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COMMONWEALTH OF KENTUCKY
FRANKLIN CIRCUIT COURT
DIVISION I
CASE NO. 18-CI-379
ELECTRONICALLY FILED

COMMONWEALTH OF KENTUCKY,
ex rel. ANDY BESHEAR, ATTORNEY GENERAL, *et al.* PLAINTIFFS

v.

MATTHEW G. BEVIN, in his official capacity
as Governor of the Commonwealth of Kentucky, *et al.* DEFENDANTS

COMBINED MEMORANDUM IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT AND RESPONSE TO PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT

Does the recently enacted Senate Bill 151 violate the inviolable contract? That is the ultimate issue here, and while it is simple to phrase, it is exceedingly complex to understand. To some extent, the complexity comes from the very term itself. After all, an "inviolable" contract appears at first glance to be an oxymoron, much like an unsinkable ship or an uncrashable airplane. And even greater complexity arises from the fact that there is very little legal authority addressing what exactly it means to be an *inviolable* contract. It cannot literally be inviolable, or else the Plaintiffs would not see a need to bring this case. In other words, despite its name, the inviolable contract is obviously capable of being violated. Thus, the real question is whether SB 151 violates the so-called inviolable contract. Simply put, it does not.

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There are two potential ways to analyze this issue, but only one of them is correct. One way—which is the analysis urged by the Plaintiffs—is to say that a public employee's ability to accrue pension benefits is locked in at the moment the employee is hired, and the employee must be allowed—at the very least—to continue earning those exact same benefits at the exact same rates as long as the employee remains employed. In other words, any change to an employee's ability to accrue benefits in the future is a violation of the contract. This is commonly known as the California Rule. It has proven to be an unmitigated disaster in its namesake state, as well as other states that have experimented with it. Thus, the California Rule has been overwhelmingly rejected across the country. In fact, even the *California* courts are walking away from it. And yet, the Plaintiffs argue that this is the rule Kentucky should follow. Tellingly, their brief simply assumes that this is the correct rule without undertaking any analysis or explanation as to *why* it is the correct rule. Were the Plaintiffs to attempt such an explanation, they would have to confront the realities of the California Rule—*i.e.*, that it is nonsensical, fiscally irresponsible, and legally unjustifiable.

The alternative analysis—which the Plaintiffs do not even acknowledge—says that a public employee's right to already-accrued pension benefits must be protected, but the employee does not have to be permitted to continue accruing pension benefits in the future. In other words, a public employee has an inviolable right to pension benefits that he or she has already accrued, but has no right to future accruals. This is analogous to salaries and wages—*i.e.*, an employee has a contractual right to be

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paid for work that he or she has already performed, but, in the absence of a written contract for a set term, does not have a right to continue earning money in the future. This is the prevailing view (hereinafter, the "Prevailing Rule") across the country with regard to public pensions, and it is *the only* analysis applied with respect to private pensions. In contrast to the California Rule, the Prevailing Rule is sensible, fiscally responsible, and legally justified. To say it is obvious that the Court should follow the Prevailing Rule instead of the California Rule is an understatement. And, assuming that the Court does so, it can only conclude that SB 151 does not violate the inviolable contract since SB 151 only alters prospective, unaccrued benefits.[1]

Finally, the Plaintiffs also raise a number of complaints about the process used to enact SB 151. This is nothing more than a sideshow. Most of the process-based issues raised by the Plaintiffs are not even justiciable. In any event, those issues are all unavailing. As a result, the Defendants are entitled to summary judgment.

One final point: the Kentucky Education Association ("KEA") and the Fraternal Order of Police ("FOP") also lack standing, and therefore should be dismissed as Plaintiffs on that ground.

For these reasons, and as explained below, the Defendants are entitled to summary judgment.[2]

[1] While the inviolable contract cannot literally be inviolable, this brief will nevertheless refer to the contract throughout as the "inviolable contract" for the purposes of convenience and consistency with the statutory language.

[2] The Defendants are seeking summary judgment under protest because the Court ordered them to file a brief on the merits without the benefit of discovery. The Defendants continue to believe that discovery is necessary on many issues in this case, and the Defendants do not waive any objections by asking the Court for summary judgment. [*See* Ex. 1, Brinkman Aff.].

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FACTS

Creation and History of the Kentucky Retirement Systems

Public employees in Kentucky have long been provided pension benefits. But, for much of the twentieth century, those benefits were viewed by the courts as a mere gratuity that could be completely taken away from an employee at any moment prior to retirement. *See, e.g., City of Louisville v. Bd. of Educ. of Louisville*, 163 S.W.2d 23, 25 (Ky. 1942).

In 1972, the Kentucky General Assembly set out to change this. In order to provide greater security for public employees' pensions, it enacted KRS 61.692(1), which, at the time, provided that:

> in consideration of the contributions by the members and in further consideration of the benefits received by the state from the member's employment, KRS 61.510 to KRS 61.700 shall constitute an inviolable contract of the Commonwealth, and the benefits provided therein shall not be subject to reduction or impairment by alteration, amendment, or repeal.[3]

The basic pension benefit available to state and county retirees under this system is relatively straightforward: when they retire at full retirement age, they are eligible to receive an annual retirement allowance equal to their years of service,

[3] 1972 Ky. Acts ch. 116, § 60. KRS 61.692 applies to most state employees. Identical inviolable contract provisions were also enacted for county employees and the State Police in 1972. *See* KRS 16.652(1) (state police); KRS 78.852(1) (county employees). The statutory provisions governing the County Employees Retirement System (CERS), State Police Retirement System (SPRS), and Kentucky Employees Retirement System (KERS) are essentially identical, so those three retirement systems and the provisions governing them will generally be treated and discussed in this brief as if they are one system, even though they are technically three systems united under the same Board of Trustees. Teachers are members of a separate system, the Kentucky Teachers' Retirement System (KTRS), which is discussed separately below. Legislators and judges also are in a different pension system, but the Plaintiffs have not raised any claims pertaining to that system.

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multiplied by the average of their five highest years of salary—three highest for hazardous-duty employees—and then multiplied by a specific benefit factor, commonly referred to as a multiplier. *See* KRS 61.510(14); KRS 61.595.

From the beginning, it was clear that the so-called inviolable contract was not set in stone. Instead, its provisions have ebbed and flowed many times over the years. For instance, in 1976, the General Assembly modified the covered provisions within the inviolable contract, reducing the range of statutes included within it to KRS 61.510 to KRS 61.692. 1976 Ky. Acts ch. 321, § 40. In 1988, the covered provisions were extended to the present range of KRS 61.510 to KRS 61.705. 1988 Ky. Acts ch. 349, § 29.

Over time, many provisions have also been added to *and* taken away from the inviolable contract. *See, e.g.,* KRS 61.585 (repealed by 1976 Ky. Acts ch. 321, § 41); KRS 61.620 (repealed by 1976 Ky. Acts ch. 321, § 41). One significant benefit added to the inviolable contract after its creation was hospital and medical insurance for retirees. *See* KRS 61.702. This benefit was added in 1978. 1978 Ky. Acts ch. 311, § 9.

But the General Assembly's tinkering with the inviolable contract has not been limited solely to measures that increase benefits. In 1986, the General Assembly raised the percentage of income that employees were required to contribute to the pension system. When the inviolable contract was created in 1972, employees were required to contribute 4% of their income to the pension system. 1966 Ky. Acts ch.

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35, § 5. In 1986, however, the General Assembly raised the required contribution to 5%. 1986 Ky. Acts ch. 293, § 4.

Two years later, the General Assembly amended the inviolable contract to create a 10% service credit bonus for employees. *See* KRS 61.596 (repealed by 2000 Ky. Acts ch. 385, § 42). That amendment, however, also contained a sunset clause that prohibited retirement system members from taking advantage of the bonus if they did not retire by a certain date. *See* 1988 Ky. Acts ch. 336, § 1. Thus, KRS 61.596 created a benefit within the inviolable contract, but that benefit terminated before it could be taken advantage of by all of the members of the retirement systems.

In 1993—in response to the Boptrot prosecutions—the General Assembly amended the inviolable contract to provide that legislators convicted of a felony relating to their duties as a legislator would forfeit their pension rights and benefits, "except for the return of [the legislator's] accumulated contributions and interest credited on those contributions." *See* KRS 6.696; 1993 (1st Extra. Sess.) Ky. Acts ch. 4, § 78 (amending the inviolable contract to apply "except as provided in KRS 6.696"). In other words, the General Assembly terminated the inviolable contract rights of legislators in those circumstances.

In 2000, the General Assembly repealed KRS 61.554, which had allowed LRC employees to purchase service credit after working six legislative bienniums. 1990 Ky. Acts ch. 480, § 6 (repealed by 2000 Ky. Acts ch. 385, § 42).

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Similarly, in 2003, the General Assembly removed hospital and medical insurance benefits from the inviolable contract for employees hired on or after July 1, 2003. KRS 61.702(8)(e) (added by 2003 Ky. Acts ch. 155, § 1).

In 2008, the General Assembly made perhaps the most significant changes yet to the Kentucky Retirement Systems, creating what is now referred to as Tier II benefits for employees hired on or after September 1, 2008. *See generally* 2008 (1st Extra. Sess.) Ky. Acts ch. 1. Employees who were already in the system prior to those reforms are said to have Tier I benefits. The major distinctions between Tier I and Tier II benefits are: Tier II employees are required to contribute 1% of their income for future medical and hospital insurance benefits, while Tier I employees are not required to contribute anything, KRS 61.702(2)(b); Tier II employees have generally lower multipliers, KRS 61.595(1); the "high five" and "high three" calculations for Tier II employees must be based on full years of employment whereas the "high five" calculation for Tier I employees can be based on as little as 48 months of employment and the "high three" calculation can be based on as little as 24 months of employment, KRS 61.510(14); Tier I non-hazardous employees can retire unreduced benefits at any age after 27 years of service, but Tier II non-hazardous employees can only retire with unreduced benefits if they are at least 57 years old and their age plus years of service equals at least 87, KRS 61.595(2); and Tier I employees generally receive full medical and hospital insurance benefits at 20 years of service, whereas Tier II employees simply receive a cash stipend—based on their months of service—to defray the cost of purchasing insurance.

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In 2013, the General Assembly made still more changes to the Kentucky Retirement Systems, this time creating what is referred to as Tier III benefits. *See generally* 2013 Ky. Acts ch. 120. Tier III benefits are different in nature than the Tier I and Tier II benefits. Whereas the earlier tiers are pure defined benefit plans, Tier III is a hybrid cash balance plan. KRS 61.595(3); KRS 61.597. It is known as a "hybrid" plan because it has characteristics of both a defined benefit plan and a defined contribution plan. Under Tier III, a member has a cash balance in an account designated for the member, and that balance increases based on required contributions from the member and the member's employer, as well as a certain level of guaranteed investment returns. KRS 61.597(2). Upon retirement, a Tier III employee can either receive a distribution of their contributions plus their employer's contributions plus the investment returns, or they can opt for an annuity calculated according to actuarial assumptions and based on their accumulated account balance. KRS 61.597(7). Like Tier II employees, Tier III employees also receive a stipend for medical and hospital insurance based on their months of service. Tier III employees are not expressly covered by the inviolable contract, but their contributions—and only their contributions—are protected. KRS 61.692(2).

Creation and History of the Kentucky Teacher Retirement System

In 1978, six years after the creation of the inviolable contract for members of the Kentucky Retirement Systems, the General Assembly extended the inviolable contract to the Commonwealth's teachers. *See* 1978 Ky. Acts ch. 152, § 20 (codified at KRS 161.714). The teachers' inviolable contract, which is essentially identical to

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the inviolable contract provisions that apply to state employees, county employees, and the State Police, initially provided that:

> in consideration of the contributions by members and in further consideration of benefits received by the state from the member's employment, KRS 161.220 to KRS 161.710 shall constitute an inviolable contract of the Commonwealth, and the benefits provided therein shall not be subject to reduction or impairment by alteration, amendment, or [repeal].[4]

Like the pension benefit available to state and county employees, the benefit available to members of the Kentucky Teachers Retirement System ("KTRS") under the inviolable contract provisions is calculated by multiplying a member's years of service by their final average salary—calculated according to their highest five or highest three years of salary—and then multiplied by a benefit factor, commonly referred to as a multiplier. KRS 161.220(9); KRS 161.620. Unlike the other pension systems, the KTRS does not have multiple tiers of pension benefits. All KTRS members are generally able to retire with unreduced benefits after 27 years of service, or the age of 60, whichever comes first. KRS 161.600.

Like the inviolable contract for state and county employees, the details within the KTRS inviolable contract have seen significant change over the years. First, the rate at which teachers are required to contribute to their pension system has increased several times since 1978. When the inviolable contract was created, members of the Kentucky Teachers Retirement System ("KTRS") were required to

[4] The original language actually stated that the benefits "shall not be subject to reduction or impairment by alteration, amendment, or *appeal*." This appears to have been a scriveners error and was officially corrected in 1992. 1992 Ky. Acts ch. 192, § 17.

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contribute 7.7% of their salaries. 1978 Ky. Acts ch. 152, § 8. This increased to 7.84% in 1979; to 9.32% on January 1, 1984; to 9.6% on July 1, 1984; and to 9.855% in 1988. 1978 Ky. Acts ch. 152, § 8; 1982 Ky. Acts ch. 326, § 7; 1984 Ky. Acts ch. 253, § 15; 1988 Ky. Acts ch. 240, § 3.

In addition, benefits covered by the inviolable contract have been reduced, and even eliminated, since 1978. In 1992, for instance, the General Assembly repealed KRS 161.705. 1992 Ky. Acts ch. 192, § 18. That statute had allowed a KTRS member, or the member's employer, or both, to make voluntary contributions of up to 4% of the member's salary, which would be invested by KTRS for the member's benefit. 1990 Ky. Acts ch. 476, Pt. V, § 542.

Changes in 1995 further reduced KTRS members' benefits. Prior to 1995, KRS 161.700 provided that pension payments were exempt from state and municipal taxes. 1990 Ky. Acts ch. 476, Pt. V, § 541. In 1995, however, the statute was amended to provide that retirement benefits would be subject to the state income tax after January 1, 1998. 1995 (2d Extra. Sess.) Ky. Acts ch. 1, § 6; KRS 161.700.

Unfunded Liabilities and the Arrival of the Pension Crisis

Any pension system that allows employees to work for 27 years and then collect a defined benefit retirement allowance for the rest of their lives—which could be 40 or 50 years—is bound to run into funding problems. And so it is with all of Kentucky's public pension systems.

Standard & Poor's recently ranked Kentucky's pension systems as the worst funded among the 50 states. [*See* Ex. 2, Standard & Poor's, U.S. State Pensions:

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Weak Market Returns Will Contribute to Rise in Expense, Sept. 12, 2016 (hereinafter, "S&P 2016 Report")]. And a recent study conducted for the benefit of the Commonwealth revealed that the total unfunded liability for Kentucky's public pension systems lies somewhere between $33 *billion* in the best case scenario and $84 *billion*, depending on the assumptions used to calculate it. [PFM Interim Report #2, Historical & Current Assessment at 1 (hereinafter, "PFM Report #2"), attached as Ex. A to Chilton Aff, Ex. 3]. The average public pension fund in the United States is funded at 73.2%, but the KERS Non-hazardous plan is funded at a mere *16%*. [*Id.* at 24-25]. The KERS Hazardous, CERS Non-hazardous and Hazardous, SPRS, and KTRS plans are better funded—with the best being the CERS Non-hazardous plan at 59%—but they are still far below the national average. [*Id.* at 25].

This ever-present sword of Damocles threatens every aspect of the Commonwealth's fiscal well-being. Pension spending in Kentucky has obviously not kept pace with the level of spending necessary to keep the pension systems adequately funded, and yet, pension spending has increased nearly five times as fast as General Fund revenue over the last decade. [*Id.* at 26-27]. This means that pension spending is crowding out the Commonwealth's spending on other priorities like education and public protection. If the unfunded liability continues to grow, the Commonwealth will be forced to devote more and more of its financial resources to the pension plans all the while falling further and further behind. This will only result in more crowding out of spending on other budget items.

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Importantly, the unfunded liability is not just a problem of underfunding. Indeed, structural issues with the pension funds—like actuarial back-loading, actuarial assumption changes, and cost-of-living adjustments—account for more than half of the problem. [*Id.* at 5]. A mere 15% of the unfunded liability is attributable to underfunding. [*Id.*]. This is demonstrated most clearly by the experience of CERS. While the Commonwealth has often failed to pay the full amount of its full actuarially required contribution to KERS, local governments have typically paid the full requirement. [*Id.* at 13]. If simply funding the pensions were enough, one would expect CERS to be nearly 100% funded. But it is not. Instead, it is only 59% funded. [*Id.* at 25]. In short, the issue is not simply that the pension systems are underfunded; the issue is that they are structurally unsound.

Given the structural problems, it is not surprising that the pension systems have had abysmal cash flows over the last decade. The KERS non-hazardous fund has had negative cash flows to the tune of hundreds of millions of dollars per year for the last decade. [*Id.* at 5-6]. As a result, it is now in such poor shape that estimates show it could be insolvent as early as 2022 if it stays on the same path. [*Id.* at 47]. The other funds have had similar experiences over the past decade. This is not sustainable.

Governor Bevin and the General Assembly try to Save the Pension Systems

In light of the obvious problems with Kentucky's pension systems, Governor Bevin and the General Assembly did what any good leaders would do: they confronted the problems head-on and resolved to stop kicking the can down the road.

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To that end, they held discussions about pension reform amongst themselves and with citizen groups—including the KEA and FOP—throughout 2017. [*See* Ex. 4, Tom Latek, *Work still being done in preparation for special session on pension crisis*, Kentucky Today (Sept. 15, 2017)]. These conscientious and diligent efforts to save the pension systems from insolvency ultimately led to the passage of SB 151.

SB 151 makes a number of much-needed reforms to Kentucky's public pension systems. *See* 2018 Ky. Acts ch. 107. Among its more important provisions are the following, divided according to the affected pension systems:

Reforms to KERS, CERS, and SPRS

- There are no changes for current retirees.
- For Tier I members who retire after July 1, 2023, service credit obtained for unused sick leave cannot be added to the member's service credit to determine whether the member is eligible to receive a retirement allowance or to reduce applicable actuarial penalties for early retirement. *Id.* at §§ 16-17.
- Tier I members hired on or after July 1, 2003 must contribute 1% of their creditable compensation to a fund for retiree health insurance. *Id.* at § 30.
- Level-dollar funding (analogous to a mortgage payment) over a 30-year amortization period is established to pay down the unfunded liabilities. Level-dollar funding is a more direct and fiscally-responsible method of paying down the unfunded liabilities than the current level-percent-of-payroll, which back-loads the payments on the assumption that state and county payrolls will increase over time. *Id.* § 18.

Reforms to KERS and CERS

- For Tier I non-hazardous members who retire after July 1, 2023, lump-sum payments for compensatory time upon termination of employment cannot be used to increase their average final compensation for the purpose of computing their retirement allowance. In other words,

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members will not be able to spike their pensions with payments for compensatory time. *Id.* at §§ 14-15.

- Tier I members cannot use uniform, equipment, or any other expense allowances paid on or after January 1, 2019 to increase their average final compensation for the purpose of computing their retirement allowance. In other words, members will not be able to spike their pensions with the amounts paid to them for payments for uniform, equipment, or any other expense allowances. *Id.* at §§ 14-15.

- For Tier I non-hazardous members retiring on or after January 1, 2019, the determination of their highest five years of compensation must be based on five *complete* fiscal years. Likewise for Tier I hazardous members retiring after January 1, 2019, the determination of their highest three years of compensation must be based on three *complete* fiscal years. *Id.* at §§ 14-15.

Reforms to KTRS

- There are no changes for current retirees.

- All members hired on or after January 1, 2019 will have a hybrid cash balance plan, like Tier III members of KERS, CERS, and SPRS. *Id.* at § 43.

- For existing members, payment for unused sick days accrued as of December 31, 2018 can be used to increase their average final compensation for the purpose of computing their retirement allowance, but unused sick days accrued after that date cannot be so used. *Id.* at § 44.

- For existing members, only sick leave accrued as of December 31, 2018 can be converted into service credit. *Id.* at §74.

- Level-dollar funding (analogous to a mortgage payment) over a 30-year amortization period starting in 2021 is established to pay down the unfunded liabilities. As explained above, level-dollar funding is a more direct and fiscally-responsible method of paying down the unfunded liabilities than the current level-percent-of-payroll. *Id.* at § 63.

- A mandatory actuarially-required contribution is established for KTRS for the first time, thereby helping to ensure that adequate amounts will be appropriated to KTRS in future budgets. *Id.* at § 63.

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Reforms to Legislators' Retirement Plan

- SB 151 removes salary reciprocity for non-legislative compensation earned on or after January 1, 2019. Thus, it ends the practice of legislators spiking their pensions by taking a higher paying job in another branch of government. *Id.* at § 4.

- The multiplier to be used in the retirement allowance formula is reduced from 2.75% to 1.97% for service accrued on or after January 1, 2019. *Id.* at § 3.

These reforms are significant accomplishments. By adopting level-dollar funding and moving all new KTRS members into a hybrid cash balance system, the reforms essentially ensure that Kentucky will stop digging its pension hole deeper and will actually start filling it in. Moreover, the new hybrid cash balance plan for KTRS members promises to provide them with better benefits than they would have received under the old pension plan. In fact, the Jefferson County Teachers Association ("JCTA") has publicly stated that the new hybrid cash balance plan has the potential to provide greater benefits than the old defined benefit plan. [Ex. 5, JCTA Analysis of SB 151]. In addition, the JCTA has also noted that mandating an actuarially required contribution to KTRS is a positive development, and that level-dollar funding will eliminate the unfunded liability faster than other funding methods. [*Id.*; *see also* Ex. 6, JCTA Facebook Post, April 15, 2018].

While the Jefferson County Teachers Association appears to be largely pleased with SB 151, at least one observer fears that the bill did not go far enough. Standard & Poor's recently downgraded the Commonwealth's bond rating from A+ to A due in large part to the Commonwealth's significant unfunded pension liability. [Standard & Poor's, Kentucky RatingsDirect Report, May 18, 2018, at 2 (hereinafter, "S&P

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Report"), attached as Ex. A to Barrow Aff., Ex. 7]. While observing that the Commonwealth's 2018 pension reform gives it a stable outlook for the time being, the ratings agency expressed concern that these reforms did not go far enough to put the Commonwealth on solid financial ground. [*Id.* at 12]. It also expressed concerns about the effect of potential lawsuits—like this one—regarding the pension reform bill. [*Id.*].

Regardless, it is clear that Standard & Poor's views SB 151 as a positive development for the Commonwealth. [*See* Ex. 7, Barrow Aff.]. Its most recent ratings report refers to the reforms in SB 151 as "welcome" changes, and it notes that the Commonwealth's "stable outlook reflects Kentucky's enacted pension reform." [S&P Report at 6, 12]. Similarly, Moody's, another credit rating agency, recently reported that Kentucky's "credit benefits from recently enacted pension reforms . . . ." [Moody's Investors Service, Commonwealth of Kentucky Credit Opinion, May 1, 2018 at 1 (hereinafter, "Moody's Report"), attached as Ex. B to Barrow Aff., Ex. 7]. Moody's also observed that "Kentucky's recently enacted credit-positive pension reforms will reduce its exposure to investment performance and longevity risk across key funds." [*Id.* at 4]. But Moody's also expressed concern about this lawsuit, noting that "[t]he changes are being challenged by the state's attorney general, however, and may be overturned." [*Id.*].

This lawsuit does indeed threaten to halt the Commonwealth's forward momentum. SB 151 essentially saves the pension systems by ensuring that they will remain solvent, and it also provides teachers with benefits that are potentially more

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generous than they would have obtained under the old plan. These are positive developments. And yet, the Attorney General, the KEA, and the FOP want to stop them for some reason. Their crusade against fiscal responsibility and improved retirement benefits is as mind-boggling as it is perilous. The Governor and the General Assembly are trying to *save* the pension systems, and the Plaintiffs—if they succeed here—will inexplicably be hastening the pension systems to their graves.

ARGUMENT

The Plaintiffs make two general kinds of arguments against SB 151: substantive arguments—*i.e.*, arguments that the law is invalid because it violates some substantive right guaranteed by the Constitution or a statute—and process-based arguments—*i.e.*, arguments that the law is invalid not because there is anything wrong with the law itself, but because the process used to pass it was wrong. The primary substantive argument is that SB 151 violates the so-called inviolable contract. This issue ultimately comes down to whether the Court follows the California Rule or the Prevailing Rule. As explained below, in Part I, the latter is the correct rule. And under that rule, SB 151 does not violate any rights under the inviolable contract.

The other substantive arguments raised against SB 151 are that it violates the Contracts Clause and Takings Clause of the Kentucky Constitution, as well as the constitutional prohibition against exercising arbitrary power. These arguments, addressed below in Parts II, III, and IV, are also unavailing.

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Part V addresses the multitude of process-based arguments raised by the Plaintiffs. These arguments—most of which are not even justiciable—are just desperate attempts to get the courts to strike down a statute that the Plaintiffs simply do not like. This is not an appropriate role for the courts. Moreover, if the Court goes down this path, it will open a Pandora's Box of problems that could lead to the invalidation of nearly every law passed in Kentucky in the last century. Such absurdity should not be even be considered.

Finally, Part VI explains that the KEA and FOP have no standing and therefore should be dismissed as Plaintiffs.

I. SB 151 does not violate any contractual rights.

It is indisputable that SB 151 only affects public employees' ability to accrue certain pension benefits *in the future*. It *does not* take away or reduce any benefits they have already accrued. Accordingly, this Court must determine whether public employees have a right to future accruals of benefits, or whether they only have a right to benefits they have already accrued. There are two possible approaches to this issue, and they lead to opposite outcomes. If the Court goes against the great weight of authority and follows the California Rule—as urged by the Plaintiffs—then it will likely find that SB 151 violates contractual rights. Conversely, if the Court follows the Prevailing Rule, then it must find that SB 151 *does not* violate any contractual rights. Only one of these options is sensible, fiscally responsible, and legally justified. And it is not the California Rule.

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A. The Court should not follow the California Rule.

California is not known for its sound public policy. The California Rule regarding pension rights is especially problematic—so much so that even California courts are starting to walk away from it. This Rule, which was created out of whole cloth by the California courts primarily during the second half of the twentieth century, provides that public employees have "a right to earn future [pension] benefits through continued service." *Legislature v. Eu*, 816 P.2d 1309, 1332 (Cal. 1991) (in bank). And not only do they have the *right* to continue accruing benefits in the future, but they also have the *right* to continue accruing benefits at no less than the rate at which they were permitted to accrue benefits when they were first hired. *See id.* at 1333. In other words, under the California Rule, when a public employee is hired, that employee has a locked-in right to continue accruing future pension benefits forever at no less than the accrual rate that was available to them on their first day of employment. Simply put, the California Rule denies public employers any flexibility when it comes to current employees' future pension accruals—they must be afforded the opportunity to accrue any and all benefits that were capable of being accrued when they were hired.

The California Rule has only been cited with approval by courts in a handful of states, and several of them subsequently repudiated the rule. *See* Amy B. Monahan, "Statutes as Contracts? The 'California Rule' and its Impact on Public Pension Reform," 97 Iowa L. Rev. 1029, 1071-73 (2012). Why? Because it is nonsensical, fiscally irresponsible, and legally unjustifiable.

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It makes no sense to say that public employees have a right to future pension accruals. Taken to its logical extent, such a rule would mean that public employers could never terminate their employees or reduce their compensation. No reasonable person can dispute that terminating an employee completely ends the employee's ability to continue accruing pension benefits, nor can anyone reasonably dispute that reducing an employee's compensation reduces the rate at which the employee accrues pension benefits. Therefore, anyone who is being intellectually honest would have to admit that the California Rule—carried to its logical conclusion—would affect the ability to terminate employees or reduce their compensation. But, of course, no one takes issue with the ability to terminate public employees or reduce their compensation. This destroys any rationale for holding that there is a right to future accruals. "After all, if your employment can be terminated and your salary lowered prospectively, what is the basis for finding a right to future accruals?" *Id.* at 1077. There is none. And, tellingly, the California courts have never even attempted to provide one. Instead, "[t]hey simply treat it as a given." *Id.* Logic, however, says that it is anything but.

Moreover, a pension is a form of deferred compensation. *See, e.g., Brosick v. Brosick*, 974 S.W.2d 498, 504 (Ky. App. 1998). Thus, it is analogous to salary or wages, and should be treated the same way.[5] Indeed, as the Oregon Supreme Court has held, pension benefits are simply "another form of compensation." *Moro v. State of Oregon*, 351 P.3d 1, 20 (Or. 2015). "Whereas, for example, salary is compensation

[5] If pensions were not a form of compensation, they would likely constitute an emolument, and therefore be unconstitutional. *See* Ky. Const. § 3.

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paid to the employee every two weeks or at the end of each month, a pension is compensation paid to the employee at retirement." *Id.* Therefore, since salary and wages can be reduced prospectively—meaning that there is no right to continue accruing them at the same rate in the future—it makes no sense to say that pension benefits cannot similarly be reduced on a prospective basis. In other words, since there is no right to continue accruing future salary or wages at the same rate, there is no logical—or legal—basis upon which to conclude that employees should have a right to continue accruing pension benefits at the same rate.

Guaranteeing a right to future accruals is also inefficient and irresponsible. It is absurd to suggest that a state legislature would provide employees with a specific set of unalterable pension benefits from the day they are hired. Doing so would encumber the state with obligations running as long as 70 or 80 years without any flexibility to take measures to protect the state from run-away costs. No state that cares about its future fiscal condition would put itself on the hook for such obligations; it would expose the state to far too much vulnerability and uncertainty.

In addition, it is not in the best interest of employees to guarantee a right to future accruals. This might seem counterintuitive at first glance, but it is true. If public employers cannot alter pensions on a prospective basis in order to preserve solvency, then they may have to accomplish that by terminating employees, reducing salaries and wages, or reducing fringe benefits like health insurance—or all three. *See* Monahan, 97 Iowa L. Rev. at 1079. These obviously are not desirable outcomes, and many employees may prefer to accept reduced future pension accruals in

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exchange for preserving their jobs, or preserving their wage rate, or preserving affordable health insurance. The California Rule, however, would not allow such flexibility. *See id.*

The California Rule was initially influential and was adopted by several states, but it appears that only a handful of states still follow it. Why? Because nearly everyone recognizes that it is a disastrous rule. This is nowhere more evident than in California itself. California is experiencing crushing financial pressures stemming from its out-of-control public pensions. From 2002-03 to 2017-18, public employers' pension contributions in California increased by 400% on average. *See* Joe Nation, *Pension Math: Public Pension Spending and Service Crowd Out in California, 2003-2030*, Stanford Institute for Economic Policy Research at x (Oct. 2, 2017), available at https://siepr.stanford.edu/research/publications/pension-math-public-pension-spending-and-service-crowd-out-california-2003 (last visited May 23, 2018). For California public employers, "pension contributions now consume on average 11.4% of all operating expenditures, more than three times their 3.9% share in 2002-03." *Id.* And pension contributions are projected to increase by an additional 73% to 113% by 2029-30. *Id.* As a result, state and local governmental entities in California "have reduced social, welfare and educational services, as well as 'softer' services, including libraries, recreation, and community services. In some cases, governments have reduced total salaries paid . . . ." *Id.* xi. The bottom line is that "rising pension costs are making it harder to provide services traditionally considered part of government's core mission." *Id.* at 1.

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These results are so disastrous that even the California courts are walking away from the California Rule. This is most clearly demonstrated in *Marin Association of Public Employees v. Marin County Employees' Retirement Association*, 206 Cal. Rptr. 3d 365 (Cal. App. 2016), where the court retreated significantly from the traditional California Rule in an apparent attempt to unwind some of the damage caused by the rule. *Marin Association* involved a challenge to the provision of the California Public Employees' Pension Reform Act of 2013, which attempted to eliminate pension spiking by prohibiting things like payments for unused sick leave from being counted as part of an employee's compensation when calculating the employee's pension benefit. The plaintiffs alleged that they had a contractual right to spike their pensions with such payments. *See id.* at 381. Thus, in the plaintiffs' view—and consistent with the holding in *Eu*—the state could not change pension spiking at all with regard to existing employees. *See id.*

In evaluating this claim, the court began by noting that "a pension is treated as a form of deferred salary that the employee earns prior to it being paid following retirement." *Id.* The court then noted that "pension rights are not immutable." *Id.* at 382. It further noted that "the government entity providing the pension may make reasonable modifications and changes in the pension system. This flexibility is necessary 'to permit adjustments in accord with changing conditions and at the same time maintain the integrity of the system and carry out its beneficent policy.'" *Id.* (quoting *Miller v. State of California*, 557 P.2d 970 (Cal. 1977)). And the court then observed that while the legislature cannot destroy pension rights, it can modify them

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because "[t]he right to modify inheres in the inalienable rights of government." *Id.* at 383.

Throughout the opinion, the court further found the ability to modify pension benefits to be a broad one, concluding that "there are acceptable changes aplenty that fall short of 'destroying' an employee's anticipated pension. 'Reasonable' modifications can encompass reductions in promised benefits. Or changes in the number of years [of] service required. Or a reasonable increase in the employee's contributions." *Id.* at 387-88 (citations omitted). Thus, the court concluded that a public employee "does not have a right to any fixed or definite benefits but only to a substantial or *reasonable* pension," and that "*reasonable* modifications and changes" may be made "before the pension becomes payable." *Id.* at 388. Applying this rule, the court found that the anti-spiking provisions in the law were valid because they were "quite modest" and "purely prospective." *Id.* at 390, 393.

The *Marin Association* holding is a far cry from the traditional California Rule—which guarantees public employees a right to future pension accruals at no less than the rate that was available to them when they were hired—and it demonstrates that even the California courts no longer believe in the soundness of the California Rule. If even California does not believe in the California Rule, why should Kentucky? Simply put, it should not. Rather, the Commonwealth should follow the rule that is presently prevailing among state and federal courts, referred to herein as the Prevailing Rule—*i.e.*, the rule that protects accrued pension benefits, but permits prospective changes.

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B. The Court should follow the Prevailing Rule instead.

Given the disastrous results of the California Rule, it is no surprise that courts are rejecting it from coast to coast. Indeed, some states that had previously adopted it have now abandoned it. Significantly, it has been rejected in many states that have statutory protections for pension benefits that are similar to Kentucky's inviolable contract. And, perhaps even more significantly, the Prevailing Rule is more consistent with the manner in which Kentucky's statutory "inviolable contract" language has been treated throughout the years.

1. The Prevailing Rule is more consistent with Kentucky's past treatment of the inviolable contract.

There is little authority in Kentucky on how the term "inviolable contract" ought to be interpreted. But there is not a complete absence of authority, and the authority that exists supports the application of the Prevailing Rule instead of the California Rule.

In 1973, Kentucky's highest court addressed municipal employees' inviolable contract rights in *Holsclaw v. Stephens*, 507 S.W.2d 462 (Ky. 1973). At issue in that case was the plan to create the Lexington-Fayette Urban County Government and abolish the City of Lexington as a legal entity. One aspect of the plan was the creation of a combined retirement system that would include employees of both Fayette County and the old City of Lexington. A group of employees and retirees of the City of Lexington argued that the plan would impair their inviolable contract rights, which were provided by KRS 90.400. *See id.* at 478. Specifically, they contended that the creation of the new pension system would impair or dilute the value of contributions

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they had made to their previous pension system. The court pointed out that there is never a guarantee that cities will remain in existence, and that once a city ceases to exist, employees have no right to continued employment. *See id.* at 479. By implication, this means that employees also have no right to future accrual of pension benefits once a city ceases to exist. The court then made it clear that the required protection for the city employees' pension rights was backward-looking protection focused on their accrued benefits, not forward-looking protection for future accruals. The court held:

> As concerns pension rights, it is of course true that the termination of the existence of the City of Lexington will not extinguish the assets of the pension funds, and those active or retired members of the pension systems by and for whom contributions were made will have vested rights in those assets. **But the continued existence of the pension system in its previous form and strictly in accordance with the previous statutes governing city pension systems is not essential to the protection of those vested rights.**

Id. (emphasis added). Thus, the court held that protection provided by the inviolable contract was the protection of already-accrued benefits, not future accruals.[6] This is plainly an application of the Prevailing Rule.

The Kentucky courts next had occasion to address inviolable contract rights in *Jones v. Board of Trustees of Kentucky Retirement Systems*, 910 S.W.2d 710 (Ky. 1995). In *Jones*, the Board of Trustees of the Kentucky Retirement Systems sued the governor and several other officials because the 1992 budget bill did not fund the

[6] *Holsclaw* was later disapproved of on other grounds, pertaining solely to taxation, in *Jacobs v. Lexington-Fayette Urban County Government*, 560 S.W.2d 10, 14 (Ky. 1977). But *Holsclaw*'s holding on pensions has not been disapproved of or reversed.

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state pensions at the level recommended by the Board. *See id.* at 712. In rejecting the Board's claims, the Kentucky Supreme Court made several observations that indicate the Prevailing Rule, rather than the California Rule, is the correct method of interpreting the inviolable contract. First, the court found that "[t]he contract between the Commonwealth and its employees is for retirement funding. It is not a contract which denies the General Assembly the ability to fashion its ways or means in providing pension funds." *Id.* at 713-14. Thus, the court acknowledged that changes to the pension systems are not prohibited by the inviolable contract. It reiterated this point in the very next sentence by adding, "[t]he appellees' argument that the retirement statutes forever removed legislative power to amend those statutes runs afoul of our holding in *Legislative Research Commission v. Brown*, 664 S.W.2d 907 (1984)." *Id.* at 714. Finally, the court held that "[a]t the simplest level, appellees have the right to the pension benefits they were promised as a result of their employment, at the level promised by the Commonwealth." *Id.* 715. This is perhaps the clearest indication that the Kentucky Supreme Court views pension rights through the lens of the Prevailing Rule rather than the California Rule. After all, the court did not hold that state employees are entitled to the pension benefits they were promised as a result of their employment *plus the pension benefits they expected to accrue as a result of their future employment*. The reference to employment, but not future employment, is significant. Moreover, it is striking that the court used the past tense in referring to promised benefits. Specifically, the court found that employees have a right to "the pension benefits they were promised," not

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to the benefits that *are or will be promised if their employment continues in the future*. The Court's use of the past tense indicates that the inviolable contract is a backward-looking provision, protecting what has already been accrued—*i.e.*, what was promised—but not protecting future accruals.

The General Assembly's historical treatment of the inviolable contract also demonstrates that the Prevailing Rule is the correct rule. The General Assembly has made many changes to the public pension systems over the years, many of which have reduced plan members' benefits on a prospective basis. For example, KERS members were required to contribute 4% of their salaries to the pension system when the inviolable contract was created in 1974, *see* 1966 Ky. Acts ch. 35, § 5, but in 1986, the required contribution rate was raised to 5% going forward, *see* 1986 Ky. Acts ch. 293, § 4. Likewise, the General Assembly has increased the required contribution rate for KTRS members several times, raising it from 7.7% to 7.84% in 1979, then to 9.32% in 1984, and then 9.6% later that same year, and, finally, to 9.855% in 1988. *See* 1978 Ky. Acts ch. 152, § 8; 1982 Ky. Acts ch. 326, § 7; 1984 Ky. Acts ch. 253, § 15; 1988 Ky. Acts ch. 240, § 3. Requiring employees to pay more for their pension benefits undoubtedly affects the value of those benefits, but the General Assembly obviously did not see a problem with that.

In addition, on multiple occasions, the General Assembly has *completely repealed* a benefit that was available to KERS members under the inviolable contract. In 1988, the General Assembly offered a 10% service credit bonus to certain employees, but placed a sunset provision on that benefit. *See* KRS 61.596 (repealed

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by 2000 Ky. Acts ch. 385, § 42). In other words, they made a benefit available for a limited time, and then made it completely unavailable from that point forward. The General Assembly clearly did not believe that once a benefit had been offered, it had to continue being offered so that employees could accrue it in the future.

Similarly, in 2000, the General Assembly repealed KRS 61.554, which had allowed LRC employees to purchase service credit after working six legislative bienniums. *See* 1990 Ky. Acts ch. 480, § 6 (repealed by 2000 Ky. Acts ch. 385, § 42). Eliminating this benefit would be a violation of the inviolable contract under the California Rule. The fact that it was repealed clearly indicates that the General Assembly does not intend the inviolable contract to be interpreted according to such a rule.

Finally, the Prevailing Rule is the only one that is consistent with the age old rule that one legislature cannot bind another. As the Kentucky Supreme Court held in *Jones*, the "argument that the retirement statutes forever removed legislative power to amend those statute runs afoul of our holding in *Legislative Research Commission v. Brown*, Ky., 664 S.W.2d 907 (1984)."

2. The Prevailing Rule is also in line with recent trends from other states, and is the only rule accepted under federal law.

Kentucky's pension crisis is the worst in the nation, but Kentucky is not the only state dealing with this issue. In response to crushing pension debt, state and municipal governments from coast to coast have undertaken pension reform efforts. In many instances, these efforts have led to litigation, just as SB 151 has here. And

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the overriding theme coming out of those cases is that employees' accrued benefits cannot be reduced, but unaccrued benefits can be reduced prospectively because employees do not have a right to future accruals. That is, states are generally adopting the Prevailing Rule. As one commentator has observed, "[a] common theme can be seen emerging from the case law, no matter what the putative holding: employees have a right to pension benefits that they have already accrued, but not necessarily to the accrual of future benefits." Stuart Buck, "The Legal Ramifications of Public Pension Reform," 17 Tex. Rev. L. & Pol. 25, 57 (2012). Recent decisions in Florida, Wisconsin, Oregon, and Michigan all demonstrate the soundness of the Prevailing Rule, and Kentucky should follow these states' reasoning.

To begin, Florida's experience is illustrative. In response to rising budgetary pressures, the Florida legislature enacted pension reforms in 2011. In particular, the legislature "converted the Florida Retirement System (FRS) from noncontributory by employees to contributory, required all current FRS members to contribute 3% of their salaries to the retirement system, and eliminated the retirement cost-of-living adjustment for creditable service after the effective date of the act." *Scott v. Williams*, 107 So. 3d 379, 381 (Fla. 2013). FRS members sued, arguing that those reforms violated their contractual rights.

Florida law has a preservation of rights statute, which—much like Kentucky's statutory inviolable contract—provides that "the rights of members of the retirement system established by this chapter are declared to be of a contractual nature, entered into between the member and the state, and such rights shall be legally enforceable

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as valid contract rights and shall not be abridged in any way." *Id.* at 383 (quoting Fla. Stat. § 121.011(3)(d)). The Florida Supreme Court rejected the plaintiffs' argument that the reforms violated this provision. In doing so, it clearly rejected the California Rule and followed the Prevailing Rule.

The plaintiffs argued that the reforms should be evaluated under the California Rule:

> It is contended, without dispute, that even though the actual changes in the plan occur at a future date, the changes diminish the total expected retirement benefits that could have accrued over the entire projected life of a member's employment who continue their employment after the amendments. Thus, the challengers contend, the rights to a noncontributory plan and to a continuing COLA were part of the contract established under section 121.011, Florida Statutes (1974), as it has been continually enacted, and are rights to be honored over the life of their employment with the State.

Id. at 386. The Florida Supreme Court gave this argument short shrift. It concluded "that the preservation of rights statute was enacted to give contractual protection to those retirement benefits already earned as of the date of any amendments to the plan." *Id.* at 388. The court further stated that "the preservation of rights statute was not intended to bind future legislatures from prospectively altering benefits for future service performed by all members of the FRS," and that the reforms at issue were valid because they were "prospective changes within the authority of the Legislature to make." *Id.* at 389. The court arrived at this holding based on the following key observations:

> [T]he rights provision was not intended to bind future legislatures from prospectively altering benefits which accrue for future state service. To hold otherwise would

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> mean that no future legislature could in any way alter future benefits of active employees for future services, except in a manner favorable to the employee. *This view would, in effect, impose on the state the permanent responsibility for maintaining a retirement plan which could never be amended or repealed irrespective of the fiscal condition of this state*. Such a decision could lead to fiscal irresponsibility. It would also impose on state employees an inflexible plan which would prohibit the legislature from modifying the plan in a way that would be beneficial to a majority of employees, but would not be beneficial to a minority.

Id. at 388 (quoting *Florida Sheriffs Ass'n v. Dept. of Admin.*, 408 So. 2d 1033, 1037 (Fla. 1981)). Thus, Florida has unequivocally rejected the California Rule and adopted the Prevailing Rule allowing prospective changes to pensions while protecting already-accrued benefits.

The Wisconsin Supreme Court applied the same reasoning and reached the same result in *Stoker v. Milwaukee County*, 857 N.W.2d 102 (Wis. 2014). In Wisconsin, counties with a population of 500,000 or more are required by state statute to provide pension plans for their employees. *See id.* at 104 (Wis. 2014) (citing Ch. 201, Wis. Laws of 1937). Wisconsin law provides—much like Kentucky's inviolable contract—that those pension benefits "shall not be diminished or impaired by subsequent legislation or by any other means without [members'] consent." *Id.* at 105 (quoting Ch. 138, Wis. Laws of 1945). Under another statute, counties can make changes to their pension systems when necessary, but "no such change shall operate to diminish or impair the annuities, benefits or other rights of any person who is a members of [the pension system] prior to the effective date of any such change." *Id.* at 106 (quoting § 1, ch. 405, Wis. Laws of 1965). Acting pursuant to these laws,

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Milwaukee County created a pension system for its employees. Its pension system "calculates pension payments for its retired employees by multiplying a retiree's final average salary by a certain percentage known as a multiplier, and the resulting number is then multiplied by the retiree's total years of county service." *Id.* at 103.[7] In 2000, Milwaukee County raised its "multiplier from 1.5% to 2% for service rendered on and after January 1, 2001." *Id.* (citing Milwaukee Cnty., Wis. Gen. Ordinance § 201.24(5.15)(1)(a) (2000)). Subsequently, Milwaukee County "reduced the multiplier from 2% to 1.6% for all county service performed on and after January 1, 2012." *Id.* at 104 (citing Milwaukee Cnty., Wis. Gen. Ordinance § 201.24(5.1)(2)(f) (2011). The 2% multiplier continued to apply to service rendered from 2001 through 2011. Nevertheless, employees sued on the ground that their rights had been impaired because they had a right to continue accruing future benefits with a 2% multiplier. *See id.* The Wisconsin Supreme Court rejected this argument, firmly adopting the Prevailing Rule.

The plaintiffs in *Stoker* essentially argued that Wisconsin should follow the California Rule, *see id.* at 109, but the Wisconsin Supreme Court firmly rejected that argument. Indeed, it found that adopting a rule that prohibits prospective changes to pensions would lead to "absurd results." *Id.* The court concluded that "[b]ecause the multiplier is 'a form of deferred compensation that is earned as the work is performed,' it 'can be changed, but only as it is related to work not yet performed.'" *Id.* at 113 (quoting *Champine v. Milwaukee Cnty.*, 696 N.W.2d 245 (Wis. App. 2005)).

[7] This is essentially the same formula used to calculate pension payments in Kentucky's pension systems. *See* KRS 61.595.

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The court also noted that its "conclusion that Milwaukee County may prospectively modify benefits before they vest is consistent with the anti-cutback rule of the Employee Retirement Income Security Act ("ERISA") of 1974. The anti-cutback rule allows employers subject to ERISA to modify benefits with respect to future service because those benefits have not yet accrued." *Id.* (citing *Cent. Laborers' Pension Fund v. Heinz*, 541 U.S. 739, 747 (2004)). Thus, in light of these considerations, the court held that reducing the multiplier "did not breach [the plaintiffs'] contractual right to retirement system benefits earned and vested because it had prospective-only application to future service credits not yet earned." *Id.* at 116.

Also instructive is the Oregon Supreme Court's decision in *Moro v. State of Oregon*, 351 P.3d 1 (Or. 2015). Oregon had previously adopted the California Rule in *Oregon State Police Officers' Association v. State of Oregon*, 918 P.2d 765, 773 (Or. 1996), where the court held that public employees' pension benefits "vest on acceptance of employment or after a probationary period, with vesting encompassing not only work performed but also work that has not yet begun." But the Oregon Supreme Court abrogated this holding in *Moro*, abandoning the California Rule in favor of the Prevailing Rule. *See Moro*, 351 P.3d at 37.

At issue in *Moro* was a pension reform bill that reduced the cost-of-living adjustment applied to benefits received under the Oregon Public Employee Retirement System. *See id.* at 7. The ultimate issue, as in the cases discussed above, was whether the state was required to allow employees to continue accruing the COLA benefit in the future at the pre-reform rate, or whether it could reduce that

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benefit prospectively. *See id.* at 33-34. The court concluded that employees had "a contractual right to receive the pre-amendment COLA for benefits that they earned *before* the effective dates of the amendments—that is, benefits that are generally attributable to work performed before the amendments went into effect," *id.* at 8, but that employees had "no contractual right to receive the pre-amendment COLA for benefits that they earned *on or after* the effective dates of the amendments—that is, benefits that are generally attributable to work performed after the amendments went into effect," *id.* The court acknowledged its previous holding in *Oregon State Police Officers' Association*, *id.* at 34-35, but abrogated it, rejecting the position that pension benefits "cannot be changed prospectively," *id.* at 35. The court found that "[t]he PERS contract binds a participating employer to compensate a member for only the work that the member has rendered and based on only the terms offered at the time the work was rendered . . . ." *Id.* at 23. Accordingly, the court held that the legislature cannot change benefits "that have already accrued," but is well within its rights to change "benefits that might accrue in the future." *Id.* at 37.

Finally, Michigan is also among the recent deluge of states adopting the Prevailing Rule rather than the California Rule. In 2010, the Michigan legislature modified pension benefits for current public school employees in response to a budget shortfall in the state public school system. *AFT Mich. v. State of Michigan*, 866 N.W.2d 782, 786 (Mich. 2015). Among other things, the pension reform legislation "required all current public school employees to contribute 3% of their salaries to the MPSERS [Michigan Public School Employees' Retirement System] to assist in

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funding retiree healthcare benefits for current and future public school retirees." *Id.* Prior to the 2010 reforms "public school employees had never been required to pay for these benefits." *Id.* A group of labor unions representing public school employees sued, arguing—among other things—that the legislation violated their members' contractual rights to pension benefits.

While the litigation over the 2010 reforms was pending, the legislature passed another pension reform bill in 2012. The 2012 bill made changes to the 2010 retiree healthcare provisions—such as allowing employees to avoid paying the 3% contribution if they wanted to opt out of retiree healthcare benefits—and also increased the amount that employees were required to contribute to the pension system. *See id.* at 787-88. The unions challenged the 2012 reforms as well, but the Michigan Supreme Court upheld those reforms. Although the unions argued that the reforms violated their members' contract rights with respect to their pension benefits, the Michigan Supreme Court rejected this argument on the ground that public employees had no contractual rights to future pension benefits. *See id.* at 806. Articulating the Prevailing Rule, the court stated that "[a]lthough public school employees have no contractual right to accrue future pension benefits, they do possess a contractual right to receive the pension benefits they have already earned." *Id.* at 808 n.26.

Federal courts also apply the Prevailing Rule instead of the California Rule. For example, in *Van Houten v. City of Fort Worth*, 827 F.3d 530 (5th Cir. 2016), the Fifth Circuit considered whether changes to Fort Worth's pension plan violated Texas

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law. Prior to the changes, Fort Worth provided retirees with a pension equal to the average of their three highest annual salaries multiplied by their years of service and then subjected to a 3% multiplier. *See id.* at 533. The changes reduced the multiplier to 2.5%, changed the "high three" factor to a "high five" factor, and changed the cost-of-living adjustment. Employees challenged the reforms, but the Fifth Circuit turned away their challenge. It concluded that "[i]f the changes to the pension plan impact only benefits that have not yet accrued, amendment is permissible. *Id.* at 538. And since the reforms at issue were prospective only, they did not violate the employees' rights. *See id.* at 538-39.

The trend established by all these cases is clear: courts across the country recognize that the appropriate rule for evaluating changes to public pension plans is not the California Rule, but the Prevailing Rule—*i.e.*, the rule that says accrued benefits must be protected, but unaccrued future benefits can be changed or reduced. This rule is legally correct, sensible, fiscally responsible, and consistent with Kentucky law. Therefore, this court should join the overwhelming chorus of states that are following it.

C. Under the Prevailing Rule, none of the challenged provisions of SB 151 are invalid since they all apply to prospective, unaccrued benefits.

All of the challenged provisions in SB 151 are purely prospective in their effect on pension benefits. Not one of those changes affects inviolable contract benefits that members of the pension systems have already accrued. Instead, the changes only affect unaccrued future benefits. The Plaintiffs have not even attempted to

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demonstrate otherwise, and, in fact, they are incapable of doing so. There is simply no credible argument that SB 151 reduces any accrued benefits that are protected by the inviolable contract. As a result, under the Prevailing Rule, the Court must find that the challenged portions of SB 151 are valid and not in violation of the inviolable contract.

The Plaintiffs have challenged seven particular benefit changes made by SB 151. The following briefly recaps each challenge and explains why each one is prospective, and therefore permissible under the Prevailing Rule:

1. The challenge to § 74 of the bill, which amends KRS 161.623 to limit the number of sick days that KTRS members can accrue after December 31, 2018 for the purpose of enhancing their service credit –

    - Section 74 of the bill does nothing more than limit the ability of KTRS members to accrue sick days *in the future* that can be exchanged for service credit when they retire. Without the amendment, the benefit would not even accrue until the occurrence of two future contingencies: (1) the employee retires, and (2) the employee has unused sick days at that point. The change in § 74 does not, in any way, affect current accrued benefits.

2. The challenge to the portions of § 14 and § 15 of the bill that amend KRS 61.510 and 78.510 to exclude lump-sum payments of compensatory time from the calculation of creditable compensation for employees retiring after July 1, 2023 –

    - Sections 14 and 15 eliminate the ability to use unused compensatory time to increase an employee's creditable compensation at retirement. As with the exchange of sick days for service credit, an employee does not accrue this benefit until: (1) the employee retires, and (2) the employee has unused compensatory time at the point of retirement. Accordingly, these changes only affect benefits that might accrue in the future, if at all. *Cf. Cinotto v. Delta Airlines, Inc.*, 674 F.3d 1285, 1296-97 (11th Cir. 2012) (holding that defendant was not required to allow employee to take advantage of increased retirement benefit for employees who continued working past the age of 52 when that benefit was terminated prospectively before the plaintiff reached that age).

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3. The challenge to the portions of § 14 and § 15 of the bill that amend KRS 61.510 and 78.510 to exclude uniform and equipment allowances paid after January 1, 2019 from the calculation of creditable compensation –

    - This change only affects how money received *in the future* will be counted in determining employees' retirement allowances when they retire *in the future*. To say that this is a purely prospective change is to state the obvious.

4. The challenge to § 16 and § 17 of the bill, which amend KRS 61.546, KRS 78.616, and KRS 16.645 to prohibit the use of sick leave credit to determine retirement eligibility for Tier I KERS, CERS, and SPRS members retiring after July 1, 2023 –

    - This change, like the other changes to sick leave and compensatory time, only affects benefits that might accrue *in the future*. The right to use unused sick leave to determine retirement eligibility cannot accrue until an employee who is not otherwise eligible for retirement accumulates enough unused sick leave to then become eligible for retirement. These are contingent *future events*. If an employee has presently accrued this right and wants to enforce it, the employee can do so. If an employee has not presently accrued this right, then eliminating the ability to accrue it in the future is obviously not an impairment of an accrued benefit.

5. The challenge to § 30 of the bill, which amends KRS 61.702(2)(b), KRS 78.545, and KRS 16.645 to require a 1% deduction of the creditable compensation for Tier I KERS, CERS, and SPRS members hired after July 1, 2003 for the purpose of funding providing retiree health insurance –

    - The obvious answer to this challenge is that retiree health benefits are expressly excluded from the terms of the inviolable contract for employees hired after July 1, 2003. *See* KRS 61.702(8)(e). In addition, § 30 simply raises the employee contribution rate, which the General Assembly has done many times throughout the history of the public pension systems.

6. The challenge to the portions of § 14 and § 15 of the bill that amend KRS 61.510 and 78.510 to make clear that, for retirements occurring after January 1, 2019, the calculation of Tier I members' "high three" and "high five" must be based on three and five complete fiscal years, respectively –

    - As an initial matter, it is important to note that the Plaintiffs are making a facial challenge to SB 151. Thus, they must establish that there are no circumstances under which the bill can be valid. They clearly have not done so here. Even if one were to assume for the

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sake of argument that it might reduce some employees' benefits to change "high three" and "high five" to mean three and five complete fiscal years—and there actually is no evidence that would permit such an assumption—one could not assume that it would necessarily reduce employees' benefits in *all instances*. There may be employees who retire on January 2, 2019 using a "high five" made up of five complete fiscal years who would have received exactly the same retirement allowance if it had been calculated using a "high five" made up of the previous 49 months. The Plaintiffs have offered no evidence on this point even though it is their burden to prove invalidity. Regardless, the amendment at issue does not impair employees' accrued contractual rights. The changes to "high three" and "high five" only take effect *in the future*—that is, for retirements after January 1, 2019. Anyone who has already accrued the right to retire with the old "high three" and "high five" calculation is free to do so until January 1, 2019. Anyone who has accrued that right but does not desire to use it prior to that date obviously has no grounds on which to complain. More to the point, if such individuals ultimately retire and receive a retirement allowance that is at least as large as what they would have received had they retired before January 1, 2019, then their pension benefits obviously have not been reduced by the new "high three" and "high five" calculation. *See, e.g., Cinotto*, 674 F.3d at 1296-97.

7. The challenge to § 19 of the bill, which amends KRS 61.597 and KRS 78.545 to reduce the guaranteed interest credit for any KERS or CERS Tier I and Tier II members who opted into the hybrid cash balance plan in 2014 –

    - The obvious problem with this challenge is that there is not a single Tier I or Tier II member who opted into the hybrid cash balance plan. [*See* Ex. 8, Surratt Aff.]. Indeed, the opportunity to opt into the plan was never even offered to Tier I and Tier II members because the statute provided that opting into the plan was contingent on the retirement systems' receipt of a private letter ruling from the IRS, and such a private letter ruling was never even sought. *See* KRS 61.5955(6). Given that no Tier I or Tier II members ever opted into the hybrid cash balance plan, it is clear that no Tier I or Tier II members' rights are affected by the reduction in the guaranteed return for that plan. Moreover, the statute provided that if any Tier I or Tier II members ever opted into the hybrid cash balance plan, they would do so "in lieu of the benefits he or she is currently eligible to receive from the systems." KRS 61.5955(1). Thus, even if there were opt-ins—which there are not—they would have waived their inviolable contract rights upon opting in.

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II. SB 151 does not impair any contractual rights, but even if it did, it would not violate the Contracts Clause of the Kentucky Constitution.

The Plaintiffs contend that SB 151 violates public employees' contractual rights, and therefore also violates the Contracts Clause of Section 19 of the Kentucky Constitution. First, as explained above, SB 151 does not violate any contractual rights. Second, even if it did violate contractual rights, it would not be in violation of the Contracts Clause, and therefore would still be valid.

Section 19 of the Kentucky Constitution provides that the General Assembly may not enact any law "impairing the obligation of contracts." Ky Const. § 19. This provision, which mirrors its federal counterpart, "is not an absolute bar to subsequent modification of a State's own financial obligations." *See U.S. Trust Co. of New York v. New Jersey*, 431 U.S. 1, 25 (1977). A legislature "cannot bargain away the police power of a State," and "the Contract Clause does not require a State to adhere to a contract that surrenders an essential attribute of its sovereignty." *Id.* at 23. For this reason, courts universally hold that a state runs afoul of the Contracts Clause only if it *substantially* impairs the contract at issue. *See Allied Structural Steel Co. v. Spannaus*, 438 U.S. 234, 244 ("[T]he first inquiry must be whether the state law has, in fact, operated as a substantial impairment of a contractual relationship."); *Maryland State Teachers Ass'n, Inc. v. Hughes*, 594 F. Supp. 1353 (D. Md. 1984). And even then, "an impairment may be constitutional if it is reasonable and necessary to serve an important public purpose." *U.S. Trust Co.*, 431 U.S. at 25.

SB 151 does not breach the inviolable contract, but even if it did, the changes do not constitute a "substantial impairment." More importantly, the changes in SB

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151—along with other legislation passed by the General Assembly—were reasonable and necessary to allow the Commonwealth to begin to undo decades of structural deficiencies and underfunding that have put the state retirement systems into jeopardy.

A. None of the changes created by SB 151 constitute a "substantial impairment" of the inviolable contract.

When applying the Contracts Clause, "the first inquiry must be whether the state law has, in fact, operated as a substantial impairment of a contractual relationship." *Allied Structural Steel Co.*, 438 U.S. at 244. The Plaintiffs skip right past this step. They contend that *any* impairment is a substantial impairment, rendering the analysis a completely perfunctory exercise. [Pls.' Br. at 38-44]. But this threshold question is critical because "[t]he severity of the impairment measures the height of the hurdle the state legislation must clear." *Id.* at 245. "Minimal alteration of contractual obligations may end the inquiry at its first state." *Id.* It is insufficient, in other words, to demonstrate only that the state impaired a contract. *Substantial* impairment is required.

The Plaintiffs challenge seven changes made to Kentucky's retirement systems in SB 151. In short, the Plaintiffs contend that these changes constitute substantial impairments of the inviolable contract:

- Amending KRS 161.623 to limit the number of sick days that KTRS members can use to enhance the service credit calculation to days accumulated up through December 31, 2018.
- Amending KRS 61.510 and 78.510 to exclude lump-sum payments of compensatory time from the calculation of creditable compensation for employees retiring after July 1, 2023.

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- Amending KRS 61.510 and 78.510 to exclude uniform and equipment allowances paid after January 1, 2019 from the calculation of creditable compensation.

- Amending KRS 61.546, KRS 78.616, KRS and 16.645 to prohibit the use of sick leave credit to determine retirement eligibility for Tier I KERS, CERS, and SPRS members retiring after July 1, 2023.

- Amending KRS 61.702(2)(b), KRS 78.545, and KRS 16.645 to require a 1% deduction of the creditable compensation for Tier I KERS, CERS, and SPRS members hired after July 1, 2003 for the purpose of funding providing retiree health insurance.

- Amending KRS 61.510 and 78.510 to make clear that the calculation of Tier I members' "high three" and "high five" must be based on three and five complete fiscal years, respectively.

- Amending KRS 61.597 and KRS 78.545 to alter the guaranteed interest credit for any KERS or CERS Tier I and Tier II members that opted into the hybrid cash balance plan in 2014.

None of these marginal changes are substantial, and the Plaintiffs' motion fails to prove otherwise.

The substantial impairments that the Plaintiffs allege have no factual basis whatsoever. For example, the Plaintiffs contend that SB 151 violates the inviolable contract by limiting the use of accrued sick days to calculate service credit under KRS 161.623 for KTRS members after December 31, 2018. What the Plaintiffs' brief fails to mention is that this change has no practical effect on any public school teacher or local school board employee in Kentucky. There are not any public school employees who are even eligible for service credit under KRS 161.623. [Ex. 9, Harbin Aff.]. The right to receive service credit for sick days under KRS 161.623 is not granted to individual employees. Instead, participating school districts must choose to offer the benefit to their employees. *See* KRS 161.623(2). But members receiving service credit

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for sick days cannot also receive compensation under the salary-spiking provision of KRS 161.155(10), which often provides more lucrative benefits. Every public school district has therefore chosen not to offer service credit under KRS 161.623. The Plaintiffs, in other words, contend that the limit on sick leave accrual for service credit is a substantial impairment of the inviolable contract *even though no current public school teachers are eligible for this benefit anyway*. Whatever the definition of substantial is, it certainly is not this. Furthermore, the fact that KRS 161.623 gives local school districts the *option* of allowing their teachers to use unused sick days for service credit underscores that teachers have *no contractual right* to such service credit. How can teachers have a contractual right in something that their school district employers can decide to give, or not give, them? Simply put, they cannot.

The remaining alleged substantial impairments that the Plaintiffs identify similarly suffer from a lack of factual support. In fact, the Plaintiffs make almost no effort to provide any real evidence about the effect of the changes in SB 151.[8] Instead, their brief contains one unsupported allegation after another. When discussing the changes to sick leave, for example, the Plaintiffs' cite an article from a newsletter written in 2001 to support their claim that the change "has clear and material costs."

[8] The only "evidence" the Plaintiffs rely on to prove many of their factual assertions regarding the effect of SB 151 on state workers is an article from a newsletter that was written in 2001—almost twenty years ago. The article is written by an unknown author with unknown credentials who cites to unverified facts to conclude that state workers could accumulate $16,500 worth of sick leave over a lifetime of employment. The assertions made in the article are not even within the realm of admissible or competent evidence, and for this reason should be excluded from consideration by the Court. *See Hubble v. Johnson*, 841 S.W.2d 169, 171 (Ky. 1992) (rejecting a party's attempt to rely wholly on inadmissible evidence "to support a motion for summary judgment"); *James v. Wilson*, 95 S.W.3d 875, 898 (Ky. App. 2002) ("'Evidence' necessarily implies evidence that would be admissible at trial."); CR 56.01 & 56.05.

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But the article itself contains only back-of-the-envelope calculations about the value of sick leave. There is no data about the number of employees eligible to use this benefit after 2023; no data on the total value of the benefit for actual employees eligible to use it. There is no actual evidence supporting the claim that the change "has clear and material costs"—nor could there be, given that the Plaintiffs successfully persuaded this Court to stay discovery before it ever began.

Likewise, the Plaintiffs object to the change in interest credits for Tier I and Tier II members who opted into the hybrid cash balance plan in 2014. But, again, if the Court had allowed discovery on this issue, the Plaintiffs might know that there is not one Tier I or Tier II member who opted into the hybrid cash balance plan. [Ex. 8, Surratt Aff.]. Just as with the change to KRS 161.623, this change does not affect any of the people the Plaintiffs claim to represent. It cannot be a substantial impairment—it impairs no one's rights.

The lack of seriousness underpining the Plaintiffs' allegations continues as they discuss other changes in SB 151. The Plaintiffs throw out allegations about "average life expectancy" with no factual support. [Pls.' Br. at 42]. They contend that a recession "could cost the member [of a hybrid cash balance plan] their entire retirement," but rely only on a general citation to the KRS Comprehensive Annual Financial Report that in no way supports their claim.[9] [*Id.* at 43]. The record does not support any of the Plaintiffs' claims about the effects of SB 151 on public

[9] Nor could it because the hybrid cash balance plans under SB 151 still protect any participating members from market losses.

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employees' benefits, yet they insist that this Court must find that each and every change amounts to a substantial impairment.

Even when the Plaintiffs do provide financial information for the Court (which, again, no party could probe or test through the ordinary discovery process), the largest number they can come up with is a reduction of 5.5% for some members' creditable compensation.[10] They contend that the limitation on expense allowances for uniform and equipment could amount to 5.5% reduction in creditable compensation for some employees. These numbers purportedly are based on an average salary (that the Plaintiffs provide with no supporting documents), along with a one-page excerpt from a collective bargaining agreement. Assuming that the numbers are accurate, which the Defendants have no way to verify without discovery, the worst case scenario is a 5.5% reduction in creditable compensation. In other words, this is not a case in which the General Assembly is cutting benefits in half or suspending payments altogether—actions that might certainly be substantial. While a 5.5% reduction in benefits would make anyone uncomfortable, these changes are not retroactively reducing the retirement benefits of employees or already-retired members. The changes are *prospective* and only affect employees who have not yet left the workforce. If a 5.5% reduction in prospective benefits that have not even accrued is considered "substantial," this Court might as well throw out the requirement of "substantiality" altogether because no change will ever survive that standard. The Plaintiffs cannot demonstrate a substantial impairment—not even

[10] This is the highest number the Plaintiffs could come up with. Some members might only have a 1% deduction to pay for their health insurance, while most will see no change at all.

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with their many unsubstantiated factual allegations—and their claim must be dismissed.

B. The changes in SB 151 are reasonable and necessary to save Kentucky's ailing pension system and make it solvent for current and future retirees.

Finally, if the Court were to find that SB 151 did substantially impair the inviolable contract, the impairments are nonetheless justified because they are reasonable and necessary to serve an important public purpose: ensuring the solvency of Kentucky's retirement systems and guaranteeing the state's current and future retirees will receive retirement benefits through their lifetime. It is difficult to imagine a greater public purpose than the preservation of the state's retirement system, and the changes in SB 151 along with related legislation from the 2018 Regular Session ensure just that.

Kentucky's pension fund is the most underfunded in the nation. [*See* PFM Report #2 at 2; *see also* S&P 2016 Report]. The structural problems built into the system have caused an unfunded liability of somewhere between $33 billion and $84 billion. [*See* PFM Report #2]. And these problems were not primarily caused by chronic underfunding. One recent report indicated that underfunding by the General Assembly over the last decade caused only 15% of the total deficit, and that structural problems contributed to the remaining 85%. [*Id.* at 5]. The system, in other words, is broken. KERS non-hazardous has had a negative cash flow every year since at least 2002, and "[o]ver the longer-term, such negative cash flows can ultimately threaten the insolvency of the plan." [*Id.* at 6]. Legislators in the past wrote checks

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that we simply cannot continue to cash today, but the 2018 General Assembly recognized the dire situation our public employees face.

A substantial impairment remains constitutional if it "is reasonable and necessary to serve a legitimate and important public purpose." *Jones*, 910 S.W.2d at 717. "[A] State is not free to impose a drastic impairment" to solve a public crisis, but minimal impairments to resolve serious problems will survive scrutiny under the Contracts Clause. *See Maryland State Teachers Ass'n, Inc. v. Hughes*, 594 F. Supp. 1353, 1370–71 (D. Md. 1984) (quoting *United States Trust Co.*, 431 U.S. at 31). And while "complete deference to a legislative assessment of reasonableness and necessity is not appropriate" with respect to a financial obligation of the state, "pension reform, unlike the area of municipal bonds," is not "purely financial" because of the many layers of issues at play. *Id.* (quoting *U.S. Trust Co.*, 431 U.S. at 25–26). For this reason, "once the facts are brought to light the court should not act as a super legislature and attempt to second guess which legislative act would have better solved the perceived problem." *Id.* at 1371. "The legislature has the responsibility and the discretion to act on the facts and information at its disposal." *Id.*

The Plaintiffs' sole basis for denying that the changes in SB 151 are reasonable and necessary is their contention that the General Assembly "openly refused to consider any additional revenue measures to address pension obligations." [Pls. Br. at 45]. The Attorney General, KEA, and FOP strongly favor a big tax increase. They cite several bills they contend would have provided the revenue necessary to solve a sixty-billion-dollar problem. But of course, they provide no actuarial analysis, no

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expert report, *no facts whatsoever* to show that the General Assembly had a viable option to fund the pension problem and chose to ignore it. Like with their other claims, the Plaintiffs ask the Court to just take their word for it and declare the pension-reform bill unconstitutional on its face.

The Plaintiffs' lack of supporting evidence alone means that summary judgment is inappropriate. The Court ordered a stay of discovery after the Governor sought to conduct reasonable, limited depositions related to the material facts asserted in the Plaintiffs' Verified Complaint. The Court held there are "no disputed issues of material fact" that are "materially relevant to the constitutionality of the challenged legislation." [May 8, 2018 Order]. Yet the Plaintiffs are seeking summary judgment based on unsubstantiated factual claims, such as their contention that "SB 151 fails because funding the retirement systems in full is possible, and will eliminate any shortfall." *There is not a single document in the record even purporting to support this claim*, and the Court refused the Governor's reasonable request for discovery on these issues.

But even in the face of the Plaintiffs' many, unsupported factual claims, there is no disputing that SB 151 survives the challenge under the Contracts Clause because it is reasonable and necessary step to protect the public interest. This case bears a strong resemblance to *Hughes*, the landmark case from Maryland upholding the legislature's reasonable modifications to its failing pension system in the early 1980s. As here, many publicly available reports showed the dire situation for Maryland's retirement system. *Hughes*, 594 F. Supp. at 1368–1369; [PFM Report

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#2]. The Court reviewed the evidence in the record and found the marginal changes to the state's pension system, such as limiting the employees' cost-of-living adjustments, were reasonable and necessary to address the problem:

> The 1984 Act was a reasonable response to an important public concern. It addressed the perceived cause of the problem, the unlimited COLA, and did so with little or no impairment to State employees or teachers. "The extent of impairment is certainly a relevant factor in determining reasonableness." This court has found the impairment to be minimal at worst.

Hughes, 594 F. Supp. At 1370 (citing *U.S. Trust Co.*, 431 U.S. at 27); *see also Buffalo Teachers Federation v. Tobe*, 464 F.3d 362 (2d Cir. 2012) (finding a wage freeze reasonable because it was "relatively minimal" and only operated prospectively); *Baltimore Teachers Union, American Federation of Teachers Local 340, AFL-CIO v. Mayor and City Council of Baltimore*, 6 F.3d 1012 (4th Cir. 1999). The Contracts Clause is not a straightjacket, preventing reasonable action while the ship sinks. Maryland acted reasonably, and so has Kentucky. For this reason, SB 151 must be upheld.

Just as in Maryland, public reports released in Kentucky showed that a lack of funding alone was not the cause of the unfunded pension liability and that 85% of the problem was created by structural deficiencies with the system. [PFM Report at 5]. This means that, contrary to the Plaintiffs unsubstantiated assertions otherwise, funding alone cannot solve the problem. The General Assembly understood this, which is why it implemented small structural changes in addition to providing record-level funding in the 2018–2020 biennium budget.

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The Plaintiffs are simply wrong in arguing that SB 151 was unreasonable because the General Assembly did not pass one of the handfuls of bills that the Plaintiffs believe would provide additional revenue. [Pla's Mot at 46]. "[I]t is always the case that to meet a fiscal emergency taxes conceivably could be raised." *Buffalo Teachers Federation*, 464 F.3d at 372 ("[W]e find no need to second-guess the wisdom of picking the wage freeze over other policy alternatives, especially those that appear more Draconian, such as further layoffs or elimination of essential services."); *Baltimore Teachers Union*, 6 F.3d at 1020 (finding it insufficient to argue that the city "*could have* raised taxes" because "these courses are always open, no matter how unwise they may be"). Not only do the Plaintiffs fail to provide any actuarial analysis of those bills, they ignore that the General Assembly passed SB 151 along with unprecedented increases in funding for the pensions. The General Assembly did not simply cut benefits with SB 151; it mandated full contributions and funded the pensions at levels much higher than any legislature ever had before. The Plaintiffs obviously would have preferred difference policy decisions, and they want this Court to overrule the General Assembly and implement the Plaintiffs' preferred policies—or at least prevent their disfavored policies from taking effect. But that is not an appropriate role for a Court.

The Plaintiffs also ignore that the General Assembly passed SB 151 *to rescue* the pension system from insolvency. SB 151 protects the pensions of the public employees the Plaintiffs claim to represent. In *U.S. Trust Co.*, the United States Supreme Court explained that a state's impairment of a contract is reasonable when

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doing so is necessary to save the underlying obligation. *U.S. Trust Co.*, 431 U.S. at 25, 29-31. The issue in *U.S. Trust Co.* was whether New York and New Jersey could repudiate their contracts with a group of bondholders for the public purpose of promoting mass transportation, energy conservation, and environmental protection. *Id*. at 28-29. The Supreme Court acknowledged that such goals are "important and of legitimate public concern," but still found that they were insufficient to justify impairing the states' contracts. To reach this holding, the Supreme Court distinguished it from a prior case that upheld an impairment of bond contracts. *Id.* at 28 (citing *Faitoute Iron & Steel Co. v. City of Asbury Park*, 316 U.S. 502 (1942)). That case, the Supreme Court explained, was different because the contractual impairments were necessary to save the underlying obligation. *Id.* Or as the Supreme Court stated, "as a practical matter the city could not raise its taxes enough to pay off its creditors under the old contract terms. The composition plan enabled the city to meet its financial obligations more effectively." *Id.* The effect was that, although the city's actions technically impaired its contracts, it did so "with the purpose and effect of protecting the creditors." *Id.*

The same is true here. The General Assembly passed SB 151 to protect the benefits for current and retired public employees. The law makes marginal changes to the system to save the vast majority of the benefits promised. Such changes are axiomatically reasonable and necessary for the public good, and this Court should find as much and uphold the validity of SB 151.

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III. SB 151 also does not violate the Takings Clause of the Kentucky Constitution.

The Plaintiffs contend that SB 151 violates the Takings Clause in Section 13 of the Kentucky Constitution because "it deprives Kentucky's public employees of their contractual property rights in their retirement benefits without just compensation."[11] [Pls. Br. at 47]. Essentially, the Plaintiffs argue that they have a property right in benefits that have not yet accrued—benefits that do not exist and might never exist—and that any modification of these unaccrued benefits constitutes an unconstitutional taking. This argument finds no support in the law.

To the extent there is a dispute over whether SB 151 unlawfully deprives state employees of their retirement benefits, the "proper recourse would be a breach-of-contract claim, not a takings claim." *See B & B Trucking, Inc. v. U.S. Postal Service*, 406 F.3d 766, 769 (6th Cir. 2005) (citing *Hughes Communications Galaxy, Inc. v. United States*, 271 F.3d 1060, 1070 (Fed. Cir. 2001)). The Kentucky Constitution addresses the impairment of contractual rights in a separate provision. *See* Ky. Const. § 19(1). The Contracts Clause, not the Takings Clause, is the appropriate vehicle to pursue the Plaintiffs' claims. *See B & B Trucking, Inc.*, 406 F.3d at 769. If, as the Plaintiffs argue, every contractual right falls within the scope of the Takings Clause, as the Plaintiffs argue, the Contracts Clause would be wholly subsumed and entirely superfluous. This is not the law in Kentucky, nor should it be. *See MPM*

[11] As explained in Part I., C., *supra*, the changes made in SB 151 apply only prospectively and do not fall within the inviolable contract. For this reason, the Plaintiffs have no contractual right to the benefits at issue and therefore no property rights at stake, even under the Plaintiffs' theory of the Takings Clause.

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Financial Group, Inc. v. Morton, 289 S.W.3d 193, 199 (Ky. 2009) (explaining courts must be reluctant to interpret laws so as to render other provisions superfluous).

To be clear, this is not a case where the Commonwealth is attempting to confiscate benefits already earmarked for the Plaintiffs in an existing fund. SB 151 does not take any already-existing property from the Plaintiffs, nor does it require the Plaintiffs to contribute back pay or additional contributions for benefits already earned. This is a critical point here because the Plaintiffs point to several (mostly out-of-state) cases they contend support their Takings Clause argument, but all of these cases distinguish circumstances where the government confiscates benefits already accrued from cases in which the existence of a benefit is a prospective, contingent right.

In *Spina v. Consolidated Police and Fireman's Pension Fund*, 197 A.2d 169 (N.J. 1964), for example, the New Jersey Supreme Court actually denied the plaintiff's takings claim because the law at issue did not confiscate benefits from "an existing fund." *Id.* at 175. Similarly, in *Miller v. Retirement Board of Policemen's Annuity*, 771 N.E.2d 431 (Ill. App. 2001), the Court did not address whether prospective benefits could be modified as with SB 151, but instead analyzed whether the state could retroactively reduce an already-retired employee's monthly benefits and *require him to pay back benefits he already received*. *Id.* at 435. And in *Katzman v. Los Angeles County Metropolitan Transportation*, 72 F. Supp. 3d 1091 (N.D. Cal. 2014), the court rested its holding on the fact that the defendant municipality admitted that it owed an immediate obligation to the plaintiff due to the plaintiff's

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retirement. This fact distinguished *Katzman* from prior cases in which the plaintiffs "lacked a 'present entitlement' to the claimed property." *Id.* at 1101. All of the cases the Plaintiffs rely on to support their Takings Clause claim turn on whether the contractual rights entitled the claimant to immediate and already-accrued benefits.

Perhaps the best example of this point is found in *Weiand v. Board of Trustees of Kentucky Retirement Systems*, 25 S.W.3d 88, 93 (Ky. 2000), a case the Plaintiffs cite as support for their argument that contractual rights are protected by the Takings Clause, which, in fact, contradicts their claim. [Pls. Br. at 48]. In *Weiand*, the Kentucky Supreme Court rejected the plaintiff's property-rights argument because it found that the contractual right at issue was merely contingent, and there was no guarantee it would ever come to fruition. *Id.* The plaintiff was an ex-spouse of a public employee, and she was listed as the beneficiary of the employee's survivorship benefits. KERS, however, denied her claim for benefits after her ex-husband's death due to the divorce. The plaintiff sued on the grounds that the denial amounted to an unconstitutional taking of her property. *Id.* at 90-91. But contrary to the insinuation in the Plaintiffs' brief, the Kentucky Supreme Court rejected her claim.

The Supreme Court denied the property-rights claim because the benefits at issue were contingent on a future event that may not ever occur. Specifically, the plaintiff lacked a present entitlement to her benefits because there was always a possibility that she might pre-decease her husband: "even if [the couple] did not divorce, *she might never receive any of his pension benefits, as there is a possibility*

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that she could predecease [her ex-husband]." *Id.* at 93 (emphasis added). The plaintiff, in other words, had no property right in the benefits because she did not have—and never had—an actual entitlement to receive them. Similarly, the benefits at stake in this case are prospective in nature only. An employee, for example, only has the right to receive service credit for future sick days if they continue in their employment and continue to save them *and retire with unused sick days*. But there is no guarantee that either of these events will occur: public employees affected by SB 151 could leave their employment before retirement or end up using sick days they thought they could save. In either case, the employees would never actually obtain the right to receive the benefits, yet they now claim they already have a property interest protected by the Takings Clause. This is directly contrary to the holding in *Weiand*, the case the Plaintiffs contend establishes their property rights in these benefits.[12]

The only case in Kentucky the Plaintiffs have found where the court appears to subject contractual rights to the Takings Clause is *Folger v. Commonwealth*, 330 S.W.2d 106 (Ky. 1959)—a sixty-year-old case that has never been cited for this proposition. Separating the wheat from the chaff, however, reveals that *Folger* is far from groundbreaking. The "contractual right" at issue is simply a restrictive covenant contained within a deed of conveyance. *See* 330 S.W.2d at 106–07 ("All of this is recited in the deed."). The contract, in other words, is a classic property right

[12] It is worth contrasting *Weiand* with *Katzman*, another case cited by the Plaintiffs. In *Katzman*, the plaintiff had already retired and the defendant municipality admitted that the retirement triggered an immediate obligation to pay. *Katzman*, 72 F. Supp. 3d at 1101. But in cases such as *Weiand* and the instant matter where no such obligation exists, there can be no taking of the Plaintiffs' property.

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attached to the sale of real property. Moreover, the taking in *Folger* was also typical: the Commonwealth destroyed the value of the restrictive covenant when it condemned private property in order to construct a highway. *Id.* at 107. *Folger* stands only for the narrow proposition that the Takings Clause protects parties' real property interests, which include the contractual covenants included in a conveyance.

SB 151 does not seize funds belonging to the Plaintiffs. It does not require that the Plaintiffs repay benefits they have already received, and it does not confiscate benefits already earmarked in an existing fund, nor does it halt payments to a retiree already eligible to receive them. Instead, SB 151 prospectively modifies certain benefits that public employees might be eligible to receive *if* they continue employment through retirement—benefits that have neither vested nor accrued at this time, and which might never accrue regardless of the outcome of this case.[13] For this reason, the Takings Clause simply does not apply, and the "proper recourse would be a breach-of-contract claim." *See B & B Trucking, Inc.*, 406 F.3d at 769.

IV. SB 151 does not violate Section 2 of the Kentucky Constitution.

As a last-ditch effort, the Plaintiffs contend that SB 151 violates Section 2 of the Kentucky Constitution because it was "rushed" through the legislature without providing an opportunity to review and comment. [Pls. Br. at 36]. This argument is simply a rehash of the Plaintiffs' other arguments: they object to the legislative process behind the bill, and they object to what they believe are constitutional infirmities with its substance. All of this, according to the Plaintiffs, amounts to an

[13] See Part I. C., *supra.*

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arbitrary exercise of power. But for the reasons explained elsewhere, the process and contents behind SB 151 are perfectly lawful. The Plaintiffs cannot create a constitutional violation by simply bundling up their list of grievances.

"It is important to bear in mind that '[s]ection two of our Constitution does not rule out policy choices which must be made by government.'" *City of Lebanon v. Goodin*, 436 S.W.3d 505, 519 (Ky. 2014) (quoting *White v. Danville*, 465 S.W.2d 67, 69–70 (Ky. 1971)). When the government performs a "strictly legislative act" the courts should "not disturb a municipality's action if the 'existence of such rational connection is fairly debatable.'" *Id.* (quoting *City of Louisville v. McDonald*, 470 S.W.2d 173, 178 (Ky. 1971)). To this end, a statute "will be determined to be constitutionally valid if a reasonable, legitimate public purpose for it exists, whether or not [the court] agrees with its 'wisdom or expedience.'" *Buford v. Com*, 942 S.W.2d 909, 911 (Ky. App. 1997) (quoting *Walters v. Bindner*, 435 S.W.2d 464, 467 (Ky. 1968)).

Here, there is no disputing that SB 151 represents a reasonable policy choice by the General Assembly in response to a serious problem with Kentucky's retirement systems. While the Plaintiffs mistakenly contend that the General Assembly could fix the ailing pensions solely by increasing revenue, the Court cannot deem legislative policy choices arbitrary based simply on their "wisdom or expedience." *Buford*, 942 S.W.2d at 911 (quoting *Walters*, 435 S.W.2d at 467). Kentucky faces the worst unfunded pension liability in the nation, and SB 151 contains reasonable policy choices to address those problems.

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The only case remotely bearing on this issue that the Plaintiffs cite is *Commonwealth, Transportation Cabinet v. Weinberg*, 150 S.W.3d 75, 77 (Ky. App. 2004)a case in which the Kentucky Court of Appeals analyzed whether an executive agency's decision was arbitrary or capricious. The Plaintiffs cite this case for the proposition that the failure of a "[body]" to follow its own rules or regulations amounts to *per se* arbitrary and capricious conduct. [Pls.' Br. at 37]. But that is not what *Weinberg* says. Rather, the Court of Appeals held that "it is axiomatic that failure of an ***administrative agency*** to follow its own rule or regulation generally is *per se* arbitrary and capricious." *Weinberg*, 150 S.W.3d at 77 (emphasis added). This is a critical distinction because the Kentucky Supreme Court has made clear that the judiciary is precluded from adjudicating disputes over whether the General Assembly followed its own internal rules. *See Board of Trustees*, 132 S.W.3d at 777; *see also* Ky. Const. § 39. Courts cannot resolve disputes over how the General Assembly conducts its business, even if that request is couched as a Section 2 violation.

Section 2 is not a residual clause of the Kentucky Constitution that the Plaintiffs can use to salvage their otherwise meritless claims. To prevail, the Plaintiffs must demonstrate that SB 151 is the product of arbitrary and unreasonable conduct. It plainly is not, and this claim must be rejected.

V. The Plaintiffs' various process-based arguments are unavailing.

In addition to their substantive arguments against SB 151, the Plaintiffs also make numerous process-based argument—*i.e.*, arguments not about the bill itself, but about the manner in which it was enacted. Specifically, the Plaintiffs argue that

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SB 151 is invalid because: (A) it violated Section 46 of the Kentucky Constitution because it did not receive three readings prior to its passage and is really an appropriation bill and therefore needed to receive 51 votes in the House rather than the 49 that it actually received; (B) it violated Section 56 of the Kentucky Constitution because it was not read prior to being signed by the presiding officers of each legislative chamber and was not actually signed by the presiding officer of the House of Representatives since it was signed by the Speaker Pro Tempore rather than the Speaker; and (C) it did not have an actuarial analysis or a fiscal note as required by KRS 6.350 and KRS 6.955 respectively. These arguments are unavailing, and, in fact, most of them are not even justiciable.

A. The General Assembly did not violate Section 46 of the Kentucky Constitution when it passed SB 151.

The Plaintiffs launch a variety of procedural challenges against SB 151 based on Section 46 of the Kentucky Constitution and, in addition, the Court *sua sponte* requested briefing on a Section 46 issue that the Plaintiffs did not raise in their Complaint. As a matter of first importance, the Court is limited in its review of these procedural challenges by separation of powers principles and the political question doctrine. "It is well settled law in the state of Kentucky that one branch of Kentucky's tripartite government may not encroach upon the inherent powers granted to any other branch." *Elk Horn Coal Corp. v. Cheyenne Resources, Inc.*, 163 S.W.3d 408, 422 (Ky. 2005) (quoting *Smothers v. Lewis*, 672 S.W.2d 62, 64 (Ky. 1984)). Because the Plaintiffs' allegations require the Court to usurp the General Assembly's authority to

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establish its own procedural rules, *see* Ky. Const. § 39, the allegations are not justiciable.

Nevertheless, because the Court specifically requested briefing on these issues, [*see* April 20, 2018 Order at 2], a complete explanation of why SB 151's passage did not violate Section 46 is set forth below. For the reasons that follow, SB 151 passed by a sufficient number of votes. Further, it received a sufficient number of readings, and the readings occurred in a constitutional manner.

1. SB 151 received a constitutionally sufficient number of votes in the House of Representatives.

SB 151 passed the House of Representatives by a simple majority of forty-nine votes, and this simple majority is all that Section 46 requires. In almost every circumstance, a bill in Kentucky needs only a simple majority—half of all votes cast, plus one—to pass. *See* Ky. Const. § 46 ("No bill shall become a law unless, on its final passage, it receives the votes of at least two-fifths of the members elected to each House, and a majority of the members voting."). Exceptions to this rule apply only in limited circumstances. For example, a constitutional majority—half of all the members of a chamber plus one—is required to override a Governor's veto, *see* Ky. Const. § 88, to make an appropriation of money, *see* Ky. Const. § 46, or to create a debt, *id.* None of these exceptions apply to SB 151.

Although the Plaintiffs did not raise this issue in their complaint, the Court nevertheless *sua sponte* directed the parties to address whether Section 46 requires

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SB 151 to be passed by a constitutional majority.[14] Because Section 46 requires fifty-one votes only where legislation is "for the appropriation of money or the creation of debt," *see* Ky. Const. § 46—and because SB 151 is neither—the bill's forty-nine votes were constitutionally sufficient. The Plaintiffs argue that SB 151 is an appropriation bill, but do not argue that it creates a debt. However, as set forth below, and as explained by both the Department of the Treasury and the Office of State Budget Director, SB 151 is most certainly not an appropriation bill. [*See* Ex. 10, Cardwell Aff.; Ex. 11, Paiva Aff.].

Section 46 prevents legislation from passing by simple majority if the legislation is an act "for the appropriation of money." *Id.*; *see also D&W Auto Supply v. Dept. of Revenue*, 602 S.W.2d 420, 422-25 (Ky. 1980) (striking down an appropriations bill passed by less than fifty-one votes). For purposes of Section 46, the term "appropriation" means "the setting apart of a particular sum of money for a specific purpose." *Davis v. Steward*, 248 S.W. 531, 532 (Ky. 1923); *see also D&W Auto Supply*, 602 S.W.2d at 422-25 (applying this definition in Section 46 context). SB 151 does not designate any set sums of money for a specific purpose, nor does it authorize the expenditure of government funds in the first instance.[15] That is what budget bills do. *See, e.g.,* HB 200 (appropriating funds for the operations, maintenance, and support of the Executive Branch and its agencies, boards, and commissions); HB 201

[14] *Compare* 04/11/18 Plaintiffs' Verified Complaint *and* 04/11/18 Plaintiffs' Memorandum in Support of Motion for Temporary Injunction *with* 04/20/18 Court Order at 2.

[15] As explained by the Director of Accounting and Disbursements in the Commonwealth's Department of the Treasury, no public money may be withdrawn from the Treasury based on SB 151 alone. [*See* Ex. 11, Paiva Aff.].

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(appropriating funds, likewise, for the Transportation Cabinet); HB 203 (same, for the Judicial Branch); HB 204 (same, for the Legislative Branch); [*see also* Ex. 10, Cardwell Aff]. Indeed, instead of designating state funds or authorizing expenditures, SB 151 merely amends certain provisions of the Commonwealth's existing public retirement systems—systems created years ago, into which public employers are already required to pay.

Comparing SB 151 with actual appropriations bills proves that SB 151 did not need fifty-one votes to pass. For instance, in *D&W Auto Supply v. Dept. of Revenue*, the Kentucky Supreme Court struck down the Litter Control Act for being an appropriations bill in disguise where the act placed a three cent per one hundred dollar assessment on certain proceeds and directed the Department of Revenue to collect and disburse monies from the state treasury to implement the act. *D&W Auto Supply*, 602 S.W.2d at 422-25. The court decided the Litter Control Act was an appropriation because "[i]n the simplest of terms, an assessment of money [was] made and its expenditure [was] directed." *Id.* SB 151 could not be more different. The bill makes no such assessments and directs no such expenditures. Instead, it changes some of the terms of the Commonwealth's existing public retirement systems, and it amends ***how*** public employees will be paid benefits under those systems. It does not make any appropriations for employees' benefits in the first instance. [*See* Ex. 10, Cardwell Aff; Ex. 11, Paiva Aff.].

Ignoring the differences between SB 151 and *D&W Auto Supply*, the Plaintiffs rely on *Fletcher v. Commonwealth*, 163 S.W.3d 852 (Ky. 2005), to contend that SB

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151 must be an appropriations bill. In the *Fletcher* case, the Kentucky Supreme Court considered whether the Governor could appropriate money from the state treasury when the General Assembly failed to pass budget legislation, ultimately concluding the Governor does not possess such authority. The *Fletcher* court never addressed Section 46 but instead considered KRS 41.110, a statute regarding restrictions on withdrawing money from the state treasury. *Id.* at 865. For purposes of that statute, the court noted that "[w]here the General Assembly has mandated that specific expenditures be made on a continuing basis, or has authorized a bonded indebtedness which must be paid, such is, in fact, an appropriation." *Id.* The court went on to offer examples of "statutes that mandate appropriations even in the absence of a budget bill," referencing one retirement statute, KRS 61.565(1), as part of that list.[16] *Id.*

The Plaintiffs contend that because *Fletcher* described KRS 61.565 as a "statute[] that mandates appropriations even in the absence of a budget bill," and because SB 151 partially amends KRS 61.565, SB 151 itself must be an appropriations bill. This is logically flawed. First, *Fletcher* defined "appropriation" under KRS 41.110, not Section 46. The definition of appropriation under Section 46 is not what the Plaintiffs claim, but rather "the setting apart of a particular sum of money for a specific purpose." *Davis*, 248 S.W. at 532; *D&W Auto Supply*, 602 S.W.2d at 422. SB 151 sets apart no sums of money for a specific purpose. In fact, no dollar amounts are even articulated in the bill.

[16] At the time *Fletcher* was issued, the relevant provision of KRS 61.565 stated that "Each employer participating in the State Police Retirement System . . . and each employer participating in the Kentucky Employees Retirement System . . . shall contribute annually to the respective retirement system . . . ." *See Fletcher*, 163 S.W.3d at 865.

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Second, *Fletcher* does not actually state that KRS 61.565 is an appropriations bill; the Plaintiffs erroneously make that assumption. In reality, the *Fletcher* court said, in dicta, that KRS 61.565 "mandates" appropriations, not "is" an appropriation. *See Fletcher*, 163 S.W.3d at 865. Many bills require that appropriations be made without themselves being an appropriation. For better or worse, many of the Commonwealth's laws are effectively unfunded mandates. Without the authorization of a certain dollar amount from one of the various budget bills, those statutes cannot be properly implemented, and such is the case with SB 151. While SB 151 may have an impact on future budget bills, it is not itself a budget bill, and without a separate appropriation by the General Assembly, its implementation would be wholly frustrated.

Third, even if the Court were to deem KRS 61.565 an appropriations bill because of the *Fletcher* dicta, it does not follow that SB 151 is an appropriations bill just because it amends that statute. To the extent KRS 61.565 was an appropriation (which the Governor does not concede), the only reason it could be viewed as such is because it required, for the first time, that public employers contribute an unspecified amount of funds to their employees' respective retirement systems. The original creation of that contribution requirement could conceivably be an appropriation under *Fletcher*'s logic, because public employers were previously not required to use their funding for that purpose. Importantly, though, that logic would not extend to SB 151. SB 151, however, does not require any new contributions from public employers that are not already contemplated—for instance, by establishing a new

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retirement system for a group of public employees and requiring the employer for the first time to begin contributing to that system. Thus, even if the Court is persuaded that KRS 61.565 was an appropriations bill when passed, SB 151 still did not require fifty-one votes.

To be sure, SB 151 lacks the hallmark features of an appropriations bill. Appropriations bills are typically titled as such by the Legislative Research Commission, are designated to an appropriations committee as part of the legislative process, are tied to the biennium, and are subject to the Governor's line-item veto authority. [*See* Ex. 10, Cardwell Aff.]. Tellingly, the Legislative Research Commission did not consider either SB 151 or the original SB 1 to be an appropriations bill. Unlike the actual appropriations legislation passed this session, the Legislative Research Commission titled both SB 1 and SB 151 "an act relating to retirement." *See, e.g.,* HB 200 (titled "an act relating to appropriations measures" and proceeding through both the House and Senate Appropriations and Revenue Committees). Further, SB 151 amends a compilation of retirement statutes that endure in perpetuity, whereas actual appropriations legislation must be passed every two years. If SB 151 were truly an appropriations bill, it would expire at the end of the biennium. Finally, appropriations bills are subject to the Governor's line-item veto power. *See* Ky. Const. § 88 ("The Governor shall have the power to disapprove any part or parts of appropriation bills embracing distinct items, and the part or parts disapproved shall not become a law unless reconsidered and passed, as in case of a bill."). Surely no one would contend that SB 151, or any past pension legislation, is

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subject to the line-item veto. This is a good indication that SB 151 is not an appropriations bill.

In the end, the Plaintiffs attempt to seize on an argument they did not even raise, but it is clear that SB 151 is not an act "for the appropriation of money." Ky. Const. § 46. The relevant appropriations bills for purposes of Kentucky's public retirement systems are the Commonwealth's various budget bills, not SB 151. Those bills specifically include line items to fund the retirement systems, and without these, there would be no money for public employers to contribute to their employees' pension funds in the first place. Even if SB 151 requires that appropriations be made at some point, the bill does not actually authorize those appropriations such that money from the state treasury can be designated for the relevant retirement systems. Accordingly, SB 151 required only a simple majority of votes to constitutionally pass.

2. SB 151 did not violate the "three-readings" requirement of Section 46.

Kentucky Constitution Section 46 also provides that "[e]very bill shall be read at length on three different days in each House . . . ." Beyond this succinct statement, neither the Constitution nor subsequent case law sets out any requirements regarding the form or contents of a bill when it receives those three readings. Pursuant to Kentucky Constitution Section 39, "[e]ach House of the General Assembly may determine the rules of its proceedings." The House of Representatives, both through its Rules of Procedure and custom, has determined that a committee substitute, when passed, becomes the original bill, and that a bill need only receive the three readings at some point during the legislative process. There is simply no

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requirement under Kentucky law that a bill "as passed" receive three readings in each chamber. [*See* Pls.' Verified Compl. at ¶¶ 103, 105 (claiming "SB 151, as passed" failed to receive the appropriate number of readings)].

It is undisputed that SB 151, in some form, received three readings in both legislative chambers. [*See* Pls.' Br. at 15-16 (acknowledging SB 151 was read by title twice in the House and three times in the Senate before the committee substitute)]. The legislative record indicates that SB 151 received its first Senate reading on March 12, 2018; its second Senate reading on March 13; and its third reading on March 16. SB 151 then received its first reading in the House on March 20 and its second reading on March 21. Subsequently, both a committee substitute and a title amendment were passed with respect to the bill, which removed the original wastewater provisions and inserted the retirement system amendments. After these amendments were voted upon, the bill received its third House reading, and after this third reading, SB 151 passed the House and, as amended, also passed the Senate.[17] This procedural history makes clear that SB 151 was voted upon three times in each chamber. The only remaining question, then, is whether SB 151 was required to have three ***additional*** readings in both chambers after the House passed the committee substitute and title amendment.

This is not a question for the Court to decide. "Such a determination is a political question, which traditionally courts have declined to address in the exercise

[17] The procedural history of SB 151 is detailed in the 2018 Legislative Record, available from the Legislative Research Commission at http://www.lrc.ky.gov/record/18RS/record(14-4-2018).pdf (last accessed May 15, 2018).

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of proper restraint, and have left to the appropriate branch of government." *Philpot v. Haviland*, 880 S.W.2d 550, 554 (Ky. 1994). The Kentucky Supreme Court has previously made clear that not all issues under Section 46—if any—are justiciable. In *Philpot v. Haviland*, the court considered the portion of Section 46 which states "[b]ut whenever a committee refuses or fails to report a bill submitted to it in a reasonable time, the same may be called up by any member . . . ." *Id.* (quoting Ky. Const. § 46). When asked to interpret the meaning of a "reasonable time" under the Constitution, the court acknowledged that to do so would violate fundamental separation of powers principles and the political question doctrine set forth in *Baker v. Carr*, 369 U.S. 186 (1962):

> We are of the opinion, however, that the determination of what is a 'reasonable time' in this context is a matter for the legislature to determine, under Section 39 of the Kentucky Constitution. For us to presume to define a 'reasonable time' would result in the judiciary usurping the power of the Senate to determine for itself through its own rules when a committee has failed to report a bill within a reasonable time.

Id. at 553.

The Plaintiffs' three-readings argument essentially asks the Court to expound upon what the language of Section 46 means and to find that it requires all bills to be given three readings ***in their final form***. This is simply not for the judiciary to decide. *See, e.g.*, *id.*; *Manning v. Sims*, 213 S.W.2d 577, 580 (Ky. 1948) ("It is essential that the sharp separation of the powers of government be preserved carefully by the courts. Those which are judicial must not be permitted to encroach upon those which are legislative.") The General Assembly has determined for itself that bills need not

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receive three readings as finally passed, and this Court should not usurp its authority to so determine.

But even if the Court could appropriately pass on the question, the Plaintiffs have yet another hurdle: there is no reason to believe that the reading requirement cannot be satisfied by reading a bill into the Journal, which the practice of the General Assembly. Contrary to the Plaintiffs' suggestions, there is nothing in the Constitution that requires bills to be read out loud. Accomplishing the reading requirement by reading the title of a bill out loud and then reading the bill at length into the Journal is consistent with the text of Section 46, as well as the purposes behind Section 46 and the General Assembly's historical practices and interpretation of Section 46.

The General Assembly's practice squares with the purposes behind Section 46 as articulated in the constitutional debates: ensuring that all legislators had access to proposed bills, and that the legislators intended to cast their votes the way they did. As the Plaintiffs point out, the Framers were indeed troubled by various "abuses"; however, a more thorough reading of the debates demonstrates that the real rub for the Framers was not merely the legislature's choice to pass a bill with haste but with the passing of a bill before the members even had an opportunity to know that they were voting, much less what they were voting on:

> We all know that many abuses exist in legislative bodies in the passage of acts. There are now on the statute books of Kentucky not less than two hundred railroad charters granting the most extraordinary privileges. ***Not one of those has been passed upon a call of the yeas and nays***, and yet they involve the interest of the people in

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> every section of the State. There was, in the opinion of the Committee, a very serious abuse of the legislation in the haste with which bills are passed. . . . On one occasion, during the last Legislature, a bill involving large interests, the interests of the people of two large and populous counties, passed through both bodies of the Legislature in thirty-five minutes, and was laid before the Executive in a short time after that.
>
> The tenor of that legislation was unknown entirely to almost every person in those two counties, although it involved their interests very materially. It is probable that not more than ten men in the Legislature knew what they were voting on; ***yet, if their attention had been called it to by a yea and nay vote the bill would not have been passed.***

Simon Bolivar Buckner, *Official Report of the Proceedings and Debates of the Convention of the Constitution of the State of Kentucky*, Vol. 3, at 3868 (1891) (emphasis added). The severity of the problem at the time is summarized by Delegate Buckner's following statement: "I say that because, on its return to the Legislature, the veto was sustained with unanimity." *Id.* at 3869.

This excerpt makes clear that, prior to 1891, the General Assembly was truly passing bills without legislators knowing what they were voting on—so much so that when the Governor would veto a bill and state his objections, the General Assembly would unanimously sustain that veto, deriving the contents of the bill for the first time from the Governor's objections. *Id.* This is plainly not a problem faced by the 2018 General Assembly, which voted to override multiple gubernatorial vetoes. *See, e.g.,* HB 200; HB 366. Undoubtedly, the Framers' real concern was not with haste, or with the time spent debating legislation, but rather with ***access*** and with the legislators' abilities to know the subject matter of a bill. Thanks to computer

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technology and the General Assembly's practice of incorporating the full text of every bill into the Journal, which is available to all legislators at the touch of a computer key, there is simply no access problem in the twenty-first century.

More specifically, there was no access problem with SB 151. Just like with all other pieces of legislation, the full text of the committee substitute was available to all members of the House and Senate for their review. And while not all of the legislators may have foreseen the exact terms of the committee substitute, all were familiar with SB 1.[18] Indeed, no subject was more heavily debated during the 2018 legislative session than pension reform. All of the legislators in both chambers clearly recognized that casting a vote for SB 151 on March 29, 2018, was a vote in favor of pension reform, and to the extent any individual members did not feel as if they had sufficient time to review the committee substitute's contents, [*see* Pls.' Br. at 10 (quoting Representatives Greer and Wayne)], those members could choose for themselves whether to vote for or against the bill.

In reality, the General Assembly frequently passes bills the same way SB 151 was passed, and for good reason. Crucial work is accomplished during the final week of the legislative session, and requiring the General Assembly to start the three-readings process over again after every committee substitute or title amendment is passed would hamstring time-sensitive legislative activity. Even the most cursory review of the legislative record for past sessions reveals the flurry of amendments

[18] The Plaintiffs are quick to quote Representatives Carney and Miller who both emphasized that SB 151 was distinct from SB 1. [*See* Pls.' Br. at 5 (quoting Miller as stating "[t]his is not Senate Bill 1")]. The Plaintiffs ignore the fact that the reason SB 151 was "not Senate Bill 1" is that SB 151 removed numerous provisions of the original legislation ***at the Plaintiffs' request***.

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that pass during a session's final days on the Commonwealth's most critical pieces of legislation. The Kentucky Education Reform Act ("KERA")—the most comprehensive overhaul of public education in the nation—was significantly amended over the course of the 1990 legislative session but was never re-read three times in the House and Senate after those amendments. To the contrary, after KERA received its first two readings in the House, thirteen floor amendments were passed, and the bill then proceeded to the Senate where it received two readings before ten additional amendments were passed—not to mention the committee amendments incorporated in both chambers throughout the process.[19] A ruling in favor of the Plaintiffs calls the validity of KERA, the most pivotal education legislation enacted in Kentucky's recent history, into serious question. Yet that would be the mere tip of the iceberg.

To the extent the Plaintiffs would differentiate the KERA amendments from the committee substitute and title amendment passed with respect to SB 151, that reasoning fails. The out-of-state case law relied upon by the Plaintiffs is simply not the law of Kentucky. Nowhere in the Constitution, Kentucky case law, or House and Senate Rules of Procedure does it state that the General Assembly must start the three-readings process anew when an amendment that is not "germane" to the original bill passes. [*See* Pls.' Br. at 4, 17 (claiming the committee substitute subject matter was "in no way germane" to SB 151's original subject matter)]. Instead, the House Rules of Procedure contemplate both committee substitutes and title

[19] The procedural history of KERA, House Bill 940 of the 1990 regular session of the General Assembly, is available from the Legislative Research Commission at http://www.lrc.ky.gov/lrcsearch (last accessed May 16, 2018).

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amendments, and key laws have been passed after receiving both with support from each side of the aisle. *See* House Rule 60 (contemplating a committee substitute, which "upon its adoption, shall be considered as the original bill" and a title amendment, which "shall be presented to the body immediately after adoption of the bill").[20]

For example, in 2017, the General Assembly passed a committee substitute and title amendment to Senate Bill 12, initially styled "an act relating to responsible real property ownership", and thereby converted the bill to "an act relating to public postsecondary education governance and declaring an emergency."[21] The Plaintiffs may not like the fact that the General Assembly "turn[ed] a dog biting bill into higher education law," [*see* Pls.' Br. at 18], but this was a legitimate tactic used by the legislature to help ensure the University of Louisville's continued accreditation. The same tactic was used in 2015 for Senate Bill 192, the bipartisan anti-heroin bill ceremonially signed into law by former-Governor Steve Beshear less than twelve hours after it passed the General Assembly.[22]

[20] The Rules of Procedure for the 2018 Regular Session of the House of Representatives are publicly available from the Legislative Research Commission at http://www.lrc.ky.gov/house/HouseRules2018.pdf.

[21] *See* SB 12, 2017 Legislative Record, available at http://www.lrc.ky.gov/record/17RS/record(30-3-2017).pdf (last accessed May 16, 2018).

[22] *See* SB 192, 2015 Legislative Record, available at http://www.lrc.ky.gov/record/15rs/rec_docs.htm (last accessed May 16, 2018); Kerri Richardson & Terry Sebastian, "Gov. Beshear Signs Landmark Anti-Heroin Bill" (March 25, 2015), http://kentucky.gov/Pages/Activity-Stream.aspx?viewMode=ViewDetailInNewPage&eventID=%7B3B6958E7-F44D-4293-A774-F3670DF3DF24%7D&activityType=PressRelease.

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In sum, no violation of Section 46's three-readings requirement occurred. For the Court to find otherwise would be to impose a never-before-seen proscription on the General Assembly: one that infringes on the General Assembly's right to determine the rules of its own proceedings, that violates the Commonwealth's commitment to tripartite government, and that inserts concepts into the Constitution that do not exist. The Plaintiffs' misguided argument must be wholly disregarded.

3. SB 151 was not required to be read out loud in its entirety.

The Plaintiffs contend SB 151 was procedurally unconstitutional because it was read by title only, arguing the "at length" language in Section 46 requires a bill to be read "in its entirety" before passage. [*See* Pls.' Br. at 22-23]. The Plaintiffs would be hard pressed, however, to present the Court with an example of ***any*** Kentucky bill that was read on a chamber floor "in its entirety" at any point in the last century. This is obviously not how the General Assembly operates, and the Court should ignore the Plaintiffs' formulaic, unrealistic claim.

In actual practice, and pursuant to longstanding custom, bills passed by the General Assembly are rarely—if ever—read out loud according to the Plaintiffs' interpretation of the Constitution. Instead, all bills are read by title only regardless of whether the Journal indicates the bills were "read at length" to comply with constitutional requirements. Over sixty years ago, the Legislative Research Commission investigated the practices and procedures of the Kentucky General Assembly, and even then it was clear that no bills were read in their entirety as part of the legislative process. According to the Legislative Research Commission's

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December 1955 report, although many state constitutions contain similar requirements about reading bills in full, a number of states "like Kentucky, simply do not follow the requirement." Legislative Research Commission, *The Legislative Process in Kentucky* 135-36 (No. 43, 1955). Indeed, reading bills by title only, just as SB 151 was read, is regular practice, and accomplishes the purposes intended by the Framers as set forth in the Constitutional Convention debates. *See* Buckner, *Official Report of the Proceedings and Debates of the Convention of the Constitution of the State of Kentucky*, Vol. 3, at 3868-69 (1891) (emphasizing the need for legislators to know what bills were being passed).

Technology has advanced in indescribable ways since 1891. In its 1955 report, the Legislative Research Commission acknowledged that modern information-sharing had alleviated the problems that drove the drafting of Section 46:

> These provisions were written into constitutions at a time when prompt printing of bills was impossible. They have been retained, even in recent constitutions, to identify the bill being considered and to assure that no bill may be passed without adequate notice. ***The desirability of the requirement that one reading be in full, however, is debatable. It is not complied with and would consume an unwarranted amount of time if it were.*** As many as thirty-six bills were given first readings in a single day in the 1954 House of Representatives; reading them in full would have precluded transacting any other business. ***With present bill printing practices, this provision seems anachronistic.***

The Legislative Process in Kentucky at 136 (emphasis added).

Moreover, and as previously stated, it is not for the Court to question the processes adopted by the General Assembly. Just as the Kentucky Supreme Court

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has determined it cannot define a "reasonable time" under Section 46, the meaning of "at length" and what it means to "read" a bill are nonjusticiable political questions. *See Philpot*, 880 S.W.2d at 553-54. It is for the General Assembly to determine its own procedures, *see* Ky. Const. § 39, and, here, it has done so in a contemporary way that still accomplishes the goals intended by the Framers. If the General Assembly publishes its bills in the Journal such that they are available in full to all legislators, that is the General Assembly's prerogative.

Finally, and significantly, the Governor notes that SB 151 was read in the same way that every Kentucky bill is read and has been read for decades. If SB 151 is invalid on this ground, not only are all the laws passed this legislative session void, but an unfathomable number of laws passed throughout the Commonwealth's history are void, including the very pension systems and "inviolable contracts" that the Plaintiffs are now so loathe to see amended.[23] The Plaintiffs' argument fails to account for the realities of modernity and must be summarily dismissed.

B. SB 151 also did not violate Section 56 of the Kentucky Constitution.

Desperate for a reason to invalidate legislation they simply do not like, the Plaintiffs also contend SB 151's passage violated two provisions of Section 56 of the Kentucky Constitution. As set forth below, these arguments are also frivolous. In fact, they are so frivolous that the Plaintiffs ought to be embarrassed to make them. No reasonable person can argue that Speaker Pro Tempore David W. Osborne was

[23] For example, the Commonwealth's Executive Budget, HB 200, would be invalid, along with HB 185, which provides financial benefits to the survivors of the state's first-line defenders.

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not the presiding officer when he signed SB 151 on behalf of the Kentucky House of Representatives. And, again, there is no credible argument that SB 151 was required to be read aloud in its entirety prior to its signing.

1. SB 151 was signed by the presiding officer of the House of Representatives.

The Plaintiffs' contention that SB 151 is invalid because it was not signed by the Speaker of the House is laughable. Kentucky Constitution Section 56 does not state that the Speaker of the House must sign all bills; instead, it states that "[n]o bill shall become a law until the same shall have been signed by the ***presiding officer*** of each of the two Houses in open session." (Emphasis added.) The Plaintiffs' position that the Speaker of the House is the only individual who can ever serve as the "presiding officer" is bizarre. Like with so many of the Plaintiffs' other arguments, this one would mean that countless laws passed throughout Kentucky's history—and every law passed this legislative session—would necessarily be void.

The Kentucky Constitution does not define "presiding officer," and it does not explicitly refer to the Speaker as the "presiding officer." Instead, it simply provides that "[t]he House of Representatives shall choose its Speaker and other officers." *See* Ky. Const. § 34. Subsequent case law, the Rules of Procedure of the House of Representatives, historical practice, and common sense all make clear that an individual other than the Speaker of the House can serve as the presiding officer of the House and can thus sign bills under Section 56.

In a case favorably cited by the Plaintiffs elsewhere in their brief but conveniently ignored for this proposition, Kentucky's highest court expressly

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recognized that the President Pro Tempore of the Senate may sign bills as the presiding officer of that chamber. *See Kavanaugh v. Chandler*, 72 S.W.2d 1003, 1005 (Ky. 1934).[24] In so finding, the *Kavanuagh* court referenced an Alabama Supreme Court case that clearly articulates why the Plaintiffs' position is so untenable. *See Robertson v. State*, 30 So. 494 (Ala. 1901). At times, the Speaker of the House or the President of the Senate will inevitably be called away from his legislative duties because of illness, family emergency, travel complications, or other reasons. To forbid any other legislators from presiding over the House or Senate chambers would hamstring the legislature and prevent crucial work from being accomplished. *See id.* at 496. This is precisely why offices such as the Speaker Pro Tempore and President Pro Tempore were conceived in the first place.[25]

Unsurprisingly, the Rules of Procedure of the Kentucky House of Representatives, as well as *Mason's Manual of Legislative Procedure*, explicitly allow individuals other than the Speaker of the House to serve as presiding officers.[26] Rule 26, which articulates the duties of the Speaker of the House, states that "[a]ny

[24] [*See also* Pls.' Br. at 12, 14 (relying on other provisions of *Kavanaugh*)].

[25] The phrase "pro tempore" literally translates from Latin to "for the time (being)". *See* Pro Tempore, *Online Etymology Dictionary*, http://www.dictionary.com/browse/pro-tempore (last accessed May 16, 2018). An officer pro tempore is, by his very nature, a temporary presiding officer, authorized to perform the duties of the chair in the chair's absence. This is true not only in the Commonwealth but also at the federal level. *See, e.g.*, President Pro Tempore, United States Senate, https://www.senate.gov/artandhistory/history/common/briefing/President_Pro_Tempore.htm (last accessed May 16, 2018).

[26] Rule 74 provides that, in the absence of a specific House Rule, the most recent edition of *Mason's Manual of Legislative Procedure* shall govern the proceedings. *Mason's Manual* is a parliamentary procedure manual adopted by the National Conference of State Legislatures and used as the parliamentary authority for the Kentucky General Assembly. *See Mason's Manual of Legislative Procedure* (Nat'l Conf. of State Legislators, 2000 ed.)

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reference made to the Speaker in these rules shall refer to the Speaker of the House or, in the proper context, any member, including the Speaker Pro Tempore, who is acting as the presiding officer."

While the House Rules do not elaborate on what it means to act as "presiding officer," *Mason's Manual* does. According to *Mason's*, the duties of a "presiding officer" include opening the session each day and calling the chamber to order; announcing business; recognizing the members entitled to the floor; preserving order and decorum; guiding and directing the proceedings of the body; signing all acts; and generally supervising the legislative chamber. *Mason's Manual of Legislative Procedure* § 575 at 416-17. *Mason's* also provides that "[w]hen it is necessary for the presiding officer to vacate the chair, the president pro tempore, the speaker pro tempore or the vice chair should take the chair, and in the absence of the pro tempore or vice chair, the presiding officer next in order, if there be one." *Id.*, § 579 at 422.

Clearly, the power to sign bills is not vested in the Speaker of the House alone, but in whoever is acting as "presiding officer" at the time the bill is signed. For the majority of the 2018 legislative session, David W. Osborne, the duly elected Speaker Pro Tempore of the House of Representatives, acted as the "presiding officer" of the House, opening the session, announcing business, preserving order, directing the proceedings of the chamber, and performing the other duties of the "presiding officer" set forth in *Mason's Manual*. And at the time Osborne signed SB 151, he was the "presiding officer" of the House. The terms of Section 56 were undeniably satisfied.

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To find otherwise would declare void every law passed this legislative session, such as House Bill 185, which increased death benefits for families of law enforcement officers killed in the line of duty. House Bill 185 was lauded by the Fraternal Order of the Police throughout the legislative session, yet it was signed by Osborne just as SB 151 was.[27] If SB 151 is invalid per Section 56, then House Bill 185, every bill passed this session—including HB 200, the Executive Branch Budget bill, and HB 203, the Judicial Branch Budget bill—and innumerable other laws on the Commonwealth's books are necessarily invalid too.

2. SB 151 was not required to be read in its entirety under Section 56.

Similar to their argument with respect to Kentucky Constitution Section 46, the Plaintiffs allege SB 151 is invalid because it was not read out loud, word-for-word before it was signed. Section 56 states that a bill "shall then be read at length and compared" before the presiding officer of the House affixes his signature to it, *see* Ky. Const. § 56, and the Plaintiffs insist "at length" means "in its entirety, and not simply by title," [Pls.' Br. at 35]. Despite the Plaintiffs' misleading citations, no case defines "at length" for purposes of Section 56. And as set forth in the Legislative Research Commission's report, the General Assembly has not read bills aloud in their entirety for decades. *The Legislative Process in Kentucky* at 135-36. Instead, the General Assembly carries out the "at length" requirement of Section 56 by reading each bill by title only and then incorporating the full bill in the Journal. *See id.*

[27] *See* HB 185, *available at* http://apps.sos.ky.gov/Executive/Journal/execjournalimages/2018-Reg-HB-0185-2514.pdf (showing Osborne's signature on behalf of the House of Representatives).

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The General Assembly's standard procedure does not conflict with the Framers' intent, expressed by Delegate Spalding as follows:

> The members of the General Assembly did not know what they were voting for half the time, and this section . . . provides when an act is amended . . . ***shall be set out in full***, so every man will understand what it is when voting on it, and the people will know what change has been made when they see it.

Spalding, *Official Report of the Proceedings and Debates of the Convention of the Constitution of the State of Kentucky*, Vol. 3, at 3792 (1891) (emphasis added); *see also Commonwealth ex rel. Armstrong v. Collins*, 709 S.W.2d 437, 445 (Ky. 1986). The full text of SB 151 was plainly "set out in full" for all legislators to see and understand via the legislature's typical practice. Thus, Section 56 was never violated.

In any event, just as with the Plaintiffs' other procedural claims, the issue is not justiciable in this Court. Section 39 of the Constitution, case law precedent, and separation of powers principles entrust the General Assembly, not the judicial bench, with the power to determine the rules of its proceedings. What constitutes a "reasonable time" under Section 46 is a nonjusticiable political question. *See Philpot*, 880 S.W.2d at 553-54. In the same way, this Court may not expound on the meaning of "at length" or opine on what it means to "read" a bill. Those are questions for the General Assembly and the General Assembly alone. *Id.*; *Elk Horn Coal Corp.*, 163 S.W.3d at 422 (noting the separation of powers doctrine in the Commonwealth is to be "strictly construed").

In conclusion, the Governor again points out that the Plaintiffs' position with respect to the "at length" language in Section 56 would invalidate every bill passed

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this session and thousands throughout Kentucky history, such that the Commonwealth could no longer properly function. Bills are simply not read—nor must they be—according to the Plaintiffs' contrived reading of the Constitution. For the Plaintiffs to advance a position totally divorced from legislative realities is to irresponsibly waste the taxpayers' resources as well as the Court's time, and the Court should reject the Plaintiffs' Section 56 allegations in whole.

C. SB 151 is not invalid under KRS 6.355 and KRS 6.955.

The final facet of the Plaintiffs' process-based arguments is their contention that SB 151 is invalid because the General Assembly failed to follow the procedural rules established by KRS 6.355 and KRS 6.955. This argument is erroneous for two reasons. First, whether the General Assembly complies with its own procedural rules—even those codified in statute—is a nonjusticiable political question that this Court lacks jurisdiction to determine. Second, even if this question were justiciable, the General Assembly substantially complied with the requirements by obtaining an actuarial report for SB 1 and confirming the same report applied to the provisions in SB 151.

1. Whether the General Assembly complied with its statutory rules of procedure is a nonjusticiable political question that this Court cannot resolve.

It is black-letter law that courts cannot interfere with how the General Assembly conducts its business. *See Board of Trustees of the Judicial Form Retirement System v. Attorney General of the Commonwealth*, 132 S.W.3d 770, 777 (Ky. 2003); Ky. Const. § 39. Section 39 of the Kentucky Constitution provides that

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"[e]ach House of the General Assembly may determine the rules of its proceedings." Ky. Const. § 39. This provision is essential to Kentucky's doctrine of separation of powers, and it prohibits courts from adjudicating disputes over the manner in which the General Assembly operates. *Board of Trustees*, 132 S.W.3d at 777; *Philpot v. Haviland*, 880 S.W.2d 550 (Ky. 1994). Courts cannot "approve, disapprove, or enforce" the procedural rules governing the legislative process. *Bd. of Trustees*, 132 S.W.3d at 777. And, critically for this case, "[t]he result is the same even when the procedural is, as here, codified in a statute." *Id.*

The ruling in *Board of Trustees* controls the outcome of this case. In fact, the case is almost indistinguishable from the facts here, which is why the Plaintiffs resort to labeling the holding "dicta" to avoid its implications. [Pls.' Br. at 25–26]. In *Board of Trustees*, the General Assembly proposed a bill affecting one of the state's retirement plans, and when that bill did not pass, the language was added to a different bill through an amendment. The General Assembly obtained an actuarial analysis for the first bill, but did not reconstruct the effort for the second. *Id.* at 774–75. Eventually, the new bill passed both chambers and was signed into law, and opponents of the bill filed suit claiming the law was invalid because it did not have the actuarial analysis required under KRS 6.350. But the Kentucky Supreme Court rejected the argument outright, holding that it was not within the purview of the courts to determine whether the General Assembly follows its procedural rules. *Id.* at 777. The Supreme Court explained that "review of the legislature's adherence to its own procedural rules constitutes a nonjusticiable political question solely within

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the legislature's province," and "[t]he result is the same even when the procedural rule is, as here, codified in a statute." *Id.* (citing *Abood v. League of Women Voters*, 743 P.2d 333, 336–37 (Alaska 1987) & *Moffitt v. Willis*, 456 So.2d 1018, 1021–22 (Fla. 1984)).

The application of *Board of Trustees* to the instant matter is so apparent that the Plaintiffs' argument borders on frivolous. The Plaintiffs contend that the holding regarding justiciability is dicta "because the Supreme Court's decision primarily relied on the finding that the General Assembly had 'substantial[ly] compli[ed]' with the actuarial analysis requirement." [Pls.' Br. at 26]. This is a gross distortion of the Court's opinion. The Supreme Court engaged in a nearly seven-hundred word analysis of whether the issue was justiciable—discussing numerous out-of-state cases addressing a similar question—and concluded that the courts have no authority to adjudicate these kinds of disputes. *Board of Trustees*, 132 S.W.3d at 777–78. At the end of its discussion, the Supreme Court included *one additional sentence* indicating that the General Assembly might have substantially complied with the requirements of the statute by obtaining an actuarial analysis on the first bill, and this single sentence is what the Plaintiffs submit is the primary holding of the Court's opinion.

A cursory reading of *Board of Trustees* reveals that the Supreme Court grounded its opinion on justiciability, but even if that were not the case, the Court's statement regarding substantial compliance cannot be dicta as a matter of law. This Court has jurisdiction "over only 'justiciable causes.'" *Berger Family Real Estate, LLC v. City of Covington*, 464 S.W.3d 160, 166 (Ky. App. 2015) (quoting Ky. Const.

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§ 112(5)). A justiciable cause is one in which there is "an actual controversy" that the Court can decide. *Id.* (citing *Interactive Gaming Council v. Commonwealth ex re. Brown*, 425 S.W.3d 107, 112 (Ky. App. 2014)). If a case is not justiciable, the court lacks the power to resolve the issue. *Id.* Justiciability, in other words, is not merely an alternative means of resolving a case—it is a threshold jurisdictional inquiry that *ends the case* if the court determines that it lacks the authority to weigh in. In *Board of Trustees*, once the Supreme Court determined that the issue was not justiciable, it lacked jurisdiction to adjudicate the merits of the issue—including whether or not the previously used actuarial analysis substantially complied with the statute. Any further discussion was, as a matter of law, dicta. *See H.R. ex rel. Taylor v. Revlett*, 998 S.W.2d 778 (Ky. App. 1999) ("As such, the 1996 opinion turned on a lack of jurisdiction both by the trial court and this Court on appeal. Any additional findings on appeal are superfluous and cannot be binding due to the lack of jurisdiction.").

The Plaintiffs' remaining arguments to avoid the impact of *Board of Trustees* are similarly deficient. The Plaintiffs attempt to distinguish KRS 6.350 from procedural rules because "both houses of the legislature passed it and the Governor signed it into law." [Pls. Br. at 26]. Of course, that was true when the Supreme Court analyzed the issue in *Board of Trustees*, and the Plaintiffs do not cite any authority for treating a codified rule of procedure any differently than another procedural rule. This is likely because the only case addressing this in Kentucky held exactly the opposite. *See Board of Trustees*, 132 S.W.3d at 777–78.

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In an attempt to shoehorn the statutory argument into a constitutional issue, the Plaintiffs argue that SB 151 is invalid because "[t]he power to ignore or suspend such a binding statute does not rest in a single individual, such as Speaker Pro Tempore Osborne or Chairman [Jerry] Miller." They point to Section 15 of the Kentucky Constitution for support, which provides that laws can only be suspended "by the General Assembly." But even if KRS 6.350 was suspended by the passage of SB 151, *it was suspended by the General Assembly*. SB 151 passed both the Senate and the House of Representatives, and it was signed into law by the Governor. If the Plaintiffs believe that the legislature suspended KRS 6.350 by enacting SB 151, it was the General Assembly—not a single individual—that effected the suspension.[28]

This also explains why the Plaintiffs are wrong in arguing that SB 151 does not amount to an implicit repeal of KRS 6.350. It is "an elementary rule of statutory interpretation that whenever in the statutes on any particular subject there are apparent conflicts which cannot be reconciled, the *later* statute controls." *Beshear v. Haydon Bridge Co., Inc.*, 304 S.W.3d 682 (Ky. 2010) (quoting *Butcher v. Adams*, 220 S.W.2d 398, 400 (1949)). The Plaintiffs argue that one law—SB 151—is in conflict with a prior law—KRS 6.350. In such a circumstance, the most recently enacted statute prevails. Or as the Kentucky Supreme Court explained, "the failure to follow such procedural rules amounts to an implied *ad hoc* repeal of such rules." *Board of Trustees*, 132 S.W.3d at 778 (quoting *State ex rel. La Follette v. Stitt*, 338 N.W.2d 684,

[28] The Plaintiffs appear to suggest that the General Assembly must suspend a statute *expressly* in order for it to be effective. [Pls. Br. at 27]. The Plaintiffs provide no support for this argument—no statutes, no case law—and instead rely only on the fact that the General Assembly has, at some time in the past, expressly suspended a statute. This is a bizarre argument with no legal basis whatsoever.

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687 (Wisc. 1983)). If SB 151 did in fact conflict with KRS 6.355, as the Plaintiffs argue, the effect is not a nullification of SB 151 but an implicit repeal of the prior statute.

KRS 6.350 is not a super-statute, and Kentucky law does not allow for any such thing. There is nothing that the General Assembly can do by an ordinary statute that it cannot undo through the same process. Whether it is called an implicit repeal or not, the fact is that the General Assembly passed SB 151 through the process required by the Kentucky Constitution—and this Court lacks the authority to inquire any further.

The same arguments apply with equal force to KRS 6.955. KRS 6.955 creates a procedural rule for the General Assembly to follow, requiring a fiscal note be attached to certain bills touching on local government. The bill is not rooted in any constitutional mandate, and the Court, therefore, cannot "approve, disapprove, or enforce" it. *See Board of Trustees*, 132 S.W.3d at 777.

2. The General Assembly substantially complied with the provisions of KRS 6.350 and KRS 6.955.

Even if this Court could review the General Assembly's compliance with KRS 6.350 or KRS 6.955, the facts in the record indicate that the General Assembly substantially complied with both statutes.[29] The provisions of SB 151 were first introduced in SB 1. At that time, the General Assembly obtained an actuarial report

[29] The Court's April 20, 2018 scheduling order requested that the parties brief whether the actuarial analysis for SB 151 satisfied the standard set forth in *Board of Trustees*. Of course, as explained above, the Court lacks jurisdiction to resolve this issue because it is not justiciable. Regardless, the Court subsequently ordered a stay of discovery ten days later, making it difficult—if not impossible—to properly resolve this issue.

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analyzing the provisions of SB 1 and its committee substitute. This actuarial report was provided to the legislators and made public weeks before the legislature eventually voted on SB 151. Subsequently, on March 29, 2018, the day the committee substitute amended SB 151 to add the provisions of SB 1,the General Assembly received an amended actuarial analysis for SB 151 from GRS Retirement Consulting. The new report indicated that the previously provided actuarial analysis of SB 1 applied to the new bill.

Again, this is almost identical to the fact pattern the Supreme Court analyzed in *Board of Trustees*. In that case, the legislature obtained an actuarial analysis for the first version of the legislation but did not obtain an updated analysis when the second bill was amended by to include the relevant provisions. The Supreme Court noted that during the debate on the new bill that ultimately passed, the bill's sponsor stated from the floor: "Section 4 was added . . . and I have a report here . . . from the retirement system . . . that says . . . '*I am unable to determine the fiscal impact, if any, of Section 4*.'" 132 S.W.3d at 775 (emphasis added). The General Assembly, in other words, actually requested an actuarial analysis from the retirement system for the amended bill and received a response stating that it could not make a determination. Nonetheless, the Supreme Court found that the General Assembly substantially complied with the statute by obtaining an actuarial report on the *prior* bill that never passed. *Id.* at 778. Similarly, here it would have been sufficient for the General Assembly to rely on the prior actuarial report alone without requesting a new analysis. But the General Assembly actually went a step further: it asked for and

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received an updated report the same day SB 151 passed, and that actuarial report was made publicly available for every legislator to access. This is more than what the Supreme Court deemed "substantial compliance" in *Board of Trustees*, and the Plaintiffs' contention otherwise must be rejected.

Similarly, the actuarial analysis obtained for SB 1 and SB 151 substantially complies with the requirement of a fiscal note in KRS 6.955. The requirements for a fiscal note are broadly worded and vaguely defined. It requires only that the Legislative Research Commission provide an estimate of the effect the law will have on expenditures or revenues of local government. *See* KRS 6.965(1). How or in what detail the fiscal note accomplishes this is left unsaid. The actuarial analysis assessing the financial impact of SB 1 and SB 151 is more than sufficient to substantially comply with this statute.

VI. The Kentucky Education Association and Kentucky State Lodge Fraternal Order of Police do not have associational standing.

Two of the three Plaintiffs are associations purporting to litigate this matter on behalf of their entire memberships. Because those two Plaintiffs do not have appropriate associational standing, they should be dismissed before this lawsuit is allowed to proceed.

"Standing is a legal term defined as a 'sufficient legal interest in an otherwise justiciable controversy to obtain some judicial decision in the controversy.'" *Interactive Gaming Council v. Commonwealth ex rel. Brown*, 425 S.W.3d 107, 112 (Ky. 2014) (quoting *Kraus v. Ky. State Senate*, 872 S.W.2d 433, 439 (Ky. 1993)). In general, an association only has standing to sue as a third party on behalf of its

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members if (1) its members would otherwise have standing to sue in their own right; (2) the interests the association seeks to protect are germane to the association's purpose; and (3) neither the claim asserted nor the relief requested requires the participation of individual members in the lawsuit. *See Commonwealth ex rel. Brown v. Interactive Media Entm't & Gaming Ass'n, Inc.*, 306 S.W.3d 32, 38 (Ky. 2010) (citing *Hunt v. Washington State Apple Advertising Comm'n*, 432 U.S. 333 (1977)). While Kentucky has never officially adopted this entire three-prong test first articulated by the United States Supreme Court, "at a minimum, to establish associational standing at least one member of the association must individually have standing to sue in his or her own right." *Bailey v. Preserve Rural Roads of Madison Cnty., Inc.*, 394 S.W.3d 350, 356 (Ky. 2011).

The KEA and FOP fail to satisfy the prerequisites of associational standing for at least two reasons. First, the two associations fail to specifically identify even a single one of their members. An association's blanket assertion that it is litigating a matter on behalf of a group of individuals with their own standing fails to satisfy the binding precedent of the Kentucky Supreme Court. *See Commonwealth ex rel. Brown*, 306 S.W.3d at 38-39. In a 2010 case where two associations purported to represent a number of relevant entities but failed to specifically identify at least some of those entities, the Kentucky Supreme Court found the action improper for lack of standing and explained that "[w]ithout even revealing any of the [individuals] they purport to represent, the associations cannot hope to achieve associational standing." *Id.* at 38.

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Here, the KEA and FOP have done the exact same thing as the associations in *Commonwealth ex rel. Brown*—they have broadly asserted that their underlying members have standing, but they have failed to provide even the slightest proof to back up their claims. Just as in *Commonwealth ex rel. Brown*, "this Court cannot simply take their words for it." *Id.* The Court should refuse to let the two associations proceed in this litigation on the bare assertions set forth in the complaint. *See* Verified Complaint at ¶¶ 6-7 (failing to specifically identify a single member of either association).

Additionally, inherent in the concept of associational standing is the notion that the association is acting in the best interest of its members. *See Commonwealth ex rel. Brown*, 306 S.W.3d at 40 ("[B]efore a favorable judgment can be attained, the association's general allegations of injury must clarify into 'concrete' proof that 'one or more of its members' has been injured."). The KEA and FOP do not have standing to contest the validity of SB 151 because neither they, nor any of their purported members, have actually been harmed by the bill. Put another way, no one has suffered a requisite injury in fact. *See Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560 (1992). To the contrary, SB 151 works to the two associations' benefit by steering the Commonwealth's failed retirement systems back on a path towards sustainability, thereby increasing the likelihood that public employees such as teachers and police officers will recover any pension benefits at all when they retire. Moreover, the new hybrid cash balance plan for teachers likely gives them a better

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benefit than they would have had under the old plan. Even the Jefferson County Teachers Association says so.

Where there are "genuine conflicts" between a litigant's interests and those of an absent third party, courts have "strongly counsel[ed] against third party standing." *See Amato v. Wilentz*, 952 F.2d 742, 750 (3d Cir. 1991); *see also Clifton Terrace Assocs., Ltd. v. United Tech. Corp.*, 929 F.2d 714, 722 (D.C. Cir. 1991) (denying third-party standing where the litigant's "interests in the subject of this suit to some extent conflict with those of the [third parties] whose rights [the litigant] purports to advance"). Because the purported members of the Plaintiffs' associations are better off under the terms of SB 151, which the General Assembly passed to address the retirement systems' current multi-billion dollar deficits, there is no injury, and the Plaintiffs are not advocating in their members' best interests by litigating this matter. The Court should dismiss both the KEA and the FOP from this action.

CONCLUSION

The ultimate question for this Court is whether it wants to move the Commonwealth backward, in the direction of fiscal irresponsibility and insolvent pension systems, by following the California Rule, or whether it wants to join the recent trend of marching toward prosperity and solvent pension systems by following the Prevailing Rule. The answer is an easy one. Even the California courts are walking away from the California Rule. Why? Because the Prevailing Rule is the only one that is sensible, fiscally responsible, and legally justifiable. Nevertheless,

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the Attorney General wants Kentucky to be like California—a fiscally irresponsible state with high taxes and no flexibility to reform public pensions to ensure they will remain solvent. The Defendants implore this Court to reject that approach and follow the Prevailing Rule. It is the only way, in the long run, to ensure that the pension systems will remain solvent and will remain capable of providing retirement benefits to the Commonwealth's public employees and retirees. Those individuals have worked hard and deserve no less. The Court should not turn its back on them by adopting a rule that will only hasten the decline of the pension systems. Instead, the Court should follow the Prevailing Rule and should grant summary judgment in favor of the Defendants.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing were served via email this 23rd day of May, 2018, to Andy Beshear, J. Michael Brown, La Tasha Buckner, S. Travis Mayo, Marc G. Farris, Samuel Flynn, Office of the Attorney General, 700 Capitol Avenue, Suite 118, Frankfort, Kentucky 40601, Jeffrey Walther, Walther, Gay & Mack, 163 E. Main St., Suite 200, Lexington, KY 40588, David Leightty, Priddy, Cutler, Naake, Meade, 2303 River Road, Suite 300, Louisville, KY 40206, David Fleenor, Capitol Annex, Room 236, Frankfort, KY 40601, Eric Lycan, Office of the Speaker, Capitol Annex, Room 332, Frankfort, KY 40601, Mark Blackwell, 1260 Louisville Road, Frankfort, KY 40601.

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EXHIBIT 1

COMMONWEALTH OF KENTUCKY
FRANKLIN CIRCUIT COURT
DIVISION I
CASE NO. 18-CI-379
ELECTRONICALLY FILED

COMMONWEALTH OF KENTUCKY,
ex rel. ANDY BESHEAR, ATTORNEY GENERAL, *et al.* PLAINTIFFS

v.

MATTHEW G. BEVIN, in his official capacity
as Governor of the Commonwealth of Kentucky, *et al.* DEFENDANTS

AFFIDAVIT OF SCOTT BRINKMAN

Comes the affiant, Scott Brinkman, first being duly sworn, and states as follows:

1. I am over the age of 18 and of sound mind.
2. I am a resident of Jefferson County, Kentucky.
3. I have personal knowledge of the facts asserted in this affidavit.
4. I currently serve as the Secretary of the Executive Cabinet of the Governor of Kentucky.
5. I am familiar with the litigation regarding 2018 Senate Bill 151, which is styled *Commonwealth of Kentucky, ex rel. Beshear, et al. v. Matthew G. Bevin, in his official capacity as Governor of the Commonwealth of Kentucky, et al.*, Franklin Cricuit Court, Division I, Case No. 18-CI-379.
6. I am aware that the Plaintiffs in the aforementioned lawsuit have filed a summary judgment motion without any discovery having been taken.
7. Based on my knowledge and review of the case, it is my belief, as representative of the Governor's Office, that the Defendants' counsel need additional opportunity to

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conduct discovery so as to investigate and resolve multiple factual issues and disputes.

Further the affiant sayeth naught.

Scott Brinkman

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF FRANKLIN)

Subscribed and sworn to before me this 23 day of May, 2018, by Scott Brinkman.

Notary Public

My commission expires on the ____ day of ____

DEANNA COPE BRANDSTETTER
Notary Public
Kentucky - State at Large
My Commission Expires Apr 21, 2020

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Exhibit 2

S&P Global
Ratings

RatingsDirect®

U.S. State Pensions: Weak Market Returns Will Contribute To Rise In Expense

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U.S. State Pensions: Weak Market Returns Will Contribute To Rise In Expense

Waiting For Recovery

After losses in 2008 and 2009, most U.S. state pension plans have not been able to recover to funded levels seen in the early 2000s. Investment returns in 2015 and 2016 are not going to make that path any easier. Most plans report on a June 30 year-end, and while the year ended June 2014 posted strong market returns, short-term stock market volatility at the end of June 2015 -- related to stalled negotiations between Greece and its creditors -- contributed to lower reported pension funded ratios for most plans in 2015, according to a survey by S&P Global Ratings. Then, Brexit in June 2016 created another ill-timed blow to market performance. Although a month-end rally recovered Brexit-related losses, investment returns announced to date by many of the largest state plans still averaged less than 1% for the year ended June 30, 2016, which we expect will depress future reported pension funded ratios.

Given the long-term nature of the obligations and their payout, most state pension funding policies stress a long-term view of funding estimated liabilities and smoothing market performance over several years. As a result, the full impact of market losses will not be reflected immediately in states' required pension contributions but will gradually increase as annual market fluctuations are phased in to avoid year-to-year budget shocks. Nevertheless, a trend of lackluster investment returns, together with forecasts of lower expected market returns over the next 10 years, has brought on renewed calls from some financial economists for lower rate of return and discount rate assumptions. When public pension plans assume a lower rate of return, all else being equal, governments must dedicate a greater proportion of their revenue to pension contributions to meet the higher estimated pension liability. Continued trends of slow revenue growth, growing liabilities, and higher future pension contribution costs could amplify an already constrained budget environment for many states.

Overview

- Weak market returns in 2015 dampened pension funded ratios reflected in new GASB accounting with market valuation of assets.
- A second year of soft market results in 2016 could pressure plans to continue to adopt lower discount rate assumptions, pursue higher yields, or reprise attempts for pension reform.
- How pension plans and state governments manage current assets and future contributions is key to the future health of pension systems and state budgets.

A state's prudent management of its long-term liabilities is important for long-term credit stability. The majority of the largest state plans still assume an annual return between 7.5% and 8%, although there continues to be significant debate in the market about whether the discount rate assumptions used for public pension plans remain too high. In light of lower than expected market returns and expectations for this trend to continue, plan managers have been

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under pressure to better align plan assumptions with the market reality of the past couple years by either lowering the actuarial assumed returns assumptions used in their funding policies or pursuing higher yields through riskier investment strategies. We have noticed that more plans are moving to gradually lower assumed rates of return, although many remain within the 7.5% to 8% band. For example, Oregon's Public Employees Retirement system elected to change its assumed rate of return to 7.5% from 7.75% for calendar 2016 which, along with a recent court decision reversing previous pension reform, will impact employer contribution rates in future biennia. Washington will change the assumed rate of return for most of its plans to 7.7% from 7.8% and the Hawaii Employee Retirement System's assumed rate will change to 7.5% from 7.55% beginning in July 2017. New York State has also moved from 7.5% to a 7% return assumption for its 2015 retirement system valuation which will be reflected in future plan comprehensive annual financial reports (CAFRs).

In our view, these decisions represent a difficult tradeoff between reducing the long-term risk associated with uncertain and volatile market returns in exchange for increased budgetary pressure. For example, in August, the Illinois Teachers' Retirement System board voted to lower the assumed annual rate of return further to 7% from 7.5%. We expect that decision to add upwards of $400 million to Illinois' fiscal 2018 budget and increase the state's already sizable $4 billion to $5 billion structural budget gap. We believe that, while complicating budget negotiations even further, this true reckoning of the challenges ahead is positive from a credit standpoint. However, even as some plans bring their return assumption closer to 7%, others suggest these return assumptions might still be too high. A recent publication by Alicia Munnell at the Boston College Center for Retirement Research assumes a 6% expected nominal return in its analysis of government pension liability and contributions (Munnell, Alicia H. and Jean-Pierre Aubrey, "An Overview of the Pension/OPEB Landscape").

In order to maintain higher assumed return targets, some plans have adopted riskier investment allocations, which poses a different set of challenges. This strategy could be attractive in order to maintain higher assumed rates of return and avoid immediate recognition of higher estimated liabilities and contributions. However, riskier investment strategies expose plans to higher volatility and a series of return shortfalls could compound underfunding with steeper growth in contribution rates over time. Chart 1 shows that actual five-year average returns through 2015 still generally exceed the assumed rates of return for the largest state pension plans, but investment allocations have also grown riskier in the previous five years. Using reported plan investment allocations between 2010 and 2015 found on the Public Plans Data website maintained by the Center for Retirement Research at Boston College or in plan reports, we note the proportion of the portfolio allocation among equity and alternative investments for the states' largest pension plan (measured by share of the state's net pension liability (NPL)) averaged 68% and grew by more than 8% compared to the allocation five years earlier.

Finally, as the challenge of meeting investment returns and contribution hikes intensifies, states might also resume the quest for pension reform to manage rising pension liabilities, despite a road fraught with legal hurdles and setbacks. How states and plans manage these pressures and craft funding policies to meet a realistic estimate of the long-term pension liability is important to future state credit quality.

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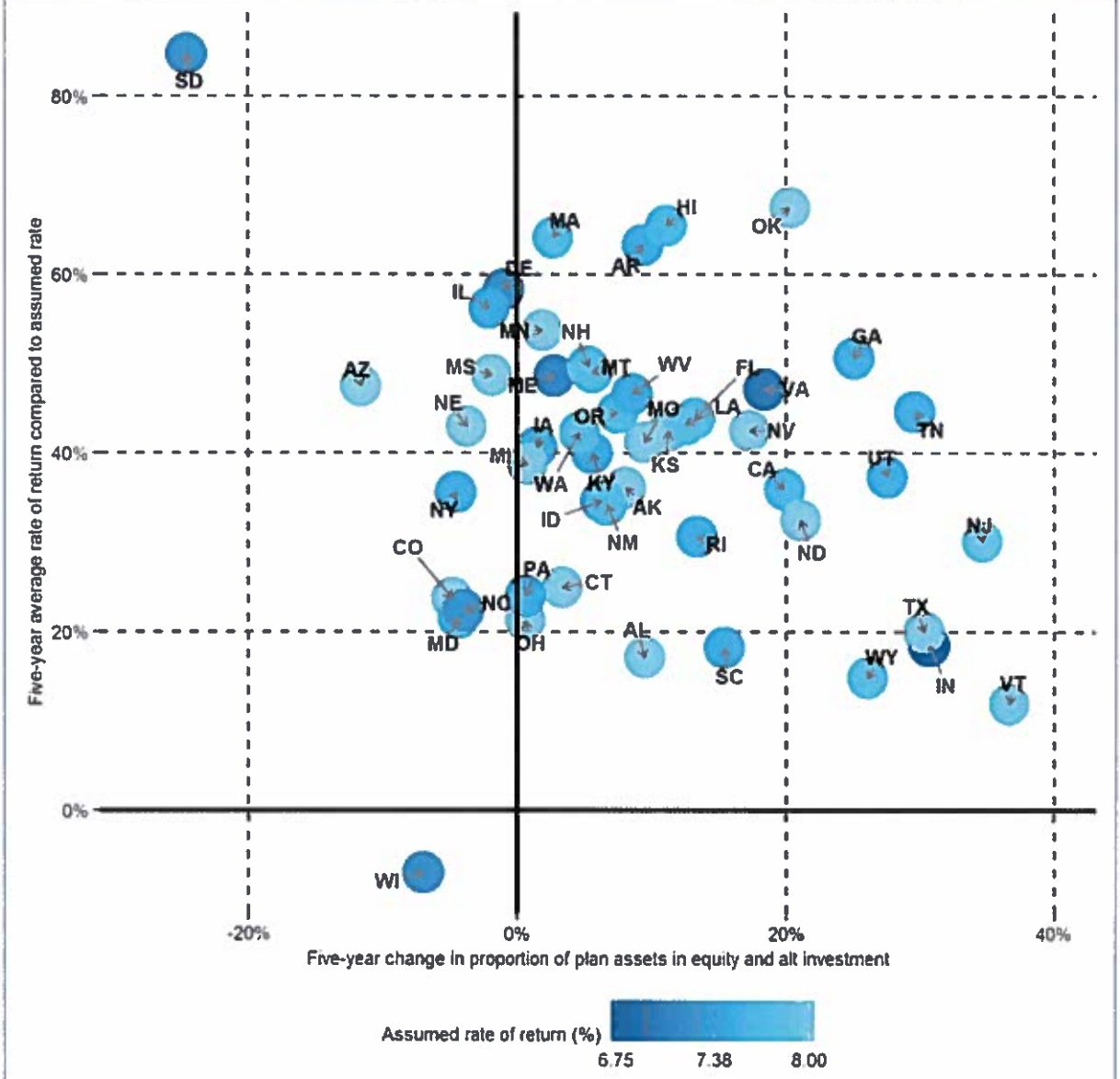
Chart 1

Plans Increase Riskier Investment Allocation To Meet Return Targets



IN reflects the investment allocation of the consolidated defined benefit assets across INPRS funds. WI reflects the investment allocation for the Wisconsin Retirement Fund reported as of Dec. 31, 2014 compared to Dec. 31, 2009.

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Healthy Systems And Budgets

The future long-term health of pension systems and state and local government budgets is influenced by whether:

- Plans are making some annual progress on funding the unfunded liability;
- Funding policies are well-crafted and plan managers proactively target realistic assumptions;
- Governments are committed to adequate annual funding; and
- Governments are successful in pension reform initiatives to control growth in liabilities.

Survey Results

Our 2015 survey results incorporate reported pension liabilities under the Governmental Accounting Standards Board (GASB) statements 67 and 68, which took effect for employers and governmental non-employer contributing entities for fiscal years starting on or after June 15, 2013, and June 15, 2014, respectively. The statements change how pension liabilities are accounted for and reported in state and local governments' financial statements. The new standards also value pension plan assets to market and incorporate this volatility in year-to-year reported pension funded ratios.

Pension funded ratios

Based on plan information reported through the end of fiscal 2015, the median funded ratio across state plans was 74.6%. We have seen two years of pension plan financial statements for most pension plans since the rollout of GASB 67 reporting standards with a majority of plans reporting a decline in funded ratios between fiscal 2014 and fiscal 2015. Chart 2 reflects this general negative trend in funded ratios between fiscal 2014 and fiscal 2015 due to relatively weak market performance and higher reported liabilities. One exception to this trend was a 12% improvement in Alaska's funded ratios after the state made an extraordinary $3 billion contribution from its constitutional budget reserve fund to boost assets in its public employees retirement plan and its teachers plan.

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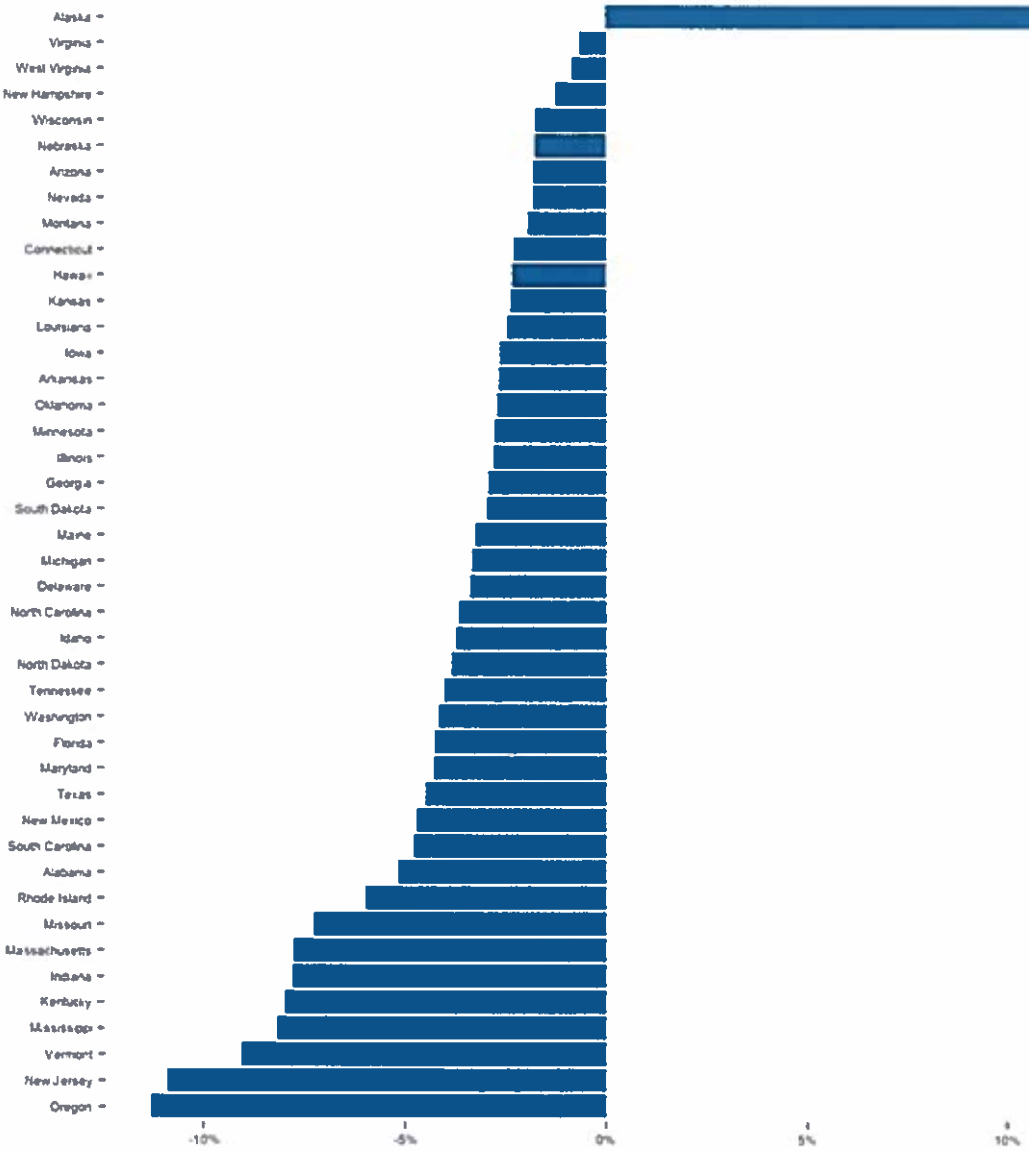
Chart 2
Change In GASB 67 Funded Ratio: Fiscal 2015 vs. Fiscal 2014



Excludes seven states for which the major GASB 67 plan reports were not available for two years.
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South Dakota, Wisconsin and North Carolina continue to lead among the states with the highest funded pension ratio. Compared to our last pension survey (see "U.S. State Pension Roundup: Recent Court Rulings And Reform Slowdowns Make Active Management Essential," published June 18, 2015), Florida and New York rose to the top five, benefiting from the market valuation of assets under the new reporting standards. Although Oregon had previously ranked among the top five states with the highest funded ratios, it fell out of the ranking after the Oregon Supreme Court overturned a significant feature of the state's 2013 pension reform legislation which consequently increased estimated

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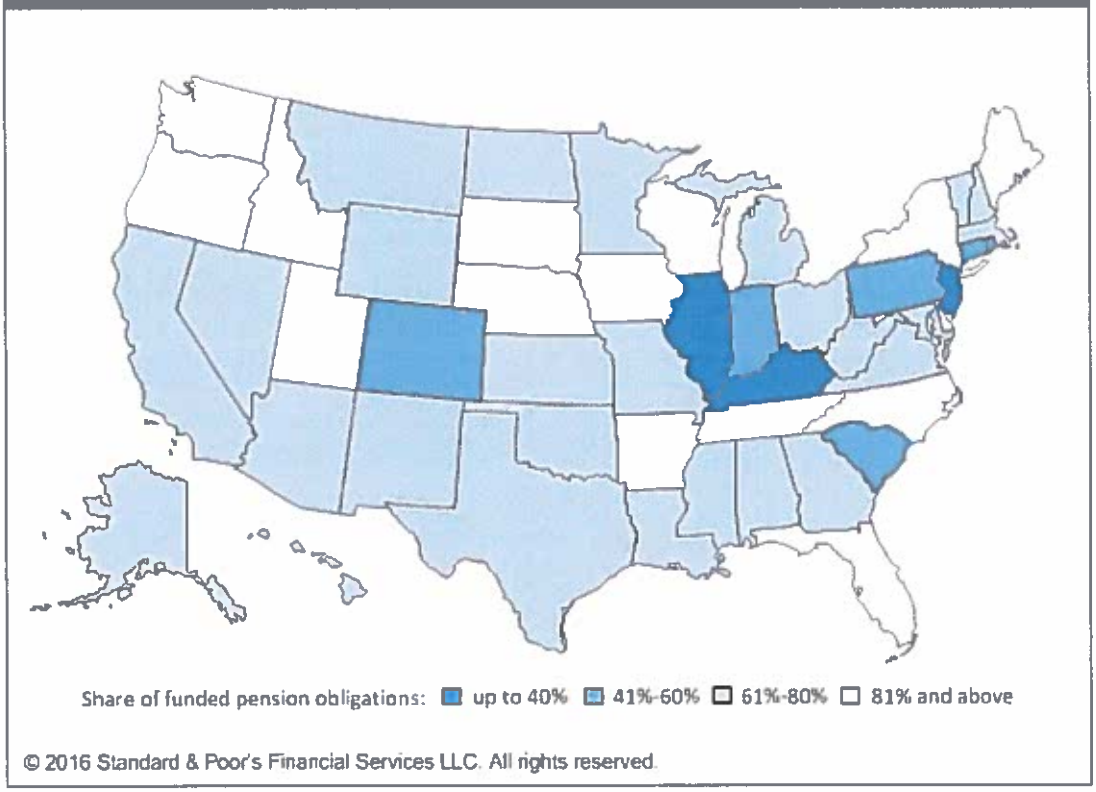
plan liabilities. In particular, the court ruled that Oregon could not reduce cost-of-living adjustments on benefits Oregon Public Employees Retirement System employees had earned before the enactment of the reform legislation. The higher liability estimates contributed to an 11% decline in Oregon's fiscal 2015 reported funded ratio compared to fiscal 2014. Oregon estimates pension contribution costs will grow by $316 million for the 2017-2019 biennium, or 1.6% of the tentative $20 billion two-year budget because of the higher OPERS liability estimates.

Likewise, Connecticut, Kentucky, and Illinois continue to rank among the states with the worst funded ratios. Compared to last year's report, New Jersey reported a lower pension funded ratio which incorporates higher estimated liabilities under the new reporting standards due to projected future depletion of pension asset and a blended assumed discount rate for most of its state plans.

Chart 3
Pension Funded Ratio



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Fiscal 2015 Best-Funded Pension Ratios	
South Dakota	104.1
Wisconsin	102.7
New York State	98.1
North Carolina	94.6
Florida	92.0

Fiscal 2015 Worst-Funded Pension Ratios	
Kentucky	37.4
New Jersey	37.8
Illinois	40.2
Connecticut	49.4
Rhode Island	55.5

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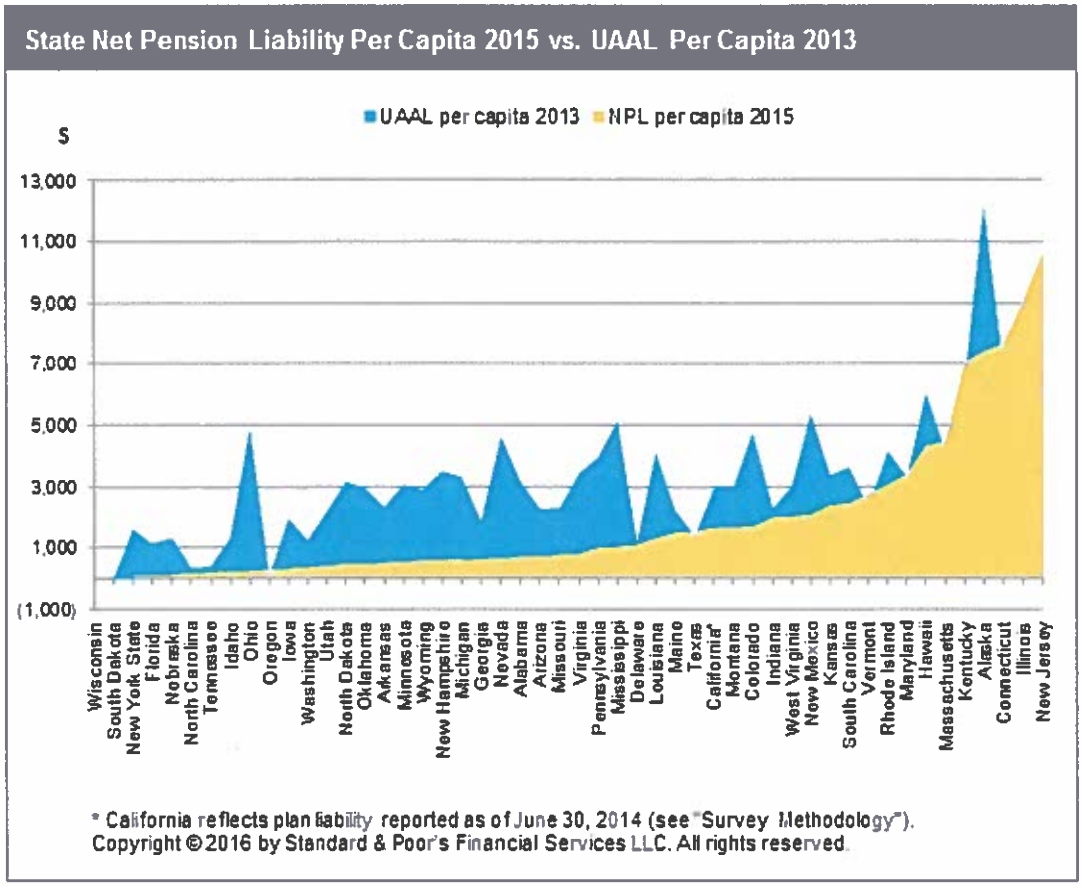
State reported share of net pension liability

Our 2015 survey incorporates the state's estimated share of the aggregate plan net pension liability under new GASB reporting standards.

For cost-sharing multiple employer plans, GASB 68 bases the reported share of the plan liability on the state's share of required pension contributions to the plan. Under previous GASB reporting standards, many states had reported the total plan liability for such plans, with no disclosure on the state's respective share of the liability. We believe the new GASB reporting standards provide for improved transparency and comparability of state-specific pension liabilities.

Incorporating the state's proportionate share of the net pension liability in this year's survey, we found that the unfunded pension liability per capita declined significantly for most states when compared to the reported total UAAL per capita under previous GASB accounting using 2013 valuations. However, New Jersey, Illinois, Connecticut, Kentucky, and Massachusetts are examples of states with a high net pension liability per capita exceeding $3,500 which grew compared to the UAAL per capita reported in last year's survey.

Chart 4



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GASB 67 And 68 Reporting

What's new	What survey data shows	What to expect
Under new reporting standards, pension plans use a market valuation of assets at the measurement date rather than actuarially derived pension asset valuation. Only a handful of pension plans projected a future depletion of assets and used a lower assumed discount rate (or blended rate) to estimate their liabilities for GASB reporting. New reporting standards also provide disclosure on the state's proportionate share of the pension liability for cost-sharing pension plans.	States' pension funded ratios generally improved in fiscal 2014 due to strong market returns and compared to reported actuarially smoothed ratios in the previous year, although fiscal 2015 funded ratios were generally lower. Certain New Jersey, Texas, and Kentucky pension plans adopted a blended assumed discount rate which caused net pension liabilities to increase under new GASB reporting. Most states' reported share of net pension liability reflected lower liabilities overall than previously reported.	Future plan ratios and NPLs will be more volatile due to market valuation. Reported pension liability estimates could grow if more plans project future asset depletion dates and adopt blended rates. The state's share of liability will move with fluctuations in the plan's reported NPL, although the percentage share of the plan's liability for most states should not fluctuate significantly from year to year, absent significant reform.

Measuring Funding Progress

Reported pension liabilities are estimates of a long-term liability that needs to be managed over time to avoid significant future costs and credit pressure. Under the previous GASB 25 and 27 standards, GASB required the calculation of the annual required contribution (ARC), which had been used as a barometer of a state's progress and commitment to funding its long-term liability. The ARC represented the employer's cost of retirement benefits earned by employees in the current year and the amount needed to amortize any existing unfunded accrued liability over a period not to exceed more than 30 years. And, in general, we found that state plans that had a history of calculating pension contributions on an actuarial basis and regularly making pension contributions that met the ARC performed better than those that had not. Although GASB 67 and 68 accounting standards no longer require the calculation of an ARC, we understand most plans have not materially changed their funding policies since the implementation of GASB 67 and 68. Plans that had previously used an ARC-based funding policy now disclose an actuarially determined contribution (ADC) which is essentially the same as the ARC calculation.

However, actuarial assumptions used for funding policies won't align with assumptions used to derive liability estimates for GASB reporting purposes. Funding policies for most plans generally use an actuarial valuation of assets,

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smoothing market returns over a longer period, to help provide a more stable and predictable unfunded liability estimate and annual contribution target than otherwise achievable with year-to-year market valuation of assets. Furthermore, the ARC's effectiveness at reducing the overall liability is only as good as the assumptions used to calculate it. That is, required contribution amounts necessary to demonstrate progress in plan funding could be greatly underestimated depending on actuarial assumptions behind the respective funding policies, including assumed amortization methods.

In our view, states that are consistent in funding required contributions based on funding policies that use conservative actuarial assumptions demonstrate an overall commitment and a path forward toward funding the estimated long-term liability. Furthermore, we believe new reported accounting measures can also provide clues on whether total annual plan contributions are making progress in funding the long-term estimated liability. Chart 5 compares total annual plan contributions to certain costs driving the annual change in the net pension liability. We believe there is likely some amount of funding progress if the annual plan contributions cover (1) service cost (the present value of benefits earned by participants in the year) (2) a portion of the annual total interest cost related to pension liabilities unmatched by plan assets, and (3) some amortization of the beginning net pension liability. The chart reveals that, on the whole, plan contributions for only about 25% of the states are covering these annual costs for the most recently reported year.

Aside from Alaska, which made a large non-recurring contribution to its pension plans in fiscal 2015, South Dakota, Tennessee, New York, Wisconsin, and North Carolina show strong progress in annual pension funding and are also notably states that have ranked among those the highest pension-funded ratios in our recent pension surveys.

Interestingly, Oklahoma plans showed strong progress in funding certain annual costs as of the most recent plan reports even though Oklahoma's pension funding is based on the dedication of certain revenues to fund pensions and does not directly correlate to an actuarially determined contribution. We note that prior to fiscal 2012, Oklahoma had funded its pensions at levels that were less than 70% of the ARC. However, pension reform efforts eliminated the cost of living adjustment (COLA) and reduced the state's liability, bringing the ARC closer in line with the revenue stream dedicated to fund it. Over the past four years, Oklahoma's contributions exceeded the ARC on an aggregate basis with overfunding of some plans and underfunding of others. This, however, could turn out to be temporary as the funding formula is driven by economically sensitive revenues, does not have an actuarial basis and does not adjust to increases in estimated liability.

The chart also reflects that New Jersey plans funded only 33% of the annual cost measures. This is likely to continue after the New Jersey Supreme Court ruled in June 2015 that the state's pension contributions are not constitutionally protected. Additionally, in August, state legislators failed to put a voter referendum on the November ballot for a constitutional amendment that would have required the state to increase its pension contributions.

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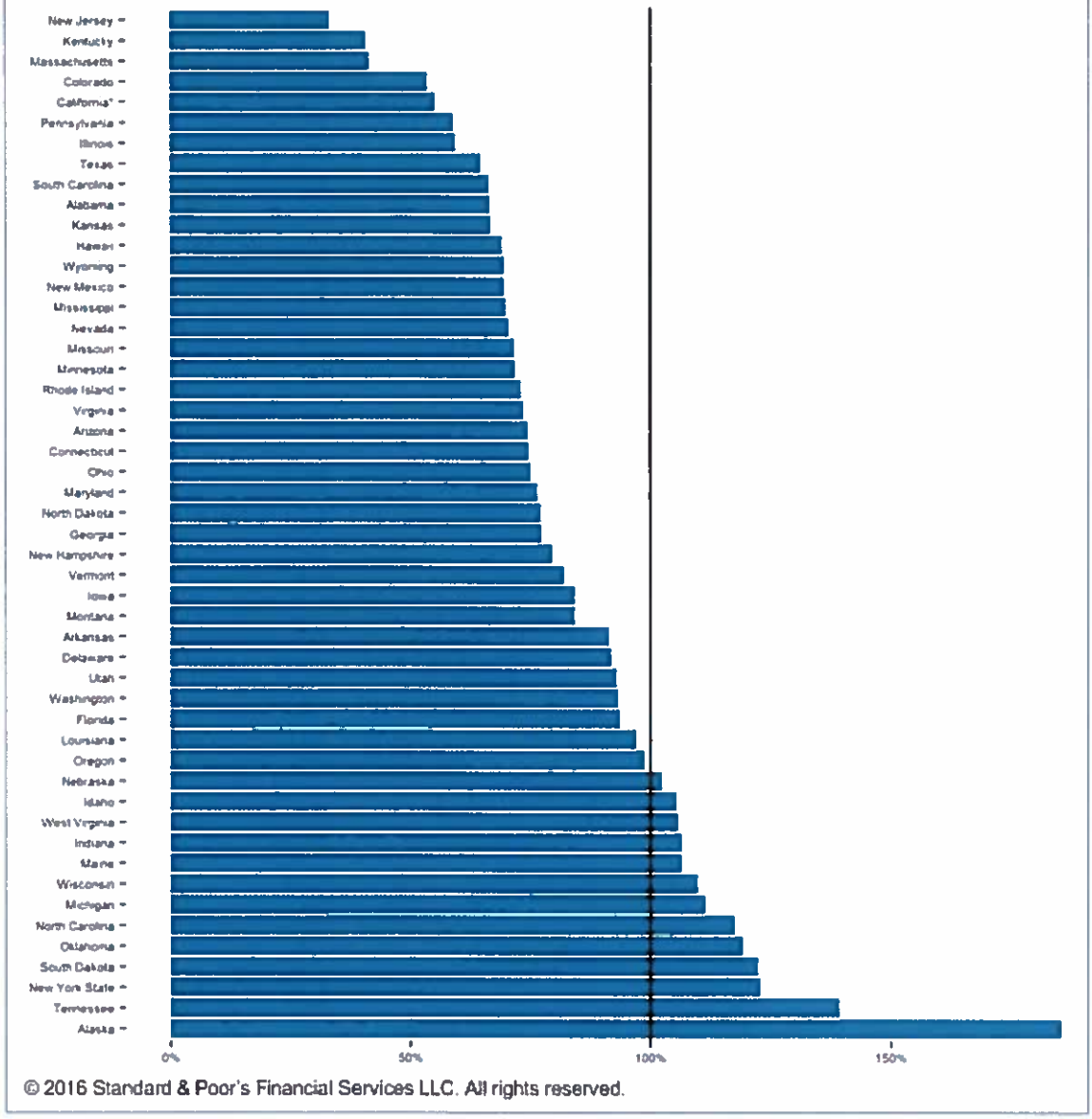
Chart 5
Total Plan Contributions Compared To Accounting Measures For Plan Funding Progress



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Assumptions matter

There are a multitude of assumptions behind the liability estimates and funding policies. These assumptions – including those relating to the rate of return, amortization methods, mortality rates, benefit growth, plan characteristics, and more -- drive a plan's estimated long-term pension liability. Incorporation of updated demographic and economic assumptions from regular experience studies are a sign of proactive plan management. A plan that significantly lags in its response to emerging long-term economic and demographic trends could fall behind in its funding, causing more significant cost increases in the future.

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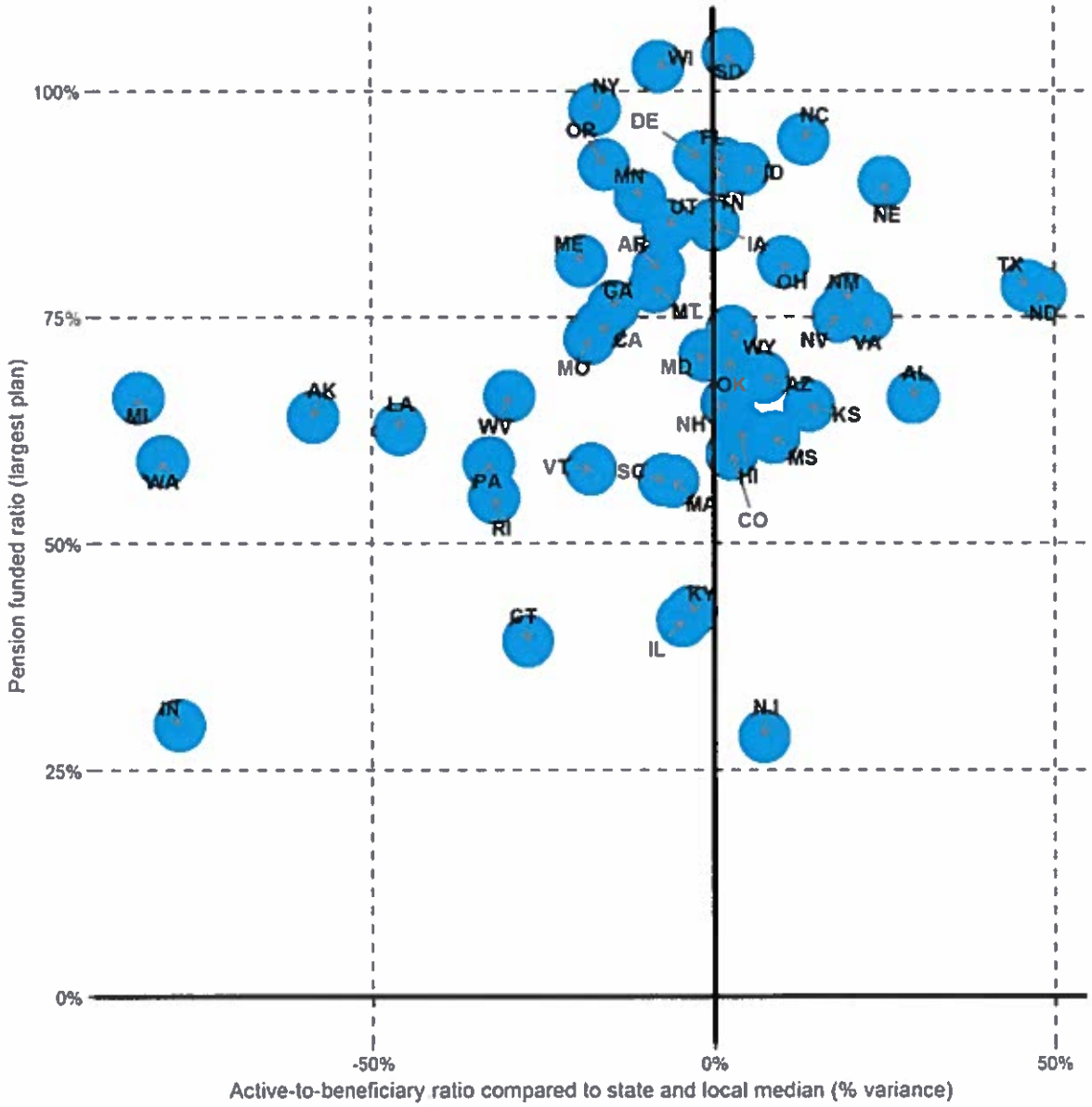
Plan characteristics and demographic makeup are also important in analysis of future pension pressures. Chart 6 reflects the active-to-beneficiary ratio for the largest state plans as it relates to the 1.5 median ratio reported by the U.S. Census Bureau for all state and local plans. Plans with relatively low active members compared to beneficiaries and without a strong funded ratio of pension assets to cover future benefits could face significantly greater challenges to cover future contributions as the base of contributing members shrinks.

Chart 6
Largest State Plans: Active To Beneficiary Ratios And Funded Status



Largest plan funded ratio as of most recent plan report. Indiana's pre-1996 Teachers Retirement Fund is a closed plan that the state funds on a pay-as-you-go basis.

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Pension Reform: A Mixed Bag

Some states have implemented pension reform successfully, while other state pension reform initiatives have met with legal roadblocks. The legal and political environment for each state differs and not all states have tested pension reform in court. Whereas the Illinois Supreme Court decision to overturn the state's 2013 pension reform has contributed to mounting budgetary stress and credit deterioration for Illinois, many states have demonstrated successful pension reform upheld in court or through settlements. Reform in Maine and Maryland in 2011 reduced COLA for current employees. In 2015, Texas passed legislation to increase active employee contributions to the Employees Retirement System. While such examples reflect successful reform for existing employee benefits, other states have focused on reducing benefits for new hires. In 2015, West Virginia established a new benefit tier for several plans which reduced benefits and required higher employee contributions for new hires. Nevada's 2015 legislature also established a new benefit tier for the Public Employees' Retirement System and reduced benefits for new hires. In late 2015, South Dakota's retirement system approved reform that adopts characteristics of a hybrid plan for new hires.

Although New Jersey's pension liabilities still remain severely unfunded, in June 2016, the New Jersey Supreme Court ruled in favor of New Jersey's 2011 law that froze COLAs, which otherwise could have led to an even higher pension liability. In August 2016, a California court of appeal ruling allowed adjustments to existing benefits for CALPERS municipal employees which seems to contradict a longstanding State Supreme Court decision (the "California Rule") and could imply more flexibility for future pension reform in the state. However, it is still too early to tell whether the case will be upheld upon appeal to the State Supreme Court.

According to the National Conference of State Legislatures, 44 states introduced 1,132 bills that related to pensions in 2016 compared to a total 1,101 bills introduced (by 50 states) in 2015. While more bills were introduced, only 177 pension related bills were enacted in 2016 compared to 252 in 2015 and 302 in 2014. Despite an apparent slowdown in enacted reform in the previous couple of years, we expect GASB reporting, increased attention to weaker market returns over the past two years, and increased calls from market participants for reducing assumed rates of return, will make it more likely that most states will resume efforts for pension reform as a means of managing rising liabilities and contributions.

Absent material pension reform, liability estimates will generally grow with experience trends. We believe lower market returns and rate of return assumptions could increase budgetary costs or strain a state's commitment to meeting its required long-term pension contributions. To the extent plans cannot demonstrate a history of meeting assumed projected contributions, we could see reports of asset depletion and calculation of higher liability using a blended assumed discount rate under new GASB reporting standards. Thus, we expect pension liabilities will continue to grow as a component of a state's overall liability profile and could pose significant public policy and funding challenges for many states. How states manage these liabilities both on an annual basis and in the long term will remain important credit factors in our review of state governments' total debt and liabilities.

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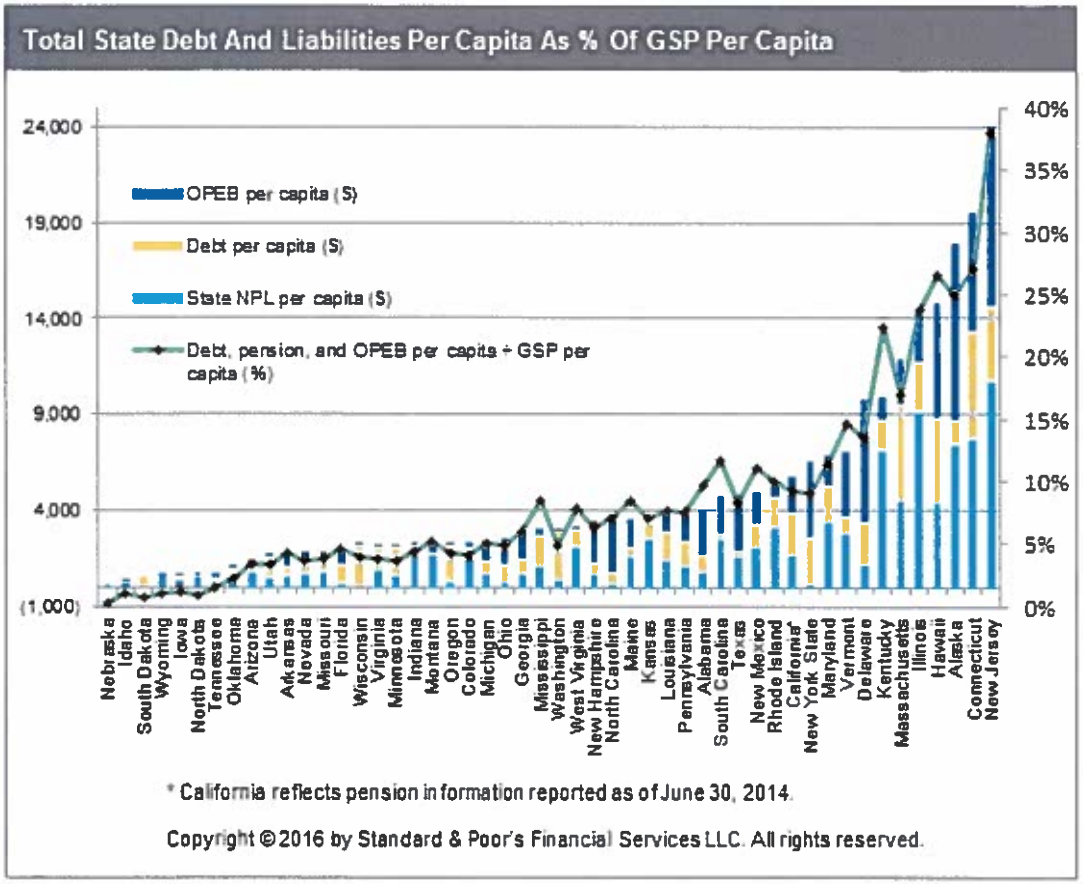
Chart 7



U.S. States' Pension Liabilities And Ratios

State	Funded ratio (%)	Vs. last year (GASB 67)	NPL ($ mils.)	NPL per capita ($)	Debt, pension, and OPEB per capita ($)	State's largest plan	GO rating/outlook
Alabama	67.0	Lower	3,457	711	4,088	AL ERS	AA/Stable
Alaska	67.5	Higher	5,468	7,405	17,887	AK PERS	AA+/Negative
Arizona	63.2	Lower	4,892	716	1,420	AZ SRS	AA/Stable
Arkansas	82.4	Lower	1,533	515	1,758	AR PERS	AA/Stable
California*	75.0	NA	64,631	1,651	5,798	CA PERF	AA-/Stable
Colorado	60.0	NA	9,146	1,676	2,344	CO State Division	AA/Stable
Connecticut	49.4	Lower	27,511	7,660	19,484	CT SERS	AA-/Stable
Delaware	89.1	Lower	1,031	1,090	9,789	DE State Employees	AAA/Stable
Florida	92.0	Lower	2,299	113	2,017	FL RS	AAA/Stable
Georgia	80.7	Lower	6,462	632	2,927	GA ERS	AAA/Stable
Hawaii	62.4	Lower	6,197	4,328	14,806	HI ERS	AA/Positive
Idaho	91.3	Lower	356	215	402	ID PERS	AA+/Stable
Illinois	40.2	Lower	116,760	9,078	14,320	IL TRS	BBB+/Negative
Indiana	60.3	Lower	13,133	1,984	2,261	IN TRF pre-1996	AAA/Stable

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U.S. States' Pension Liabilities And Ratios (cont.)

State	Funded ratio (%)	Vs. last year (GASB 67)	NPL ($ mils.)	NPL per capita ($)	Debt, pension, and OPEB per capita ($)	State's largest plan	GO rating/outlook
Iowa	85.1	Lower	1,003	321	677	IA PERS	AAA/Stable
Kansas	65.2	Lower	6,940	2,383	3,616	KS PERS	AA-/Stable
Kentucky	37.4	Lower	31,184	7,046	9,845	KY Teachers	A+/Stable
Louisiana	63.8	Lower	6,082	1,302	3,994	LA LASERS	AA/Negative
Maine	81.3	Lower	1,970	1,481	3,574	ME PERS	AA/Stable
Maryland	68.8	Lower	20,316	3,382	6,876	MD TRPS	AAA/Stable
Massachusetts	61.5	Lower	30,248	4,451	11,912	MA MTRS	AA+/Negative
Michigan	66.5	Lower	6,128	618	2,408	MI SERS	AA-/Stable
Minnesota	78.8	Lower	2,998	546	2,252	MN SERF	AA+/Positive
Mississippi	61.8	Lower	3,045	1,018	3,013	MS PERS	AA/Stable
Missouri	66.9	Lower	4,706	773	1,805	MO MSEP	AAA/Stable
Montana	74.5	Lower	1,720	1,665	2,292	MT PERS+DBRP	AA/Stable
Nebraska	88.8	Lower	230	121	129.55	NE Schools	AAA/Stable
Nevada	75.2	Lower	1,919	664	1,793	NV PERS	AA/Stable
New Hampshire	65.4	Lower	813	611	3,436	NH RS	AA/Stable
New Jersey	37.8	Lower	95,396	10,648	24,065	NJ TPAF	A/Negative
New Mexico	70.6	Lower	4,324	2,073	4,916	NM PERA	AA+/Negative
New York State	98.1	NA	1,471	74	6,544	NY ERS	AA+/Stable
North Carolina	94.6	Lower	1,701	169	3,480	NC PERS	AAA/Stable
North Dakota	70.4	Lower	364	481	679	ND PERS	AA+/Stable
Ohio	78.8	NA	2,917	251	2,536	OH PERS	AA+/Stable
Oklahoma	80.3	Lower	1,888	483	1,025	OK Teachers	AA+/Negative
Oregon	91.9	Lower	1,092	271	2,296	OR PERS	AA+/Stable
Pennsylvania	57.6	NA	12,565	981	4,072	PA SERS	AA-/Negative
Rhode Island	55.5	Lower	3,223	3,051	5,389	RI ERS - State	AA/Stable
South Carolina	57.9	Lower	11,920	2,434	4,765	SC RS	AA+/Stable
South Dakota	104.1	Lower	(94)	(109)	411.39	SD RS	AAA/Stable
Tennessee	91.3	Lower	1,287	195	717	TN CSHEPP	AAA/Stable
Texas	75.6	Lower	41,610	1,515	4,812	TX TRS	AAA/Stable
Utah	88.5	NA	1,204	402	1,655	UT URS	AAA/Stable
Vermont	65.4	Lower	1,722	2,750	7,084	VT Teachers	AA+/Stable
Virginia	74.6	Lower	6,757	806	2,216	VA VRS	AAA/Stable
Washington	86.8	Lower	2,668	372	3,019	WA PERS 1	AA+/Stable
West Virginia	76.9	Lower	3,711	2,012	3,114	WV TRS	AA-/Stable
Wisconsin	102.7	Lower	(687)	(119)	2,104	WI WRS	AA/Stable
Wyoming	80.1	NA	347	592	642	WY PERS	AAA/Negative
Total			577,564				
Median	74.6		3,134	790	3,016		
Average	73.2		11,551	1,870	4,849		

Ratings as of Sept. 12, 2016. *California reflects pension information reported as of June 30, 2014.

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Survey Methodology

Our calculation of pension liabilities was derived from pension plan and state CAFRs reporting under GASB 67/68 standards, GASB 67 consultant reports, and GASB 68 allocation reports currently available to us. We have combined information across multiple pension plans for each state to calculate the state's aggregated plan net position to the total pension liability (pension funded ratio) and funding progress measures. We use cost-sharing multiple employer pension plan CAFRs or GASB 67 reports released within the state's fiscal year and use the state's proportionate share of plan liabilities to calculate the state's net pension liability.

All states except for Alabama and New York have released a CAFR using GASB 68 reporting standards, which incorporates disclosure on the state's proportionate share of cost-sharing pension plans. To estimate Alabama's and New York's respective shares of the pertinent cost-sharing plans' net pension liability, we use the most recent plan GASB 68 allocation reports. Although most states report their proportionate share of respective plan net pension liabilities as of fiscal 2014, we assume the same percentage share applied to fiscal 2015 plan NPLs. In deriving the estimated state portion of the liability for some cost-sharing multiple employer plans, we include a portion of plan liabilities in addition to those reported in the state's CAFR if we expect the state will likely continue to make pension contributions on behalf of other plan employers, even if such contributions are not legally required or do not flow directly to the plan.

Most cost-sharing multiple employer pension plans in which states participate have reported two years of pension plan data under GASB 67 through each respective state's fiscal 2015 year-end. However, given varying reporting dates, some plans do not have a conforming two-year history under GASB 67 reporting standards; therefore the following states are not included in Chart 2: California, Colorado, New York, Ohio, Pennsylvania, Utah, and Wyoming.

Most states' single plan or agent employer plans are relatively small and updated GASB reported information is available only as of fiscal 2014 in the states' fiscal 2015 CAFRs. Given the relative size of these plans, if updated information is not available for fiscal 2015, we carry forward fiscal 2014 net pension liabilities to fiscal 2015 to maintain relative comparability between years. California is an exception in that its share of NPL in its largest plan, CALPERS PERF A, represents more than half of the state's estimated NPL. CALPERS PERF A is an agent multiple-employer plan which only reports under updated GASB standards as of fiscal 2014 in the state's fiscal 2015 CAFR. We therefore report on California's ratios as of fiscal 2014.

Chart 5 uses the following calculation across all state plans to estimate annual plan funding progress: Total employer and employee plan contributions ÷ the sum of service cost + total interest cost x (1 – average plan funded ratio) + (beginning plan net pension liability ÷ 30). If the aggregate beginning unfunded pension liability across plans is negative, beginning plan net pension liability ÷ 30 would be treated as zero. Likewise, for funded ratios at or above 100%, the interest cost factor would be zero.

Charts 1 and 6 reflect information specific to the largest pension plan in which the state participates (see table 1), measured by its share of the state's total estimated net pension liability.

Only a rating committee may determine a rating action and this report does not constitute a rating action.

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Exhibit 3

COMMONWEALTH OF KENTUCKY
FRANKLIN CIRCUIT COURT
DIVISION I
CASE NO. 18-CI-379
ELECTRONICALLY FILED

COMMONWEALTH OF KENTUCKY,
ex rel. ANDY BESHEAR, ATTORNEY GENERAL, *et al.* PLAINTIFFS

v.

MATTHEW G. BEVIN, in his official capacity
as Governor of the Commonwealth of Kentucky, *et al.* DEFENDANTS

AFFIDAVIT OF JOHN CHILTON

Comes the affiant, John Chilton, first being duly sworn, and states as follows:

1. I am over the age of 18 and of sound mind.
2. I am a resident of Jefferson County, Kentucky.
3. I have personal knowledge of the facts asserted in this affidavit.
4. I currently serve as the Budget Director for the Commonwealth of Kentucky, and I also serve on the Board of Trustees of the Kentucky Retirement Systems.
5. The Commonwealth of Kentucky hired The PFM Group to study Kentucky's public pension systems and provide a performance and best practices analysis.
6. The PFM Group provided the requested analysis in three separate reports.
7. As part of my job duties, I received and reviewed those reports.
8. True and accurate copies of the three reports from The PFM Group are attached hereto as Exhibits A, B, and C.

Further the affiant sayeth naught.

John Chilton

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COMMONWEALTH OF KENTUCKY)
)
COUNTY OF FRANKLIN)

Subscribed and sworn to before me this 23rd day of May, 2018, by John Chilton.

Julie Shinkle #59136
Notary Public

Julie Shinkle Notary Public State at Large Kentucky

My commission expires on the 12 day of 7, 2021.

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Exhibit A

Commonwealth of Kentucky

Pension Performance and Best Practices Analysis

Interim Report #1: Transparency and Governance

December 30, 2016

The PFM Group
Financial & Investment Advisors

In conjunction with:

PRM Consulting Group
Stites & Harbison PLLC

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- Procurement Practices and Use of the Model Procurement Code
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- Board Member Disclosure/Conflict of Interest

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- Staffing Within the State Personnel System

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- The Pew Charitable Trusts: "Making State Pension Investments More Transparent," February 2016
- Institutional Limited Partners Association (ILPA) Fee Transparency Initiative Template, October 2016

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Introduction

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Introduction

The Commonwealth of Kentucky sponsors three major retirement systems, collectively providing pensions and retiree healthcare benefits to tens of thousands of retired state, local government, school district, and nonprofit employees across the state. Within these three major systems, there are eight pension plans in all, each with different operating practices and benefit plan designs, covering specific employee groups.

For the pensioners and current workers within these covered groups, the reliability and security of these retirement programs are paramount. At the same time, these systems represent a significant investment for Kentucky's taxpayers, and their affordability and financial sustainability bear strongly on the capacity of the Commonwealth and its local governments to address other critical public needs.

Currently, while the condition, pressures, and dynamics vary across each of these three major systems and their component parts, the Commonwealth's retirement programs in the aggregate are among the most challenged in the nation. According to a recent credit rating agency analysis that evaluated each state's proportionate share of liability for public employee pensions as of FY2015, Kentucky systems had the worst overall ranking – with combined funding set aside at just 37.4 percent of the levels required to pay for their current long-term obligations.

FY2015 Worst-Funded Pension Ratios – Aggregate of State Liabilities		
	Median	**74.6%**
	Average	**73.2%**
46	Rhode Island	55.5%
47	Connecticut	49.4%
48	Illinois	40.2%
49	New Jersey	37.8%
50	**Kentucky**	**37.4%**

Source: Standard & Poor's, *U.S. State Pensions: Weak Market Returns Will Contribute to Rise in Expense*, September 12, 2016

More recently, the latest FY2016 actuarial valuation for the Kentucky Employees Retirement System (KERS) Non-Hazardous pension component of the program covering state civilian employees within the broader Kentucky Retirement Systems (KRS) reported a funded ratio of just 16.0 percent, down from 19.0 percent in FY2015. While funding levels are higher for the public safety, local government, teachers, and judicial and legislative programs, all of Kentucky's systems are underfunded and the aggregate challenges remain quite severe.

In this general context, the Commonwealth's Finance and Administration Cabinet, through a competitive process, has selected a team led by PFM Group Consulting LLC to develop a range of analyses that illustrate the current and projected financial condition of the systems, and draw on best practices nationally to provide options and recommendations for improvement and reform. Over the months ahead, the PFM Group team will report on these critical issues.

This first report is focused on ***transparency and governance*** for each of the Commonwealth's three major systems. In later reports, we will address investment performance, structural governance,

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administrative structure and efficiency, actuarial and funding approaches, plan design, and other aspects of each of the three retirement systems.

Concerns regarding pension transparency and governance are not unique to Kentucky. As state and local pension funded ratios nationally have eroded, scrutiny of investment performance and the cost of investment options has increased. Further, increased asset allocations across many systems into alternative investments such as private equity and hedge funds[1] has generated new questions and challenges for measuring and reporting fees, costs, and performance. In addition, the increased availability of information and data generally across society has raised expectations for public sector transparency.

Within Kentucky, the Commonwealth's system with the largest membership, KRS, has been the focus of particular concerns in recent years – many directly relevant to all three major retirement systems. Not only has the KERS Non-Hazardous plan within the KRS experienced extraordinarily sharp declines in its funded ratio, but a series of audits and evaluations have surfaced issues related to the appropriateness of procedures, internal controls, disclosure policies, potential conflicts of interest, the engagement of placement agents, and the absence of standardized written investment policies.[2]

Between 2006 and 2014, four Chief Investment Officers have been appointed at the KRS, with at least one resignation due to audit findings. Compounded by this executive turnover, the KRS has a recent history of high investment management fees and relatively low returns, further elevating the importance of a transparency and governance review.

To address these and other concerns, Governor Bevin issued Executive Order 2016-340 on June 17, 2016 to reform the KRS, and the Kentucky Legislature has considered legislation to strengthen transparency and governance and transparency broadly across all three of the Commonwealth's retirement systems.[3]

- To help inform next step actions, this report addresses the following issues through a mix of benchmarking and best practices analysis: Fee and Performance Reporting
- Exceptions to Investment Disclosure Requirements
- Procurement Practices and Use of the Model Procurement Code
- Use of Placement Agents
- Disclosure of Member Benefits
- Board Member Disclosure/Conflict of Interest
- Board Structure and Qualifications

[1] A hedge fund is an alternative investment vehicle with a goal of outperforming the market or providing a hedge against market changes, typically structured as a limited partnership. Third party investors such as pension funds, banks, and wealthy individuals invest in the partnership as limited partners while the hedge fund management group serves as the general partner. Hedge funds can use a wide range of strategies and tactics, but often employ a greater degree of risk and leverage than more traditional investments in pursuit of a higher return.

[2] Review of the Kentucky Retirement Systems Perimeter Park West, Inc.'s Holly Hill Land Purchase, Finance and Administration Cabinet Office of Policy and Audit, July 6, 2009; Examination of Certain Policies, Procedures, Controls, and Financial Activities of Kentucky Retirement Systems, Kentucky Auditor of Public Accounts, June 28, 2011.

[3] Senate Bill 2 (SB2) was introduced during the 2016 Kentucky General Assembly. It is considered the benchmark legislative initiative to address transparency (and, to a more limited extent, governance) issues across the Commonwealth's retirement systems. The provisions of SB2 were evaluated as a component of this report, and may be found in full at the following link: http://www.lrc.ky.gov/record/16RS/SB2.htm

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Introduction

- Staffing within the State Personnel System

Our review indicates that the Commonwealth's recent actions to reorganize KRS Board, to establish higher standards for appointment, and to enhance governance, reporting, contracting and personnel practices, are all aligned with best practices for governance, administration, and transparency.

Further recommended refinements and/or actions to institutionalize executive reforms by statute, as well as parallel measures to strengthen the Teachers Retirement System of Kentucky (TRS) and the Kentucky Judicial Form Retirement System (KJFRS), are summarized in the table that follows and detailed throughout this report.

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Summary of Recommendations	
Recommendations	Considerations
Transparency	
Improve fee transparency for all systems by: • **Requiring reporting of actual dollar fees and expense ratios from all managers.** • **Adopting the Institutional Limited Partners Association (ILPA) Fee Transparency Initiative Template and reporting alternative investment results on that basis.** • **Making investment policy statements accessible.** • **Disclosing all performance, both net and gross of fees for the following time periods: current quarter, 1 year, 3 years, 5 years, 10 years and, to the extent possible, 20 or more years.** • **Reporting performance results for the plan and by asset class and manager, net and gross of fees.**	Follow industry best practices by making fee reporting and net investment performance results more comprehensive and transparent.
Improve internally managed expense transparency for all systems by reporting associated personnel, research/data service, and other operating costs separately from total investment and/or administrative expenses, particularly for index strategies.	Follow industry best practices by making all net investment reporting more comprehensive and transparent, and allowing comparisons between externally and internally managed portfolios.
Amend KRS 61.878 to allow for complete disclosure of all investment fees for all managers by modifying the unfair commercial advantage language so that it is limited to investment strategy information or other intellectual property, and not fees or the cost of investment services to the system.	Follow industry best practices by making investment manager fee information more comprehensive and transparent.
Post offering documents, but not investment manager contracts, publicly to the web site.	Posting investment manager contracts publicly would be beyond standard industry practice and likely have a greater negative impact on the ability to attract qualified managers than disclosing their fees.
Establish a clear written policy and procedure for procurement of investment managers and funds, but maintain exemption from the Model Procurement Code for investment managers.	Following the Model Procurement Code for investment managers would potentially inhibit the ability to react to markets and make changes to portfolios in a timely manner.
Restrict access to funds using placement agents either through prohibition of use of retirement system funds for placement agent fees, or under strict guidelines for disclosure, compensation and behavior.	Preserving flexibility to invest via placement agents may have some long-term benefits, but only under proper conditions. Otherwise, prohibiting use of placement agents would address concerns and should maintain an appropriate range of investment options.

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Summary of Recommendations	
Recommendations	Considerations
Modify privacy protection of member benefit information through confidentiality restrictions in KRS 61.661 tailored to specific job classifications.	Retirement system member benefit information is treated as open records in some states, and there is a legitimate public purpose in having access to tailored data.
Review current KRS and TRS Conflict of Interest policies and the Kentucky Executive Branch Code of Ethics for additional opportunities to strengthen and clarify requirements.	Statute and policies in other states demonstrate greater detail on the responsibilities of members, particularly regarding campaign contributions and Board members acting in an individual capacity.
Governance	
Amend the KRS Board by statute to increase the number of executive appointments to the Board and investment committee with investment experience by between one and four.	Improve the oversight and stability of KRS by adding expertise to the Investment Committee, in line with requirements of states with a single fiduciary Board model or separate investment fiduciary Boards.
Amend the TRS Board by statute to add six appointments by the Governor to the TRS Board, requiring two or more of the appointments to have investment experience.	Increase the diversity of stakeholder perspectives on the Board, which was the only Board in the peer group with no executive or legislative appointments, and add formal investment experience requirements to the statute.
Require the advice and consent of the Senate for executive appointments to the KRS and TRS Boards.	Most of the 20 peer states reviewed provide for legislative appointment or oversight of Board members, providing additional input and check-and-balance on oversight. The KJFRS **b**oard already has direct legislative appointments.
Amend the KJFRS Board by statute to require the two executive appointments to have investment experience.	There is currently no formal investment experience requirement for Board members.
Consider exempting KRS senior investment officials, in addition to the Executive Director, from the state personnel system.	KRS has a need for the best possible tools for recruiting and retention in investment positions. Under the state personnel system, KRS may not have as much flexibility to offer market-based compensation packages to hire and retain appropriate staff expertise for the oversight of multibillion dollar investment programs and may face issues with prolonged vacancies. While a similar exemption may also be warranted for the overall chief executive officer overseeing all system activities, continued use of the state personnel system remains a reasonable approach for other non-investment professional, customer service, administrative, and support positions.

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Transparency

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Fee Reporting

The issue of fee transparency and performance reporting has been a major topic among state retirement systems in recent years, taking on even greater importance as allocations to alternative investments nationally have trended upward.[4] This is a direct result of the complex fee structure of many alternative investments, like private equity, and the difficulty in measuring the true costs incurred by investors. Although some guidance for disclosure has been provided by the Governmental Accounting Standards Board (GASB) and other organizations, such direction has not kept pace with the rise in alternative investments. In turn, this has led to inconsistent interpretations of the guidelines and significant variations in fee disclosure and performance reporting across state retirement systems.

Illustrating the varying degree of transparency and reporting among state pension systems nationally, the following table outlines the fee and performance reporting disclosed in the Comprehensive Annual Financial Report (CAFR) for each state.

Fee Disclosures	Overall Investment Manager Fees (external)	Carried Interest / Private Equity Related Fees (external)	Other Expenses (custodian, commissions, etc. - external)	Total Expenses (including internal costs)	Total Plan Performance (net/gross)
California	Yes	Yes	Yes	Yes	Multiple*
Georgia	Yes	Yes	Yes	Yes	Multiple *
Indiana	Yes	No	Yes	No	Net
Massachusetts	Yes	No	Yes	No	Gross
Missouri	Yes	Yes	Yes	Yes	Net
New York	Yes	Yes	Yes	Yes	Multiple *
North Carolina	Yes	Yes	No	No	Net
Ohio	Yes	No	Yes	No	Net
Oregon	Yes	Yes	Yes	Yes	Net
Pennsylvania	Yes	Yes	Yes	Yes	Net
Rhode Island	Yes	Yes	Yes	Yes	Net
South Carolina	Yes	Yes	Yes	Yes	Net
Tennessee	Yes	No	Yes	No	Gross
Virginia	Yes	Yes	Yes	Yes	Net

*States marked as having "Multiple" reporting methods have two funds that report differently from one another.

Even among the various Kentucky retirement systems, fee disclosure practices have varied, as shown in the table below.

[4] An alternative investment is an asset that is distinct from the conventional investment classes, such as stocks, bonds and cash. Alternative investments are typically held by institutional investors (including pension funds) or high-net-worth individuals because of the complexity and more limited regulation of such investments. Examples of alternative investments include private equity, hedge funds, real estate, and derivatives contracts.

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Transparency

Fee Disclosures	KRS	KTRS	KJFRS
Overall Investment Manager Fees	Yes	Yes	Yes
Carried Interest / Performance Fees	Yes	Not Specified	N/A*
Other Expenses (custodian, commissions, etc.)	Yes	Yes	Yes
Underlying Manager Fee Detail	No	Yes	N/A
Total Plan Performance (net/gross)	Gross and Net	Gross and Net	Gross and Net
Asset Class Performance (net/gross)	Gross and Net	Gross	Gross
Underlying Manager Performance (net/gross)	Gross and Net	No	N/A

**The KJFRS does not use underlying managers, but rather relies on its adviser to purchase individual securities, resulting in a finding of "N/A" for some disclosure categories.*

Although Kentucky's retirement systems have not historically provided the level of transparency now recommended by organizations like Pew and ILPA, the systems are trending in the right direction. Of particular note, Executive Order 2016-340 has added additional requirements to the fee reporting standards for KRS by requiring that

> *"investment holdings, fees and commissions shall be disclosed by each individual manager, including underlying individual managers in fund of funds and individual underlying holdings, and investment fees and commissions shall include any profit sharing, carried interest, or any other partnership incentive arrangements or agreements."*

To better address such fee transparency concerns and inconsistencies nationally, in 2015, a group of institutional investors announced the launch of a project called the Fee Transparency Initiative. The goal is to implement "best practices" for reporting the transparency of fees. The group consists of CalPERS, New York Teachers Retirement System State Teachers Retirement System of Ohio, and others, led by Institutional Limited Partners Association (ILPA).

The Fee Transparency Initiative resulted in a template to document all types of compensation paid to fund managers, including incentive compensation, profit sharing, and expenses that managers and their affiliates receive. The template is in a format that is comprehensive and based on a standard set of guidelines, but that also allows for some flexibility based on the unique fee structures for various types of investments. It is recommended that the template be completed on a quarterly basis, with expenses reported on a year-to-date basis to ensure timely delivery. As the industry advances and evolves, it is anticipated that the ILPA will make further revision to the ILPA template going forward. For reference, the 2016 ILPA template is included as an appendix.

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Transparency

In 2016, the Pew Charitable Trusts also published a best practices guide for fee transparency ("Making State Pension Investments More Transparent," February 2016), which is outlined in the table below, along with a brief summary of how Kentucky's retirement systems now compare against these standards. The full Pew report is also attached as an appendix.

Fee Transparency Best Practices	KRS Status	TRS Status	KJFRS
Adopt comprehensive fee-reporting standards, such as those proposed by the Institutional Limited Partners Association (ILPA) Fee Transparency Initiative	External investment manager fees as an annual percentage of assets are reported on website annually but only include publicly stated fee, not the actual fee negotiated or paid by KRS. Less transparent costs are not available.	Dollar amounts paid to each external manager are included in CAFR on website. Investment manager fee schedules and more detailed fee information are not provided separately on the website.	The actual dollar amounts paid are provided on their website. Fee schedules, assets and more detailed information are not provided. Fee-reporting standards proposed by ILPA would not be applicable to KJFRS at this time.
Make investment policy statements transparent and accessible	Investment policy statement is available on the website.	CAFR includes some information on asset allocation and investment policy. A separate investment policy document is not available on the website.	Investment policy statement is available on the website.
Disclose bottom-line performance, both net and gross of fees	Performance is available on website on a monthly and quarterly basis. Net of fees performance is shown in the consultant's report since inception. Gross of fees is shown for attribution purposes for select time periods only.	Gross of fee performance is available on website as of the most recent fiscal year end. Net of fees performance is reported for 2014-2016 fiscal years in the CAFR.	Performance is available on website on a quarterly basis. Net of fees is only shown for the total portfolio for the past 18 months. Gross of fees is shown for trailing 20 years.
Report results by asset class, net and gross of fees	Net and gross of fees is shown for individual investment manager and asset class levels.	Gross of fees performance is shown for the asset class level. Individual investment manager performance is only shown for the "Alternative Credit" category.	Gross of fees performance is shown for asset class level.
Expand reporting to include longer-term performance results (20 years)	Total plan performance is shown for periods up to 10 years and since inception. Asset class performance is shown for periods up to 25 years and since inception.	Total plan and asset class performance is shown for trailing 20 years but not since inception.	Total plan and asset class performance is shown for trailing 20 years but not since inception.

Source: The Pew Charitable Trusts: "Making State Pension Investments More Transparent," February 2016

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Performance Reporting

In addition to the disclosure of fees paid to investment managers and other service providers, performance reporting has also been included in discussions of improved transparency and consistency. As shown in the preceding table, the Pew Charitable Trusts recommends calculating and reporting performance both gross and net of fees. This should not only include the standard management fee, but all additional performance-based fees and other costs paid to the managers.

Similar to the lack of consistency in fee transparency, performance reporting among state retirement systems also varies. According to the 2016 Pew research, a majority of states report net of fees, 15 states report gross of fees, one state (South Dakota) discloses performance both net and gross of fees, and Kentucky is one of seven states to provide performance in a different way depending on the plan. It is important to note, however, that Pew's analysis is based on information found in each plan's CAFR, which may differ from the annual or quarterly performance reports posted to their websites.

2016 SB2, as proposed, would have established additional requirements related to performance reporting and related information that would be posted to the retirement system websites. Each Kentucky system would provide:

> *"an update of net investment returns, asset allocations, and the performance of the funds against benchmarks adopted by the board for each fund and for each asset class administered by the board. The update shall be posted on a quarterly basis for fiscal years beginning on or after July 1, 2008."*

KRS and TRS have been providing performance both gross and net of fees in recent reports.

Fee and Performance Reporting Recommendations

We believe that the general trend towards greater transparency of investment fees and performance is a positive one that reduces the risk of excessive fees and conflicts of interest between Board members and service providers. Better disclosure should also allow for better decision making by the Board members as they will have easier access to relevant information. Although there is some level of concern that disclosing all fees paid to investment managers could limit the pool of managers willing to negotiate lower fees and do business with the retirement systems (due to the possibility of their fees becoming public, thereby reducing their ability to negotiate fees with other current and future clients), we feel that the benefits of increased transparency outweigh this concern in almost all circumstances.

In addition to greater transparency of external manager fees, the retirement systems should also work to improve the level of transparency regarding the costs of internally managed investments. Both KRS and TRS deploy internally managed strategies for some investments, but include such investment-related expenses as part of the systems' broad administrative costs. These assets have a significant

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weight in the portfolios (23 percent in KRS and 42 percent in TRS) and all expenses related to the management of these accounts should be identified, appropriately allocated, and fully disclosed along with the other investment fees to provide greater clarity about both investment costs and the cost of non-investment administration. Disclosure of these costs to each Board Investment Committee in detail and to each Board in summary, just as now done for the externally managed funds, will provide better information for decision-making.

For example, Missouri provides a line item in its CAFR labeled "internal investment activity expenses" and then provides a detailed breakdown into various categories (i.e. personnel, facilities, software, education, travel, research/data services, memberships, etc.) related to internal investment activity. Without this information, it is impossible to fully evaluate whether or not it makes sense to manage these assets internally or outsource them to a third-party. The costs related to index strategies, in particular, should be compared to external passively managed funds, which typically have low management fees.

Overall, the guidelines outlined in KRS Executive Order 2016-340 and the proposed 2016 SB2 represent significant improvements over the historical standards followed by each of the three Kentucky retirement systems. Building on these measures toward full transparency and accountability, we strongly recommend that the retirement systems follow the best practices established by the Pew Charitable Trusts, which include the adoption of the ILPA fee reporting template.

Although not specifically addressed in the best practices matrix on page 12, we would also specify our recommendation that:

- Manager fees should be reported as both dollars and expense ratios.
- Performance for each underlying manager should be reported both gross and net of fees.

Each Board, in accordance with its fiduciary responsibilities, should require detailed fee compensation information from each of the managers so that Board members can individually and collectively be knowledgeable and understand all fees and compensation being paid to the managers and their related parties. This information should be reviewed in detail by each Board Investment Committee and investment staff, with summary reports to be reviewed by each full Board and posted on each system's website for availability to the general public.

Among the types of fees the Boards should require are those provided through the ILPA template (as applicable) including:

- Management Fees – Gross of Offsets, Waivers & Rebates
- Management Fee Rebates
- Advisory Fees
- Broken Deal Fees
- Transaction & Deal Fees

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- Directors Fees
- Monitoring Fees
- Organizational Costs
- Placement Fees
- Capital Markets Fees
- Fee Waivers
- Partnership Expenses - Non-Overhead - Paid to GP and Related Parties
- Partnership Expenses - Overhead - Paid to GP and Related Parties
- Partnership Expenses - Non-Overhead - Paid Non-Related Parties
- Partnership Expenses - Overhead - Paid to Non-Related Parties

As it pertains to public information, it is also important to provide gross and net performance statistics for each of the managers, asset classes, and systems to the public on no less than an annual basis. Currently, the Commonwealth's Public Pension Oversight Board (PPOB) receives such information quarterly, which is good practice. Along with performance information, expense and compensation data should be provided for each manager separately using at least the following categories (as appropriate): manager fees and expenses (total direct and indirect compensation), fund advisory fee, operating expenses, carried interest, and all other expenses.

Exceptions to Manager Disclosure Requirements

In much the same way that there has been an industry-wide trend towards greater fee transparency, there has also been a demand for greater overall transparency of all third-party contracts, policies, and other related documents. Although there is no single set of best practices regarding the disclosure of such documents, much of the concern is linked to the issue of fee transparency as seen, for example, in The Pew Charitable Trusts best practices and ILPA Fee Transparency Initiative.

In Kentucky, both Executive Order 2016-340 and proposed 2016 SB2 outline a set of disclosure standards such that *"all contracts or offering documents for services, goods, or property purchased or utilized by the systems"* should be posted to system websites and readily accessible by the public.

At the same time, KRS 61.878 includes an exemption from publicly reporting any information that may compromise the retirement systems' ability to be competitive and would *"permit an unfair commercial advantage to competitors of the entity that disclosed the records."* Proposed 2016 SB2 addresses this exemption, but also states that *"no provision of this section or KRS 61.878 shall exclude disclosure and review of all contracts, including investment contracts, by the board, the Auditor of Public Accounts, and the Government Contract Review Committee established pursuant to KRS 45A.705 or the disclosure of investment fees and commissions as provided by this section."*

A primary concern that sometimes leads systems to limit their document disclosure is related to the fees that have been negotiated with investment managers, particularly in the private equity space. If investment managers are aware that their fees will be publicly available, they may be less willing to

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negotiate discounted fees or even to work with a retirement systems at all. In turn, this may negatively impact the quality of investment managers in the portfolio and, therefore, the investment returns.

Despite this concern, certain states like Missouri and California have enacted legislation to require the full disclosure of all such investment fees and arrangements. Although these states do not provide the actual contracts for each investment manager / advisor on their website, their CAFR is available and provides detail of fees paid to each investment manager, advisor, and other related third-party firms. There is also the ability to submit a public request for information, which may or may not include contractual agreements for service providers.

Recommendations for Exceptions to Manager Disclosure Requirements

Although we fully understand the concerns associated with providing detailed information regarding investment fees and related documents to the public, we believe the industry trend is towards greater transparency and would recommend that Kentucky be at the forefront of that trend. As noted above, the guidelines provided by The Pew Charitable Trusts and the ILPA serve as best practices regarding fee disclosure. In both cases, there are no exemptions for sensitive information like reduced fees negotiated with alternatives managers. Accordingly, in keeping with the goal of strong disclosure, we would recommend amending / removing the exemptions outlined above in KRS 61.878 and related statutes to allow for complete disclosure of all investment fees by KRS, TRS, and KJFRS. This would align Kentucky's disclosure policy with what we believe are industry best practices and mirror what is already being done by Missouri and California, among others, which are viewed as leaders in the trend towards greater transparency.

More specifically, we recommend:

- Complete disclosure of fees, expenses, and other compensation paid to managers and other service providers should be required by statute, with reports on at least an annual basis to each Board investment Committee and staff in full detail.
- Summary level reports should be developed by each Board investment Committee and staff for presentation to each full Board on at least an annual basis, with these summary reports made available to the public.
- The ILPA template should be the minimum standard for reporting on partnership-type and other alternative investments and managers.

Offering documents, such as prospectuses or offering memorandums, typically contain standard disclosure language on the investment objectives/risks and firm structure that must be provided to a prospective investor before execution of a contract. Because these documents are readily provided by the investment manager prior to entering into an agreement, we do not believe the information contained in these documents is sensitive enough to warrant exclusion from public disclosure. As a result, we would recommend that these documents be made publicly available to provide interested parties with additional information on the investments within the plans.

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With regard to contracts with investment managers, however, we believe that publishing such detailed information would be beyond the scope of best practices for transparency and could have a negative impact on the systems' ability to hire quality investment managers. While even the public disclosure of investment manager fees may cause some managers to shy away from doing business with the Commonwealth, we believe that this would be a relatively small group, with such action warranted by the importance of greater transparency. The public disclosure of the actual agreements entered into between the Commonwealth and investment managers, on the other hand, would more likely lead to a significant number of quality managers that are unwilling to manage assets for the systems.

Such investment manager contracts typically contain sensitive information related to most-favored-nation clauses, investment strategies or procedures, personnel information, indemnification language, opportunities for co-investment, and/or other proprietary details about the managers' business and approach that they would not want made public. We believe it is important that all such information be available to and reviewed by the systems' investment staff and Board Investment Committees, and that such review by well-qualified representatives provides sufficient protection for the systems and the public.

Accordingly, we recommend:

- Prospectuses, offering memoranda, and other standard offering documents should be made available on the systems' publicly available websites.
- Final manager contracts should be reserved for detailed review by each system's Board Investment Committee and staff.

Procurement Practices and Use of the Model Procurement Code

Purchasing regulations and policy for the Commonwealth's retirement systems have varied over the years, with the KRS, TRS, and KJFRS now exempted from the general State Model Procurement Code. The KRS and TRS rely on written procurement policies adopted by their respective Boards to guide purchasing, while the KJFRS has no written procurement policy.

In 2016, Kentucky's Legislative Research Commission (LRC) staff surveyed all 50 states and the District of Columbia regarding practices nationally for including or excluding state retirement systems from general purchasing codes. As shown in the resulting LRC analysis as presented to the Commonwealth's Public Pension Oversight Board (PPOB), 29 states (57 percent) had no procurement code exemption for their state retirement system, while 20 states (38 percent) had an explicit exemption from the procurement code for their state retirement system.

For this current transparency report, the PRM Consulting group – a member of the project team – conducted a survey of a 20-state benchmarking group also used to examine Board composition. This survey group will also be used in later reports for benchmarking benefit plan design, investment performance, and other system features. These systems include the seven states contiguous to Kentucky, other regional states of similar scale, and certain states where, like Kentucky, teachers are not covered by Social Security.

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Similar to the results found by the Pension Oversight Board presentation, the PRM 20-state survey found that explicit exemptions from state procurement laws are common, but not universal. Of note, Virginia explicitly states that procurements by the retirement Board of trustees are not subject to the state procurement act, while Indiana statutes note that general policies do not apply to alternative investments, thus giving their investment committee increased leverage to invest in alternative arrangements. Some states, such as Ohio and Missouri, allow their Boards to set up their own policy regarding selecting vendors for investment advisory services, and Indiana and Illinois place the authority for entering contracts for investments and advisory services in alternative entities, in the hands of the Executive Director and Illinois Board of Investment respectively.

The following chart includes detail about each state's exceptions, if any, included in the PRM review.

State	Retirement System Exemptions from General State Purchasing Requirements
Illinois	The system is exempt from the State's model procurement code, but does have a written procurement policy. The Illinois State Board of Investment can directly invest pension assets in public market, private, and real estate investments. The Board may not delegate management functions, but can arrange personalized investment advisory services
Indiana	Executive Director has full authority to enter all contracts on behalf of the system. General procurement policies apply except for contracts for alternative investments
Kentucky	Exempted from state purchasing laws. Contracting authority lies with each Board
Maryland	Two candidates for vendors required to be submitted to the Board for consideration and possible interviews
Missouri	The CIO oversees the system's Chief General Asset Consultant who serves under contract of the Board. The CIO can hire outside service providers provided the hiring process follows the Board's Investment Policy
Ohio	Board establishes policy for selecting investment manager
Virginia	The selection of services related to the management, purchase, or sale of authorized investments, actuarial services, and disability determination services shall be governed by the standard of care in § 51.1-124.30. Procurements through the Board are not subject to the State Procurement Act
Rhode Island, South Carolina, South Dakota, Tennessee, West Virginia, Wyoming have no retirement system exemptions from State procurement policies	

Recommendations for Procurement Practices and Use of the Model Procurement Code

Procurement Codes work best when dealing with distinct, ministerial processes or tangible services (like building a building or processing payroll), and are generally less effective when dealing with ways of thinking and other more complex services and approaches.

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In addition, investment strategies and capital markets can change quickly based on newly released economic data or political instability and the resignation of a portfolio manager can greatly disrupt the ability of an investment manager to perform in the future. Being tied to a stringent procurement process, such as the Model Procurement Code, would greatly reduce the ability of the systems and their investment consultants and staff to make changes to the portfolios in a timely manner, potentially to the detriment of investment performance.

Instead, the systems would be better served to stringently evaluate the process for identifying, evaluating and following managers for inclusion in a search process. When agreed to, all managers should be evaluated against such an internal process and presented for consideration and approval under this consistent and structured approach. This process, which would range from the start of the search process to the signing of the manager contract and investment of assets, should be well documented and made public to ensure complete transparency and accountability regarding the selection of investment managers and strategies.

As long as a sound and structured selection process is in place, with strong transparency and disclosure requirements, we do not recommend that the retirement systems adopt the Model Procurement Code for the hiring and firing of investment managers. To be clear, however, use of the Model Procurement Code would be entirely appropriate for other service providers, including investment consultants, custodians, and operational vendors and suppliers.

In addition, even if the Commonwealth were to maintain the Model Procurement Code as a vehicle for the selection of some investment managers, we recommend the continued exemption of investment in passively managed index funds that simply mirror a benchmark and provide market returns at a low cost. In the event that active and specialty managers were included in the procurement process, the exemption for passively managed index funds would provide the portfolios with the flexibility to gain market exposure quickly without having to wait for the procurement process to be completed. In turn, this would prevent the portfolios from remaining invested in poorly performing managers or strategies for an excessive period of time due solely to rigid and time consuming procurement procedures.

In sum, we recommend:

- The selection of investment managers by the Commonwealth's retirement systems should remain exempt from the Model Procurement Code to maintain maximum flexibility and speed, so long as the processes involving such managers are fully documented, transparent, and consistent.
- Other retirement system purchases and contracting may appropriately be covered by the Model Procurement Code, including the selection of any consultants engaged to provide global direction on asset allocation, manager selection, and other elements of investment strategy and management.

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- Purchasing in support of general, day-to-day operations may also be appropriately covered by the Model Procurement Code.

In general, it may also be noted that Kentucky's purchasing system provides for some exemptions from standard competitive bidding procedures when well supported by operational requirements and approved in advance. With this existing flexibility, the need for full exemption from the Model Procurement Code can, again, be limited solely to the selection of investment managers.

Use of Placement Agents

A placement agent is an individual or firm hired to act as a marketing intermediary, or "middleman" for an asset manager, to sell its investment products to investors – linking investment firms with public pension funds. Placement agents act as third-party marketers, and are neither employees of investment managers nor subject to manager supervision of their activities.

Because of the lack of relationship clarity and managerial oversight, investors are often unaware that placement agents are paid marketers for the managers that have retained them and may be unfamiliar with the sometimes large amounts of compensation placement agents can receive for directing investors. Placement agent fees can be significant and typically average about 1 percent of the total investment, which is often more than traditional equity and fixed income managers charge for their services in total.

According to a study conducted by Stephen McKeon of the University of Oregon, and Matthew D. Cain, a financial economist at the SEC based on data from Preqin, a leading source of data and intelligence for the alternative assets industry, in 1991, placement agents were almost nonexistent. By mid-2014, however, they were involved in 41 percent of the fund-raising for North American private equity firms and became a staple of some pension funds. For example, the California Public Employees' Retirement System (CalPERS), invested in 784 funds using placement agents from 1991 to 2011, according to Preqin. Of those investments, approximately 27 percent of the funds CalPERS invested in during that time had a placement agent. Further, some of the placement agents made campaign contributions to Board members in a pay-to-play scenario that resulted in a serious corporate governance black eye for CalPERS.

The reason systems allow placement agents is the perception that placement agents can connect pension funds to lesser-known private equity funds that might produce high returns. Similar to real estate agents, placement agents can also serve as information sources, guiding pension funds through the private equity process and helping them select better investments.

Placement agent fees are generally paid directly by money managers to the agents for securing investors such as public pensions. However, placement agent fees are ultimately associated with the fund fees paid by investors to managers because most money managers will need to account for this expense in their overall fund fees so that their intended revenue is not reduced. These fees are not easily identified by Board members, thus resulting in relationships of middlemen obtaining millions of dollars in fees.

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KRS has, like many other state systems, allowed placement agents to introduce investment managers – leading critics to question the size of the fees incurred and the nature of the relationships and investment decisions involved. As alluded to on page 5, previous audits and reviews identified payments to placement of $13 million over one five-year period, found issues with following controls and procedures regarding their use, and resulted in SEC investigation. The TRS and KJFRS have not used placement agents.

Similarly, the availability of large sums of fee payments, coupled with often long-term relationships and the lack of transparency surrounding placement agent fees, has led to instances of real or perceived corruption nationally – and ultimately to some states now banning the use of placement agents in their public pension funds altogether. For example:

- The former CEO of CalPERS pled guilty to conspiracy to commit bribery.
- The former Controller of New York State went to jail over a pay-to-play scandal involving placement agents.
- A Dallas money manager in 2009 pleaded guilty to corruption charges in New York for paying kickbacks to a placement agent who doubled as the chief fundraiser for that state's comptroller.

Such events led to the City of New York to ban placement agents from all five of their pension funds across all investment classes, and New Mexico and Illinois have also banned placement agents.

In an alternative approach, the following states passed legislation requiring placement agents to register as political lobbyists and to disclose their compensation received.

States Requiring Placement Agents to Register as Lobbyists	
California	New Jersey
Florida	North Carolina
Kentucky	Ohio
Maryland	Texas

For Kentucky, as a result of past placement agent scandals, the Kentucky General Assembly amended the definition of lobbyists as described above in 2012, and prohibited KRS, TRS, or KJFRS funds to be used to pay placement agents that are not registered with the SEC. In addition, the KRS Board adopted a Manager and Placement Agent Disclosure Policy, requiring full disclosure of the existence of placement agents and the fees paid to them by investment managers. The policy includes the disclosure of any conflicts of interest, political contributions, services, and fees paid related to investments in KRS. This policy went into effect in August 2012.

Other states adopting placement agent disclosure rules include the following:

States with Placement Agent Rules or Disclosure Policies	
Indiana	Oregon
Massachusetts	South Carolina
Missouri	Virginia

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Tennessee and New Jersey have also implemented disclosure rules, using the SEC final 2010 rules and requiring placement agents to be registered with the SEC, FINRA, or similar state agency.

The Missouri State Employee Retirement System (MOSERS) was an early adopter of alternative investments, some with placement agents, and yet has still been considered a successful system with good governance and solid investment policies. MOSERS understood the risks and limited familiarity of some Board members with such investments and practices, so became one of the first systems to adopt a formal placement agent disclosure policy, as cited below:

- *Use of placement agents is recognized as a useful tool to be able to invest in uniquely positioned investment firms. However, external service providers are required to provide placement agent information prior to contracting with MOSERS. Information includes a description of fees arrangements, and information on SEC and/or lobbyist registration.*

The McKeon & Cain study referenced above also found that there can be a "too close" relationship with a pension fund and placement agent. It found that when a pension fund begins to invest with a single placement agent, trouble often ensues. In the 20-year period of the study, only three such firms had exclusive relationships with a pension fund. All three – Arvco Capital Research, the Wetherly Capital Group, and Diamond Edge Capital Partners – had employees convicted in pay-to-play scandals.

The following table includes a list of the top 15 public pension funds invested in private equity and the percentage of their investments that employ a placement agent as of 2011. Please note that this analysis does not indicate whether the given pension fund invested through a placement agent or directly with the fund for any given investment.

Rank	Limited Partner	Type	# of Investments	% With Agents
1	California Public Employees' Retirement System	Public Pension	784	27.4%
2	Pennsylvania State Employees' Retirement System	Public Pension	404	21.7%
3	California State Teachers' Retirement System	Public Pension	377	26.4%
4	State Universities Retirement System of Illinois	Public Pension	303	15.6%
5	Michigan Department of Treasury	Public Pension	301	19.0%
6	State of Wisconsin Investment Board	Public Pension	274	23.9%
7	Washington State Investment Board	Public Pension	273	18.1%
8	Oregon State Treasury	Public Pension	273	32.9%
9	Illinois Municipal Retirement Fund	Public Pension	272	22.7%
10	Pennsylvania Public School Employees' Retirement System	Public Pension	269	35.4%
11	Virginia Retirement System	Public Pension	254	18.0%
12	Regents of the University of California	Public Pension	253	21.8%
13	Los Angeles Fire and Police Pension System	Public Pension	245	29.0%
14	San Francisco City & County Employees' Retirement System	Public Pension	237	22.2%
15	Los Angeles County Employees' Retirement Association	Public Pension	236	16.5%

Table above drawn from a league table ranking of the top 20 U.S. investors in private equity (i.e., limited partners) ranked by number of investments. In addition to the public pension funds listed above, endowments and funds of funds are also included in the overall top 20. The final column reports the equal-weighted percentage of funds which employ a placement agent. Data as of 2011.

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Recommendations Regarding Use of Placement Agents

Among other states, here is a great disparity in placement agent rules, ranging from bans to various levels of disclosure requirements. In some cases, placement agents must register as lobbyists. The SEC has also played a role in regulating the use of placement agents, requiring investment advisors to work with agents who are registered with the SEC or with a broker dealer. Most states, like Kentucky, require the complete and timely disclosure of all relationships of intermediaries like placement agents.

There is no global best practice for dealing with the placement agent issue. Different jurisdictions and systems have developed policies to fit their particular situations. For organizations with large investment teams like CalPERS, perhaps the value of a placement agent is minimized. For other smaller organizations, the placement agent is a way to gain visibility into a manager that would not otherwise be gained. Regardless of the investment value, the issues relating to compensation (transparency and reasonableness) and governance (no self-dealing or conflicts of interest) applies to all. As a general rule, we believe that investing in funds represented by placement agents can be warranted in some, specific circumstances and can help add value to a portfolio. As such, preserving flexibility to invest via placement agents may be beneficial to the systems, but only if properly monitored and documented to help avoid the aforementioned pitfalls.

The current KRS policy allows for the use of placement agents as long as all relationships, fees, and status as a registered lobbyist are fully disclosed. The proposed legislation in 2016 SB2 would implement a further significant change by stating that "no funds…including fees and commissions paid to an investment manager, private fund, or company issuing securities, who manages system assets, shall be used to pay fees and commissions to placement agents." Given the typical fee arrangements between placement agents and investment managers, this would likely prevent the retirement systems from investing in funds using placement agents at all.

The Commonwealth could reasonably sustain a complete or effective ban on placement agents through an approach like SB2. If the Commonwealth wished to preserve a somewhat larger range of investment options in the long term, the following recommendations would help guard against potential abuses:

- The systems should reserve the potential benefits of placement agents in limited circumstances while simultaneously implementing strict guidelines for compensation and behavior.
- Much as with lobbyists or other government relations professionals assisting businesses with navigation of public purchasing processes, the impact of any use of placement agents should be closely monitored and should adhere to the following guidelines:
    - Placement agents should only be allowed as a way to access small, less visible managers, never for larger funds that are easily accessed directly by system staff (i.e. $300M in assets vs. $1B).
    - Placement agents must register as a broker-dealer with the Securities and Exchange Commission (SEC) and with the Commonwealth as a lobbyist to help ensure compliance with rules relating to conflict of interest and self-dealing, among other issues.

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- The placement agent, investment manager, the internal investment team, and the Board should all be required to fully disclose any relationships to ensure no conflicts or self-dealing exist during the consideration of an investment involving a placement agent.
- Any real, potential, or perceived conflicts of interest involving the system Boards or staff should require the recusal of any involved individuals during consideration.
- There should be full disclosure of compensation to the placement agent (term, duties and amount) and to the external investment managers or advisors, using full disclosure formats such as the ILPA template, so that the Board can consider the reasonableness of all compensation and other factors.

Disclosure of Member Benefits

The account information and actual or estimated retirement annuity amounts for active and/or retired members of KRS, TRS, and KJFRS has been protected as confidential information exempt from the Federal Freedom of Information Act or similar state open records requests, based on the KRS 61.661 statute.

In recent months, The Bluegrass Institute, an independent Kentucky public policy research and educational organization, circulated a "transparency pledge" that would require amending this exemption specifically for legislators and their account information. Since legislators receive reciprocity for service in other governmental retirement systems, the pledge required that any service in KRS, TRS, or KJFRS be included and factored into the estimates that would be made available for disclosure. The Bluegrass Institute reports that 40 of the incoming representatives and a portion of senators signed the pledge.[5]

The determination of whether this information is or should be public is entirely a state legal and policy decision. Our review of the 20 other benchmark retirement systems indicated at least 10 will provide this information for employees generally. In six of those cases, batch files have been made available for third parties to post all data on a searchable web site, either by transparency-oriented non-profits or news sites. Alternatively, a system could post such information directly.

The State of Florida has a clear and detailed Public Records Policy, and "will not produce or generate information that does not already exist in the division's records or a member's retirement account file. The division will not calculate an estimate of an FRS member's pension plan retirement benefit in response to a public records request and will only release previously calculated estimates of retirement benefits."[6] The Florida Policy exempts from disclosure a large number of job classifications or members of certain job classifications based on their duties.

We have to date only confirmed several other benchmark states that treat pension benefit information as confidential. Virginia prohibits disclosure of personal information from public information requests based on privacy considerations. Indiana statute *"provides that Fund records of individual members and membership information are confidential, except for the name and years of service of a fund member."*

[5] http://www.bipps.org/tag/legislative-transparency-pledge/
[6] http://www.dms.myflorida.com/workforce_operations/retirement/public_records

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Recommendation for Disclosure of Member Benefits

Disclosure of pension benefit information is not uncommon, and in the case of legislative benefits, public interest is understandable given the reciprocity benefits provided to members as well as the overall distress of Kentucky's retirement systems. A tailored policy applying to specific job classifications or members similar to Florida's is reasonable, although again the definition of what information is private is a state prerogative.

Board Member Disclosure/Conflict of Interest

KRS and TRS both require Board members to sign a Conflict of Interest statement in addition to ethics standards that are applicable under KRS Chapter 11A. We reviewed the Conflict of Interest statements and applicable underlying state statute of several other peer states in order to identify potential gaps. While a full review of ethics laws and rules could require its own report, we have several observations:

- The Board statements and KRS Chapter 11A do not address campaign contributions. Previous Executive Branch Ethics Commission advisory opinions have specifically clarified that the "Code of Ethics does not affect [the] ability to accept campaign contributions."[7]We found that similar policies in California, Indiana, Missouri, and Pennsylvania addressed campaign contributions, with particular reference to prospective contributors that are contractors or have business with the retirement system.
- The Board statements and KRS Chapter 11A do not define or circumscribe the individual authority of members. Other similar policies obligate the individual member to:
    - Take steps to avoid prohibited communications with vendors or individuals seeking to influence the Board
    - Refrain from communicating on business and investment-related matters with staff members other than the Executive Director (or in the case of KRS also the CIO) outside of Board or committee meetings, and otherwise recognize the lack of authority of individual members of the Board acting individually
    - Limit public speaking to discussion of existing Board policy or decisions
    - Avoid discussing specific benefit or annuity amounts with system members.

The Indiana and Missouri policies provide good examples of more detailed and proscriptive Conflict of Interest policies.

[7] Executive Branch Ethics Commission, *ADVISORY OPINION 11-08,* December 2, 2011

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Governance

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Overview of the Retirement Systems and Structures

The Commonwealth of Kentucky sponsors three major retirement systems. These systems have a variety of governance structures, membership demographics, types of participating employers, plan design features, and funding approaches and challenges.

As noted in the Introduction to this report, PFM's engagement with the Commonwealth encompasses a range of analyses to assess and illustrate the current and projected financial condition of the systems, and to draw on best practices nationally to provide options and recommendations for reform. This initial report focuses on transparency and select governance issues. In future reports, we will address investment performance, administrative structure and efficiency, actuarial approaches, plan design, and other elements of each of the three retirement systems, including additional comments and recommendations regarding governance that extend beyond the issues addressed within this initial report.

- The Kentucky Retirement Systems (KRS) Board of Trustees, which includes 17 members, oversees five plans:
  - The Kentucky Employees Retirement System (KERS) Non-Hazardous and Hazardous plans for state and state-related workers in non-hazardous (i.e. civilian) and hazardous (i.e. corrections, etc.) job classifications, who are represented on the Board by two active or retired members of the plans elected by active and retired members;
  - The State Police Retirement System (SPRS) for state troopers, who are represented on the Board by one active or retired member of the plan elected by active and retired members;
  - The County Employees Retirement System (CERS) Non-Hazardous and Hazardous plans for local government and school administrative and support workers in non-hazardous and hazardous job classifications, who are represented on the Board by three active or retired members of the plan elected by active and retired members.
  - The Board also includes the Secretary of the Commonwealth's Personnel Cabinet (*ex officio*) and, per Executive Order 2016-340, ten appointees of the Governor, three of whom are selected from a list of nominations provided by each of the Kentucky League of Cities, Kentucky Association of Counties, and Kentucky School Boards Association.
- The Teachers' Retirement System of Kentucky (TRS) Board of Trustees supervises the plan for teachers at public schools and universities in the state, who are represented by four active elected members, one retired member, and two non-teaching (lay) elected representatives. The Commonwealth Commissioner of Education and State Treasurer serve ex officio, for a total of nine Board members. There are no executive or legislative Board appointments.
- The Kentucky Judicial Form Retirement System (KJFRS) supervises the Kentucky Judicial Retirement Plan and the Kentucky Legislators Retirement plan, which are represented by eight Board members – three appointed by the state Supreme Court, one by the President of the

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Kentucky Senate, one by the Speaker of the Kentucky House of Representatives, one by the President and Speaker jointly, and two by the Governor.

Summary level data regarding membership, liabilities, and funded status for each of these systems and major plans is provided in the following table.

Commonwealth of Kentucky Retirement Characteristics FY 2016

System	Kentucky Retirement Systems					Teachers' Retirement System of Kentucky	Kentucky Judicial Form Retirement System	
Funding*	68% State non-hazardous, 98% State hazardous; 142 nonprofit and othersState Employees/Funding			Local Govt Employees		95% State	State	
Plan	Kentucky Employees Retirement System: Non-Hazardous	Kentucky Employees Ret. System: Hazardous	State Police Ret. System	County Employees Ret. System: Non-Hazardous	County Employees Ret. System: Hazardous		Legislators' Retirement Plan**	Judicial Ret. Plan**
Active Members	37,779	3,959	908	80,664	9,084	71,848	101	237
Inactive Members	10,399	481	65	14,357	775	9,240	42	18
Retirees Receiving Benefits	44,004	3,966	1,515	56,339	8,563	51,563	200	330
Unfunded Actuarial Liability ($ in Millions)	$11,112.4	$377.2	$540.6	$4,541.1	$1,565.3	$14,531.3	$15.2	$115.0
Funded Ratio	15.97%	59.73%	30.26%	59.00%	57.74%	54.60%	85.10%	72.07%

* Information shown as of fiscal year ended 6/30/2015

** Information shown as of fiscal year ended 6/30/2015 as UAL is calculated biannually.

NOTE:
Retirees Receiving Benefits - Number includes retired member and beneficiaries
Inactive members listed are inactive vested members non-vested inactive members are not referenced

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Board Structure, Qualifications and Standards

KRS and Benchmarked Civilian Board Structures

Executive Order 2016-340 expanded the KRS Board to include additional members with financial expertise. The number of appointees with investment experience to be made by the Governor was expanded from two to six, increasing the overall size of the Board from 13 to 17.

As noted previously, our team has benchmarked 20 other state retirement systems in neighboring and/or similarly sized states that will also be used in later reports. Of these 20 benchmark states, nine cover teachers in the same primary retirement system as civilians and other employees, while 11 have separate systems for teachers with a separate governing Board, for which we also collected information. Among the nine states with both civilians and teachers under the same system, neighboring Indiana consolidated the administration of all of its separate systems under a common Board and administration in 2011 (benefits remain separate).

Also among these 20 benchmark states, only four have separate systems for judicial employees (Georgia, Illinois, Iowa, and Michigan), with the remaining 16 states administering retirement programs for the judiciary as a component of their overall, primary system.

We collected the following information for each of these 20 states:

- Overall Board composition and form of appointment
- Whether appointed members are appointed by the executive or legislative branch
- Whether the legislature must consent to executive appointments
- The number of Board members that are required to have financial or investment experience, and the definition of such experience

The following table summarizes the number of appointees for each state's primary retirement system (information regarding teacher-specific systems follows separately), as well as the appointing authorities for Board members. While approaches across these benchmarks vary, many states balance representation across appointees, elected system members, and ex officio members with broader responsibilities within each government.

Retirement System Board	Size	Appointed	Elected	Ex Officio
California Public Employees Retirement System	13	3	6	4
Colorado Public Employees Retirement Association	15	3	11	1
Florida Retirement System	3	1	0	2
Georgia Employees Retirement System	7	4	0	3
Illinois State Employees Retirement System	13	6	6	1
Indiana Public Employees Retirement Fund	9	7	0	2
Iowa Public Employees Retirement System	11	6	0	5
Massachusetts State Employees Retirement System	5	1	2	2
Michigan State Employees' Retirement System	9	4	0	5

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Retirement System Board	Size	Appointed	Elected	Ex Officio
Missouri State Employees Retirement System	11	6	3	2
New York State Common Retirement Fund	1	0	0	1
North Carolina Retirement Systems	13	10	0	3
Ohio Public Employees Retirement System	11	2	7	2
Pennsylvania State Employees Retirement Systems	11	10	0	1
South Carolina Retirement Systems	11	11	0	0
Tennessee Consolidated Retirement System	20	9	2	9
Texas Employee Retirement System	7	7	0	0
Virginia Retirement System	9	9	0	0
West Virginia Consolidated Retirement Board	16	12	0	4
Wisconsin Retirement System	13	10	1	1
Average (Excluding Kentucky)	**10**	**6**	**2**	**2**
Median (Excluding Kentucky)	**11**	**6**	**0**	**2**
Kentucky Retirement Systems (2015 and before)	**13**	**6**	**6**	**1**
Kentucky Retirement Systems (2016)	**17**	**10**	**6**	**1**

Source: National Association of State Retirement Administrators data, individual retirement system web sites, and relevant state statutes and code.

On a comparative basis, the current number of KRS appointed and ex officio members is consistent with typical practices, with a somewhat larger number of elected members resulting in an above average Board size overall. To some degree, Board size can be associated with representation for the span of covered members. For example, the largest benchmark plan, the Tennessee Consolidated Retirement System (TCRS), also administers multiple, separate plans including the plan for teachers, and therefore the executive appointments also include representatives of schools and universities. This factor is also reflected in Kentucky's structure, given elected member positions associated with distinct groups of public employees, and the appointed positions nominated by local government associations.

While a slight minority of nine of the other systems provide for direct legislative appointments to the Board, an additional five provide for Senate confirmation of the Governor's nominations. In Indiana the House and Senate provide the Governor with two nominations each, from which the Governor selects appointments. Accordingly, some form of legislative involvement is common. The states that provide for Senate confirmation include states with part-time legislatures. For example, the State of Texas requires the advice and consent of the Senate for the Governor's seven appointments to the Employee Retirement System and nine appointments to the Teacher Retirement System, and overall the Senate must confirm roughly 1,000 appointments, yet it only meets in odd-numbered years. The Governor's appointments may begin serving when appointed on an interim basis, and are then reviewed when the legislature is in session.

TRS and Benchmarked Teacher Board Structures

The Kentucky Teachers Retirement System is similar to the average and median for other teacher systems in total Board size, but is unique among the 10 states reviewed in not having any appointed

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members -- all are elected by current or retired members. The average among the benchmarked teacher systems is five appointed members with a median of four.

Teachers Retirement System Board	Board Size	Appointed	Elected	Ex Officio
California State Teachers Retirement System	12	5	3	4
Teachers Retirement System of Georgia	10	8	0	2
Illinois Teachers Retirement System	13	6	6	1
Massachusetts Teachers' Retirement System	7	2	2	3
Michigan Public School Employees' Retirement System	12	11	0	1
Missouri Public Schools Retirement System	7	3	4	0
New York State Teachers' Retirement System	7	2	3	2
Ohio State Teachers Retirement System	11	3	7	1
Pennsylvania School Employees Retirement System	15	2	6	7
Teacher Retirement System of Texas	9	9	0	0
Average (Excluding TRS)	**10**	**5**	**3**	**2**
Median (Excluding TRS)	**10**	**4**	**3**	**1**
Kentucky Teachers Retirement System	9	0	7	2

Source: Review of National Association of State Retirement Administrators data, individual retirement system web sites, and relevant state statutes and code.

The Commissioner of the Kentucky Department of Education is an Ex Officio member of the Kentucky TRS. Since the Education Commissioner is appointed by the state Board of Education, whose members are appointed by the Governor, this might be considered a form of executive appointment, but it is indirect with the Board of Education members and Commissioner holding staggered terms.

Legislative involvement in Board appointments was much less common among the 11 other teacher systems listed in the preceding table than in primary state retirement systems, with only one of the 11 providing a legislative appointment, and four requiring Senate consent to executive appointments.

The Kentucky Judicial Form Retirement System is unlike the majority of the other states reviewed which administer pension benefits for legislators and judges through the same Board that administers benefits for the general state employees and sometimes teachers. Only four of the 20 other states had a separate fiduciary board and retirement system for judges. Several others had separate retirement systems for judges that were still within the purview of a consolidated retirement system board that administers benefits for most state employees. The KJFRS includes appointments by the governor, the legislature, and the state Supreme Court, representing the independently-elected judges, and is therefore the only system that currently involves the legislature in the Board appointment process. There are currently no investment or financial experience requirements for KJFRS Board members.

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Board Structure – General Considerations

Academic research on the effect of Board structure on pension plan performance is mixed. Different studies have found somewhat weak and/or inconsistent correlations with investment performance.[8] Faced with such inconclusive research findings, the Manhattan Institute, a free market public policy think-tank, recommended in 2016 that "Reforms should strive for more balance in boards, including requiring public-citizen members and members with financial expertise."[9] In response to this recommendation, the National Association of Retirement System Administrators (NASRA) has highlighted the importance of plan assets to participating members, noting that plan participants are the sole "owners" of such assets once placed in trust.[10]

While such perspectives diverge in some respects, there is a general acknowledgment that the general public, taxpayers, participating employers, and plan participants are all meaningful stakeholders in public retirement systems. In this spirit, the leading professional association for public sector finance officials, the Government Finance Officers Association (GFOA) has issued a best practice on public employee post-employment benefit systems stating:

> *"Board composition should reflect the varied interests of those responsible for funding the plan and should include plan participants and retirees, citizens of the governmental unit, and officers of the plan sponsor, as well as independent directors. This assures balanced deliberations and decision making."*[11]

Board Qualifications

The importance of training and education for all Board members and increased emphasis on financial and investment experience is also highlighted in academic and policy research, professional association guidelines, and the PFM team's practical experience.

Under Kentucky Executive Order 2016-340, new KRS Board investment experience requirements for at least six appointees of the Governor was defined as including:

> *"at least ten (10) years of experience in one (1) of the following areas of expertise:*
>
> *a. A portfolio manager acting in a fiduciary capacity;*
>
> *b. A professional securities analyst or investment consultant;*

[8] See, for example, Albrecht and Hingorani, *Effects of Governance Practices and Investment Strategies on State and Local Government Pension Fund Financial Performance*, International Journal of Public Administration, Fall 2004; Albrecht, Shamsub, Giannatsio, *Public Pension Fund Governance Practices and Financial Performance*, Journal of Public Budgeting, Accounting & Financial Management, Summery 2007; Mitchell and Hsin *Public Sector Pension Governance and Performance*, The Economics of Pensions: Principles, Policies and International Experience (1997); Useem and Mitchell, *Holders of the Purse Strings: Governance and Performance of Public Retirement Systems*, Social Science Quarterly, Vol 81, 2 (2000); Yang and Mitchell, *Public Sector Pension Governance, Funding and Performance: A Longitudinal Appraisal*, Pension Fund Governance: A Global Perspective on Financial Regulation (2008).

[9] Manhattan Institute, *Safeguarding Public-Pension Systems: A Governance-Based Approach*, March 2016

[10] http://www.nasra.org//Files/Letters/Manhattanresponse1604.pdf

[11] GFOA Best Practice, Governance of Public Employee Post-Retirement Benefits Systems, March 2010

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c. A current or retired employee or principal of a trust institution, investment or finance organization, or endowment fund acting in an investment-related capacity;

d. A chartered financial analyst in good standing as determined by the CFA Institute;

e. A university professor who teaches economics or investment-related studies; or

f. Any other professional with exceptional experience in the field of public or private finances."

While investment and financial experience requirements vary among the benchmarked retirement systems, Kentucky's standards are consistent with best practices, and other states nationally have enhanced their requirements in similar fashion. The State of Ohio, for example, added an executive appointment with investment experience requirement for each of its retirement system Boards in 2004, and the State of South Carolina completely restructured its Board, adding a separate investment committee with investment or financial experience required for all members in 2005.

The following tables detail the number of Board members required to have specific financial and/or investment experience across the benchmarked state primary and teacher-specific systems, as well as a summary of the standards for such experience. Although such requirements are not universal, these do represent good practice.

As detailed later, it may also be noted that three of these systems – Massachusetts, South Carolina and Wisconsin – have separate investment fiduciary boards in addition to their administrative Boards, with the fiduciary Board requiring more extensive experience. In addition, Florida and New York have sole or limited fiduciary models, where one to three state officials serve as the trustees.

Retirement System Board (Primary)	# of Board members required to have financial and/ or investment experience	Required experience
Kentucky Retirement Systems	6 of 17	10 years of experience and expertise as either a portfolio manager, professional securities analyst, chartered financial analyst in good standing, university professor who teaches economics or investments, or other exceptional experience in the field of public or private finance
California Public Employees Retirement System	0 of 13	No financial background required by state law; State Treasurer and State Controller serve ex officio
Colorado Public Employees Retirement Association	3 of 15	3 members with significant experience and competence in investment management, finance, banking, economics, accounting, pension administration, or actuarial analysis who are not part of the retirement system

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Retirement System Board (Primary)	# of Board members required to have financial and/ or investment experience	Required experience
Florida Retirement System	0 of 3	Florida State Board of Administration is governed by a 3 member Board: Governor, Chief Financial Officer, and the Attorney General. The Board is charged with managing pension funds, including public employees and teachers
Georgia Employee Retirement System	1 of 7	10 years of experience in the investment of moneys and not a member of the state retirement system; Auditor and Treasurer also serve ex officio
Illinois State Employee Retirement System	0 of 13	No financial background required by state law Illinois State Board of Investment (ISBI); Treasurer and Comptroller serve ex officio
Indiana Public Employee Retirement Fund	1 of 9	1 member must have experience in economics, finance, or investments; Auditor and Treasurer serve ex officio
Iowa Public Employees Retirement System	3 of 11	Investment Board of the Iowa Public Retirement System 3 members not participants of the retirement system who have substantial institutional investment experience or substantial institutional financial experience
Massachusetts State Employees Retirement System	0 of 5	No financial background required by state law; Treasurer serves ex officio Pension Reserves Investment Management Board (PRIM) handles investments, and requires 1 member who is a private citizen with an investment business background
Michigan State Employees' Retirement System	0 of 9	No financial background required by state law; Auditor, Treasurer serve ex officio
Missouri State Employees Retirement System	0 of 11	No evidence of financial background required
New York State Common Retirement Fund	0 of 1	The Comptroller manages investment operations of NYCRF with the support of the First Deputy Comptroller, the CIO/Deputy Comptroller for the Division of Pension Investments and Cash Management, and the Counsel to the Comptroller and their professional staff, outside counsel, consultants, and advisory committees

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Retirement System Board (Primary)	# of Board members required to have financial and/ or investment experience	Required experience
North Carolina Retirement System	0 of 13	No financial background required by state law; Treasurer serves ex officio
Ohio Public Employee Retirement System	3 of 11	1 member appointed by the treasurer who has direct experience in management, analysis, supervision, or investment of assets; 2 members known as the investment expert members who have direct experience in management, analysis supervision, or investment of assets (1 member appointed by the governor and 1 member appointed jointly by the House of Representatives and President of the Senate The Board will designate a person who is a licensed state retirement officer to be the chief investment officer)
Pennsylvania State Employees Retirement Systems	0 of 11	No financial background required by state law; State Treasurer serves ex officio
South Carolina Retirement Systems	0 of 11	No financial background required by state law, however, investments are handled by a separate agency with experience requirements
Tennessee Consolidated Retirement System	0 of 20	No financial background required by state law; State Treasurer, Commissioner of Finance and Admin, Comptroller of Treasury are members of the Board
Texas Employee Retirement System	0 of 7	3 members appointed with experience in securities investment, pension administration or pension law; 1 member appointed with actuarial qualifications; 1 member appointed with experience in governmental finance
Virginia Retirement System	4 of 9	Gubernatorial appointees: 2 with a min of 5 years of experience in the direct management, analysis, supervision, or investment of assets (one state and one faculty or higher education employee); Legislative appointees: 2 with min of 5 years of experience in the direct management, analysis, supervision, or investment of assets (one state employee and one teacher)

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Retirement System Board (Primary)	# of Board members required to have financial and/ or investment experience	Required experience
West Virginia Consolidated Retirement Board	8 of 16	All 8 appointees to the Board shall have recognized competence or significant experience in pension management or administration, actuarial analysis, institutional management or accounting; Assets are managed by the State Investment Management Board
Wisconsin Retirement System	0 of 13	No financial background for Board members required by state law; Separate Wisconsin Investment Board oversees investments, and requires that 5 of its 8 members have at least 10 years of investment experience, with any person having financial interest in or whose employer is dealer/broker/securities/mortgage/real estate investments not eligible for appointment, and any member who acquires interest to vacate membership

As detailed in the following table, five of the teacher-specific systems reviewed require investment or financial experience for a minimum number of Board members.

Retirement System Board (Teachers)	Board members required to have financial management or investment experience	Required experience
Kentucky Teachers Retirement System	0 of 9	No financial background required by law
California State Teachers Retirement System	0 of 12	No financial background required by law; Director of Finance, State Controller, State Treasurer serve ex officio
Georgia Teachers Retirement System	1 of 10	1 member with investment experience and not a member of the Teachers Retirement System
Illinois Teachers' Retirement System	0 of 13	No financial background required by law
Massachusetts Teachers Retirement Board	0 of 7	No financial background required by state law; Treasurer, Auditor serve ex officio; Pension Reserves Investment Management Board (PRIM) requires 1 member who is a private citizen with an investment business background

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Michigan Public School Employees Retirement System	3 of 12	1 member who is working in a school system in a finance or operations management position who is not a superintendent; 1 retiree from a finance or operations management position; 1 member from the general public who has experience in institutional investments
Missouri Teacher and School Employee Retirement System	0 of 7	No evidence of financial background required
New York State Teachers' Retirement System	3 of 7	2 members with experience in the fields of finance and investment, at least one must have experience as an executive of an insurance company; one present/former bank executive; state comptroller designee
Ohio State Teachers Retirement System	4 of 11	A superintendent, treasurer, and 2 members with direct experience in management, analysis, supervision or investment of assets
Pennsylvania Public School Employees' Retirement System	0 of 15	No financial background required by state law; State Treasurer serves ex officio
Retirement System Board (Teachers)	**Board members required to have financial management or investment experience**	**Required experience**
Texas Teacher Retirement System	3 of 9	TX Gov Code 825.002(b) requires that the Governor shall appoint 3 members of the Board who have demonstrated financial expertise, who have worked in private business or industry, and who have broad investment experience, preferably in investment of pension funds. None of these members appointed may be a member or annuitant of the retirement system.

An Alternative Structure -- Separate Investment Boards

As noted previously, an alternative to the standard of having one overarching Board responsible for both plan administration and investments is to have a separate investment Board that may have different membership than the system's primary Board. This structure is designed to provide greater focus on investment decisions with enhanced reliance on independent expertise. Examples include the following:

- The State of Wisconsin has created a state Investment Board to manage investments for the Wisconsin Retirement System, State Investment Fund, and several other smaller trust funds. Five out of eight members are required to meet specific minimum investment or financial criteria. Two of the remaining members must be participants of the Wisconsin Retirement System and are appointed by the retirement Board.

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- For the Florida Retirement System three-person Board of Administration, the Governor, the state Chief Financial Officer, and Attorney General, all elected positions, appoint three members each to a separate Investment Advisory Council, although the fiduciary responsibility for decisions remains with the Board.
- In 2005, South Carolina established the South Carolina Retirement System Investment Commission (RSIC) and transferred fiduciary responsibility for investments from the Retirement System Board to the RSIC, which includes seven members appointed by the Governor, legislature, Comptroller General, and several other ex officio and elected members. All must meet investment or financial experience criteria.
- In Massachusetts the Pension Reserves Investment Management (PRIM) Board manages investments for all state pension funds. The state Treasurer chairs the Board and the Governor appoints a member who is required to have investment experience.

Unlike the KRS, the TRS does not have a requirement for financial or investment expertise among Board members. In a modified version of the separate investment Board structure, however, the TRS does include the non-voting participation of two outside investment experts on its Investment Committee. This structure was implemented by the TRS Board in December 2008 following a Public Pension Working Group process, and features parallel experience requirements to those in Executive Order 2016-340. To date, this practice has not been incorporated into statute.

General Board Education and Training

The importance of education and training for all retirement system Board members is emphasized by several best practices on system governance. For example, the GFOA best practice previously referenced also states:

> *"New trustees must receive orientation training explaining their responsibilities and fiduciary duties as well as the duties of the system's staff and agents (e.g., actuaries, attorneys, advisors, and fund managers). A program of continuing education must be developed, and participation should be strongly encouraged or required."*

Similarly, the National Conference of Public Employee Retirement Systems (NCPERS) recommends the "Adoption of a fiduciary education program to continuously improve fiduciaries' skill sets."[12]

KRS and TRS have both adopted education policies for Board members in order to ensure members are adequately equipped to serve in their role as fiduciaries . The KRS policy requires that new Board members undergo a minimum of eight hours of trustee education within the first three months of service, and a minimum of 12 hours of trustee educational activity in each year thereafter. The TRS policy requires a minimum of four hours of trustee education within the first two months of service, and a minimum of eight in each year thereafter.

Although there is no generally accepted national best practice for the specific number of hours of trustee training to be required on an annual basis, Kentucky's systems should continue to maintain and monitor their education programs to ensure meaningful training opportunities for Board members.

[12] NCPERS Best Governance Practices for Public Employee Retirement Systems, March 2012

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Staffing the Systems within the State Personnel System

Executive Order 2016-340 also requires that all KRS employees except for the Executive Director shall be fully subject to the state personnel system established pursuant to KRS 18A.005 to 18A.204, including determination of salaries, effectively placing investment professionals and all other KRS employees within the state personnel system. This approach provides structure to retirement system staffing that can be beneficial for most positions, including those in customer service, general administration and support, and non-investment professional roles.

At the same time, our team's experience and other industry research[13] indicates that greater recruitment and retention flexibility is warranted for senior professionals in the highly specialized and competitive investment management field with responsibility for overseeing billions of dollars in assets. Attempts to supplement insufficient internal expertise and capacity can lead to a higher level of external investment management and significantly higher costs.

To ensure appropriate staff qualifications and compensation, active Board review of any senior-level compensation outside of the state personnel system would be critical, particularly if bonuses are used.

Initial Governance Recommendations

- Establish balanced retirement system governance consistent with best practices for diverse representation by including Board members with investment experience, stakeholder appointments (i.e., continued nominations from local government associations for the KRS Board), and elected members.
- For the KRS Board, institutionalize stronger investment expertise requirements by amending current statutes to reflect Executive Order 2016-340 increasing the number of executive appointments with investment experience requirements from two to six. This will provide improved oversight and stability for the KRS Investment Committee, be consistent with benchmark norms for the total number of appointed trustees, and provide some of the benefits of a separate investment Board model within a more traditional integrated administrative/fiduciary Board structure.
- Add Senate confirmation of the Governor's appointments to the KRS legislation, as 2016 Senate Bill 2 (2016 SB2) has previously contemplated. Common among the benchmarked systems, this approach provides a further check-and-balance on the governance structure across Administrations that could help to sustain improved oversight over time.
- In addition, 2016 SB2 contemplated adding six appointments by the Governor to the TRS Board, with parallel Senate confirmation, and a requirement that two of the appointments have investment experience. While the TRS Board has performed relatively well in many respects, Kentucky is an outlier with regard to the lack of stakeholder diversity and exclusive concentration of elected members on its teachers retirement system Board. To ensure a full range of stakeholder perspectives and appropriate Board expertise for the long-term, we recommend adoption of this approach or a similar set of requirements.

[13] Funston Advisory Services LLC, *Public Pension Governance That Works*, March 2014

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- Adding the investment experience requirement for the two appointments by the Governor to the KJFRS Board would be consistent with the spirit of Executive Order 2016-340 and 2016 SB2. The present composition of the Board provides that the legislators and judges have a majority on their respective investment committees. Increasing the number of executive appointments would shift this balance, but simply requiring the two executive appointments to have investment experience would retain the current balance while ensuring financial and investment expertise on the Board.
- As an alternative governance approach, the Commonwealth could consider establishing a separate Investment Board to serve all three retirement systems with consistent, high-level investment expertise, experience, and responsibility.
- Under Executive Order 2016-340, the placement of KRS employees under the state personnel system provides a range of benefits, and is generally good policy. For senior investment professionals, however, we recommend that the Commonwealth consider providing exemptions or other flexibility to ensure the capacity to recruit, retain, and quickly replace as needed high-caliber, specialized personnel.

As noted previously, this initial report is focused substantially on a review of the issues addressed in Executive Order 2016-340 and 2016 SB 2. In subsequent reports, we will address additional governance concerns, such as the options for administering the County Employees Retirement System (CERS), now a component of the KRS which some stakeholders have proposed to become a separate, fully independent system.

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Appendices

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A brief from THE PEW CHARITABLE TRUSTS | Feb 2016

Making State Pension Investments More Transparent

Accountability varies widely and could be improved

Overview

The California Public Employees' Retirement System (CalPERS), the nation's largest public retirement plan, recently raised the bar on investment fee transparency by disclosing the full amount it pays to invest in private equity, which may bring greater rewards but also greater risk and higher management costs. CalPERS, like most public retirement systems, pays performance-based fees, known as carried interest, to external investment managers as part of their compensation, but the system only began publicly disclosing these costs in November. CalPERS' new policy of reporting carried interest and other performance fees resulted in the disclosure that external investment partners realized $700 million from profit sharing agreements in fiscal 2015.

The move highlights the widespread problem among public retirement systems of underreported manager fees and expenses, particularly those associated with alternative investments such as private equity, real estate, and hedge funds, and points to the need for greater disclosure in order to provide full transparency on investment costs. State retirement systems receive guidance on disclosing investment details from the Governmental Accounting Standards Board and the Government Finance Officers Association's Best Practice for Public Employee Retirement System Investments. However, states interpret and implement these standards differently.

To examine transparency practices across the 50 states, The Pew Charitable Trusts collected data on asset allocation, performance, and fees from the 73 largest state-sponsored pension funds. Collectively, these funds have approximately $2.9 trillion in investments, or more than 95 percent of all state pension fund investments, according to the U.S. Census Bureau's Census of Governments 2014 report on state-administered pensions.[1]

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The analysis shows wide variation in investment strategies, policies on disclosure of investment returns, and transparency in reporting the costs of managing assets. Better and more consistent disclosure rules would help those with a stake in these systems discern how well investments are being managed and provide data that could be compared more easily from state to state.

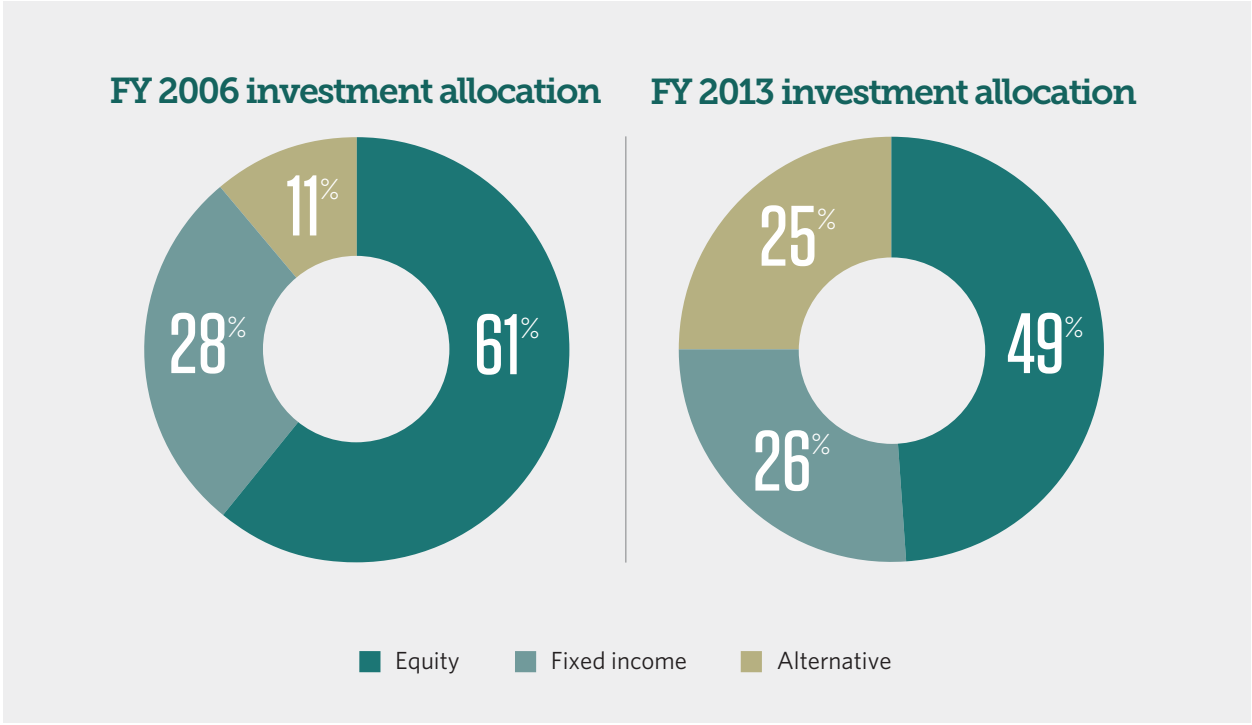
In many cases, current disclosure policies make it difficult for policymakers, stakeholders, and the public to gauge the actual performance of these funds. To help interested parties develop a more complete understanding of both the results and the costs of different investment strategies, this brief highlights some specific steps to improve transparency through greater disclosure. States and funds should:

- Adopt comprehensive fee-reporting standards, such as those proposed by the Institutional Limited Partners Association's Fee Transparency Initiative.
- Make investment policy statements transparent and accessible.
- Disclose bottom-line performance, both net and gross of fees.
- Expand reporting to include longer-term performance results.
- Report results by asset class, net and gross of fees.

Figure 1

Allocation of Fund Assets in FY 2006 and 2013

Percentage in alternative investments more than doubled



Sources: State Comprehensive Annual Financial Reports, 2006 and 2013

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Increased use of alternative asset classes requires greater disclosure

State retirement systems across the United States collectively have more than $3 trillion in assets, with three-quarters invested in stocks and what are known as "alternative investments"—an allocation that has more than doubled in recent years.[2] To manage these assets, state funds paid more than $10 billion in 2014 in fees and investment expenses—their largest expenditure. The cost of managing these assets has increased by more than 30 percent over the past decade, a jump closely correlated with greater use of alternative investments, such as real estate, private equity, and hedge funds. These fees can reduce investment returns on alternatives by as much as 10 to 20 percent.

What Are Alternative Investments?

Although there is no fixed definition for alternative investments, they are generally agreed to include private equity, hedge funds, real estate and some commodities. These investments typically lack an established public exchange, have low liquidity, and can be more difficult to value. Alternative investments typically carry higher fees and can be employed to diversify investment portfolios or to achieve higher rates of return, although often at higher levels of risk.

Some state funds report investment performance "gross of fees," which does not account for payments to investment managers. Some provide information about overall long-term performance but do not detail the results of individual investment strategies. Some states, though, are taking action to improve transparency. After public criticism, state treasurers in North Carolina and Rhode Island took new steps over the past two years toward greater fee disclosure.[3]

Cities face similar issues. For example, a study of the New York City pension fund released in 2015 found that the fund underperformed its stated investment goals by a total of $2.5 billion over the past decade, largely as a result of high investment fees, and the Dallas Police and Fire Fund recently reported significant losses in investments made in local real estate.[4]

These examples all point to the need for greater and more consistent transparency on these investments. In particular, the increased use of alternative asset classes requires greater disclosure because of their complicated nature, intricate fee structures, and potential risk to a fund's health.

Recommendation 1: Adopt comprehensive fee reporting standards

A recent report by CEM Benchmarking Inc., an independent global provider of comparative analysis for large pension funds, endowments, and sovereign wealth funds, estimates that the average value of undisclosed private equity fees, including carried interest, monitoring costs and other portfolio company fees, can equal 1.5 percent or more of assets each year, or about half of total private equity management costs.[5] The recently released 2014 CalPERS reporting mirrors this finding and suggests that the treatment of carried interest is a significant contributor to the wide variation in reported fees across the 73 plans studied here.

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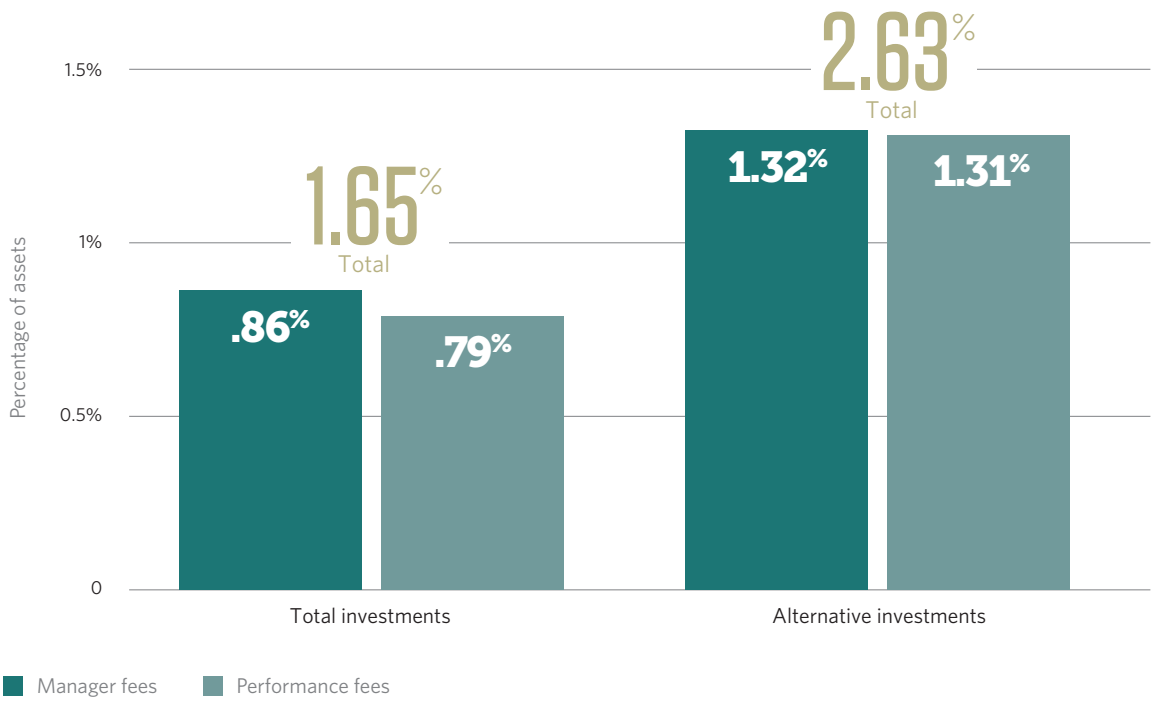
Figure 2

MOSERS' Investment Fees Paid to External Managers, 2013

Performance fees represent close to half of all reported fees



Source: 2013 Comprehensive Annual Financial Report, Missouri State Employees' Retirement System

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For example, the South Carolina Retirement System holds 38 percent of its assets in alternative investments and has been widely criticized for being subject to some of the highest fees in the country—1.58 percent in reported fees in 2013. But CEM found that South Carolina was "simply reporting more costs than other funds rather than incurring more costs."[6] The South Carolina Retirement System Investment Commission (RSIC) reports invoiced management fees, which is common; but unlike most funds, it also reports the fees deducted from returns. The commission explains its practice with this note:

> A portion of investment expenses are directly invoiced by the manager; however, a significant number of investment managers provide account valuations on a net of fee basis. Since these investment expenses are netted against investment income, amounts reported represent a good faith attempt by the RSIC to disaggregate amounts that were not necessarily readily separable throughout the fiscal year. The collection process is not standard practice for many investment managers. The investment expense numbers netted out of accounts include amounts for investment management fees, performance fees (carried interest) and other expenses such as organization expenses in limited partnership structures."[7]

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In other words, rather than relying on the external managers' standard reporting or invoices, South Carolina collects and validates additional detailed information, not only on full management fees but also on portfolio company fees, other fund-level fees, and accrued carried interest (performance fees). This is an attempt to account for all fees incurred during the fiscal year, including those that were netted from asset values.[8]

This level of fee disclosure may be uncommon, but South Carolina is not the only plan collecting and reporting more than invoiced fees. The Missouri State Employees' Retirement System (MOSERS) is particularly thorough in collecting and reporting these fees, not only by asset class but for each external consultant or manager. MOSERS reports the highest fees of the 73 plans studied, at 1.73 percent, with 1.65 percent paid to external managers. But, as illustrated in Figure 2, about half of all reported external management costs during the 2013 reporting period were performance fees that many states do not report.

The call for standardized reporting and transparency of private equity fees in the United States may be gaining momentum. The Institutional Limited Partners Association's Fee Transparency Initiative, a widely supported industry effort to establish comprehensive standards for fee and expense reporting among institutional investors and fund managers, is advocating for total fee reporting by private equity managers and their investors.[9] The association released a final version of the proposed standardized reporting template in January 2016.[10] Further, in a recent letter to the Securities and Exchange Commission, 13 state and municipal treasurers and comptrollers—including several contributors to the Fee Transparency Initiative—made an appeal for industrywide standards on private equity fee disclosure, including carried interest.[11]

> Clear information that accounts for the costs of managing assets is needed to fully understand investment performance. Still, more than one-third of plans examined do not disclose detailed returns minus the fees paid to managers, or "net of fees."

Recommendation 2: Make investment policy statements transparent and accessible

The Government Finance Officers Association (GFOA) recommends that each pension plan develop a concrete statement of investment goals that describes its investment and risk tolerance saying, "The development of an investment policy is fundamental to sound financial management."[12] Public pension funds' formal investment policies include information on the risk and return objectives, as well as targets for investments across different asset classes. Making these investment policies transparent and readily accessible provides stakeholders with critical information on the strategies that pension systems follow for the investment of public funds.

For example, MOSERS provides online access to its investment policy statement, which includes a detailed description of the use of alternative investments to achieve the fund's risk and return objectives. The system also includes an in-depth explanation of the policy in its annual reports.[13]

Of the 73 plans examined, 59 provided access to investment policies online; others indicated that their policies are available upon written request. Setting a standard of making these statements available online, following the practice of most funds, creates the foundation for transparency in public pension investing.

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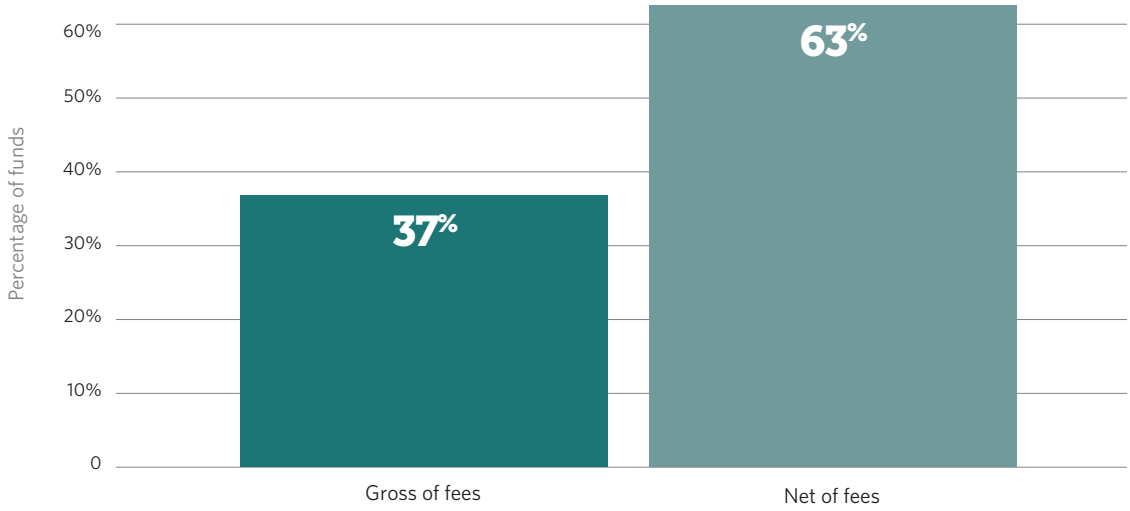
Recommendation 3: Disclose bottom-line performance, both net and gross of fees

Clear information that accounts for the costs of managing assets is needed to fully understand investment performance. Still, more than one-third of plans examined do not disclose detailed returns minus the fees paid to managers, or "net of fees." For 10-year results, 27 of 73 plans studied, or 37 percent, reported returns "gross of fees"—without deducting manager fees. (See Figure 3.) Reporting performance both gross and net of fees gives stakeholders information on both the cost and bottom-line results of pension funds' investment strategies. A direct comparison of returns on a net and gross basis is a clear and easy method for examining the impact of fees on fund performance.

Figure 3

State Pension Fund Performance: Gross or Net of Fees

Most plans report totals minus fees



Sources: State Comprehensive Annual Financial Reports, 2013 and 2014; state treasury reports; quarterly investment reports; and state responses to data inquiries

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Recommendation 4: Expand performance reporting to include 20-year results by investment type

Fund investment policies are designed to reflect the long-term nature of pension funds because many participants may work for over 30 years and receive benefits for 20 years—or more—in retirement. However, the GFOA recommendations only call for reporting performance over five years, and most funds report only 10-year investment performance.

Reporting results over a longer time horizon would supply stakeholders with information that is better aligned with fund investment strategies. It also would be helpful when examining the impact of shorter-term results, such as the strong performance during the 1990s bull run of the stock market or the underperformance to fund benchmarks during the volatile financial markets of the 2000s. Based on Pew's research, 13 of the funds in the analysis regularly provide 20-year investment performance figures in their reports and six report such figures by asset class. Making this practice routine would furnish stakeholders with critical information on long-term results that is more aligned with the long-term investment strategies that these funds follow.

Recommendation 5: Include performance results by asset class—both net and gross of fees

The GFOA recommendations call for funds to provide performance results by asset class over time, as well as full disclosure of long-term investment performance by investment type or asset class. State retirement systems in Georgia, Kentucky, Louisiana, Missouri, and New York already release comprehensive 20-year data on performance returns by asset class. Currently, only Georgia and Missouri make that information available net of fees. South Dakota is the only state to disclose 20-year performance net and gross of fees but does not break this reporting down by asset class.

While the performance of individual asset classes may vary over the short term, long-term performance data must be available to assess the overall success of the investment strategy. Further, disclosure of performance both gross and net of fees by asset class would provide stakeholders with bottom-line results and a clearer picture of the cost of implementing the investment strategy identified in fund policy. (See Appendix A for an illustration of how the current reporting for the Pennsylvania Public School Employees' Retirement System could be improved to include this additional information.)

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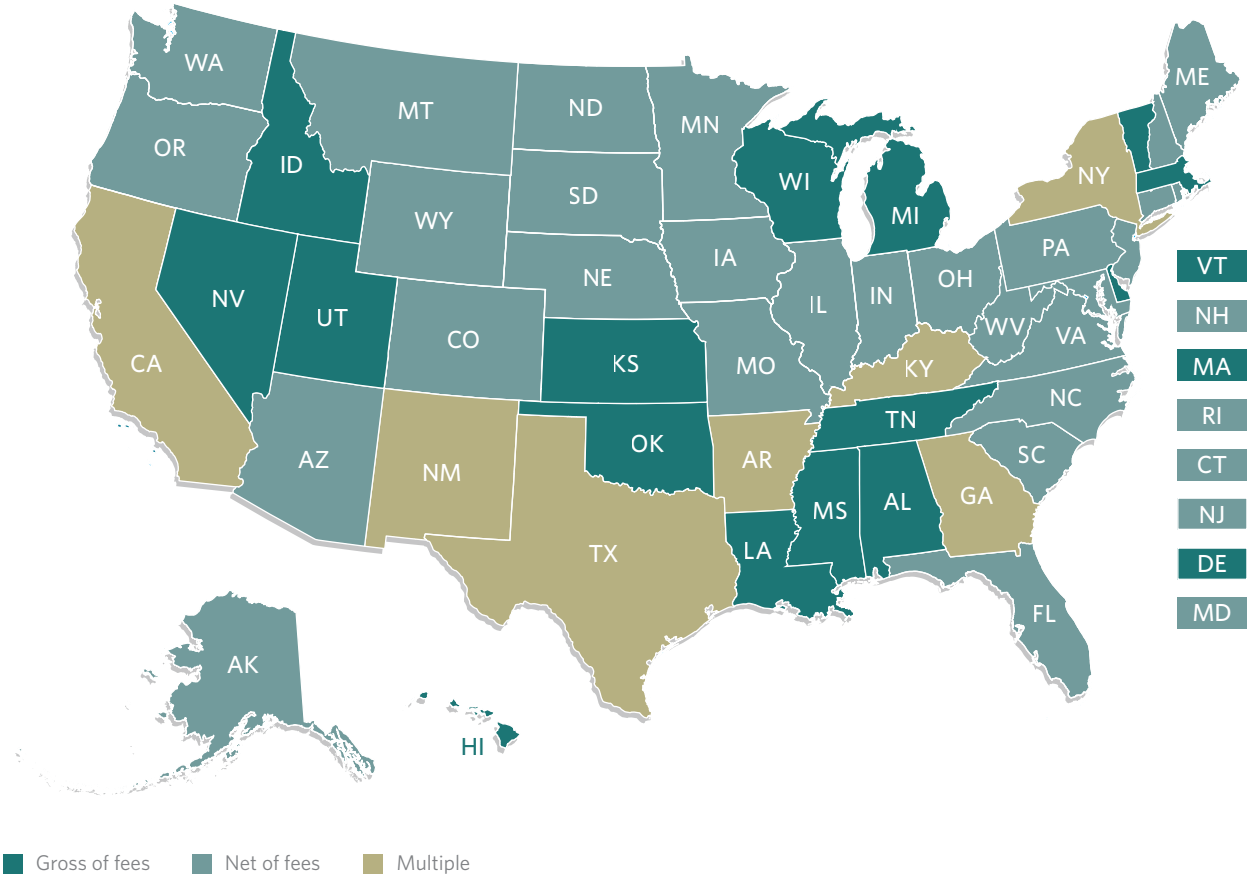
Figure 4

Most States Report Pension Investment Performance After Fees

In some states reporting practices differ by plans



Notes: South Dakota discloses performance as both net and gross of fees. The states marked as having multiple reporting methods have two funds included in our 73 list that report performance differently from each other.

Sources: State Comprehensive Annual Financial Reports, 2013 and 2014; state treasury reports; quarterly investment reports; and state responses to data inquiries

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Conclusion

Allocation of assets and bottom-line performance ultimately determine plans' fiscal health and the ability to pay for the promised retirement benefits; in fact, experts estimate that investment returns account for 60 percent of pension benefits. The fees and cost of managing these assets can significantly affect the long-term costs of providing retirement benefits to public workers.

There is no one-size-fits-all approach to investing pension assets. However, because many alternative investments involve greater risk and complexity, boosting transparency is essential. Policymakers, stakeholders, and the public need full disclosure on investment performance and fees to ensure that risks, returns, and costs are balanced in ways that follow best practices and meet funds' policy needs.

Methodology

Pew's research focused on financial data collected from 2012, 2013, and 2014 financial reports, including Comprehensive Annual Financial Reports, investment reports, and in two instances—North Carolina and Connecticut—annual state treasury reports. For each plan, Pew collected data from the financial reports on asset allocation, performance, and fees. Pew made no adjustments or changes to the state figures and offered states the opportunity to verify the data. A forthcoming report on pension fund investments and performance will examine plan level 2014 data.

Additional data used in this analysis came from two sources:

- Data collected from state Comprehensive Annual Financial Reports; pension plan actuarial valuations; and other statements that disclose financial details about individual public pension plans between fiscal 1992 and 2014. In some cases in which information was not available in public sources, the data also include facts provided by the individual pension plans in response to Pew's requests.
- *Pensions & Investments'* "Public 100,"[14] a fund-level data set that provides details on public-sector pension plans' use of hedge funds, private equity, and other alternative investments. This source includes data from 126 major state and local pension funds covering 95 percent of all U.S. public pension assets, according to U.S. census data. Pew's analysis used the data set covering 2006 to 2013, the most recent period for which consistent data on asset allocation and fees are available. In particular, the analysis relied on the data for the period between 2006 and 2011.

It is important to note that available data sources should be used with care when making cross-plan comparisons. For example, inconsistencies often arise in reporting periods and asset classification across funds. In addition, the annual reports of the public pension plans studied show a wide range of completeness in disclosure of fees paid, particularly with regard to alternative classes such as hedge funds and private equity.

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Appendix A

Pennsylvania Public School Employees' Retirement System (PSERS) Disclosure

PSERS does a good job of reporting on fund performance and providing returns net of fees by asset class for one, three, five, and 10 years. The system also provides relevant benchmarks for each of these breakdowns. The table below displays these performance data but also illustrates how our recommended improvements to reporting could be incorporated. Specifically, the net-of-fees performance information would be supplemented by the addition of gross-of-fees figures on the left that easily highlight the impact of fees on the fund's returns, and 20-year information is added to show long-term performance results.

	Gross of fees					Net of fees				
	1 year	3 years	5 years	10 years	20 years	1 year	3 years	5 years	10 years	20 years
PSERS Total Portfolio						14.91	8.66	12.09	7.28	
Total Fund Policy Index						12.05	6.14	9.2	5.81	
Median Public Defined Benefit Plan (DBP) Fund Universe (HEK Database)						16.56	9.57	12.44	6.86	
PSERS U.S. Equity Portfolios						25.27	16.52	19.95	7.99	
U.S. Equity Policy Index						24.55	15.77	18.73	8.07	
PSERS Non-U.S. Equity Portfolios						18.14	6.01	12.32	9.2	
Non-U.S. Equity Policy Index						21.1	5.54	11.29	8.2	
PSERS Fixed Income Portfolios						9.86	7.21	10.71	7.46	
Fixed Income Policy Index						6.52	4.34	7.83	6.5	
PSERS Commodity Portfolios						13.12	-4.59	3.94	N/A	
Commodity Policy Index						8.21	-5.16	1.99	N/A	
PSERS Absolute Return Portfolios						6.31	4.33	8.24	N/A	
Absolute Return Policy Index						7.5	7.5	7.7	N/A	
PSERS Risk Parity Portfolios						23.95	12.95	N/A	N/A	
Risk Parity Policy Index						16.45	4.23	N/A	N/A	
PSERS Master Limited Partnership (MLP) Portfolios						35.97	28.46	33.01	N/A	
Standard & Poor's MLP Index						24.87	20.32	26.99	N/A	
PSERS Real Estate						16.44	10.91	7.9	6.06	
Blended Real Estate Index						11.13	10.21	8.75	8.63	
PSERS Alternative Investments						14.27	11.33	14.9	13.7	
Thomson ONE Median Return, Vintage Year Weighted						8.34	5.14	7.6	5.78	

Currently undisclosed

Source: Pennsylvania Comprehensive Annual Financial Report, 2014

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Endnotes

1 2014 Survey of Public Pensions: State and Local Data," U.S. Census Bureau (February 2015), http://www.census.gov/govs/retire/.

2 2014 Survey of Public Pensions:State and Local Data," U.S. Census Bureau (February 2015), http://www.census.gov/govs/retire/; all other figures are calculated using Pew data.

3 For information about efforts to raise the bar on disclosure concerning investment management fees and fee arrangements, see North Carolina Department of State Treasurer, "Treasurer Cowell Urges House to Pass Pension Investment Transparency Measure," June 3, 2014, https://www.nctreasurer.com/inside-the-department/News-Room/press-releases/Pages/Treasurer-Cowell-Urges-House-to-Pass-Pension-Investment-Transparency-Measure.aspx; and also see Edward Siedle, "North Carolina State Workers Demand Treasurer Release Pension Records," *Forbes*, Jan. 14, 2014, http://www.forbes.com/sites/edwardsiedle/2014/01/14/north-carolina-state-workers-demand-treasurer-release-pension-records. For further details about Rhode Island's efforts to increase disclosure on pension investment management fees and fee arrangements, see Rhode Island Office of the General Treasurer, "Treasurer Magaziner Unveils 'Transparent Treasury' Initiative," May 26, 2015, http://www.ri.gov/press/view/24905; Rhode Island Office of the General Treasurer, "Transparency in Government Agreement," last updated May 25, 2015, http://data.treasury.ri.gov/dataset/201505-state-investment-commission-report-may-2015/resource/ea15ae0f-51b9-4af5-abbd-9f477722f738; and James Comtois, "Rhode Island Takes Transparency to New Level," *Pensions & Investments*, June 29, 2015, http://www.pionline.com/article/20150629/PRINT/306299974/rhode-island-takes-transparency-to-new-level.

4 Patrick McGeehan, "Wall Street Fees Wipe Out $2.5 Billion in New York City Pension Gains," *The New York Times*, April 8, 2015, http://www.nytimes.com/2015/04/09/nyregion/wall-street-fees-wipe-out-2-5-billion-in-new-york-city-pension-gains.html?smid=tw-share&_r=1; Steve Thompson, "Real Estate Losses Near $200M for Dallas Police, Fire Pension Fund," *The Dallas Morning News*, Sept. 18, 2014, http://www.dallasnews.com/news/metro/20140918-real-estate-losses-near-200m-for-dallas-police-fire-pension-fund.ece.

5 Andrea Dang, David Dupont, and Mike Heale, "The Time Has Come for Standardized Total Cost Disclosure for Private Equity," CEM Benchmarking Inc. (April 2015), http://www.cembenchmarking.com/Files/Documents/CEM_article_-_The_time_has_come_for_standardized_total_cost_disclosure_for_private_equity.pdf.

6 Dang, Dupont, and Heale.

7 South Carolina Retirement Systems, "FY2013 Comprehensive Annual Financial Report," 85–89, https://www.retirement.sc.gov/financial/cafrarchive/CAFR%202013.pdf.

8 For a more detailed discussion of South Carolina's approach to collecting and reporting accurate private equity costs, see Dang, Dupont, and Heale, "The Time Has Come," 4.

9 Institutional Limited Partners Association, "Private Equity Reporting Should Be More Uniform Across Industry, Says ILPA," Sept. 3, 2015, http://ilpa.org/index.php?file=/wp-content/uploads/2015/09/ILPA-Transparency-Initiative-press-release_2015-Sept3.pdf&ref=http://ilpa.org/2015/ilpa-publishes-a-press-release-on-increasing-transparency-in-the-pe-industry/&t=1447791502.

10 Institutional Limited Partners Association, "ILPA Fee Reporting Template," https://ilpa.org/best-practices/reporting-best-practices/for-consultation-ilpa-fee-reporting-template/.

11 In a letter dated July 21, 2015, trustees from 12 states and the District of Columbia representing $1 trillion in pension assets called upon the Securities and Exchange Commission to require standardized private equity disclosure (http://comptroller.nyc.gov/wp-content/uploads/documents/SEC_SignOnPDF.pdf).

12 Nicholas Greifer, "A Guide for Establishing a Pension Investment Policy," Government Finance Officers Association (2003), http://www.gfoa.org/sites/default/files/AGuideForEstablishingAPensionInvestmentPolicy.pdf.

13 Missouri State Employees' Retirement System, "Investment Policy," https://www.mosers.org/Investments/Investment-Policy.aspx

14 *Public 100*," Pensions & Investments, http://www.pionline.com/data-store.

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For further information, please visit:

pewtrusts.org/pensions

Contact: Ken Willis, communications officer
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Project website: pewtrusts.org/pensions

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Institutional Limited Partners Association (ILPA) Fee Transparency Initiative Template

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ILPA Reporting Template (v. 1.1) - This packet was last updated on Oct. 17, 2016

Reporting Template

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ILPA Reporting Template Guidance (Version 1.1)

ILPA Reporting Template (v. 1.1) - This packet was last updated on Oct. 17, 2016

Overview

The ILPA Reporting Template (the "Template") was developed to promote more uniform reporting practices in the private equity industry. It is one component of the ILPA's Transparency Initiative (the "Initiative"), a broad-based effort to establish more robust and consistent standards for fee reporting and compliance among investors, fund managers, and their advisors. The Initiative was comprised of senior investment and reporting professionals from a cross-section of investor institutions and advisors.

The Template, which details all monies paid to the fund manager, affiliates, and third parties, is the first deliverable of the Initiative. The Template reflects feedback from more than 120 individuals and organizations, including nearly 50 global LP groups, and 25 General Partner organizations (GPs), as well as numerous industry trade bodies and a number of leading consultants, advisors, fund administrators, and accountants.

Template Goals

The Template is organized into two sections (A & B). Each section has a discrete goal, providing LPs with:

A. The ability to monitor, aggregate and analyze an LP's direct costs of participating in a given private equity fund (a "Fund"). These values are presented within the framework of a typical partners' capital account statement, providing valuable context to the reported

B. A summary of the GP's sources of economics regarding the Fund and the investments made by the Fund (including reimbursements and any fees not subject to offset).

Template Guidance

Through dozens of interactions with the GP and LP communities during the consultation phase of the Template's development, the ILPA became aware of several complex issues that should be considered by all stakeholders when populating and analyzing the content provided in the Template. The guidance below is intended to communicate the expectations and necessary background to allow LPs and GPs to determine how both parties can utilize the Template most effectively.

This guidance assumes that every LP and GP has unique needs and resources. To accommodate this diversity, the responsibility for determining how the Template can be used to support their needs lies with individual LPs and their managers. The ILPA recommends that LPs and GPs should carefully consider the following when deciding how the Template is to be utilized within a GP's periodic disclosure package.

These guidelines, originally issued in January 2016, and revised in October 2016, are not anticipated to change in the near term. However, the ILPA will continue to monitor the challenges faced by LPs and GPs during the Template's adoption and may make additional clarifying or other changes to either this guidance or the Template in future. Interested parties should consult ilpa.org for the latest versions of these guidelines and the Template.

I. Frequency & Implementation

The Template is designed to be supplemental to a Fund's standard financial disclosures. The ILPA recommends that the Template is provided on a quarterly basis within a reasonable timeframe after the release of standard reports. The Template is not intended to be a substitute for any other reports, including capital call and distribution notices.

The content should be provided in an Excel or digital format (e.g., XML) that is compatible with reporting software systems and allows for aggregation and analysis of information. To maximize the usefulness of the data being presented, PDF format is not recommended.

During the initial adoption period, LPs should adjust their adoption/frequency/ lagging expectations to accommodate for the necessary changes to GPs' processes, technology, and resources. It is expected to take up to one year or more for GPs to adapt their processes to meet the demands of mass-producing the customized Template for each of their LPs, depending on the size, complexity, and infrastructure of each firm's operations.

The ILPA anticipates that the timing of each GP's transition to the standard indicated by the Template will depend upon the point at which a critical mass of a GP's LPs begin requesting the Template. Therefore, it's imperative for LPs to signal to their GPs at the earliest opportunity that they require this information.

Additionally, LPs should be aware that select fields within the Template, particularly in Section A.3 ("Miscellaneous"), may be more difficult for GPs to produce. Feedback from GPs suggest that the data in Section A.3 is neither customarily tracked in most GP systems, nor easily derived from existing ledger entries. LPs should moderate their expectations for the timely reporting of information for these fields accordingly. For the avoidance of doubt, it is anticipated that GPs will eventually modify their processes to allow for the regular reporting of this data in the future.

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When contemplating the desired timeline for full integration of the Template into reporting processes, LPs are reminded that many (if not all) of the fees charged to portfolio investments are tracked in a separate ledger (and software) from a Fund's accounts. It will likely require meaningful revisions to GP accounting and reporting procedures to aggregate the information from multiple ledgers into a single report. The scope of these changes in procedure and operations will necessarily be greater for GPs managing multiple products or pools of capital, those with more complex economic or operating models, or those GPs with a less sophisticated reporting infrastructure.

The Template should only be applied on a prospective basis to future funds, and, where feasible, to current vintages in the active investment phase. See Section IV for additional guidance on legacy funds.

The Template was developed for quarterly frequency to accommodate for LPs' fiscal year ends that often differ from the calendar year reporting of typical GPs. Having the Template data on a quarterly basis allows LPs to produce annualized figures to whatever quarter aligns with their own reporting cycle. However, as improvements in GP reporting processes and reporting software make quarterly calculations more feasible on an automated basis, the ILPA anticipates that GPs and LPs will together determine the frequency that meets each LP's needs.

The ILPA believes that it will be in the best interests of the industry in the long term to explore how to automate the generation, presentation, and dissemination of the data contained within the Template. To that end, the ILPA has collaborated with the AltExchange Alliance to ensure that the elements of the Template are reflected within the AltExchange data standards. A version of the Template is now available in a software-agnostic format (i.e., XML) to facilitate the integration of the Template's elements into LPs' and GPs' existing reporting systems. The XML formatted Template is available on ilpa.org.

II. Tiered Content – Differentiated Levels of Reporting

To ensure the Template focuses on efficiently meeting the needs of a diverse LP community, a two-tiered structure has been incorporated into the Template. Level 1 data represents high-level summary content, and the minimum baseline that the ILPA is recommending should be provided by GPs to LPs. Level 2 data introduces additional granularity and itemization for certain subtotals, i.e., fees subject to offset and partnership expenses, and fees/reimbursements received from portfolio investments. The more-detailed Level 2 content is represented by the shaded, collapsible rows in the Template.

The following table highlights the key differences between the data points captured by Level 1 and Level 2 information in the Template.

Level 1 Standard	Level 2 Standard
Partnership Expenses - Total	Partnership Expenses – Accounting, Administration & IT
	Partnership Expenses – Audit & Tax Preparatory
	Partnership Expenses – Bank Fees
	Partnership Expenses – Custody Fees
	Partnership Expenses – Due Diligence
	Partnership Expenses – Legal
	Partnership Expenses – Organization Costs
	Partnership Expenses – Other Travel & Entertainment
	Partnership Expenses – Other
Total Offsets to Fees & Expenses (applied during period)	Advisory Fee Offset
	Broken Deal Fee Offset
	Transaction & Deal Fee Offset
	Directors Fee Offset
	Monitoring Fee Offset
	Capital Markets Fee Offset
	Organization Cost Offset
	Placement Fee Offset
	Other Offset
Total Fees with Respect to Portfolio Companies/Investments	Advisory Fees
	Broken Deal Fees
	Transaction & Deal Fees
	Directors Fees
	Monitoring Fees
	Capital Markets Fees
	Other Fees

The data representing the Level 1 summary content may be sufficient for many LPs to monitor their portfolios. As such, LPs preferring less detail may request that their GPs provide only Level 1 content. This will help GPs focus their efforts on providing Level 2 content only to LPs that require it.

For the avoidance of doubt, ILPA recommends that GPs provide both Level 1 and Level 2 content to each of their LPs. However, GPs should have conversations with their LPs regarding the requisite level of reporting.

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III. Scaled Implementation – Fund Sizes

LPs should factor the size, back-office resources, operating budgets, and complexity of the funds managed by their GPs when determining their requirements for Template compliance.

Some GPs, including newer managers and managers of smaller, VC, or SBIC funds, may not have the staffing or technology resources to populate the quarterly Template in a reasonable timeframe, without significantly reducing their effectiveness in other areas. In addition, several of the fields within the Template may not apply to funds with simpler economics, meaning that these fields would consistently have a null value. LPs' expected timeline for receiving the Template should reflect the operational and other constraints facing GPs described in this section. The ILPA recommends that LPs investing in smaller GPs with simpler economics consider whether Level 1 content would be sufficient to meet their compliance or investment monitoring needs.

IV. Application to Legacy Funds

LPs should consider a fund's age when determining their requirements for Template compliance. The process surrounding how a GP manages account balances or cash flows with respect to certain elements within the Template may make populating the Template difficult. For instance, information may be managed across different ledgers, or GPs may use a different hierarchy for tracking partnership expense sub-totals (audit, bank fees, etc.). There may be a significant operational burden associated with reorganizing a GP's historical ledgers to align with the Template layout. LPs should therefore weigh carefully whether the incremental value of this information for historical periods warrants requiring it for older funds and perhaps consider the acceptability of less stringent requirements (particularly any requests for since inception data).

For the avoidance of doubt, GPs are encouraged to utilize best judgement when an LP requests since inception data for a legacy fund. GPs that deem such requests unduly burdensome for their back-office resources would still comply with these guidelines if they elected not to comply with such a request.

V. Conformity with the LPA

The values presented in the Template should be calculated within the framework of a Fund's Limited Partnership Agreement (LPA), including its valuation policy. Template values for NAV, incentive allocation (carried interest), fee offsets, management fees, unfunded commitment, and call/distribution amounts should be consistent with the totals presented in a Fund's other disclosures. Additionally, the definition used for Related Parties in the Template should be consistent with the definition used in the existing LPA.

Please note that the Template does provide a recommended definition for Related Parties. The ILPA encourages the adoption of this definition for all future PE funds.

As an exception to the above, the ILPA recommends that GPs adopt the ILPA's prescribed hierarchy for partnership expenses, fee offsets and fee/expense income received from investments (all of which is categorized as Level 2 content). Due to the various hierarchies currently being reported in fund financials, LPs are unable to conduct any meaningful, plan-level analysis of these balances. As noted in a previous section, this accommodation is only recommended for newer funds. For the avoidance of doubt, GPs are asked to adopt these categories for reporting purposes only, and are not being asked to revise their methodologies for calculating these sub-totals.

VI. Use of Estimates for Individual Partner's Balances

To provide context to each value, the Template requests an individual LP's allocation for every reported balance. The ILPA acknowledges that it may be unfeasible to precisely calculate the partner's share for certain balances, particularly any fees not subject to offset (as there would be no provision in the LPA to calculate the LP's share of a fee offset for which it was not entitled). These balances are denoted with a "****" in the Template. For these balances, GPs should only provide an estimated amount, using the LP's pro rata share of the Fund.

Due to the accounting complexity resulting from LP opt-outs and any specialized offset/waterfall provisions in certain LP side letters, LPs should understand that any individual LP's allocation for these balances are approximations and should only be used to provide context to any cumulative balances.

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VII. Template Endorsement

To help communicate the scope of adoption within the industry, organizations are encouraged to endorse the Template. Instructions for endorsing the Template are provided on ilpa.org.

In general, a Template endorsement signals that the endorsing organization:

- Believes that a single standard for fee disclosures is necessary to efficiently monitor and report private equity fund activity
- Will make best efforts to adhere to all of the Template Guidelines
- Will not modify the Template beyond what is prescribed in the Template Guidelines (most notably, Sections VIII, IX, and XIII)
- Will not make, or comply with, requests to complete alternate, customized template formats that provide the same data points found in the ILPA Template
- Recognizes the challenges faced by GPs and LPs with regards to completing the Template and monitoring fees, respectively, and will make best efforts to collaborate with each other to ensure that the Template is applied in the most effective and efficient way

For LPs (and their consultants/administrators), an endorsement also indicates that:

- They're willing to encourage their GPs to complete and adopt the Template
- They will use content yielded by the Template to systematically monitor their portfolio
- They will phase-out use of any other formats they're using to gather fee data

For GPs (and their advisors), an endorsement also indicates that:

- In the short term, they're willing to complete the Template for any LP that requests it
- In the long term, they'll work towards implementing an automated solution that provides the Template to all of their LPs on a regular basis, as part of their standard reporting package

VIII. GP Modifications to Template

The Template-style format, with its hard-coded series of fields, was deemed most effective at creating a unified reporting standard, rather than a principles-based approach which was expected to only exacerbate the continuing proliferation of bespoke formats.

The prescribed fee data is presented alongside values typically included in a partners' capital account statement (PCAP) because it is believed that this PCAP information offers valuable context and quality control to the disclosures on fees and expenses. The ILPA acknowledges that standardizing the format for the PCAP itself is problematic, therefore this section is intended to detail acceptable modifications to the Template that allow GPs additional flexibility in its application.

GPs should not delete or merge any fields in the Template, including any of the more detailed itemization included as Level 2 content. If certain fields do not apply to a Fund, GPs are still advised to include these fields and populate them with zeros.

While Template fields should not be deleted or merged, GPs do have the flexibility to repurpose, supplement, or re-order the fields in Section A.1 (NAV Reconciliation and Summary of Fees, Expenses and Incentive Allocation) to accommodate for variances between their existing PCAP format and the one used in the Template (which is mostly relevant to U.S. GAAP-centric, commingled funds). While potentially beneficial to the industry, the purpose of the Initiative was not to standardize the format for PCAPs.

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Some examples of acceptable modifications include:

- GPs whose PCAPs typically show the NAV reconciliation on a gross-of-carry basis, where periodic changes in accrued carry are indicated in separate line items, can adapt the Template format (which represents a net-of-carry basis) by adding and repurposing certain fields to match the basis of their standard PCAP. Regardless of any changes, the GP should still report any periodic changes in accrued/paid carried interest (in the section called “Reconciliation for Accrued Incentive Allocation”).

- Additional fields that could be potentially inserted into Section A.1 include tax withholding, transfer of capital from a secondary purchase/sale, and currency gain/loss.

- Existing fields, such as Placement Fees, may be moved into the reconciliation of Net Operating Income, depending on the GP’s existing reporting practices.

- GPs may rename fields to match the terminology in use within their country (e.g., Priority Profit Share is the more commonly used term for management fees in the U.K.).

- GPs may need to add or rename field names in the Level 1 content to accommodate funds that are denominated in multiple currencies, or with non-traditional or more complex fund structures (e.g., permanent capital and evergreen funds).

For any such revisions, GPs are encouraged to point out the explicit variations from the names or ordering of fields within the original ILPA Template, including explanatory footnotes, where appropriate. Some LPs may be relying on name-based Excel formulas (e.g., VLOOKUP) to aggregate content from reports provided by multiple GPs.

IX. LP Modifications and Adherence to the Template

One of the many benefits of a standardized Template is the reduced need for the GP community to process numerous, bespoke fee template requests from LPs. A single standard will make the reporting process more efficient and, over time, allow for greater comparability of information across managers and portfolios. As such, LPs should not modify any of the fields within the Template (including the accompanying Fund of Funds Template) before requesting that their GPs populate it.

However, LPs may request supplemental schedules that provide more clarity on any individual Template balance (e.g., itemized details on fee income received from individual portfolio companies). GPs should use their discretion when accommodating these supplemental Template requests.

Furthermore, LPs that adopt the Template are encouraged to transition away from using any customized template format that they’re currently using to collect the same data provided in the Template. While it’s understandable that they may use both their legacy format and the Template for a short period, it is counterproductive to encouraging broad adoption of these reporting standards to require the GP community to report in multiple formats over an extended period of time. For the avoidance of doubt, LPs that continue to request fee information via multiple formats after a reasonable transition period are not in compliance with these guidelines.

X. Footnotes

A footnotes section is provided at the bottom of the Template. GPs are encouraged to use this space to pre-emptively describe any out-of-the-ordinary balances. Also, GPs should footnote any YTD amounts that are classified in an “Other” balance (e.g., Partnership Expenses-Other, Other Offsets, etc.). Lastly, GPs should disclose in the footnotes if they have charged the Fund for any fund administration services that utilized in-house staff and infrastructure.

XI. Fee Allocations to Remaining Positions held by the Manager

In Section B.1 (“Source Allocation”), GPs are asked to provide a summary of all fees and reimbursements received by the GP and its affiliates from portfolio investments (under “With Respect to the Fund’s Portfolio Companies/Investments”). Aggregate LPs’ allocation for these fees are to be provided in the middle columns of the section (under “Cumulative LPs’ Allocation of Total Fund”). In cases where the GP/affiliates have additional exposure to the Fund’s investments (e.g., via LP co-investors or other funds/vehicles within the GP’s fund family), any remaining allocation of the total fees received from investments held by the reported Fund should be provided in the far-right columns of the section (under “Affiliated Positions”).

In total, the cumulative fee amounts received by the GP and its affiliates (including fees not subject to offset) should be accounted for (with care taken to avoid redundant entries or double-counting) in these two groups of columns. For the avoidance of any doubt, this section should not include any fees received by co-investors not under the umbrella of the GP/affiliates (e.g., other GPs or non-affiliated deal sponsors).

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XII. Fund of Funds Template

A supplemental schedule, which links to the Template, is provided to itemize the layer of fees and incentive allocation that a fund of funds ("FOF") pays to its underlying fund holdings. These values represent the normal fees and incentive allocation that the FOF paid via their commitment to each fund holding in the portfolio. The values do not include any pro-rata share of the fees charged by the FOF to its own LPs.

The ILPA acknowledges that any FOF will be highly challenged to provide the itemized content in the supplemental template. Like a traditional LP, the FOF's ability to track and report this content in a meaningful fashion to its own LPs is entirely contingent upon a uniform level of reporting and universal compliance from all of the underlying managers in the FOF's portfolio. As such, the ILPA recommends that FOF organizations provide the content in the supplemental schedule to LPs by special request only. The content should be reported in the format provided. The frequency and lag time of the reporting should be determined jointly by the FOF and the LP making the request.

XIII. Miscellaneous

• The Template was designed as a tool for standardizing the preferred level of disclosures on fees, expenses, and incentive allocation. It was not designed for verifying any of the GP's calculations for these amounts. To remain focused on this goal, certain metrics/terms used in these calculations (e.g. current management fee rate, preferred return rate, carry percentage, waterfall structure, etc.) are intentionally withheld from the Template. Subsequent to the release of the Template, the ILPA will issue additional guidance (in the form of a white paper and updates to the ILPA Principles) that will address the issue of LPA compliance.

• In the event of a transfer of interest between LPs (i.e., secondary purchase of an LP interest), historical activity should be presented in a manner that is consistent with a fund's standard reports.

•To match a traditional partners' capital account statement, values presented in Section A.1 (NAV Reconciliation and Summary of Fees, Expenses and Incentive Allocation) can have a positive or negative balance, depending upon how that value typically impacts the entity's wealth (e.g., increases in incentive allocation are a negative balance for LPs, a positive balance for the GP's allocation and a null balance for the Total Fund). However, balances in the remaining sections are typically presented as a positive balance (regardless of their impact on wealth). As such, Template users should avoid aggregating values from different sections.

• Current fee offset percentages are provided in Section A.1 in order to give interested LPs an approximation of total fees that are not subject to offset. LPs should be aware that potential nuances in how offset calculations are defined in an LPA (e.g., the offset percentages may increase/decrease over the life of the Fund) may make it difficult to use the Template to precisely calculate fees not subject to offset.

• When analyzing the fees charged by the GP to its investments, LPs should consider the potential accretive nature of any billable services rendered by the GP to the portfolio investment. LPs should also acknowledge that reimbursements paid by portfolio companies to the GP for amounts the GP has advanced to cover the cost of travel/services do not represent a source of revenue for the GP. Furthermore, GPs should acknowledge that LPs have an obligation to understand any non-"arms-length" engagement between a GP and portfolio company.

• The Total Fund balances presented in the Template should include all parallel vehicles/AIVs under the Fund's umbrella. Certain exceptions (e.g., funds denominated in multi-currencies) may apply.

• As in a traditional partners' capital account statement, partnership expenses presented in Section A.1 would not include any capitalized transaction fees charged to LPs.

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Best Practices Fund II, L.P.	**QTD** (Oct-15 - Dec-15)	**YTD** (Jan-15 - Dec-15)	**Since Inception** (Feb-07 - Dec-15)	**QTD** (Oct-15 - Dec-15)	**YTD** (Jan-15 - Dec-15)	**Since Inception** (Feb-07 - Dec-15)	**QTD** (Oct-15 - Dec-15)	**YTD** (Jan-15 - Dec-15)	**Since Inception** (Feb-07 - Dec-15)

A. Capital Account Statement for LP #5

A.1 NAV Reconciliation and Summary of Fees, Expenses & Incentive Allocation		***LP #5's Allocation of Total Fund***			***Total Fund (incl. GP Allocation)***			***GP's Allocation of Total Fund***		
Beginning NAV - Net of Incentive Allocation		**$45,067,000**	**$38,196,000**	**$0**	**$2,495,281,787**	**$2,163,081,300**	**$0**	**$339,194,377**	**$276,104,050**	**$0**
Contributions - Cash & Non-Cash		0	5,000,000	35,000,000	0	250,375,000	1,752,625,000	0	375,000	2,625,000
Distributions - Cash & Non-Cash (input positive values)		1,250,000	5,000,000	19,000,000	62,593,750	250,375,000	1,452,175,000	2,593,750	12,875,000	77,175,000
Total Cash / Non-Cash Flows (contributions, less distributions)		**(1,250,000)**	**0**	**16,000,000**	**(62,593,750)**	**0**	**300,450,000**	**(2,593,750)**	**(12,500,000)**	**(74,550,000)**
Net Operating Income (Expense):										
(Management Fees – Gross of Offsets, Waivers & Rebates):		(187,500)	(750,000)	(6,625,000)	(9,375,000)	(37,500,000)	(331,250,000)	0	0	0
Management Fee Rebate		0	0	0	0	0	0	0	0	0
(Partnership Expenses - Total):		(48,000)	(154,780)	(548,429)	(2,328,750)	(4,985,053)	(25,072,055)	0	0	0
(Partnership Expenses – Accounting, Administration & IT)		*(1,000)*	*(2,500)*	*(27,000)*	*(50,000)*	*(128,000)*	*(1,350,000)*	*0*	*0*	*0*
(Partnership Expenses – Audit & Tax Preparatory)		*(2,000)*	*(5,000)*	*(58,000)*	*(100,000)*	*(250,000)*	*(2,600,000)*	*0*	*0*	*0*
(Partnership Expenses – Bank Fees)		*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
(Partnership Expenses – Custody Fees)		*(12,500)*	*(27,500)*	*(55,000)*	*(550,000)*	*(695,000)*	*(2,900,000)*	*0*	*0*	*0*
(Partnership Expenses – Due Diligence)		*(20,000)*	*(50,000)*	*(95,000)*	*(1,000,000)*	*(1,250,999)*	*(2,555,000)*	*0*	*0*	*0*
(Partnership Expenses – Legal)		*0*	*(37,500)*	*(250,000)*	*0*	*(1,875,000)*	*(12,500,000)*	*0*	*0*	*0*
(Partnership Expenses – Organization Costs)		*(10,000)*	*(25,000)*	*(50,000)*	*(500,750)*	*(628,000)*	*(2,522,500)*	*0*	*0*	*0*
(Partnership Expenses – Other Travel & Entertainment)		*(2,500)*	*(7,005)*	*(12,444)*	*(128,000)*	*(147,554)*	*(599,555)*	*0*	*0*	*0*
(Partnership Expenses – Other[+])		*0*	*(275)*	*(985)*	*0*	*(10,500)*	*(45,000)*	*0*	*0*	*0*
Total Offsets to Fees & Expenses (applied during period):		82,600	346,500	1,538,521	4,140,600	19,227,400	82,424,249	0	0	0
Offset Categories	**% Offset to LP #5***									
Advisory Fee Offset	*80%*	*16,000*	*72,000*	*185,007*	*500,000*	*2,000,000*	*9,062,500*	*0*	*0*	*0*
Broken Deal Fee Offset	*80%*	*8,000*	*32,000*	*137,007*	*320,000*	*1,600,000*	*8,000,000*	*0*	*0*	*0*
Transaction & Deal Fee Offset	*80%*	*4,000*	*12,000*	*129,007*	*390,000*	*1,400,000*	*5,968,749*	*0*	*0*	*0*
Directors Fee Offset	*100%*	*600*	*2,500*	*37,500*	*30,000*	*875,000*	*6,875,000*	*0*	*0*	*0*
Monitoring Fee Offset	*100%*	*30,000*	*135,000*	*675,000*	*1,500,000*	*6,900,000*	*34,000,000*	*0*	*0*	*0*
Capital Markets Fee Offset	*100%*	*15,000*	*68,000*	*335,000*	*750,000*	*3,450,000*	*16,500,000*	*0*	*0*	*0*
Organization Cost Offset	*80%*	*8,000*	*20,000*	*40,000*	*400,600*	*502,400*	*2,018,000*	*0*	*0*	*0*
Placement Fee Offset	*100%*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Other Offset[+]	*80%*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Reconciliation for Unapplied Offset Balance (Roll-forward)	*Unapplied Offset Balance (Roll-forward) - Beginning Balance*	*1,000*	*5,000*	*0*	*250,000*	*2,500,000*	*0*	*0*	*0*	*0*
	Plus: Total Offsets to Fees & Expenses (recognized during period)	*81,600*	*341,500*	*1,538,521*	*3,890,600*	*16,727,400*	*82,424,249*	*0*	*0*	*0*
	Less: Total Offsets to Fees & Expenses (applied during period)	*82,600*	*346,500*	*1,538,521*	*4,140,600*	*19,227,400*	*82,424,249*	*0*	*0*	*0*
	Unapplied Offset Balance (Roll-forward) - Ending Balance	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
(Total Management Fees & Partnership Expenses, Net of Offsets & Rebates, Gross of Fee Waiver)		(152,900)	(558,280)	(5,634,908)	(7,563,150)	(23,257,653)	(273,897,806)	0	0	0
Fee Waiver		0	7,500	25,000	0	375,000	1,250,000	0	0	0
Interest Income		500	1,000	10,000	25,038	50,075	500,750	38	75	750
Dividend Income		10,000	32,380	233,508	500,750	2,503,750	17,030,000	750	3,750	30,000
(Interest Expense)		(2,000)	(8,000)	(40,000)	(100,150)	(400,600)	(2,003,000)	(150)	(600)	(3,000)
Other Income/(Expense)[+]		1,000	3,000	20,000	50,075	150,225	1,001,500	75	225	1,500
Total Net Operating Income / (Expense)		**(143,400)**	**(522,400)**	**(5,386,400)**	**(7,087,438)**	**(20,579,203)**	**(256,118,556)**	**713**	**3,450**	**29,250**
(Placement Fees)		**0**	**0**	**(40,000)**	**0**	**0**	**(2,000,000)**	**0**	**0**	**0**
Realized Gain / (Loss)		**1,000,000**	**3,000,000**	**15,100,000**	**50,075,000**	**145,392,253**	**887,937,906**	**2,575,000**	**12,725,000**	**175,728,250**
Change in Unrealized Gain / (Loss)		**1,000,000**	**5,000,000**	**20,000,000**	**62,593,750**	**250,375,000**	**1,608,000,000**	**12,531,160**	**75,375,000**	**250,500,000**
Ending NAV - Net of Incentive Allocation		**$45,673,600**	**$45,673,600**	**$45,673,600**	**$2,538,269,350**	**$2,538,269,350**	**$2,538,269,350**	**$351,707,500**	**$351,707,500**	**$351,707,500**
Reconciliation for Accrued Incentive Allocation	Accrued Incentive Allocation - Starting Period Balance	(4,750,000)	(3,750,000)	0	0	0	0	337,500,000	275,000,000	0
	Incentive Allocation - Paid During the Period	50,000	250,000	1,250,000	0	0	0	(2,500,000)	(12,500,000)	(75,000,000)
	Accrued Incentive Allocation - Periodic Change	(300,000)	(1,500,000)	(6,250,000)	0	0	0	15,000,000	87,500,000	425,000,000
	Accrued Incentive Allocation - Ending Period Balance	(5,000,000)	(5,000,000)	(5,000,000)	0	0	0	350,000,000	350,000,000	350,000,000
	Ending NAV - Gross of Accrued Incentive Allocation	$50,673,600	$50,673,600	$50,673,600	$2,538,269,350	$2,538,269,350	$2,538,269,350	$1,707,500	$1,707,500	$1,707,500

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Best Practices Fund II, L.P.	**QTD** (Oct-15 - Dec-15)	**YTD** (Jan-15 - Dec-15)	**Since Inception** (Feb-07 - Dec-15)	**QTD** (Oct-15 - Dec-15)	**YTD** (Jan-15 - Dec-15)	**Since Inception** (Feb-07 - Dec-15)	**QTD** (Oct-15 - Dec-15)	**YTD** (Jan-15 - Dec-15)	**Since Inception** (Feb-07 - Dec-15)
A.2 Commitment Reconciliation:	***LP #5's Allocation of Total Fund***			***Total Fund (incl. GP Allocation)***			***GP's Allocation of Total Fund***		
Total Commitment	**$50,000,000**	**$50,000,000**	**$50,000,000**	**$2,503,750,000**	**$2,503,750,000**	**$2,503,750,000**	**$3,750,000**	**$3,750,000**	**$3,750,000**
Beginning Unfunded Commitment:	**$18,500,000**	**$23,500,000**	**$50,000,000**	**$926,387,500**	**$1,176,762,500**	**$2,503,750,000**	**1,387,500**	**1,762,500**	**3,750,000**
(Less Contributions)	0	(5,000,000)	(35,000,000)	0	(250,375,000)	(1,752,625,000)	0	(375,000)	(2,625,000)
Plus Recallable Distributions	0	0	4,000,000	0	0	200,300,000	0	0	300,000
(Less Expired/Released Commitments)	0	0	0	0	0	0	0	0	0
+/- Other Unfunded Adjustment	0	0	(500,000)	0	0	(25,037,500)	0	0	(37,500)
Ending Unfunded Commitment	**$18,500,000**	**$18,500,000**	**$18,500,000**	**$926,387,500**	**$926,387,500**	**$926,387,500**	**$1,387,500**	**$1,387,500**	**$1,387,500**

A.3 Miscellaneous** (input positive values):	***LP #5's Allocation of Total Fund***			***Total Fund (incl. GP Allocation)***			***GP's Allocation of Total Fund***		
Incentive Allocation - Earned (period-end balance)****	$1,250,000	$1,250,000	$1,250,000	$0	$0	$0	$75,000,000	$75,000,000	$75,000,000
Incentive Allocation - Amount Held in Escrow (period-end balance)****	$250,000	$250,000	$250,000	$0	$0	$0	$15,000,000	$15,000,000	$15,000,000
Returned Clawback****	$0	$0	$0	$0	$0	$0	$0	$0	$0
Capitalized Transaction Fees & Exp. - Paid to Non-Related Parties****	$50,000	$200,000	$1,000,000	$2,503,750	$10,015,000	$50,075,000			
Distributions Relating to Fees & Expenses****	$2,500	$10,000	$58,000	$125,188	$500,750	$2,904,350			
Fund of Funds: Gross Fees, Exp. & Incentive Allocation paid to the Underlying Funds****	$1,951	$7,806	$24,626	$97,720	$390,879	$1,233,161			

B. Schedule of Fees, Incentive Allocation & Reimbursements Received by the GP & Related Parties, with Respect to the Fund and Portfolio Companies/Investments Held by the Fund

B.1 Source Allocation:		***LP #5's Allocation of Total Fund***			***Cumulative LPs' Allocation of Total Fund***			***Affiliated Positions******		
With Respect to the Fund's LPs	Management Fees - Net of Rebates, Gross of Offsets and Waivers	187,500	750,000	6,625,000	9,375,000	37,500,000	331,250,000			
	Partnership Expenses - Paid to GP & Related Parties - Gross of Offsets	1,000	4,000	30,000	50,075	200,300	1,502,250			
	(Less Total Offsets to Fees & Expenses - applied during period)	(82,600)	(346,500)	(1,538,521)	(4,140,600)	(19,227,400)	(82,424,249)			
	Capitalized Transaction Fees & Exp. - Paid to GP & Related Parties****	0	0	0	0	0	0			
	Accrued Incentive Allocation - Periodic Change	300,000	1,500,000	6,250,000	15,000,000	87,500,000	425,000,000			
With Respect to the Fund's Portfolio Companies/ Invs.	Total Fees with Respect to Portfolio Companies/Investments:	80,600	350,500	1,611,277	3,792,500	17,475,000	86,164,062	$947,225	$4,342,500	$21,334,765
	*Advisory Fees****	*20,000*	*90,000*	*231,259*	*625,000*	*2,500,000*	*11,328,125*	*156,250*	*625,000*	*2,832,031*
	*Broken Deal Fees****	*10,000*	*40,000*	*171,259*	*400,000*	*2,000,000*	*10,000,000*	*100,000*	*500,000*	*2,500,000*
	*Transaction & Deal Fees****	*5,000*	*15,000*	*161,259*	*487,500*	*1,750,000*	*7,460,937*	*121,875*	*437,500*	*1,865,234*
	*Directors Fees****	*600*	*2,500*	*37,500*	*30,000*	*875,000*	*6,875,000*	*6,600*	*192,500*	*1,512,500*
	*Monitoring Fees****	*30,000*	*135,000*	*675,000*	*1,500,000*	*6,900,000*	*34,000,000*	*375,000*	*1,725,000*	*8,500,000*
	*Capital Markets Fees****	*15,000*	*68,000*	*335,000*	*750,000*	*3,450,000*	*16,500,000*	*187,500*	*862,500*	*4,125,000*
	*Other Fees****[+]	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
	Total Reimbursements for Travel & Administrative Expenses****	5,000	15,000	62,200	200,000	600,000	248,800	8,000	19,500	88,500
Total Received by the GP & Related Parties		**$491,500**	**$2,273,000**	**$13,039,956**	**$24,276,975**	**$124,047,900**	**$761,740,863**	**$955,225**	**$4,362,000**	**$21,423,265**

*Current offset percentages for the specific LP; As offset calculations may change over the life of the Fund, the current offset percentages may not be applicable for calculating the non-QTD offset balances

**Content in A.3 aims to provide users with additional context on the balances provided in other sections; Some of the balances in A.3 represent a sub-total for an amount provided in another section; Balances in this section should be entered as a positive amount, even though similar balances in other sections may typically be presented as a negative amount; To prevent double-counting, or other miscalculations, users should avoid netting balances in A.3 with amounts in other sections

***Balances in this section represent fees & reimbursements received by the GP/Manager/Related Parties with respect to the Fund's investments that are not allocable to the Total Fund (i.e. allocated to ownership interests of LP co-investors & other vehicles managed-by/affiliated-with the GP/Manager/Related Party); To avoid double-counting, LP # 5's Allocation of Total Fund should not reflect any pro-rata share of these positions; Balances in this section, plus the balances in the "Cumulative LPs' Allocation of Total Fund" section, should equal the total fees/reimbursements received by the GP/Manager/Related Parties With Respect to the Fund's Portfolio Companies/Invs.

****Allocation for individual LPs, the Total Fund and all remaining positions may need to be estimated on a pro-rata basis

[+]A description should be provided in the footnote section for any amount(s) listed in this row for the year-to-date period

Shaded/Italicized/Grouped Content Represents Level 2 Data

Footnotes for any YTD (Total Fund) expenses, fees & offsets (including any "other" balances)

Partnership Expenses – Other ($10,500) = Insurance ($8,000) + Partnership-Level Taxes ($2,500)

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Fund of Funds Template: Fees, Expenses & Incentive Allocation to Underlying Funds (values in "Parent" Fund Currency)

ILPA Reporting Template (v. 1.1) - This packet was last updated on Oct. 17, 2016

"Parent" Fund Name:	Best Practices Fund II, L.P.
"Parent" Fund Currency:	USD
"Parent" Fund Size:	$2,503,750,000
LP #5 Commitment to "Parent" Fund:	$50,000,000
Period Ending:	Dec. 31, 2015

	Underlying "Child" Fund				Fees, Expenses & Incentive Allocation Paid by "Parent" Fund to "Child" Funds (Total Fund, Incl. GP Allocation - Reported in "Parent" Fund Currency)														
					Management Fees – Gross of Offsets, Waivers & Rebates			Management Fees – Net of Offsets, Waivers & Rebates			Partnership Expenses - Total			Incentive Allocation - Paid			Incentive Allocation - Periodic Change in Accrued		
	Name	Commitment Amount	Vintage	Currency	QTD	YTD	Since Inception	QTD	YTD	Since Inception	QTD	YTD	Since Inception	QTD	YTD	Since Inception	QTD	YTD	Since Inception
1	ABC Venture Partners III, L.P.	$100,000,000	2008	USD	$4,993	$19,970	$239,641	$4,743	$18,972	$227,659	$2,496	$9,985	$119,820	$25,000	$100,000	$120,000	$1,672	$6,690	$80,280
2	XYZ Capital Partners II, L.P.	$50,000,000	2012	USD	$3,994	$15,976	$179,730	$3,794	$15,177	$170,744	$1,997	$7,988	$89,865	$20,000	$80,000	$90,000	$1,338	$5,352	$60,210
3	European Venture Partners IV, L.P.	$109,065,000	2013	EUR	$5,295	$21,179	$42,358	$5,030	$20,120	$40,240	$2,647	$10,590	$21,179	$26,514	$106,054	$175,888	$1,774	$7,095	$14,190
4																			
5																			

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ILPA Fee Reporting Template - Definitions

ILPA Reporting Template (v. 1.1) - This packet was last updated on Oct. 17, 2016

Section	Field	Definition
A1. NAV Reconciliation	LP's Allocation of Total Fund	Balances that represent a single LP's interest in the Total Fund; Estimations are acceptable for any single LP amount that's denoted with a "****"
	Total Fund (incl. GP Allocation)	Balances that represent the cumulative interest of a single fund, including all of its side/parallel vehicles (current and liquidated)
	GP's Allocation of Total Fund	Balances that represent the interest of the legal entity, including any Related Parties, that manages the fund
	Beginning NAV - Net of Incentive Allocation	The valuation of the Fund at the beginning of the period for a given investor, or group of investors; This balance is reflective of any incentive allocation that was attributable to the GP at the beginning of the period; Per Section VIII of the Template Guidelines, GPs may also report this value without first attributing incentive allocation (i.e., Gross of Incentive Allocation); See Section VIII of the Template Guidance for more details
	Non-Cash Contributions & Distributions	Includes any in-kind transactions (e.g., stock distributions) and/or "netted" transactions (i.e., call and distribution called on the same date that fully offset each other)
	Management Fee Rebate	Refund of any prior management fees to the Fund's investors
	Partnership Expenses – Accounting, Administration & IT	Expenses charged to the Fund for fund administration, including accounting, valuation services, filing fees and IT activities; ***Any YTD expenses attributed to internal staff, Related Parties and/or internal infrastructure must be footnoted in this document***; Excludes expenses for audit and tax preparation
	Partnership Expenses – Audit & Tax Preparatory	Expenses charged to the Fund for the audit of the Fund's financial records and for the preparation of any tax documents related to the Fund; Excludes any costs related to organizing the Fund, investment due diligence and fund administration expenses
	Partnership Expenses – Bank Fees	Expenses charged to the Fund for banking/finance services; Excludes fund administration expenses and interest; Includes fees related to credit facilities and other short-term financing at the fund level
	Partnership Expenses – Custody Fees	Expenses charged to the Fund for the registration of securities and other custody-related activities; Excludes fund administration expenses
	Partnership Expenses – Due Diligence	Expenses charged to the Fund to confirm all material assumptions in regards to potential investment opportunities; Includes all costs that can be clearly linked to the due diligence of specific investment opportunities including legal, travel and other costs; Includes both consummated and unconsummated deals; Exclude management fees and the costs of identifying and sourcing potential investment opportunities; Excludes fund administration expenses
	Partnership Expenses – Legal	Expenses charged to the Fund for legal services on behalf of the Fund; Includes legal analysis to interpret or amend the Fund's LPA; Excludes any legal costs associated with organizing/administering the fund or investment due diligence
	Partnership Expenses – Organization Costs	Expenses charged to the Fund for the establishment of the Fund, including any legal/audit costs; Excludes any fund administration expenses or Placement Fees
	Partnership Expenses – Other Travel & Entertainment	Expenses charged to the Fund related to travel & entertainment on behalf of the Fund; May include travel related to LPAC meetings or unreimbursed portfolio company meetings; Excludes travel costs associated with due diligence
	Partnership Expenses – Other	Expenses charged to the Fund, not described elsewhere; May include annual meeting expenses, insurance, partnership level taxes, and deal origination/monitoring expenses; May include fees paid to the Fund's directors and advisory committee members; Explanations for any YTD amounts included in this field must be footnoted in this document
	Total Offsets to Fees & Expenses (applied during period)	Total amount that recognized fund management fees/expenses were reduced by during the period, to the benefit of the Fund's investors, resulting from fees/expenses received by the GP/Manager/Related Party; Applied offset amount does not necessarily represent the total amount of recognized fees/expenses that were subject to offset during the period, as the applied amount typically cannot exceed the total recognized, gross fund management fees/expenses during the period
	Advisory Fee Offset	Offset (gross of any unapplied balance) for any fees/costs paid to the GP/Manager/Related Party relating to consultancy services provided to portfolio companies; Advisory fees are provided through project-based services with no ongoing monitoring style fees; Compensation is based on hourly or task-based fees; Excludes services related to Transaction & Deal Fees
	Broken Deal Fee Offset	Offset for any termination fees/costs received from counterparties of the Fund's unconsummated deals; Typically netted (subject to the Fund's LPA) against any unreimbursed termination fees/costs paid to counterparties; Amount is gross of any unapplied balances during the period
	Transaction & Deal Fee Offset	Offset (gross of any unapplied balance) for any fees/costs paid to the GP/Manager/Related Party regarding the purchase and sale of investments (excl. Broken Deal Fees); Include fees/exp. related to any bolt-on acquisitions for the portfolio company
	Directors Fee Offset	Offset (gross of any unapplied balance) for any fees paid to the GP/Manager/Related Party (including any fees paid directly to individuals) for their role on a portfolio company's board of directors; Includes any non-cash compensation (e.g., stock)

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ILPA Fee Reporting Template - Definitions

ILPA Reporting Template (v. 1.1) - This packet was last updated on Oct. 17, 2016

Section	Field	Definition
A1. NAV Reconciliation	Monitoring Fee Offset	Offset (gross of any unapplied balance) for any fees, including accelerated monitoring fees, paid to the GP/Manager/Related Party as part of an agreement between the portfolio company and the GP/Manager/Related Party over a finite or indefinite period; Monitoring fees are identified as ongoing management services provided to portfolio companies, based on annually established fees as opposed to hourly or task based fees
	Capital Markets Fee Offset	Offset (gross of any unapplied balance) for any fees/costs paid to the GP/Manager/Related Party for their role in securing financing for a company; Excludes any Transaction & Deal Fees
	Organization Cost Offset	Offset (gross of any unapplied balance) for any costs related to the establishment of the Fund; Typically, LP offsets are provided for amounts in excess of a predetermined value; Exclude any offsets for Placement Fees
	Placement Fee Offset	Offset (gross of any unapplied balance) for fees/costs paid to the GP/Manager/Related Parties, or paid to outside parties, for fundraising services
	Other Offsets	Offset (gross of any unapplied balance) for any remaining fees/costs paid to the GP/Manager/Related Party, subject to LP offset, not listed elsewhere; Explanations for any YTD amounts included in this field must be footnoted in this document
	Unapplied Offset Balance (Roll-forward) - Beginning Balance	Prior period, ending-balance for any fees/expenses, subject to offset against fund management fees/expenses, that have been recognized, but not yet credited to the benefit of the Fund's investors
	Total Offsets to Fees & Expenses (recognized during period)	Periodic fees/expenses, subject to offset against fund management fees/expenses, that were credited to the benefit of the Fund's investors; This amount may not necessarily equal the offset amount applied during the period, as the applied amount cannot typically exceed the total amount of total recognized, gross fund management fees/expenses during the period
	Unapplied Offset Balance (Roll-forward) - Ending Balance	Current period, ending-balance for any fees/expenses, subject to offset against fund management fees/expenses, that have been recognized, but not yet credited to the benefit of the Fund's investors
	Total Management Fees & Partnership Exp., Net of Offsets & Rebates, Gross of Fee Waiver	Periodic gross management fees and fund expenses, less any Fee Waiver and Total Offsets to Fees & Expenses (applied during the period)
	Fee Waiver	Any waiver of management fees in lieu of assuming the GP's commitment obligations to the Fund
	Placement Fees	Fees/costs paid to the GP/Manager/Related Party, or to outside parties, for fundraising services; These fees are sometimes not an income statement line-item in a fund's financial records, but rather a direct reduction to partners' capital; GP may relocate this row, depending on how it is treated on their income statement
	Realized Gain / (Loss)	Changes in the Fund's valuation, attributable to full or partial sales of investments; Please note that gain/loss in the Template is presented on a net-of-incentive-allocation-basis; Per Section VIII of the Template Guidelines, GPs could also report the gain/loss can on a gross-basis; See Section VIII of the Template Guidance for more details
	Change in Unrealized Gain / (Loss)	Changes in the Fund's valuation, attributable to investments still held by the Fund; Please note that gain/loss in the Template is presented on a net-of-incentive-allocation-basis; Per Section VIII of the Template Guidelines, GPs could also report the gain/loss on a gross-basis; See Section VIII of the Template Guidance for more details
	Ending NAV - Net of Incentive Allocation	The valuation of the Fund at the end of the period for a given investor, or group of investors; This balance is reflective of any incentive allocation that was attributable to the GP at the end of the period; Per Section VIII of the Template Guidelines, GPs may also report this value without first attributing incentive allocation (i.e., Gross of Incentive Allocation); See Section VIII of the Template Guidance for more details
	Accrued Incentive Allocation - Starting Period Balance	Prior period, ending-balance for GP's/Manager's/Related Parties' expected share of any unrealized profits that would be paid upon realization of all remaining investments, based on current valuations (also known as Carried Interest or GP Profit Share), less any potential Clawback obligation; Balance also includes any uncollected profits from realized investments, if applicable
	Incentive Allocation - Paid During the Period	GP's/Managers'/Related Parties' share of any realized profits from an investment (also known as Carried Interest and GP Profit Share), less any returned Clawback; Balance only reflects Incentive Allocation collected by the GP/Related Parties, including amounts held in escrow
	Accrued Incentive Allocation - Periodic Change	Periodic change in GP's/Managers'/Related Parties' expected share of any unrealized profits that would be paid upon realization of all remaining investments, based on current valuations (also known as Carried Interest and GP Profit Share), less any potential Clawback obligation; Change also includes any uncollected profits from realized investments, if applicable
	Accrued Incentive Allocation - Ending Period Balance	Current period, ending-balance for GP's/Manager's/Related Parties' expected share of any unrealized profits that would be paid upon realization of all remaining investments, based on current valuations (also known as Carried Interest or GP Profit Share), less any potential Clawback obligation; Balance also includes any uncollected profits from realized investments, if applicable
A3. Misc.	Incentive Allocation - Earned (period-end balance)	Estimated period-end balance for GP's/Managers'/Related Parties' share of any realized profits from investments (aka Carried Interest and GP Profit Share), less any Returned Clawback; Balance reflects all incentive allocation entitled to the GP/Related Parties (attributable to realizations), including amounts held in escrow and/or not yet collected by the GP
	Incentive Allocation - Amount Held in Escrow (period-end balance)	Period-End balance for the portion of the GP's/Managers'/Related Parties' share of any realized profits from investments (aka Carried Interest and GP Profit Share) that has been collected, but is currently held in a third party account until certain milestones are met (per the Fund's LPA)
	Returned Clawback	Excess Incentive Allocation paid to the GP/Manager/Related Parties, including amounts held in escrow, which has been returned to the Fund
	Capitalized Transaction Fees & Exp. - Paid to Non-Related Parties	Any fees & expenses rolled into the cost-basis of the Fund's investments that are paid by the Fund's investors to non-Related Parties
	Distributions Relating to Fees & Expenses	Estimated portion of distributions that are attributed to the return of any fees/expenses paid; Typically returned by the GP before any Incentive Allocation is captured as part of the waterfall calculation
	Fund of Funds: Gross Fees, Exp. & Incentive Allocation paid to the Underlying Funds	Additional layer of fees/expenses/Incentive Allocation (incl. accruals) charged by the underlying funds held by the Fund-of-Funds; Excludes any fees/expenses/Incentive Allocation charged by the Fund-of-Fund (the 'parent' fund) that manages the underlying funds ('child' funds); Fields are linked to a supplemental template (Fund of Funds-Underlying); LP balances are estimates

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ILPA Fee Reporting Template - Definitions

ILPA Reporting Template (v. 1.1) - This packet was last updated on Oct. 17, 2016

Section	Field	Definition
B1. Source Allocation	Related Party	See "Related Party Definition" tab
	With Respect to the Fund's LPs	Fees, expenses and incentive allocation paid/accrued by the Fund's LPs to the GP/Management/Related Parties; Excludes any expenses that are paid to non-Related Parties
	With Respect to the Fund's Portfolio Companies/Invs.	Fees, expenses and reimbursements paid/accrued by (or in regards to) the Fund's portfolio holdings (incl. fees not subject to offsets) to the GP/Manager/Related Parties; Include any fees received from 3rd parties regarding arrangements for the investment (e.g., purchasing discount fees), and any fees received after the liquidation of the Fund or any sleeve/AIV of the Fund
	Cumulative LPs' Allocation of Total Fund	Balances that represent the cumulative interest of a single fund, including all of its side/parallel vehicles (current and liquidated), less the GP's Allocation of Total Fund
	Partnership Expenses - Paid to GP & Related Parties - Net of Offsets	Share of total partnership expenses (including any placement fees or other charges that are treated as direct reduction to partners capital) paid to the GP/Manager/Related Parties for services provided to the Fund; Excludes expenses paid to non-Related Parties that are advanced out of the management company's reserves until the expense can be called from the Fund's LPs (aka "pass-through" transactions)
	Capitalized Transaction Fees & Exp. - Paid to GP & Related Parties	Any fees & expenses rolled into the cost-basis of the Fund's investments that are paid by the Fund to the GP/Manager/Related Parties; Excludes expenses paid to non-Related Parties that are advanced out of the management company's reserves until the expense can be called from the Fund's LPs (aka "pass-through" transactions)
	Advisory Fees	Fees/costs that are paid/accrued to the GP/Manager/Related Parties (incl. any fees not subject to offset) relating to consultancy services provided to portfolio companies; Advisory fees are provided through project-based services with no ongoing monitoring style fees; Compensation is based on hourly or task-based fees; Excludes services related to Transaction & Deal Fees
	Broken Deal Fees	Termination fees/costs received from counterparties of the Fund's unconsummated deals, netted against any termination fees/costs paid to counterparties that weren't reimbursed by the Fund; Include any fees not subject to offset
	Transaction & Deal Fees	Fees/costs that are paid/accrued to the GP/Manager/Related Party (incl. any fees not subject to offset) regarding the purchase and sale of investments; Excludes broken deal fees; Include fees/exp. related to bolt-on acquisitions for the portfolio company
	Directors Fees	Fees/costs that are paid/accrued (gross of any unapplied offset balance) to the GP/Manager/Related Party (incl. any fees paid directly to individuals and/or any fees not subject to offset) for their role on the portfolio company's board of directors; Includes any non-cash compensation (e.g., stock)
	Monitoring Fees	Fees/costs, including accelerated monitoring fees, that are paid/accrued to the GP/Manager/Related Party (incl. any fees not subject to offset) as part of an agreement between the portfolio company and the GP/Manager/Related Party over a finite or indefinite period; Monitoring fees are identified as ongoing management services provided to portfolio companies, based on annually established fees as opposed to hourly or task based
	Capital Markets Fees	Fees/costs that are paid/accrued to the GP/Manager/Related Party (incl. any fees not subject to offset) for their role in securing financing for a portfolio company
	Other Fees	Any remaining fees/costs that are paid/accrued to the GP/Manager/Related Party (incl. any fees not subject to offset) not listed elsewhere; Explanations for any YTD amounts included in this field must be footnoted in this document
	Total Reimbursements for Travel & Administrative Expenses	Repayment of any travel or other administrative expenses from the Fund's portfolio investment to the GP/Manager/Related Party

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ILPA Reporting Template (v. 1.1) - This packet was last updated on Oct. 17, 2016

The ILPA acknowledges that the definition of 'Related Parties' can vary from manager to manager, and is typically linked to specific language in a fund's LPA. The ILPA also acknowledges that it's unlikely a manager would track and report Related Party activities that did not fall within the scope of any previously agreed upon definition. However, to ensure that a consistent standard is applied to any future funds, the ILPA strongly recommends the use of the following Related Party definition in any disclosures for funds with an inception date after March 1, 2016:

Operational Person(s) means any operational partner, senior advisor or other consultant or employee whose primary activity for a Relevant Entity is to provide operational or back office support to any portfolio company of any investment vehicle, account or fund managed by a Related Person.

Related Person(s) means any current or former employee, manager or partner of any Relevant Entity which employee, manager or partner is involved in the investment activities or accounting and valuation functions of such Relevant Entity or any of their respective family members.

Related Party(ies) means (i) any Related Person, (ii) any Operational Person, (iii) any entity more than [10]% of the ownership of which is held directly or indirectly (whether through other entities or trusts) by any Related Person or Operational Person and whether or not such Related Person or Operational Person participates in the carried interest received by the General Partner or the Special Limited Partner, and (iv) any consulting, legal or other service provider regularly engaged by portfolio companies of any investment vehicle, account or fund managed by a Related Person and which also provides advice or services to any Related Person or Relevant Entity.

Relevant Entity(ies) means the General Partner, any separate carry vehicle, the Investor Advisor or any of their parent or subsidiary entities or any similar entity related to any other investment vehicle, account or fund advised or managed by any current or former Related Person.

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Exhibit B

Commonwealth of Kentucky

Pension Performance and Best Practices Analysis

Interim Report #2:

Historical and Current Assessment

May 22, 2017

pfm

In conjunction with:

PRM Consulting Group
Stites & Harbison PLLC

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A. Kentucky Benefit Structures

B. Benchmarking Tabular Findings

C. Full Investment Analysis

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I. Executive Summary

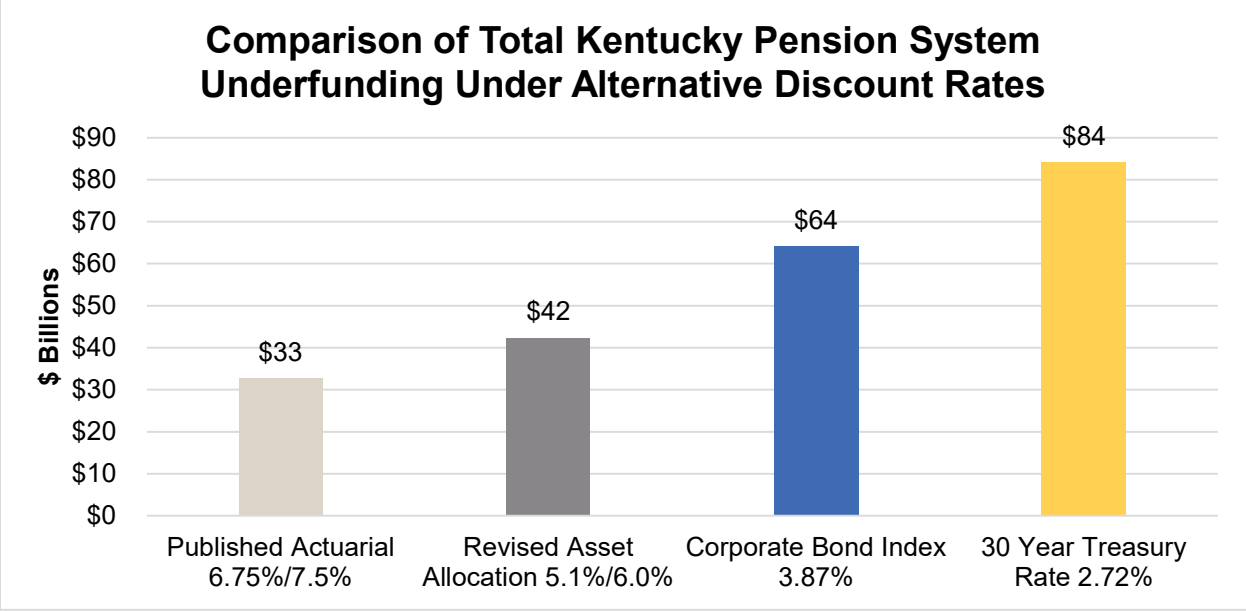
The Commonwealth of Kentucky sponsors three major retirement systems, collectively providing pensions and retiree healthcare benefits to tens of thousands of retired state, local government, school district, and nonprofit employees across the state. Within these three major systems, there are eight pension plans in all, each with different operating practices and benefit plan designs, covering specific employee groups.

For the pensioners and current workers within these covered groups, the reliability and security of these retirement programs are paramount. At the same time, these systems represent a significant investment for Kentucky's taxpayers, and their affordability and financial sustainability bear strongly on the capacity of the Commonwealth and its local governments to address other critical public needs.

Large Unfunded Liabilities

In the aggregate, the Commonwealth of Kentucky faces a funding shortfall across its pension systems of $33 billion even assuming the funds achieve targeted investment return rates of 6.75-7.5% ("published actuarial rate").

Figure 1



Source: PRM Consulting Group based on analysis of the actuarial reports

Based on alternate return assumptions for a 10-year investment horizon and increased liquidity requirements consistent with an updated KRS policy, the unfunded liability would rise to $42 billion ("Revised Asset Allocation rate"). Using weighted average rates across the yield curve for a

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corporate bond index used in private sector pension reporting ("Corporate Bond Index") the projected unfunded liability would total $64 billion, and with the equivalent average rate for U.S. Treasuries, it would total $82 billion – more than 7 times Kentucky's annual General Fund spending.[1]

In addition, according to the most recent actuarial valuations, Kentucky's retiree health benefits are underfunded by approximately $6 billion, over and above the pension shortfall.

Weakest Pension Funding of Any State

The Commonwealth's share of the retirement system aggregate pension underfunding has been calculated by the credit rating agency, Standard & Poor's ("S&P"), as the worst among the 50 states – with just 37.4% of total current obligations now funded, compared to a national median of 74.6% as of FY2015, the most recent period reported by S&P on this basis.[2]

- While the funding levels vary among the eight different plans supported by the Commonwealth, all are underfunded, and only the comparatively small Legislative and Judicial plans are funded at or above national averages.
- The primary pension plan for civilian state employees, the Kentucky Employees Retirement System Non-Hazardous pension plan (KERS-NH) was only 16% funded as of the end of FY2016 – one of the most challenged pension programs in the nation. This funded ratio was based on the actuarial assumptions as of June 30, 2016 and would be lower using more conservative assumptions.

The Commonwealth's unfunded liability is also one of the largest in proportion to the revenues available to pay for the liabilities, draining resources from other critical needs. According to the credit rating agency Moody's Investors Service, Kentucky had the third-highest net pension liability among the states when measured as a percentage of governmental revenues using standardized actuarial assumptions. This ratio for Kentucky's liability at 185% of total annual revenues was more than twice the average state burden of 75% and more than three times the median of 60%.

Eroding Financial Condition

As recently as FY2002 the KERS-NH plan was over 100% funded, and the Kentucky Teachers' Retirement System (TRS) plan was nearly 90% funded. The funded status of KERS-NH dropped precipitously and constantly thereafter, despite benefit reform efforts including the implementation of new benefit tiers for new hires in 2008 and 2014. Overall, the KERS-NH financial position fell

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[1] *Corporate bond index rates from Citibank pension discount curve as of April 30, 2017; U.S. Treasury yield curve as of May 4, 2017.*

[2] *Standard & Poor's, U.S. State Pensions: Weak Market Returns Will Contribute to Rise in Expense, September 12, 2016.*

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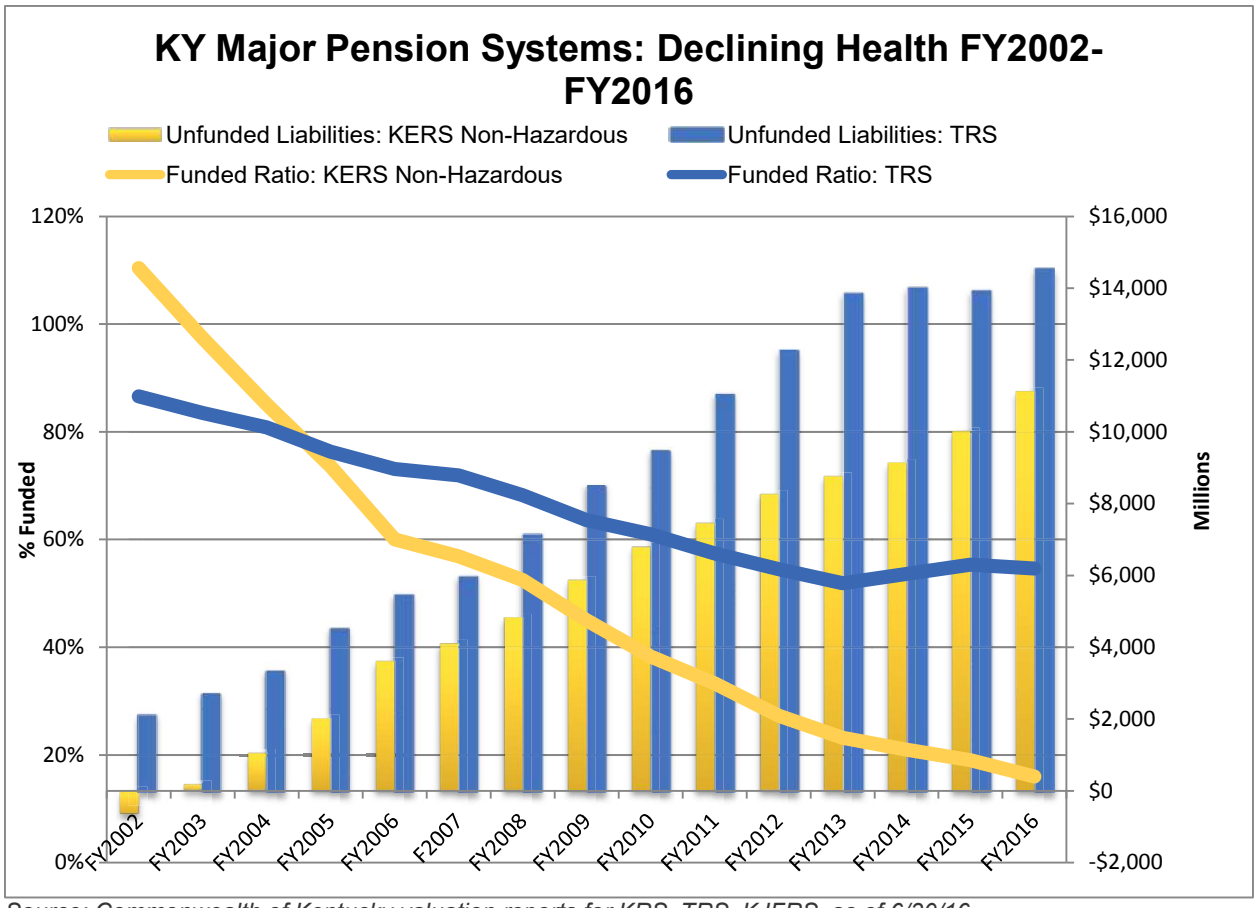
from a net asset surplus to an unfunded liability of over $11 billion. The declining health of the TRS pension fund has been more gradual and less severe, but nonetheless steady. Overall, the amount of TRS unfunded liabilities increased by nearly 600% between FY2002 and FY2016 as seen in Figure 2.

Figure 2



Source: Commonwealth of Kentucky valuation reports for KRS, TRS, KJFRS, as of 6/30/16

Multiple Factors Drove the Decline

Multiple factors contributed to the deteriorating funded status of Kentucky's pensions across the past decade, with the relative impact of these factors varying among the Commonwealth's different plans.

In the aggregate across all plans, the largest single factor underlying the decline was an actuarial funding approach that effectively "back-loaded" payments such that – even if the Commonwealth and other member employers had met all of the calculated actuarial funding requirements each and every year – these payments would still have been less than the annual interest on the Unfunded

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Actuarial Liability ("UAL"), causing the UAL to grow. This "actuarial back-loading" is further detailed in Section V of the full report that follows. In addition, each of the plans modified various actuarial assumptions over this period – for example, adopting somewhat more conservative investment return assumptions and reflecting improving longevity by adjusting mortality rates. Together, the actuarial back-loading and assumption adjustments drove nearly half of the aggregate growth in underfunding (47%), and led to a majority of the shortfalls in the TRS and CERS-NH plans.

The past decade also saw many years of weak investment returns. Performance below actuarial assumptions led to about one-third of the aggregate funding decline. Although much of this experience was driven by the failure of the overall market to meet actuarial assumptions (which were even higher than current rate assumptions for much of this ten-year period), plan-specific investment performance below market-wide results was also a factor for most of the plans.

As seen in Table 1, for the TRS and KERS-NH plans in particular, Commonwealth payment levels below the Actuarially Required Contribution (ARC) were also significant factors, leading to 15% of the total funding decline across all plans. Other contributing factors were cost of living adjustment ("COLA") benefit enhancements granted in the earlier years of the decade evaluated, which created a new liability that has never been funded, and other elements of plan experience (such as mortality rates) that varied from actuarial assumptions then in effect.

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Table 1

	Factors Increasing the Unfunded Pension Liability 6/30/2005 to 6/30/2016 (Amounts in $Millions)									
Causes	TRS	KERS-NH	KERS-H	CERS-NH	CERS-H	SPRS	KJRP	KLRP	TOTAL	% of Total
Actuarial Back-loading	$3,278	$1,153	$89	$1,269	$353	$111	$31	$2	$6,286	25%
Actuarial Assumption Changes	1,958	2,319	82	984	249	50	25	5	5,672	22%
Plan Experience	232	539	39	372	107	107	43	2	1,441	6%
Investment: Market Performance Below Assumption	1,926	639	80	931	297	45	5	2	3,925	15%
Investment: Plan Performance Below Market	1,014	610	(5)	207	82	8	14	0	1,930	8%
Funding Less Than the ARC	1,588	2,561	(10)	(220)	(133)	42	(11)	3	3,820	15%
COLAs	0	1,291	68	672	267	72	27	3	2,400	9%
Total	$9,996	$9,112	$343	$4,215	$1,222	$435	$133	$17	$25,473	100%

Cash Flow Trends and Solvency Risks

With this eroding funded status, three large Kentucky retirement systems, KERS-NH, CERS-NH, and TRS, have had negative cash flow for at least seven recent years, defined as inflows *(employer*

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contributions, employee contributions, dividends and interest) being less than outflows (*benefit payments, administrative and operating expenses).*

KERS-NH has had severe negative cash flow of over $100 million every year since at least FY2002, and TRS has had negative cash flow nine of the last ten years, with the only exception being FY2011 when the proceeds of a $465.4 million pension obligation bond boosted system assets on a one-time basis. For CERS-NH, while the magnitude of the negative cash flow is smaller, it is nonetheless consistent – and has increased in recent years. In the near-term, such negative cash flow across these plans requires the liquidation of assets to meet current obligations, which can make it more difficult to achieve investment goals, or a more conservative investment strategy that allocates a relatively larger share of assets to liquidity and matches asset maturities to liabilities. Over the longer-term, such negative cash flows can ultimately threaten the solvency of the plans.

Table 2

Total Kentucky Pension Fund Cash Flows FY2006-FY2016 Inflows + Interest/Dividends – Outflows ($ in 000s)			
Fund	**Inflows**	**Outflows**	**Cash Flow**
KERS-NH	$4,792,048	$9,061,781	$(4,269,733)
KERS-H	477,393	502,187	(24,794)
SPRS	304,008	512,277	(208,269)
CERS-NH	5,428,274	5,744,284	(316,010)
CERS-H	1,942,982	1,780,890	162,092
TRS	13,612,859	15,866,112	(2,253,253)
Total	$26,557,564	$33,467,531	$(6,909,967)

The at-risk condition of the KERS-NH plan in particular is highlighted by comparing the fund net position to the annual benefit payments. As of year-end FY2016, the KERS-NH fund had assets of just under $2.0 billion, which represented barely two years (783 days) of benefit payments on hand. Considering that KERS-NH lost $2.2 billion in plan assets in FY2008-FY2009, it is apparent that the system's ability to maintain assets for a pre-funded retirement system is acutely vulnerable to a sharp downturn that further threatens solvency.

Under current assumptions, including the statutory schedule for paying down the unfunded liabilities that backloads principal payments, the funded ratio for KERS-NH is estimated by the actuary to continue to decline, before gradually rising beginning in FY2023 – but only if all actuarial assumptions are met. In fact, even if the current assumptions of 6.75% annual investment returns and 4% annual payroll growth are achieved and the payment schedule is met in full, KERS-NH is still not estimated to reach 20% funded until FY2030, as can be seen in Table 3. A more conservative amortization schedule for paying down unfunded liabilities, a level dollar amortization – similar to a standard home mortgage schedule - would cost significantly more in the short term

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but would make faster progress in reducing the unfunded liability, would eliminate reliance on changes in payroll as a variable, and would not backload principal payments as does the current funding schedule.

Table 3

Comparison of Pension Amortization Schedules KERS-NH June 30, 2016 Valuation and Actuarial Assumptions Level % of Payroll (Current Baseline Amortization Method as Defined in 2013SB2 vs. Level $ Amortization ($ in Millions)						
Year	Employer Contribution		Unfunded Liability		Funded Ratio	
	Level %	Level $	Level %	Level $	Level %	Level $
2019	$731.7	$1,082.2	$11,620.2	$11,257.9	12.9%	15.6%
2020	752.6	1,113.1	11,741.1	10,981.7	12.2%	17.9%
2021	793.3	1,117.3	11,788.5	10,642.9	12.0%	20.5%
2022	817.6	1,151.5	11,813.5	10,245.4	11.9%	23.6%
2023	851.9	1,099.4	11,804.5	9,874.7	12.1%	26.5%
2024	879.0	1,134.5	11,766.7	9,442.6	12.4%	29.7%
2025	912.1	1,071.0	11,692.2	9,046.9	13.0%	32.7%
2026	942.7	1,106.9	11,581.0	8,587.5	13.8%	36.1%
2027	976.7	1,040.2	11,427.5	8,166.3	14.9%	39.2%
2028	1,010.4	1,076.1	11,229.1	7,679.9	16.3%	42.7%
2029	1,044.0	1,005.8	10,983.0	7,233.8	18.0%	46.0%
2030	1,080.6	1,041.0	10,682.7	6,721.3	20.1%	49.7%
2031	1,114.8	968.8	10,327.0	6,249.2	22.5%	53.1%
2032	1,154.6	1,003.4	9,906.7	5,709.9	25.5%	57.0%
2033	$1,190.7	$929.8	$9,421.5	$5,211.2	28.9%	60.7%

Source: Cavanaugh MacDonald[3]

Note: Actuarial assumptions include 6.75% earnings assumption, 4% payroll growth, and 26-year remaining amortization period.[4]

[3] *Certain actuarial data and calculations have been developed by Cavanaugh Macdonald Consulting LLC, plan actuaries for the KERS and TRS systems, under a subcontract with PFM in order to help ensure the accuracy of the estimates and projections herein.*

[4] *The level dollar amortization schedule is estimated to fluctuate somewhat due to the Commonwealth's biennial budget structure, and conversion of the amortization estimate to a payroll basis by the actuary's model.*

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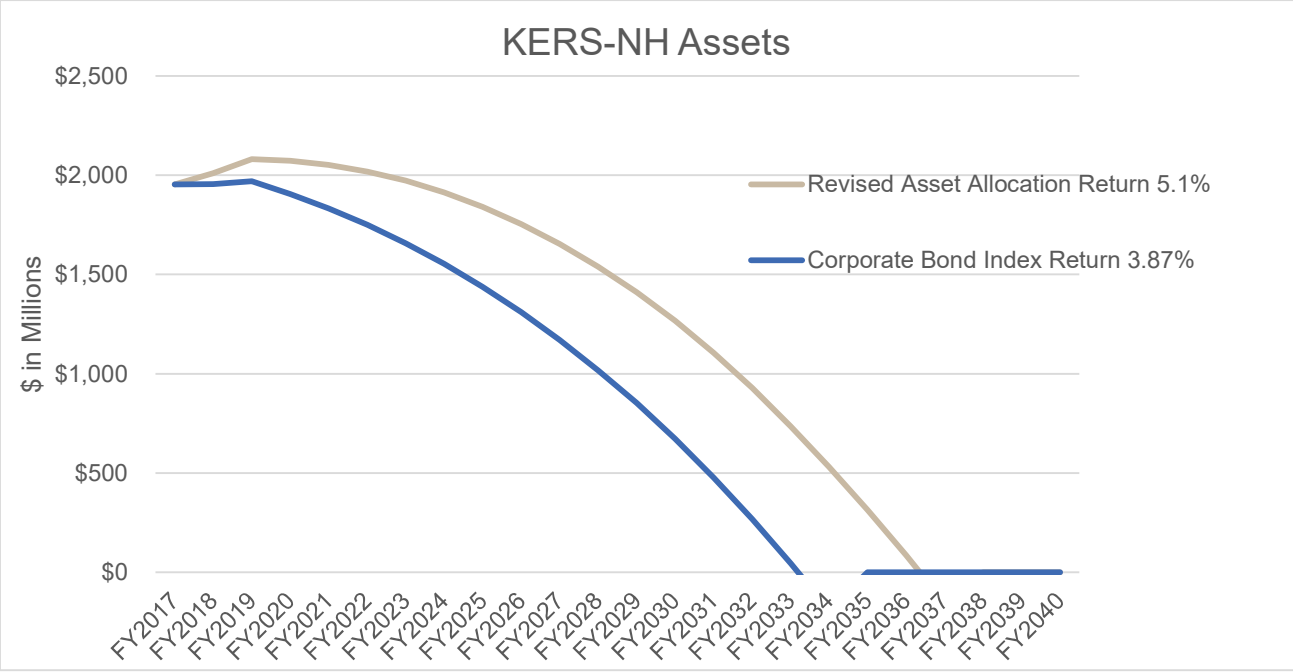
Further, continued solvency requires full funding. If the Commonwealth reverts to the pattern of underfunding the system that it followed from FY2004-FY2014, we project that the KERS-NH fund will be depleted by FY2022, just five years away.

Evaluating cash flows in a solvency analysis over a 30-year period under a range of alternative scenarios, we further project that KERS-NH will also become insolvent, even if more elevated recent patterns of budgetary contributions are maintained and a reduced payroll growth is assumed. Following ten years of a negative 1% compounded annual change in payroll, a 0% payroll growth assumption was applied, or effectively a level dollar amortization, rather than the 4% now assumed by the plan's actuaries. Following years of budgetary underfunding, the FY2016 through FY2018 budgets funded more than the Actuarially Determined Contribution (ADC). If the FY2016 or the average of the FY2016-2018 budgeted contributions are maintained going forward, KERS-NH is still projected to become insolvent, assuming either the Revised Asset Allocation or Corporate Bond Index return assumptions of 5.1% or 3.87%. If the enhanced overfunding of the FY2017-2018 budgets were maintained for future contributions, the plan is projected to remain solvent, even with 0% payroll growth and the Revised Asset Allocation or Corporate Bond Index investment returns.

Figure 3



Source: PRM Consulting Group

Note: 0% Payroll Growth. Ultimate contribution of FY2016 budget ($672 Million) annually

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Similarly, while the TRS has a higher funded level and more assets on hand, we also project that the TRS could become insolvent in the decades ahead if the FY2018 employer contribution amount is not increased in future years and plan assets do not earn well above the private sector pension discount rate.

Competitive Benefits

The benefits offered to the Commonwealth's employees – including both pensions and retiree healthcare – are generous compared to the national and regional private sector. Section VI of this report on "Benefit Structure" encompasses detailed benchmarking of plan design and value. Key findings include:

- Most private employers nationally now support retirement primarily through 401(k)-style defined contribution ("DC") plans, and funding for retiree healthcare benefits has become increasingly rare across private industry. Relative to the 12 largest private Kentucky employers, the value of retirement benefits for the KRS plans also compares highly favorably.

- While public employers are still more likely to provide traditional defined benefit ("DB") pensions and retiree healthcare benefits, most states – including Kentucky – have modified benefits within the past decade to address sustainability concerns. In addition to the Commonwealth and its "hybrid' cash balance plan for recently hired KERS and CERS participants, 18 other states nationally now offer hybrid and/or DC plans for civilian workers.

- While Kentucky teachers do not participate in Social Security, the value of their DB pension nonetheless provides a comparatively generous overall benefit. Among the advantages of Kentucky's teacher plan, participants can retire at any age with 27 years of service or at age 55 with 10 years of service (5 years of service if hired before 7/1/2008). As a result, according to actuarial reports, the average age at retirement of a TRS member is 55 – below the age when teachers in many other states are even eligible for full benefits.

- Of 20 states benchmarked in detail for this report, Kentucky was also among just four that fully fund the employer contribution for teacher pensions at the state level. In contrast, nine states require local school districts to fully fund these contributions, and seven states share a portion of the contribution with local districts.

Next Steps

By evaluating the scale of Kentucky's retiree benefit funding pressures, analyzing the factors that have contributed to this challenge, and benchmarking approaches elsewhere, this Pension Report #2 is intended to provide important background and context for moving forward.

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In the forthcoming Report #3, we will present ideas and alternatives for improving the long-term security, reliability, and affordability of these benefit programs. Building on our analysis of factors that have led to the current conditions, including our previous Report #1 on transparency and governance, areas to be addressed prospectively are expected to include:

- Actuarial method and assumptions
- Investment practices and approach
- Benefit levels and risk exposure
- Funding policy

Through past legislative reforms, recent Board actions, and significant additional funding in FY17-18, Kentucky has already taken positive steps in many of these critical areas. Nonetheless, the continued scale of the Commonwealth's remaining challenge requires further strong, corrective action.

A status quo approach is not sustainable.

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II. Overview of the Retirement Systems

Kentucky state law establishes three major retirement systems that collectively administer eight distinct retirement plans covering most state and local government and school district employees, as well as employees of some state universities and government-related non-profit entities. All three systems administer both pension and Other Post-Employment Benefit (OPEB) benefits for retirees and beneficiaries (primarily medical insurance coverage but also including dental, vision, and life insurance).

The systems and plans administered include:

- Kentucky Retirement Systems ("KRS")
  - Kentucky Employees Retirement System ("KERS")
    - Non-Hazardous employees plan ("KERS-NH")
    - Hazardous employees plan ("KERS-H")
  - State Police Retirement System ("SPRS")
  - County Employees Retirement System ("CERS")
    - Non-Hazardous employees plan ("CERS-NH")
    - Hazardous employees plan ("CERS-H")
- Teachers' Retirement System of Kentucky ("TRS")
- Kentucky Judicial Form Retirement System ("KJFRS")
  - Legislators' Retirement Plan ("KLRP")
  - Judicial Retirement Plan ("KJRP")

These eight plans involve a range of financial conditions and demographics, as illustrated in Table 4, of selected pension characteristics. In total, as of September 2015, the systems covered 204,580 active state, local, school, and nonprofit employees, 35,377 vested former employees not yet at retirement age, and 166,480 retirees already collecting benefits, for a total of 406,437 individuals.

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Table 4

Commonwealth of Kentucky Retirement Plan Characteristics FY2016								
System	**KRS**					**TRS**	**KJFRS**	
Source of Employer Funding	**70% state non-hazardous, 98% state hazardous; 142 nonprofit and others**			**Local governments**		**95% State**	**State**	
Plan	**KERS-NH**	**KERS-H**	**SPRS**	**CERS-NH**	**CERS-H**		**KLRP***	**KJRP***
Active Members	37,779	3,959	908	80,664	9,084	71,848	101	237
Inactive Members	10,399	481	65	14,357	775	9,240	42	18
Retirees Receiving Benefits	44,004	3,966	1,515	56,339	8,563	51,563	200	330
Unfunded Actuarial Liability ($ in Millions)	$11,112.4	$377.2	$540.6	$4,541.1	$1,565.3	$14,531.3	$15.2	$115.0
Funded Ratio	16.0%	59.7%	30.3%	59.0%	57.7%	54.6%	85.1%	72.1%

Source: Commonwealth of Kentucky valuation reports for KRS, TRS, KJFRS, as of 6/30/2016

Note: Retirees Receiving Benefits - Number includes retired member and beneficiaries. Inactive members listed are inactive vested members; non-vested inactive members are not referenced.

**Information shown as of fiscal year ended 6/30/2015 as UAL is calculated biannually.*

The balance of this Report #2 will address key aspects of Kentucky's retirement programs both in the aggregate and for each plan individually:

- Liability analysis under alternative actuarial assumptions
- Fiscal pressures from underfunding
- Cash flow concerns and solvency analysis
- Sources of the increases in unfunded liability
- Benefit structure
- Investment analysis

Within this overview, the following highlights are noted:

Kentucky Retirement Systems

KERS-NH is the most severely underfunded of Kentucky's plans at just 16.0%. Its $11.1 billion shortfall represents over one-third of the Commonwealth's $32.8 billion combined pension Unfunded Actuarial Liability under current assumptions. KERS-NH is a mature plan that has more retirees receiving benefits (44,004) than active employees paying into the system (37,779), creating

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a heightened reliance on returns from prefunded assets. As noted in the Executive Summary, without corrective action, these dynamics place KERS-NH at risk of depleting its remaining assets within a matter of just a few years.

KERS-H, covering State Corrections employees and other hazardous job classifications outside of the State Police, provides benefits to roughly one-tenth the number of participants as the KERS-NH plan (3,959 active and 3,966 receiving benefits). In addition, the Commonwealth has historically funded a higher percentage of the required employer contribution for KERS-H, such that the plan is 59.7% funded – still below national norms and well short of full funding, but not as severely challenged as the KERS-NH plan. As a result of its smaller size and better funded status, the total KERS-H liability at $377.2 million is far smaller than that of KERS-NH, even though plan participants can typically retire at younger ages under a benefit structure aligned with the hazards and physical requirements of their work.

The ***SPRS*** provides benefits for uniformed State Police officers, and is the smallest of the KRS state-level plans, with 908 active members and 1,515 retirees receiving benefits. As with KERS-H, SPRS participants can typically retire earlier than KERS-NH members. Despite fewer participants than the KERS-H plan, a weaker funded ratio of just 30.3% leads to a larger unfunded liability of $540.6 million.

The ***CERS-NH*** plan for local government employees is administered centrally at the state level as one group within the overall KRS retirement system. This is a common structure – 14 of 20 states benchmarked for our study similarly covered local government employees through the primary state retirement system. As the largest plan in the state by membership, CERS-NH covers 80,664 active workers and provides benefits to 56,339 retirees. With a 59.0% funded ratio, however, the plan's $4.5 billion liability is less than half the size of that for the smaller KERS-NH plan. In CERS, the benefit structure has historically been aligned with KERS, with generally similar benefits up through 2004 and matching benefits thereafter. Unlike the other KRS plans, however, CERS liabilities are liabilities of local governments and government-related entities, rather than the state. As a result, the historical funding has been different for CERS than the other systems, as will be addressed further in Section V of this Report on "Sources of the Increases in Unfunded Liability." Among other factors, participating local governments have typically paid the full ARC, while the Commonwealth has paid less than its full requirement in many years, contributing to CERS' higher overall funded ratio.

The ***CERS-H*** plan for local police, firefighters, and other hazardous employees is similarly funded by local governments, and has a 57.7% funded ratio, close to that of the CERS-NH plan. With a smaller number of participants (9,084 active and 8,563 retirees receiving benefits), the total unfunded liability is also smaller at under $1.6 billion, even with the earlier typical retirement ages associated with public safety jobs.

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Teachers' Retirement System

The ***TRS*** has the largest unfunded liability among the Kentucky pension plans at $14.5 billion,[5] even with a funded ratio of 54.6% significantly higher than that of the KERS-NH plan. This is in part a function of the larger size of the TRS program, with 71,848 active members and 51,563 retirees receiving benefits. Although the TRS plan continues to have more active members than retirees, a significant number of active teachers, roughly 15,000 (25%) are currently eligible for retirement. Also contributing to TRS' larger liability, Kentucky teachers have higher average salaries than the average non-hazardous state employee – and also have a more generous pension benefit structure than provided under KERS-NH. It is important to note, however, that Kentucky teachers, unlike state and municipal employees, do not participate in Social Security.

Judicial Form Retirement System (JFRS)

Within the JFRS, the ***KJRP*** provides benefits for retired Justices of the Supreme Court and Judges of the Circuit, Family, District, and Appeals Courts. With just 237 active members and 330 retirees receiving benefits, this is a comparatively small plan. Historically, contributions to the JRP have been consistent with actuarial requirements, and the plan funded ratio is 72.1%. As a result, the total unfunded liability is also relatively small at $115.0 million.

Similarly, the ***KLRP*** serving retired members of the General Assembly has a comparatively small membership base (101 actives; 200 retirees receiving benefits), and a funded ratio of 85.1%. Overall, the LRP has the lowest unfunded liability of the eight State retirement plans at $15.2 million.

Other Post-Employment Benefits (OPEB)

Each of the eight Kentucky retirement plans also includes an Insurance Fund, which is the trust established to fund the retiree medical and other OPEB benefits. In the aggregate, OPEB unfunded liabilities of $5.9 billion represent approximately 15% of the Commonwealth's total retiree benefit funding shortfall, and will also be addressed throughout Report #2.

5 The TRS unfunded liability increases significantly to $30.9 billion on the GASB 67/68 basis, which requires the actuary to apply a significantly reduced discount rate to portions of the amortization period when recent patterns of underfunding required contributions require the actuary to project similar underfunding in future years, and as a result fund assets are projected to be depleted.

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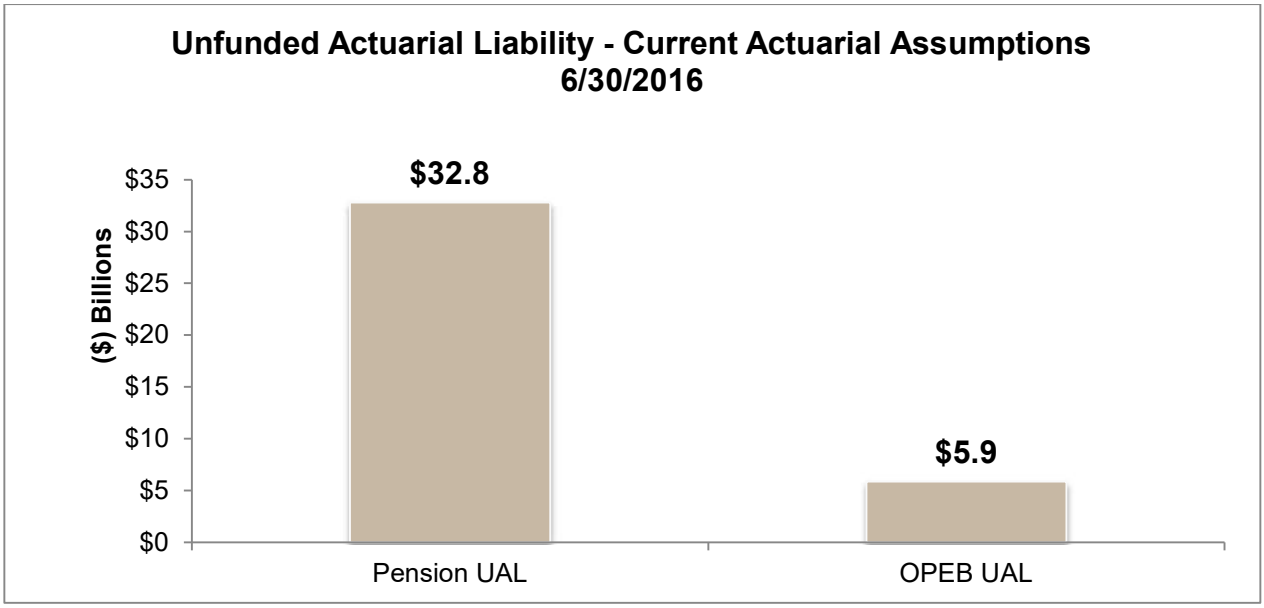
III. The Kentucky Retirement Funding Challenge

Magnitude of the Underfunded Liabilities

Under current actuarial assumptions, Kentucky's unfunded retiree benefit liabilities as of June 30, 2016 totaled $38.7 billion – $32.8 billion for pensions and $5.9 billion for OPEB, as can be seen in Figure 4.

Figure 4



Source: Commonwealth of Kentucky valuation reports for KRS, TRS, KJFRS, as of 6/30/2016

Such reported values of the total and unfunded liability of retiree plans like Kentucky's are dependent on the assumptions used by the actuary. Under alternative actuarial assumptions, the scale of the calculated liability and funded status will vary. As noted in the most recent Public Fund Survey[6] conducted by the National Association of State Retirement Administrators ("NASRA"):

> *Of all actuarial assumptions, a public pension plan's investment return assumption has the greatest effect on the projected long-term cost of the plan. This is because over time, a majority of revenues of a typical public pension fund come from investment earnings.*

6 National Association of State Retirement Administrators, "Public Fund Survey, Summary of Findings for FY2015," December 2016.

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Even a small change in a plan's investment return assumption can impose a disproportionate impact on a plan's funding level and cost.

Accordingly, some analysts substitute alternate assumptions for key variables in order to standardize their evaluations and compare plans on an "apples-to-apples" basis. In addition, alternative actuarial scenarios can be used to evaluate "what if" scenarios and risks, such as the potential impact of lower investment returns than the actuaries assume.

As of FY2016, Kentucky investment return assumptions, which are also used as the discount rate in public pension plan accounting, range from 6.75% to 7.50%, were as follows:

Table 5

Pension Plan	FY2016 Discount Rate
Kentucky Teachers' Retirement System	7.50%
Kentucky Employee Retirement System - Hazardous	7.50%
County Employee Retirement System - Non-Hazardous	7.50%
County Employee Retirement System - Hazardous	7.50%
Kentucky Judicial Retirement System	7.00%
Kentucky Legislative Retirement System	7.00%
Kentucky Employee Retirement System - Non-Hazardous	6.75%
State Police Retirement System	6.75%

Source: KRS, TRS, KJFRS valuation reports

The 7.0-7.5% used by most Kentucky plans are consistent with common practice nationally, while the 6.75% rate adopted by the KRS Board in December 2015 for the KERS-NH and SPRS plans is at the lower end of the range among state and local pension plan investment return/discount rate assumptions. According to NASRA, the average state retirement system investment return assumption was 7.52% in February 2017, down from 7.66% the prior year as part of an ongoing trend toward de-risking plans through reduction of the return assumptions, as "among the 127 plans measured, nearly three-fourths have reduced their investment return assumption since fiscal year 2010."[7] Similarly, a slightly larger sample of state and large local plans from the Public Plans Data website maintained by the Center for Retirement Research at Boston College ("Public Plans Data" or "PPD") reported a similar average investment return assumption of 7.58%, both factoring in the

[7] *National Association of State Retirement Administrators (NASRA) Issue Brief: Public Pension Plan Investment Return Assumptions, February 2016 and February 2017*

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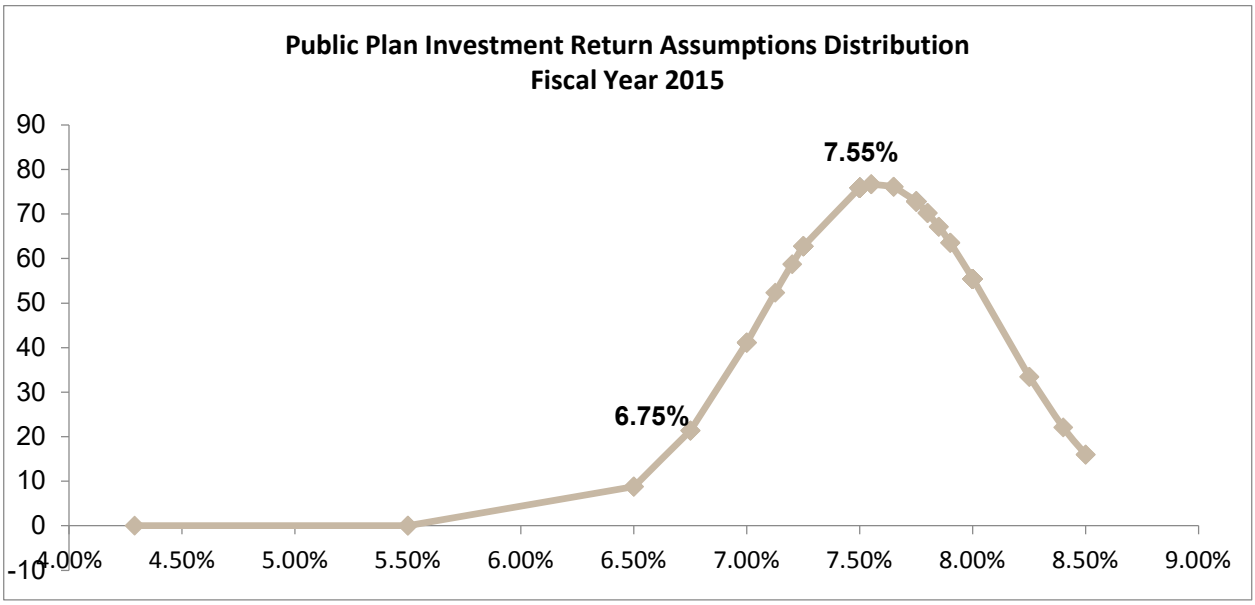
KERS-NH rate.[8] The distribution of assumptions reported across Public Plans Data is illustrated in Figure 5 below.

Figure 5



Source: calculated from Public Plan Data for Fiscal Year 2015, maintained by the Center for Retirement Research at Boston College

Two of the six sample plans with lower investment return assumptions than KERS-NH and SPRS have special conditions:

- The Portland Police and Fire Disability Retirement Fund reported an assumed return of 4.29%. This fund is essentially funded on a pay-as-you-go rather than pre-funded basis, and is supported by a dedicated local real estate tax.[9]
- The Wisconsin Retirement System applied a 7.2% investment return assumption to the accrued liability associated with active and inactive employees, and a 5.0% investment return assumption to the accrued liability associated with post-retirement members. The blended rate at 12/31/2015 was therefore 5.50%.[10]

8 National Association of State Retirement Administrators (NASRA) Issue Brief: Public Pension Plan Investment Return Assumptions, February 2016, and Public Plans Database.

9 City of Portland FY16 CAFR.

10 Wisconsin Retirement System Funding Policy.

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The rate adopted for KERS-NH and SPRS, while lower than average, also reflects special conditions. The low funded ratio of the plans and ongoing cash flow issues, addressed further in a later section, may limit the ability of the plans to pursue a long-term return-seeking asset allocation, and instead require them to hold relatively more assets in short-term fixed income investments and cash in order to pay benefits and avoid losses, when compared to other plans.

In addition, in the current economic environment, the trend among public plans in recent years has been to adopt lower investment return rate assumptions. Since the start of the decade, the median assumption has dropped from 8.0% to 7.5%, and the number of plans with assumptions below 7.0% has increased.[11]

Under federal Employee Retirement Income Security Act ("ERISA") standards for private plans, nongovernmental plan sponsors typically discount liabilities for reporting and funding based on high-quality corporate bond rates. "The bond-based approach is premised on the theory that pension benefits are 'bond-like,' in that they constitute promises to make specific payments in the future, and should be similarly valued."[12]

In contrast, the standard discount rate approach for public pension plans as defined by the Governmental Accounting Standards Board ("GASB"), which has been designated by the American Institute of Certified Public Accountants as the administrator of generally accepted accounting principles for U.S. state and local governmental entities, continues to be to use the expected long-term earnings rate on plan assets. The rationale for using the long-term earnings rate for public plans includes factors such as:

- The relatively long working tenure with the same employer, and relatively early normal retirement age of typical participants in public plans, which produces more years of benefit payouts post-retirement.
- The relatively low risk of a state and local government entity going bankrupt, going out of business or being acquired, which, it is argued, makes the ERISA standard for calculating "settlement costs" of the liability and/or market-based "spot rates" of interest rates at a point in time, less appropriate.
- The increased funding volatility associated with using market-based bond rates in the ERISA standard, which would cause contribution instability in government budgeting.

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11 National Association of State Retirement Administrators, "Public Fund Survey, Summary of Findings for FY2015," December 2016.

12 United States Government Accountability Office, Pension Plan Valuation: Views on Using Multiple Measures to Offer a More Complete Financial Picture, September 2014.

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GASB Statements 67 and 68 issued in 2012 and recently implemented by state and local pension plans and plan sponsors adopted a hybrid of the traditional earnings-based assumption and a bond-based assumption for reporting, but not funding, purposes. The Statements require the application of the long-term earnings rate on assets that are projected to cover future liabilities, and an index of 20-year government bond rates to any projected future shortfall. This "blended" rate is to be applied and reported only in cases where the actual contributions have consistently been materially below the required contribution, and therefore assets are projected to be depleted, as was the case with the FY2015 and FY2016 TRS and KJFRS reports. The most recent GASB blended discount rates applied were 4.20% for TRS for FY2016, while the rates for KJRP and KLRP in FY2015 were 6.41% and 6.85%, respectively.

While GASB and various industry and professional associations continue to support the use of the earnings-based approach, again, a key question remains as to what an appropriate projection should be in the current economic environment – and whether 6.75% to 7.5% remains reasonable over the long-term. This must be addressed by both investment professionals and policymakers.

Further, the use of alternative assumptions in valuing liabilities has also been recognized as a potentially valuable tool in understanding plan risk and protecting against declines in funded ratios as have occurred nationally since FY2000. Following expert study and testimony, the United States GAO observed that "there may be value in having multiple liability measures to arrive at funding, benefit, and investment policies that will better balance risks and rewards to plan participants and all other stakeholders." An independent panel commissioned by the Society of Actuaries recommended that plan trustees "obtain a direct estimate of the degree to which the plan anticipates it will achieve its funding goals by realizing a premium earned on risky assets, by comparing liabilities under the standard assumptions to "the plan liability and normal cost calculated using a risk-free rate (e.g., the U.S. Treasury yield curve), based on the plan's actuarial funding method and demographic assumptions."[13]

In order to assess the investment risk associated with the retirement systems and more fully understand how the discount rate assumption affects the actuarial calculations, beyond the 1% deviation in rate sensitivity analysis that is also required by GASB 67 and 68, the following analysis applies several alternative bond-based or "risk-free" discount rates and re-estimated the total and unfunded liability:

- A Revised Asset Allocation rate. A rate of 5.1% was applied to KERS-NH and SPRS, and a rate of 6.0% was applied to all other plans. Our understanding is that KRS is updating its asset allocation approach to reflect the varying degrees of stress and diminished assets of its plans. Based on our understanding of this approach, we developed alternate return

13 Society of Actuaries, Report of the Blue Ribbon Panel on Public Pension Plan Funding, February 2014.

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assumptions for a 10-year investment horizon and two levels of increased liquidity positions consistent with an updated KRS policy, with an allocation of up to 25% short-term bonds and 25% cash for the highly stressed plans. These assumptions were based on PFM Asset Management's expected 10-year return for a portfolio with increased allocation to short-term bonds and cash. The time horizon for the investment return and the matching of asset investments to liabilities and the cash flows of paying benefits reflect the condition of the plans.

Although the policy of KRS does not directly apply to the TRS or KJFRS plans, the persistent underfunding of these plans, corresponding application of the depletion date and blended rate under GASB 67, and the recurring and large negative cash flows projected by the actuary of the TRS plan all support the application of a similar Revised Asset Allocation rate of 6.0% for the TRS and KJFRS plans.

- Corporate Bond Index rate. The Citibank corporate bond index rate was used for valuation of private sector pension plans and made available through the Society of Actuaries for these purposes. The appropriate rate for the time period when projected benefits would be paid was applied, and a weighted average rate for the future liabilities was calculated. The weighted average rate across the yield curve as of April 30, 2017 was 3.87%.

- U.S. Treasury rate. The weighted average rate across the yield curve as of May 4, 2017 was 2.72%.

As illustrated in Figure 6, the aggregate unfunded liability for pensions alone increases from a reported level of $33 billion to $42 billion with the Revised Asset Allocations, $64 billion using typical private sector standards, and up to $84 billion using the weighted average Treasury or "risk-free" rate.

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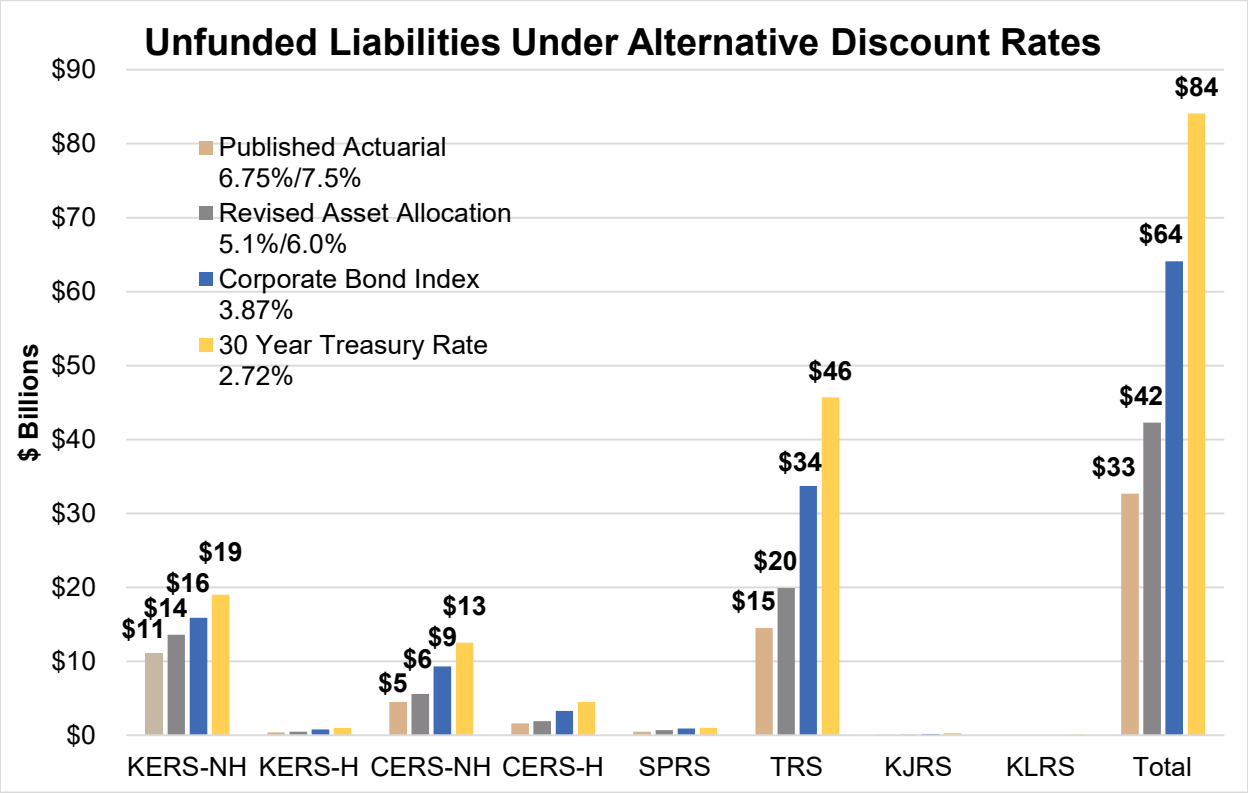
Figure 6



Source: PRM Consulting Group

Liability Composition

In evaluating the scale of Kentucky's liability, a further perspective is to disaggregate the total liabilities to evaluate how much of the challenge is associated with different cohorts of plan participants. Based on the category of plan participant – for example, still active versus already retired, and/or Tier I (pre-2008 hire date) versus Tier 2 (post-2008 hires under a modified benefit structure) – the options and opportunities for future reform may vary.

For example, as shown in Figure 7, the accrued liabilities for the system with the lowest funded ratio, and the second-lowest ratio of active employees to retirees, KERS-NH, are heavily associated with members that have already retired. Over three-quarters of the accrued liability at 6/30/2016 was attributable to Tier I (pre-2008 hire date) members that had entered retired or inactive status. Less than 2% of the accrued liability was associated with post-2008 hires.

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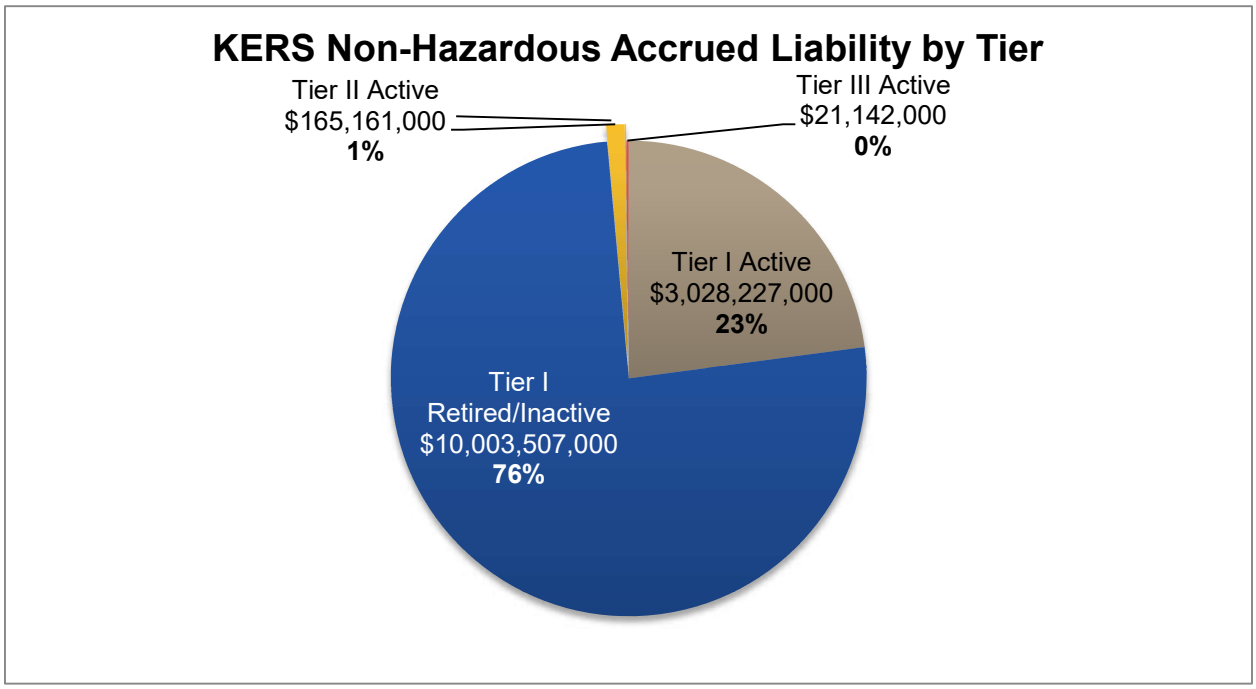
Figure 7



Source: Cavanaugh MacDonald, based on June 30, 2016 actuarial valuation and valuation assumptions including 6.75% earnings assumption and 4% payroll growth.

Similarly, the State Police Retirement System has the lowest ratio of active employees to retirees, due in part to its lower retirement age eligibility criteria relative to the other systems. The unfunded liability associated with retired and inactive Tier I members is therefore even higher than for KERS-NH, as seen in Figure 8 on the following page.

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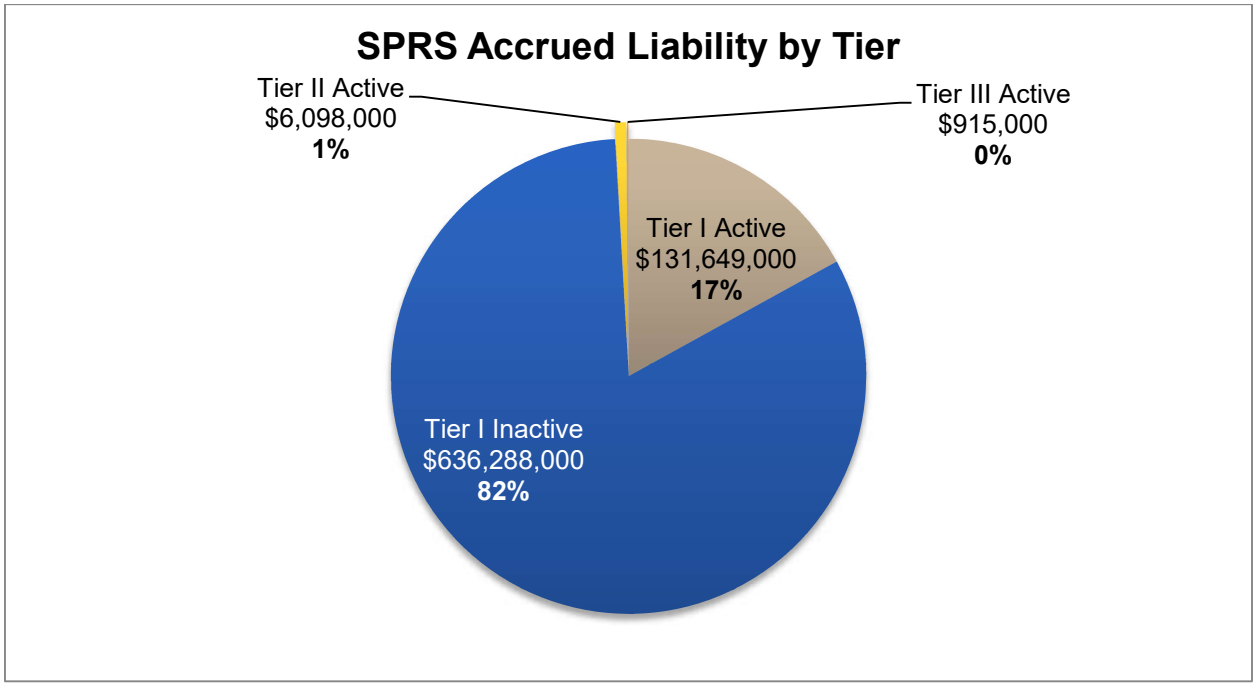
Figure 8



Source: Cavanaugh MacDonald, based on June 30, 2016 actuarial valuation and valuation assumptions including 6.75% earnings assumption and 4% payroll growth.

Comparative Funded Levels

The size of the unfunded liability for Kentucky's retirement systems is not only large in absolute terms, it is also large in comparison to other states. According to a recent Standard & Poor's credit rating agency analysis that evaluated each state's proportionate share of liability for public employee pensions as of FY2015, the most recent report available, Kentucky systems had the worst overall ranking – with combined funding set aside at just 37.4% of the levels required to pay for current long-term obligations shown in Table 6. This ranking by Standard & Poor's excluded liabilities for CERS and for the non-state employers in KERS. Ranked last out of 50, Kentucky's funded ratio was roughly half the median among state proportionate liabilities.

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Table 6

FY2015 Worst-Funded Pension Ratios – Aggregate of State Liabilities		
	Median	**74.6%**
	Average	**73.2%**
46	Rhode Island	55.5%
47	Connecticut	49.4%
48	Illinois	40.2%
49	New Jersey	37.8%
50	**Kentucky**	**37.4%**

Source: Standard & Poor's, U.S. State Pensions: Weak Market Returns Will Contribute to Rise in Expense, September 12, 2016

Comparison of the funded ratio for each Kentucky pension plan individually to national averages indicates that all but the two smallest pension plans sponsored by the state are underfunded. In aggregate, across the country, state and local government defined benefit pension plans were underfunded by $1.9 trillion as of June 30, 2016 (according to the Federal Reserve Bank), with an aggregate funded ratio of 66.0% as seen in Figure 9 on the next page.

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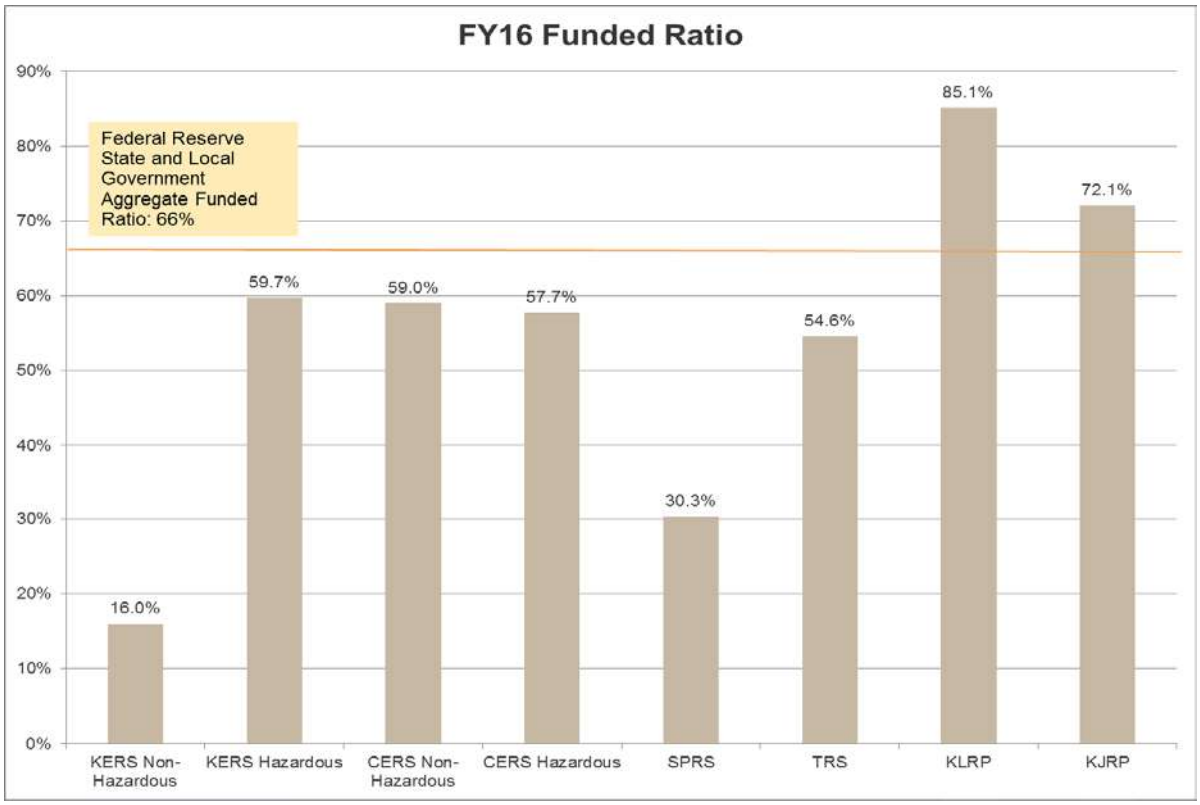
Figure 9



Source: Commonwealth of Kentucky valuation reports for KRS, TRS, KJFRS, as of 6/30/2016; Federal Reserve Board Financial Accounts of the United States

Although FY2016 data is not yet available for the Public Plans Data sample, the FY2015 funded ratio for the plans in the sample was 74.1%, according to the Center for Retirement Research, which is consistent with the Federal Reserve data. Only the two KJFRS plans exceeded the Federal Reserve average.

Measures of average OPEB funded ratios beyond state-level comparisons are less available, but a Center for Retirement Research survey published in March 2016 using FY2013 data found that the aggregate state and local government funded ratio was 7.0%. More recently, Standard & Poor's reported that the average and median funded ratio for state governments specifically in FY2015 was 0%, as most states had not pre-funded any of their liability. Compared to either OPEB metric, every Kentucky plan was relatively well-funded for this smaller component of its overall retiree benefits program.

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Table 7

FY2016 Funded Ratios - OPEB	Insurance Fund
KERS Non-Hazardous	30.3%
KERS Hazardous	125.3%
CERS Non-Hazardous	69.6%
CERS Hazardous	72.9%
SPRS	67.2%
TRS	21.9%
KLRP	127.3%
KJRP	104.7%
National Average [1]	7.0%

Source: Commonwealth of Kentucky valuation reports for KRS, TRS, KJFRS, as of 6/30/16; Federal Reserve Board Financial Accounts of the United States; Center for Retirement Research How Big a Burden Are State and Local OPEB Benefits?, March 2016

Fiscal Pressures from Underfunding

The size of Kentucky's unfunded pension liability in turn drives elevated levels of required contributions. As a result, and with the Administration and Legislature's commitment to more fully funding these requirements, the trend in the Commonwealth's budget allocation for pensions has been for expenditures to increase far faster than the rest of the budget – significantly crowding out other spending priorities, even as the unfunded liability has increased.

As shown in Figure 10, over the past decade, Commonwealth pension spending has increased nearly five times as fast as revenues – growing 56% in FY2017 alone. Along with fast growing Medicaid costs, this has severely constrained growth in the rest of the budget to below inflationary levels, even as the Commonwealth's population has increased.

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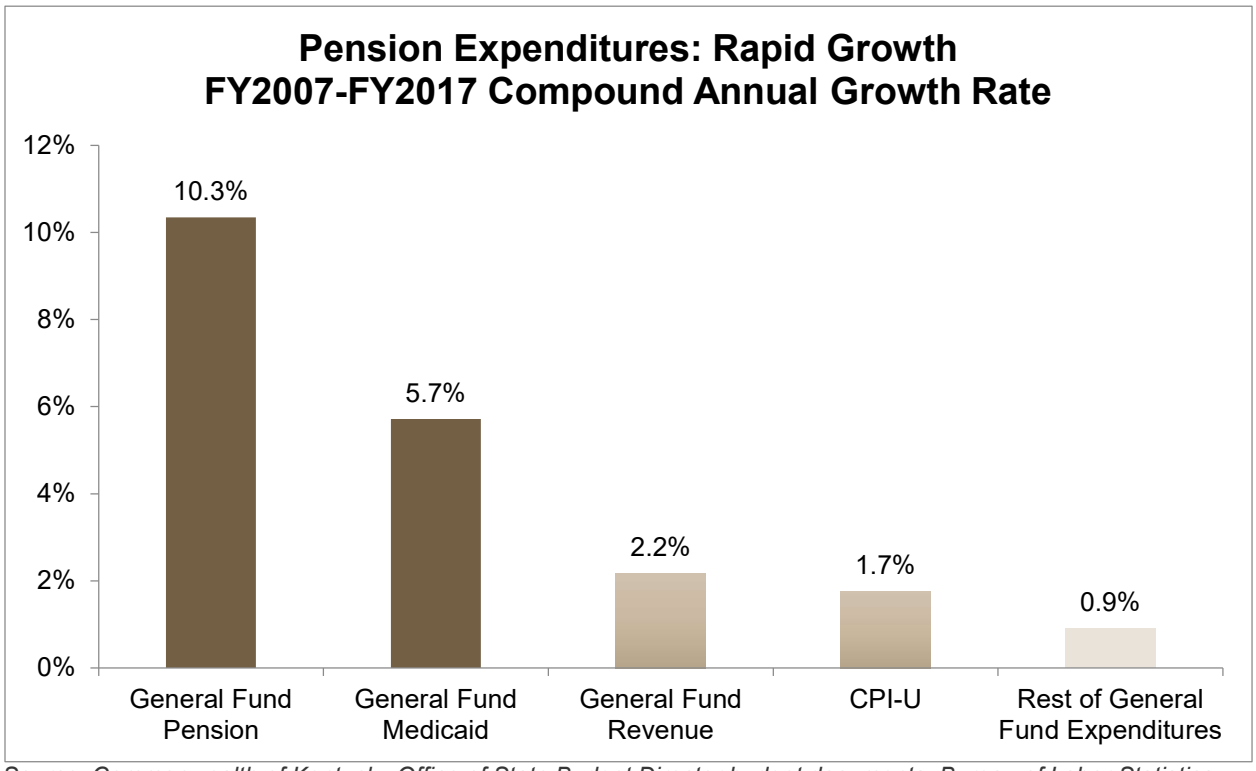
Figure 10



Source: Commonwealth of Kentucky Office of State Budget Director budget documents; Bureau of Labor Statistics; 2017. Consumer Price Index-Urban Consumers data based on Federal Reserve estimate

Yet to date, even as contributions have trended upwards, the funded status of the largest systems has not improved. Figure below illustrates the gradual increase in the Commonwealth's funding of pensions for TRS and KERS-NH from FY02 onward, the brief spike in FY11 contributions due to the $465.4 million of pension obligation bond proceeds provided to TRS, followed by the significant commitment of additional funds by the Governor and General Assembly in the FY2017 budget. However the increases have not kept pace with the increase in liabilities and the funded ratio for either system has yet to improve.

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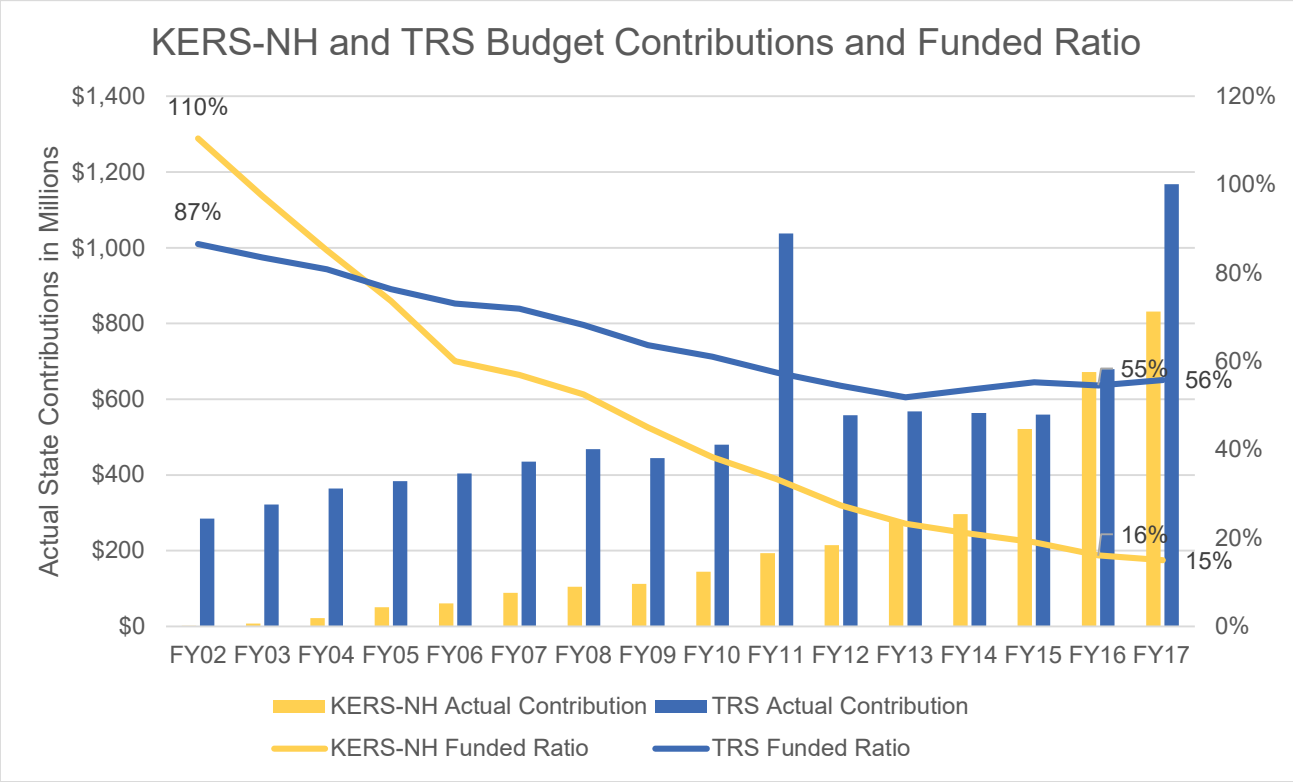
Figure 11



Source: Commonwealth of Kentucky valuation reports for KRS, TRS as of 6/30/16, and Kentucky Office of the State Budget Director data. FY17 funded ratio from Cavanaugh MacDonald data based on the projections and assumptions of the 6/30/16 valuations. FY11 figure includes pension obligation bond proceeds for TRS.

The Commonwealth's unfunded or net pension liability is also one of the nation's largest in proportion to the revenues available to pay for the liabilities, when compared to other states.[14] Moody's Investors Service evaluates state and local pension burdens on a comparable basis by adjusting the liabilities using a standardized discount rate based on typical rates for private plans, and by amortizing the liabilities over a standard 20-year period with a level debt service structure. Kentucky had the third-highest net pension liability as a percentage of governmental revenues under the Moody's methodology at 261%. This burden was more than twice the average of 108% and more than three times the median of 85%.

14 The new GASB standards announced in Statements 67 and 68 also changed the basis of pension reporting for financial position from Unfunded Actuarial Liability or Unfunded Accrued Actuarial Liability to Net Pension Liability. The UAL continues to be used but Net Pension Liability is the external reporting standard.

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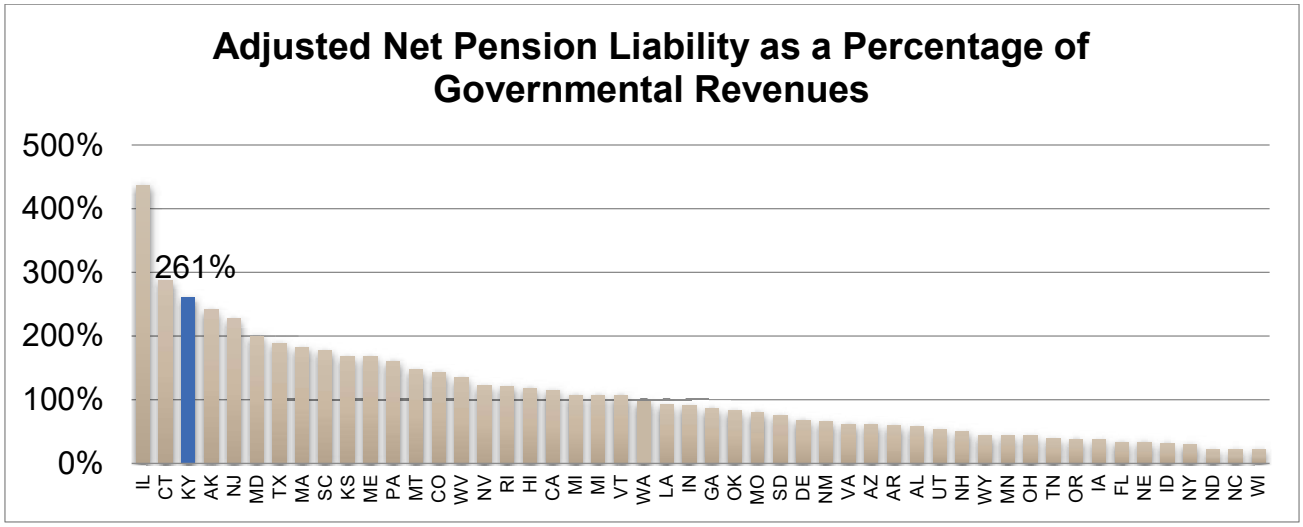
Figure 12



Source: Moody's Investors Service, Fiscal 2015 Pension Medians-US States, October 6,, 2016

Evaluating comparative fiscal pressures from a different perspective, the Center for Retirement Research at Boston College similarly found Kentucky's pension burden to be among the highest in the nation. In this analysis, as shown in Figure 13, the Center for Retirement Research applied a standardized amortization to compare annual required pension contributions in relation to "own-source" or non-federal revenue. From this vantage, Kentucky was found to have the third-highest pension-related budget burden nationally at 11.2%, well above the average of 3.2% and median of 2.4%. In other words, the Commonwealth must dedicate a significantly higher-than-average proportion of its operating budget to pension funding.

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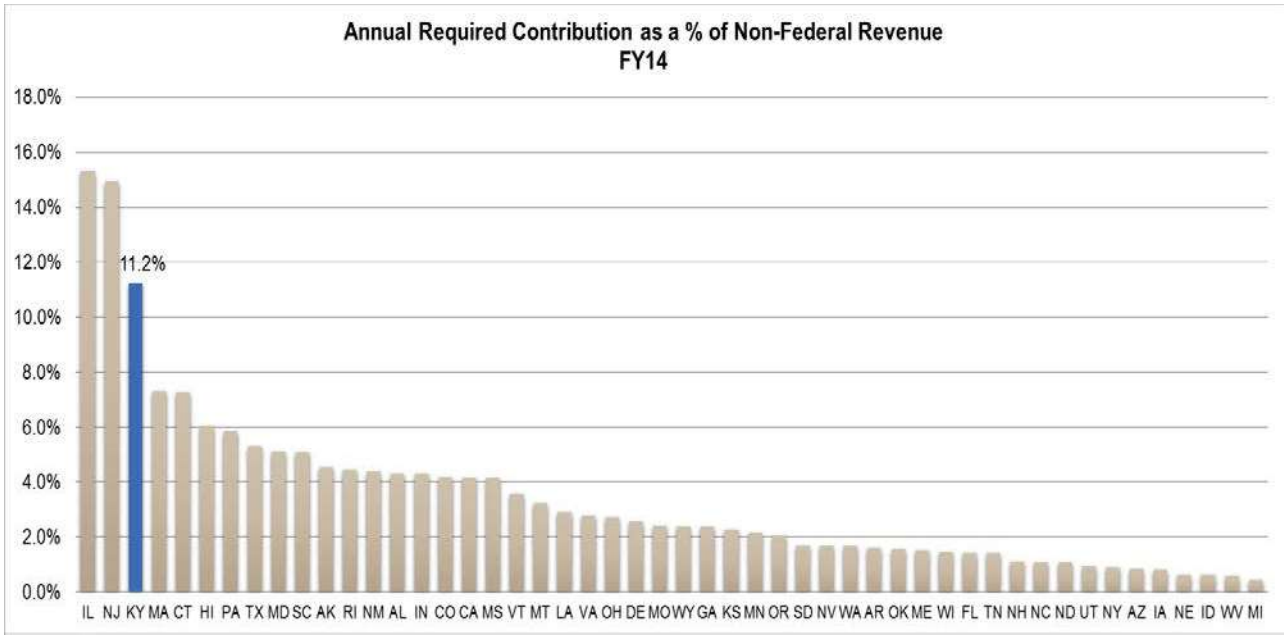
Figure 13



Source: Center for Retirement Research, Will Pensions and OPEBs Break State and Local Budgets?, October 2016

To evaluate pension pressures on a plan-by-plan basis, Figure 14 illustrates the ADC for each plan expressed as a percentage of payroll.[15] This perspective shows the degree to which pension funding burdens overall staffing costs.

According to the Public Plans Data website, the national median ADC as a percentage of payroll costs was 18.6% for FY2015. Although several of Kentucky's plans were near or even below this average, two of the larger Commonwealth plans – KERS-NH and TRS – had actuarially recommended pension contributions as a percentage of pay that were significantly higher than the median.

15 The ADC replaced the ARC in required pension reporting beginning with FY15 for plan sponsors. Therefore analysis of past trends in this report use the ARC, while analysis of data and/or estimates for FY15 forward use the ADC.

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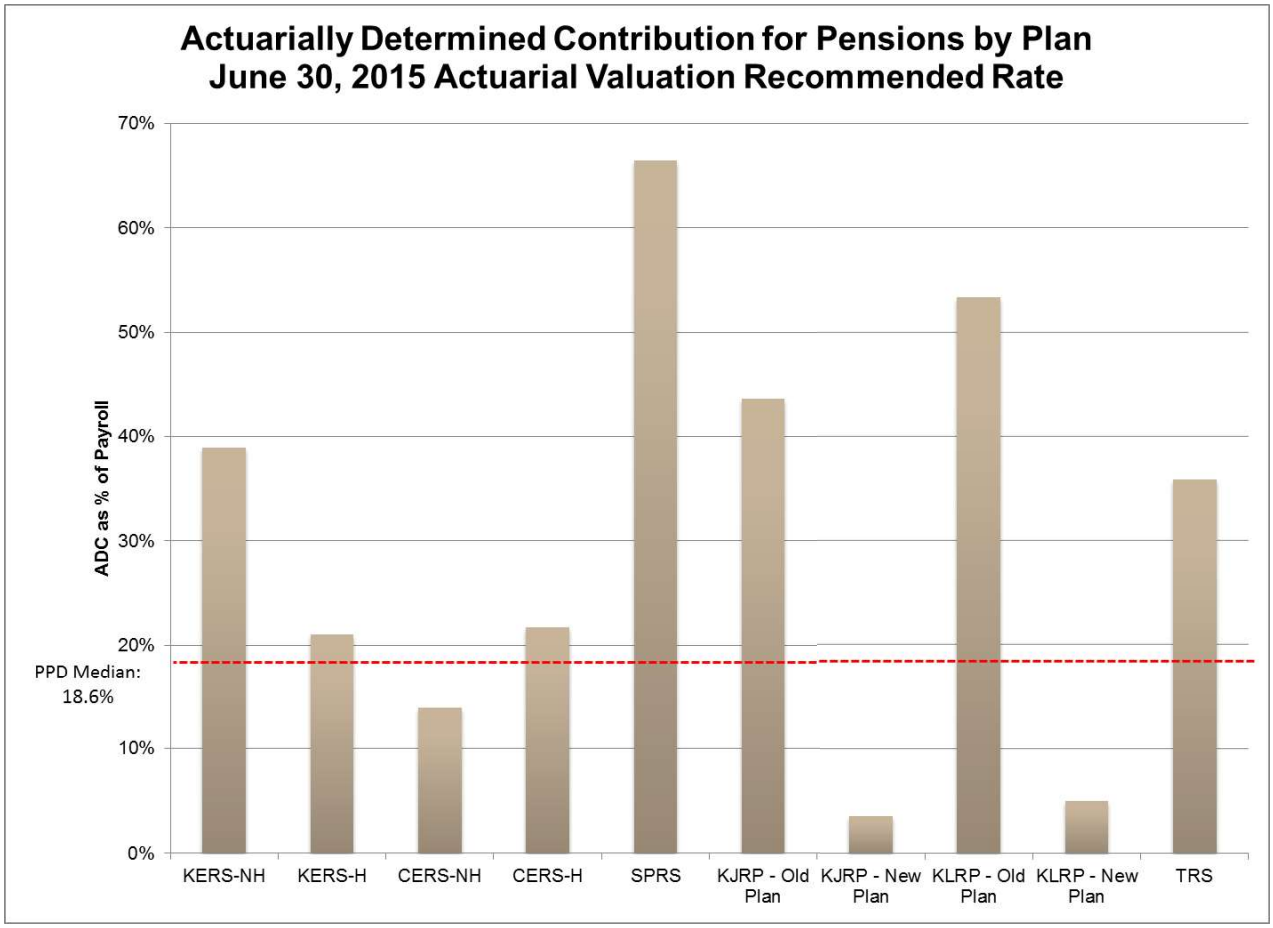
Figure 14



Source: System valuation reports, Center for Retirement Research: The Funding of State and Local Pensions, 2015- 2020, June 2016

Of note, the rate for the KRS and TRS plans shown above represents a blended rate for all employees, however, the associated rate for employees hired under less generous Tier 3 benefits in more recent years is significantly lower, due to a reduced normal cost for annual service benefits earned, and dramatically lower unfunded liability amortization. This difference between the relative benefits and funding needs of the old plans and the newer cash balance plan can be seen in the large disparity between the newer and older KJFRS plans also shown above, where the actuary reports on the cash balance plan implemented in 2014 separately.

Credit Rating Pressures

The fiscal pressures generated by the Commonwealth's pension and OPEB liabilities are reflected in its credit ratings, which directly impact the cost of borrowing and provide a measure of the

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Commonwealth's overall financial health. S&P recently applied a negative outlook to Kentucky's 'A' issuer credit rating, citing as the cause:

> *"our view there exists at least a one in three chance that funding levels of the commonwealth's pension plans could significantly weaken and associated fixed costs could continue to grow to a level that might significantly pressure budgetary performance and flexibility."*[16]

The rating report also noted liquidity issues for the systems and the ongoing underfunding of the TRS required contribution.

In order to better isolate the impact of pensions on the Commonwealth's rating, we analyzed its pension funding using the Moody's quantitative rating framework, or scorecard. Moody's recently doubled the weight granted to debt and pension funding obligations within its credit analysis from 10% to 20% of the total. Although the Commonwealth has an overall Aa2 issuer rating from Moody's, the indicative rating for the pension component of its scoring suggests a rating of "Baa and below," at least five steps lower than the overall rating. This analysis illustrates that pensions will continue to be a significant drag on the Commonwealth's rating. Baa3 is the lowest investment grade rating.

Table 8

Moody's Rating Calculator - Indicative Pension Score for Kentucky $ in Thousands	
Year	**2014**
Moody's Adjusted Net Pension Liability (ANPL)	41,321,044
Moody's ANPL as % of Governmental Revenues	185.20%
Three-Year Average ANPL	40,620,411
Three-Year Average ANPL as % of Governmental Revenues	182.06%
Governmental Revenues	22,311,579
Indicative Rating	**Baa and Below**

Source: Moody's MFRA (Municipal Financial Ratio Analysis) database. Moody's Adjusted Net Pension Liability is an estimate developed by Moody's to adjust reported liabilities by standardized actuarial assumptions for comparative purposes.[17]

16 S&P Global Ratings, RatingsDirect: Kentucky, January 11, 2017.

17 Although Moody's reviewed 2015 adjusted net pension liability data, this was the first year GASB 67/68 were applied, and while Kentucky's relative position in ANPL did not change, the absolute data and ranges varied significantly from prior values. It is not clear that the criteria ranges have been updated to reflect this variance.

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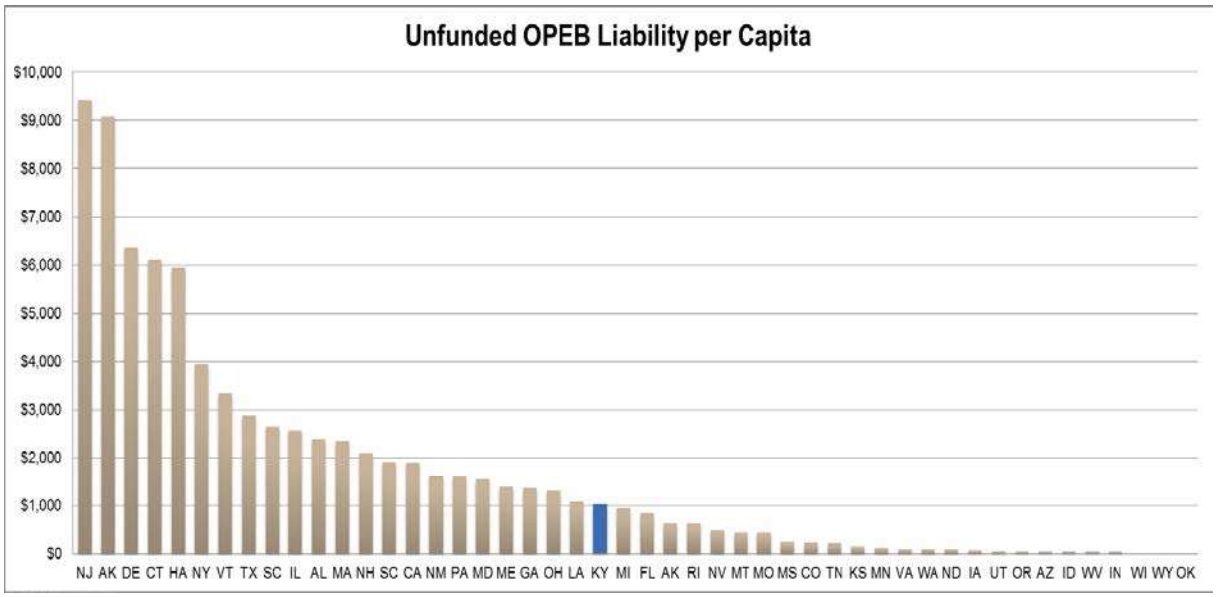
Other Post-Employment Benefits (OPEB)

In addition to its pension liabilities, the Commonwealth also has roughly $6 billion of unfunded liability for OPEB, primarily associated with retiree healthcare, adding to Kentucky's overall retiree benefit funding pressures.

This liability is large in dollar terms, but is comparatively moderate in relation to both the pension liability and to the OPEB liability in other states. On a per-capita basis, Kentucky ranked 23rd among states in unfunded OPEB liability per capita in FY2015 at $1,042, just above the median of $896 and below the average of $1,668, as seen in Figure 15.

Figure 15



Source: Standard & Poor's, Rising U.S. State Post-Employment Benefit Liabilities Signal An Unsustainable Trend, September 7 2016 Note: Nebraska and South Dakota have no OPEB liability. Liabilities are as reported for the most recent valuation date available, between 12/31/13 and 6/30/15.

Previous reforms have helped to manage Kentucky's OPEB liability, such as the conversion of the benefit for KRS members hired after 2003 to a fixed inflation-adjusted subsidy per month of service, and retiree medical reforms adopted for TRS members in 2010. Kentucky has also been relatively more proactive in prefunding the OPEB benefit through employer and employee contributions than other states.

Across the 50 states, benefit programs and funding approaches are more diverse for OPEB than for pensions. While some states have replaced traditional pensions with alternative models in recent years, every state has offered some form of defined benefit pension for a significant period of time, and therefore has a liability that it has pre-funded and is amortizing. With OPEB, however, a number of states do not currently make any contribution towards retiree medical care, and may not

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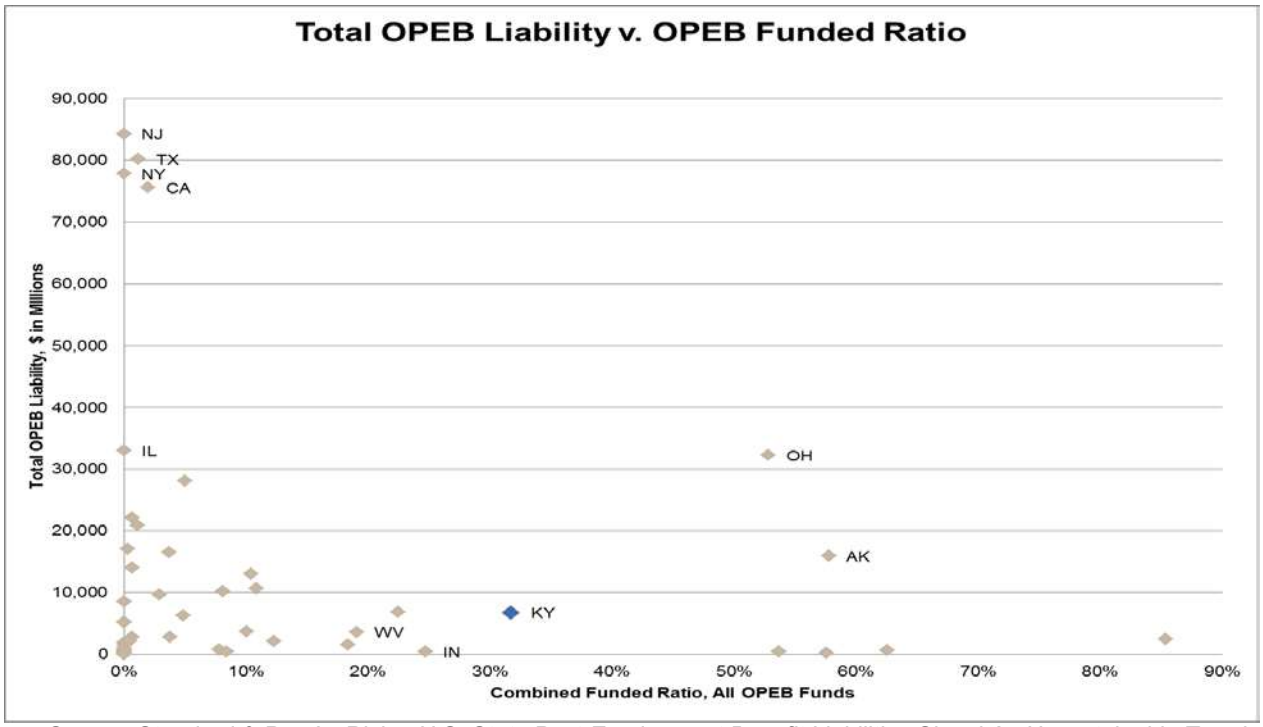
have done so historically. A recent Pew study indicated that 15 states provide no contribution or subsidy for pre-Medicare retirees, and 16 states provide no contribution for Medicare-eligible retirees; therefore the only liability associated would be for the implicit subsidy of offering retirees coverage through the active employee health plans, although several states do not even offer that.[18] Some other states have adopted the KRS model of providing a fixed dollar contribution for the retiree to use to purchase coverage. In terms of prefunding, only very recently have a majority of states established trust funds to pre-fund OPEB liabilities.

As a result, at least with regard to OPEB funding, Kentucky is comparatively well-positioned, as evidenced in Figure 16 below. Only two states with more total OPEB liability had a higher funded ratio than Kentucky in FY2015. Every contiguous state other than Ohio had a lower funded ratio. Three states with much higher total OPEB liability than Kentucky have not dedicated any assets toward OPEB liabilities.

Figure 16



Source: Standard & Poor's, Rising U.S. State Post-Employment Benefit Liabilities Signal An Unsustainable Trend, September 7 2016. Note: Nebraska and South Dakota have no OPEB liability. Liabilities are as reported for the most recent valuation date available, between 12/31/2013 and 6/30/2015.

18 The Pew Charitable Trusts and the John D. and Catherine T. MacArthur Foundation, State Retiree Health Plan Spending, May 2016. The "implicit subsidy" concept reflects that the average healthcare cost for retirees, who tend to be older, will be higher than for active employees. When retirees are permitted to continue in an active employee plan for the same cost attributed to actives, this practice implicitly provides a subsidy to the retirees.

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IV. Cash Flow Concerns and Solvency Analysis

As the funded status of Kentucky's retirement systems has eroded, cash flows have also become increasingly pressured. With negative cash flow in the near-term, the systems must routinely liquidate assets in order to pay benefits and operating expenses, which presents challenges for adherence to a long-term asset allocation and investment policy. Ultimately, if negative cash flow is not corrected, the ability to meet payment obligations and maintain solvency is placed at risk.

Cash Flow Analysis

To evaluate this concern, we reviewed historical data for system cash flows, defined as:

- Inflows: employer contributions, employee contributions, dividends and interest
- Outflows: benefit payments, administrative and operating expenses

We also reviewed the data for changes in net plan assets, which included the above as well as investment income, or unrealized gains and losses in asset values (without actuarial smoothing). Of note, achieving investment return assumptions does not automatically provide a cash flow benefit in all cases, since the portions of returns due to increased equity share values or the price of fixed income instruments are not liquid until sold.

As shown in the following tables (Tables 9-18), our analysis indicated that all three of the large Kentucky retirement systems, KERS-NH, CERS-NH, and TRS, have had negative cash flow for at least seven recent years. KERS-NH has experienced severe negative cash flow of over $100 million every year for more than a decade.

Table 9

KERS-NH Pension Fund Cash Flows Inflows + Interest/Dividends - Outflows ($ in 000s)			
Year	**Inflows**	**Outflows**	**Cash Flow**
FY2006	$321,936	$595,147	$(273,211)
FY2007	374,024	656,773	(282,749)
FY2008	386,497	715,852	(329,355)
FY2009	337,077	825,742	(488,665)
FY2010	325,639	842,938	(517,299)
FY2011	392,623	857,928	(465,305)
FY2012	387,487	878,939	(491,452)
FY2013	454,584	897,532	(442,948)

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KERS-NH Pension Fund Cash Flows Inflows + Interest/Dividends - Outflows ($ in 000s)			
Year	Inflows	Outflows	Cash Flow
FY2014	470,716	914,708	(443,992)
FY2015	686,969	929,816	(242,847)
FY2016	$654,496	$946,406	$(291,910)

The KERS-H plan has experienced negative cash flow each year since FY10.

Table 10

KERS-H Pension Fund Cash Flows Inflows + Interest/Dividends - Outflows ($ in 000s)			
Year	Inflows	Outflows	Cash Flow
FY2006	$35,252	$25,817	$9,435
FY2007	41,302	30,788	10,514
FY2008	43,979	34,012	9,967
FY2009	39,619	39,548	71
FY2010	38,487	39,819	(1,332)
FY2011	42,888	47,298	(4,410)
FY2012	40,641	51,844	(11,203)
FY2013	51,458	52,350	(892)
FY2014	40,001	58,049	(18,048)
FY2015	54,942	60,227	(5,285)
FY2016	$48,824	$62,435	$(13,611)

SPRS, like KERS-NH, has had negative cash flow every year since FY2002.

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Table 11

SPRS Pension Fund Cash Flows Inflows + Interest/Dividends - Outflows ($ in 000s)			
Year	**Inflows**	**Outflows**	**Cash Flow**
FY2006	$19,034	$34,970	$(15,936)
FY2007	$22,612	$37,360	$(14,748)
FY2008	23,752	39,589	(15,837)
FY2009	21,414	42,738	(21,324)
FY2010	20,218	45,856	(25,638)
FY2011	27,052	46,937	(19,885)
FY2012	26,613	49,089	(22,476)
FY2013	29,507	50,774	(21,267)
FY2014	35,684	53,453	(17,769)
FY2015	42,974	55,052	(12,078)
FY2016	$35,148	$56,459	$(21,311)

The magnitude of the negative cash flow at CERS-NH is smaller than for KERS-NH and TRS, but nonetheless consistent in recent years, and may be increasing.

Table 12

CERS-NH Pension Fund Cash Flows Inflows + Interest/Dividends - Outflows ($ in 000s)			
Year	**Inflows**	**Outflows**	**Cash Flow**
FY2006	$353,527	$349,521	$4,006
FY2007	419,550	389,263	30,287
FY2008	449,501	429,120	20,381
FY2009	436,352	475,854	(39,502)
FY2010	432,121	494,571	(62,450)
FY2011	521,263	520,596	667
FY2012	520,721	553,899	(33,178)

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CERS-NH Pension Fund Cash Flows Inflows + Interest/Dividends - Outflows ($ in 000s)			
Year	**Inflows**	**Outflows**	**Cash Flow**
FY2013	560,358	584,253	(23,895)
FY2014	608,520	615,751	(7,231)
FY2015	592,175	647,071	(54,896)
FY2016	$534,186	$684,385	$(150,199)

The CERS-H plan had consistently positive cash flows for the first six years of the period but has trended downward recently.

Table 13

CERS- H Pension Fund Cash Flows Inflows + Interest/Dividends – Outflows ($ in 000s)			
Year	**Inflows**	**Outflows**	**Cash Flow**
FY2006	$132,702	$104,347	$28,355
FY2007	156,961	119,242	37,719
FY2008	169,767	128,975	40,792
FY2009	160,469	142,444	18,025
FY2010	155,144	140,000	15,144
FY2011	187,691	171,394	16,297
FY2012	160,109	174,187	(14,078)
FY2013	208,201	184,056	24,145
FY2014	211,995	194,021	17,974
FY2015	205,361	204,534	827
FY2016	$194,582	$217,690	$(23,108)

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TRS has had negative cash flow in nine of the last ten years, with the sole exception of FY2011 when one-time pension obligation bond proceeds of $465.4 million were received. While TRS negative cash flow was over $600 million in FY2016, we expect this level to be reduced in FY2017 due to an increased appropriation for the employer contribution.

Table 14

TRS Pension Fund Cash Flows Inflows + Interest/Dividends - Outflows ($ in 000s)			
Year	**Inflows**	**Outflows**	**Cash Flow**
FY2006	$1,078,520	$1,055,280	$23,239
FY2007	1,121,620	1,124,714	(3,093)
FY2008	1,163,896	1,194,486	(30,590)
FY2009	1,093,753	1,276,355	(182,602)
FY2010	1,104,859	1,345,950	(241,091)
FY2011	1,692,378	1,427,184	265,195
FY2012	1,240,690	1,510,251	(269,561)
FY2013	1,311,995	1,601,159	(289,164)
FY2014	1,254,832	1,687,794	(432,961)
FY2015	1,314,907	1,773,358	(458,451)
FY2016	$1,235,409	$1,869,583	$(634,174)

The change or net increase/decrease in plan assets was more volatile than the cash flows, depending on investment returns in each year. Overall, in addition to the severe downturn in FY2009-FY2010, each of the large systems had additional years of decreasing plan assets.

KERS-NH had eight years of declines, including substantial losses in FY08-FY09 and declines for the past five consecutive years.

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Table 15

KERS-NH Pension Fund Net Increase/ (Decrease) in Plan Assets ($ in 000s)			
Year	**Additions**	**Deductions**	**Changes in Net Position**
FY2006	$672,649	$595,147	$77,502
FY2007	989,155	656,773	332,382
FY2008	(436)	715,852	(716,288)
FY2009	(646,526)	825,742	(1,472,268)
FY2010	762,839	842,938	(80,099)
FY2011	897,668	857,928	39,740
FY2012	322,615	878,939	(556,324)
FY2013	683,973	897,532	(213,559)
FY2014	732,245	914,708	(182,463)
FY2015	679,308	929,816	(250,508)
FY2016	$598,916	$946,406	$(347,490)

The CERS-NH Pension Fund had a net decrease in half of the past ten years, including the past two years.

Table 16

CERS-NH Pension Fund Net Increase/ (Decrease) in Plan Assets ($ in 000s)			
Year	**Additions**	**Deductions**	**Changes in Net Position**
FY2006	$647,298	$349,521	$297,777
FY2007	1,009,736	389,263	620,473
FY2008	47,919	429,120	(381,201)
FY2009	(624,871)	475,854	(1,100,725)
FY2010	984,051	494,571	489,480
FY2011	1,283,559	520,596	762,963

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CERS-NH Pension Fund Net Increase/ (Decrease) in Plan Assets ($ in 000s)			
Year	**Additions**	**Deductions**	**Changes in Net Position**
FY2012	391,539	553,899	(162,360)
FY2013	999,511	584,253	415,258
FY2014	1,348,330	615,751	732,579
FY2015	559,724	647,071	(87,347)
FY2016	$384,981	$684,385	$(299,404)

The TRS Pension Fund also had a net decrease in half of the past ten years and the past two years.

Table 17

TRS Pension Fund Net Increase/ (Decrease) in Plan Assets ($ in 000s)			
Year	**Additions**	**Deductions**	**Changes in Net Position**
FY2006	$1,386,694	$1,055,280	$331,413
FY2007	2,768,457	1,124,714	1,643,744
FY2008	(151,412)	1,194,486	(1,345,898)
FY2009	(1,284,454)	1,276,355	(2,560,809)
FY2010	2,287,204	1,345,950	941,255
FY2011	4,101,171	1,427,184	2,673,987
FY2012	1,176,766	1,510,251	(333,485)
FY2013	2,912,846	1,601,159	1,311,687
FY2014	3,671,556	1,687,794	1,983,762
FY2015	1,729,918	1,773,358	(43,440)
FY2016	$633,284	$1,869,583	$(1,236,299)

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The smaller systems had generally more favorable change in plan assets history, although every system other than KJFRS had declining plan assets for FY2012, FY2015 and FY2016.

Table 18

Total Kentucky Pension Fund Changes in Plan Assets, FY2006-FY2016 Net Increase/ (Decrease) in Plan Assets ($ in 000s)			
Fund	**Additions**	**Deductions**	**Changes in Net Position**
KERS-NH	$5,692,406	$9,061,781	$(3,369,375)
KERS-H	634,015	502,187	131,828
SPRS	391,520	512,277	(120,757)
CERS-NH	7,031,777	5,744,284	1,287,493
CERS-H	2,389,874	1,780,890	608,984
TRS	19,232,030	15,866,112	3,365,918
Total	$35,371,622	$33,467,531	$1,904,091

The high-risk condition of the KERS-NH and SPRS systems in particular is highlighted by comparing the fund net position at year-end FY2016 to the annual benefit payments in that year in Figure 17. The KERS-NH fund had assets of just under $2.0 billion available, which represented 783 days of benefit payments on hand, far below the Kentucky average of 3,201 days. Considering that KERS-NH lost $2.2 billion in plan assets in FY2008-FY2009, it is apparent that the system's present inability to maintain assets for a pre-funded retirement system is acutely vulnerable to another sharp downturn. SPRS has a higher balance but is still significantly below the state average and below what might be viewed as healthy liquidity.

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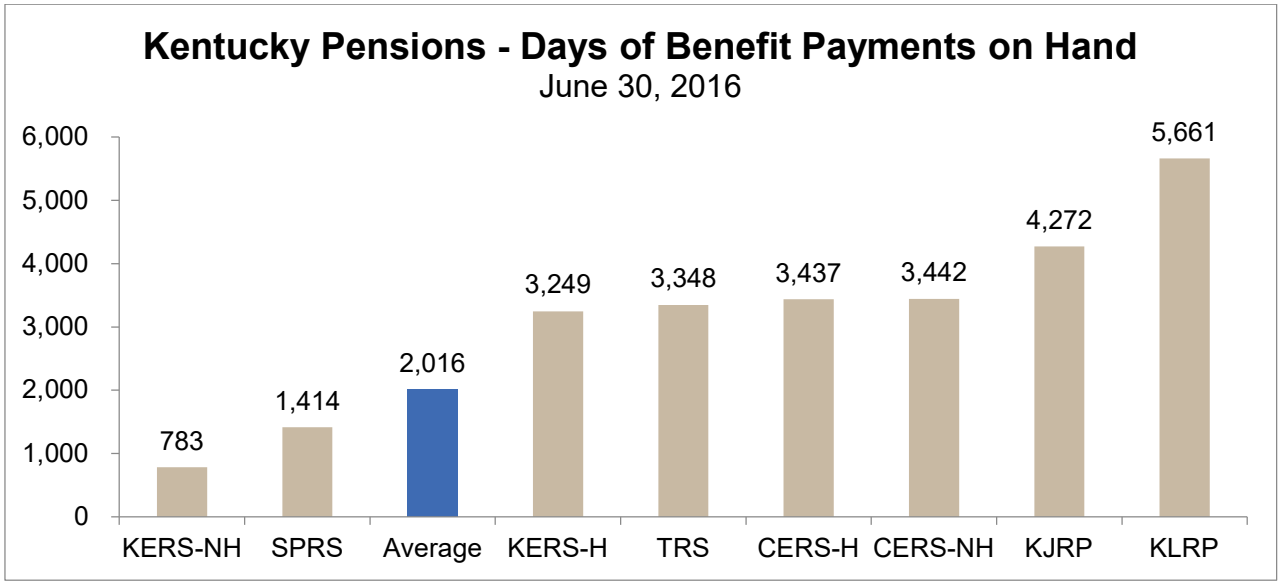
Figure 17



Source: Commonwealth of Kentucky FY2016 annual financial reports for KRS, TRS, KJFRS.

The actuarial amortization estimates from the June 30, 2016 valuation illustrate that negative cash flows are projected to continue for the major systems, KERS-NH and TRS. Based on the assumptions, contribution requirements, and amortization schedule of the June 30, 2016 KERS-NH valuation, as illustrated in Table 19, negative cash flows are projected to continue until the growth in benefit payments begins to level off while the amortization schedule for the unfunded liability continues to increase.

Table 19

KERS-NH Pension Fund Projected Cash Flows Based on June 30, 2016 Valuation and Assumptions: 6.75% Earnings, 4% Payroll Growth Annually Inflows - Outflows **($ in 000s)**			
Year	**Inflows**	**Outflows**	**Cash Flow**
FY16	614,761	946,407	(331,646)
FY17	740,104	970,194	(230,090)
FY18	756,955	980,487	(223,532)
FY19	817,653	991,093	(173,440)
FY20	840,985	1,000,951	(159,966)
FY21	884,308	1,010,891	(126,583)

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KERS-NH Pension Fund Projected Cash Flows Based on June 30, 2016 Valuation and Assumptions: 6.75% Earnings, 4% Payroll Growth Annually Inflows - Outflows ($ in 000s)			
Year	**Inflows**	**Outflows**	**Cash Flow**
FY22	911,371	1,021,291	(109,920)
FY23	948,591	1,031,667	(83,076)
FY24	978,803	1,041,248	(62,445)
FY25	1,015,157	1,050,188	(35,031)
FY26	1,049,221	1,058,845	(9,624)

Source: Cavanaugh MacDonald

Note: Unlike prior cash flow tables, does not include dividends/interest or other investment earnings.

TRS is also projected to experience significant negative annual cash flows based on the assumptions, contribution requirements, and amortization schedule of the June 30, 2016 valuation report, even if the 7.5% earnings assumption is met annually and the full Actuarially Determined Contribution (ADC) is made annually for the first time since FY2004. It is not uncommon for a mature system with a high level of retirees to actives to operate with negative cash flows and rely on investment earnings to offset changes in net position. As cited previously, according to NASRA, "over time, a majority of revenues of a typical public pension fund come from investment earnings."[19] However, the recurring negative cash flows of the magnitude projected for TRS, illustrated in Table 20 indicate the level of risk and stress associated with a plan that is 55% funded.

Table 20

TRS Pension Fund Projected Cash Flows Based on June 30, 2016 Valuation and Assumptions: 7.5% Earnings, 3.5% Payroll Growth Annually Inflows - Outflows ($ in 000s)			
Year	**Inflows**	**Outflows**	**Cash Flow**
FY16	878,499	1,841,835	(963,336)
FY17	1,364,932	1,964,173	(599,241)
FY18	1,380,628	2,054,888	(674,260)
FY19	1,446,733	2,127,401	(680,668)

[19] *National Association of State Retirement Administrators, "Public Fund Survey, Summary of Findings for FY2015," December 2016.*

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TRS Pension Fund Projected Cash Flows Based on June 30, 2016 Valuation and Assumptions: 7.5% Earnings, 3.5% Payroll Growth Annually Inflows - Outflows ($ in 000s)			
Year	**Inflows**	**Outflows**	**Cash Flow**
FY20	1,469,823	2,200,779	(730,956)
FY21	1,525,999	2,273,937	(747,938)
FY22	1,607,509	2,373,992	(766,483)
FY23	1,686,030	2,429,201	(743,171)
FY24	1,742,259	2,507,931	(765,672)
FY25	1,799,455	2,590,340	(790,885)
FY26	1,856,506	2,674,843	(818,337)

Source: Cavanaugh MacDonald

Note: Unlike prior cash flow tables, does not include dividends/interest or other investment earnings.

The negative cash flow for TRS would be greater in future years where:

- The earnings assumption is not met
- Payroll growth is lower than assumed
- Authorized funding levels are lower than the ADC

Further, the pace of progress under the current funding policy will be slow, even if all assumptions are met. In fact, even if the current assumptions of 6.75% annual investment return and 4% annual payroll growth are achieved and the contribution payment schedule is met in full, the funded ratio of KERS-NH is estimated to continue to decline until FY2023, and is not estimated to reach even a 20% funded status until 2030. A more conservative amortization schedule for paying down unfunded liabilities, a level dollar amortization – similar to a standard home mortgage schedule -- would cost significantly more in the short term but would make faster progress in reducing the unfunded liability, would eliminate reliance on changes in payroll as a variable, and would not backload principal payments are much as the current schedule.

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Table 21

Comparison of Pension Amortization Schedules KERS-NH June 30, 2016 Valuation and Actuarial Assumptions Level % of Payroll (Current Baseline Amortization Method as Defined in 2013SB2) vs. Level $ Amortization $ in Millions						
Year	Employer Contribution		Unfunded Liability		Funded Ratio	
	Level %	Level $	Level %	Level $	Level %	Level $
2019	$731.7	$1,082.2	$11,620.2	$11,257.9	12.9%	15.6%
2020	752.6	1,113.1	11,741.1	10,981.7	12.2%	17.9%
2021	793.3	1,117.3	11,788.5	10,642.9	12.0%	20.5%
2022	817.6	1,151.5	11,813.5	10,245.4	11.9%	23.6%
2023	851.9	1,099.4	11,804.5	9,874.7	12.1%	26.5%
2024	879.0	1,134.5	11,766.7	9,442.6	12.4%	29.7%
2025	912.1	1,071.0	11,692.2	9,046.9	13.0%	32.7%
2026	942.7	1,106.9	11,581.0	8,587.5	13.8%	36.1%
2027	976.7	1,040.2	11,427.5	8,166.3	14.9%	39.2%
2028	1,010.4	1,076.1	11,229.1	7,679.9	16.3%	42.7%
2029	1,044.0	1,005.8	10,983.0	7,233.8	18.0%	46.0%
2030	1,080.6	1,041.0	10,682.7	6,721.3	20.1%	49.7%
2031	1,114.8	968.8	10,327.0	6,249.2	22.5%	53.1%
2032	1,154.6	1,003.4	9,906.7	5,709.9	25.5%	57.0%
2033	$1,190.7	$929.8	$9,421.5	$5,211.2	28.9%	60.7%

Source: Cavanaugh MacDonald

Note: Actuarial assumptions include 6.75% earnings assumption, 4% payroll growth, and 26-year remaining amortization period.

Solvency Analysis

Given this at-risk funded position, contribution history, and cash flow and liquidity concerns, we tested the KERS-NH and TRS plans under several alternate assumptions and scenarios to identify whether the plans would be projected to remain solvent. The variables altered included:

- The discount rate, linked to investment return assumptions that can vary widely in practice.
- The assumed rate of increase in payroll, which drives the rate of increase in the assumed employer contribution. If actual payroll decreases or grows at a slower rate than assumed, the funding shortfall will increase in the actuarial model.

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- The percentage of the actuarially determined contribution (ADC) contributed, since the full ARC/ADC was not fully funded for KRS for over ten years, and has not yet been budgeted for TRS in over ten years.

A solvency analysis estimating cash flows over a 30-year period based on information from the plan actuary was conducted under these varying assumptions.

KERS-NH Solvency Test Results

- Based on the past pattern of negative payroll growth detailed later in Section IV, payroll growth was assumed to be 0% annually. This is effectively a level dollar amortization and would reduce the risk associated with past negative payroll growth, and the resultant continual back-loading of amortization principal and deterioration in short-term funded ratios.
- Several alternative discount rates were assumed:
  - A Revised Asset Allocation rate of 5.1%. KRS has updated its asset allocation approach to reflect the varying degrees of stress and diminished assets of its plans. Based on our understanding of this approach, we developed alternate return assumptions for a 10-year investment horizon and a level of increased liquidity consistent with updated KRS policy, with up to an allocation of 25% short-term bonds and 25% cash. These assumptions were based on PFM Asset Management's expected 10-year return for a portfolio with increased allocation to short-term bonds and cash. The time horizon for the investment return and the matching of asset investments to liabilities and the cash flows of paying benefits reflect the condition of the plans.
  - Corporate Bond Index rate. The Citibank corporate bond index rate is used for valuation of private sector pension plans and made available through the Society of Actuaries for these purposes. The appropriate rate for the time period when projected benefits would be paid is applied, and a weighted average rate for the future liabilities was calculated. The weighted average rate across the yield curve as of April 30, 2017 was 3.87%.
- If the past patterns of underfunding the required contribution were followed, the plan would become insolvent by FY2022.

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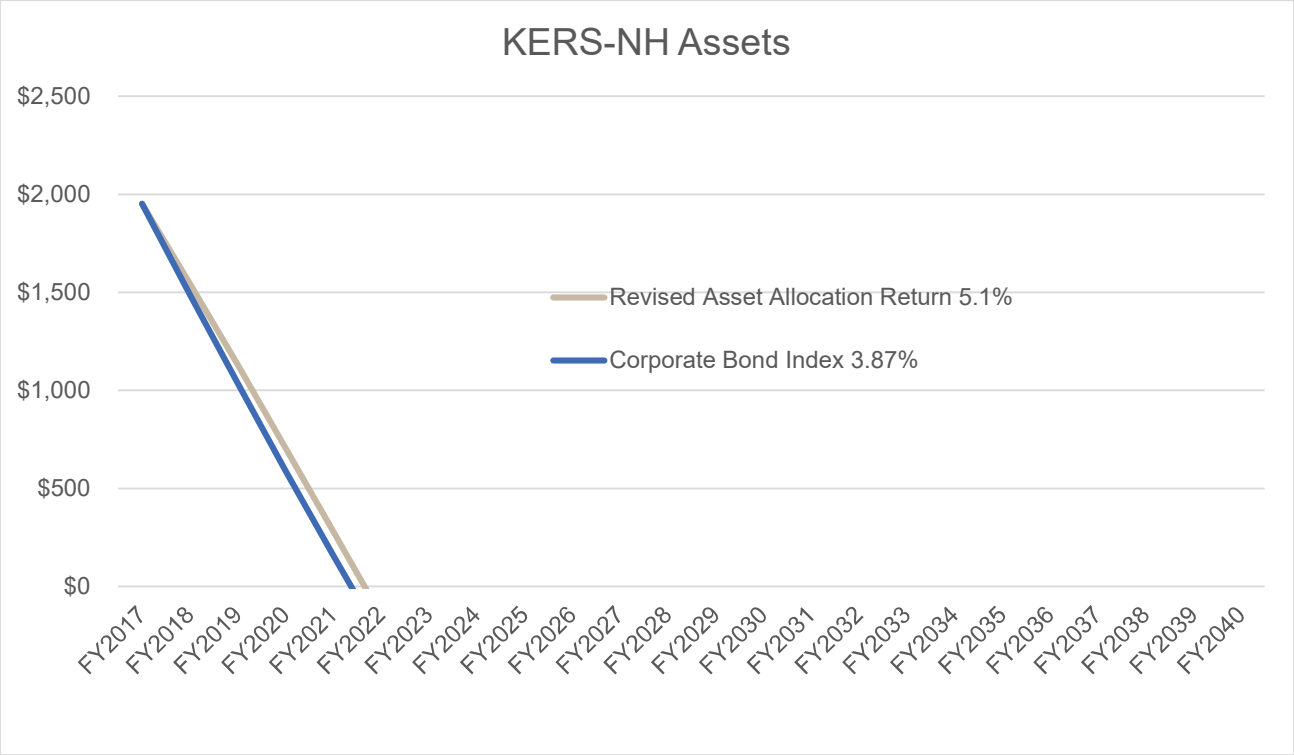
Figure 18



Source: PRM Consulting Group estimates based on data from Cavanaugh MacDonald

- The plan is projected to become insolvent by FY2028 if the FY16 or ADC-equivalent contribution were provided in future years, the plan earned the Corporate Bond Index rate, and payroll growth is 0%, or by FY2029 if the Revised Asset Allocation rate is earned.

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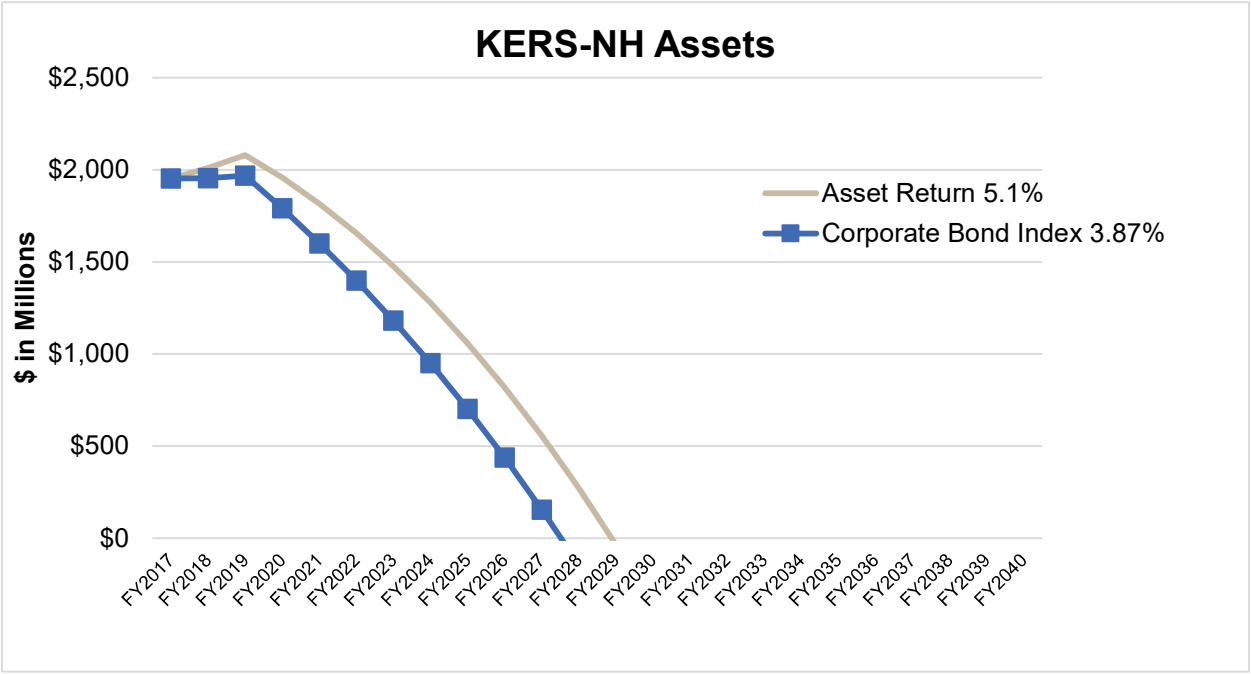
Figure 19



Source: PRM Consulting Group estimates based on data from Cavanaugh MacDonald

Note: 0% Payroll growth and Ultimate contribution of FY2016 budget ($672 Million) annually

- The plan is projected to become insolvent by FY2033 if the average of the budget amounts from FY2016-FY2018 were provided in future years, the plan earned the Corporate Bond Index rate, and payroll growth is 0%, or by FY2037 if the Revised Asset Allocation rate is earned.

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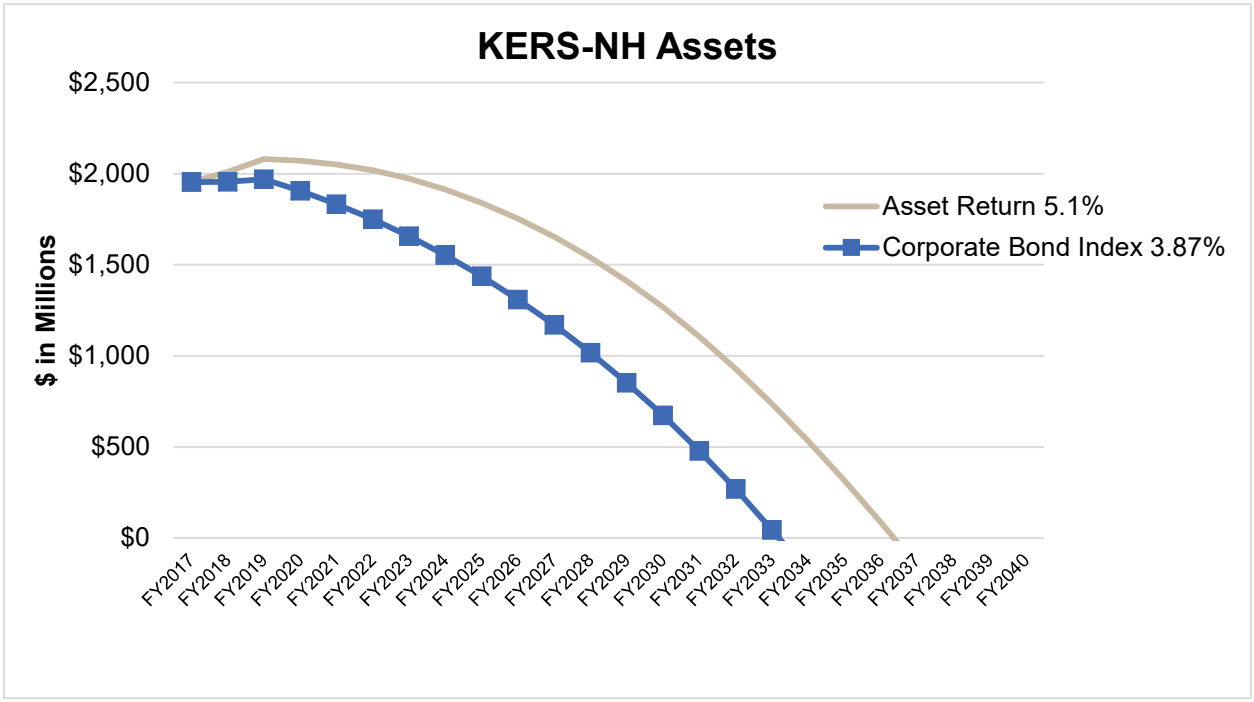
Figure 20



Source: PRM Consulting Group estimates based on data from Cavanaugh MacDonald

Note: 0% Payroll growth and Ultimate contribution of 3 year average from FY2016, FY2017, and FY2018 budgets ($787 Million) annually

- The amounts appropriated in the FY17-18 budget were significantly higher than the ADC. If these amounts were maintained and the Revised Asset Allocation or Corporate Bond Index rates are achieved every year on average, the plan is projected to remain solvent, even with 0% payroll growth.

TRS Solvency Test Results

- If the recommended employer contribution levels are fully achieved in FY2019 and thereafter (which would be the first time since FY2004) and assets earn the Revised Asset Allocation return of 6.0% per year or higher, the plan is projected to remain solvent.
- However, the plan is projected to become insolvent, if:
  - The employer contribution of the average of the FY2016-2018 budgeted amounts is maintained in future years, and payroll growth is initially a reduced 1% per year increasing to the actuarial assumption of 2.5% per year. If assets earn the Revised Asset Allocation return of 6.0% per year insolvency is estimated to occur in FY2044,

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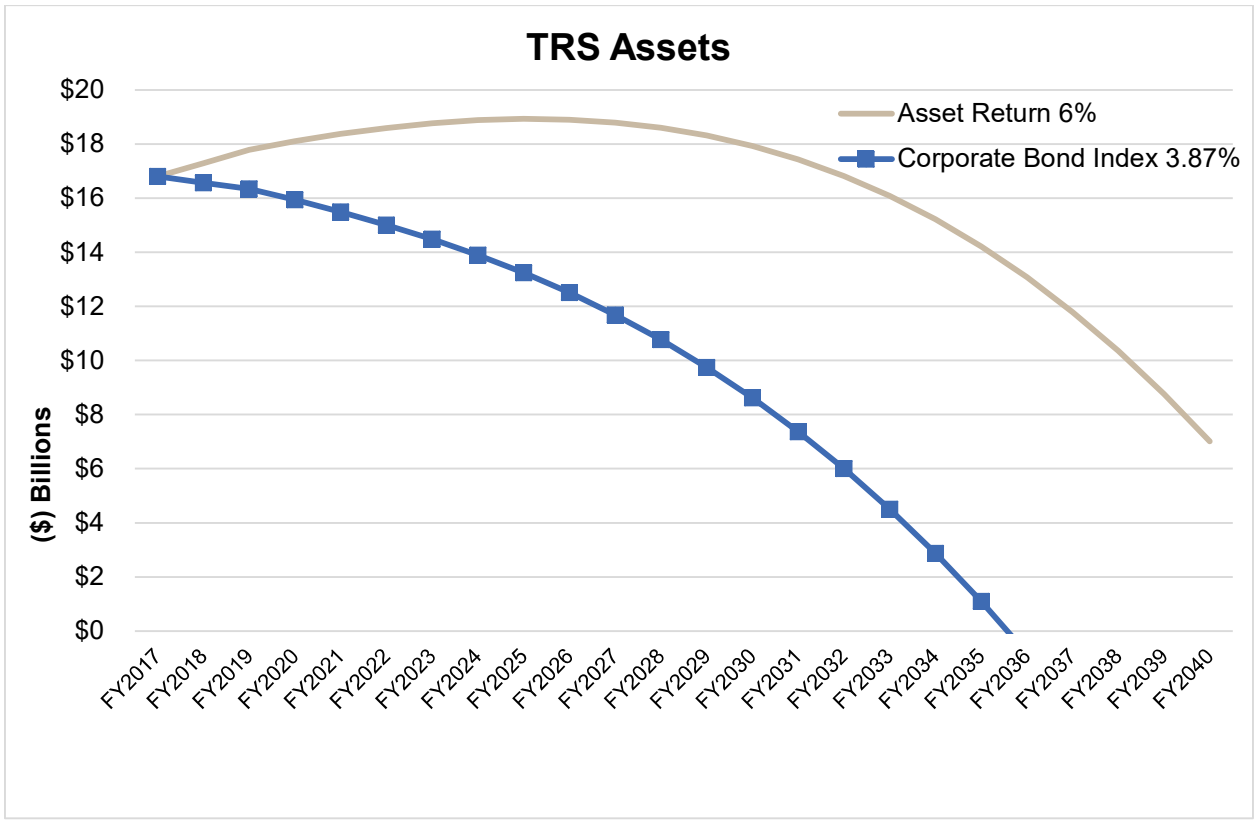
while insolvency is estimated to occur in FY2036 if the plan earns the Corporate Bond Index rate.

Figure 21



Source: PRM Consulting Group estimates based on data from Cavanaugh MacDonald

Note: 1% Payroll growth increasing to Ultimate of 2.5%. Ultimate contribution of 3 year average from FY2016, FY2017, and FY2018 budgets ($997 Million) annually

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V. Pension Budget Estimates

The Commonwealth's budget contributions towards pensions are projected to continue to escalate by design under the current amortization method. The conservative alternatives covered in this report, such as level dollar amortization or revised actuarial assumptions, would reduce the risks of insolvency, volatility, and continued patterns of underfunding, but would entail significantly greater potential costs in the near- to medium-term.

The estimated General Fund budget associated with the future employer contribution portion of the ADC is presented in the following tables for the KERS, SPRS, and TRS systems. Note that the KERS-NH system in particular has a relatively large proportion of the employer contribution paid by budgetary funds other than the General Fund, including federal grants and road and restricted funds, while also having employer participants that are outside the Commonwealth's budget.

Table 22

Year	Commonwealth of Kentucky General Fund Budget Estimates TRS and KERS-NH Budget Estimates Baseline June 30, 2016 Valuation and Alternative Assumptions ($ in Millions)					
	TRS			KERS-NH		
	Published Actuarial Assumptions	Published Actuarial Assumptions with Level $ Amortization	Revised Asset Allocation Discount Rate (6%), Level % Amortization	Published Actuarial Assumptions	Published Actuarial Assumptions with Level $ Amortization	Revised Asset Allocation Discount Rate (5.1%), 0% Payroll Growth
2019	$1,056.8	$1,392.4	$1,407.7	$377.8	$558.8	$622.2
2020	1,071.0	1,403.6	1,454.5	388.6	574.7	640.0
2021	1,116.3	1,454.7	1,526.9	409.6	576.9	639.9
2022	1,185.3	1,501.4	1,596.8	422.2	594.5	659.5
2023	1,251.5	1,540.1	1,661.2	439.9	567.7	628.3
2024	1,296.2	1,546.2	1,703.1	453.9	585.8	648.3
2025	1,341.5	1,548.3	1,745.4	471.0	553.0	611.5
2026	1,386.5	1,546.8	1,786.8	486.8	571.6	632.0
2027	1,432.5	1,544.7	1,828.2	504.3	537.1	593.5
2028	1,479.7	1,542.2	1,870.5	521.7	555.6	614.0
2029	1,529.8	1,540.0	1,915.1	539.1	519.3	573.2

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Year	Commonwealth of Kentucky General Fund Budget Estimates TRS and KERS-NH Budget Estimates Baseline June 30, 2016 Valuation and Alternative Assumptions ($ in Millions)					
	TRS			KERS-NH		
	Published Actuarial Assumptions	Published Actuarial Assumptions with Level $ Amortization	Revised Asset Allocation Discount Rate (6%), Level % Amortization	Published Actuarial Assumptions	Published Actuarial Assumptions with Level $ Amortization	Revised Asset Allocation Discount Rate (5.1%), 0% Payroll Growth
2030	1,582.1	1,538.0	1,961.4	557.9	537.5	593.3
2031	1,636.5	1,536.4	2,009.1	575.6	500.2	551.0
2032	1,692.4	1,534.6	2,058.0	596.2	518.1	570.7
2033	$1,751.3	$1,533.7	$2,108.4	$614.8	$480.1	$527.4

Source: PFM analysis based on information from the Kentucky Office of the State Budget Director and employer contribution estimates from Cavanaugh MacDonald

Note: Budget amount based on the actuarially determined contribution under each scenario, not reflective of prior under- or over-funding. The TRS Revised Discount Rate estimates also reflect reduction of the payroll growth assumption to 2.5%.

Table 23

Year	Commonwealth of Kentucky General Fund Budget Estimates SPRS and KERS-NH Budget Estimates Baseline June 30, 2016 Valuation and Alternative Assumptions ($ in Millions)					
	SPRS			KERS-H		
	Published Actuarial Assumptions	Published Actuarial Assumptions with Level $ Amortization	Revised Asset Allocation Discount Rate (6%), 0% Payroll Growth	Published Actuarial Assumptions	Published Actuarial Assumptions with Level $ Amortization	Revised Asset Allocation Discount Rate (5.1%), 0% Payroll Growth
2019	$19.1	$27.9	$32.4	18.1	$24.6	$33.4
2020	19.5	28.5	33.1	18.6	25.3	34.3

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Year	Commonwealth of Kentucky General Fund Budget Estimates SPRS and KERS-NH Budget Estimates Baseline June 30, 2016 Valuation and Alternative Assumptions ($ in Millions)					
	SPRS			KERS-H		
	Published Actuarial Assumptions	Published Actuarial Assumptions with Level $ Amortization	Revised Asset Allocation Discount Rate (6%), 0% Payroll Growth	Published Actuarial Assumptions	Published Actuarial Assumptions with Level $ Amortization	Revised Asset Allocation Discount Rate (5.1%), 0% Payroll Growth
2021	20.7	28.9	33.4	19.9	26.1	35.2
2022	21.2	29.6	34.2	20.5	26.9	36.2
2023	22.3	28.7	33.0	21.4	26.2	34.8
2024	22.9	29.5	33.8	22.0	26.9	35.9
2025	23.8	28.0	32.0	22.5	25.5	33.7
2026	24.4	28.7	32.8	23.2	26.2	34.7
2027	25.4	27.2	30.9	23.6	24.5	32.3
2028	26.2	28.0	31.9	24.3	25.3	33.3
2029	27.3	26.5	30.0	24.8	23.7	30.9
2030	28.2	27.4	31.0	25.6	24.4	31.9
2031	29.3	25.7	28.9	26.2	22.8	29.4
2032	30.4	26.7	30.1	27.2	23.7	30.5
2033	$31.4	$24.8	$27.8	$27.8	$22.0	$28.2

Source: PFM analysis based on information from the Kentucky Office of the State Budget Director and employer contribution estimates from Cavanaugh MacDonald

Note: Budget amount based on the actuarially determined contribution under each scenario, not reflective of prior under- or over-funding.

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Table 24

Year	Commonwealth of Kentucky General Fund Budget Estimates TRS, KERS, and SPRS Total Budget Estimates Baseline June 30, 2016 Valuation and Alternative Assumptions ($ in Millions) Published Actuarial Assumptions	Published Actuarial Assumptions with Level $ Amortization	Revised Discount Rate, Payroll Growth Assumptions
2019	$1,471.8	$2,003.7	$2,095.7
2020	1,497.7	2,032.1	2,161.9
2021	1,566.5	2,086.6	2,235.4
2022	1,649.2	2,152.4	2,326.7
2023	1,735.1	2,162.7	2,357.3
2024	1,795.0	2,188.4	2,421.1
2025	1,858.8	2,154.8	2,422.6
2026	1,920.9	2,173.3	2,486.3
2027	1,985.8	2,133.5	2,484.9
2028	2,051.9	2,151.1	2,549.7
2029	2,121.0	2,109.5	2,549.2
2030	2,193.8	2,127.3	2,617.6
2031	2,267.6	2,085.1	2,618.4
2032	2,346.2	2,103.1	2,689.3
2033	$2,425.3	$2,060.6	$2,691.8

Source: PFM analysis based on information from the Kentucky Office of the State Budget Director and employer contribution estimates from Cavanaugh MacDonald

Note: Budget amount based on the actuarially determined contribution under each scenario, not reflective of prior under- or over-funding. The TRS Revised Discount Rate estimates also reflect reduction of the payroll growth assumption to 2.5%.

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VI. Sources of Increases in the Unfunded Liability

As recently as FY2002 the KERS-NH plan reported a funded ratio of over 100%, and the TRS plan reported nearly 90% funding. In order to better understand and isolate the subsequent causes of growth in the unfunded liability – and also to inform potential remedies for the future – we conducted a detailed analysis of past actuarial reports in order to categorize, quantify, and illustrate causes.

Table 25 shows a summary of funded status for a majority of Kentucky's eight plans as of June 30, 2005 and eleven years later as of June 30, 2016, a period covering most of the decline in funding. In the aggregate, the plans experienced a growth in unfunded pension liabilities of $25.5 billion when measured using the plan's actuarial valuations.

Table 25

Components of $25.5 Billion Growth in Unfunded Pension Liabilities Amounts in $Millions							
	6/30/2005 6/30/2007 (KJRS & KLRS)			6/30/2016			
	Actuarial Accrued Liabilities	Actuarial Value of Assets	Unfunded Actuarial Accrued Liabilities	Actuarial Accrued Liabilities	Actuarial Value of Assets	Unfunded Actuarial Accrued Liabilities	Growth in Unfunded Actuarial Accrued Liabilities
TRS (Teachers)	$19,135	$14,599	$4,536	$32,028	$17,497	$14,531	$9,995
KERS Non-Hazardous	7,579	5,579	2,000	13,225	2,112	11,113	9,113
KERS Hazardous	439	405	34	937	560	377	343
CERS Non-Hazardous	5,385	5,059	326	11,077	6,535	4,542	4,216
CERS Hazardous	1,796	1,452	344	3,705	2,139	1,566	1,222
SPRS (State Police)	459	354	105	775	235	540	435
KJRS (Judiciary)	241	259	(18)	412	297	115	133
KLRS (Legislators)	65	70	(5)	104	30	74	79

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Components of $25.5 Billion Growth in Unfunded Pension Liabilities Amounts in $Millions							
	6/30/2005 6/30/2007 (KJRS & KLRS)			6/30/2016			
	Actuarial Accrued Liabilities	Actuarial Value of Assets	Unfunded Actuarial Accrued Liabilities	Actuarial Accrued Liabilities	Actuarial Value of Assets	Unfunded Actuarial Accrued Liabilities	Growth in Unfunded Actuarial Accrued Liabilities
Total	$35,099	$27,777	$7,322	$62,263	$29,405	$32,858	$25,536

Explanation of the Categories

The categories used to analyze the sources of these increases in the unfunded liability are described in Table 26 below:

Table 26

Major Category	Identified Source of Increase in Unfunded Liability	Explanation
Actuarial	1. Actuarial back-loading; funding the Actuarially Recommended Contribution (ARC) was less than the annual break-even payment on the Unfunded Liability	The actuary's recommended contribution based on the system's funding policy, amortization method, period, and other characteristics, was not large enough to offset interest due on the Unfunded Liability in that year and keep it from increasing. This particularly applies in a level percent of payroll amortization in which, unlike a mortgage with a level payment, payments are back-loaded. This can cause "negative amortization" in the early years of the amortization period, where the unfunded liability is actually scheduled to increase, particularly if the amortization period is reset to a longer period as it was multiple times for KRS and TRS.
Actuarial	2. Actuarial assumption changes	The liability increased due to reductions in the earnings assumption/discount rate, or increases in the life expectancy of plan participants.
Actuarial	3. Plan experience different from assumptions	Workforce hiring and separation patterns and life expectancies were more or less costly than anticipated.
Funding	4. Appropriation was less than the ARC	The employer funding amount provided was less than the amount recommended by the actuary, under the

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Major Category	Identified Source of Increase in Unfunded Liability	Explanation
		system's funding policy. This primarily applies to KERS, SPRS, TRS, and KJFRS, as CERS employers routinely paid the required employer contribution.
Investment	5. Investment performance was less than market performance	This measures the extent to which actual investment performance of the retirement system was below representative benchmark portfolio performance, i.e., how much did the retirement system underperform the market.
Investment	6. Market performance was less than the valuation interest rate	This measures the extent to which the representative benchmark portfolio investment performance was less than the assumed investment earnings rate, i.e., how much did the market as a whole underperform the earnings assumption.
COLA	7. COLAs – cost-of-living-adjustments	Post-retirement annuity increases were granted, but were not anticipated in prior funding measurements.

Actuarial Back-loading

The technical, at times arcane, dynamics and implications of actuarial funding methods and assumptions are not always well understood outside of the actuarial profession, but can have significant impacts on system funding. In Kentucky, one of the specific actuarial approaches in use – while common nationally and widely accepted as one of several alternatives – effectively back-loads system funding when viewed on a multi-year basis, and has contributed materially to the decline in funded status across the Commonwealth's plans.

Like many government pension plans, Kentucky's systems use a "level percent of payroll" method for amortizing any unfunded liabilities that may emerge over time. This is one of several common and accepted amortization methods, and is intended to promote affordability and budgetary stability. Under this approach, a pension plan establishes amortization payment amounts that are not fixed at a set dollar amount, as in a typical home mortgage, but instead are structured to represent a level percentage of payroll. In an open plan with new entrants and regular salary increases, payroll is expected to grow over time. In turn, this means that the planned amortization payments are also assumed to increase in dollar terms over time – which results in smaller payments in the near-term than would be required under the alternative "level dollar" amortization method that sets all payments at the same level year-after-year.

The chart that follows, Figure 22, illustrates the level percentage of payroll and level dollar amortization methods based on the estimated unfunded liability for KERS-NH as of the June 30, 2016 valuation, assuming the 6.75% investment return and 4% payroll growth. The level percentage of payroll amortization is the method assumed in the valuation report, and it is also

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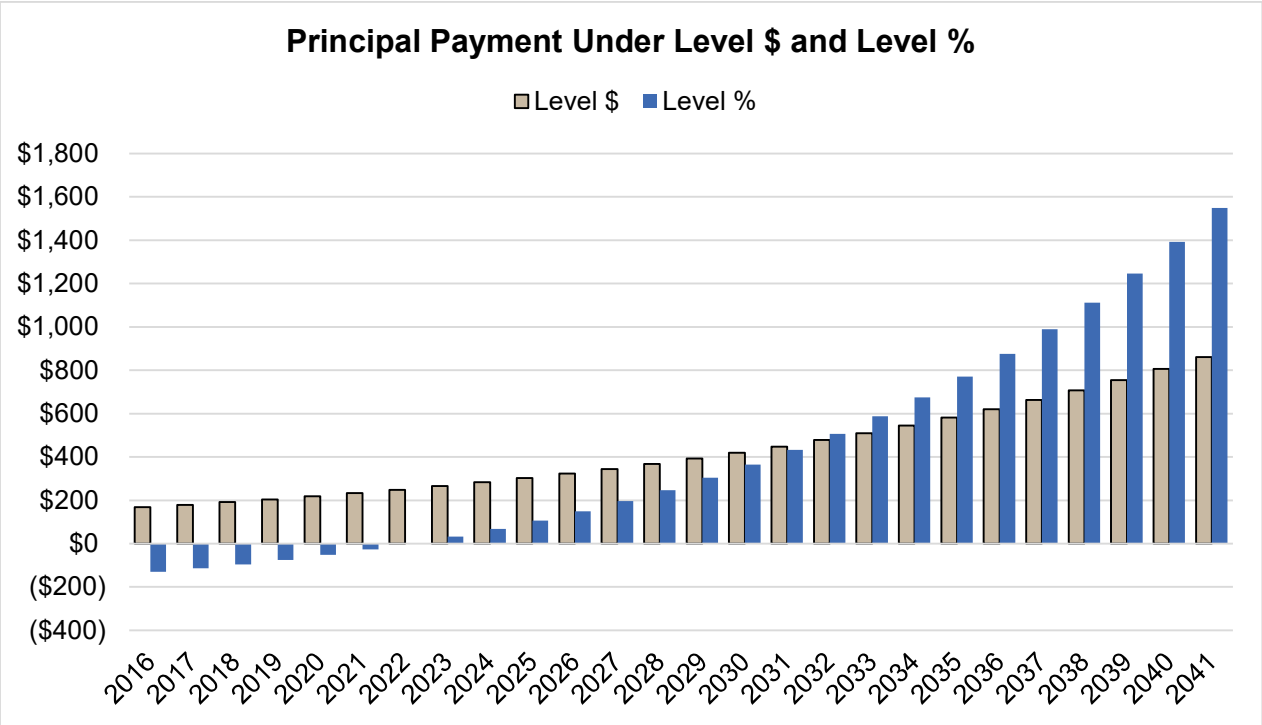
specified in state law. This has therefore been the basis of budgetary allocations and forecasts. Each of these methods result in 100% funding by the end of the remaining 26 year amortization period. In the level percentage of payroll approach, however, in the early years of the amortization the interest paid on the unfunded liability is not sufficient, and therefore the unfunded liability continues to increase. This is illustrated on the chart as a negative principal amount, or what is also called "negative amortization." This is also why, as shown in earlier tables, the funded ratio is assumed to decline in the earlier years of the period, with progress primarily occurring in the last few years of the amortization period. As a result of such back-loading, the dollar amount of the unfunded liability actually increases for nearly a decade.

Figure 22



Source: PRM Consulting Group based on data from Cavanaugh MacDonald

This potential impact of this amortization method is often overlooked, such as when pension reforms are implemented concurrent with a restarted amortization period. The level percent of payroll, while intended to promote budgetary affordability and intergenerational equity, also involves more risk by shifting unfunded liability amortization payments into the future. To the extent that investment earnings, payroll growth, or other inflation assumptions are not met, unfunded liability payments will be shifted further forward, and the risk that the net present value of unfunded liabilities will grow increases. In contrast, the level dollar amortization provides for larger payments sooner, and reduces the risk of growth in the unfunded liability.

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The chart above and previous tables also illustrate how progress in the funded ratio for the Kentucky Retirement Systems plans is projected to be much slower under the current level percent of payroll amortization than with a change to a level dollar amortization. Again, this delay in improving the funded ratio and reducing the unfunded liability also leaves the systems more susceptible to the long-term and recurring impacts of other factors that deviate from assumptions.

As stated above, relying on the level percentage of payroll amortization presents the potential for volatility and funding delays associated with deviations in the payroll growth itself. On the one hand, if payroll growth is lower than assumed, this produces favorable experience as the expected future benefit payments based on average final compensation will be lower. On the other, since Commonwealth departments and participating employers in KERS and CERS contribute to the system as an allocated percentage of their payroll, if the actual payroll is less than the actuary's contribution calculation assumed, then the actual contributions will be less than required in the short term. This unfavorable variance is then re-amortized the next year and, due to the back-loading of the amortization, shifts further out into the future.

This issue has particularly impacted KERS-NH. The actuarial valuation has assumed between 3.5% and 4.5% annual growth in payroll in each 30-year schedule prepared since FY2006, and yet covered payroll actually contracted over the period by a compound annual average of -1.1%, in part due to the fiscal pressure caused by accelerating pension needs. The size of the KERS-NH workforce dropped by roughly one-fifth, 19.8%, from 2005 to 2016. The difference between the assumed growth path from the 2005 valuation and the actual payroll is illustrated in the chart below. Again, there are positive and negative offsets to this variance, but the implication is that KERS-NH is consistently underfunding contributions compared to previous expectations, resulting in larger interest accruals on the unfunded liability, and further actuarial back-loading of principal.

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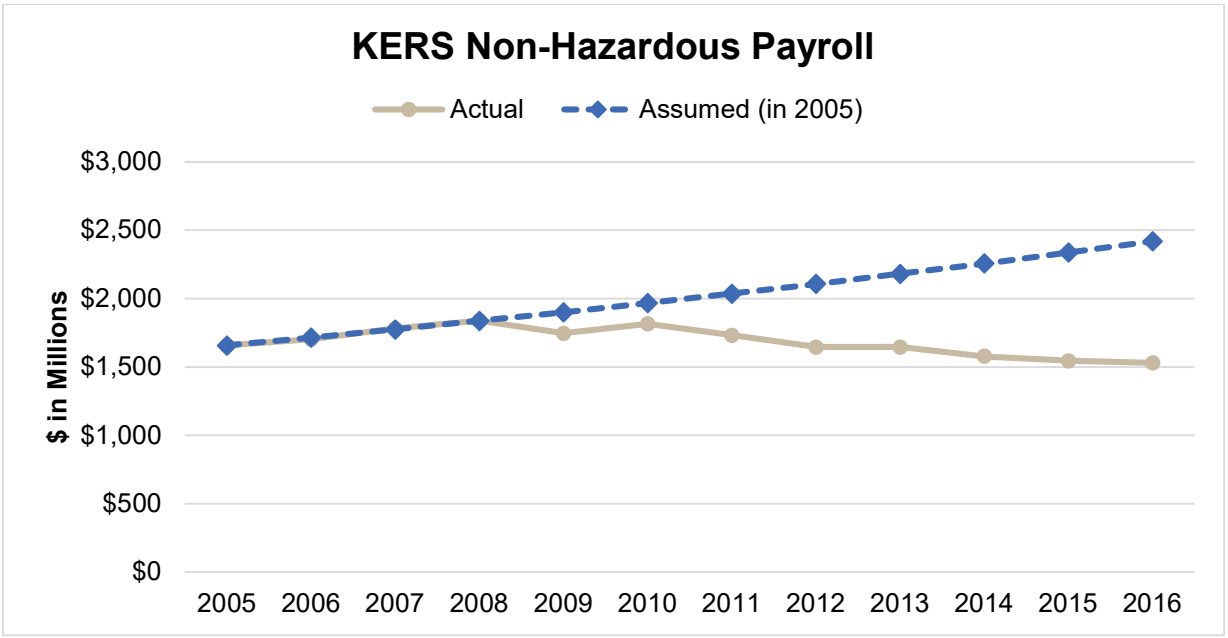
Figure 23



Source: KRS annual valuation reports

Actuarial Assumption Changes

A second factor increasing the reported size of Kentucky's unfunded pension liabilities has been adjustments to actuarial assumptions. Like most systems nationally, Kentucky's plans periodically review whether their actuarial assumptions have been consistent with actual experience, and may choose to modify assumptions when variances are identified. Most notably, such assumption changes have included reductions in the investment earnings assumptions. Other modifications, such as the adoption of newer mortality tables to reflect increasing longevity, have also had an impact.

While changes in actuarial assumptions do not, of course, affect the ultimate cost of benefits paid to retirees, they can significantly impact the scale of such obligations as estimated going forward.

Actuarial Experience

Relatedly, to the extent that actual experience varies from actuarial projections in current years, such variations can result in either favorable or unfavorable results. With regard to mortality assumptions, for example, greater longevity than assumed will result in more years of payments than had been planned. With one exception, the impact of such variances are captured in this category. That exception involves investment returns that differ from each plan's assumptions. Because of the relatively large impact of such investment experience, that factor is tracked within two separate categories that follow – investment performance associated with broader market conditions, and plan investment performance relative to the market.

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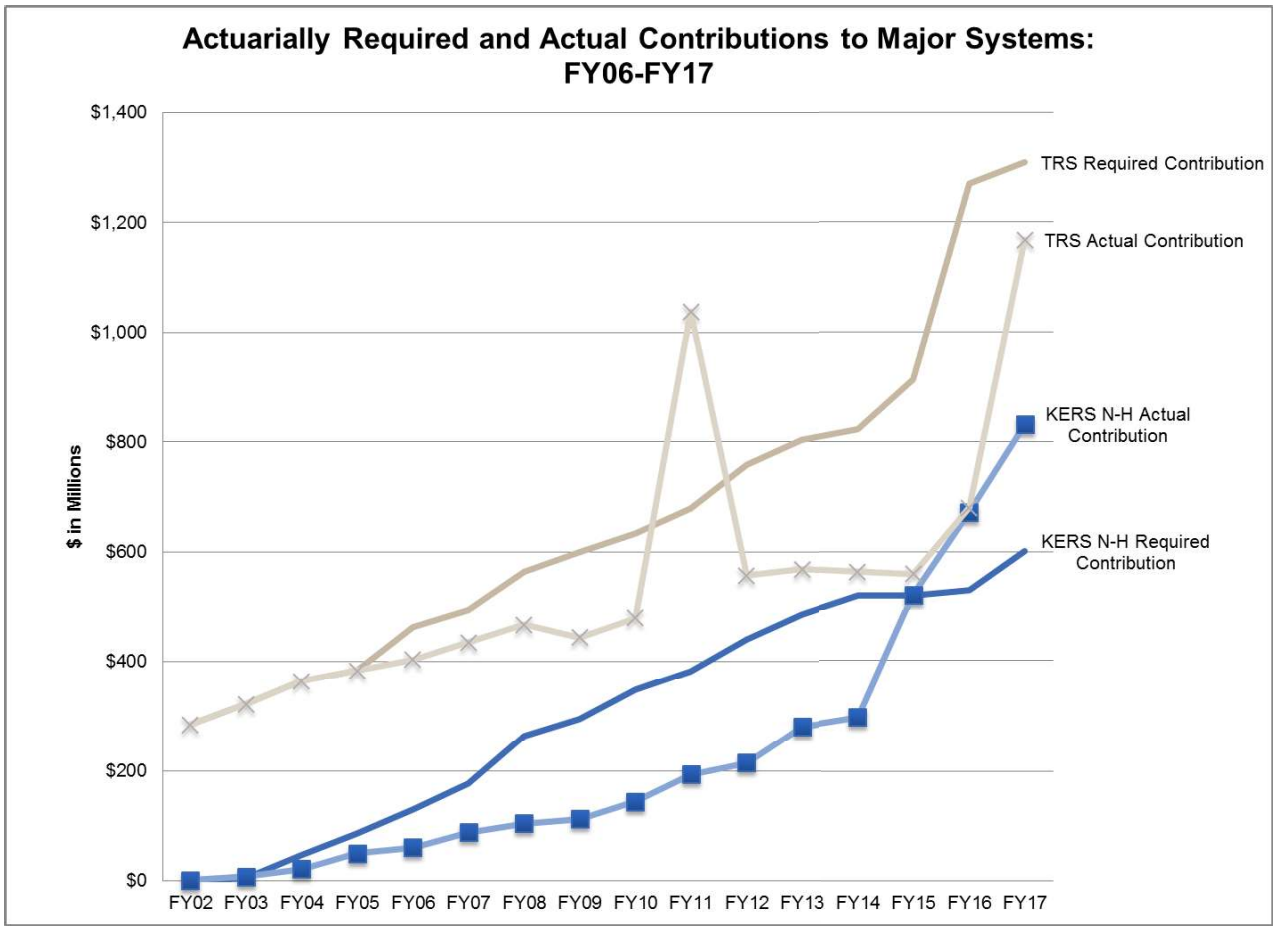
Appropriation below the ARC

Another major driver of the declining financial health of several of Kentucky's larger has been the historical underfunding of the Commonwealth's Actuarially Required Contributions (ARC). As shown in Figure 24 below, for example, both the KERS-NH and TRS systems received contributions that were hundreds of millions of dollars below the ARC each year across most years of the analysis period.

Figure 24



Source: Commonwealth of Kentucky valuation reports and CAFRS for KRS, TRS, multiple years; Kentucky Office of the State Budget Director

In FY2002, KERS-NH owed no employer contribution due to the net asset surplus at the time. Beginning in FY04, the ARC was underfunded by $26 million and remained underfunded until FY2015, peaking at a funding shortfall of $226.3 million in FY2012, when less than half the required

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contribution was made. The Senate Bill 2 reform of 2013 put the Commonwealth on a path to full funding of the ARC, which has now been surpassed with funding greater than the ARC along with more conservative assumptions in the FY2017-FY2018 budget.

For TRS, the Commonwealth maintained full funding of the ARC prior to FY05 before underfunding beginning in FY2006. The magnitude of the underfunding grew from $60.3 million in FY2006 to $590.4 million in FY2016 – more than the entire ARC for KERS-NH, and representing only 53.5% funding of the ARC in that year. This trend was only briefly offset in FY2011 when the Commonwealth issued $465.4 million of Pension Obligation Bonds to provide a one-time restoration of funds that had been diverted from payment of the ARC for TRS pensions in order to cover the pay-as-you-go costs of the TRS Insurance OPEB program. The FY2017 and FY2018 budgets adopted by Governor Bevin and the Legislature provided a significant funding restoration to TRS, although the Actuarially Determined Contribution (ADC) was not quite fully funded.[20]

Investment Performance

The period reviewed for this analysis included the "Great Recession" – the longest and sharpest economic downturn of the post-World War II era. During those recession years, almost every pension plan nationally experienced significant investment losses. Also during the 2005-2016 period of our review, however, several of Kentucky's retirement plans have been criticized for specific investment strategies and fees.

To better understand the relative impacts of both general headwinds in the overall markets and any plan-specific investment underperformance, our analysis disaggregates overall investment results into two distinct categories:

- Plan-specific investment performance relative to annual benchmarks linked to overall market performance each year.
- Overall market performance relative to each plan's assumed investment return rate.

This approach is intended to provide greater insight into the relative impact of these external and internal factors in growth of the unfunded liability.

20 New GASB standards announced in Statements 67 and 68 changed the basis of pension financial reporting from the ARC to the ADC effective with the FY14 financial statements for the retirement systems and FY15 for the Commonwealth.

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Cost-of-Living Adjustments (COLAs)

Finally, any improvements to benefits that are provided without commensurate funding will increase a pension plan's unfunded liability. In the early years of this review period, some unfunded COLAs were granted.

Plan-by-Plan Analysis

For each of Kentucky's retirement systems, the relative impact of each of these factors is quantified and discussed below.[21]

Teachers Retirement System

Table 27 compares the funded status of the Teachers Retirement System as of June 30, 2005 with the funded status as of June 30, 2016. While the plan assets increased by $2.9 billion, the plan liabilities increased by $12.9 billion, resulting in an increase in the unfunded actuarial accrued liability of $10 billion.

Table 27

TRS Pension Benefits (Amounts in $Millions)			
	6/30/2005	6/30/2016	Change
Valuation Discount Rate	7.50%	7.50%	0.00%
Actuarial Value of Assets	$14,599	$17,497	$2,898
Actuarial Accrued Liability	$19,135	$32,028	$12,893
Unfunded Actuarial Accrued Liability	$4,536	$14,531	$9,995
Funded Status	76.3%	54.6%	-21.7%

FY2006 Experience

Table 28 shows the experience of the Teachers Retirement Plan in FY2006, which illustrates some of the common factors that caused the increase in the unfunded actuarial accrued liability.

[21] *Tables and figures in this section prepared by PRM Consulting Group based on analysis of valuation reports and additional data from KRS, TRS and KJFRS.*

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Table 28

Teachers Retirement Plan - FY2006 Experience (amounts in $ millions)			
	Actuarial Accrued Liability (AAL)	Actuarial Value of Assets (AVA)	Unfunded Actuarial Accrued Liability (UAAL)
As of 6/30/2005	**$19,135**	**$14,599**	**$4,536**
Discount rate	7.50%	7.50%	
FY 2006 Normal Cost	$487	$487	$0
FY 2006 Funding above Normal Cost	$0	$183	($183)
Interest Accrual	$1,433	$1,081	$352
Benefits Paid	($1,038)	($1,038)	$0
Liability (Gain) or Loss	$308	$0	$308
Asset Gain or (Loss)	$0	($454)	$454
As of 6/30/2006	**$20,325**	**$14,858**	**$5,467**
Discount rate	7.50%	7.50%	

The Actuarial Accrued Liability (AAL) grew by $1,190 million as employees earned $487 million in additional benefits due to their accrual of an additional year of service from 7/1/2005 to 6/30/2006. The AAL is the discounted present value of future accrued benefits, and, with the passage of time, employees age one year closer to starting to receive their pensions, resulting in an increase in the liability of $1,433 million. The AAL declined by $1,038 million as benefits were paid out either as pension payments or refunds of contributions. Lastly, the AAL increased by $308 million due to experience losses.

The Actuarial Value of Assets (AVA) increased by $670 million with the influx of new member and employer contributions. Of this total, $487 million was needed to cover the value of benefits earned in the year, resulting in $183 million of funding available towards paying down the Unfunded Actuarial Accrued Liability (UAAL). The assets were expected to earn 7.50%, which would add $1,081 million during the year. In FY2006 the investment performance was 5.28%, resulting in investment earnings of $627 million. The asset loss, measured against the expected increase of $1,081 million, was therefore $454 million.

Overall, the increase in the Unfunded Actuarial Accrued Liability from 6/30/2005 to 6/30/2006 is due to three main factors:

- Asset loss, compared to expected return, of $454 million

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- Liability loss, compared to expected growth in liabilities, of $308 million, and
- Insufficient funding to cover interest on the unfunded actuarial accrued liability, of $169 million.

A similar analysis was conducted for each of the following years. In addition to these three factors, the unfunded liability increased due to changes in actuarial assumptions.

Actuarial Assumptions

Effective for the 6/30/2011 valuation, the valuation interest rate was changed from a fixed 7.50% per year to a "Smoothed Interest Rate Methodology". This methodology developed a separate rate to be used for the next 25 years such that when combined with the actual investment performance over the last 5 years, the 30-year period compound rate was equivalent to 7.50%. Benefits paid more than 25 years in the future continued to be discounted at 7.50%. The Smoothed Interest Rate Methodology included a corridor of 0.50% around the ultimate investment return such that if the calculated amount was below 7.00% or above 8.00%, the valuation interest rate limit would apply. The Smoothed Interest Rate Methodology was first adopted for use in the 6/30/2011 valuation and used for the next two years. For the 6/30/2014 valuation the methodology reverted to the fixed 7.50% interest rate.

Table 29 shows the 5-year prior investment performance, the calculated smoothed discount rate before applying the corridor, and the actual rate used in the valuation. If the only assumption change was the change in interest rate, then upon adoption, the liability would be expected to decrease, as the interest rate increased from 7.50% to 8.00% for the next 25 years. However, as shown in the following table, there were several other assumption changes adopted effective as of 6/30/2011, including a change to the mortality table and an increase in the factor used to reflect the impact of converting unused sick leave into additional pension credit. The combined impact of the assumption changes effective 6/30/2011 was an increase in the liability of $751 million.

Table 29

Smoothed Interest Rate Methodology				
	2011	2012	2013	2014
5th prior year	14.6%	-6.5%	-14.6%	13.4%
4th prior year	-6.5%	-14.6%	13.4%	21.6%
3rd prior year	-14.6%	13.4%	21.6%	2.4%
2nd prior year	13.4%	21.6%	2.4%	14.1%
Prior year	21.6%	2.4%	14.1%	17.9%
5-year average	4.76%	2.44%	6.59%	13.70%

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Smoothed Interest Rate Methodology				
	2011	2012	2013	2014
Years 1-25 before corridor	8.06%	8.54%	7.68%	6.30%
Years 1-25 after corridor	8.00%	8.00%	7.68%	7.00%

Based on information reported by the plan's actuary in each year's annual valuation report, the liability increased by $1,958 million due to changes in assumptions. The amounts and reasons for the changes in liability are summarized in Table 30.

Table 30

Changes in Actuarial Assumptions and Liability		
Year	**Description of Assumption Changes**	**Increase (Decrease) ($Millions)**
6/30/2011	Smoothed Interest Rate Methodology adopted Unused sick leave loading increased from 1% to 2% Mortality tables changed for both retirees and employees Retirement rates changes Disability rates reduced Withdrawal rates changed	$751
	Actuarial cost method changed	(8)
6/30/2012	Due to Smoothed Interest Rate Methodology	(30)
6/30/2013	Due to Smoothed Interest Rate Methodology	921
6/30/2014	Due to reversion from Smoothed Interest Rate Methodology to fixed Interest Rate	621
6/30/2016	Pay increase assumption reduced	(297)
	Total (all years)	**$1,958**

Actual vs Recommended Employer Funding

Pension plan funding consists of two sources: member (employee) contributions and employer contributions. Member contributions, which are set by statute, are contributed each pay-period. The TRS Board recommends the amount of the employer contributions, based on the calculations performed by the plan's actuary. The actual amount of funding is determined by the Kentucky

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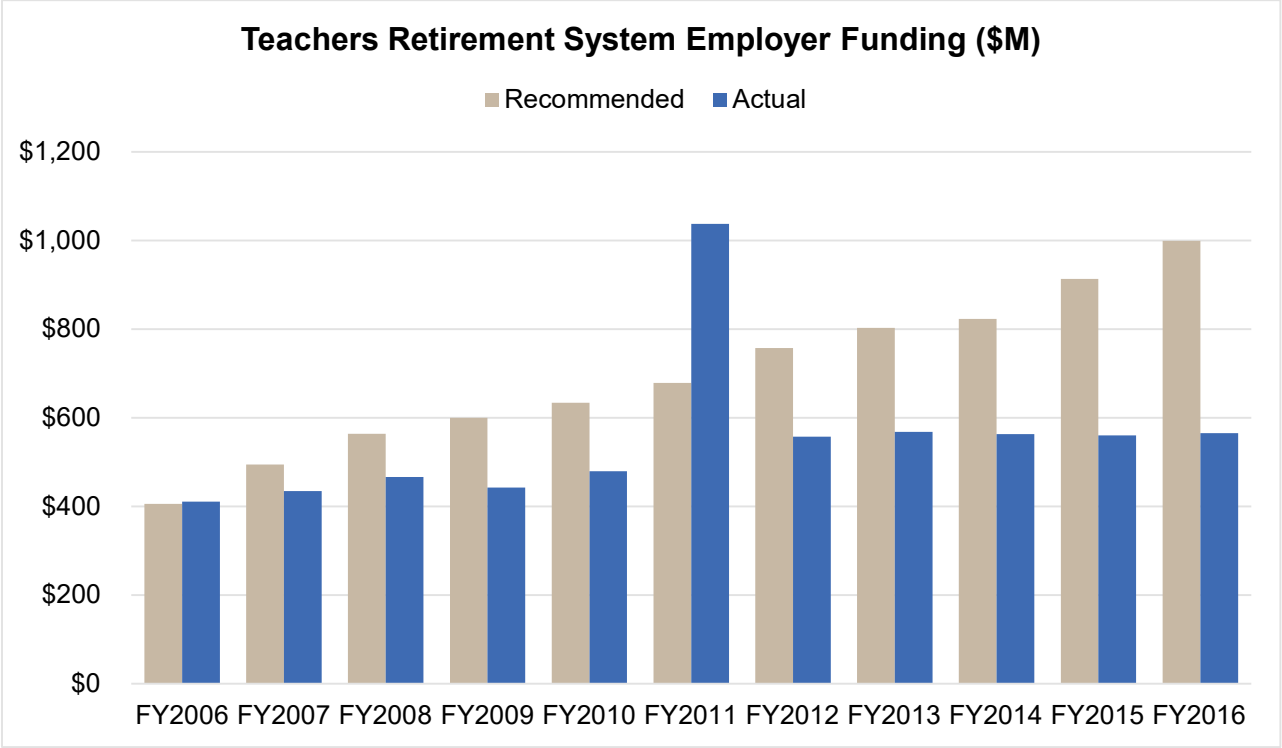
legislature. Figure 25 shows that in nine of the last eleven years the amount appropriated was less than the recommended amount.

Figure 25



Recommended Employer Funding vs Interest on Unfunded Actuarial Accrued Liability

Even if the amount appropriated by the legislature had been equal to the recommended employer contribution, it would not have been sufficient to prevent the unfunded liability from increasing. The TRS statute sets out the required funding method, which uses the "level percentage of projected payroll" method to spread the funding cost over the amortization period – again, essentially back-loading the payments.

Further, prior to FY2014, the funding policy of TRS was to reset the amortization of the unfunded liability to 30 years every year in an open or rolling amortization. This prevented the ARC from getting to the point in the level percent of payroll amortization period when the unfunded liability begins to get paid down. In FY2014 TRS adopted a closed 30-year amortization for the unfunded liability at that time, and closed 20-year amortizations for new unfunded liabilities in each year. A summary of the amortization payments and interest is shown in Figure 26.

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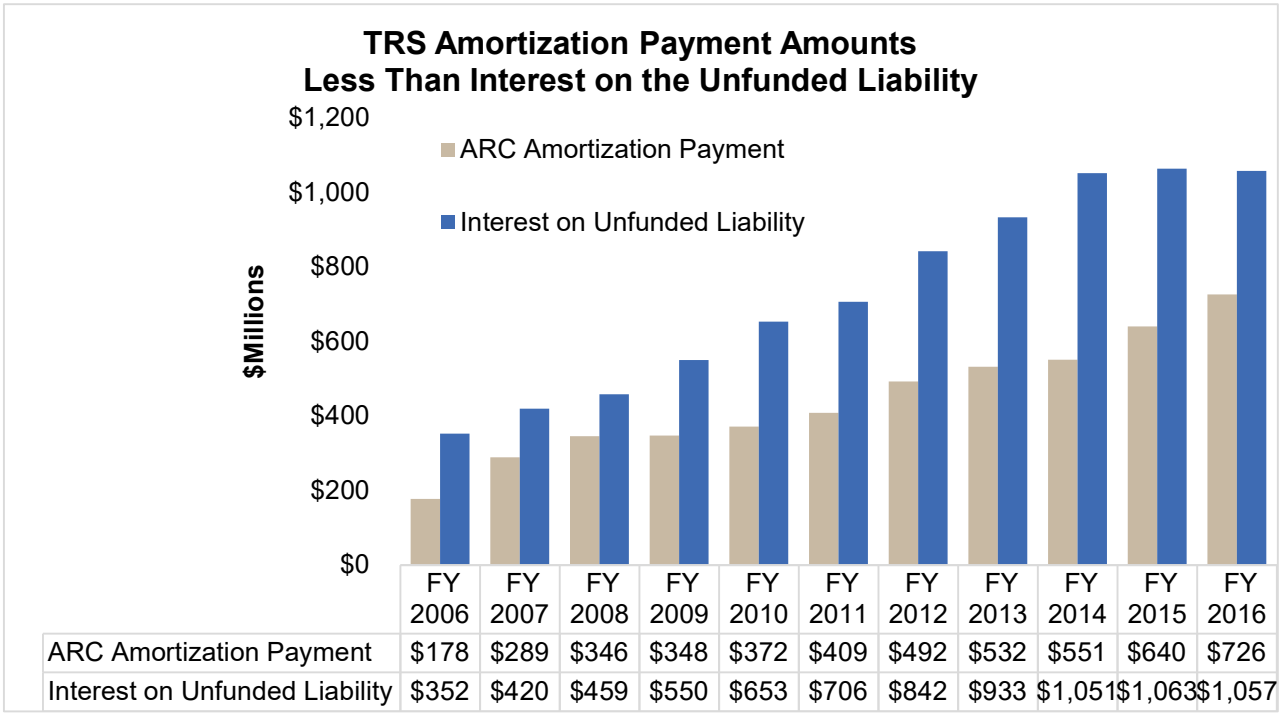
Figure 26



	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
ARC Amortization Payment	$178	$289	$346	$348	$372	$409	$492	$532	$551	$640	$726
Interest on Unfunded Liability	$352	$420	$459	$550	$653	$706	$842	$933	$1,051	$1,063	$1,057

Investment Performance

The actual investment performance, measured based on the plan's Actuarial Value of Assets which recognizes realized and unrealized asset gains or losses over a five year period, was compared to the actual market performance based on a benchmark portfolio and to the plan's valuation interest rate in Figure 27.

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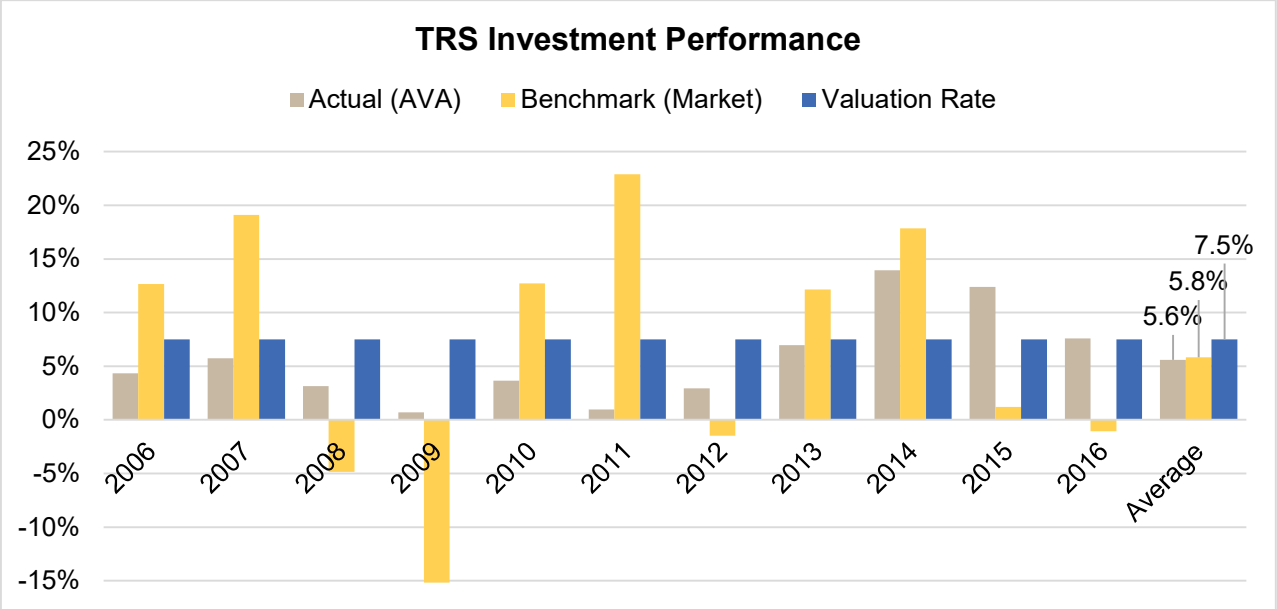
Figure 27



The increases in the unfunded liability over the 11 years have been categorized into one of six causes, as shown in Table 31, which are mapped to three major categories: funding, asset performance, and actuarial assumptions.

Table 31

Major Category	TRS - Causes of Increase in Unfunded Liability	Amount
Funding	1. Appropriation was less than the Actuarially Recommended Contribution (ARC)	$1,588
Actuarial	2. Actuarial Back-loading	3,278
Investment	3. Investment performance was less (more) than market performance	1,014
Investment	4. Market performance was less than the valuation interest rate	1,926
Actuarial	5. Actuarial assumption changes	1,958
Actuarial	6. Plan experience different from assumptions	232
	Total	**$9,996**

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KERS Non-Hazardous Retirement Plan

Table 32 compares the funded status of the KERS Non-Hazardous as of June 30, 2005 with the funded status as of June 30, 2016. The plan assets decreased by $3.5 billion, and the plan liabilities increased by $5.6 billion, resulting in an increase in the unfunded actuarial accrued liability of $9.1 billion and a decline in the funded status from 73.6% to 16.0%.

Table 32

KERS-NH Pension Benefits (Amounts in $Millions)			
	6/30/2005	6/30/2016	Change
Valuation Discount Rate	8.25%	6.75%	-1.50%
Actuarial Value of Assets	$5,579	$2,112	($3,467)
Actuarial Accrued Liability	$7,579	$13,225	$5,646
Unfunded Actuarial Accrued Liability	$2,000	$11,113	$9,113
Funded Status	73.6%	16.0%	-57.6%

FY2006 Experience

Table 33 shows the experience of the KERS Non-Hazardous Retirement Plan in FY2006, which illustrates the factors that caused the increase in the unfunded actuarial accrued liability for this plan.

Table 33

KERS Non-Hazardous Retirement Plan FY2006 Experience Amounts in $millions			
	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability
6/30/2005	$7,579	$5,579	$2,000
Discount rate	8.25%	8.25%	
FY 2006 Benefits earned	$144	$144	$0
FY 2006 Funding above Normal Cost	0	25	(25)
Interest Accrual	613	442	171
Benefits Paid	(588)	(588)	0

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KERS Non-Hazardous Retirement Plan FY2006 Experience Amounts in $millions			
	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability
Expenses Paid	0	(8)	8
Investment Expenses	0	(5)	5
Plan Amendments	133	0	133
COLA granted	118	0	118
Assumption Changes	702	0	702
Data Corrections	8	0	8
Liability (Gain) or Loss	285	0	285
Asset Gain or (Loss)	0	(196)	196
6/30/2006	$8,995	$5,394	$3,601
Discount rate	7.75%	7.75%	

The Actuarial Accrued Liability (AAL) grew by $1,416 million as employees earned $144 million in additional benefits due to their accrual of an additional year of service from 7/1/2005 to 6/30/2006. The AAL is the discounted present value of future accrued benefits and with the passage of time, employees age one year closer to starting to receive their pensions, resulting in an increase in the liability of $613 million. The AAL declined by $588 million as benefits were paid out either as pension payments or refunds of contributions. The liability increased by $133 million from a plan amendment and by $118 million from the granting of a cost-of-living increase for current retirees. The discount rate was reduced from 8.25% to 7.75%, resulting in an increase in the liability of $702 million. Data corrections led to an $8 million increase in the liability, and plan experience different from assumptions resulted in an increase of $285 million.

The Actuarial Value of Assets (AVA) declined by $185 million as the benefit payments plus expenses exceeded the sum of investment earnings and member and employer contributions. The assets were expected to earn 8.25%, which would have increased the assets by adding $442 million during the year. In FY2006 the investment performance was 4.52%, resulting in investment earnings of $246 million. The asset loss, measured against the expected increase of $442 million, was therefore $196 million. Employer and member funding of $169 million exceeded the value of new benefits earned of $144 million by only $25 million. After payment of administration and investment expenses of $13 million only $12 million was available to reduce the unfunded liability and was therefore insufficient amount to cover interest on the unfunded liability of $2,000 million.

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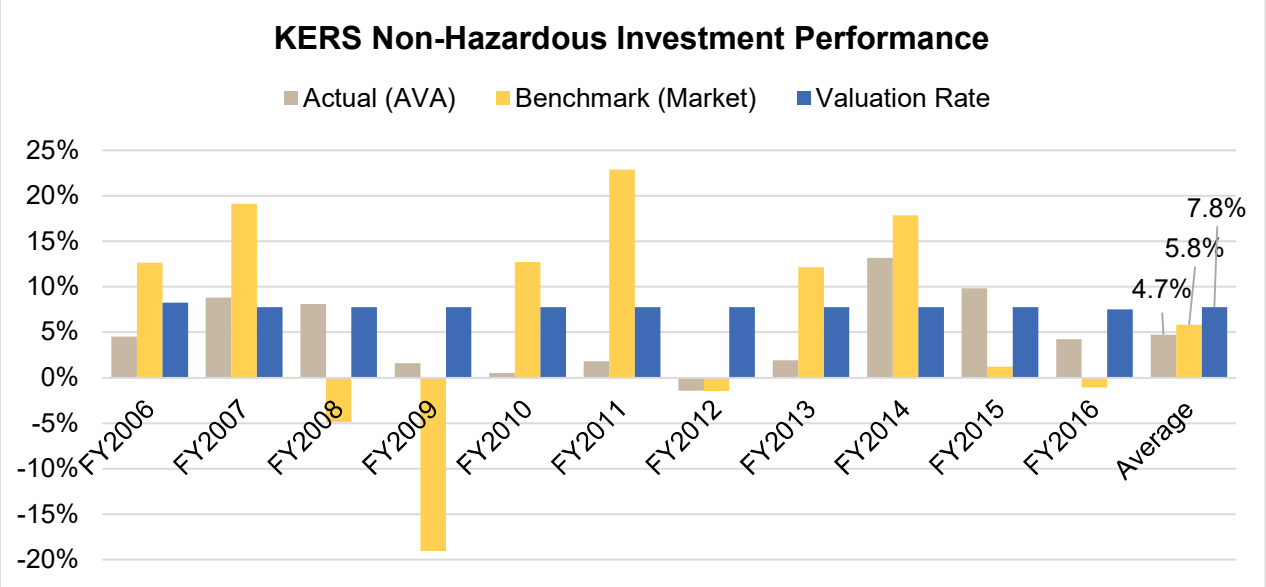
The increase in the Unfunded Actuarial Accrued Liability from 6/30/2005 to 6/30/2006 is therefore due to five main factors:

- Asset loss, compared to expected return, of $196 million
- Liability loss, compared to expected growth in liabilities, of $285 million, and
- Actuarial back-loading of $158 million.
- Assumption changes and data corrections of $710 million
- Plan amendments, including the COLA of $251 million

Similar analyses were conducted for each of the successive plan years. The investment performance was analyzed by comparing actual performance to a benchmark of market performance as well as to the plan's valuation interest rate. Figure 28 shows the investment performance over the past 11 years.

Figure 28



Funding was analyzed by comparing the actual amount appropriated to the Actuarially Recommended Contribution and whether the ARC was sufficient to pay interest on the Unfunded Liability. Figure 29 shows that for each year the amount funded was less than the recommended amount.

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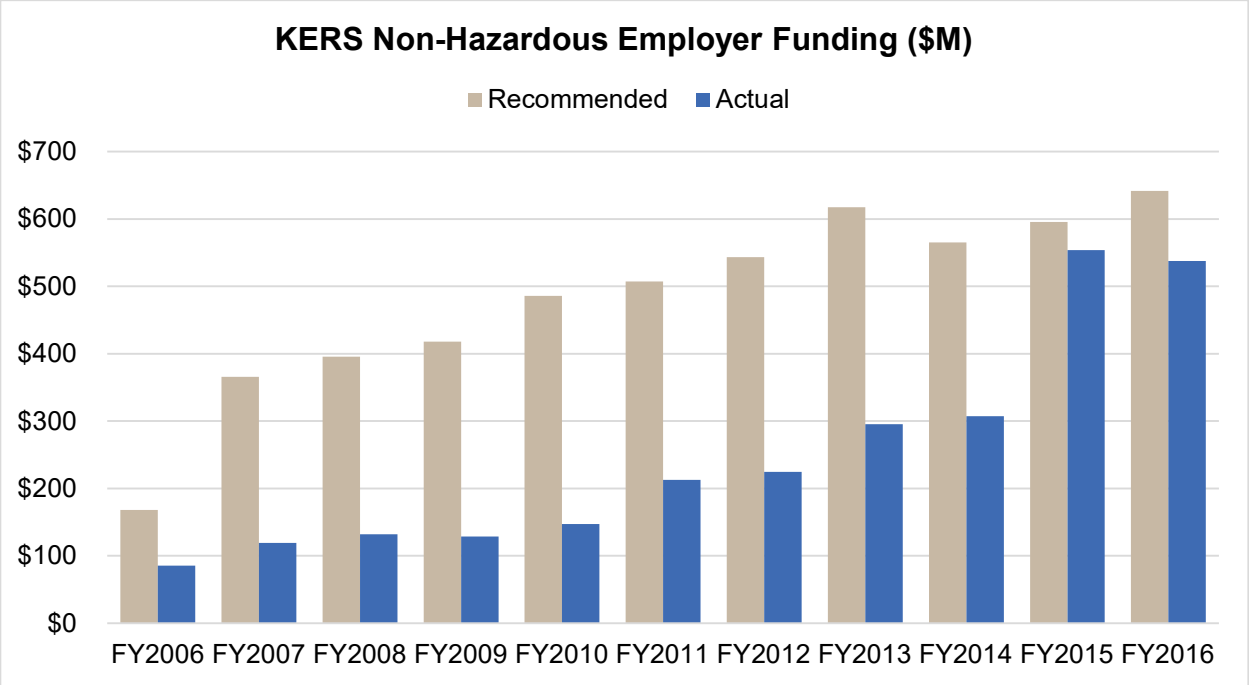
Figure 29



Recommended Employer Funding vs Interest on Unfunded Actuarial Accrued Liability

Even if the amount appropriated by the legislature had been equal to the recommended employer contribution, it would not have been sufficient to prevent the unfunded liability from increasing. The KERS statute sets out the required funding method as the "level percentage of projected payroll" method. In 10 of the 11 years, the amount of the ARC amortization payment was insufficient to cover interest on the unfunded pension liability. In aggregate, the difference between the amortization payments and interest on the unfunded liability was $1,153 million.

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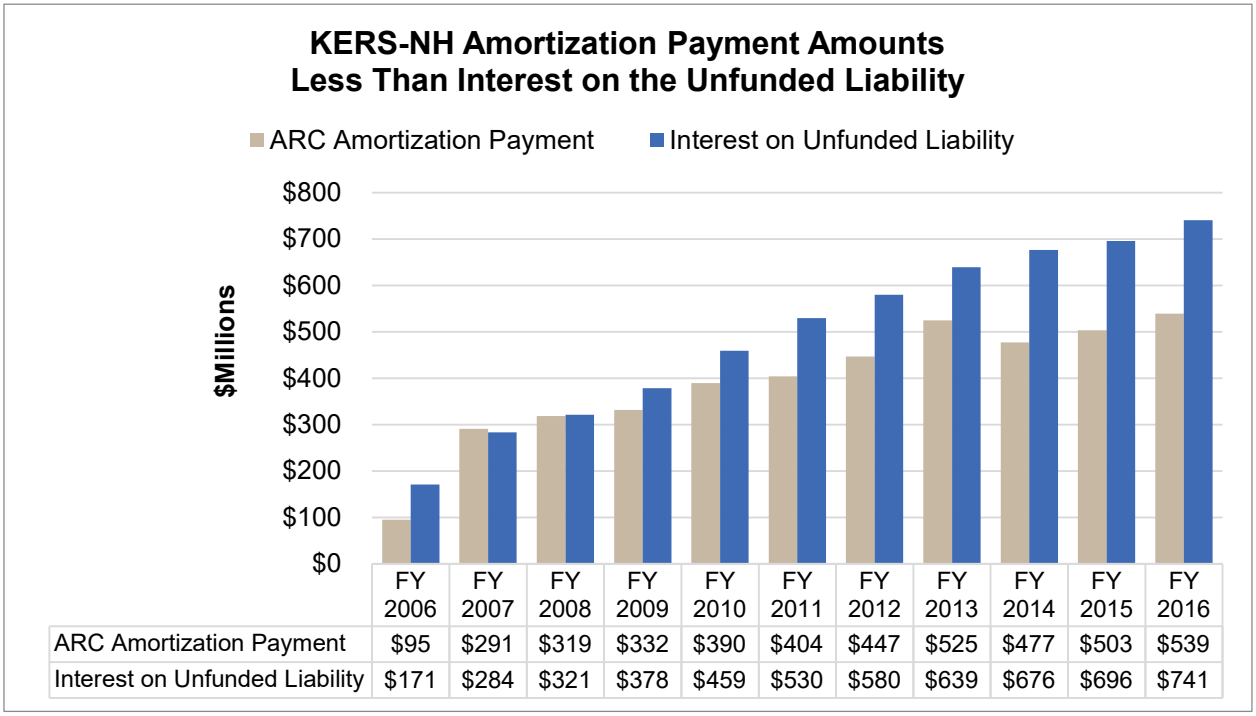
Figure 30



	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
ARC Amortization Payment	$95	$291	$319	$332	$390	$404	$447	$525	$477	$503	$539
Interest on Unfunded Liability	$171	$284	$321	$378	$459	$530	$580	$639	$676	$696	$741

The results over the 11 years are summarized in Table 34.

Table 34

Major Category	KERS-NH - Causes of Growth in Unfunded Liability	Amount
Funding	1. Appropriation was less than the Actuarially Recommended Contribution (ARC)	$2,561
Actuarial	2. Actuarial Back-loading	1,153
Investment	3. Investment performance was less than market performance	610
Investment	4. Market performance was less than the valuation interest rate	639
COLA	5. COLAs granted without any additional funding	1,291
Actuarial	6. Actuarial assumption changes	2,319

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Major Category	KERS-NH - Causes of Growth in Unfunded Liability	Amount
Actuarial	7. Plan experience different from assumptions	539
	Total	**$9,112**

KERS Hazardous Retirement Plan

Table 35 compares the funded status of the KERS Hazardous plan as of June 30, 2005 with the funded status as of June 30, 2016. The plan assets increased by $155 million, and the plan liabilities increased by $498 million, resulting in an increase in the unfunded actuarial accrued liability of $343 million and a decline in the funded status from 92% to 60%.

Table 35

KERS-H Pension Benefits Amounts in $Millions			
	6/30/2005	6/30/2016	Change
Valuation Discount Rate	8.25%	7.50%	-0.75%
Actuarial Value of Assets	$405	$560	$155
Actuarial Accrued Liability	$439	$937	$498
Unfunded Actuarial Accrued Liability	$34	$377	$343
Funded Status	92%	60%	-32%

Actual and Recommended Employer Contributions

Figure 31 compares the actual employer funding to the recommended contributions. In 8 of the 11 years, the actual amount exceeded the recommended contributions. Over the 11-year period the aggregate amount of employer funding exceeded the recommended amount by $10 million.

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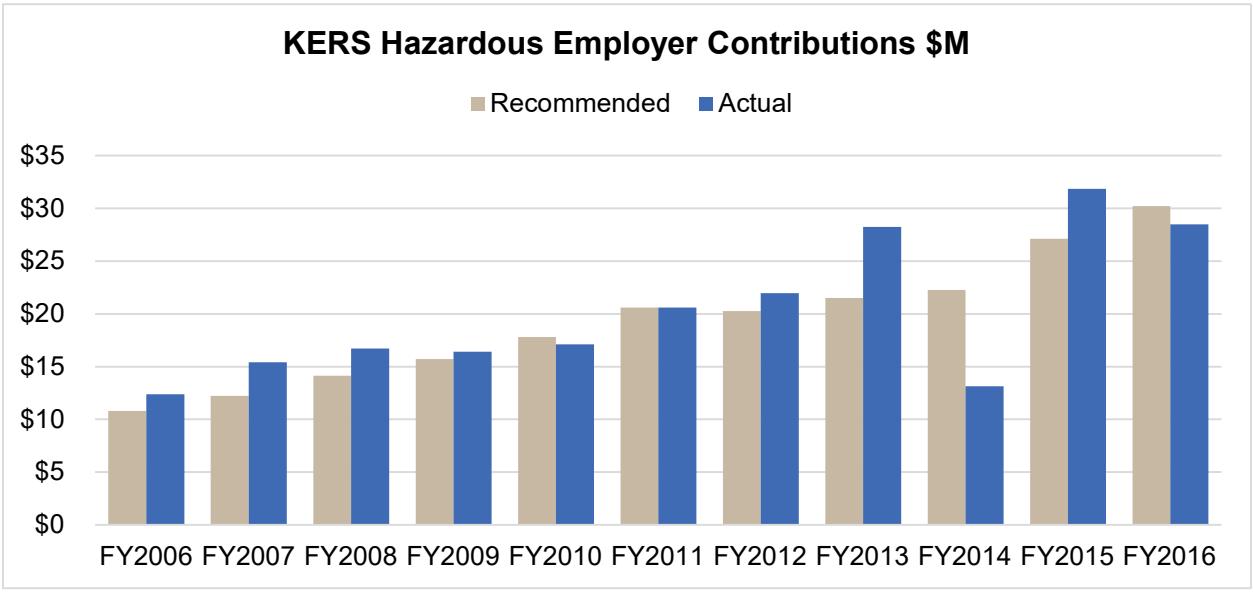
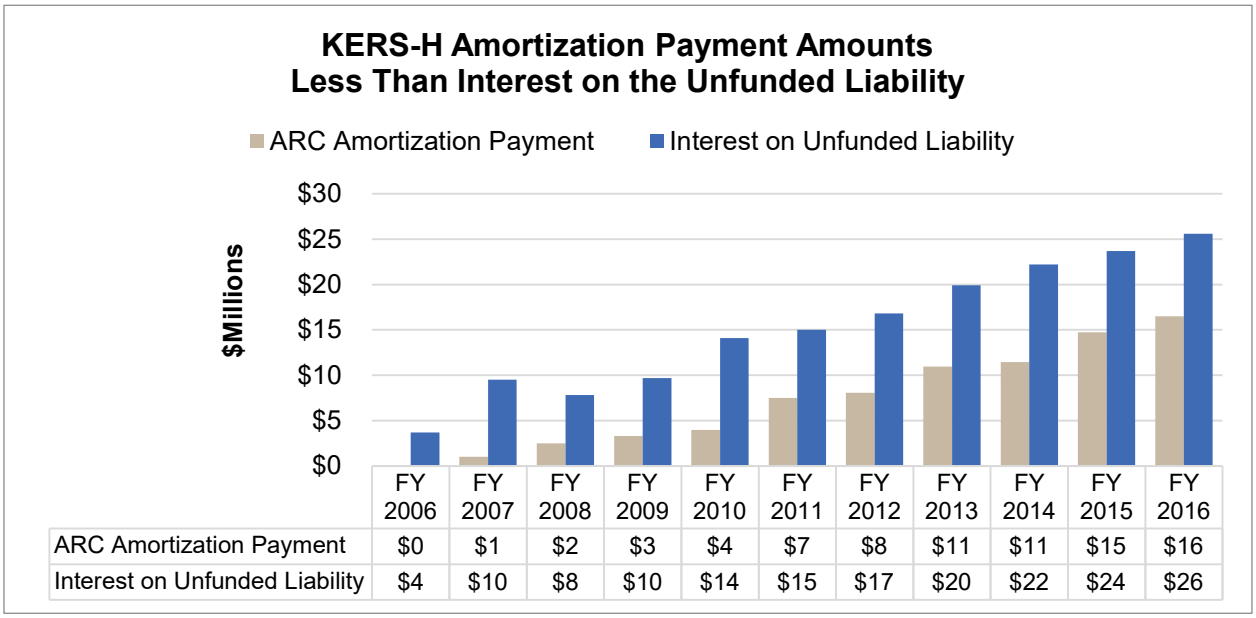
Figure 31



In each of the 11 years, the interest on the unfunded liability exceeded the ARC amortization payment. Over the 11-year period the aggregate amount was $89 million.

Figure 32



	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
ARC Amortization Payment	$0	$1	$2	$3	$4	$7	$8	$11	$11	$15	$16
Interest on Unfunded Liability	$4	$10	$8	$10	$14	$15	$17	$20	$22	$24	$26

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Investment Performance

The investment performance was analyzed by comparing actual performance to a benchmark of market performance as well as to the plan's valuation interest rate. Figure 33 shows the investment performance over the past 11 years.

Figure 33

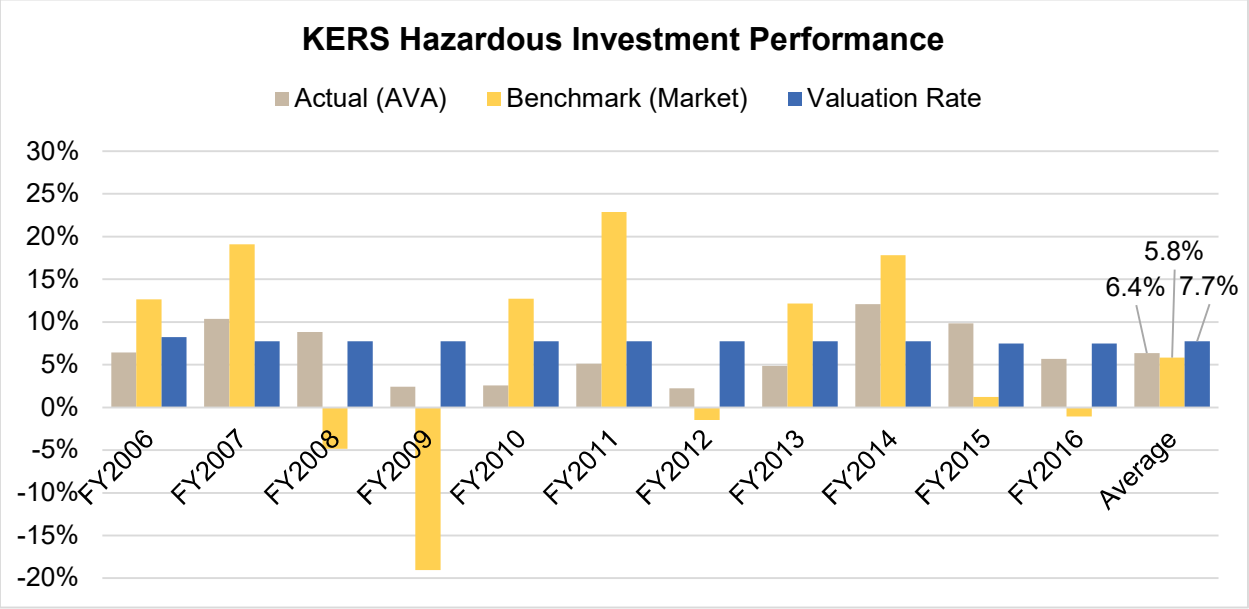

Table 36 summarizes the sources of the increase in the unfunded liability over the 11 years for the KERS Hazardous Retirement System.

Table 36

Major Category	KERS-H - Causes of Growth in Unfunded Liability	Amount
Funding	1. Appropriation was less (more) than the Actuarially Recommended Contribution (ARC)	($10)
Actuarial	2. Actuarial Back-loading	89
Investment	3. Investment performance was less (more) than market performance	(5)
Investment	4. Market performance was less than the valuation interest rate	80

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Major Category	KERS-H - Causes of Growth in Unfunded Liability	Amount
COLA	5. COLAs granted without any additional funding	68
Actuarial	6. Actuarial assumption changes	82
Actuarial	7. Plan experience different from assumptions	39
	Total	**$344**

CERS Non-Hazardous Retirement Plan

Table 37 compares the funded status of the CERS Non-Hazardous as of June 30, 2005 with the funded status as of June 30, 2016. The plan assets increased by $1,476 million, and the plan liabilities increased by $5,692 million, resulting in an increase in the unfunded actuarial accrued liability of $4,216 million and a decline in the funded status from 94% to 59%.

Table 37

CERS-NH Pension Benefits (amounts in $Millions)			
	6/30/2005	6/30/2016	Change
Valuation Discount Rate	8.25%	7.50%	-0.75%
Actuarial Value of Assets	$5,059	$6,535	$1,476
Actuarial Accrued Liability	$5,385	$11,077	$5,692
Unfunded Actuarial Accrued Liability	$326	$4,542	$4,216
Funded Status	94%	59%	-35%

Actual and Recommended Employer Contributions

Figure 34 compares the actual employer funding to the recommended contributions. In 10 of the 11 years, the actual amount exceeded the recommended contributions. Over the 11-year period the aggregate amount of employer funding exceeded the recommended amount by $220 million.

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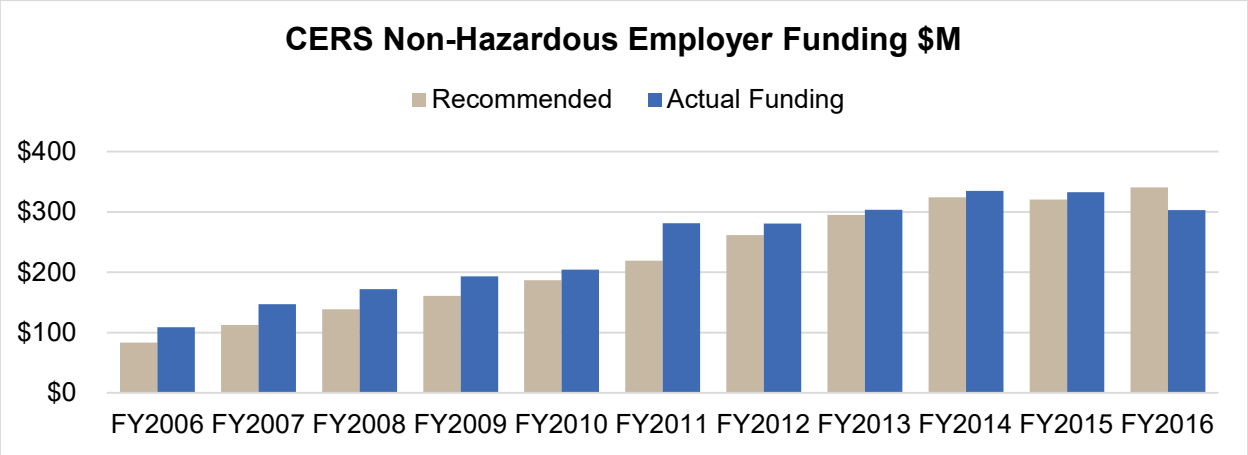
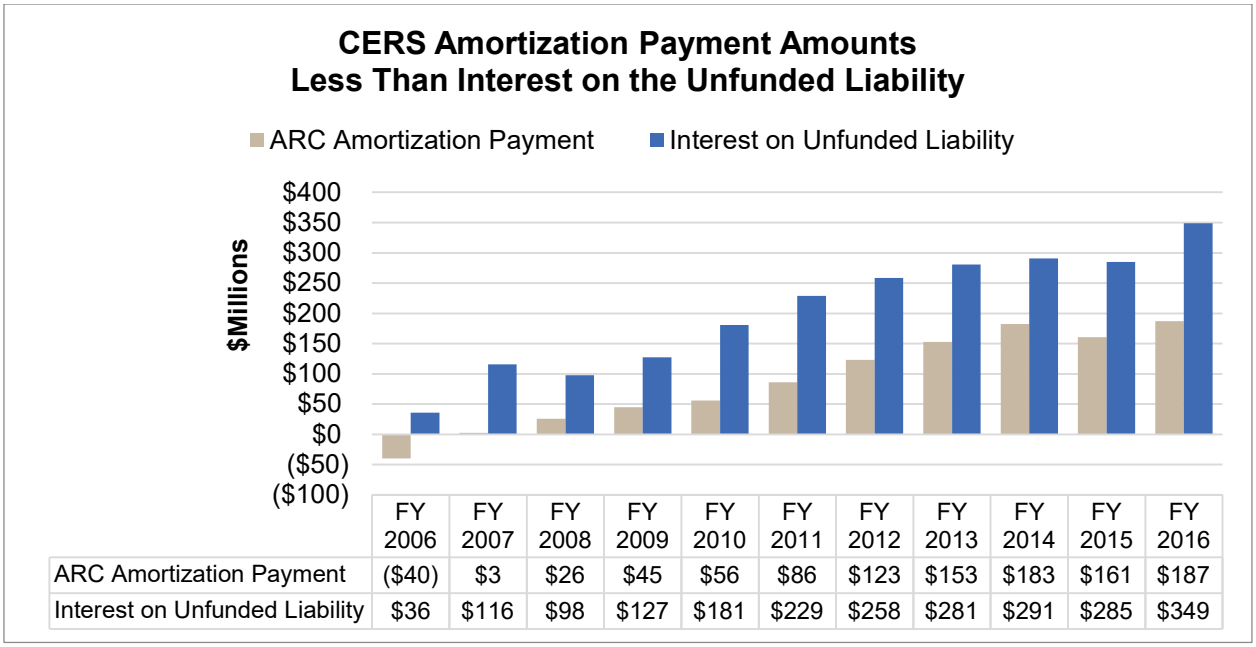
Figure 34



In each of the 11 years, the interest on the unfunded liability exceeded the ARC amortization payment. Over the 11-year period the aggregate amount was $1,269 million. In FY2006 the employer contribution was less than the employer Normal Cost rate, resulting in negative amortization.

Figure 35



	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
ARC Amortization Payment	($40)	$3	$26	$45	$56	$86	$123	$153	$183	$161	$187
Interest on Unfunded Liability	$36	$116	$98	$127	$181	$229	$258	$281	$291	$285	$349

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Investment Performance

The investment performance was analyzed by comparing actual performance to a benchmark of market performance as well as to the plan's valuation interest rate. The following chart shows the investment performance over the past 11 years. The investment performance compound annual rate of earnings over the 11-year period, as measured using the plan's Actuarial Value of Assets, matched the benchmark investment return rate of 5.84%. The valuation interest rate was 8.25% for FY2006 and 7.75% for FY2007 and later years, for an average of 7.80%. For purposes of measuring the change in unfunded liability, the benchmark returns were applied to the Actuarial Value of Assets on a year-by-year basis. As the value of the assets increased over the period, and the benchmark returns exceeded the actual returns from FY2010-FY2016, this resulted in a $207 million investment underperformance relative to market. As noted in Figure 36, the benchmark returns did not meet the valuation rate, and this resulted in a further $931 million increase in unfunded liability. Overall, the investment performance resulted in a $1,138 million increase in the unfunded liability.

Figure 36

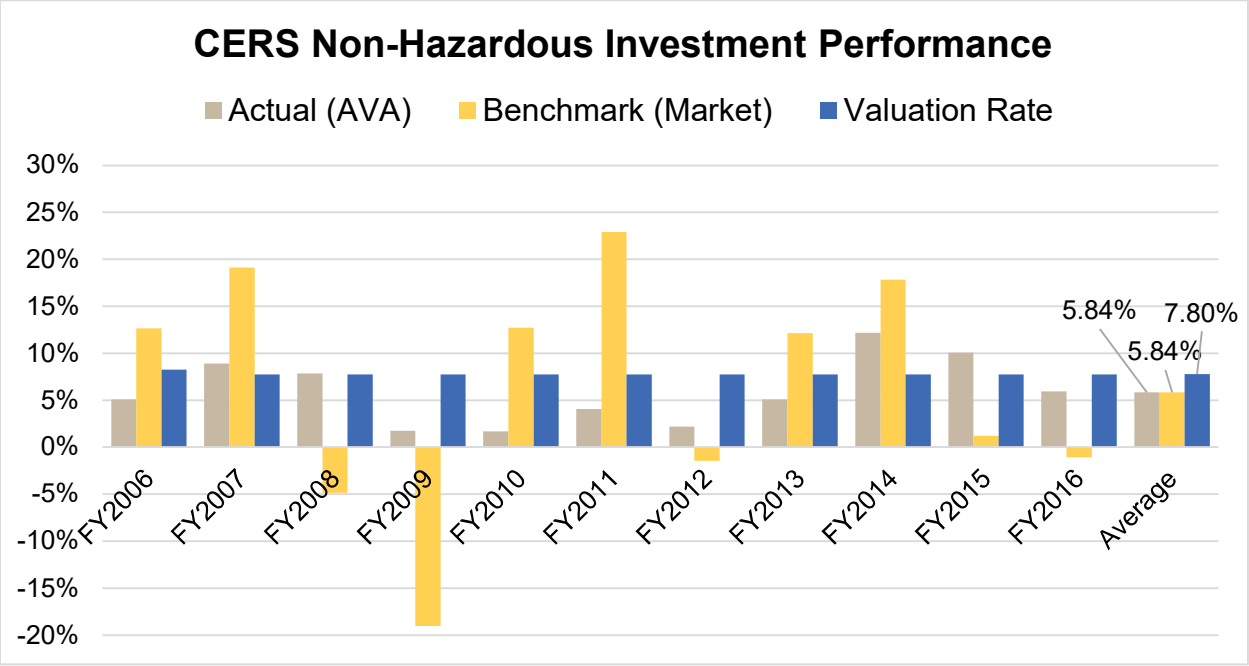

Table 38 summarizes the sources of the increase in the unfunded liability over the 11 years for the CERS Non-Hazardous Retirement System.

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Table 38

Major Category	CERS-NH - Causes of Growth in Unfunded Liability	Amount
Funding	1. Appropriation was less (more) than the Actuarially Recommended Contribution (ARC)	($220)
Actuarial	2. Actuarial Back-loading	1,269
Investment	3. Investment performance was less than market performance	207
Investment	4. Market performance was less than the valuation interest rate	931
COLA	5. COLAs granted without any additional funding	672
Actuarial	6. Actuarial assumption changes	984
Actuarial	7. Plan experience different from assumptions	372
	Total	**$4,215**

CERS Hazardous Retirement Plan

Table 39 compares the funded status of the CERS Hazardous as of June 30, 2005 with the funded status as of June 30, 2016. The plan assets increased by $687 million, and the plan liabilities increased by $1,909 million, resulting in an increase in the unfunded actuarial accrued liability of $1,222 million and a decline in the funded status from 81% to 58%.

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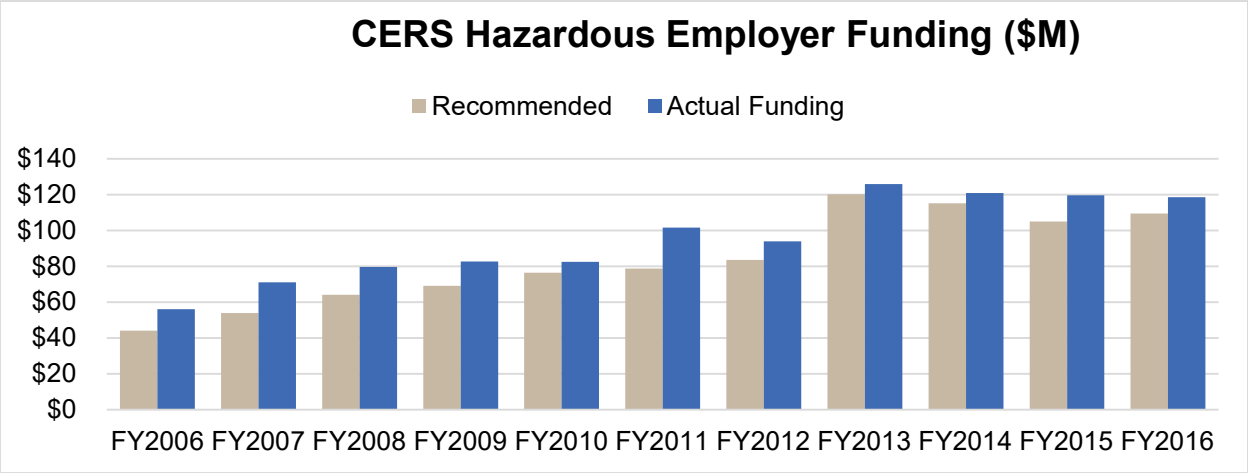
Table 39

CERS-H Pension Benefits Amounts in $Millions			
	6/30/2005	6/30/2016	Change
Valuation Discount Rate	8.25%	7.50%	-0.75%
Actuarial Value of Assets	$1,452	$2,139	$687
Actuarial Accrued Liability	$1,796	$3,705	$1,909
Unfunded Actuarial Accrued Liability	$344	$1,566	$1,222
Funded Status	81%	58%	-23%

Actual and Recommended Employer Contributions

Figure 37 compares the actual employer funding to the recommended contributions. In each of the past 11 years the actual amount exceeded the recommended contributions. Over the 11-year period the aggregate amount of employer funding exceeded the recommended amount by $133 million.

Figure 37



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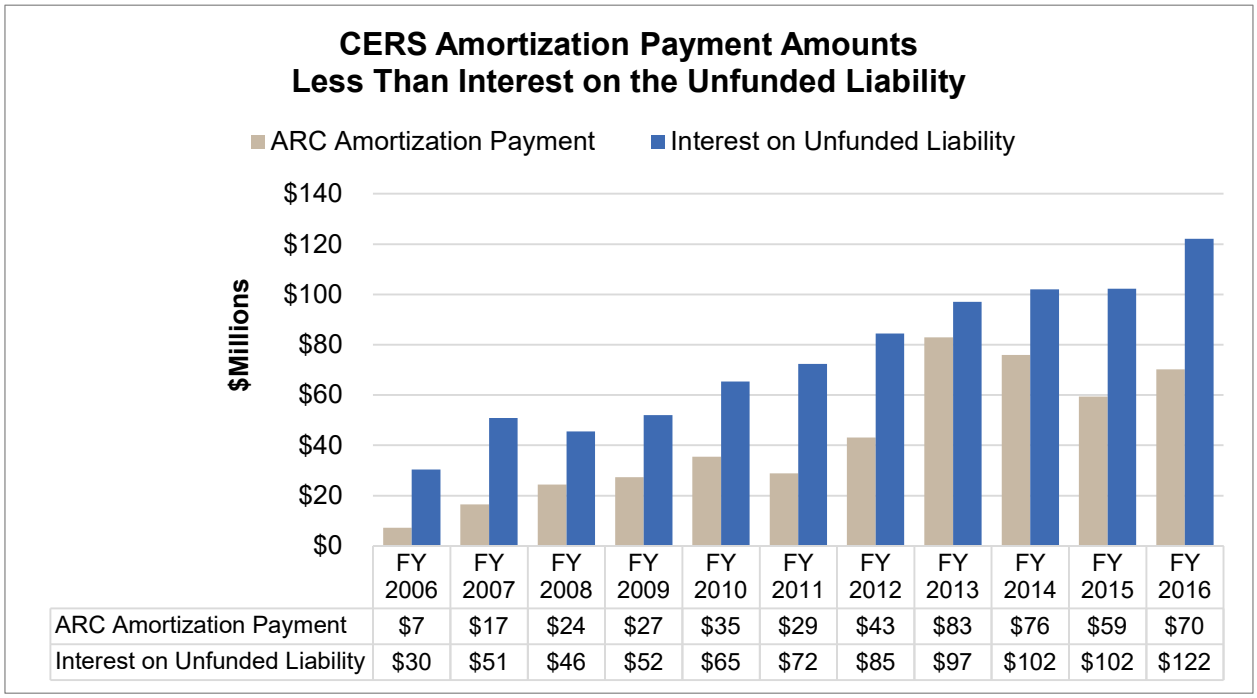
In each of the 11 years, the interest on the unfunded liability exceeded the ARC amortization payment. Over the 11-year period the aggregate amount was $353 million.

Figure 38



	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
ARC Amortization Payment	$7	$17	$24	$27	$35	$29	$43	$83	$76	$59	$70
Interest on Unfunded Liability	$30	$51	$46	$52	$65	$72	$85	$97	$102	$102	$122

Investment Performance

The investment performance was analyzed by comparing actual performance to a benchmark of market performance as well as to the plan's valuation interest rate. Figure 39 shows the investment performance over the past 11 years. The investment performance compound annual rate of earnings over the 11-year period, as measured using the plan's Actuarial Value of Assets was 5.71%, just below the benchmark investment return rate of 5.84%. The valuation interest rate was 8.25% for FY2006 and 7.75% for FY2007 and later years, for an average of 7.80%. For purposes of measuring the change in unfunded liability, the benchmark returns were applied to the Actuarial Value of Assets on a year-by-year basis. As the value of the assets increased over the period, and the benchmark returns exceeded the actual returns from FY2010-FY2016, this resulted in an $82 million investment underperformance relative to market. As noted in Table 40 on the following page, the benchmark returns did not meet the valuation rate, and this resulted in a further $297 million increase in unfunded liability. Overall, the investment performance resulted in a $379 million increase in the unfunded liability.

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Figure 39

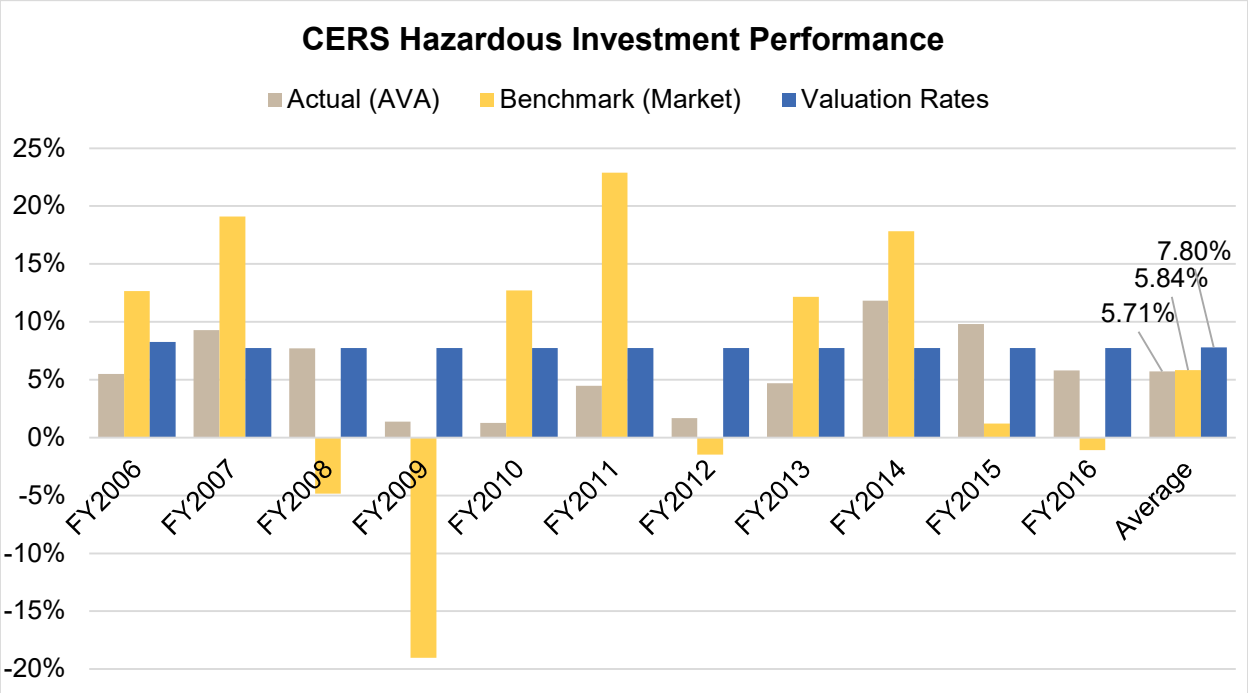

Table 40 summarizes the sources of the increase in the unfunded liability over the 11 years for the CERS Hazardous Retirement System.

Table 40

Major Category	CERS-H - Causes of Growth in Unfunded Liability	Amount
Funding	1. Appropriation was less (more) than the Actuarially Recommended Contribution (ARC)	($133)
Actuarial	2. Actuarial Back-loading	353
Investment	3. Investment performance was less (more) than market performance	82
Investment	4. Market performance was less than the valuation interest rate	297
COLA	5. COLAs granted without any additional funding	267
Actuarial	6. Actuarial assumption changes	249

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Major Category	CERS-H - Causes of Growth in Unfunded Liability	Amount
Actuarial	7. Plan experience different from assumptions	107
	Total	**$1,222**

State Police Retirement Plan

Table 41 compares the funded status of the State Police Retirement System as of June 30, 2005 with the funded status as of June 30, 2016. The plan assets decreased by $119 million, and the plan liabilities increased by $316 million, resulting in an increase in the unfunded actuarial accrued liability of $435 million and a decline in the funded status from 77% to 30%.

Table 41

SPRS Pension Benefits (Amounts in $Millions)			
	6/30/2005	6/30/2016	Change
Valuation Discount Rate	8.25%	6.75%	-1.50%
Actuarial Value of Assets	$354	$235	($119)
Actuarial Accrued Liability	$459	$775	$316
Unfunded Actuarial Accrued Liability	$105	$540	$435
Funded Status	77%	30%	-47%

Actual and Recommended Employer Contributions

Figure 40 compares the actual employer funding to the recommended contributions. In 10 of the past 11 years the actual amount funded was less than the amount recommended by the KERS Board. In aggregate the funding shortfall was $42 million.

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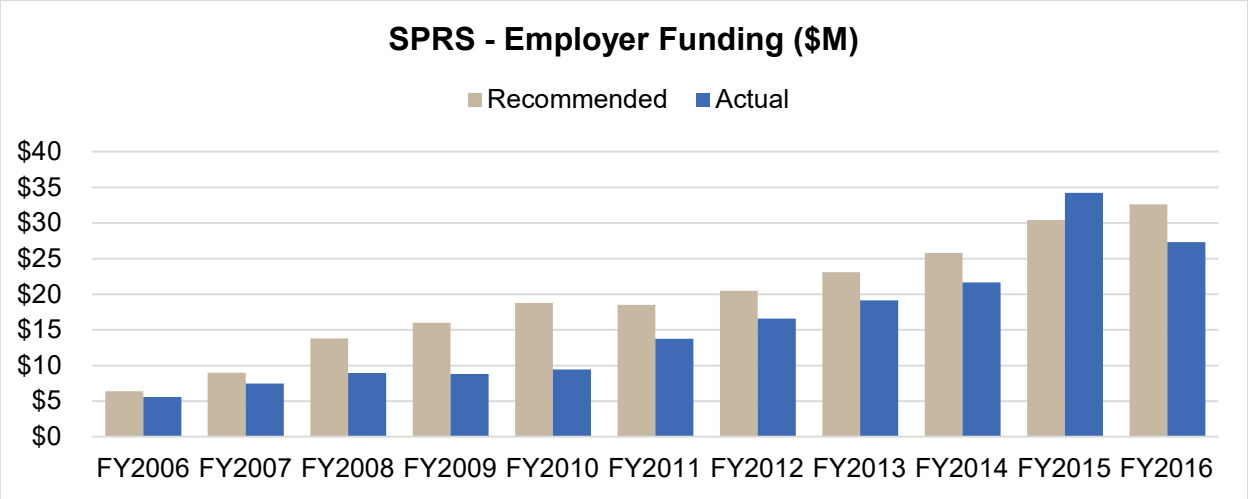
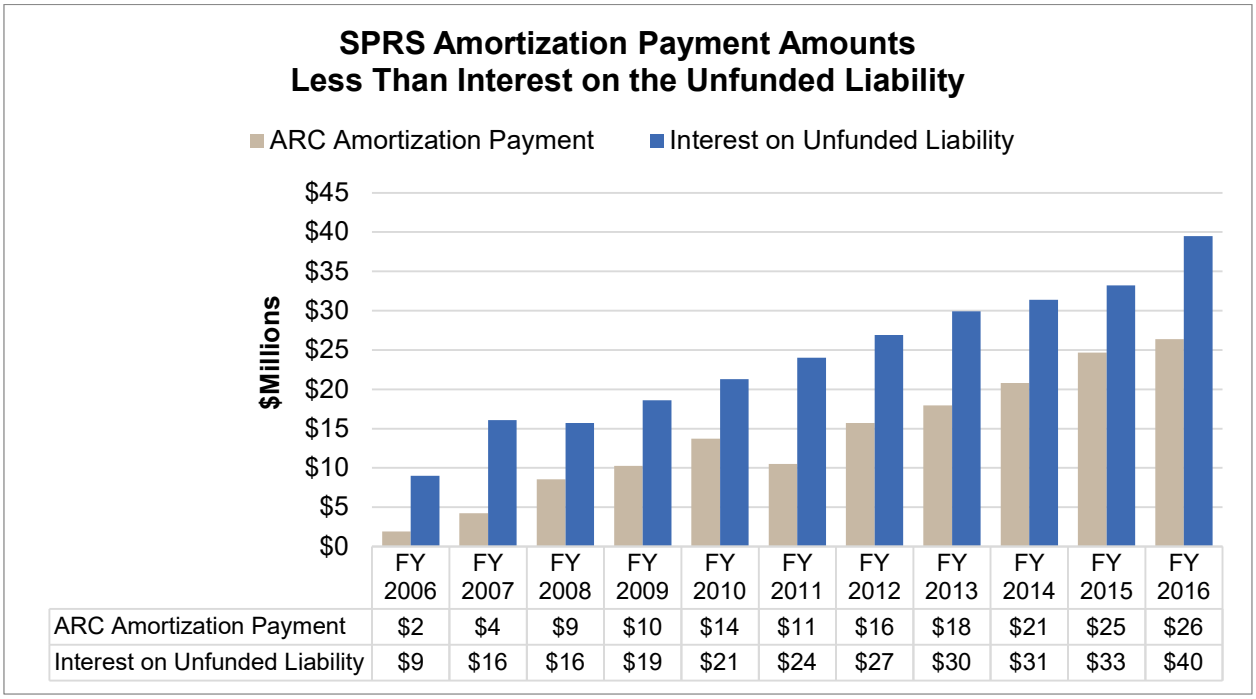
Figure 40



In each of the 11 years, the interest on the unfunded liability exceeded the ARC amortization payment. Over the 11-year period the aggregate amount was $111 million.

Figure 41



	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
ARC Amortization Payment	$2	$4	$9	$10	$14	$11	$16	$18	$21	$25	$26
Interest on Unfunded Liability	$9	$16	$16	$19	$21	$24	$27	$30	$31	$33	$40

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Investment Performance

The investment performance was analyzed by comparing actual performance to a benchmark of market performance as well as to the plan's valuation interest rate. Figure 42 shows the investment performance over the past 11 years. The investment performance compound annual rate of earnings over the 11-year period, as measured using the plan's Actuarial Value of Assets was 6.14%, just above the benchmark investment return rate of 5.84%. The valuation interest rate was 8.25% for FY2006 and 7.75% for FY2007 and later years, for an average of 7.80%. For purposes of measuring the change in unfunded liability, the benchmark returns were applied to the Actuarial Value of Assets on a year-by-year basis. As the value of the assets decreased over the period, and the benchmark returns exceeded the actual returns from FY2010-FY2016, this resulted in an $8 million investment underperformance relative to market. As noted in Figure 42, the benchmark returns did not meet the valuation rate, and this resulted in a further $45 million increase in unfunded liability. Overall, the investment performance resulted in a $53 million increase in the unfunded liability.

Figure 42

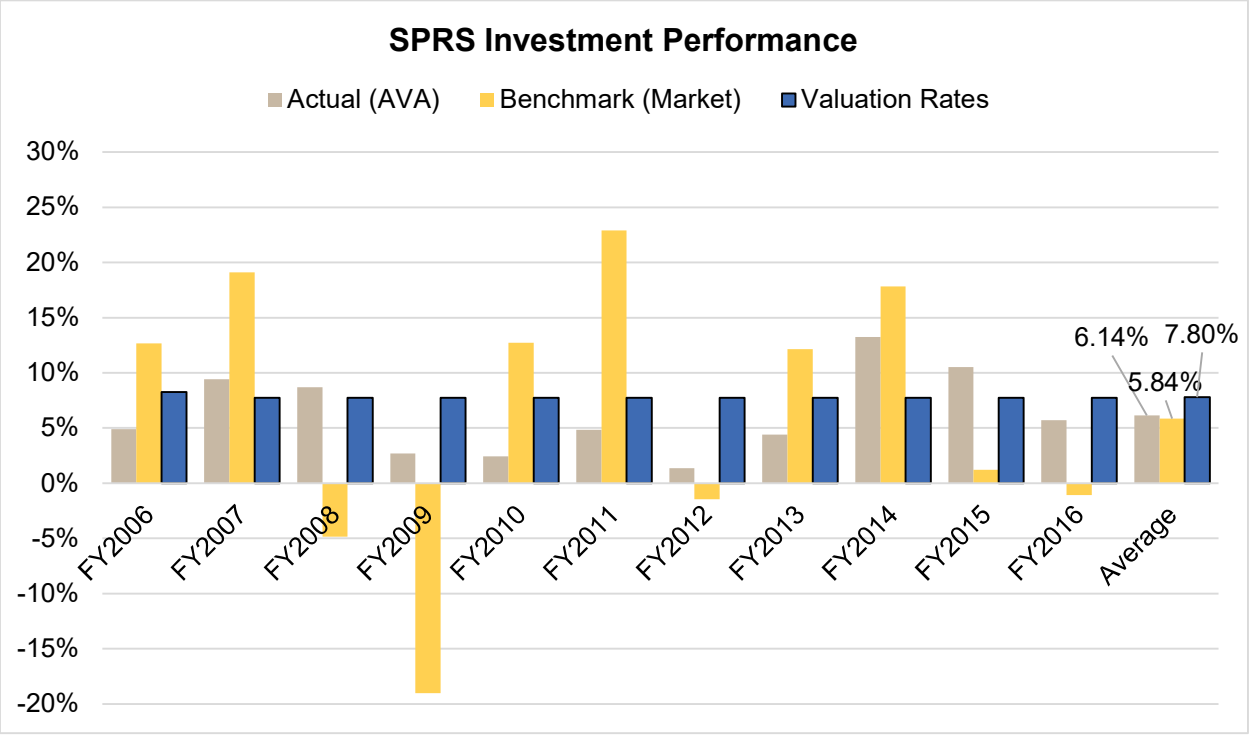

Table 42 summarizes the sources of the increase in the unfunded liability over the 11 years for the State Police Retirement System.

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Table 42

Major Category	SPRS - Causes of Growth in Unfunded Liability	Amount
Funding	1. Appropriation was less (more) than the Actuarially Recommended Contribution (ARC)	$42
Actuarial	2. Actuarial Back-loading	111
Investment	3. Investment performance was less (more) than market performance	8
Investment	4. Market performance was less than the valuation interest rate	45
COLA	5. COLAs granted without any additional funding	72
Actuarial	6. Actuarial assumption changes	50
Actuarial	7. Plan experience different from assumptions	107
	Total	**$435**

Kentucky Judicial Retirement Plan

Table 43 compares the funded status of the combined pension and health insurance benefits for the Kentucky Judicial Retirement Plan as of June 30, 2005 with the funded status as of June 30, 2015.[22] The plan assets increased by $38 million, and the plan liabilities increased by $171 million, resulting in an increase in the unfunded actuarial accrued liability of $133 million and a decline in the funded status from 107% to 72%.

Table 43

Kentucky Judicial Retirement Plan - Pension and Insurance Benefits Amounts in $Millions			
	6/30/2005	6/30/2015	Change
Valuation Discount Rate	7.50%	7.00%	-0.50%
Actuarial Value of Assets	$259	$297	$38

22 The Judicial and Legislative plans have full actuarial valuations conducted every other year, and therefore June 30, 2016 data is not available.

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Kentucky Judicial Retirement Plan - Pension and Insurance Benefits Amounts in $Millions			
	6/30/2005	6/30/2015	Change
Actuarial Accrued Liability	$241	$412	$171
Unfunded Actuarial Accrued Liability	($18)	$115	$133
Funded Status	107%	72%	-35%

Cost of living benefit increases were granted that increased the liability by $26.6 million, however no allowance was made for these benefits in advance. Consequently, once awarded, the COLAs increased the unfunded liability.

As noted above, the discount rate was reduced from 7.50% to 7.00%, which resulted in an increase in the plan's liability. The net impact of assumption changes was an increase in unfunded liability of $24.7 million.

Contributions to the KJRS plus funds transferred from KERS exceeded the Annual Required Contributions in aggregate over the 10 years, however the aggregate funding was not sufficient to cover the value of the new benefits earned plus the growth in the Unfunded Liability.

The plan's investment performance as measured by the Actuarial Value of Assets was slightly below the benchmark performance during the 10-year period at 6.3% per year compared to the benchmark return of 6.6% per year. The valuation interest rate was 7.5% at the beginning of the period and 7.0% at the end, with a weighted average of 7.1%. The investment underperformance relative to benchmark increased the unfunded liability by $5.1 million. The benchmark investment performance was below the valuation interest rate resulting in additional increase in the unfunded liability of $14.3 million.

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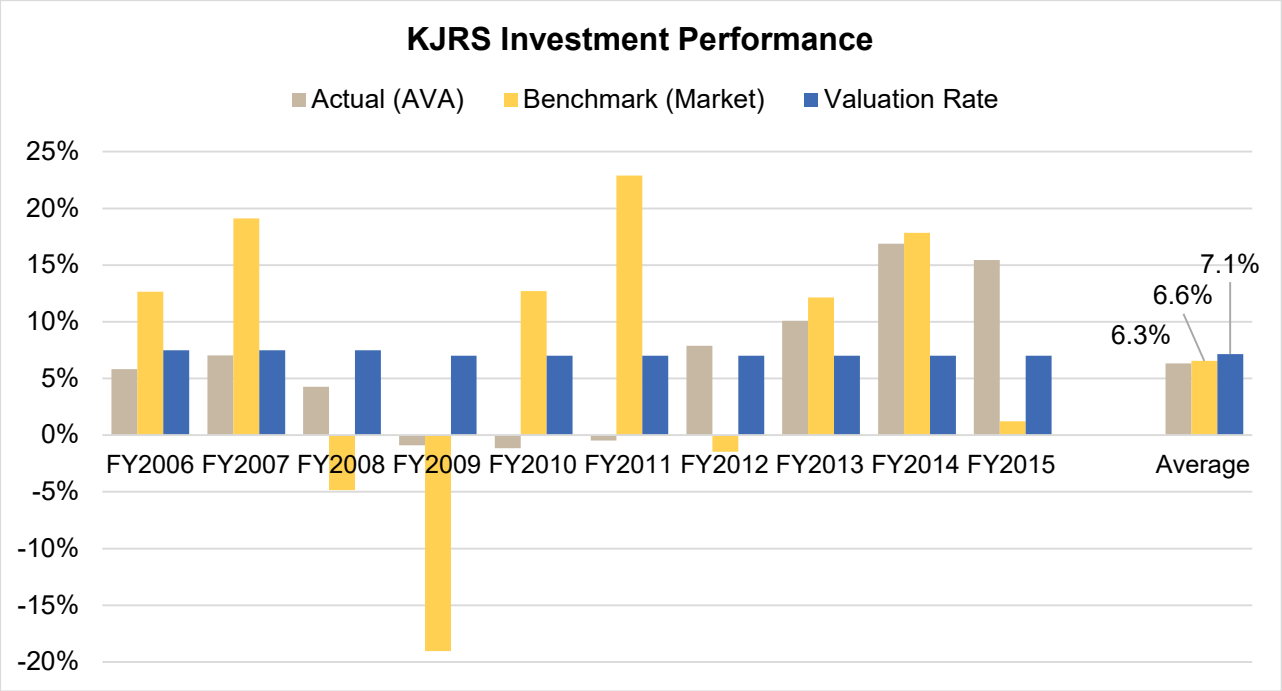
Figure 43



The largest factor contributing to the increase in the unfunded liability was plan experience worse than expected. A major contributing factor to this component is the application of final salary from a subsequent State employment being applied to the Judiciary service.

Table 44

Major Category	KJRP - Causes of Growth in Unfunded Liability	Amount
Funding	1. Appropriation was less (more) than the Actuarially Recommended Contribution (ARC)	($11.2)
Actuarial	2. Actuarial Back-loading	30.6
Investment	3. Investment performance was less (more) than market performance	14.3
Investment	4. Market performance was less than the valuation interest rate	5.1
COLA	5. COLAs granted without any additional funding	26.6
Actuarial	6. Actuarial assumption changes	24.7

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Major Category	KJRP - Causes of Growth in Unfunded Liability	Amount
Actuarial	7. Plan experience different from assumptions	43.0
	Total	**$133.1**

Kentucky Legislative Retirement Plan

Table 45 compares the funded status of the combined pension and health insurance benefits for the Kentucky Legislative Retirement Plan as of June 30, 2007 with the funded status as of June 30, 2015. The plan assets increased by $23 million, and the plan liabilities increased by $40 million, resulting in an increase in the unfunded actuarial accrued liability of $17 million and a decline in the funded status from 108% to 89%.

Table 45

Kentucky Legislative Retirement Plan - Pension and Insurance Benefits Amounts in $Millions			
	6/30/2005	6/30/2015	Change
Valuation Discount Rate	7.50%	7.00%	-0.50%
Actuarial Value of Assets	$70	$92	$23
Actuarial Accrued Liability	$65	$104	$40
Unfunded Actuarial Accrued Liability	$5	($12)	($17)
Funded Status	108%	89%	-19%

Cost of living benefit increases were granted that increased the liability by $2.9 million, however no allowance was made for these benefits in advance. Consequently, once awarded, the COLAs increased the unfunded liability.

As noted above, the discount rate was reduced from 7.50% to 7.00%, which resulted in an increase in the plan's liability. The net impact of assumption changes was an increase in unfunded liability of $4.7 million.

Funding was less than the ARC, contributing to an increase of $2.9 million in the Unfunded Liability.

The plan's investment performance as measured by the Actuarial Value of Assets was higher than the benchmark performance during the 8-year period at 6.4% per year compared to the benchmark return of 4.4% per year. The valuation interest rate was 7.5% at the beginning of the period and 7.0% at the end, with a weighted average of 7.1%. The investment performance relative to benchmark on a dollar basis had no impact on the unfunded liability. However, the benchmark

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investment performance was below the valuation interest rate resulting in additional increase in the unfunded liability of $2.5 million.

Figure 44

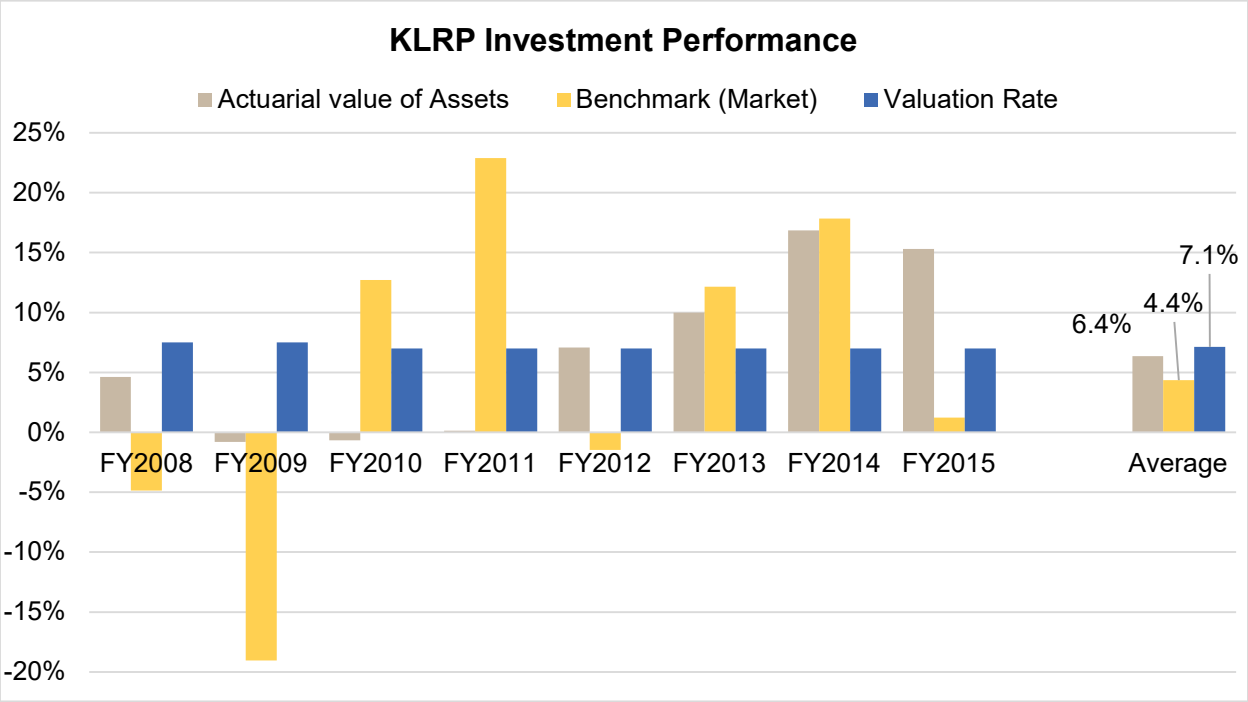

Table 46 shows the largest single factor contributing to the increase in the unfunded liability was the change in actuarial assumptions.

Table 46

Major Category	KLRP - Causes of Growth in Unfunded Liability	Amount
Funding	1. Appropriation was less (more) than the Actuarially Recommended Contribution (ARC)	$2.9
Actuarial	2. Actuarial Back-loading	$2.2
Investment	3. Investment performance was less (more) than market performance	$0.0
Investment	4. Market performance was less than the valuation interest rate	$2.5
COLA	5. COLAs granted without any additional funding	$2.9

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Major Category	KLRP - Causes of Growth in Unfunded Liability	Amount
Actuarial	6. Actuarial assumption changes	$4.7
Actuarial	7. Plan experience different from assumptions	$1.9
	Total	**$17.1**

Summary

Table 47 below summarizes the increase in unfunded pension liability by retirement system for the systems and the cause or reason for the increase.

Table 47

	Factors Increasing the Unfunded Pension Liability 6/30/2005 to 6/30/2016 (Amounts in $Millions)									
Causes	TRS	KERS-NH	KERS-H	CERS-NH	CERS-H	SPRS	KJRP	KLRP	TOTAL	% of Total
Actuarial Back-loading	$3,278	$1,153	$89	$1,269	$353	$111	$31	$2	$6,286	25%
Actuarial Assumption Changes	1,958	2,319	82	984	249	50	25	5	5,672	22%
Plan Experience	232	539	39	372	107	107	43	2	1,441	6%
Investment: Market Performance Below Assumption	1,926	639	80	931	297	45	5	2	3,925	15%
Investment: Plan Performance Below Market	1,014	610	(5)	207	82	8	14	0	1,930	8%
Funding Less Than the ARC	1,588	2,561	(10)	(220)	(133)	42	(11)	3	3,820	15%

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	Factors Increasing the Unfunded Pension Liability 6/30/2005 to 6/30/2016 (Amounts in $Millions)									
Causes	TRS	KERS-NH	KERS-H	CERS-NH	CERS-H	SPRS	KJRP	KLRP	TOTAL	% of Total
COLAs	0	1,291	68	672	267	72	27	3	2,400	9%
Total	$9,996	$9,112	$343	$4,215	$1,222	$435	$133	$17	$25,473	100%

Table 47 also shows that the largest contributing cause to the increase in the unfunded pension liability was the use of the level percentage of payroll funding method, or actuarial back-loading. The magnitude of the increase was affected by the pay increase assumptions – which were far higher than actual pay increases over this 11-year time period. A further contributing factor is Kentucky's biennial budget. The County plans reset their contribution rates annually, whereas the State plans reset their contribution rates every second year.

The next two largest factors were the increase in liability due to changes in actuarial assumptions and market investment performance, as measured by the benchmark portfolio being below the assumed valuation earnings rate. These two factors are related, as the decision to reduce the valuation earnings rate reflected the lower actual and reduced future investment earnings expectations.

The fourth major cause was employer funding less than the actuarially recommended rates. This was an issue for three of the six plans – and was the major cause of the increase for the KERS Non-Hazardous plan.

The fifth major cause was the fact that pension increases (cost-of-living adjustments or COLAs) were granted, but no additional funding was provided.

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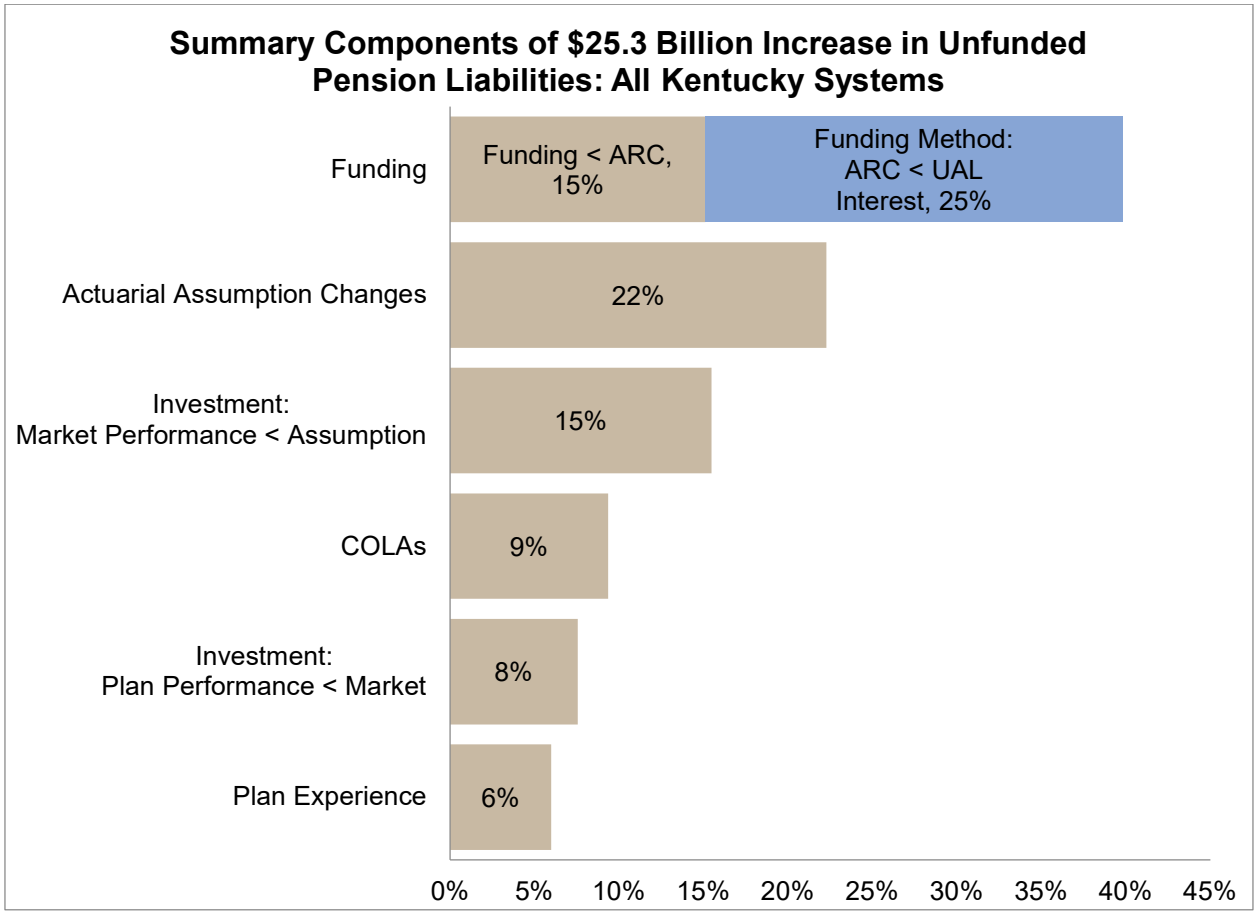
Figure 45



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VII. Benefit Structure

The benefit structures of the Kentucky retirement systems have been restructured multiple times within the past 15 years:

- 2003, KRS OPEB benefit modified for new hires
- 2004, CERS benefit multiplier conformed to KERS multiplier for new hires
- 2008, TRS pension benefits modified for new hires
- 2008, KRS pension benefits modified for new hires
- 2010, TRS OPEB benefit modified for all members
- 2014, KRS, KJFRS benefits modified for new hires

In addition to reports accompanying most of these initiatives, in recent years the Legislative Research Commission has prepared an annual report to the Public Pension Oversight Board that details the benefits provided under each system.

We gathered information on past and current benefit provisions for the Kentucky Retirement Systems. This detailed information is contained in Appendix A. We also collected information for 20 other state systems for civilians, state police, teachers, and judges in order to compare terms. This detailed information is contained in Appendix B. These states include the states contiguous to Kentucky, other states where teachers are not in the Social Security system, and other regional competitors or states with relevant benefit provisions, identified with input from Commonwealth leadership.

In this section of the report we focus on comparisons and findings from reviewing that extensive data that is provided for reference in the appendices. In addition, for a smaller subset of the comparative states, we quantified the present value of the pension benefit for KERS-NH and TRS members in order to make a direct comparison of value that factors in the different elements of the benefit structure.

The data collected on benefit structures informs the scenarios and analyses being prepared for the third report that will address recommendations and alternatives.

The comparative states and characteristics surveyed are described Table 48.

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Table 48

States Surveyed for Pensions/OPEB	KY, CA, CO, FL, GA, IL, IN, IA, MA, MI, MO, NY, NC, OH, PA, SC, TN, TX, VA, WV, WI
Pension Plan Characteristics Surveyed	Plan Structure (DB, DC, Hybrid), Benefit Formula, Employee Contribution, Vesting, AFC Period, Normal Retirement Eligibility, Social Security Participation, and COLA
OPEB Plan Characteristics Surveyed	Plan Structure (DB, DC), Active Employee Contribution, Retire Premium Co-Share (Under 65/65 and Over), Employer Contribution (Under 65/65 and Over), Insurance Coverage, Eligibility, and Prescriptions

Industry Trends

Traditional DB pension plans are now uncommon in the private sector, with just 15% of the workforce in private industry participating in such plans, which are often closed to new hires and/or a smaller component of a hybrid benefit. In fact, only 49% of U.S. private industry workers participate in any form of employer-sponsored retirement plan, including DC programs. Among state and local government workers, however, participation in DB plans remains higher at 75%, but below a historical peak of 91% in 1994.

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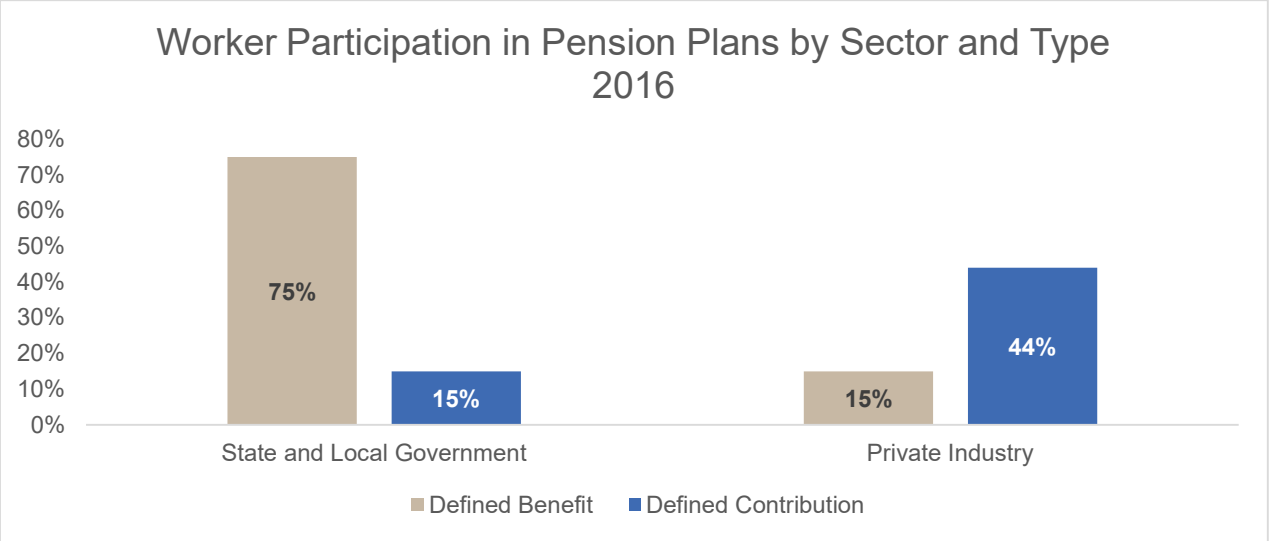
Figure 46



Source: Bureau of Labor Statistics National Compensation Survey, March 2016;

A research study of total compensation for public vs. private sector workers in all 50 states placed Kentucky overall as offering "market level" compensation, which was defined as 18 states that provided compensation within plus or minus 5 percent of the private sector for similar employment.[23] Only one state was evaluated as offering a penalty to private sector compensation, while the majority of states were calculated to provide a premium to private sector compensation for similar employment of 6 or more percent.

The study found that Kentucky state government worker wages were on average 12% lower than for comparable jobs in the private sector. Fringe benefits, however, were 56% of pay for the state employees vs. 38% of pay for Kentucky's private sector. The disparity in the value of benefits provided caused total compensation for state workers to be 4% higher overall.

23 Overpaid or Underpaid? A State-by-State Ranking of Public Employee Compensation, American Enterprise Institute for Public Policy Research, April 2014.

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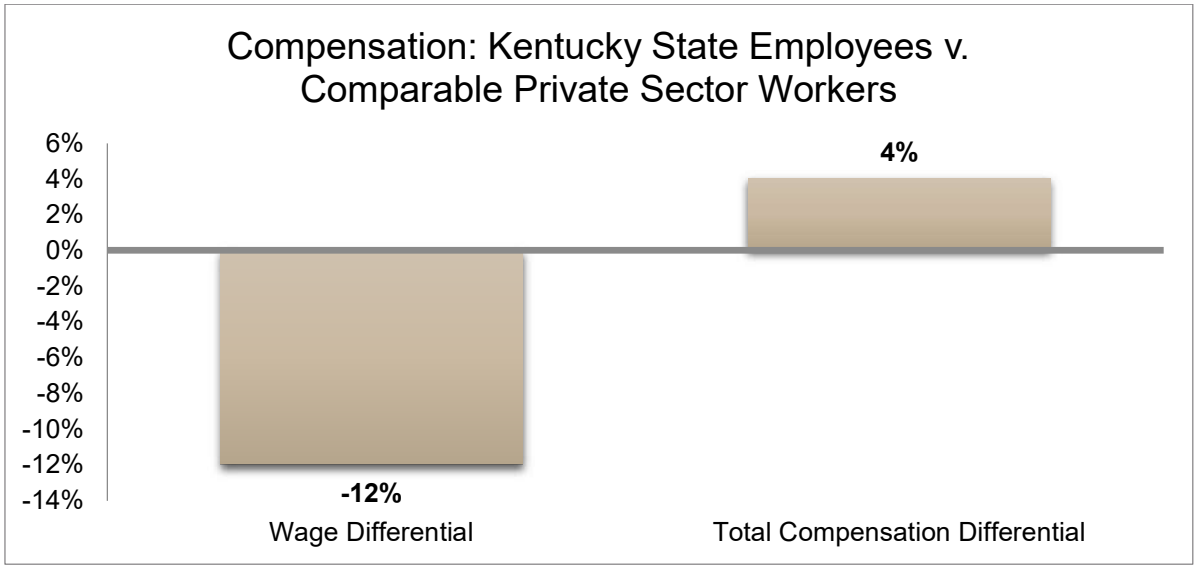
Figure 47



Source: Overpaid or Underpaid? A State-by-State Ranking of Public Employee Compensation, American Enterprise Institute for Public Policy Research, April 2014

For many workers in the general labor market, cash compensation is more impactful for recruitment and retention. At the same time, benefit costs often have higher growth rates and/or volatility. From both fiscal and human resources perspectives, Kentucky might benefit from rebalancing its "total compensation portfolio."

The difference between the benefits offered to pre-2003 KRS workers and TRS members and those offered in the private sector is particularly acute for OPEB. Only a small fraction of private sector workers still had access to post-retirement health care benefits through their employer, when the Bureau of Labor Statistics last surveyed.

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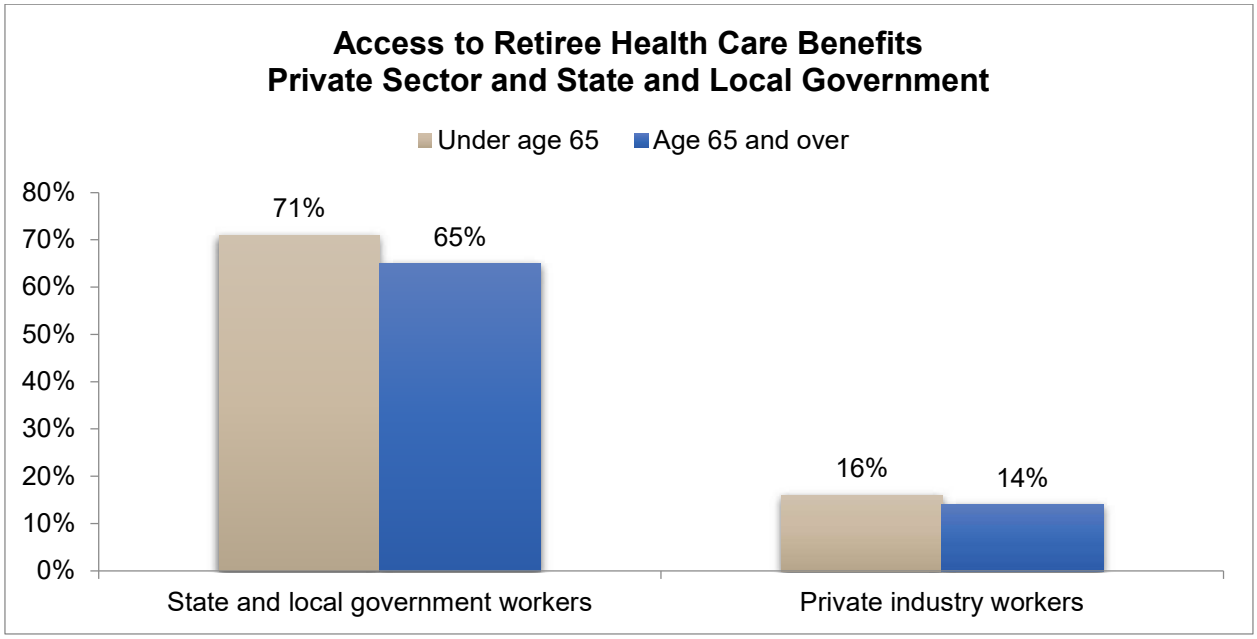
Figure 48



Source: Bureau of Labor Statistics, National Compensation Survey, March 2012 (most recent available on this topic)

KRS Pension Plans Compared to Other State Plans

The KRS Tier 1 and Tier 2 benefit plans are traditional defined benefit plans with a benefit factor that is used to multiply against compensation and years of service to determine the pension annuity benefit on retirement.

The Tier 3 plan adopted in 2013 SB2 for new hires after January 1, 2014 is a cash balance plan. The cash balance plan credits the employee's account with their 5% employee contribution, a 4% employer contribution, and in addition guarantees the employee a 4% return on account balances with an additional upside contribution, calculated as 75% of the excess returns above 4 percent for a smoothed five-year period. This benefit structure is unique among the 20 comparative states and therefore does not fit directly in Table 49 on the following page.

In other respects the Tier 2 and Tier 3 benefits are between the low end and median of the benchmark plans.

Across the country, plan designs are complex and interrelated (i.e., some plans may provide optional plans, some have innovative risk management features, lower employee contributions may correlate with lower benefit levels, etc.). Accordingly, the following table of high-level plan characteristics should be viewed as a starting point only for more detailed comparisons.

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Among the benchmark plans for civilians, the primary plan structure for new hires remains the traditional defined benefit plan, with 15 such plans, four hybrid (DB+DC) plans, and one DC-only plan. This is not atypical of plan structures nationally. Most state governments still offer defined benefit plans as the primary plan for state employees. According to research by the National Conference of State Legislatures, 19 states offer alternative plans as or among their primary plan(s) for civilian new hires:

- 6 states have mandatory hybrid plans
- 3 states have mandatory cash balance plans, including KRS
- 3 states have mandatory DC plans
- 7 states have a choice of structures instead of a single primary plan
- 8 states have replaced DB plans with alternatives between 2009-2014, and none since

Table 49

	KRS Tier 2 (non-hazardous)	KRS Tier 3 (non-hazardous)	Low – Benchmark Plans	Median – Benchmark Plans	High – Benchmark Plans
Employee Contribution (with Social Security – 16 states)	5%	5%	2.25% (GA 1.25% DB and 1.0% 401(k))	5% (MI, VA)	9.5% (TX)
Employee Contribution (no Social Security – 4 states)	N.A.		4% (IL)	9%	11% (MA)
Vesting Period	5 YRS	5 YRS	4 YRS (MI:401(k)) 5 YRS (CA, CO, NC, OH, TN, WV, WI)	8 YRS (FL, SC)	10 YRS (GA, IL, IN, MA, MO, NY, PA, TX)
Benefit Multiplier (DB Plans only)	≤ 10 YOS:1.10% 11-20 YOS: 1.30% 20-26 YOS: 1.50% 26-30 YOS: 1.75% ≥ 30 YOS: 2.00%	N.A.	1.0%	1.82%	2.5%
Final compensation period	5 YRS	N.A.	1/12 of the Highest 3 YRS (CO)	5 YRS (IN, IA, MA, NY, OH, SC, TN, VA, WV)	8 YRS (FL, IL)
COLA	Ad hoc basis	Ad hoc basis	None / Ad hoc basis	3%	5%

Source: PFM review of state financial reports, valuation reports, employee handbooks, and other documents. Please see Appendix B for full data.

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TRS Pension Plan Compared to Other State Teacher Plans

The Teachers' Retirement System plan is a traditional defined benefit plan, and Kentucky is among the 14 states where all or most teachers are not covered by Social Security. The traditional DB plan is even more common among the teachers, with 17 DB plans, three hybrid plans, and no DC-only or cash-balance plans among the 20 comparative states. The Kentucky plan is approximately equal to the median in benefit multiplier at typical amounts of service, lower than the median in employee contributions for the plans that are not in Social Security, and is the most generous in retirement eligibility, as illustrated further in Table 50.

Table 50

	TRS Tier 2 (non-university members)	Low – Benchmark Plans	Median – Benchmark Plans	High – Benchmark Plans
Employee Contribution (with Social Security – 13 states)	N.A.	3% (FL, IN)	6%	8.66% (SC)
Employee Contribution (no Social Security – 7 states)	9.105%	7.7% (TX)	10%	14.5% (OH)
Vesting Period	5 YRS	5YRS	5 YRS	10 YRS
Benefit Multiplier (DB Plans only)	< 10 YOS: 1.70% 10-20 YOS: 2.00% 20-26 YOS: 2.30% 26-30 YOS: 2.50% 30 YOS: 3.00%	1.1%	2.0%	2.5%
Final compensation period	5 YRS	1/12 of the Highest 3 YRS	5 YRS	8YRS
COLA	1.5% annually, additional ad hoc increases must be authorized by the General Assembly	None (WV, FL) or Ad hoc basis	3%	5%

Source: PFM review of state financial reports, valuation reports, employee handbooks, and other documents. Please see Appendix B for full data.

Among the 20 comparative states, only three other states fund the employer contribution for teacher pensions completely at the state level, as in Kentucky. Nine states fund the employer contribution completely at the local school district level, with the rest sharing in the allocation.

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KRS OPEB Plans Compared to Other State Plans

The KRS retiree medical plans were reformed for employees hired after July 1, 2003, from plans that provide similar coverage to active employees with up to 100% of the cost paid by the Commonwealth, to a fixed or defined contribution model. Employees hired since July 1, 2003 receive a set contribution per month of service to an account to be used by the retiree to purchase coverage. Among the 20 comparative states, 12 continue to offer new hires a traditional defined benefit medical plan for retirees, with some significant portion of the premium paid by the employer, if typical years of service provisions are met.

Table 51

	KRS Tier 1 (non-hazardous)	KRS Tier 3 (non-hazardous)	Low – Benchmark Plans	Median – Benchmark Plans	High – Benchmark Plans
Benefit Structure	Defined Benefit with premium-sharing based on years of service	Fixed/ defined contribution	• 2 states offer no coverage to new hires • 3 states offer access only with no premium sharing • 3 states offer fixed contributions	Premium-sharing based on fixed percentage, years of service, or fixed subsidies	5 states offer 100% employer-paid coverage based on years of service
Employer-Provided Benefit	Premium costs for state plan on following schedule: 0 – 3 years 0% 4 – 9 years 25% 10 – 14 years 50% 15 – 19 years 75% 20 or more years 100%	$12.99 per month per year of service, adjusted by 1.5% annually	None	Varies (see Appendix B)	100%
Active Employee Contribution	1%	1%	None	Most states do not have an active employee contribution	1%

Source: PFM review of state financial reports, valuation reports, employee handbooks, and other documents. Please see Appendix B for full data.

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TRS OPEB Plans Compared to Other State Teacher Plans

The retiree medical plans for teachers in the comparative states do not vary significantly from the civilian employee plans, as both types of employees are in the same system with the same benefits in many of the 20 states. Teachers in Kentucky, both current actives and new hires, continue to receive a traditional defined benefit medical coverage. Reforms adopted in 2010 increased active employee contributions toward to the benefit and introduced local School District funding of contributions towards the OPEB benefit and liability. Employees can continue to earn an employer contribution of up to 100% of premium costs, based on years of service. While civilian state employees in California and Illinois can receive up to 100% of premiums paid by the employer, based on years of service, teachers in those states either pay 100% of the premium in the case of California, or a percentage of premium based on the medical plan.

Table 52

	TRS	Low – Benchmark Plans	Median – Benchmark Plans	High – Benchmark Plans
Benefit Structure	Defined Benefit with premium-sharing based on years of service	• 2 states offer no coverage to new hires • 4 states offer access only with no premium sharing • 3 states offer fixed contributions	Premium-sharing based on fixed percentage, years of service, or fixed subsidies	3 states offer 100% employer-paid coverage based on years of service
Employer-Provided Benefit	Premium costs for state plan on following schedule: 0-14.99 YOS: 0% 15-19.99 YOS: 45% 20-24.99 YOS: 65% 25-25.99 YOS: 90% 26-26.99 YOS: 95% 27+ YOS: 100%	None	Varies (see Appendix B)	100%

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	TRS	Low – Benchmark Plans	Median – Benchmark Plans	High – Benchmark Plans
Active Employee Contribution	Non-University members: 3.75% University members: 2.77%	None	Most states do not have an active employee contribution	Three other states have an employee contribution of between 1% and 1.45% of pay

Source: PFM review of state financial reports, valuation reports, employee handbooks, and other documents. Please see Appendix B for full data.

Quantitative Value of Benefits Comparison

To further evaluate TRS retirement saving arrangements for employees, it is useful to compare with plans provided by contiguous states. In Figure 49 below we show the lump sum value of the retirement benefit from Social Security and from defined benefit and defined contribution plans maintained by those states. Note that all the states depicted provide a defined benefit plan for teachers. Three of the states (Tennessee, Indiana and Virginia) also provide a supplemental defined contribution plan. We show those combined results in the graph below.

The graph below was made using the plan provisions for a new hire (current contribution rates, COLAs, etc.) theoretically retiring this year. The amounts shown above the zero line are the employer provided benefit, separately for Social Security (the dark blue portion of the bar), the defined benefit plans (the yellow portion), and the defined contribution plans (the orange portion). The amounts shown below the line are the additive values created through employee contributions, separately for Social Security (the dark red portion), the defined benefit plans (the light tan portion), and the defined contribution plans (the dark tan portion). As demonstrated in the graph, TRS's employer contributions are higher than average, while the employee contributions fall slightly below the average.

It should be noted that for Ohio and Illinois, someone retiring at age 62 with 30 years of service does not qualify for unreduced benefits. The employee contributions in these cases (14% and 9.4%, respectively) are sufficient to fully fund the reduced benefit payments, and thus the employer contributions are zero.

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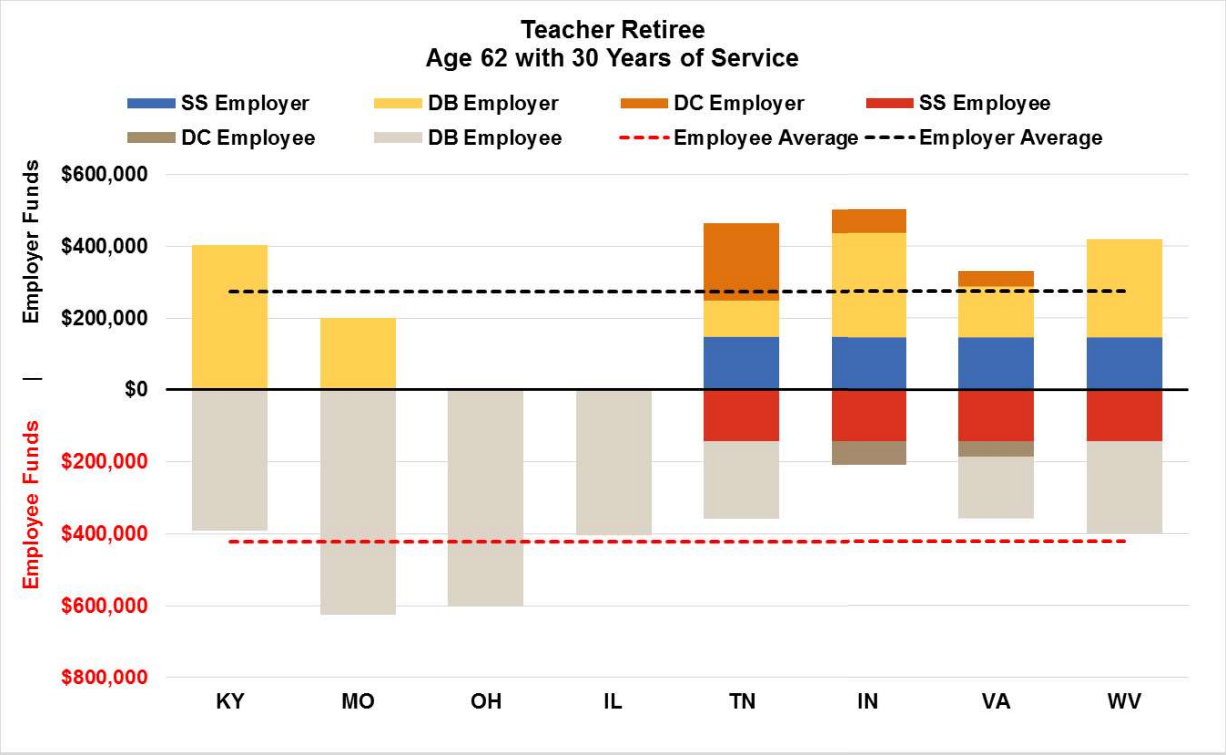
Figure 49



Source: PRM Consulting Group

To assess the adequacy and competitiveness of KERS-NH's retirement savings arrangements for current non-hazardous general employees, we again compared results to the results produced under the retirement systems of contiguous states. We show those results in Figure 50 below.

The graph was made using the plan provisions for a new Tier 3 hire (current contribution rates, COLAs, etc.) theoretically retiring this year. The amounts shown above the zero line are the employer provided benefit, separately for Social Security (the dark blue portion of the bar), the defined benefit plans (the yellow portion), and the defined contribution plans (the orange portion). The amounts shown below the line are the additive values created through employee contributions, separately for Social Security (the dark red portion), the defined benefit plans (the light tan portion), and the defined contribution plans (the dark tan portion). As shown, KERS-NH is fairly close to the average for both employer and employee contributions.

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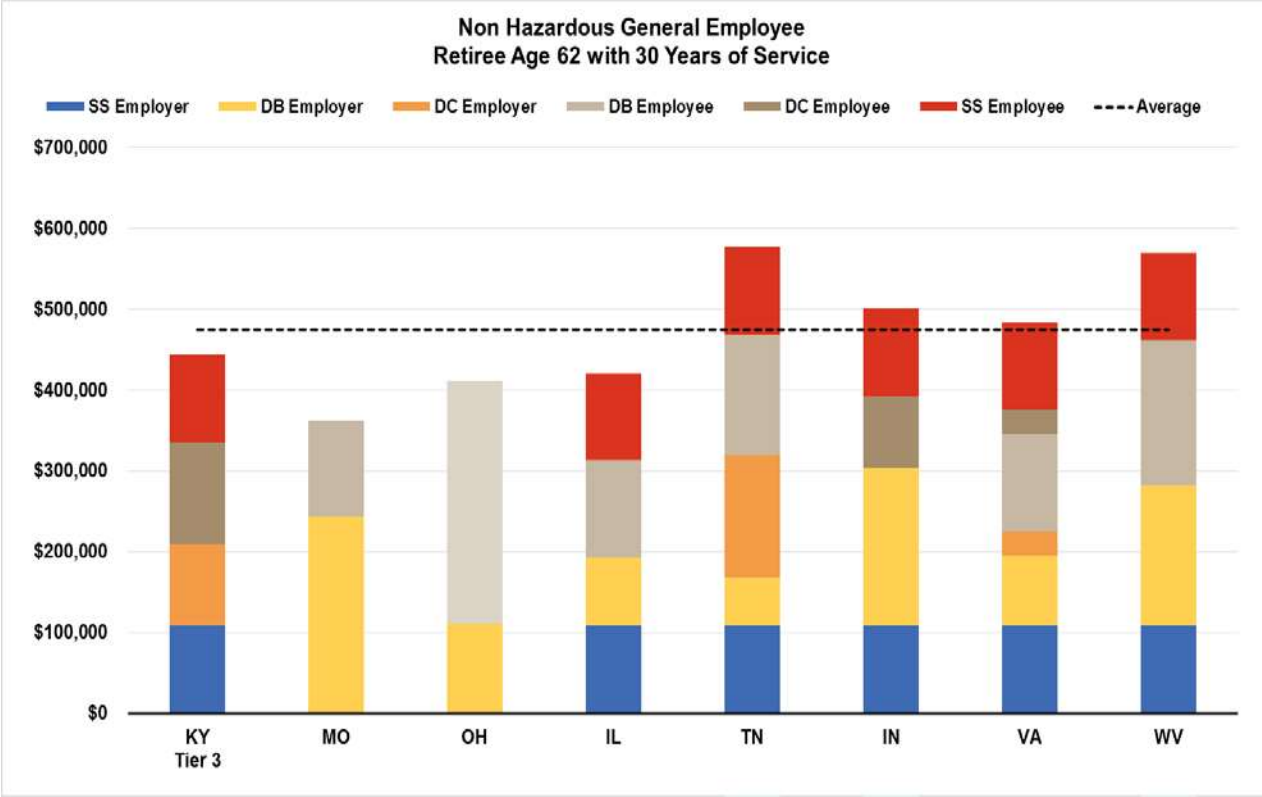
Figure 50



Source: PRM Consulting Group

Similar analysis for the roughly 23,000 active employees in the KERS-NH Tier 1 legacy plan indicates that the provision for employees to retire early with an unreduced benefit after earning 27 years of service, regardless of age, provides the potential of a significantly larger benefit than the average benefit provided by other states. As of June 30, 2016, 1,355 Tier 1 employees under the normal retirement age of 65 had achieved 27 years of service and were therefore eligible for this provision. Of these, 773 were under the age of 55. The lump sum value of the benefit for a Tier 1 KERS-NH employee retiring at age 55 with 27 years of service is over $100,000, or roughly 33%, higher than the average of the other states.

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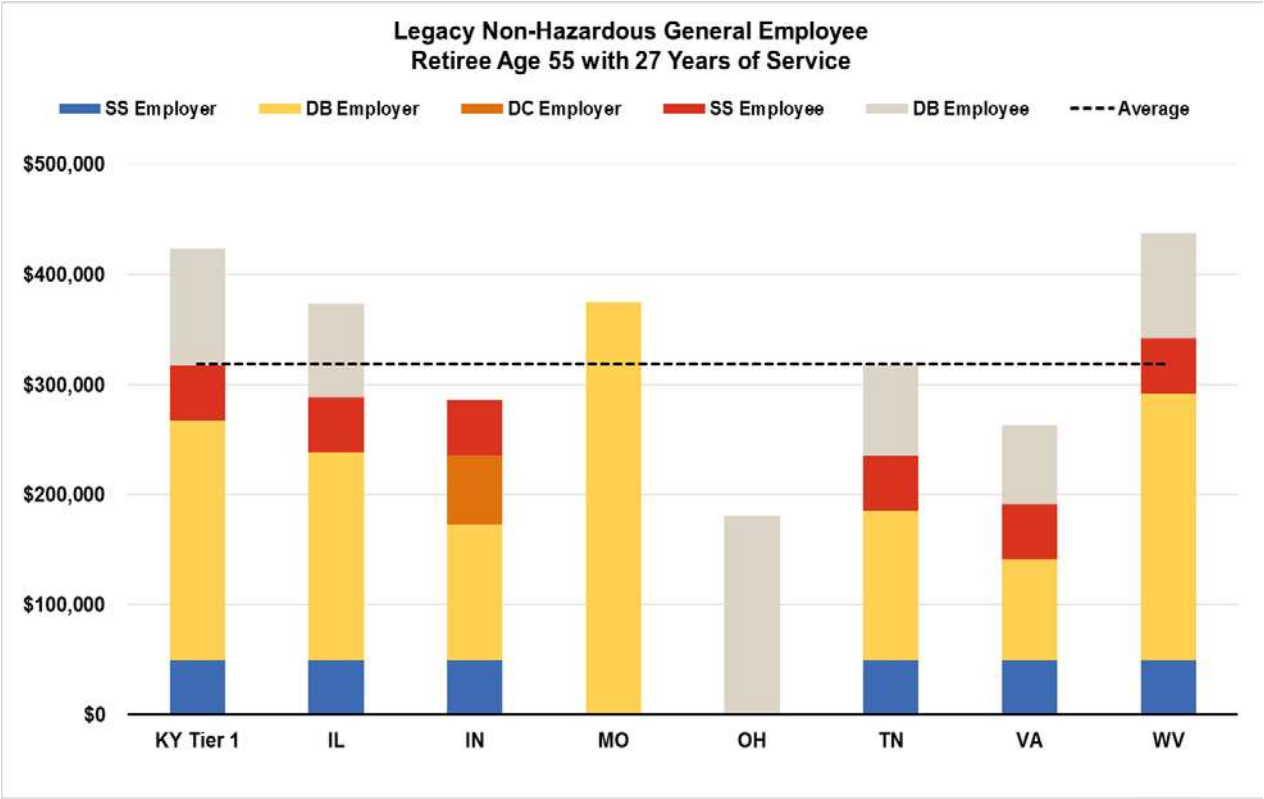
Figure 51



Source: PRM Consulting Group

In addition to TRS contributing more than the average employer, these benefits are available to employees at an earlier age, which boosts the cost of the employer. As a way of comparing retirement eligibilities, we calculated the earliest possible age of retirement for contiguous and competitor states' teachers, and have displayed them in Figure 52 below. The calculations were made using two different assumptions for age at hire: 22 years and 27 years.

For example, if someone is hired at age 32, and the retirement requirement for an unreduced benefit is (1) age 65 with 5 years of service or (2) Rule of 90, the earliest possible retirement age is 61 (age 61 plus 29 years of service meets the rule of 90 requirement). The dotted lines represent the average earliest retirement age for each age at hire. As shown below, TRS is below the average for all hire ages represented. According to actuarial reports, the average age at retirement of a TRS employee is 55, which is not an eligible age for full benefits for seven of the comparative states.

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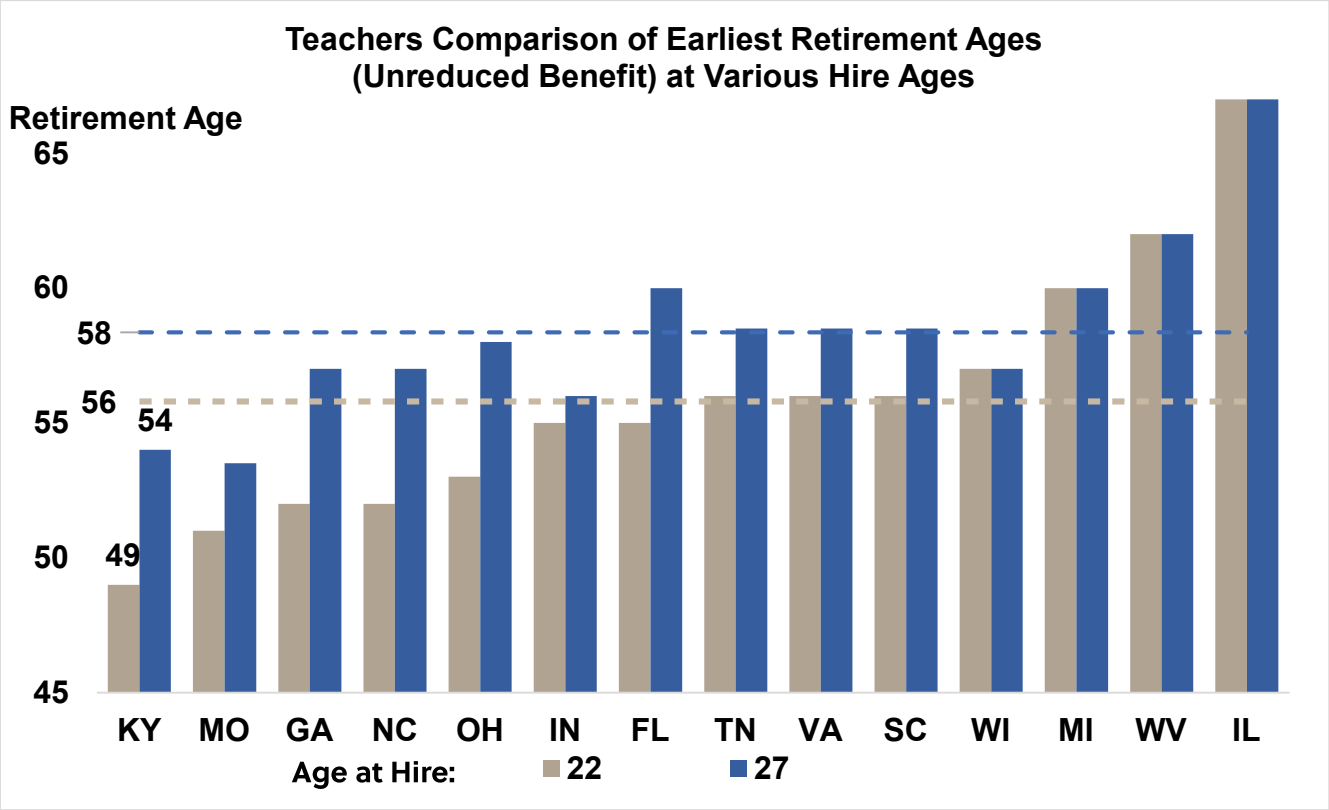
Figure 52



Source: PRM Consulting Group

In addition to comparing to other public systems, following on the comparison to private sector employment cited above, we also compared the value of the retirement benefits (defined contribution, defined benefit, and retiree healthcare) provided to employees by the largest private sector employers in Kentucky with the value of the retirement benefits provided by the Commonwealth to its employees.

Data was collected from the latest corporate annual reports which show the total number of employees and total value of the benefits earned. In accordance with SEC requirements, the value of the benefits reported in the 10-k's are based on "market" discount rates, which averaged 4.40%. The value of the benefits earned under the KRS plans has been adjusted to reflect the equivalent discount rate.

Figure 53 compares the value of benefits earned per year for the five KRS plans with the value from the 12 largest Kentucky employers.

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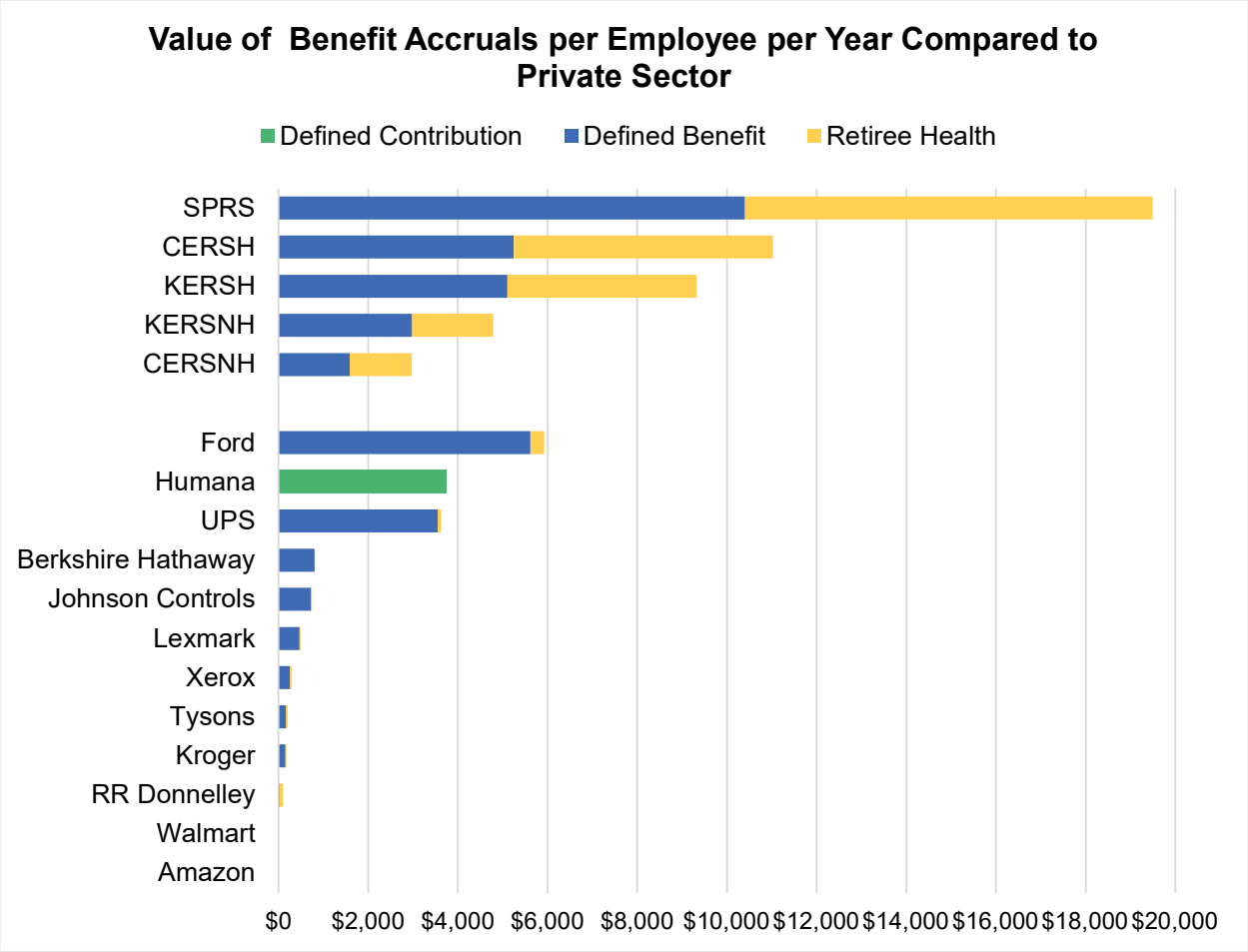
Figure 53



Source: PRM Consulting Group analysis of 10-k reports

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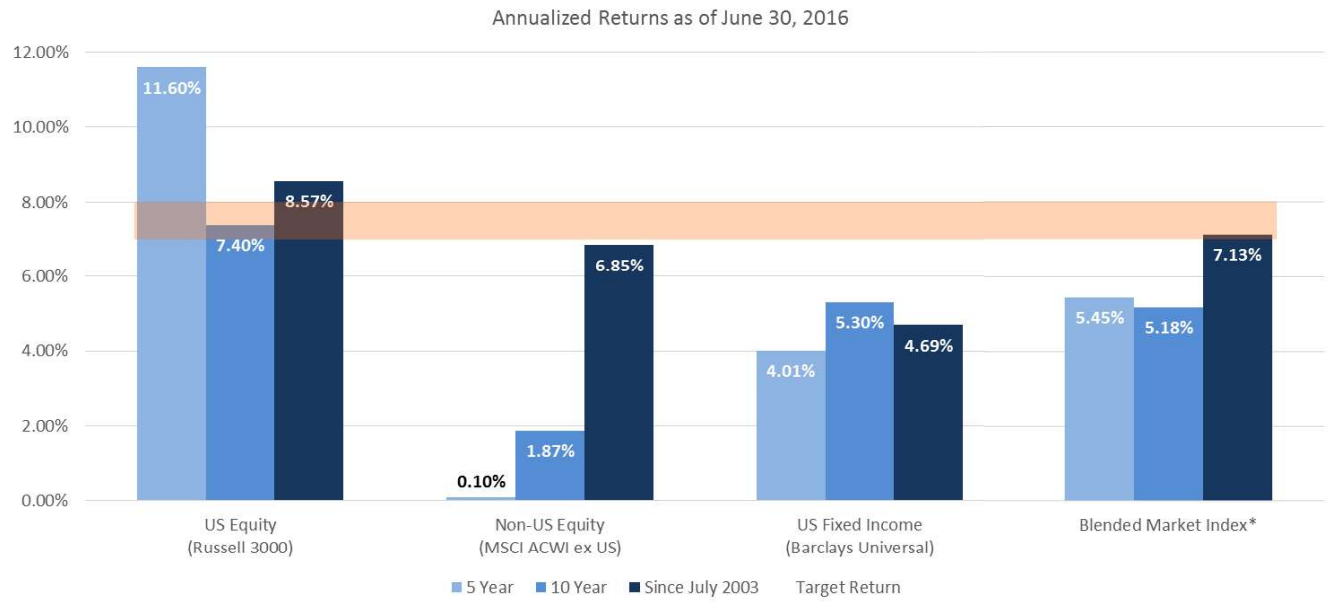
VIII. Investment Analysis

PFM Asset Management LLC has developed a detailed analysis of the investment allocation, performance, and risk profile of each of the Commonwealth's retirement systems. Full detail is provided in Appendix C, building on the analysis of fees, administrative issues, and transparency practices previously issued in Report #1 on Transparency and Governance.

Overview of Market Environment

Although more recent investment returns have been strong for certain asset classes, the past decade has shaped a difficult environment for long-term retirement plans that have target returns of 7-8% on an annualized basis. Looking at traditional asset classes, only US Equity has achieved an annualized return greater than 7% during the past 10 years. As seen in Figure 54 below, a blended market index consisting of 35% Russell 3000, 35% MSCI ACWI ex US (net) and 30% Barclays Universal significantly lagged a 7-8% target return over the past 10 years and has only slightly exceeded 7% since July 2003.

Figure 54



*Note: * Blended Market Index: 35% Russell 3000, 35% MSCI ACWI ex US, 30% Barclays Universal*

Not surprisingly, most state pension plans have struggled to achieve their target return during the last decade. For the 10-year period ending June 30, 2015, the average state pension plan earned

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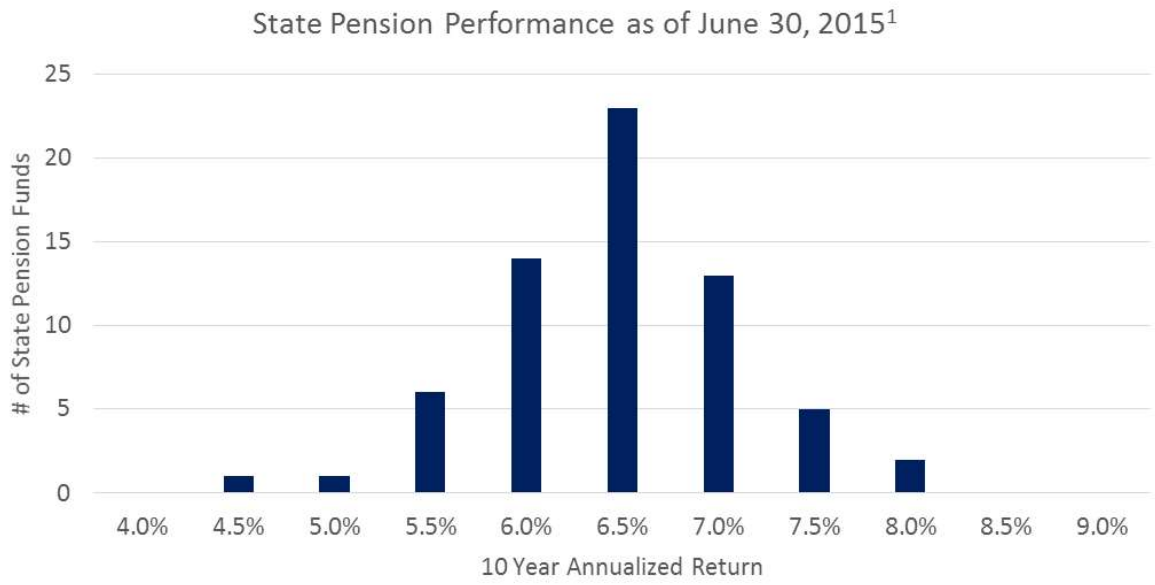
just 6.84% annualized, according to a study by Cliffwater LLC.[24] Returns ranged from 4.75% to 8.35% with a top quartile return of just 7.13%, significantly lagging the median actuarial return assumption of 8%.

Figure 55



Source: Cliffwater LLC, An Examination of State Pension Performance: 2006 to 2015, September 2016.

As outlined further below, the Kentucky retirement plans also failed to achieve their target return over the past decade, contributing to the poor funded status of the plans.

Allocation to Alternative Investments

In addition to relatively poor market performance, the last decade saw a significant increase in the use of alternative investments (hedge funds, private equity, etc.) in state pension plans. According to a study by Pew Charitable Trusts[25], the average allocation to alternative investments more than doubled from 2006 (11%) to 2012 (23%). The increase in this allocation was primarily funded from equities as the average fixed income allocation remained fairly static. Further analysis into the financial reports of various comparable state retirement plans showed that roughly 7.5% of the alternatives allocation consisted of hedge funds (refer to Appendix for more details). Although some alternative asset classes have exhibited strong relative performance, hedge funds in

24 Cliffwater LLC, An Examination of State Pension Performance: 2006 to 2015, September 2016.

25 Pew Charitable Trusts, State Public Pension Investments Shift Over Past 30 Years, June 2014.

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particular have consistently lagged a traditional equity and fixed income benchmark, as illustrated in Table 53 (as of June 30, 2016).

Table 53

	1 Year	3 Years	5 Years	10 Years	Since July 2003
Blended Market Index	**-1.08%**	**5.67%**	**5.45%**	**5.18%**	**7.13%**
HFRI Fund of Funds Composite Index	-5.40%	1.92%	1.63%	1.58%	3.09%
CA US Private Equity Index	10.64%	11.61%	11.52%	7.41%	14.29%
NCREIF Property Index	3.20%	11.23%	11.37%	10.76%	9.28%

When looking at the alternatives allocations for the Kentucky Retirement System plans, a roughly 10% allocation to hedge funds in the KRS Retirement Plans had a negative impact on overall plan returns, which lagged the TRS Retirement Plans that did not have an allocation to hedge funds. However, it should be noted that the newly appointed Board for KRS has made significant progress in removing the hedge fund investments, which is likely to result in improved performance and lower fees going forward.

KRS Retirement Plans

Looking first at a summary level of the KRS pension plans, as shown below in Table 54 and detailed in the Appendix, all five plans slightly underperformed the policy benchmark in most trailing periods and significantly lagged the 7.5% investment return assumption for the entire period examined. When comparing the plans to a universe of public plans > $1 billion, KFRS total performance falls in the bottom quartile for all trailing periods shown. Performance at the asset class level has generally been in-line with the relevant index for longer periods, with the exception of real estate, indicating manager selection has not been a significant detractor of performance.

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Table 54

As of June 30, 2016	3 Years	5 Years	7 Years	10 Years	Jul-2003 To Jun-2016
KERS - PEN	4.99	5.11	8.44	4.89	6.23
KERS - PEN Benchmark	5.75	5.82	8.82	5.45	6.55
Over/Under Performance	*-0.75*	*-0.71*	*-0.38*	*-0.56*	*-0.32*
KERS H - PEN	5.35	5.32	8.60	5.00	6.31
KERS H - PEN Benchmark	5.34	5.57	8.64	5.33	6.46
Over/Under Performance	*0.01*	*-0.25*	*-0.04*	*-0.33*	*-0.14*
CERS - PEN	5.07	5.16	8.48	4.91	6.25
CERS - PEN Benchmark	5.32	5.56	8.63	5.32	6.45
Over/Under Performance	*-0.25*	*-0.41*	*-0.15*	*-0.41*	*-0.20*
CERS H - PEN	5.39	5.35	8.62	5.01	6.32
CERS H - PEN Benchmark	5.32	5.56	8.63	5.32	6.45
Over/Under Performance	*0.07*	*-0.22*	*-0.01*	*-0.31*	*-0.13*
SPRS - PEN	4.98	5.10	8.44	4.89	6.23
SPRS - PEN Benchmark	5.43	5.63	8.68	5.35	6.48
Over/Under Performance	*-0.45*	*-0.53*	*-0.24*	*-0.46*	*-0.25*

Source: RV Kuhns Quarterly Investment Performance Reports as of 6/30/2016.

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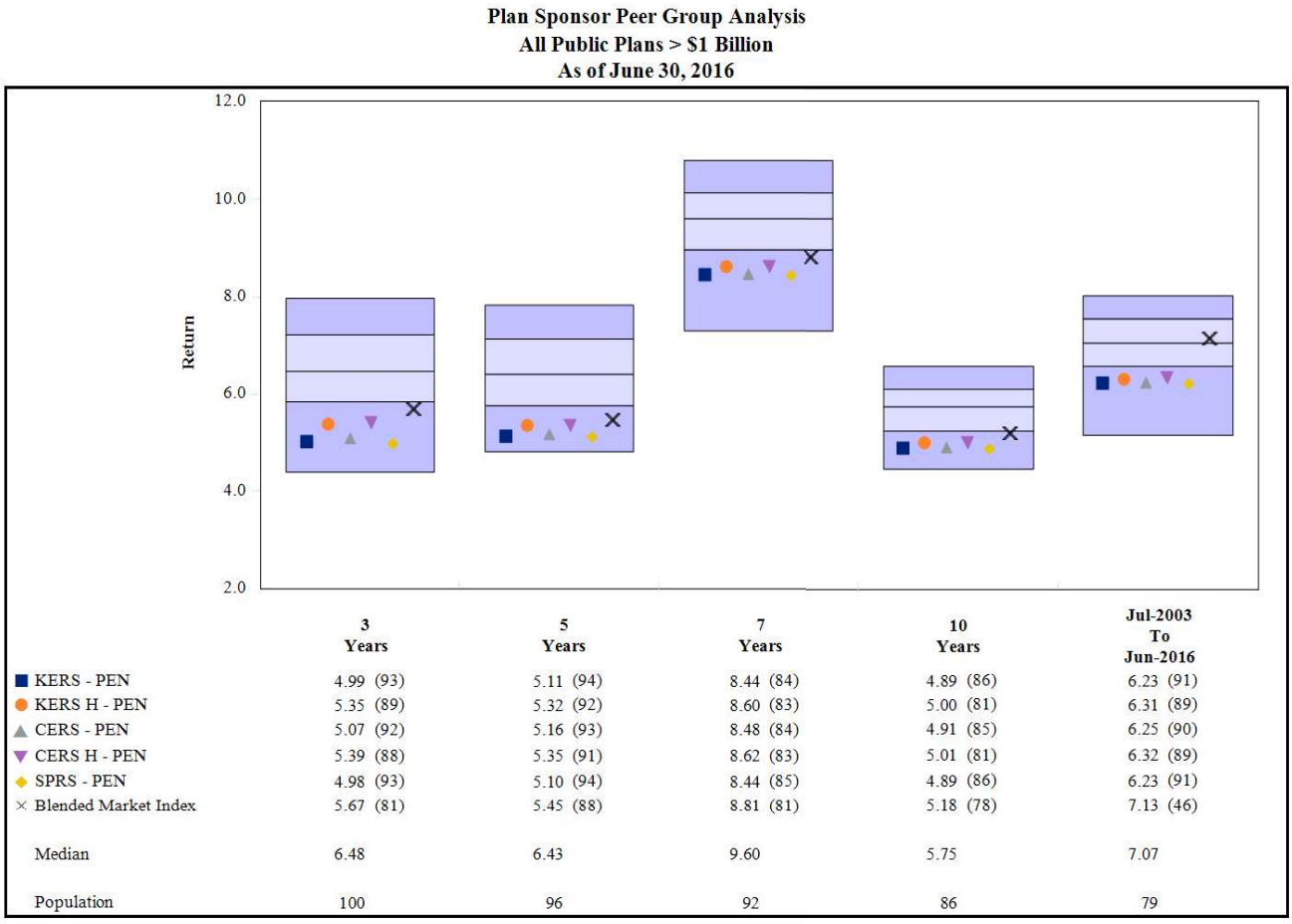
Figure 56



	3 Years	5 Years	7 Years	10 Years	Jul-2003 To Jun-2016
KERS - PEN	4.99 (93)	5.11 (94)	8.44 (84)	4.89 (86)	6.23 (91)
KERS H - PEN	5.35 (89)	5.32 (92)	8.60 (83)	5.00 (81)	6.31 (89)
CERS - PEN	5.07 (92)	5.16 (93)	8.48 (84)	4.91 (85)	6.25 (90)
CERS H - PEN	5.39 (88)	5.35 (91)	8.62 (83)	5.01 (81)	6.32 (89)
SPRS - PEN	4.98 (93)	5.10 (94)	8.44 (85)	4.89 (86)	6.23 (91)
Blended Market Index	5.67 (81)	5.45 (88)	8.81 (81)	5.18 (78)	7.13 (46)
Median	6.48	6.43	9.60	5.75	7.07
Population	100	96	92	86	79

Source: RV Kuhns Quarterly Investment Performance Reports as of 6/30/2016 and Investment Metrics peer group data

Asset allocation, with shifting targets over recent years, has been the primary detractor of relative KRS performance. This relative underperformance can be largely attributed to the following:

- International equity allocation increased from 40% of public equity to 50% of public equity in 2011 and has lagged the Russell 3000 Index by more than 1,100 basis points annually.
- Hedge fund allocation of roughly 10% was added in 2011 and has lagged the Russell 3000 Index by nearly 800 basis points annually.
- Real return allocation has averaged 8-10% of the portfolio during the past 5 years and has lagged the Russell 3000 Index by more than 800 basis points annually.

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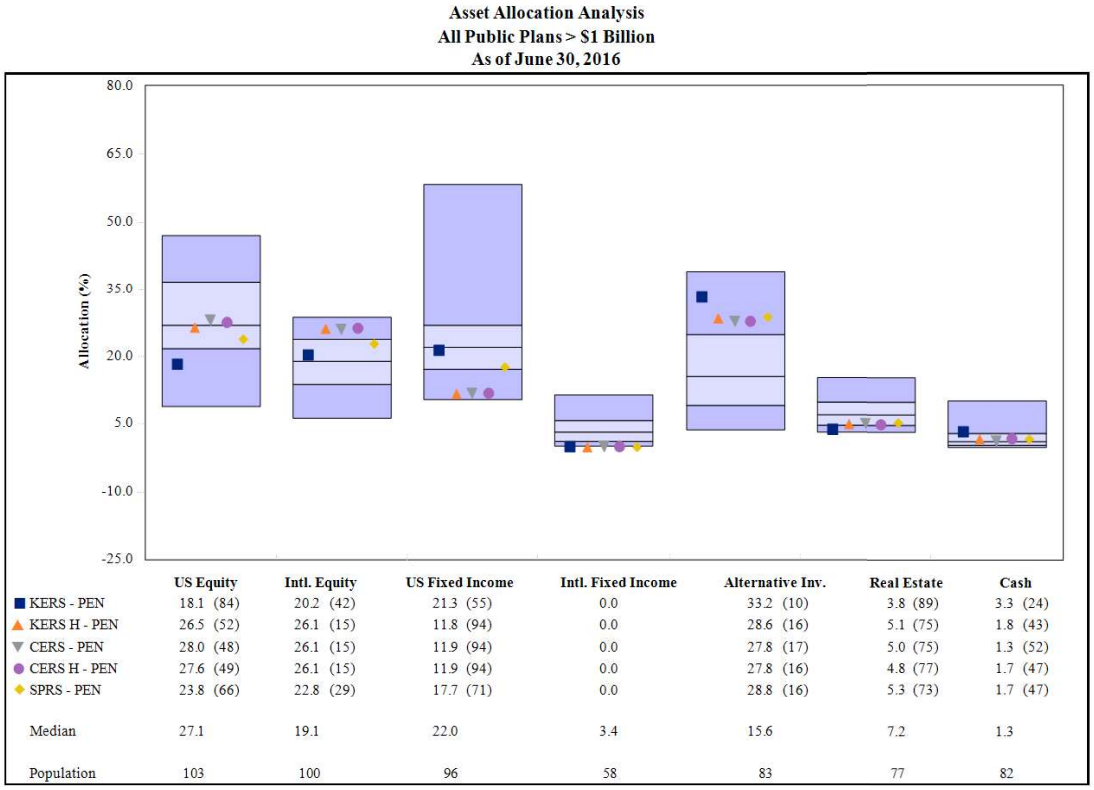
- Private equity allocation has added value over public equity for most trailing periods, but has lagged its long-term benchmark (Russell 3000 Index + 3%).

When compared to a peer universe of public plans > $1 billion, the KRS plans have had an allocation to alternatives that is nearly twice as much as the peer average, falling in the top quartile of the universe. However, as mentioned above, the newly appointed Board has taken steps to significantly reduce the overall allocation to hedge funds in an attempt to lower costs, increase liquidity, and improve performance.

Figure 57



	US Equity	Intl. Equity	US Fixed Income	Intl. Fixed Income	Alternative Inv.	Real Estate	Cash
KERS - PEN	18.1 (84)	20.2 (42)	21.3 (55)	0.0	33.2 (10)	3.8 (89)	3.3 (24)
KERS H - PEN	26.5 (52)	26.1 (15)	11.8 (94)	0.0	28.6 (16)	5.1 (75)	1.8 (43)
CERS - PEN	28.0 (48)	26.1 (15)	11.9 (94)	0.0	27.8 (17)	5.0 (75)	1.3 (52)
CERS H - PEN	27.6 (49)	26.1 (15)	11.9 (94)	0.0	27.8 (16)	4.8 (77)	1.7 (47)
SPRS - PEN	23.8 (66)	22.8 (29)	17.7 (71)	0.0	28.8 (16)	5.3 (73)	1.7 (47)
Median	27.1	19.1	22.0	3.4	15.6	7.2	1.3
Population	103	100	96	58	83	77	82

Source: RV Kuhns Quarterly Investment Performance Reports as of 6/30/16 and Investment Metrics peer group data

Figure 58 depicts the historical asset allocation for the KRS Pension, based on RV Kuhns quarterly reports from 2005 – 2016. The addition of absolute return (hedge funds) in 2011 is clearly depicted, which coincides with a reduction in domestic equity and fixed income. The allocation to real estate has also increased since 2011, although more moderately than hedge funds.

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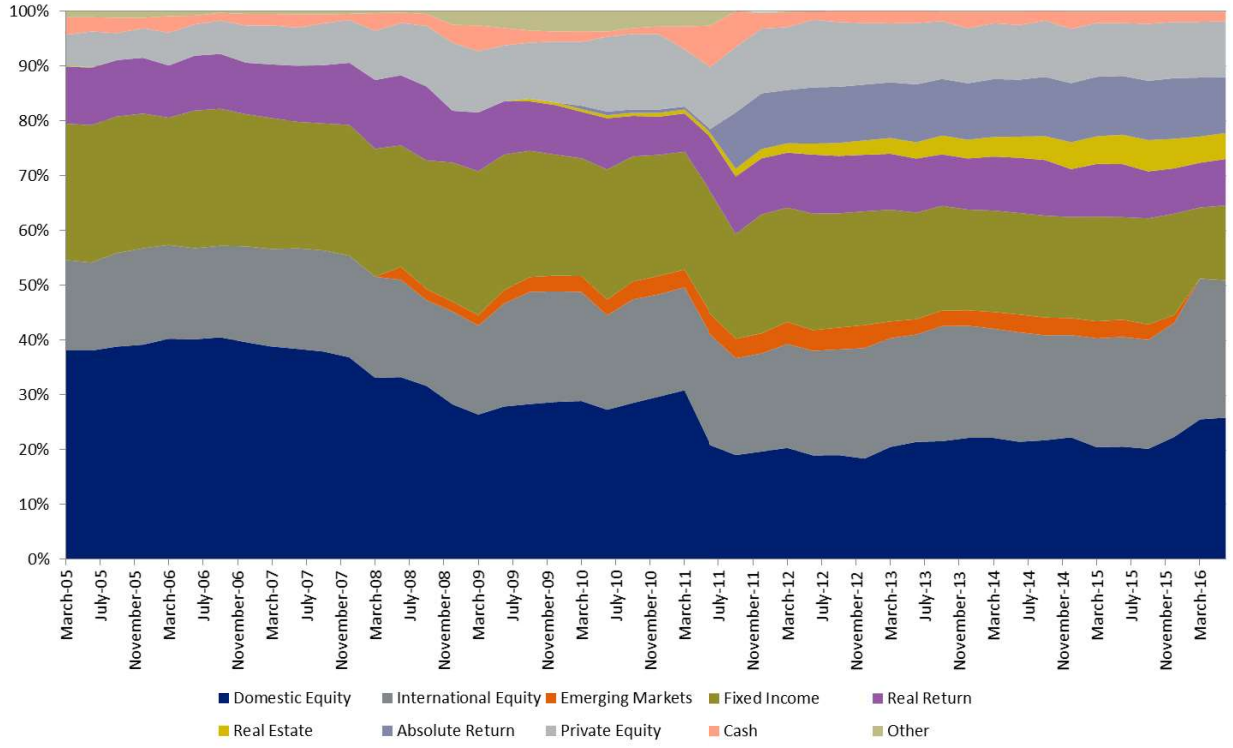
Figure 58



Source: RV Kuhns Quarterly Investment Performance Reports

TRS Retirement Plans

When compared to a peer universe of public plans > $1 billion, the TRS Pension Plan's performance ranked in the 19th percentile over ten years (6.29% return) but only 76th since July 2003 (6.58% return), the beginning date of the monthly returns data provided by TRS. From FY 2009-2016, the Pension Plan's performance ranked above the 50th percentile in 6 out of the 8 fiscal year periods, but ranked close to the 90th percentile each year from FY 2004-2008. From a performance attribution standpoint, the following factors had a large impact on the relative performance of the Plan:

- International equity was absent from the portfolio until July 2005 and has gradually increased to 19%. The low allocation to international equity relative to domestic hurt performance from 2003-2007 but has contributed to the outperformance from 2008-2015.
- The TRS Plan has become more aggressive over time, with fixed income representing 43% of the portfolio in March 2003 and gradually decreasing to 25% as of June 2016.

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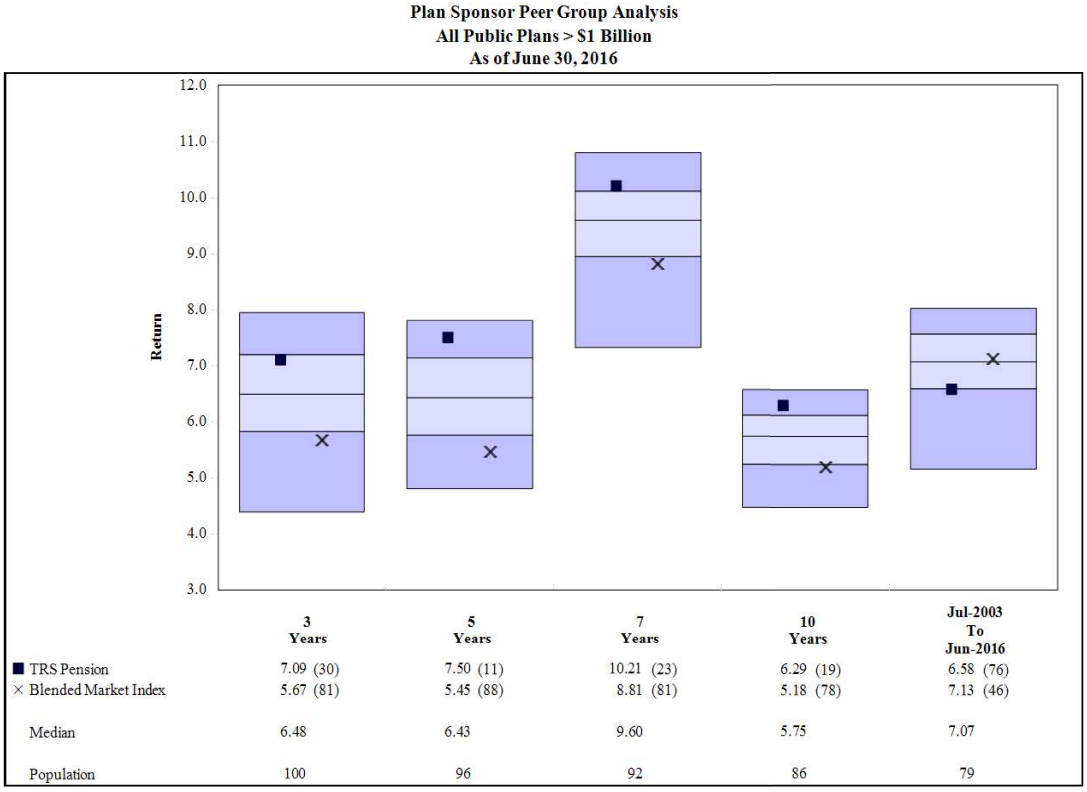
- The private equity allocation helped overall performance with a return of 9.64% since it was included in the portfolio in July 2008 compared to a return of 8.68% for the Russell 3000.

Figure 59



Source: Segal RogersCasey Quarterly Investment Performance Reports as of 6/30/16 and Investment Metrics peer group data.

Unlike the KRS Retirement Plans, the TRS Pension Plan has a relatively low allocation to alternative investments, which falls in the bottom quartile of public plans > $1 billion. The result has been a relatively higher (top quartile) allocation to US Equity, which has been a major contributor to the plan's top quartile performance during the past 10 years, as can be seen in Figure 60 below.

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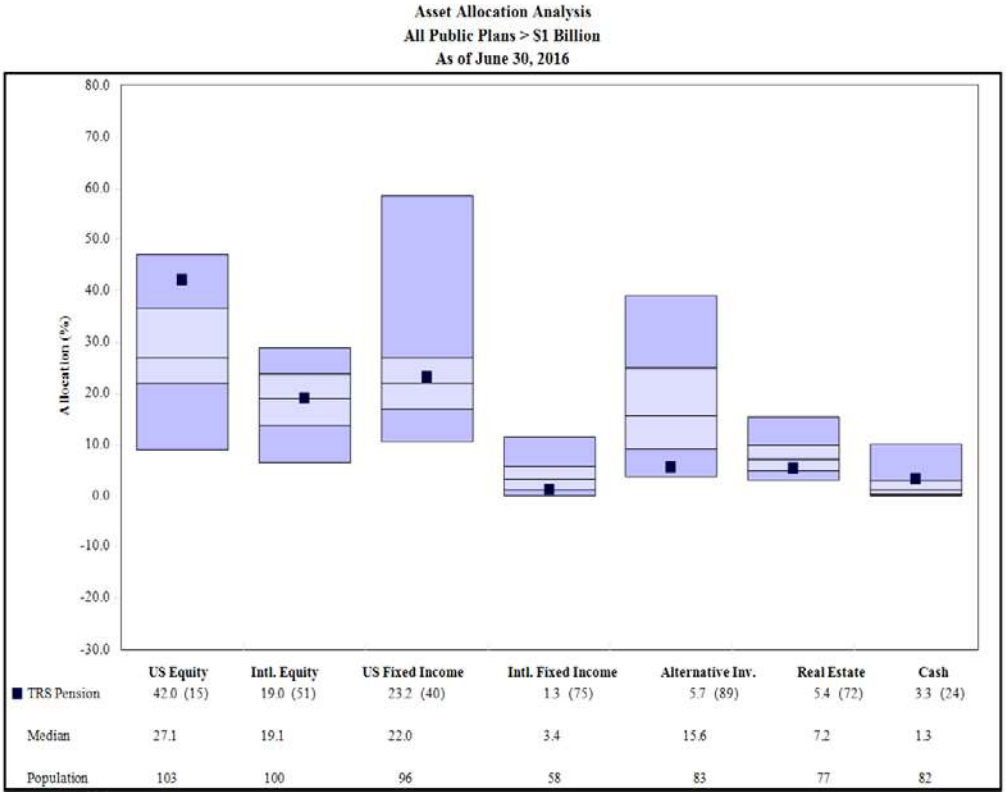
Figure 60



Source: Segal RogersCasey Quarterly Investment Performance Reports as of 6/30/16 and Investment Metrics peer group data.

Figure 61 depicts the TRS historical allocation, based on the Segal RogersCasey quarterly reports from 2003 – 2016. The TRS portfolio has consistently been more heavily weighted to traditional equity and fixed income investments when compared to the KRS Pension Fund. Although international equity was only added to the portfolio in 2005, it has gradually increased to become a significant part of the overall equity allocation. As noted above, the plan has become more aggressive and risky over the period shown, with fixed income declining as international equity and private equity have gradually increased.

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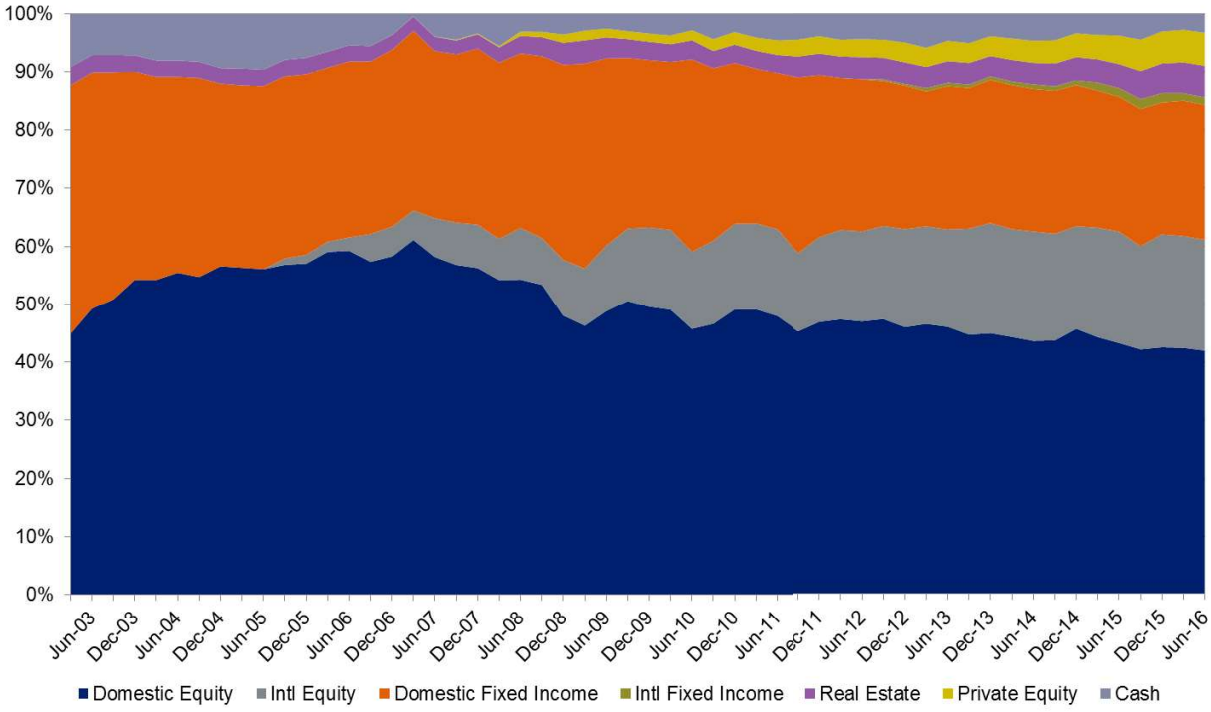
Figure 61



Source: Segal RogersCasey Quarterly Investment Performance Reports

Investment Expenses

The general trend towards a higher allocation to alternative investments has led to demands for greater transparency. Traditional equity and fixed income investments generally have a straightforward fee structure. However, alternative investments typically include both asset-based and performance-fees, hurdle rates, and other hidden costs. Roughly half of the costs incurred by private equity investments are related to performance-based fees typically not included in fee disclosures by state retirement plans[26].

Disclosure requirements in the industry have not kept pace with the rapid shift to alternative investments. GASB 67 states that "investment-related costs should be reported as investment expense if they are separable from (a) investment income and (b) the administrative expense of the plan". Separating performance-based fees for alternatives is difficult and not required by GASB, leaving little incentive for plan sponsors to address the issue. Although transparency is limited, reported fees for state plans increased from 0.28% in 2006 to 0.37% in 2012, largely due to an

26 CEM Benchmarking: "The Time Has Come For Standardized Total Cost Disclosure For Private Equity", April 2015.

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increase in alternative investments[27]. However, reported fees are likely significantly understated as most state plans do not report performance-based fees and other hidden costs.

Best practices and recommendations regarding these important concerns were included in our Report #1 on Transparency and Governance.

Manager Fees

The internal KRS report includes fee schedules for all underlying managers, but is inconsistent with fees shown in the report from the KRS advisor, RV Kuhns (KRS report footnote indicates there are cases where actual fees negotiated are lower than shown, and RV Kuhns report fees are generally lower). In both KRS reports, the fees listed do not include any performance-based fees or other hidden costs and do not include administrative/operational costs of internally managed accounts. The RV Kuhns reported fees are shown below for major categories.

Table 55

	Overall Weighted Average	Fixed Income	US Equity	Non-US Equity	Real Return	Absolute Return	Private Real Estate	Private Equity (KRS)/ Alternatives (TRS)
KRS Pension	0.53%	0.43%	0.12%	0.31%	0.82%	0.93%	1.06%	1.31%
KRS Insurance	0.51%	0.47%	0.13%	0.34%	0.79%	0.89%	1.05%	1.35%
TRS Pension	0.26%	0.01%	0.13% (aggregated)				0.78%	1.60%
TRS Medical	0.34%		0.06% (aggregated)				2.80%	4.35%
National Benchmark (Median or Range)	0.34%	0.35%	0.75%	0.80%	1.0 - 1.5%	1.0 - 2.0% Mgmt + 10 - 20% Carry	1.0 - 2.0% Mgmt + 10 - 20% Carry	1.0 - 2.0% Mgmt + 10 - 20% Carry

Sources: KRS: RV Kuhns & Internal Report as of 6/30/16; TRS: Internal Report for year ended 6/30/16; National Benchmark (overall): PPOB Investment Expense Report, 2/22/16; National Benchmark (asset class): eVestment Alliance for Fixed Income, US Equity & Non-US Equity and PFM manager research database for alternatives managers

The overall reported expense ratios for the TRS Plans are lower than KRS. However, this does not include the cost of internally managed funds for TRS, which represent roughly 30% of the total TRS assets for Pensions and 10% for Medical. The costs for TRS real estate and private equity managers are also likely understated, and some reporting inconsistencies remain to be reconciled. In addition, as KRS transitions out of high fee hedge funds, overall average costs should decline.

Potential Impact of Segregating Assets

Aggregating assets among all KRS plans has resulted in significant purchasing power.

27 The Pew Charitable Trusts: "State Public Pension Investments Shift Over Past 30 Years", June 2014.

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- Pension (6/30/2016): $10.8b (KERS: $1.9b; KERS H: $0.5b; CERS: $6.1b; CERS H: $2.0b; SPRS: $0.2b)
- Insurance (6/30/2016): $4.2b (KERS: $0.7b; KERS H: $0.4b; CERS: $1.9b; CERS H: $1.1b; SPRS: $0.2b)

More than one-third of the portfolios are invested in managers with tiered fee schedules. Separating CERS assets from the other plans will reduce purchasing power and result in higher fees based on the current tiered fee schedules. The CERS weighted average fees would remain largely unchanged if they could retain the same contract terms, increasing by less than 1bp ($450k for Pension, $210k for Insurance). However, KERS & SPRS weighted average fees would be more impacted due to smaller asset size, increasing by roughly 3bps ($805k for Pension, $260k for Insurance). These estimates are based on the manager fee schedules outlined in RV Kuhn's quarterly report plus the private equity manager fee schedules from the internal KRS report. The fee impact noted above is likely understated as it would also limit the ability to negotiate reduced fees in the future as the aggregate asset size is reduced if the plans are separated. This may also impact KRS' ability to negotiate fees with other providers (i.e. consultants, custodian, etc.). Lastly, separating illiquid alternative assets (private equity, etc.) may not be possible in near-term.

Third-Party Provider Fees

KRS uses four different investment advisors/consultants:

- RV Kuhns (General Advisor) charged $395K in 2011 and increases annually by greater of 2% or CPI plus $20K per custodian search and $55K per asset/liability study.
- ORG Portfolio Management (Real Estate Advisor) charged $275K in 2008 and increases annually by CPI.
- Pension Consulting Alliance (Private Equity Advisor) charged $375K in 2014 and increases annually by 3%.
- Albourne America (Hedge Funds & Real Assets Advisor) charges $240K annually for hedge fund advisory and $240K annually for real assets advisory, plus minor costs for additional scope.

Bank of New York Mellon is the custodial bank for KRS. They charge 0.15bps for US assets under custody and 0.50bps – 90bps for non-US assets depending on market, plus various fees for trading and additional services (compliance, performance reporting, portfolio analytics, etc.)

TRS lists expenses for three consultants in the 2016 CAFR:

- Aon Hewitt ($358,850)

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- Bevis Longstreth ($50,137)
- George Philip ($38,962)

Bank of New York Mellon is also the custodial bank for TRS. The 2016 CAFR shows an expense of $380,233 (Pension) and $30,275 (Medical).

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Appendix A: Kentucky Benefit Structures

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		KERS Non-Hazardous			KERS Hazardous		
		Tier 1 **(prior to 9/1/2008)**	Tier 2 **(9/1/2008-12/31/2013)**	Tier 3 **(post 1/1/2014)**	Tier 1 **(prior to 9/1/2008)**	Tier 2 **(9/1/2008-12/31/2013)**	Tier 3 **(post 1/1/2014)**
Plan Design:	**Benefit Multiplier**	1.97% (or 2.0% for btwn 1/1998-1/1999) (8/1/2004-9/1/2008) ≥ 4 YOS: 2.00%	≤ 10 YOS:1.10% 11-20 YOS: 1.30% 20-26 YOS: 1.50% 26-30 YOS: 1.75% ≥ 30 YOS: 2.00%	No benefit factor Annuity calculated by member's account balance reflecting 4% employer contribution and minimum 4% interest	2.49%	≤ 10 YOS:1.30% 11-20 YOS: 1.50% 20-25 YOS: 2.25% ≥ 25 YOS: 2.50%	No benefit factor Annuity calculated by member's account balance reflecting 7.5% employer contribution and minimum 4% interest
	Maximum Benefit	No cap	No cap	No cap	No cap	No cap	No cap
	Vesting Period	5 YRS	5 YRS	5 YRS	5 YRS	5 YRS	5 YRS
	Employee Contribution	5.00%	6.00% (1.00% allocated to health benefits)	6.00% (1.00% allocated to health benefits)	8.00%	9.00% (1.00% allocated to health benefits)	9.00% (1.00% allocated to health benefits)
	Final Average Salary Period	Highest 5 YRS	Last 5 YRS preceding retirement	n/a	Highest 3 YRS	Highest 3 YRS	n/a
	Retirement Eligibility	Any age w/ 27 YOS Age 65 w/ 4 YOS*	Age + YOS ≥ 87 (Min Age 57) or Age 65 w/ 5 YOS		Any age w/ 20 YOS Age 55 w/ 5 YOS*	Any age w/ 25 YOS*	Age 60 w 5 YOS
	COLA	COLA needs to be authorized by legislature			COLA needs to be authorized by legislature		
Assumptions:	**Investment Return**	6.75%	6.75%	6.75%	7.50%*	7.50%*	7.50%*
	GASB Discount Rate	6.75%	6.75%	6.75%	7.50%*	7.50%*	7.50%*
	Inflation	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%
	Smoothing Period	5-YR	5-YR	5-YR	5-YR	5-YR	5-YR
	Amortization Period	28-YR	28-YR	28-YR	28-YR	28-YR	28-YR
	Amortization Method	Level percent of payroll closed	Level percent of payroll closed	Level percent of payroll closed	Level percent of payroll closed	Level percent of payroll closed	Level percent of payroll closed
Financial:	**Funded Ratio**	15.97%	15.97%	15.97%	59.73%	59.73%	59.73%
	Unfunded Actuarial Liability	$11,112,411,929	$11,112,411,929	$11,112,411,929	$377,218,942	$377,218,942	$377,218,942

Note:
KERS Non-Haz Tier1: Money Purchase for age 65 with less than 4 YOS based on contributions and interest
KERS Haz Tier1: Money Purchase for age 55 with less than 5 YOS based on contributions and interest
KERS Haz Tier2: Money Purchase calculations

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		CERS Non-Hazardous			CERS Hazardous		
		Tier 1 **(prior to 9/1/2008)**	Tier 2 **(9/1/2008-12/31/2013)**	Tier 3 **(post 1/1/2014)**	Tier 1 **(prior to 9/1/2008)**	Tier 2 **(9/1/2008-12/31/2013)**	Tier 3 **(post 1/1/2014)**
Plan Design:	**Benefit Multiplier**	Prior to 8/1/2004 ≥ 4 YOS: 2.20% (8/1/2004-9/1/2008) ≥ 4 YOS: 2.00%	≤ 10 YOS:1.10% 10-20 YOS: 1.30% 20-26 YOS: 1.55% 26-30 YOS: 1.75% ≥ 30+ YOS: 2.00%	No benefit factor Annuity calculated by member's account balance reflecting 4% employer contribution and minimum 4% interest	≥ 5 YOS: 2.50%	≤ 10 YOS:1.30% 10-20 YOS: 1.50% 20-25 YOS: 2.25% ≥ 25+ YOS: 2.50%	No benefit factor Annuity calculated by member's account balance reflecting 7.5% employer contribution and minimum 4% interest
	Maximum Benefit	No cap	No cap	No cap	No cap	No cap	No cap
	Vesting Period	5 YRS	5 YRS	5 YRS	5 YRS	5 YRS	5 YRS
	Employee Contribution	5.00%	6.00% (1.00% allocated to health benefits)	6.00% (1.00% allocated to health benefits)	8.00%	9.00% (1.00% allocated to health benefits)	9.00% (1.00% allocated to health benefits)
	Final Average Salary Period	Highest 5 YRS	Last 5 YRS preceding retirement	n/a	Highest 3 YRS	Highest 3 YRS	n/a
	Retirement Eligibility	Age 65 w/ 4 YOS*	Age + YOS ≥ 87 (Min Age 57) or Age 65 w/ 5 YOS		Age 55 w/ 5 YOS*	Age 60 w/ 5 YOS	
	COLA	COLA needs to be authorized by legislature			COLA needs to be authorized by legislature		
Assumptions:	**Investment Return**	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%
	GASB Discount Rate	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%
	Inflation	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%
	Smoothing Period	5-YR	5-YR	5-YR	5-YR	5-YR	5-YR
	Amortization Period	28-YR	28-YR	28-YR	28-YR	28-YR	28-YR
	Amortization Method	Level percent of payroll closed	Level percent of payroll closed	Level percent of payroll closed	Level percent of payroll closed	Level percent of payroll closed	Level percent of payroll closed
Financial:	**Funded Ratio**	59.00%	59.00%	59.00%	57.74%	57.74%	57.74%
	Unfunded Actuarial Liability	$4,541,084,447	$4,541,084,447	$4,541,084,447	$1,565,337,050	$1,565,337,050	$1,565,337,050

Note:
CERS Non-Haz Tier 1: Less than 4 YOS, the monthly benefit is the actuarial equivalent of 2X the member's contribution w/interest
CERS Haz Tier 1: Less than 5 YOS, the monthly benefit is the actuarial equivalent of 2X the member's contribution w/interest

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State Police				
		Tier 1 **(prior to 9/1/2008)**	Tier 2 **(9/1/2008-12/31/2013)**	Tier 3 **(post 1/1/2014)**
Plan Design:	**Benefit Multiplier**	≥ 5 YOS:2.50%	≤ 5 YOS (hazardous duty) ≤ 10 YOS:1.30% 11-20 YOS: 1.50% 20-25 YOS: 2.25% ≥ 25 YOS: 2.50%	No benefit formula Annuity calculated by member's account balance reflecting 7.5% employer contribution and minimum 4% interest
	Maximum Benefit	No cap	No cap	No cap
	Vesting Period	5 YRS	5 YRS	5 YRS
	Employee Contribution	8.00%	9.00% (1.00% allocated to health benefits)	9.00% (1.00% allocated to health benefits)
	Final Average Salary Period	Highest 3 YRS	Highest 3 YRS	n/a
	Retirement Eligibility	Any age w/ 20 YOS Age 55 w/ 5 YOS*	Any age w/ 25 YOS Age 60 w/ 5 YOS	
	COLA	COLA needs to be authorized by legislature		
Assumptions:	**Investment Return**	6.75%	6.75%	6.75%
	GASB Discount Rate	6.75%	6.75%	6.75%
	Inflation	3.50%	3.50%	3.50%
	Smoothing Period	5-YR	5-YR	5-YR
	Amortization Period	28-YR	28-YR	28-YR
	Amortization Method	Level percent of payroll closed	Level percent of payroll closed	Level percent of payroll closed
Financial:	**Funded Ratio**	30.26%	30.26%	30.26%
	Unfunded Actuarial Liability	$540,592,758	$540,592,758	$540,592,758

Note:
KRS State Police: Tier 1 - Money Purchase for age 55 w/ less than 5 YOS Tier 2 & 3 - No Money Purchase calculations

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		Judicial Retirement Plan**			
		Tier 1 **(prior to 7/1/1978)**	Tier 2 **(7/1/1978-6/30/1980)**	Tier 3 **(7/1/1980-1/1/2014)**	Tier 4 **(post 1/1/2014)**
Plan Design:	**Benefit Multiplier**	5.00% uninterrupted YOS (not to exceed 100.00% of FAC)	4.15% uninterrupted YOS (not to exceed 100.00% of FAC)	2.75% uninterrupted YOS (not to exceed 100.00% of FAC)	No benefit factor Annuity calculated by member's account balance reflecting 4% employer contribution and minimum 4% interest
	Maximum Benefit	100.00% of FAC			
	Vesting Period	5 YRS	5 YRS	5 YRS	5 YRS
	Employee Contribution	Prior to 9/1/2008:5.00% (100% of benefit accrued contributions stop)	Prior to 9/1/2008:5.00% (100% of benefit accrued contributions stop)	Prior to 9/1/2008:5.00% Post 9/1/2008:6.00% (100% of benefit accrued contributions stop)	6.00% (1.00% allocated to health benefits)
	Final Average Salary Period	Highest 3 YRS	Highest 3 YRS	Highest 3 YRS	n/a
	Retirement Eligibility	Age 65 w/ 8 YOS*	Age 65 w/ 8 YOS*	Age 65 w/ 8 YOS*	None
	COLA	1.50% annually on July 1 if funding is 100%			Hybrid Cash Balance Plan at 100.00% and authorized by legislature
Assumptions:	**Investment Return**	7.00%	7.00%	7.00%	7.00%
	GASB Discount Rate	6.41%	6.41%	6.41%	6.41%
	Inflation	3.00%	3.00%	3.00%	3.00%
	Smoothing Period	Market Value	Market Value	Market Value	Market Value
	Amortization Period	≥ 30-YR	≥ 30-YR	≥ 30-YR	≥ 30-YR
	Amortization Method	Normal cost plan interest on liability + 1% of liability	Normal cost plan interest on liability + 1% of liability	Normal cost plan interest on liability + 1% of liability	Normal cost plan interest on liability + 1% of liability
Financial:	**Funded Ratio**	72.07%	72.07%	72.07%	72.07%
	Unfunded Actuarial Liability	$114,986,969	$114,986,969	$114,986,969	$114,986,969

** Reporting requirement changed per GABS 67, 2016 UAAL and funded ratio not provided in most recent audit. Information shown as of fiscal year ended 6/30/2015

Note:

KJRP Tier 1 - Tier 3: The age 65 requirement shall be reduced by 1 year for each 5 YOS and 1 year for each year beyond the YOS needed to accrue a benefit of 100%

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Legislators' Retirement Plan**					
		Tier 1 **(prior to 7/1/1978)**	Tier 2 **(7/1/1978-6/30/1980)**	Tier 3 **(7/1/1980-12/31/2013)**	Tier 4 **(post 1/1/2014)**
Plan Design:	**Benefit Multiplier**	5.00% uninterrupted YOS (not to exceed 100% of FAC) 2.75% all other YOS	4.15% uninterrupted YOS (not to exceed 100% of FAC) 2.75% all of ther YOS	3.5% uninterrupted YOS (not to exceed 100% of FAC) 2.75% all other YOS	No benefit factor Annuity calculated by member's account balance reflecting 4% employer contribution and minimum 4% interest
	Maximum Benefit	100.00% of FAC			
	Vesting Period	5 YRS	5 YRS	5 YRS	5 YRS
	Employee Contribution	Prior to 9/1/2008:5.00% (100% of benefit accrued contributions stop)	Prior to 9/1/2008:5.00% (100% of benefit accrued contributions stop)	Prior to 9/1/2008:5.00% Post 9/1/2008:6.00% (100% of benefit accrued contributions stop)	6.00% (1.00% allocated to health benefits)
	Final Average Salary Period	Highest 3 YRS	Highest 3 YRS	Highest 3 YRS	n/a
	Retirement Eligibility	Age 65 w/ 5 YOS (or combo w/ other state service = 8 YOS)*	Age 65 w/ 5 YOS (or combo w/ other state service = 8 YOS)*	Age 65 w/ 5 YOS (or combo w/ other state service = 8 YOS)*	None
	COLA	1.50% annually on July 1 if funding is 100%			Hybrid Cash Balance Plan at 100.00% and authorized by legislature
Assumptions:	**Investment Return**	7.00%	7.00%	7.00%	7.00%
	GASB Discount Rate	6.85%	6.85%	6.85%	6.85%
	Inflation	3.00%	3.00%	3.00%	3.00%
	Smoothing Period	Market Value	Market Value	Market Value	Market Value
	Amortization Period	≥ 30-YR	≥ 30-YR	≥ 30-YR	≥ 30-YR
	Amortization Method	Normal cost plan interest on liability + 1% of liability	Normal cost plan interest on liability + 1% of liability	Normal cost plan interest on liability + 1% of liability	Normal cost plan interest on liability + 1% of liability
Financial:	**Funded Ratio**	85.10%	85.10%	85.10%	85.10%
	Unfunded Actuarial Liability	$15,207,557	$15,207,557	$15,207,557	$15,207,557

** Reporting requirement changed per GABS 67, 2016 UAAL and funded ratio not provided in most recent audit. Information shown as of fiscal year ended 6/30/2015

Note:

KLRP Tier 1 - Tier 3: The age 65 requirement shall be reduced by 1 year for each 5 YOS and 1 year for each year beyond the YOS needed to accrue a benefit of 100%

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		Teachers' Retirement	
		Tier 1 **(prior to 7/1/2008)**	Tier 2 **(post 7/1/2008)**
Plan Design:	**Benefit Multiplier**	Non-University members service prior to 7/1/1983:2.00% service post 7/1/1983:2.50% post 7/1/2002 ≤ 10 YOS:2.00% ≥ 10 YOS:2.50% retire post 7/1/2004 ≥ 30 YOS:3.00% University members 2.00% for each YOS	Non-University members ≤ 10 YOS:1.70% 10-20 YOS:2.00% 20-26 YOS:2.30% 26-30 YOS:2.50% 30 YOS:3.00% University members ≤ 10 YOS:1.50% 10-20 YOS:1.70% 20-27 YOS:1.85% ≥ 27 YOS 2.00%
	Maximum Benefit	No cap	No cap
	Vesting Period	5 YRS	5 YRS
	Employee Contribution	Non-University members:9.105% University members:7.625%	
	Final Average Salary Period	Age 60 Highest 5 YRS (-5.00% per yr < Age 60 or 27 YOS) Age 55 Highest 3 YRS w/ 27 YOS*	Age 60 Highest 5 YRS (-6.00% per yr < Age 60 or 27 YOS) Age 55 Highest 3 YRS w/ 27 YOS*
	Retirement Eligibility	Any age w/ 27 YOS Age 55 w/ 5 YOS	Any age w/ 27 YOS Age 60 w/ 5 YOS Age 55 w/ 10 YOS
	COLA	1.50% annually additional ad hoc increases authorized by the General Assembly	
Assumptions:	**Investment Return**	7.50%	7.50%
	GASB Discount Rate	4.20%	4.20%
	Inflation	3.00%	3.00%
	Smoothing Period	5-YR	5-YR
	Amortization Period	28.1-YR	28.1-YR
	Amortization Method	Level percent of payroll closed	Level percent of payroll closed
Financial:	**Funded Ratio**	54.60%	54.60%
	Unfunded Actuarial Liability	$14,531,333,000	$14,531,333,000

Note:
KTRS Tier 1 and Tier 2: The minimum annual service allowance for all members is $440.00 multiplied by credited services

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		KERS Non-Hazardous			KERS Hazardous		
		Tier 1 **(prior to 7/1/2008)**	Tier 2 **(7/1/2008-12/31/2013)**	Tier 3 **(post 1/1/2014)**	Tier 1 **(prior to 7/1/2008)**	Tier 2 **(7/1/2008-12/31/2013)**	Tier 3 **(post 1/1/2014)**
Plan Design:	**Benefit**	Lifetime	Lifetime	Lifetime	Lifetime	Lifetime	Lifetime
	Structure	DC post 2003	DC	DC	DC post 2003	DC	DC
	Coverage	Family	Family	Family	Family	Family	Family
	Employee Contribution	Prior to 2003 employee contributes a % of premium: 20+ YOS:0% 15-19 YOS:25% 10-14 YOS:50% 4-9 YOS:75% ≤4 YOS:100% Post 2003 employer contributes $12.80/mo per YOS *dollar amount is adjusted 1.5% annually	Active employee contributes 1.00% of salary + retirement system pays $12.99 per/mo per YOS towards retiree premium *dollar amount is adjusted 1.5% annually	Active employee contributes 1.00% of salary + retirement system pays $12.99 per/mo per YOS towards retiree premium *dollar amount is adjusted 1.5% annually	Prior to 2003 employee contributes a % of premium: 20+ YOS:0% 15-19 YOS:25% 10-14 YOS:50% 4-9 YOS:75% ≤4 YOS:100% Post 2003 employer contributes $19.19/mo per YOS *dollar amount is adjusted 1.5% annually	Active employee contributes 1.00% of salary + retirement system pays $19.48 per/mo per YOS towards retiree premium *dollar amount is adjusted 1.5% annually	Active employee contributes 1.00% of salary + retirement system pays $19.48 per/mo per YOS towards retiree premium *dollar amount is adjusted 1.5% annually
	Retirement Eligibility	Any age w/ 27 YOS Age 65 w/ 4 YOS*	10 YOS	15 YOS	Any age w/ 20 YOS Age 55 w/ 5 YOS*	10 YOS	15 YOS
Assumptions:	**Investment Return**	7.50%*	7.50%*	7.50%*	7.50%*	7.50%*	7.50%*
	Inflation	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%
	Smoothing Period	5-YR	5-YR	5-YR	5-YR	5-YR	5-YR
	Amortization Period	28-YR	28-YR	28-YR	28-YR	28-YR	28-YR
	Amortization Method	Level percent of payroll closed	Level percent of payroll closed	Level percent of payroll closed	Level percent of payroll closed	Level percent of payroll closed	Level percent of payroll closed
Financial:	**Funded Ratio**	30.26%	30.26%	30.26%	125.26%	125.26%	125.26%
	Unfunded Actuarial Liability	$1,761,489,315	$1,761,489,315	$1,761,489,315	($62,851,075)	($62,851,075)	($62,851,075)

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		CERS Non-Hazardous			CERS Hazardous		
		Tier 1 **(prior to 7/1/2008)**	Tier 2 **(7/1/2008-12/31/2013)**	Tier 3 **(post 1/1/2014)**	Tier 1 **(prior to 7/1/2008)**	Tier 2 **(7/1/2008-12/31/2013)**	Tier 3 **(post 1/1/2014)**
Plan Design:	**Benefit**	Lifetime	Lifetime	Lifetime	Lifetime	Lifetime	Lifetime
	Structure	DC post 2003	DC	DC	DC post 2003	DC	DC
	Coverage	Family	Family	Family	Family	Family	Family
	Employee Contribution	Prior to 2003 employee contributes a % of premium: 20+ YOS:0% 15-19 YOS:25% 10-14 YOS:50% 4-9 YOS:75% ≤4 YOS:100% Post 2003-2008 employer contributes $12.80/mo per YOS *dollar amount is adjusted 1.5% annually	Active employee contributes 1.00% of salary + retirement system pays $12.99 per/mo per YOS towards retiree premium *dollar amount is adjusted 1.5% annually	Active employee contributes 1.00% of salary + retirement system pays $12.99 per/mo per YOS towards retiree premium *dollar amount is adjusted 1.5% annually	Prior to 2003 employee contributes a % of premium: 20+ YOS:0% 15-19 YOS:25% 10-14 YOS:50% 4-9 YOS:75% ≤4 YOS:100% Post 2003 employer contributes $19.19/mo per YOS *dollar amount is adjusted 1.5% annually	Active employee contributes 1.00% of salary + retirement system pays $19.48 per/mo per YOS towards retiree premium *dollar amount is adjusted 1.5% annually	Active employee contributes 1.00% of salary + retirement system pays $19.48 per/mo per YOS towards retiree premium *dollar amount is adjusted 1.5% annually
	Retirement Eligibility	Age 65 w/ 4 YOS*	10 YOS	15 YOS	Age 55 w/ 5 YOS*	10 YOS	15 YOS
Assumptions:	**Investment Return**	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%
	Inflation	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%
	Smoothing Period	5-YR	5-YR	5-YR	5-YR	5-YR	5-YR
	Amortization Period	28-YR	28-YR	28-YR	28-YR	28-YR	28-YR
	Amortization Method	Level percent of payroll closed	Level percent of payroll closed	Level percent of payroll closed	Level percent of payroll closed	Level percent of payroll closed	Level percent of payroll closed
Financial:	**Funded Ratio**	69.60%	69.60%	69.60%	72.86%	72.86%	72.86%
	Unfunded Actuarial Liability	$1,044,364,390	$1,044,364,390	$1,044,364,390	$496,216,115	$496,216,115	$496,216,115

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State Police				
		Tier 1 **(prior to 9/1/2008)**	Tier 2 **(9/1/2008-12/31/2013)**	Tier 3 **(post 1/1/2014)**
Plan Design:	**Benefit**	Lifetime	Lifetime	Lifetime
	Structure	DC post 2003	DC	DC
	Coverage	Family	Family	Family
	Employee Contribution	Prior to 7/1/2003 20+ YOS:0% 15-19 YOS:25% 10-14 YOS:50% 4-9 YOS:75% <4 YOS:100%	Active employee contributes 1.00% of salary + retirement system pays $19.48 per/mo per YOS towards retiree premium *dollar amount is adjusted 1.5% annually	Active employee contributes 1.00% of salary + retirement system pays $19.48 per/mo per YOS towards retiree premium *dollar amount is adjusted 1.5% annually
	Retirement Eligibility	Any age w/ 20 YOS Age 55 w/ 5 YOS*	10 YOS	15 YOS
Assumptions:	**Investment Return**	7.75%	7.75%	7.75%
	Inflation	3.50%	3.50%	3.50%
	Smoothing Period	5-YR	5-YR	5-YR
	Amortization Period	28-YR	28-YR	28-YR
	Amortization Method	Level percent of payroll closed	Level percent of payroll closed	Level percent of payroll closed
Financial:	**Funded Ratio**	67.15%	67.15%	67.15%
	Unfunded Actuarial Liability	$95,830,947	$95,830,947	$95,830,947

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Judicial Retirement Plan					
		Tier 1 **(prior to 7/1/1978)**	Tier 2 **(7/1/1978-6/30/1980)**	Tier 3 **(7/1/1980-1/1/2014)**	Tier 4 **(post 1/1/2014)**
Plan Design:	**Benefit**	Lifetime	Lifetime	Lifetime	Lifetime
	Structure	DB	DB	DB	DB
	Coverage	Family	Family	Family	Family
	Employee Contribution	Employee contributes a percentage of premium 20+ YOS:0% 11-19 YOS:50% (-5.00% per additional year above 10 YOS) 10 YOS-10 YOS + 11 mos:50% 4.9 YOS + 11 mos-10 YOS:75%	Employee contributes a percentage of premium 20+ YOS:0% 11-19 YOS:50% (-5.00% per additional year above 10 YOS) 10 YOS-10 YOS + 11 mos:50% 4.9 YOS + 11 mos-10 YOS:75%	Employee contributes a percentage of premium 20+ YOS:0% 11-19 YOS:50% (-5.00% per additional year above 10 YOS) 10 YOS-10 YOS + 11 mos:50% 4.9 YOS + 11 mos-10 YOS:75%	Active employee contributes 1.00% of salary + employee contributes a percentage of premium 20+ YOS:0% 11-19 YOS:50% (-5.00% per additional year above 10 YOS) 10 YOS-10 YOS + 11 mos:50% 4.9 YOS + 11 mos-10 YOS:75%
	Retirement Eligibility	Age 65 w/ 8 YOS*	Age 65 w/ 8 YOS*	Age 65 w/ 8 YOS*	None
Assumptions:	**Investment Return**	6.15%	6.15%	6.15%	6.15%
	Inflation	3.00%	3.00%	3.00%	3.00%
	Smoothing Period	Market Value	Market Value	Market Value	Market Value
	Amortization Period	≥ 30-YR	≥ 30-YR	≥ 30-YR	≥ 30-YR
	Amortization Method	Normal cost plan interest on liability + 1% of liability	Normal cost plan interest on liability + 1% of liability	Normal cost plan interest on liability + 1% of liability	Normal cost plan interest on liability + 1% of liability
Financial:	**Funded Ratio**	104.70%	104.70%	104.70%	104.70%
	Unfunded Actuarial Liability	($3,041,186)	($3,041,186)	($3,041,186)	($3,041,186)

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Legislators' Retirement Plan					
		Tier 1 **(prior to 7/1/1978)**	Tier 2 **(7/1/1978-6/30/1980)**	Tier 3 **(7/1/1980-12/31/2013)**	Tier 4 **(post 1/1/2014)**
Plan Design:	**Benefit**	Lifetime	Lifetime	Lifetime	Lifetime
	Structure	DB	DB	DB	DB
	Coverage	Family	Family	Family	Family
	Employee Contribution	Employee contributes a percentage of premium 20+ YOS:0% 11-19 YOS:50% (-5.00% per additional year above 10 YOS) 10 YOS-10 YOS + 11 mos:50% 4.9 YOS + 11 mos-10 YOS:75%	Employee contributes a percentage of premium 20+ YOS:0% 11-19 YOS:50% (-5.00% per additional year above 10 YOS) 10 YOS-10 YOS + 11 mos:50% 4.9 YOS + 11 mos-10 YOS:75%	Employee contributes a percentage of premium 20+ YOS:0% 11-19 YOS:50% (-5.00% per additional year above 10 YOS) 10 YOS-10 YOS + 11 mos:50% 4.9 YOS + 11 mos-10 YOS:75%	Active employee contributes 1.00% of salary + employee contributes a percentage of premium 20+ YOS:0% 11-19 YOS:50% (-5.00% per additional year above 10 YOS) 10 YOS-10 YOS + 11 mos:50% 4.9 YOS + 11 mos-10 YOS:75%
	Retirement Eligibility	Age 65 w/ 5 YOS (or combo w/ other state service = 8 YOS)*	Age 65 w/ 5 YOS (or combo w/ other state service = 8 YOS)*	Age 65 w/ 5 YOS (or combo w/ other state service = 8 YOS)*	None
Assumptions:	**Investment Return**	6.50%	6.50%	6.50%	6.50%
	Inflation	3.00%	3.00%	3.00%	3.00%
	Smoothing Period	Market Value	Market Value	Market Value	Market Value
	Amortization Period	≥ 30-YR	≥ 30-YR	≥ 30-YR	≥ 30-YR
	Amortization Method	Normal cost plan interest on liability + 1% of liability	Normal cost plan interest on liability + 1% of liability	Normal cost plan interest on liability + 1% of liability	Normal cost plan interest on liability + 1% of liability
Financial:	**Funded Ratio**	127.30%	127.30%	127.30%	127.30%
	Unfunded Actuarial Liability	($7,805,086)	($7,805,086)	($7,805,086)	($7,805,086)

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		Teachers' Retirement	
		Tier 1 **(prior to 7/1/2008)**	Tier 2 **(post 7/1/2008)**
Plan Design:	**Benefit**	Lifetime	Lifetime
	Structure	DB	DB
	Coverage	Spousal	Spousal
	Employee Contribution	Active employee contribution Non-University members:3.75% University members:2.775% of salary + employee contributes a percentage of premium 0-14.99 YOS: 100% 15-19.99 YOS: 55% 20-24.99 YOS: 35% 25-25.99 YOS: 10% 26-26.99 YOS: 5% 27+ YOS: 0% Spousal coverage at full cost	
	Retirement Eligibility	Any age w/ 27 YOS Age 55 w/ 5 YOS	Any age w/ 27 YOS Age 60 w/ 5 YOS Age 55 w/ 10 YOS
Assumptions:	**Investment Return**	7.50%	7.50%
	Inflation	3.50%	3.50%
	Smoothing Period	5-YR	5-YR
	Amortization Period	29.3-YR	29.3-YR
	Amortization Method	Level percent of payroll closed	Level percent of payroll closed
Financial:	**Funded Ratio**	21.90%	21.90%
	Unfunded Actuarial Liability	$2,839,018,000	$2,839,018,000

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Appendix B: Benchmarking Tabular Findings

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Count	State	Social Security	Employee Contribution	Vesting (Years)	AFC Period (Years)	Normal Retirement Eligibility (Age/YOS)	Benefit Formula	COLA
1	**Kentucky (Non-Hazardous)**	**Y**	**5.0%**	**5**	**N/A**	**Age 65 with 5 YOS; Age + YOS ≥ 87**	**Employer Contribution is 4.0% Annual interest rate of 4.0% (If the system's geometric average net investment return for the previous five years exceeds 4.0% then the member's account will be credited with 75% of the amount of return over 4.0%) Accumulated Account Balance divided by Actuarial Factor (determined by age at retirement)**	**No automatic COLA; unless authorized by the General Assembly**
1B	**Kentucky (Hazardous)**	**Y**	**8.0%**	**5**	**N/A**	**Age 60 with 5 YOS; Any age with 25 YOS**	**Employer Contribution is 7.5% Annual interest rate of 4.0% (If the system's geometric average net investment return for the previous five years exceeds 4.0% then the member's account will be credited with 75% of the amount of return over 4.0%) Accumulated Account Balance divided by Actuarial Factor (determined by age at retirement)**	**No automatic COLA; unless authorized by the General Assembly**
2	California	Y	Contributions range from 5.0% to 10.0% (Approximately 65% of employees contribute 8.0%)	5 YRS	3	Age 52 with 5 YOS	2.5% x AFC x YOS (multiplier decreases by 0.1% per year prior to age 67)	Annual adjustments calculated by determining the lesser of 2.0% compounded from end of the year of retirement; or actual rate of inflation If the calculated rate of increase is less than 1.0%, then no COLA is provided (may be greater than 2.0% after several years of low inflation)
3	Colorado	N	8.0%	5	1/12 of Highest 3 YOS	Age 65; Age 58 with 30 YOS; Any age with 35 YOS	2.5% x AFC x YOS	Lesser of 2.0% or increase in CPI-W
4	Florida [1]	Y	3.0%	8	8	Age 65 with 8 YOS; Any age with 33 YOS	Up to age 65 or up to 33 YOS: 1.60% x AFC x YOS Age 66 or with 34 YOS: 1.63% x AFC x YOS Age 67 or with 35 YOS: 1.65% x AFC x YOS Age 68 or with 36+YOS: 1.68% x AFC x YOS	Retirement service earned on or after 7/1/2011 not subject to a COLA
5	Georgia	Y	1.25% into a DB Plan First 1%: 100% match additional 4% up to 50% match into a 401K plan	DB: 10 DC: 5	2	Age 60 with 10 YOS; Any age 30 YOS	DB: 1.0% x AFC x YOS 401K: Employer contribution of 100% on first 1.0% plus for each additional 1.0% contributed by member the Employer with match 50% up to 4.0% (total additional match up to 2.0%)	N/A
6	Illinois	N	4.0%	10	8	Age 67 with 10 YOS	1.67% x AFC x YOS	Lesser of 50% of increase in CPI or 3.0%

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Count	State	Social Security	Employee Contribution	Vesting (Years)	AFC Period (Years)	Normal Retirement Eligibility (Age/YOS)	Benefit Formula	COLA
7	Indiana [2]	Y	ASA: 3.0% mandatory (3.0% is picked up by employer) Hybrid: 0% for DB side 3% mandatory to an annuity savings acct (paid either by employee, employer, or both) Both options employee may elect to make additional contributions)	ASA: 5 Hybrid:10	ASA: N/A Hybrid:5	ASA: Automatic eligibility for withdrawal once separated from service (certain restrictions may apply if vested in pension) Hybrid: Age 65 with 10 YOS; 60 with 15 YOS; Age 55 + YOS ≥ 85	ASA: Employer picks up the employee mandatory 3.0% contribution Members direct their investments in a combination of any 8 funds The default investment fund is the target date fund based on a member's estimated retirement date Hybrid:1.1% x AFC x YOS	ASA: N/A Hybrid: Ad hoc basis
8	Iowa [3]	Y	5.95%	7	5	Age 62 with 20; Age 65 with any; Age + YOS ≥ 88	2.0% x AFC x YOS (1-30) + 1.0% x AFC x YOS (31-35)	No COLA; but Favorable Experience Dividend (FED) can be granted based on status of FED reserve account
9	Massachusetts	N	9% + 2% (on earnings above $30,000)	10	5	Age 60 with 10 YOS	2.5% (at age 67) x AFC x YOS multiplier decreases by 0.15 for each year member is below age 67	Subject to legislative approval; increase in CPI, up to 3.0%
10	Michigan [4]	Y	Automatically enrolled at hire into a 401(k) with a 5% contribution; Employee may elect to make additional contributions	4	N/A	Withdrawals prior to age 59.5 subject to a 10% penalty	Employer contribution is 4.0% plus match up to 5.0% (First 3.0% match are identified as retirement savings; Next 2.0% are directed to a Personal Healthcare Fund)	N/A
11	Missouri	Y	4.0%	10	3	Age 67 with 10; Age 55 + YOS ≥ 90	1.7% x AFC x YOS	80% of the increase in CPI; 5.0% maximum
12	New York	Y	Based on salary: 3.0%: ≤$45,000 3.5%: $45,000-$55,000 4.5%: $55,000-$75,000 5.75%: $75,000-$100,000 6.0%: ≥$100,000	10	5	Age 63 with 20 YOS	1.75% x AFC x YOS (1-20) + 2.0% x AFC x YOS (21+)	50% of increase in CPI; 1.0% minimum; 3.0% maximum; Adjustment is limited to first $18,000 of annuity
13	North Carolina	Y	6.0%	5	4	Age 60 with 25 YOS; Age 65 with 5 YOS; Any age with 30 YOS	1.82% x AFC x YOS	Subject to legislative approval
14	Ohio [5]	N	10.0%	5	5	Age 67 with 5 YOS; Age 55 with 32 YOS	2.2% x AFC x YOS (1-35) + 2.5% x AFC YOS (36+)	Increase in CPI; 3.0%
15	Pennsylvania [6]	Y	6.25% (Plus a shared risk contribution not to exceed an additional 2%)	10	3	Age 65 with 3 YOS; Age + YOS ≥ 92 (min 35 YOS)	2.0% x AFC x YOS x 1.0%	No automatic COLA; General Assembly or Governor can grant a COLA
16	South Carolina	Y	8.66%	8	5	Age 65 with 8 YOS; Age + YOS ≥ 90	1.82% x AFC x YOS	1.0%; $500 maximum

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Count	State	Social Security	Employee Contribution	Vesting (Years)	AFC Period (Years)	Normal Retirement Eligibility (Age/YOS)	Benefit Formula	COLA
17	Tennessee	Y	5.0% into a DB Plan 2.0% into a DC Plan (Automatic enrollment to DC Plan with opt-out feature)	5	5	Age 65 with 5 YOS; Age + YOS ≥ 90	DB:1.0% x AFC x YOS DC: Employer contribution is 5.0% into a 401K	Increase in CPI is: 0.5% - 1.0%: 1.0% 1.0%+: equal to increase in CPI, not to exceed 3.0%
18	Texas [6]	Y	9.5%	10	3	Age 65 with 10; Age + YOS ≥ 80 (min of 10 YOS)	2.3% x AFC x YOS	Any COLAs must be approved by State Legislature
19	Virginia	Y	4% into a DB Plan 1% into a DC Plan	DB: 5 DC: 4	5	Age 67 with 5 YOS; Age + YOS ≥ 90	DB: 1.0 x AFC x YOS DC: Employer contribution is 1.0% plus 100% match on the first 1.0%; 83% on 1.5%; 75% on 2.0%; 70% on 2.5%; 66% on 3.0%; 64% on 3.5%; and 62.5% on 4.0%	First 2.0% increase in CPI-U + 50% of any additional increase; 3.0% maximum
20	West Virginia	Y	4.5%	5	5	Age 62 with 10 YOS; Age 55 ≥ 80 YOS	2.0% x AFC x YOS	None
21	Wisconsin	Y	6.6%	5	3	Age 65: Age 57 with 30 YOS	1.6% x AFC x YOS	Ad hoc basis: annual annuity increases and decreases dependent on trust fund investment performance and current and future projected funding needs

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Count	State	Social Security	Employee Contribution	Percentage of Local and State Contribution	Vesting (Years)	AFC Period (Years)	Normal Retirement Eligibility (Age/YOS)	Benefit Formula	COLA
1	**Kentucky**	**N - Non-University members Y - University members**	**Non-University members: 9.105% University members: 7.625%**	**State: 100%**	**5**	**5 YRS; Age 55 with 27 YOS: 3 YRS**	**Any age with 27 YOS; Age 60 with 5 YOS; or Age 55 with 10 YOS**	**Non-University members ≤ 10 YOS: 1.70% 10-20 YOS: 2.00% 20-26 YOS: 2.30% 26-30 YOS: 2.50% 30 YOS: 3.00% University members ≤ 10 YOS: 1.50% 10-20 YOS: 1.70% 20-27 YOS: 1.85% ≥ 27 YOS: 2.00%**	**1.5% annually, additional ad hoc increases must be authorized by the General Assembly**
2	California [1]	N	2.0% at age 60: 10.25% 2.0% at age 62: 9.205%*	State: 38.7% Local: 58.8%	5	< 25 YOS: 3 YRS ≥ 25 YOS: 1 YR	2.0% at age 60: Age 50 with 30 YOS; 2.0% at age 62: Age 55 with 5 YOS	2.0% at age 60 2.0% at age 62	2.0%
3	Colorado [2]	N	8.0%	State: 0% Local: 100%	5	1/12 of Highest 3 YOS	Any age with 35 YOS; Age 58 + YOS ≥ 88; Age 65 with 5 YOS; or Age 65 with less than 5 YOS but 60 payroll postings	Greater of 2.5% x AFC x YOS (up to 40 years) or the money purchase benefit, which is actuarially determined based on the value of the member's account on the date of retirement	Lesser of increase in CPI-W or 2.0%
4	Florida	Y	3.0%	Local: 100%	8	8	Age 65 with 8 YOS; Age after 65 that member becomes vested; or Any age with 30 YOS	Up to age 65 or up to 33 YOS: 1.60% x AFC x YOS Age 66 or with 34 YOS: 1.63% x AFC x YOS Age 67 or with 35 YOS: 1.65% x AFC x YOS Age 68 or with 36+YOS: 1.68% x AFC x YOS	Retirement service earned on or after 7/1/2011 not subject to a COLA
5	Georgia [3]	Y	6.0%	State: 0% Local: 100%	10	2	Any age with 30 YOS or Age 60 with 10 YOS	2.0% x AFC x YOS (up to 40 years)	Granted on an ad hoc basis If current average CPI is greater or equal to CPI at time of retirement: 1.5% If current average CPI is than the CPI at time of retirement: no COLA
6	Illinois [4]	N	9.0%	State: 96.4% Local: 3.6%	5	8	Age 67 with 10 YOS	2.2% x AFC x YOS	Lesser of 50% of CPI or 3.0%
7	Indiana [5]	Y	ASA: 3.0% mandatory (3.0% is picked up by employer) Hybrid: 0% for DB side 3% mandatory to an annuity savings acct (paid either by employee, employer, or both) Both options employee may elect to make additional contributions)	State: 0.40% Local: 99.6%	ASA: 5 Hybrid:10	ASA: N/A Hybrid:5	ASA: Automatic eligibility for withdrawal once separated from service (certain restrictions may apply if vested in pension) Hybrid: Age 65 with 10 YOS; 60 with 15 YOS; Age 55 + YOS ≥ 85	ASA: Employer picks up the employee mandatory 3.0% contribution Members direct their investments in a combination of any 8 funds The default investment fund is the target date fund based on a member's estimated retirement date Hybrid:1.1% x AFC x YOS	ASA: N/A Hybrid: Ad hoc basis

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Count	State	Social Security	Employee Contribution	Percentage of Local and State Contribution	Vesting (Years)	AFC Period (Years)	Normal Retirement Eligibility (Age/YOS)	Benefit Formula	COLA
8	Iowa [6]	Y	5.95%	State: 0% Local: 100%	7	Highest 3 YRS as of 7/1/2012, or Highest 5 YRS over entire career	Age 65; Age 62 with 20 YOS; or Age + YOS ≥ 88	2.0% x YOS up to 30 years + additional 1% per YOS 31-35	No COLA; but Favorable Experience Dividend (FED) can be granted based on status of FED reserve account
9	Massachusetts [7]	N	11.0%	State: 100% Local: 0%	10	5	Age 60 with 10 YOS; Retirement Plus: Age 60 with 30 YOS (20 with MTRS)	Ranges from 1.45% to 2.5% based on age and YOS	Subject to legislative approval; increase in CPI, up to 3.0%
10	Michigan [8]	Y	Varies by earnings: $0 - $5,000: 3.0% $5,000.01 - $15,000: 3.6% $15,000.01 and up: 6.4%	State: 0% Local: 100%	10	5	Age 60 with 10 YOS	1.5% x AFC x YOS	3% annual non-compounded with max. annual increase $300
11	Missouri [9]	N	14.5%	State 0% Local: 100%	5	3	Age 60 with 5 YOS; Any age with 30 YOS; or Age + YOS ≥ 80	2.5% x AFC x YOS	Increase in CPI-U is between 0-5%: 2.0% Increase in CPI-U is 5% or more: 5.0% No increase in CPI-U: No COLA
12	New York [10]	Y	Based on salary ≤$45,000: 3.0% $45,000-$55,000: 3.5% $55,000-$75,000: 4.5% $75,000-$100,000: 5.75% ≥$100,000: 6.0%	State: 0% Local: 100%	10	5	Age 63 with 20 YOS	1.75% x YOS (1-20) + 2.0% x YOS (>20)	50% of CPI; 1.0% minimum; 3.0% maximum; Adjustment is limited to first $18,000 of employee's allowance
13	North Carolina	Y	6.0%	State 0% Local: 100%	5	4	Age 60 with 25 YOS, Age 65 with 5 YOS, or Any age with 30 YOS	1.82% x AFC x YOS	Subject to legislative approval
14	Ohio [11]	N	14% DB	State: 0% Local: 100%	5	5	Any age with 30 YOS; or Age 65 with 5 YOS	2.2% x AFC x 30 YOS	2.0%
15	Pennsylvania	Y	T-E: 7.5% (with shared risk of 9.5%) T-F: 10.30% (with shared risk 12.3%)	State: 50% Local: 50%	10 or Age 65 with ≥ 3 YOS	3	Age 65 with 3 YOS; or Age + 35 YOS ≥ 92	T-E: 2.0% x AFC x YOS T-F: 2.5% x AFX x YOS	No automatic COLA; General Assembly or Governor can grant a COLA
16	South Carolina	Y	8.66%	State: 100% Local: 0%	8	5	Age 65 with 8 YOS; or Age + YOS ≥ 90	1.82% x AFC x YOS	1.0%; $500 maximum
17	Tennessee	Y	5% into a DB Plan 2% into a DC Plan (Automatic enrollment to DC Plan with opt-out feature and may elect to adjust contributions)	State: 0% Local: 100%	5	5	Age 65 with 5 YOS; Age + YOS ≥ 90	DB:1.0% x AFC x YOS DC: Employer contribution is 5.0% into a 401K	Increase in CPI is: 0.5% - 1.0%: 1.0% 1.0%+: equal to increase in CPI, not to exceed 3.0%
18	Texas	N	7.7%	State: 50% Local: 50%	5	3	Age 65 with 5 YOS; Age 62 + ≥ 80 YOS (with minimum of 5 YOS)	2.3% x AFC x YOS	Any COLAs must be approved by State Legislature
19	Virginia	Y	4% into a DB Plan 1% into a DC Plan	State 0% Local: 100%	DB: 5 DC: 4	5	Age 67 with 5 YOS; Age + YOS ≥ 90	DB: 1.0 x AFC x YOS DC: Employer contribution is 1.0% plus 100% match on the first 1.0%; 83% on 1.5%; 75% on 2.0%; 70% on 2.5%; 66% on 3.0%; 64% on 3.5%; and 62.5% on 4.0%	First 2% increase in CPI-U + 50% of any additional increase; 3.0% maximum

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Count	State	Social Security	Employee Contribution	Percentage of Local and State Contribution	Vesting (Years)	AFC Period (Years)	Normal Retirement Eligibility (Age/YOS)	Benefit Formula	COLA
20	West Virginia	Y	6.0%	State: 100% Local: 0%	10	5	Age 62 with 10 YOS	2.0% x AFC x YOS	None
21	Wisconsin	Y	6.6%	State: 0% Local: 100%	5	3	Age 65 with 5 YOS; or Age 57 with 30 YOS	1.6% x AFC x YOS	Plan does not provide a COLA; however, annual annuity increases and decreases dependent on trust fund investment performance and current and future projected funding needs 2016: 0.5% increase

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	State	Social Security	Employee Contribution	Vesting (Years)	AFC Period (Years)	Normal Retirement Eligibility (Age/YOS)	Benefit Formula	COLA
1	**Kentucky**	**Y**	**8%**	**5**	**N/A**	**Any age with 25 YOS; Age 60 w 5 YOS**	**Employer Contribution is 7.5% Annual interest rate of 4.0% (If the system's geometric average net investment return for the previous five years exceeds 4.0% then the member's account will be credited with 75% of the amount of return over 4.0%) Accumulated Account Balance divided by Actuarial Factor (determined by age at retirement)**	**Authorized by Legislature**
2	California	N	11.5%	5	3	Age 50 with 5 YOS	Age 50-56: 2.0% x YOS X AFC increasing 0.1% for each year max 2.7% x YOS x FAS at 57	Increase in CPI; 2% max
3	Colorado	N	10.0%	5	1/12 of Highest 3 YOS	Age 65 with 5 YOS; Age 55 with 20 YOS; Any age with 30 YOS	2.5% x AFC x YOS	Lesser of CPI-W or 2.0%
4	Florida	Y	3.0%	8	Highest 8	Age 60 with 8 YOS; Any age with 30 YOS	3.0% x AFC x YOS	Retirement service earned on or after 7/1/2011 not subject to a COLA
5	Georgia	Y	1.25% into a DB Plan First 1%: 100% match additional 4% up to 50% match into a 401K plan	DB: 10 DC: 5	2	Age 60 with 10 YOS; Any age 30 YOS	DB: 1.0% x AFC x YOS 401K: Employer contribution of 100% on first 1.0% plus for each additional 1.0% contributed by member the Employer with match 50% up to 4.0% (total additional match up to 2.0%)	N/A
6	Illinois	N	12.5%	10	8 (capped at $106,800)	Age 60 with 20 YOS	3.0% x AFC x YOS	Lesser of 50% of CPI or 3.0%
7	Indiana	N	6.0%	20	1	Age 52 with 20 YOS	50% of base salary + 1% for each 6 mos. from 20-32 YOS	Increase in CPI; 3% max
8	Iowa	N	11.4%	4	3	Age 55 with 22 YOS	60.5% x AFC + 2.75% x AFC x YOS (23-33 YOS)	N/A
9	Massachusetts	N	12% (+2% on earning of $30,000)	10	5	Any age with 20 YOS	50% x AFC + 2.5% x AFC x YOS (21+) (maximum of 75%)	Subject to legislative approval; 3% max
10	Michigan	N	4% pension component 4% optional savings component (First 2% to health benefits and employer match; max 2%)	10 Pension Component 4 Savings Component	2	Any age with 25 YOS; Age 50 with 10 YOS;	60% x AFC (25+ YOS); 2% x AFC x YOS (≤ 25 YOS)	2.0% with maximum annual increase of $500
11	Missouri	Y	4.0%	10	3	Age 55 with 10 YOS	1.7% + 0.8% until age 62	80% of increase in CPI-U; 5% maximum
12	New York	Y	Based on salary 3%:≤$45,000 3.5%:$45,000-$55,000 4.5%:$55,000-$75,000 5.75%:$75,000-$100,000 6%:≥$100,000	10	5	Any age with 20 YOS	50% x AFC + 1.66% x AFC x YOS (21+ YOS) (maximum of 70%)	50% of CPI; 1.0% minimum; 3.0% maximum; Adjustment is limited to first $18,000 of employee's allowance
13	North Carolina	Y	6.0%	5	4	Age 55 with 5 YOS; Any age with 30 YOS	1.82% x AFC x YOS	Ad hoc basis; dependent on availability of funds and CPI

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	State	Social Security	Employee Contribution	Vesting (Years)	AFC Period (Years)	Normal Retirement Eligibility (Age/YOS)	Benefit Formula	COLA
14	Ohio	N	12.5%	20	5	Age 52 with 20 YOS; Age 48 with 25 YOS	2.5% x AFC x YOS (1-20 YOS) +2.2.5% per year from 20-25, + 2.0% per year 25+ maximum 79.25% AFC at 34+ YOS	1.25%Set annually by the board
15	Pennsylvania	N	6.25% (Plus a shared risk contribution not to exceed an additional 2%) May elect higher contribution rate for 2.5% benefit multiplier Rate: 9.3%	10	3	Any age with 20 YOS	2.0% x AFC x YOS (less than 20 YOS), 50% of AFC (20-25 YOS), or 75% of AFC (25+ YOS) 9.3% contribution rate: 2.5% x AFC x YOS	Ad hoc basis
16	South Carolina	Y	9.24%	8	5	Age 55 with 8 YOS; Any age with 27 YOS	2.14%	1.0%; $500 maximum
17	Tennessee	Y	5% into a DB Plan 2% into a DC Plan (Automatic enrollment to DC Plan with opt-out feature and may elect to adjust contributions)	5	5	Age 60 with 5 YOS; Any age with 30 YOS	DB: 1.0% x AFC x YOS +0.75% up to SS age DC: Employer contribution is 5.0% into a 401K	Increase in CPI; 3.0% maximum
18	Texas	Y	9.5% +0.5% to the Law Enforcement Custodial Supplemental Retirement Fund	10	3 Supplemental Benefit: 5	Any age 20 YOS	2.8% x AFC x YOS Supplemental benefit: 0.5% x AFC x YOS	Ad hoc basis
19	Virginia	Y	5.0%	5	5	50/25; 60/5	1.85% x YOS + Hazardous Duty Supplement until Social Security Age	First 2% increase in CPI-U + 50% of any additional increase; 3.0% maximum
20	West Virginia	N	12.0%	10	5	Age 50 with 25 YOS; Age 52 with 20 YOS;	2.75% x AFC x YOS	1.0%
21	Wisconsin	Y	6.6%	5	3	Age 53 w 25 YOS; Age 54	2.0% x AFC x YOS	Plan does not provide COLA; however, annual annuity increases and decreases dependent on trust fund investment performance and current and future projected funding needs 2016: 0.5% increase

State Police

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	State	Social Security	Employee Contribution	Vesting (Years)	AFC Period (Years)	Normal Retirement Eligibility (Age/YOS)	Benefit Formula	COLA
1	**Kentucky**	**Y**	**5.0%**	**5**	**N/A**	**Age 65 with 5 YOS; Age 57 + YOS ≥ 87**	**Employer Contribution is 4.0% Accumulated Account Balance divided by Actuarial Factor (determined by age at retirement)**	**No automatic COLA; requires Hybrid Cash Balance Plan at 100% funding and authorization by the legislature**
2	California	N	8.0%	5	Final judicial salary	Age 65 with 20 YOS; Age 70 with 5 YOS	3.75% x AFC x YOS	CPI; 3% Maximum
3	Colorado	N	8.0%	5	1/12 of Final judicial salary	Age 65; Age 58 with 30 YOS; Any age with 35 YOS	2.5% x AFC x YOS	2.0% (positive investment year) Lesser of 2.0% or CPI-W (negative investment year)
4	Florida **[1]**	Y	3.0%	8	Highest 8	Age 65 with 8 YOS; Any age with 33 YOS	3.33% x AFC x YOS	Retirement service earned on or after 7/1/2011 not subject to a COLA
5	Georgia **[2]**	Y	7.5%	10	Final judicial salary or 2 years (dependent on position)	Age 60 with 16 YOS	66.67% x AFC + 1.0 x AFC x YOS (above 16 & below 24)	Ad hoc basis
6	Illinois	N	11.0% May elect to not participate in the Survivor's Annuity Benefit: 8.5%	8	8	Age 67 with 8 YOS	3.0% x AFC x YOS	Lesser of 3.0% or CPI-U
7	Indiana	Y	6% (max at 22 YOS)	8	Final judicial salary	Age 65 with 8 YOS; Age 55 + YOS ≥ 85	<12 YOS: 3.0% x AFC x YOS 12 YOS+: 50% x AFC + 1.0% x AFC x YOS	Tied to judicial salary increases
8	Iowa **[3]**	Y	9.35%	4	3	Age 50 with 20 YOS; Age 65 with 4 YOS	3.25% x AFC x YOS	Cost of living dividend; max 3%
9	Massachusetts **[4]**	N	Based on salary: 8.0%: ≤ 30,000 9.0%: $30,000-$45,000 10%: $45,000+	10	Final judicial salary	Age 65 with 15 YOS; Age 70 with 10 YOS	5% x AFC x YOS	Subject to legislative approval; 3% max
10	Michigan **[5]**	Y	No mandatory contribution Employer match 100% up to 3%	4	N/A	Withdrawals prior to age 59.5 subject to a 10% penalty	N/A	N/A
11	Missouri	Y	4.0%	Immediate	Final judicial salary	Age 62 with 20 YOS; 67 with 12 YOS	50% x AFC	80% of CPI; 5% maximum
12	New York	Y	Based on salary: 3.0%: ≤$45,000 3.5%: $45,000-$55,000 4.5%: $55,000-$75,000 5.75%: $75,000-$100,000 6.0%: ≥$100,000	10	5	Age 63 with 20 YOS	1.75% x AFC x YOS (1-20) + 2.0% x AFC x YOS (21+)	50% of increase in CPI; 1.0% minimum; 3.0% maximum; Adjustment is limited to first $18,000 of annuity
13	North Carolina	Y	6.0%	5	10	Age 65 with 5 YOS; Age 50 with 24 YOS	Multiplier ranges from 3.02% to 4.02% x AFC x YOS (based on judicial service level)	No automatic COLA; dependent on CPI and availability of funds
14	Ohio	N	10.0%	5	5	Age 67 with 5 YOS; Age 55 with 32 YOS	2.2% x AFC x YOS (1-35) + 2.5% x AFC YOS (36+)	Increase in CPI; 3% maximum

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15	Pennsylvania	Y	Judges: 10% for 10 YOS, 7.5% 11+ YOS Magisterial Judge: 7.5%	5	3	Age 60 with 3 YOS; Any age with 35 YOS	2.0% x AFC x YOS (1-10) x 2.0 + 1.5% x AFC x YOS (11+) x 2.0	No automatic COLA; General Assembly or Governor can grant a COLA
16	South Carolina	Y	10.0%	10	Final judicial salary	Age 70 with 15 YOS; Age 65 with 20 YOS; any age with 25 YOS	71.3% x AFC + 2.67% x AFC YOS (26+)	Tied to judicial salary increases
17	Tennessee	Y	5% into a DB Plan 2% into a DC Plan (Automatic enrollment to DC Plan with opt-out feature)	DB: 8 DC: Immediate	5	Age 60 with 8 YOS; Age 55 with 24 YOS	DB: 1.6% x AFC x YOS DC: Employer contribution is 5.0%	CPI < 1%: 0.5% CPI ≥ 1%: full increase in CPI; 3.0% Maximum
18	Texas	Y	7.2%	12	Final judicial salary	Age + 12+YOS > 70; Any age with 20 YOS; Age 60 with 10 YOS Age 65 with 12 YOS	50% of AFC Judges who make contribution after 20 YOS or Rule of 70 with 12 YOS receive additional 2.3% x AFC x YOS (max 90%)	No automatic COLA: determined by legislature
19	Virginia	Y	4% into a DB Plan 1% into a DC Plan	DB: 5 DC: 4	5	Age 65 with 5 YOS; Age 60 with 30 YOS	DB: 1.0 x AFC x YOS DC: Employer contribution is 1.0% plus 100% match on the first 1.0%; 83% on 1.5%; 75% on 2.0%; 70% on 2.5%; 66% on 3.0%; 64% on 3.5%; and 62.5% on 4.0%	Increase in the CPI-U (max of 2%) + 1/2 of any additional (max of 1%); maximum 3%
20	West Virginia	Y	7.0%	14	3	Age 65 with 16 YOS; Any age with 24 YOS	75% x AFC	Judges hired to prior to July 1, 2005: Tied to judicial salary increases Judges hired post July 1, 2005: None
21	Wisconsin	Y	6.6%	5	3	Age 62 with 5 YOS	1.6% x AFC x YOS	By design does not provide COLA; however, annual annuity increases and decreases dependent on trust fund investment performance and current and future projected funding needs

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	State	Active Employee Contribution toward OPEB	Retiree Premium Co-Share, Under 65	Retiree Premium Co-Share, 65 and Over	Employer Contribution, Under 65	Employer Contribution, 65 and Over
	Kentucky (Non-Hazardous)	**1.0%**	**Retiree receives subsidy towards premium**	**Retiree receives subsidy towards premium**	**Non-Hazardous Employees: Retirement System pays $12.99 per/mo. per YOS (dollar amount is adjusted 1.5% annually)**	**Non-Hazardous Employees: Retirement System pays $12.99 per/mo. per YOS (dollar amount is adjusted 1.5% annually)**
1	**Kentucky (Hazardous)**	**1.0%**	**Retiree receives subsidy towards premium**	**Retiree receives subsidy towards premium**	**Hazardous Employees: Retirement System pays $19.48 per/mo. per YOS (dollar amount is adjusted 1.5% annually)**	**Hazardous Employees: Retirement System pays $19.48 per/mo. per YOS (dollar amount is adjusted 1.5% annually)**
2	California	N/A Health insurance plan is funded on a "pay-as-you-go" basis BU 12 and BU 16 employees and employers contribute 0.5%	With maximum subsidy; ^0% of health insurance premium cost 10% of premium cost for family members	With maximum subsidy; ^0% of health insurance premium cost 10% of premium cost for family members	Subsidy depends on BU and YOS < 10 YOS or <15 YOS: 0% 20+ YOS or 25+ YOS: 100%	Subsidy depends on BU and YOS < 10 YOS or <15 YOS: 0% 20+ YOS or 25+ YOS: 100%
3	Colorado	No evidence found	Health care subsidy to offset premium based on YOS Maximum subsidy for retiree under age 65 for 2015 is $230 per month with a 5% reduction for each year less than 20 YOS	Health care subsidy to offset premium based on YOS Maximum subsidy for retiree above age 65 for 2015 is $115 per month with a 5% reduction for each year less than 20 YOS	1.02% of payroll Maximum subsidy for retiree under age 65 for 2015 is $230 per month with a 5% reduction for each year less than 20 YOS	1.02% of payroll Maximum subsidy for retiree above age 65 for 2015 is $115 per month with a 5% reduction for each year less than 20 YOS
4	Florida	N/A	100% of premium (minus subsidy)	100% of premium (minus subsidy)	1.26% Health Insurance Subsidy Contribution Rate The Retiree Health Insurance Subsidy Program gives retirees and beneficiaries a monthly payment equal to YOS x $5, ranging from $30 to $150 per/mo.	1.26% Health Insurance Subsidy Contribution Rate The Retiree Health Insurance Subsidy Program gives retirees and beneficiaries a monthly payment equal to YOS x $5, ranging from $30 to $150 per/mo.

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	State	Active Employee Contribution toward OPEB	Retiree Premium Co-Share, Under 65	Retiree Premium Co-Share, 65 and Over	Employer Contribution, Under 65	Employer Contribution, 65 and Over
5	Georgia	N/A Health insurance plan is funded on a "pay-as-you-go" basis	Retirees and Spouses will pay a portion of the premium based on the retirees' service at retirement, ranging from 25% to 100% for single coverage and 45% to 100% for spousal coverage	Retirees and Spouses will pay a portion of the premiums based on the retirees' service at retirement, ranging from 25% to 100% for single coverage and 45% to 100% for spousal coverage; no subsidy is available to Medicare eligible members not enrolled in a Medicare Advantage Option	Premium subsidy for single coverage that ranges based on YOS ≤ 10 YOS: 0%; 30+ YOS: 75% Subsidy for eligible dependents ranges from 0% to 55%	No subsidy is available to Medicare eligible members not enrolled in a Medicare Advantage Option Premium subsidy for single coverage that ranges based on YOS < 10 YOS: 0%; 30+ YOS: 75% Subsidy for eligible dependents ranges from 0% to 55%
6	Illinois	N/A Health insurance plan is funded on a "pay-as-you-go" basis	5.0% of the premium for each YOS < 20 YRS Retiree receiving benefits from state retirement system who are not eligible for Medicare may waive healthcare coverage and receive a monthly financial incentive equal to $500 per/mo. (20+ YOS) and $150 per/mo. (< 20 YOS)	5.0% of the premium for each YOS < 20 YRS	The State Employees Insurance Act of 1971 (SEIA) requires the State to contribute towards retiree's coverage an amount equal to 5% of the cost for each YOS; maximum benefit of 100% for 20+ YOS	The State Employees Insurance Act of 1971 (SEIA) requires the State to contribute towards retiree's coverage an amount equal to 5% of the cost for each YOS; maximum benefit of 100% for 20+ YOS
7	Indiana	N/A Health insurance plan is funded on a "pay-as-you-go" basis	Retiree pays 100% premium	Retiree pays 100% premium	Within 60 days of retirement a one time bonus contribution will be credited to retiree's account $1,000 x YOS (For retirees after 6/30/2007, but before 7/1/2017)	Within 60 days of retirement a one time bonus contribution will be credited to retiree's account $1,000 x YOS (For retirees after 6/30/2007, but before 7/1/2017)
8	Iowa	N/A Health insurance plan is funded on a "pay-as-you-go" basis	100% of premium	100% of premium	N/A	N/A
9	Massachusetts	N/A Health insurance previously funded on a "pay-as-you-go" basis but currently being funded by a Master Settlement Agreement with tobacco companies to fund its OPEB liability over the next ten years	20% of monthly premium New retirees may contribute 25% after 2016 if approved by legislature	20% of monthly premium New retirees may contribute 25% after 2016 if approved by legislature	80%	80% A small subset of retirees who are age 65+ who are not eligible for Medicare because the Commonwealth does not participate in SS, the retired employee are enrolled in the same health plan available to active employees under age 65
10	Michigan [3]	For employees hired on or after 1/1/2012: Voluntary contribution to the Personal Health Care Fund with an employer match of 2%	N/A	N/A	N/A	N/A

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	State	Active Employee Contribution toward OPEB	Retiree Premium Co-Share, Under 65	Retiree Premium Co-Share, 65 and Over	Employer Contribution, Under 65	Employer Contribution, 65 and Over
11	Missouri	N/A Health insurance plan is funded on a "pay-as-you-go" basis	Employer subsidy is based on YOS Minimum retiree contribution 35%	Employer subsidy is based on YOS Minimum retiree contribution 35%	2.5% x YOS (max 65%)	2.5% x YOS (max 65%)
12	New York	N/A Health insurance plan is funded on a "pay-as-you-go" basis	Grade 9 and below: 12% of retiree premium 27% of dependent coverage Grade 10 and above: 16% of retiree premium 31% of dependent coverage	Grade 9 and below: 12% of retiree premium 27% of dependent coverage Grade 10 and above: 16% of retiree premium 31% of dependent coverage	Grade 9 and below: 12% of retiree premium 27% of dependent coverage Grade 10 and above: 16% of retiree premium 31% of dependent coverage	State reimburses 100% of the Medicare Part B premium Grade 9 and below: 12% of retiree premium 27% of dependent coverage Grade 10 and above: 16% of retiree premium 31% of dependent coverage
13	North Carolina	Active members do not make contributions to OPEB	Contributions defined as a percentage of total premium costs based on YOS 5 to 9.99 YOS: 100% 10 to 19.99 YOS: 50% 20+ YOS: 0%	Medicare retirees have the option of 1 of 4 fully insured Medicare Advantage/Prescription Drug Plan options or the self-funded Traditional 70/30 PPO plan offered to non-Medicare members If the Traditional 70/30 Plan selected, the self-funded State Health Plan coverage is secondary to Medicare Contributions defined as a percentage of total premium costs based on YOS 5 to 9.99 YOS: 100% 10 to 19.99 YOS: 50% 20+ YOS: 0%	Contributions defined as a percentage of total premium costs based on YOS 5 to 9.99 YOS: 0% 10 to 19.99 YOS: 50% 20+ YOS: 100%	Contributions defined as a percentage of total premium costs based on YOS 5 to 9.99 YOS: 0% 10 to 19.99 YOS: 50% 20+ YOS: 100%
14	Ohio [4]	Active members do not make contributions to OPEB	Retiree pays 100% premium minus subsidy	Retiree pays 100% premium minus subsidy	Employer provides a monthly allowance for retiree and spouse to purchase coverage; spousal allowance will be eliminated in 2018	Employer provides a monthly allowance for retiree and spouse to purchase coverage; spousal allowance will be eliminated in 2018
15	Pennsylvania	N/A Health insurance plan is funded on a "pay-as-you-go" basis Monthly premium for active employees is $3.22 per/mo.	Non-Medicare eligible retirees contribute 3% of Average Final Compensation	Medicare eligible retirees contribution 1.5% of Average Final Compensation	Approximately $334 for each current active eligible employee per bi-weekly pay period to the fund (rates for FY2015)	Approximately $334 for each current active eligible employee per bi-weekly pay period to the fund (rates for FY2015)

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	State	Active Employee Contribution toward OPEB	Retiree Premium Co-Share, Under 65	Retiree Premium Co-Share, 65 and Over	Employer Contribution, Under 65	Employer Contribution, 65 and Over
16	South Carolina	pay-as-you-go" basis Monthly premium for active employees is $3.22 per/mo.	New hires on or after 5/2/2008 who retire are eligible for 100% employer subsidy with 25+ YOS, 50% with 15-24 YOS, and 0% with <15 YOS	New hires on or after 5/2/2008 who retire are eligible for 100% employer subsidy with 25+ YOS, 50% with 15-24 YOS, and 0% with <15 YOS	New hires after 5/2/2008 retirees are eligible for 100% employer funding with 25+ YOS and 50% with 15-24 YOS	New hires after 5/2/2008 retirees are eligible for 100% employer funding with 25+ YOS and 50% with 15-24 YOS
17	Tennessee [1]	N/A Health insurance plan is funded on a "pay-as-you-go" basis	Current Retirees: same base premium as active employees with an adjustment for YOS 30+ YOS: 20% of premium ≥ 20 but ≤ 30 YOS: 30% of premium ≤ 20 YOS: 40% of premium Employees hired on or after 7/1/2015 will not be eligible to receive retiree health insurance coverage	Current Retirees: Flat rate premium subsidized by YOS retiree premiums after subsidies 30+ YOS: $88.47 per/mo. ≥ 20 but ≤ 30 YOS: $100.97 per mo. ≥ 15 but ≤ 20 YOS: $113.47per/mo. Non-subsidized retirees and dependents pay $138.47 per/mo. Employees hired on or after 7/1/2015 will not be eligible to receive retiree health insurance coverage	Retirees under 65 pay the same base premium as active employees with an adjustment for YOS 30+ YOS: 80% subsidized ≥ 20 but ≤ 30 YOS: 70% subsidized ≤ 20 YOS: 60% subsidized	Flat rate premium subsidized by YOS 30+ YOS: $50.00 per/mo. ≥ 20 but ≤ 30 YOS: $37.50 per mo. ≥ 15 but ≤ 20 YOS: $25.00 per/mo.
18	Texas	N/A Health insurance plan is funded on a "pay-as-you-go" basis	0% of retiree health insurance premiums; 50% of dependents' premiums: Retiree contributes any premium over and above state contribution	0% of retiree health insurance premiums; 50% of dependents' premiums: Retiree contributes any premium over and above state contribution	100% of retiree health premiums 50% of dependents' premiums	100% of retiree health premiums 50% of dependents' premiums
19	Virginia	N/A	Retirees pay 100% of premium w/ 15 YOS premium is offset by the retiree health credit program (credit only applies to single coverage)	At age 65 required to enroll in Medicare Advantage 65 Plan to supplement Medicare monthly rates range from $154 or $322 based on coverage (i.e., medical; medical + dental)	Retiree Health Insurance Credit Program $4 per/mo. per YOS reimbursement against health premium	Retiree Health Insurance Credit Program $4 per/mo. per YOS reimbursement against health premium
20	West Virginia [2]	N/A Health insurance plan is funded on a "pay-as-you-go" basis	Employees hired after 7/1/2010 will pay 100% of the premium	Employees hired after 7/1/2010 will pay 100% of the premium	N/A	N/A
21	Wisconsin	N/A Health insurance plan is funded on a "pay-as-you-go" basis	Full 2015 monthly rates range from $602.10 to $1,392.80 for single coverage ; $1,497.80-$3,477.80 for family coverage; retiree contributes percent of premium	N/A At age 65 required to enroll in Medicare	Determined by employer established in one of three ways: 1) min 50% but not more than 88% of average cost of Tier 1 plan; 2) min 50% but not more than 105% of the premium for the lowest-cost plan; 3) health plan three-tiered premium contribution structure established by the Group Insurance Board, subject to the 88% of the average cost of Tier 1 plan	N/A No plans offered

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	State	DB, DC, or Access Only Structure	Coverage: Single, Spouse, Family	Benefit Eligibility (Age/YOS/ Retire from Sponsor)	Prescription
	Kentucky (Non-Hazardous)	**DC**	**Individual/ Family**	**15 YOS**	**Prescription drug coverage is included in all medical plans offered by the Kentucky Employees' Health Plan (KEHP)**
1	**Kentucky (Hazardous)**	**DC**	**Individual/ Family**	**15 YOS**	**Prescription drug coverage is included in all medical plans offered by the Kentucky Employees' Health Plan (KEHP)**
2	California	DB	Individual/ Family	20 or 25 YOS (maximum subsidy)	Employer Group Waiver Plan with a Wrap feature
3	Colorado	DC	Individual/Family	Age 60 + YOS $\geq$ 90	Employer Group Waiver Plan Medicare Part D prescription drug coverage provide subsidies to reduce premiums: 1) Monthly direct subsidy based on number of enrollees; 2) Quarterly Coverage Gap Discount Program; 3) Catastrophic Coverage Federal Reinsurance
4	Florida	Access Only	Individual/ Family	Age 65 with 8 YOS; Any age 33 YOS	Medicare prescription drug coverage and Medicare Advantage Plans for prescription drug coverage

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	State	DB, DC, or Access Only Structure	Coverage: Single, Spouse, Family	Benefit Eligibility (Age/YOS/ Retire from Sponsor)	Prescription
5	Georgia	DB	Individual/ Family	Any age 25 YOS; Age 65 with 10 YOS	Medicare prescription drug coverage included in medical
6	Illinois	DB	Individual/ Family	Age 67 with 10 YOS	Medicare Advantage Prescription Drug coverage
7	Indiana	DB	Individual/Family	Age 65 with 10 YOS; Age 60 with 15 YOS; Age 55 + YOS $\geq$ 85	No evidence Prior to July 1, 2014 medical plan must include coverage for prescription drug coverage comparable to a Medicare plan that provides prescription drug benefits
8	Iowa	Access Only	Individual/ Family	Age 55	Medicare Prescription Drug coverage available
9	Massachusetts	DB	Individual/ Family	20 YOS; Age 55 with 10 YOS	Prescription drug coverage for Medicare and Non-Medicare
10	Michigan [3]	DC	N/A	4 YOS	State does not provide prescription drug coverage for employees hired on or after 1/1/2012

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	State	DB, DC, or Access Only Structure	Coverage: Single, Spouse, Family	Benefit Eligibility (Age/YOS/ Retire from Sponsor)	Prescription
11	Missouri	DB	Individual/Family	Age 67 with 10 YOS; Age 55 + YOS ≥ 90	Medicare prescription drug coverage included in medical
12	New York	DB	Individual/Family	10 YOS	Prescription drug component are the same share of employer contribution of the premium
13	North Carolina	DB	Individual/ Family	Age 65 with 5 YOS; Age 50 with 20 YOS Any age with 30 YOS	Prescription drug coverage Coverage becomes secondary when retiree becomes eligible for Medicare
14	Ohio [4]	DB	Individual/Family (Spousal and Dependent coverage being phased out)	10 YOS	Prescription drug coverage
15	Pennsylvania	DB	Individual/Family	25 YOS or 20 YOS and superannuation age 60	Prescription drug coverage

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	State	DB, DC, or Access Only Structure	Coverage: Single, Spouse, Family	Benefit Eligibility (Age/YOS/ Retire from Sponsor)	Prescription
16	South Carolina	DB	Individual/ Spouse	5 YOS	Medicare eligible members have the option of Employer Group Waiver Plan with/a Wrap feature 50% coverage for "donut-hole" coverage gap (assumption of "donut-hole" gap to be eliminated by 2020) Federal drug subsidies must be used
17	Tennessee [1]	DC for Medicare-eligible	Individual/ Family	10 YOS w/ 3 YRS of coverage 20 YOS w/ 1 YR of coverage	Medicare Supplement Plan does not include pharmacy
18	Texas	DB	Individual/ Family	10 YOS	Employer Group Waiver Plan plus Commercial Wrap
19	Virginia	DC	Individual/ Family (retiree credit only for employee)	15 YOS for Retiree Health Insurance Credit Program	Advantage 65 Tier system for coverage of drugs $360 annual deductible for covered brand name drugs, no deductible for generic
20	West Virginia [2]	Access Only	Individual/ Family	Age 60 with 5 YOS; Age 55 + YOS $\geq$ 80	Prescription drug coverage
21	Wisconsin	Access only	Individual/ Family	Min Age 55 with 5 YOS Norm Age 65 with 5 YOS; Age 57 with 30 YOS	Prescription drug coverage for Medicare eligible retirees through a self funded plan. Wrap product is also included to provide full coverage during the Medicare "donut hole"

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	State	Active Employee Contribution toward OPEB	Retiree Premium Co-Share, Under 65	Retiree Premium Co-Share, 65 and Over	Employer Contribution, Under 65
1	**Kentucky**	**Non-University members: 3.75% University members: 2.775% Established on a "pay-as-you-go-basis"**	**Premium subsidy that ranges based on YOS 0-14.99 YOS: 100% 15-19.99 YOS: 55% 20-24.99 YOS: 35% 25-25.99 YOS: 10% 26-26.99 YOS: 5% 27+ YOS: 0% Spousal coverage at full cost**	**Premium subsidy that ranges based on YOS 0-14.99 YOS: 100% 15-19.99 YOS: 55% 20-24.99 YOS: 35% 25-25.99 YOS: 10% 26-26.99 YOS: 5% 27+ YOS: 0% Spousal coverage at full cost**	**Premium subsidy that ranges based on YOS 0-14.99 YOS: 0% 15-19.99 YOS: 45% 20-24.99 YOS: 65% 25-25.99 YOS: 90% 26-26.99 YOS: 95% 27+ YOS: 100% Spousal coverage at full cost**
2	California	1.45% Health insurance plan is funded on a "pay-as-you-go" basis	100% of premium	100% of premium	CalSTRS does not provide health insurance coverage; however, retiree and spouses are able to continue health insurance coverage at their own cost As an active employee, CalSTRS contributes 1.45% of members wages toward earning coverage under Medicare
3	Colorado	No evidence found	Health care subsidy to offset premium based on YOS Maximum subsidy for retiree under age 65 for 2015 is $230 per month with a 5% reduction for each year less than 20 YOS	Health care subsidy to offset premium based on YOS Maximum subsidy for retiree above age 65 for 2015 is $115 per month with a 5% reduction for each year less than 20 YOS	1.02% of payroll Maximum subsidy for retiree under age 65 for 2015 is $230 per month with a 5% reduction for each year less than 20 YOS
4	Florida	N/A	100% of premium (minus subsidy)	100% of premium (minus subsidy)	1.26% Health Insurance Subsidy Contribution Rate The Retiree Health Insurance Subsidy Program gives retirees and beneficiaries a monthly payment equal to YOS x $5, ranging from $30 to $150 per/mo.
5	Georgia	N/A Health insurance plan is funded on a "pay-as-you-go" basis	Retirees and Spouses will pay a portion of the premium based on the retirees' service at retirement, ranging from 25% to 100% for single coverage and 45% to 100% for spousal coverage	Retirees and Spouses will pay a portion of the premiums based on the retirees' service at retirement, ranging from 25% to 100% for single coverage and 45% to 100% for spousal coverage; no subsidy is available to Medicare eligible members not enrolled in a Medicare Advantage Option	Premium subsidy for single coverage that ranges based on YOS ≤ 10 YOS: 0%; 30+ YOS: 75% Subsidy for eligible dependents ranges from 0% to 55%

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	State	Active Employee Contribution toward OPEB	Retiree Premium Co-Share, Under 65	Retiree Premium Co-Share, 65 and Over	Employer Contribution, Under 65
6	Illinois	Based FY2016; 1.07% of pay are made to a Teachers Health Insurance Security Fund (school districts contribute 0.80% and state contributes 1.07%) Benefit obligations are funded on a "pay-as-you-go" basis	Premium rates for retiree depend on coverage elected and whether a managed care plan is available 75% subsidy for retiree that elect a managed care plan or elect the Teachers' Choice Health Plan (TCHP) if a managed care plan is either not available or partially available; 50% subsidy for retiree that elect the TCHP when a managed care plan is available; Medicare primary dependent beneficiaries enrolled in a managed care plan or in the TCHP when no managed care plan is available receive a premium subsidy	Premium rates for retiree depend on coverage elected and whether a managed care plan is available 75% subsidy for retiree that elect a managed care plan or elect the Teachers' Choice Health Plan (TCHP) if a managed care plan is either not available or partially available; 50% subsidy for retiree that elect the TCHP when a managed care plan is available; Medicare primary dependent beneficiaries enrolled in a managed care plan or in the TCHP when no managed care plan is available receive a premium subsidy	School districts contribute 0.80 percent of pay; State contributes 1.07 percent of pay; Premium for retiree is not permitted to increase by more than 5% per year per statute Subsidy ranges between 50-75% based on what plan election
7	Indiana	N/A Health insurance plan is funded on a "pay-as-you-go" basis	Retiree pays 100% premium	Retiree pays 100% premium	Within 60 days of retirement a one time bonus contribution will be credited to retiree's account $1,000 x YOS (For retirees after 6/30/2007, but before 7/1/2017)
8	Iowa	N/A Health insurance plan is funded on a "pay-as-you-go" basis	100% of premium	100% of premium	N/A
9	Massachusetts	N/A Health insurance previously funded on a "pay-as-you-go" basis but currently being funded by a Master Settlement Agreement with tobacco companies to fund its OPEB liability over the next ten years	15%	15%	75%
10	Michigan [3]	For employees hired on or after 9/4/2012: Voluntary contribution to the Personal Health Care Fund with an employer match of 2%	N/A	N/A	N/A
11	Missouri	N/A Health insurance plan is funded on a "pay-as-you-go" basis	Employer subsidy is based on YOS Minimum retiree contribution 35%	Employer subsidy is based on YOS Minimum retiree contribution 35%	2.5% x YOS (max 65%)
12	New York	N/A Health insurance plan is funded on a "pay-as-you-go" basis	Grade 9 and below: 12% of retiree premium 27% of dependent coverage Grade 10 and above: 16% of retiree premium 31% of dependent coverage	Grade 9 and below: 12% of retiree premium 27% of dependent coverage Grade 10 and above: 16% of retiree premium 31% of dependent coverage	Grade 9 and below: 12% of retiree premium 27% of dependent coverage Grade 10 and above: 16% of retiree premium 31% of dependent coverage

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	State	Active Employee Contribution toward OPEB	Retiree Premium Co-Share, Under 65	Retiree Premium Co-Share, 65 and Over	Employer Contribution, Under 65
13	North Carolina	Active members do not make contributions to OPEB	Contributions defined as a percentage of total premium costs based on YOS 5 to 9.99 YOS: 100% 10 to 19.99 YOS: 50% 20+ YOS: 0%	Medicare retirees have the option of 1 of 4 fully insured Medicare Advantage/Prescription Drug Plan options or the self-funded Traditional 70/30 PPO plan offered to non-Medicare members If the Traditional 70/30 Plan selected, the self-funded State Health Plan coverage is secondary to Medicare Contributions defined as a percentage of total premium costs based on YOS 5 to 9.99 YOS: 100% 10 to 19.99 YOS: 50% 20+ YOS: 0%	Contributions defined as a percentage of total premium costs based on YOS 5 to 9.99 YOS: 0% 10 to 19.99 YOS: 50% 20+ YOS: 100%
14	Ohio	Active members do not make contributions to OPEB	Retiree pays 100% premium minus subsidy	Retiree pays 100% premium minus subsidy	2.1% x YOS (up to a max of 63%)
15	Pennsylvania	Active members do not make contributions to OPEB	Non-Medicare eligible retirees contribute 3% of Average Final Compensation	Medicare eligible retirees contribution 1.5% of Average Final Compensation	Approximately $334 for each current active eligible employee per bi-weekly pay period to the fund (rates for FY2015)
16	South Carolina	N/A Health insurance plan is funded on a "pay-as-you-go" basis Monthly premium for active employees is $3.22 per/mo.	New hires on or after 5/2/2008 who retire are eligible for 100% employer subsidy with 25+ YOS, 50% with 15-24 YOS, and 0% with <15 YOS	New hires on or after 5/2/2008 who retire are eligible for 100% employer subsidy with 25+ YOS, 50% with 15-24 YOS, and 0% with <15 YOS	New hires after 5/2/2008 retirees are eligible for 100% employer funding with 25+ YOS and 50% with 15-24 YOS
17	Tennessee [1]	N/A Health insurance plan is funded on a "pay-as-you-go" basis	Current Retirees: same base premium as active employees with an adjustment for YOS 30+ YOS: 20% of premium ≥ 20 but ≤ 30 YOS: 30% of premium ≤ 20 YOS: 40% of premium Employees hired on or after 7/1/2015 will not be eligible to receive retiree health insurance coverage	Current Retirees: Flat rate premium subsidized by YOS retiree premiums after subsidies 30+ YOS: $88.47 per/mo. ≥ 20 but ≤ 30 YOS: $100.97 per mo. ≥ 15 but ≤ 20 YOS: $113.47per/mo. Non-subsidized retirees and dependents pay $138.47 per/mo. Employees hired on or after 7/1/2015 will not be eligible to receive retiree health insurance coverage	Retirees under 65 pay the same base premium as active employees with an adjustment for YOS 30+ YOS: 80% subsidized ≥ 20 but ≤ 30 YOS: 70% subsidized ≤ 20 YOS: 60% subsidized
18	Texas	Active employee contribute 1%; The state contributes 0.65% percent of school district payroll; School districts contribute 55% of payroll: Health insurance benefits are financed on a "pay-as-you-go" basis	Free basic level coverage for eligible retirees and optional coverage for retirees and their dependents	Free basic level coverage for eligible retirees and optional coverage for retirees and their dependents	100% of premium for retiree coverage; a percentage of premium for dependent coverage

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	State	Active Employee Contribution toward OPEB	Retiree Premium Co-Share, Under 65	Retiree Premium Co-Share, 65 and Over	Employer Contribution, Under 65
19	Virginia	N/A	Retirees pay 100% of premium w/ 15 YOS premium is offset w/ by the retiree health credit program (credit only applies to single coverage)	At age 65 required to enroll in Medicare Advantage 65 Plan to supplement Medicare monthly rates range from $154 or $322 based on coverage (i.e., medical; medical + dental)	Retiree Health Insurance Credit Program $4 per/mo. per YOS reimbursement against health premium
20	West Virginia [2]	N/A Health insurance plan is funded on a "pay-as-you-go" basis	Employees hired after 7/1/2010 will pay 100% of the premium	Employees hired after 7/1/2010 will pay 100% of the premium	N/A
21	Wisconsin	N/A Health insurance plan is funded on a "pay-as-you-go" basis	Full 2015 monthly rates range from $602.10 to $1,392.80 for single coverage ; $1,497.80-$3,477.80 for family coverage; retiree contributes percent of premium	N/A At age 65 required to enroll in Medicare	Determined by employer established in one of three ways: 1) min 50% but not more than 88% of average cost of Tier 1 plan; 2) min 50% but not more than 105% of the premium for the lowest-cost plan; 3) health plan three-tiered premium contribution structure established by the Group Insurance Board, subject to the 88% of the average cost of Tier 1 plan

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	State	Employer Contribution, 65 and Over	DB or DC Structure	Coverage: Single, Spouse, Family	Benefit Eligibility (Age/YOS/Retire from Sponsor)	Prescription
1	**Kentucky**	**Premium subsidy that ranges based on YOS 0-14.99 YOS: 0% 15-19.99 YOS: 45% 20-24.99 YOS: 65% 25-25.99 YOS: 90% 26-26.99 YOS: 95% 27+ YOS: 100% Spousal coverage at full cost**	**DB**	**Individual/ Spouse**	**15 YOS**	**Moved Medicare Eligible Health Plan drug plan from Medicare Part D Subsidy to Employer Group Waiver Prescription Drug Plan Participate private drug manufactures' 50% subsidy in Medicare Part D's coverage gap (the "donut hole") Member of the Know Your Rx Coalition**
2	California	0%	DB	Individual/Spouse	2.0% at age 60: Age 50 with 30 YOS; 2.0% at age 62: Age 55 with 5 YOS	No program for Medicare Part D
3	Colorado	1.02% of payroll Maximum subsidy for retiree above age 65 for 2015 is $115 per month with a 5% reduction for each year less than 20 YOS	DC	Individual/Family	Age 60 + YOS $\geq$ 90	Employer Group Waiver Plan Medicare Part D prescription drug coverage provide subsidies to reduce premiums: 1) Monthly direct subsidy based on number of enrollees; 2) Quarterly Coverage Gap Discount Program; 3) Catastrophic Coverage Federal Reinsurance
4	Florida	1.26% Health Insurance Subsidy Contribution Rate The Retiree Health Insurance Subsidy Program gives retirees and beneficiaries a monthly payment equal to YOS x $5, ranging from $30 to $150 per/mo.	Access Only	Individual/ Family	Age 65 with 8 YOS; Any age 33 YOS	Medicare prescription drug coverage and Medicare Advantage Plans for prescription drug coverage
5	Georgia	No subsidy is available to Medicare eligible members not enrolled in a Medicare Advantage Option Premium subsidy for single coverage that ranges based on YOS < 10 YOS: 0%; 30+ YOS: 75% Subsidy for eligible dependents ranges from 0% to 55%	DB	Individual/ Family	Any age 25 YOS; Age 65 with 10 YOS	Medicare prescription drug coverage included in medical

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	State	Employer Contribution, 65 and Over	DB or DC Structure	Coverage: Single, Spouse, Family	Benefit Eligibility (Age/YOS/Retire from Sponsor)	Prescription
6	Illinois	Retiree must enroll in Medicare Parts A and B to receive reduced premium available to Medicare eligible participants Teachers' Choice Health Plan (TCHP) pays the 20% of approved charges not covered by Medicare. If provider does not accept Medicare assignment TCHP pays all amounts Medicare does not cover, up to the Medicare maximum limiting charges	DB	Individual/ Family	8 YOS	Prescription drug coverage included in the plan
7	Indiana	Within 60 days of retirement a one time bonus contribution will be credited to retiree's account $1,000 x YOS (For retirees after 6/30/2007, but before 7/1/2017)	DB	Individual/Family	Age 65 with 10 YOS; Age 60 with 15 YOS; Age 55 + YOS $\geq$ 85	No evidence Prior to July 1, 2014 medical plan must include coverage for prescription drug coverage comparable to a Medicare plan that provides prescription drug benefits
8	Iowa	N/A	Access Only	Individual/ Family	Age 55	Medicare Prescription Drug coverage available
9	Massachusetts	75%	DB	Individual/ Family	20 YOS; Age 55 with 10 YOS	Medicare prescription drug coverage included in medical
10	Michigan [3]	N/A	DC	N/A	4 YOS	State does not provide prescription drug coverage for employees hired on or after 9/4//2012
11	Missouri	2.5% x YOS (max 65%)	DB	Individual/Family	Age 67 with 10 YOS; Age 55 + YOS $\geq$ 90	Medicare prescription drug coverage included in medical
12	New York	State reimburses 100% of the Medicare Part B premium Grade 9 and below: 12% of retiree premium 27% of dependent coverage Grade 10 and above: 16% of retiree premium 31% of dependent coverage	DB	Individual/Family	10 YOS	Prescription drug component are the same share of employer contribution of the premium

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	State	Employer Contribution, 65 and Over	DB or DC Structure	Coverage: Single, Spouse, Family	Benefit Eligibility (Age/YOS/Retire from Sponsor)	Prescription
13	North Carolina	Contributions defined as a percentage of total premium costs based on YOS 5 to 9.99 YOS: 0% 10 to 19.99 YOS: 50% 20+ YOS: 100%	DB	Individual/ Family	Age 65 with 5 YOS; Age 50 with 20 YOS; Any age with 30 YOS	Prescription drug coverage Coverage becomes secondary when retiree becomes eligible for Medicare
14	Ohio	2.1% x YOS (up to a max of 63%); Partial Medicare Part B premium reimbursement	DB	Individual/ Family	Year of Retirement 2004-2023: 15 YOS Year of Retirement after 2023: 20 YOS	All health care plans offered to enrolles of Medicare Parts A and B, Part A-only or Part B-only include Medicare Part D prescription coverage
15	Pennsylvania	Approximately $334 for each current active eligible employee per bi-weekly pay period to the fund (rates for FY2015)	DB	Individual/Family	25 YOS or 20 YOS and superannuation age 60	Prescription drug coverage
16	South Carolina	New hires after 5/2/2008 retirees are eligible for 100% employer funding with 25+ YOS and 50% with 15-24 YOS	DB	Individual/ Spouse	5 YOS	Medicare eligible members have the option of Employer Group Waiver Plan with/a Wrap feature 50% coverage for "donut-hole" coverage gap (assumption of "donut-hole" gap to be eliminated by 2020) Federal drug subsidies must be used
17	Tennessee [1]	Flat rate premium subsidized by YOS 30+ YOS: $50.00 per/mo. ≥ 20 but ≤ 30 YOS: $37.50 per mo. ≥ 15 but ≤ 20 YOS: $25.00 per/mo.	DC for Medicare-eligible	Individual/ Family	10 YOS w/ 3 YRS of coverage 20 YOS w/ 1 YR of coverage	Medicare Supplement Plan does not include pharmacy
18	Texas	100% of premium for retiree coverage; a percentage of premium for dependent coverage	DB	Individual/ Family	10 YOS	Employer Group Waiver Plan plus Commercial Wrap

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	State	Employer Contribution, 65 and Over	DB or DC Structure	Coverage: Single, Spouse, Family	Benefit Eligibility (Age/YOS/Retire from Sponsor)	Prescription
19	Virginia	Retiree Health Insurance Credit Program $4 per/mo. per YOS reimbursement against health premium	DC	Individual/ Family (retiree credit only for employee)	15 YOS for Retiree Health Insurance Credit Program	Advantage 65 Tier system for coverage of drugs $360 annual deductible for covered brand name drugs, no deductible for generic Tier system designates fee for covered drugs
20	West Virginia [2]	N/A	Access Only	Individual/ Family	Age 60 with 5 YOS; Age 55 + YOS $\geq$ 80	Prescription drug coverage
21	Wisconsin	N/A No plans offered	Access only	Individual/ Family	Min Age 55 with 5 YOS Norm Age 65 with 5 YOS; Age 57 with 30 YOS	Prescription drug coverage for Medicare eligible retirees through a self funded plan. Wrap product is also included to provide full coverage during the Medicare "donut hole"

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	State	Active Employee Contribution toward OPEB	Retiree Premium Co-Share, Under 65	Retiree Premium Co-Share, 65 and Over	Employer Contribution, Under 65	Employer Contribution, 65 and Over	DB, DC, or Access Only Structure
1	**Kentucky**	**Employee contributes 1.00%**	**Retiree receives subsidy towards premium**	**Retiree receives subsidy towards premium**	**Retirement System pays $19.48 per/mo. per YOS (dollar amount is adjusted 1.5% annually)**	**Retirement System pays $19.48 per/mo. per YOS (dollar amount is adjusted 1.5% annually)**	**DC**
2	California	Employee and employer contribution of 0.5%	Retiree contributes remainder of premium after subsidy Subsidy based on YOS; < 10 YOS: 0% 20+ YOS: 100%	Retiree contributes remainder of premium after subsidy Subsidy based on YOS; < 10 YOS: 0% 20+ YOS: 100%	Subsidy based on YOS; < 10 YOS: 0% 20+ YOS: 100%	Subsidy based on YOS; < 10 YOS: 0% 20+ YOS: 100%	DB
3	Colorado	No evidence found	Health care subsidy to offset premium based on YOS Maximum subsidy for retiree under age 65 for 2015 is $230 per month with a 5% reduction for each year less than 20 YOS	Health care subsidy to offset premium based on YOS Maximum subsidy for retiree above age 65 for 2015 is $115 per month with a 5% reduction for each year less than 20 YOS	1.02% of payroll Maximum subsidy for retiree under age 65 for 2015 is $230 per month with a 5% reduction for each year less than 20 YOS	1.02% of payroll Maximum subsidy for retiree above age 65 for 2015 is $115 per month with a 5% reduction for each year less than 20 YOS	DC
4	Florida	N/A	100% of premium (minus subsidy)	100% of premium (minus subsidy)	1.26% Health Insurance Subsidy Contribution Rate The Retiree Health Insurance Subsidy Program gives retirees and beneficiaries a monthly payment equal to YOS x $5, ranging from $30 to $150 per/mo.	1.26% Health Insurance Subsidy Contribution Rate The Retiree Health Insurance Subsidy Program gives retirees and beneficiaries a monthly payment equal to YOS x $5, ranging from $30 to $150 per/mo.	Access Only
5	Georgia	N/A Health insurance plan is funded on a "pay-as-you-go" basis	Retirees and Spouses will pay a portion of the premium based on the retirees' service at retirement, ranging from 25% to 100% for single coverage and 45% to 100% for spousal coverage	Retirees and Spouses will pay a portion of the premiums based on the retirees' service at retirement, ranging from 25% to 100% for single coverage and 45% to 100% for spousal coverage; no subsidy is available to Medicare eligible members not enrolled in a Medicare Advantage Option	Premium subsidy for single coverage that ranges based on YOS ≤ 10 YOS: 0%; 30+ YOS: 75% Subsidy for eligible dependents ranges from 0% to 55%	No subsidy is available to Medicare eligible members not enrolled in a Medicare Advantage Option Premium subsidy for single coverage that ranges based on YOS < 10 YOS: 0%; 30+ YOS: 75% Subsidy for eligible dependents ranges from 0% to 55%	DB
6	Illinois	N/A Health insurance plan is funded on a "pay-as-you-go" basis	5.0% of the premium for each YOS < 20 YRS Retiree receiving benefits from state retirement system who are not eligible for Medicare may waive healthcare coverage and receive a monthly financial incentive equal to $500 per/mo. (20+ YOS) and $150 per/mo. (< 20 YOS)	5.0% of the premium for each YOS < 20 YRS	The State Employees Insurance Act of 1971 (SEIA) requires the State to contribute towards retiree's coverage an amount equal to 5% of the cost for each YOS; maximum benefit of 100% for 20+ YOS	The State Employees Insurance Act of 1971 (SEIA) requires the State to contribute towards retiree's coverage an amount equal to 5% of the cost for each YOS; maximum benefit of 100% for 20+ YOS	DB

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	State	Active Employee Contribution toward OPEB	Retiree Premium Co-Share, Under 65	Retiree Premium Co-Share, 65 and Over	Employer Contribution, Under 65	Employer Contribution, 65 and Over	DB, DC, or Access Only Structure
7	Indiana	$20.00 per paycheck Health insurance plan is funded on a "pay-as-you-go" basis	Percentage of total premium: 7/1/2016-6/30/2018: 50% 7/1/2018: 100%	Percentage of total premium: 7/1/2016-6/30/2018: 50% 7/1/2018 onwards: 100%	Percentage of total premium: 7/1/2016-6/30/2018: 50% 7/1/2018: 100% For retirees after 6/30/2007 but before 7/1/2017 a one time retirement bonus contribution will be credited to retiree's account within 60 days of retirement $1,000 x YOS	Percentage of total premium: 7/1/2016-6/30/2018: 50% 7/1/2018 onwards: 100% Plus a Medicare Part D retiree drug subsidy reimbursement For retirees after 6/30/2007 but before 7/1/2017 a one time retirement bonus contribution will be credited to retiree's account within 60 days of retirement $1,000 x YOS	DB
8	Iowa	N/A Health insurance plan is funded on a "pay-as-you-go" basis	100% of premium	100% of premium	N/A	N/A	Access Only
9	Massachusetts	N/A Health insurance previously funded on a "pay-as-you-go" basis but currently being funded by a Master Settlement Agreement with tobacco companies to fund its OPEB liability over the next ten years	20% of monthly premium	20% of monthly premium	80%	80% A small subset of retirees who are age 65+ who are not eligible for Medicare because the Commonwealth does not participate in SS, the retired employee are enrolled in the same health plan available to active employees under age 65	DB
10	Michigan [3]	For employees hired on or after 6/10/2012: Voluntary contribution to the Personal Health Care Fund with an employer match of 2%	N/A	N/A	N/A	N/A	DC
11	Missouri	N/A Health insurance plan is funded on a "pay-as-you-go" basis	Employer subsidy is based on YOS Minimum retiree contribution 35%	Employer subsidy is based on YOS Minimum retiree contribution 35%	2.5% x YOS (max 65%)	2.5% x YOS (max 65%)	DB
12	New York	N/A Health insurance plan is funded on a "pay-as-you-go" basis	Grade 9 and below: 12% of retiree premium 27% of dependent coverage Grade 10 and above: 16% of retiree premium 31% of dependent coverage	Grade 9 and below: 12% of retiree premium 27% of dependent coverage Grade 10 and above: 16% of retiree premium 31% of dependent coverage	Grade 9 and below: 12% of retiree premium 27% of dependent coverage Grade 10 and above: 16% of retiree premium 31% of dependent coverage	State reimburses 100% of the Medicare Part B premium Grade 9 and below: 12% of retiree premium 27% of dependent coverage Grade 10 and above: 16% of retiree premium 31% of dependent coverage	DB

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	State	Active Employee Contribution toward OPEB	Retiree Premium Co-Share, Under 65	Retiree Premium Co-Share, 65 and Over	Employer Contribution, Under 65	Employer Contribution, 65 and Over	DB, DC, or Access Only Structure
13	North Carolina	Active members do not make contributions to OPEB	Contributions defined as a percentage of total premium costs based on YOS 5 to 9.99 YOS: 100% 10 to 19.99 YOS: 50% 20+ YOS: 0%	Medicare retirees have the option of 1 of 4 fully insured Medicare Advantage/Prescription Drug Plan options or the self-funded Traditional 70/30 PPO plan offered to non-Medicare members If the Traditional 70/30 Plan selected, the self-funded State Health Plan coverage is secondary to Medicare Contributions defined as a percentage of total premium costs based on YOS 5 to 9.99 YOS: 100% 10 to 19.99 YOS: 50%	5.49% of payroll Contributions defined as a percentage of total premium costs based on YOS 5 to 9.99 YOS: 0% 10 to 19.99 YOS: 50% 20+ YOS: 100%	5.49% of payroll Contributions defined as a percentage of total premium costs based on YOS 5 to 9.99 YOS: 0% 10 to 19.99 YOS: 50% 20+ YOS: 100%	DB
14	Ohio	Active members do not make contributions to OPEB	Retiree pays 100% premium minus subsidy	Retiree pays 100% premium minus subsidy	Employer provides a monthly allowance for retiree and spouse to purchase coverage; spousal allowance will be eliminated in 2018	Employer provides a monthly allowance for retiree and spouse to purchase coverage; spousal allowance will be eliminated in 2018	DB
15	Pennsylvania	Contribution requirements are established within collective bargaining agreements Plan members are not required to make contributions	Retiree does not contribute towards premium	Retiree does not contribute towards premium	For FY2015 $850 for each current active eligible employee per bi-weekly pay period to the fund	For FY2015 $850 for each current active eligible employee per bi-weekly pay period to the fund	DB
16	South Carolina	N/A Health insurance plan is funded on a "pay-as-you-go" basis Monthly premium for active employees is $3.22 per/mo.	New hires on or after 5/2/2008 who retire are eligible for 100% employer subsidy with 25+ YOS, 50% with 15-24 YOS, and 0% with <15 YOS	New hires on or after 5/2/2008 who retire are eligible for 100% employer subsidy with 25+ YOS, 50% with 15-24 YOS, and 0% with <15 YOS	New hires after 5/2/2008 retirees are eligible for 100% employer funding with 25+ YOS and 50% with 15-24 YOS	New hires after 5/2/2008 retirees are eligible for 100% employer funding with 25+ YOS and 50% with 15-24 YOS	DB
17	Tennessee [1]	N/A Health insurance plan is funded on a "pay-as-you-go" basis	Current Retirees: same base premium as active employees with an adjustment for YOS 30+ YOS: 20% of premium ≥ 20 but ≤ 30 YOS: 30% of premium ≤ 20 YOS: 40% of premium Employees hired on or after 7/1/2015 will not be eligible to receive retiree health insurance coverage	Current Retirees: Flat rate premium subsidized by YOS retiree premiums after subsidies 30+ YOS: $88.47 per/mo. ≥ 20 but ≤ 30 YOS: $100.97 per mo. ≥ 15 but ≤ 20 YOS: $113.47per/mo. Non-subsidized retirees and dependents pay $138.47 per/mo. Employees hired on or after 7/1/2015 will not be eligible to receive retiree health insurance coverage	Retirees under 65 pay the same base premium as active employees with an adjustment for YOS 30+ YOS: 80% subsidized ≥ 20 but ≤ 30 YOS: 70% subsidized ≤ 20 YOS: 60% subsidized	Flat rate premium subsidized by YOS 30+ YOS: $50.00 per/mo. ≥ 20 but ≤ 30 YOS: $37.50 per mo. ≥ 15 but ≤ 20 YOS: $25.00 per/mo.	DC for Medicare-eligible

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	State	Active Employee Contribution toward OPEB	Retiree Premium Co-Share, Under 65	Retiree Premium Co-Share, 65 and Over	Employer Contribution, Under 65	Employer Contribution, 65 and Over	DB, DC, or Access Only Structure
18	Texas	N/A Health insurance plan is funded on a "pay-as-you-go" basis	0% of retiree health insurance premiums; 50% of dependents" premiums: Retiree contributes any premium over and above state contribution	0% of retiree health insurance premiums; 50% of dependents" premiums: Retiree contributes any premium over and above state contribution	100% of retiree health premiums 50% of dependents' premiums	100% of retiree health premiums 50% of dependents' premiums	DB
19	Virginia	N/A	Retirees pay 100% of premium w/ 15 YOS premium is offset w/ by the retiree health credit program (credit only applies to single coverage)	At age 65 required to enroll in Medicare Advantage 65 Plan to supplement Medicare monthly rates range from $154 or $322 based on coverage (i.e., medical; medical + dental)	Retiree Health Insurance Credit Program $4 per/mo. per YOS reimbursement against health premium	Retiree Health Insurance Credit Program $4 per/mo. per YOS reimbursement against health premium	DC
20	West Virginia [2]	N/A Health insurance plan is funded on a "pay-as-you-go" basis	Employees hired after 7/1/2010 will pay 100% of the premium	Employees hired after 7/1/2010 will pay 100% of the premium	N/A	N/A	Access Only
21	Wisconsin	N/A Health insurance plan is funded on a "pay-as-you-go" basis	Full 2015 monthly rates range from $602.10 to $1,392.80 for single coverage ; $1,497.80-$3,477.80 for family coverage; retiree contributes percent of premium	N/A At age 65 required to enroll in Medicare	Determined by employer established in one of three ways: 1) min 50% but not more than 88% of average cost of Tier 1 plan; 2) min 50% but not more than 105% of the premium for the lowest-cost plan; 3) health plan three-tiered premium contribution structure established by the Group Insurance Board, subject to the 88% of the average cost of Tier 1 plan	N/A No plans offered	Access only

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	State	Coverage: Single, Spouse, Family	Benefit Eligibility (Age/YOS/ Retire from Sponsor)	Prescription
1	**Kentucky**	**Individual/ Family**	**15 YOS**	**Prescription drug coverage is included in all medical plans offered by the Kentucky Employees' Health Plan (KEHP)**
2	California	Individual/Family	20 YOS (maximum subsidy)	Medicare Part D prescription drug plan and an Employer Group Waiver Plan
3	Colorado	Individual/Family	Any age 30 YOS; Age 50 with 25 YOS; Age 55 with 20 YOS; Age 65 with 5 YOS	Employer Group Waiver Plan Medicare Part D prescription drug coverage provide subsidies to reduce premiums: 1) Monthly direct subsidy based on number of enrollees; 2) Quarterly Coverage Gap Discount Program; 3) Catastrophic Coverage Federal Reinsurance
4	Florida	Individual/ Family	Age 65 with 8 YOS; Any age 33 YOS	Medicare prescription drug coverage and Medicare Advantage Plans for prescription drug coverage
5	Georgia	Individual/ Family	Any age 30 YOS Age 55 with 10 YOS	Medicare prescription drug coverage included in medical
6	Illinois	Individual/ Family	Age 60 with 20 YOS	Medicare Advantage Prescription Drug coverage

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	State	Coverage: Single, Spouse, Family	Benefit Eligibility (Age/YOS/ Retire from Sponsor)	Prescription
7	Indiana	Individual/ Family	25 YOS; Age 65 with 10 YOS; Age 60 with 15 YOS; Age 55 + YOS ≥ 85	No evidence Prior to July 1, 2014 medical plan must include coverage for prescription drug coverage comparable to a Medicare plan that provides prescription drug benefits
8	Iowa	Individual/ Family	Age 55	Medicare Prescription Drug coverage available
9	Massachusetts	Individual/ Family	20 YOS; Age 55	Prescription drug coverage for Medicare and Non-Medicare
10	Michigan [3]	N/A	4 YOS	State does not provide prescription drug coverage for employees hired on or after 6/10/2012
11	Missouri	Individual/Family	Age 55with 10 YOS;	Medicare prescription drug coverage included in medical
12	New York	Individual/Family	10 YOS	Prescription drug component are the same share of employer contribution of the premium

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	State	Coverage: Single, Spouse, Family	Benefit Eligibility (Age/YOS/ Retire from Sponsor)	Prescription
13	North Carolina	Individual/ Family	Age 50 with 15 YOS; Age 55 with 5 YOS; Any with 30 YOS	Prescription drug coverage Coverage becomes secondary when retiree becomes eligible for Medicare
14	Ohio	Individual/ Family	20 YOS	Prescription drug coverage
15	Pennsylvania	Individual/Family	Age 55 with 20 YOS; or 25 YOS	Prescription drug coverage
16	South Carolina	Individual/ Spouse	5 YOS	Medicare eligible members have the option of Employer Group Waiver Plan with/a Wrap feature 50% coverage for "donut-hole" coverage gap (assumption of "donut-hole" gap to be eliminated by 2020) Federal drug subsidies must be used
17	Tennessee [1]	Individual/ Family	10 YOS w/ 3 YRS of coverage 20 YOS w/ 1 YR of coverage	Medicare Supplement Plan does not include pharmacy

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	State	Coverage: Single, Spouse, Family	Benefit Eligibility (Age/YOS/ Retire from Sponsor)	Prescription
18	Texas	Individual/ Family	10 YOS	Employer Group Waiver Plan plus Commercial Wrap
19	Virginia	Individual/Family (retiree credit only for employee)	15 YOS for Retiree Health Insurance Credit Program	Advantage 65 Tier system for coverage of drugs $360 annual deductible for covered brand name drugs, no deductible for generic Tier system designates fee for covered drugs
20	West Virginia [2]	Individual/ Family	Age 60 with 5 YOS; Age 55 + YOS $\geq$ 80	Prescription drug coverage
21	Wisconsin	Individual/ Family	Min Age 55 with 5 YOS Norm Age 65 with 5 YOS; Age 57 with 30 YOS	Prescription drug coverage for Medicare eligible retirees through a self funded plan. Wrap product is also included to provide full coverage during the Medicare "donut hole"

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	State	Active Employee Contribution toward OPEB	Retiree Premium Co-Share, Under 65	Retiree Premium Co-Share, 65 and Over	Employer Contribution, Under 65	Employer Contribution, 65 and Over
1	**Kentucky**	**Employee contributes 1.00%**	**Percentage of medical insurance premium paid by the plan 20+ YOS: 0% ≥ 15 < 20 YOS: 25% ≥ 10 < 15 YOS: 50% ≥ 4 < 10 YOS: 75% < 4 YOS: 0%**	**Percentage of medical insurance premium paid by the plan 20+ YOS: 0% ≥ 15 < 20 YOS: 25% ≥ 10 < 15 YOS: 50% ≥ 4 < 10 YOS: 75% < 4 YOS: 0%**	**Percentage of medical insurance premium paid by the plan 20+ YOS: 100% ≥ 15 < 20 YOS: 75% ≥ 10 < 15 YOS: 50% ≥ 4 < 10 YOS: 25% < 4 YOS: 0%**	**Percentage of medical insurance premium paid by the plan 20+ YOS: 100% ≥ 15 < 20 YOS: 75% ≥ 10 < 15 YOS: 50% ≥ 4 < 10 YOS: 25% < 4 YOS: 0%**
2	California	N/A Health insurance plan is funded on a "pay-as-you-go" basis	100% of total premium plus 2%	100% of employer subsidy with 10 YOS	0%	Percentage of employer subsidy ≥ 5 YOS: 50% 5-10 YOS: Pro-rated between 50% to 100% 10+ YOS: 100%
3	Colorado	No evidence found	Health care subsidy to offset premium based on YOS Maximum subsidy for retiree under age 65 for 2015 is $230 per month with a 5% reduction for each year less than 20 YOS	Health care subsidy to offset premium based on YOS Maximum subsidy for retiree above age 65 for 2015 is $115 per month with a 5% reduction for each year less than 20 YOS	1.02% of payroll Maximum subsidy for retiree under age 65 for 2015 is $230 per month with a 5% reduction for each year less than 20 YOS	1.02% of payroll Maximum subsidy for retiree above age 65 for 2015 is $115 per month with a 5% reduction for each year less than 20 YOS
4	Florida	N/A	100% of premium (minus subsidy)	100% of premium (minus subsidy)	1.26% Health Insurance Subsidy Contribution Rate The Retiree Health Insurance Subsidy Program gives retirees and beneficiaries a monthly payment equal to YOS x $5, ranging from $30 to $150 per/mo.	1.26% Health Insurance Subsidy Contribution Rate The Retiree Health Insurance Subsidy Program gives retirees and beneficiaries a monthly payment equal to YOS x $5, ranging from $30 to $150 per/mo.
5	Georgia	N/A Health insurance plan is funded on a "pay-as-you-go" basis	Retirees and Spouses will pay a portion of the premium based on the retirees' service at retirement, ranging from 25% to 100% for single coverage and 45% to 100% for spousal coverage	Retirees and Spouses will pay a portion of the premiums based on the retirees' service at retirement, ranging from 25% to 100% for single coverage and 45% to 100% for spousal coverage; no subsidy is available to Medicare eligible members not enrolled in a Medicare Advantage Option	Premium subsidy for single coverage that ranges based on YOS ≤ 10 YOS: 0%; 30+ YOS: 75% Subsidy for eligible dependents ranges from 0% to 55%	No subsidy is available to Medicare eligible members not enrolled in a Medicare Advantage Option Premium subsidy for single coverage that ranges based on YOS < 10 YOS: 0%; 30+ YOS: 75% Subsidy for eligible dependents ranges from 0% to 55%

Judges

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	State	Active Employee Contribution toward OPEB	Retiree Premium Co-Share, Under 65	Retiree Premium Co-Share, 65 and Over	Employer Contribution, Under 65	Employer Contribution, 65 and Over
6	Illinois	N/A Health insurance plan is funded on a "pay-as-you-go" basis	5.0% of the premium for each YOS < 20 YRS Retiree receiving benefits from state retirement system who are not eligible for Medicare may waive healthcare coverage and receive a monthly financial incentive equal to $500 per/mo. (20+ YOS) and $150 per/mo. (< 20 YOS)	5.0% of the premium for each YOS < 20 YRS	The State Employees Insurance Act of 1971 (SEIA) requires the State to contribute towards retiree's coverage an amount equal to 5% of the cost for each YOS; maximum benefit of 100% for 20+ YOS	The State Employees Insurance Act of 1971 (SEIA) requires the State to contribute towards retiree's coverage an amount equal to 5% of the cost for each YOS; maximum benefit of 100% for 20+ YOS
7	Indiana	N/A Health insurance plan is funded on a "pay-as-you-go" basis	Retiree pays 100% premium	Retiree pays 100% premium	Within 60 days of retirement a one time bonus contribution will be credited to retiree's account $1,000 x YOS (For retirees after 6/30/2007, but before 7/1/2017)	Within 60 days of retirement a one time bonus contribution will be credited to retiree's account $1,000 x YOS (For retirees after 6/30/2007, but before 7/1/2017)
8	Iowa	N/A Health insurance plan is funded on a "pay-as-you-go" basis	100% of premium	100% of premium	N/A	N/A
9	Massachusetts	N/A Health insurance previously funded on a "pay-as-you-go" basis but currently being funded by a Master Settlement Agreement with tobacco companies to fund its OPEB liability over the next ten years	20% of monthly premium	20% of monthly premium	80%	A small subset of retirees who are age 65+ who are not eligible for Medicare because the Commonwealth does not participate in SS, the retired employee are enrolled in the same health plan available to active employees under age 65
10	Michigan [3]	Voluntary contribution to the Personal Health Care Fund with an employer match of 2%	N/A	N/A	N/A	N/A
11	Missouri	N/A Health insurance plan is funded on a "pay-as-you-go" basis	Employer subsidy is based on YOS Minimum retiree contribution 35%	Employer subsidy is based on YOS Minimum retiree contribution 35%	2.5% x YOS (max 65%)	2.5% x YOS (max 65%)

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	State	Active Employee Contribution toward OPEB	Retiree Premium Co-Share, Under 65	Retiree Premium Co-Share, 65 and Over	Employer Contribution, Under 65	Employer Contribution, 65 and Over
12	New York	N/A Health insurance plan is funded on a "pay-as-you-go" basis	Grade 9 and below: 12% of retiree premium 27% of dependent coverage Grade 10 and above: 16% of retiree premium 31% of dependent coverage	Grade 9 and below: 12% of retiree premium 27% of dependent coverage Grade 10 and above: 16% of retiree premium 31% of dependent coverage	Grade 9 and below: 12% of retiree premium 27% of dependent coverage Grade 10 and above: 16% of retiree premium 31% of dependent coverage	State reimburses 100% of the Medicare Part B premium Grade 9 and below: 12% of retiree premium 27% of dependent coverage Grade 10 and above: 16% of retiree premium 31% of dependent coverage
13	North Carolina	Active members do not make contributions to OPEB	Contributions defined as a percentage of total premium costs based on YOS 5 to 9.99 YOS: 100% 10 to 19.99 YOS: 50% 20+ YOS: 0%	Medicare retirees have the option of 1 of 4 fully insured Medicare Advantage/Prescription Drug Plan options or the self-funded Traditional 70/30 PPO plan offered to non-Medicare members If the Traditional 70/30 Plan selected, the self-funded State Health Plan coverage is secondary to Medicare Contributions defined as a percentage of total premium costs based on YOS 5 to 9.99 YOS: 100% 10 to 19.99 YOS: 50% 20+ YOS: 0%	Contributions defined as a percentage of total premium costs based on YOS 5 to 9.99 YOS: 0% 10 to 19.99 YOS: 50% 20+ YOS: 100%	Contributions defined as a percentage of total premium costs based on YOS 5 to 9.99 YOS: 0% 10 to 19.99 YOS: 50% 20+ YOS: 100%
14	Ohio [4]	Active members do not make contributions to OPEB	Retiree pays 100% premium minus subsidy	Retiree pays 100% premium minus subsidy	Employer provides a monthly allowance for retiree and spouse to purchase coverage; spousal allowance will be eliminated in 2018	Employer provides a monthly allowance for retiree and spouse to purchase coverage; spousal allowance will be eliminated in 2018
15	Pennsylvania	Active members do not make contributions to OPEB	Non-Medicare eligible retirees contribute 3% of Average Final Compensation	Medicare eligible retirees contribution 1.5% of Average Final Compensation	Approximately $334 for each current active eligible employee per bi-weekly pay period to the fund (rates for FY2015)	Approximately $334 for each current active eligible employee per bi-weekly pay period to the fund (rates for FY2015)
16	South Carolina	N/A Health insurance plan is funded on a "pay-as-you-go" basis Monthly premium for active employees is $3.22 per/mo.	New hires on or after 5/2/2008 who retire are eligible for 100% employer subsidy with 25+ YOS, 50% with 15-24 YOS, and 0% with <15 YOS	New hires on or after 5/2/2008 who retire are eligible for 100% employer subsidy with 25+ YOS, 50% with 15-24 YOS, and 0% with <15 YOS	New hires after 5/2/2008 retirees are eligible for 100% employer funding with 25+ YOS and 50% with 15-24 YOS	New hires after 5/2/2008 retirees are eligible for 100% employer funding with 25+ YOS and 50% with 15-24 YOS
17	Tennessee [1]	N/A Health insurance plan is funded on a "pay-as-you-go" basis	Current Retirees: same base premium as active employees with an adjustment for YOS 30+ YOS: 20% of premium ≥ 20 but ≤ 30 YOS: 30% of premium ≤ 20 YOS: 40% of premium Employees hired on or after 7/1/2015 will not be eligible to receive retiree health insurance coverage	Current Retirees: Flat rate premium subsidized by YOS retiree premiums after subsidies 30+ YOS: $88.47 per/mo. ≥ 20 but ≤ 30 YOS: $100.97 per mo. ≥ 15 but ≤ 20 YOS: $113.47per/mo. Non-subsidized retirees and dependents pay $138.47 per/mo. Employees hired on or after 7/1/2015 will not be eligible to receive retiree health insurance coverage	Retirees under 65 pay the same base premium as active employees with an adjustment for YOS 30+ YOS: 80% subsidized ≥ 20 but ≤ 30 YOS: 70% subsidized ≤ 20 YOS: 60% subsidized	Flat rate premium subsidized by YOS 30+ YOS: $50.00 per/mo. ≥ 20 but ≤ 30 YOS: $37.50 per mo. ≥ 15 but ≤ 20 YOS: $25.00 per/mo.

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	State	Active Employee Contribution toward OPEB	Retiree Premium Co-Share, Under 65	Retiree Premium Co-Share, 65 and Over	Employer Contribution, Under 65	Employer Contribution, 65 and Over
18	Texas	N/A Health insurance plan is funded on a "pay-as-you-go" basis	0% of retiree health insurance premiums; 50% of dependents" premiums: Retiree contributes any premium over and above state contribution	0% of retiree health insurance premiums; 50% of dependents" premiums: Retiree contributes any premium over and above state contribution	100% of retiree health premiums 50% of dependents' premiums	100% of retiree health premiums 50% of dependents' premiums
19	Virginia	N/A	Retirees pay 100% of premium w/ 15 YOS premium is offset w/ by the retiree health credit program (credit only applies to single coverage)	At age 65 required to enroll in Medicare Advantage 65 Plan to supplement Medicare monthly rates range from $154 or $322 based on coverage (i.e., medical; medical + dental)	Retiree Health Insurance Credit Program $4 per/mo. per YOS reimbursement against health premium	Retiree Health Insurance Credit Program $4 per/mo. per YOS reimbursement against health premium
20	West Virginia [2]	N/A Health insurance plan is funded on a "pay-as-you-go" basis	Employees hired after 7/1/2010 will pay 100% of the premium	Employees hired after 7/1/2010 will pay 100% of the premium	N/A	N/A
21	Wisconsin	N/A Health insurance plan is funded on a "pay-as-you-go" basis	Full 2015 monthly rates range from $602.10 to $1,392.80 for single coverage ; $1,497.80-$3,477.80 for family coverage; retiree contributes percent of premium	N/A At age 65 required to enroll in Medicare	Determined by employer established in one of three ways: 1) min 50% but not more than 88% of average cost of Tier 1 plan; 2) min 50% but not more than 105% of the premium for the lowest-cost plan; 3) health plan three-tiered premium contribution structure established by the Group Insurance Board, subject to the 88% of the average cost of Tier 1 plan	N/A No plans offered

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	State	DB, DC, or Access Only Structure	Coverage: Single, Spouse, Family	Benefit Eligibility (Age/YOS/ Retire from Sponsor)	Prescription
1	**Kentucky**	**DB**	**Individual/Family**	**15 YOS**	
2	California	DB	Individual/ Family	10+ YOS (maximum subsidy)	Employer Group Waiver Plan with a Wrap feature
3	Colorado	DC	Individual/Family	Age 60 + YOS ≥ 90	Employer Group Waiver Plan Medicare Part D prescription drug coverage provide subsidies to reduce premiums: 1) Monthly direct subsidy based on number of enrollees; 2) Quarterly Coverage Gap Discount Program; 3) Catastrophic Coverage Federal Reinsurance
4	Florida	Access Only	Individual/ Family	Age 65 with 8 YOS; Any age 33 YOS	Medicare prescription drug coverage and Medicare Advantage Plans for prescription drug coverage
5	Georgia	DB	Individual/ Family	Age 60 with 10 YOS	Medicare prescription drug coverage included in medical

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	State	DB, DC, or Access Only Structure	Coverage: Single, Spouse, Family	Benefit Eligibility (Age/YOS/ Retire from Sponsor)	Prescription
6	Illinois	DB	Individual/ Family	Age 67 with 8 YOS	Medicare Advantage Prescription Drug coverage
7	Indiana	DB	Individual/Family	Age 65 with 8 YOS; Age 55 + YOS ≥ 85	No evidence Prior to July 1, 2014 medical plan must include coverage for prescription drug coverage comparable to a Medicare plan that provides prescription drug benefits
8	Iowa	Access Only	Individual/ Family	Age 55	Medicare Prescription Drug coverage available
9	Massachusetts	DB	Individual/ Family	20 YOS; Age 55 with 10 YOS	Prescription drug coverage for Medicare and Non-Medicare Generic: $10, $25 Formulary: $30, $70 Non-Formulary: $65, $165
10	Michigan [3]	DC	N/A	4 YOS	State does not provide prescription drug coverage for employees hired on or after 1/1/2012
11	Missouri	DB	Individual/Family	Age 67 with 10 YOS; Age 55 + YOS ≥ 90	Medicare prescription drug coverage included in medical

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	State	DB, DC, or Access Only Structure	Coverage: Single, Spouse, Family	Benefit Eligibility (Age/YOS/ Retire from Sponsor)	Prescription
12	New York	DB	Individual/Family	10 YOS	Prescription drug component are the same share of employer contribution of the premium
13	North Carolina	DB	Individual/ Family	Age 65 with 5 YOS; Age 50 with 20 YOS Any age with 30 YOS	Prescription drug coverage Coverage becomes secondary when retiree becomes eligible for Medicare
14	Ohio [4]	DB	Individual/Family (Spousal and Dependent coverage being phased out)	10 YOS	Prescription drug coverage
15	Pennsylvania	DB	Individual/Family	25 YOS or 20 YOS and superannuation age 60	Prescription drug coverage
16	South Carolina	DB	Individual/ Spouse	5 YOS	Medicare eligible members have the option of Employer Group Waiver Plan with/a Wrap feature 50% coverage for "donut-hole" coverage gap (assumption of "donut-hole" gap to be eliminated by 2020) Federal drug subsidies must be used
17	Tennessee [1]	DC for Medicare-eligible	Individual/ Family	10 YOS w/ 3 YRS of coverage 20 YOS w/ 1 YR of coverage	Medicare Supplement Plan does not include pharmacy

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	State	DB, DC, or Access Only Structure	Coverage: Single, Spouse, Family	Benefit Eligibility (Age/YOS/ Retire from Sponsor)	Prescription
18	Texas	DB	Individual/ Family	10 YOS	Employer Group Waiver Plan plus Commercial Wrap
19	Virginia	DC	Individual/ Family (retiree credit only for employee)	15 YOS for Retiree Health Insurance Credit Program	Advantage 65 Tier system for coverage of drugs $360 annual deductible for covered brand name drugs, no deductible for generic Tier system designates fee for covered drugs
20	West Virginia [2]	Access Only	Individual/ Family	Age 60 with 5 YOS; Age 55 + YOS $\geq$ 80	Prescription drug coverage
21	Wisconsin	Access Only	Individual/ Family	Min Age 55 with 5 YOS Norm Age 65 with 5 YOS; Age 57 with 30 YOS	Prescription drug coverage for Medicare eligible retirees through a self funded plan. Wrap product is also included to provide full coverage during the Medicare "donut hole"

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Appendix C: Full Investment Analysis

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Kentucky Retirement Systems Investment Analysis

May 22, 2017

PFM Group
Consulting LLC

In conjunction with:
PRM Consulting Group
Stites & Harbison PLLC

215-557-1465
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Overview of the Market Environment (7/1/2003 - 6/30/2016)

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Summary of Market Environment

- 2003 – Recovery from Tech bubble; Beginning of Iraq War
- 2004 – US economy grows at 4.4%, best in 5 years
- 2005 – Hurricane Katrina; Rising oil prices; Rising US deficits
- 2006 – Stock market and housing prices reach new highs
- 2007 – Beginning of housing crisis; Slowing GDP in US
- 2008 – US financial crisis (“The Great Recession”)
- 2009 – Global equity recovery & spreads at historic levels
- 2010 – Continued recovery with high equity correlations; Flash Crash
- 2011 – European financial crisis; US credit downgrade
- 2012 – Slow recovery with low rates
- 2013 – Continued slow recovery with low rates; Taper Tantrum
- 2014 – Fears of global slowdown
- 2015 – Continued fears of global slowdown; Greece default; Fed uncertainty
- 2016 – Brexit; Fed uncertainty; US election

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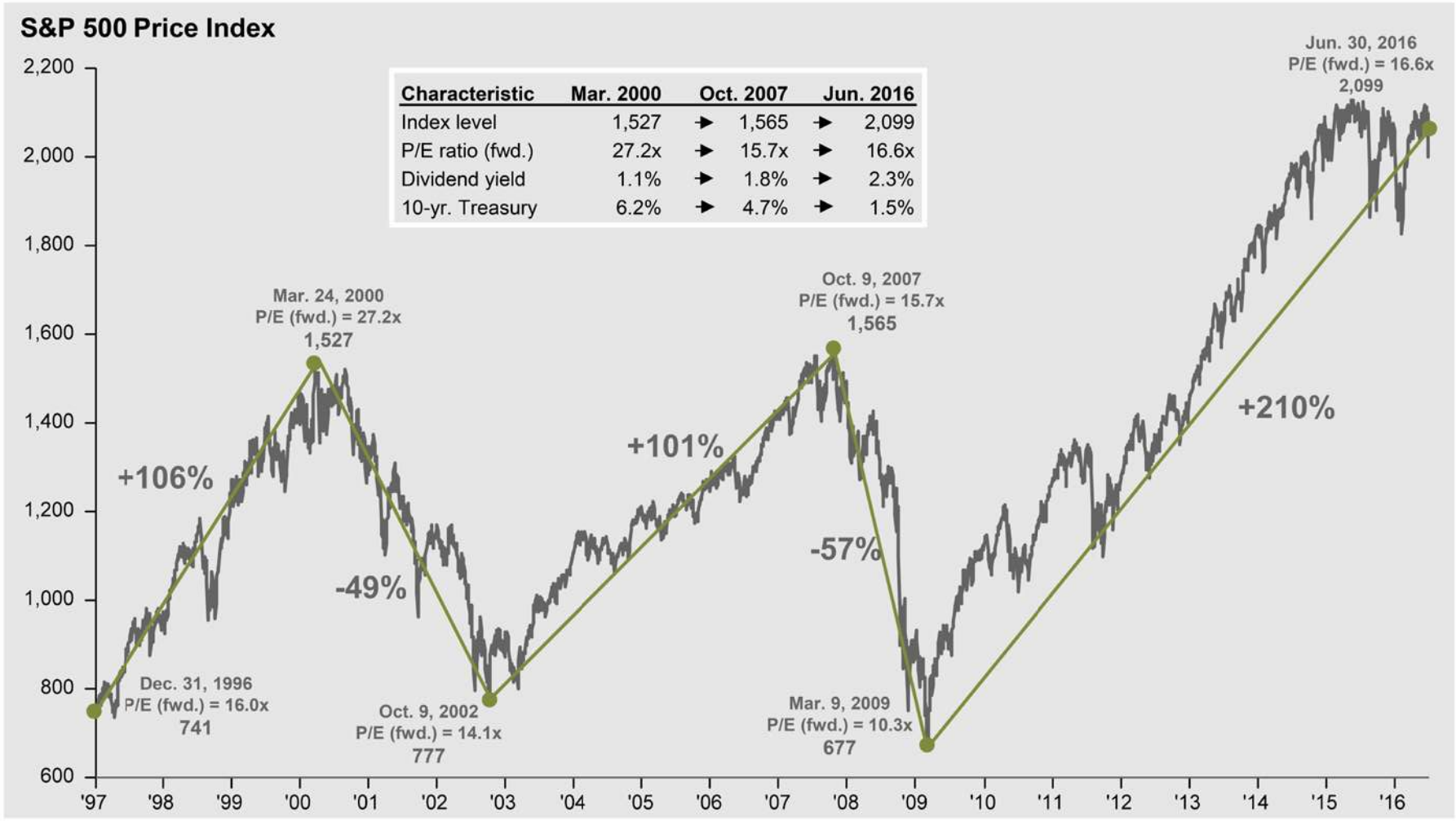
Stock Market Recovery



Source: JP Morgan Guide to the Markets, 3Q16

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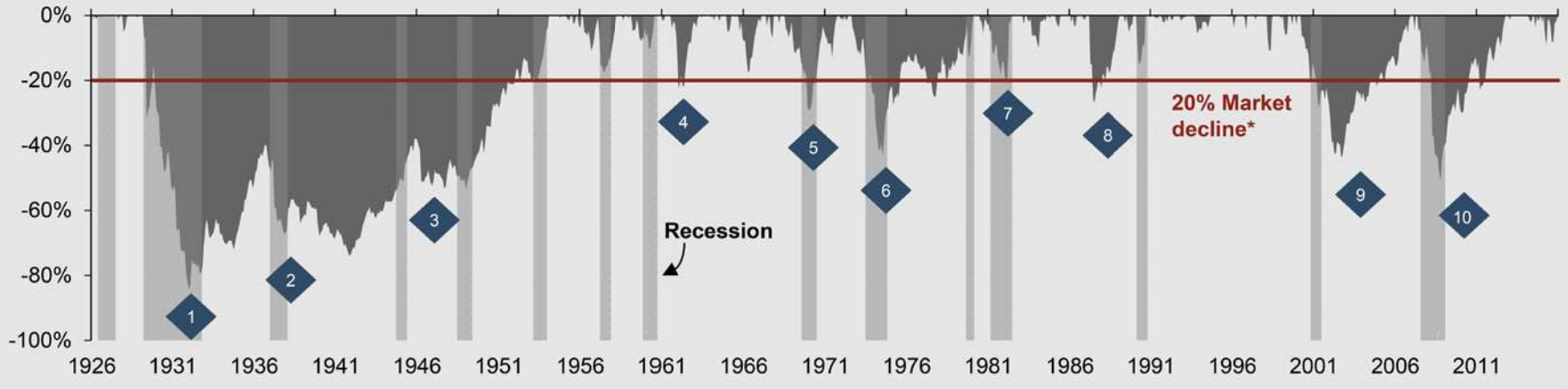
Bear & Bull Markets

S&P 500 composite declines from all-time highs



Characteristics of bull and bear markets

	Bear markets			Macro environment				Bull markets		
Market Corrections	Market peak	Bear return*	Duration (months)*	Recession	Commodity spike	Aggressive Fed	Extreme valuations	Bull begin date	Bull return	Duration (months)
1 Crash of 1929 - Excessive leverage, irrational exuberance	Sep 1929	-86%	33	◆			◆	Jul 1926	152%	38
2 1937 Fed Tightening - Premature policy tightening	Mar 1937	-60%	63	◆		◆		Mar 1935	129%	24
3 Post WWII Crash - Post-war demobilization, recession fears	May 1946	-30%	37	◆			◆	Apr 1942	158%	50
4 Flash Crash of 1962 - Flash crash, Cuban Missile Crisis	Dec 1961	-28%	7				◆	Oct 1960	39%	14
5 Tech Crash of 1970 - Economic overheating, civil unrest	Nov 1968	-36%	18	◆	◆	◆		Oct 1962	103%	74
6 Stagflation - OPEC oil embargo	Jan 1973	-48%	21	◆	◆			May 1970	74%	32
7 Volcker Tightening - Whip Inflation Now	Nov 1980	-27%	21	◆	◆	◆		Mar1978	62%	33
8 1987 Crash - Program trading, overheating markets	Aug 1987	-34%	3				◆	Aug 1982	229%	61
9 Tech Bubble - Extreme valuations, .com boom/bust	Mar 2000	-49%	31	◆			◆	Oct 1990	417%	115
10 Global Financial Crisis - Leverage/housing, Lehman collapse	Oct 2007	-57%	17	◆	◆	◆		Oct 2002	101%	61
Current Cycle								Mar 2009	210%	89
Averages	-	**-45%**	**25**					-	**152%**	**54**

Source: JP Morgan Guide to the Markets, 3Q16

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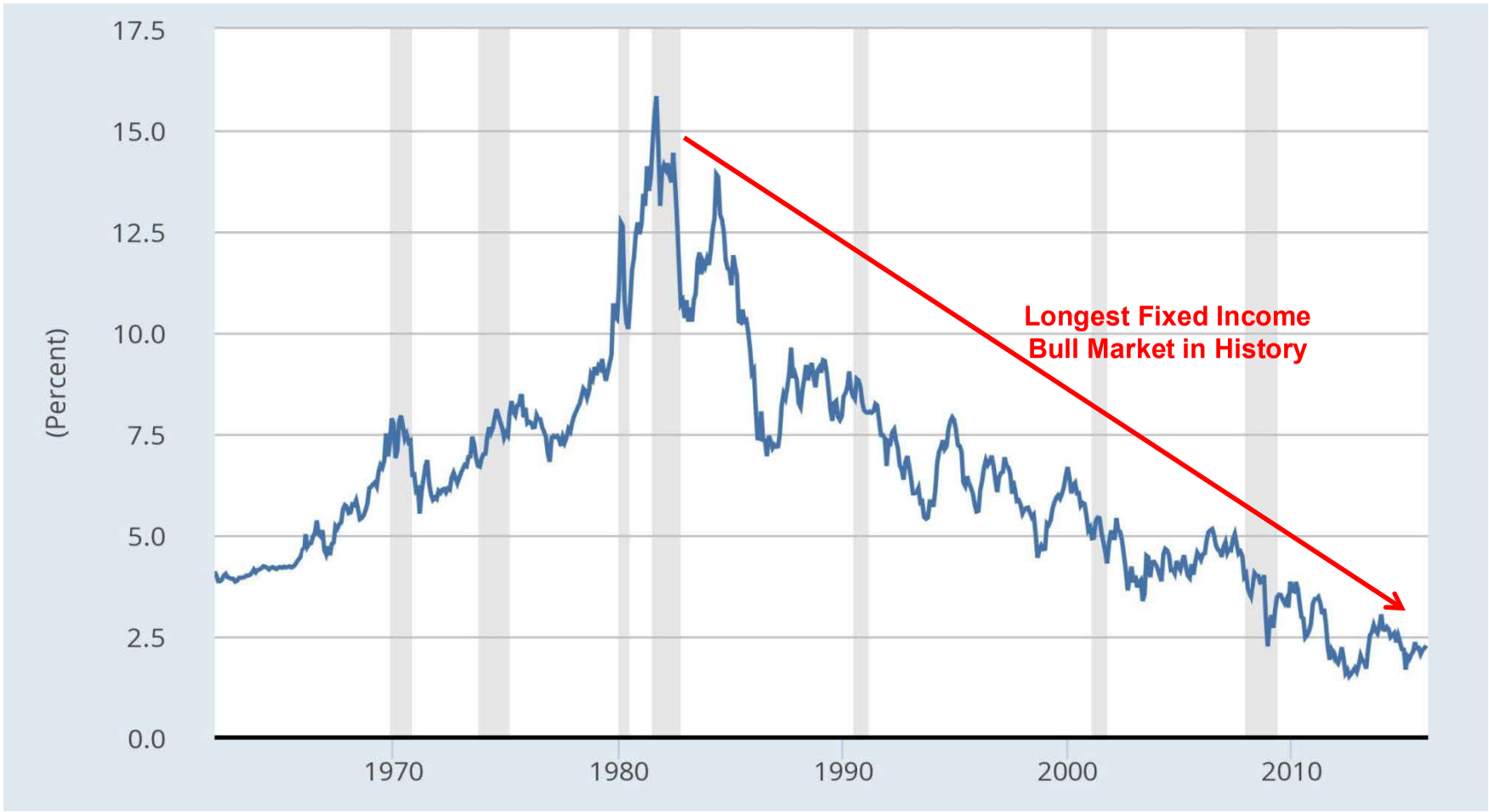
Fixed Income: 30 Years of Declining Rates

10-Year U.S. Treasury Yield
1962 - Current



Source: St. Louis Federal Reserve as of 12/31/15

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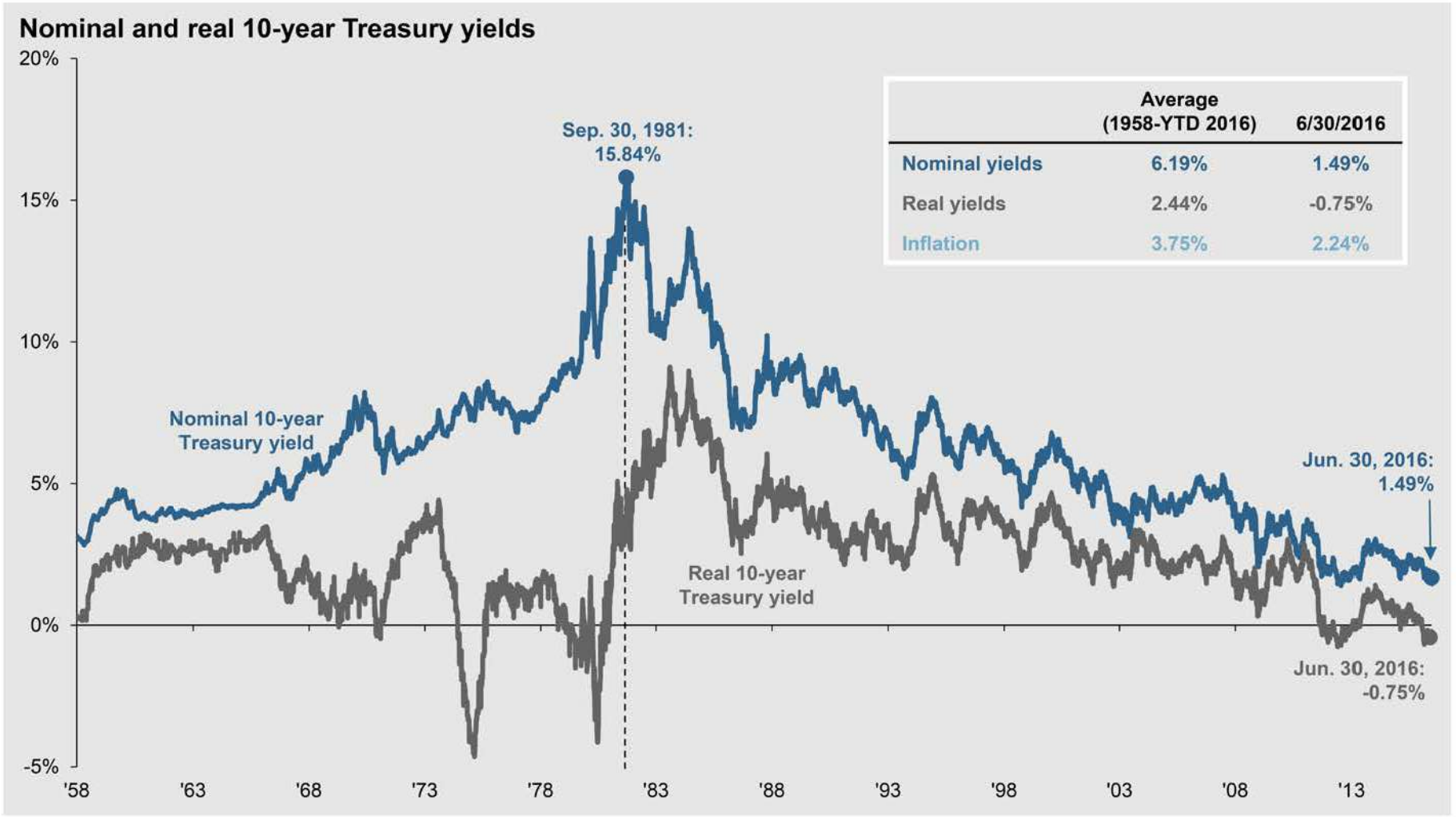
Real Interest Rates



Source: JP Morgan Guide to the Markets, 3Q16

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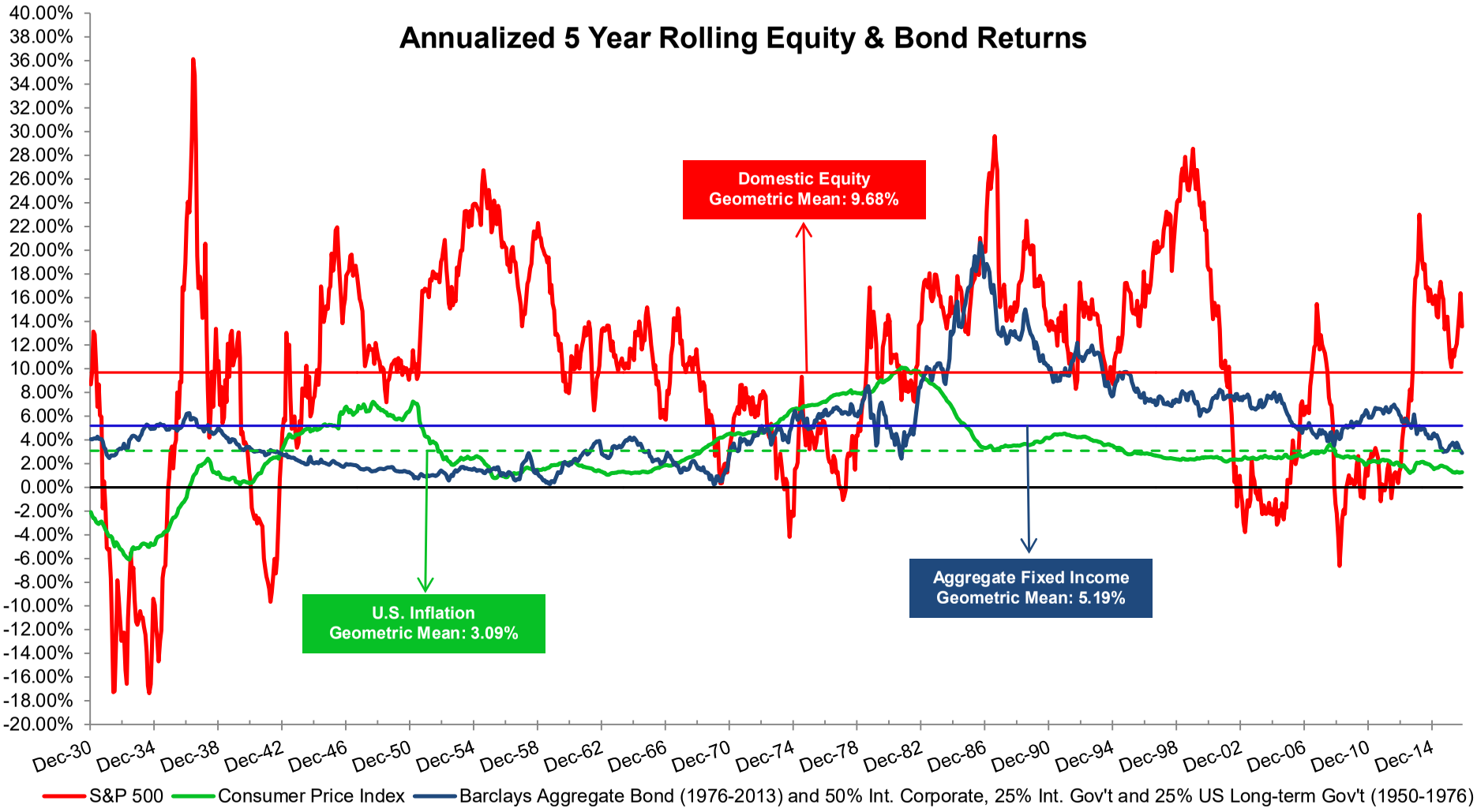
Long-Term Historical Market Returns



Source: Morningstar as of 10/31/16

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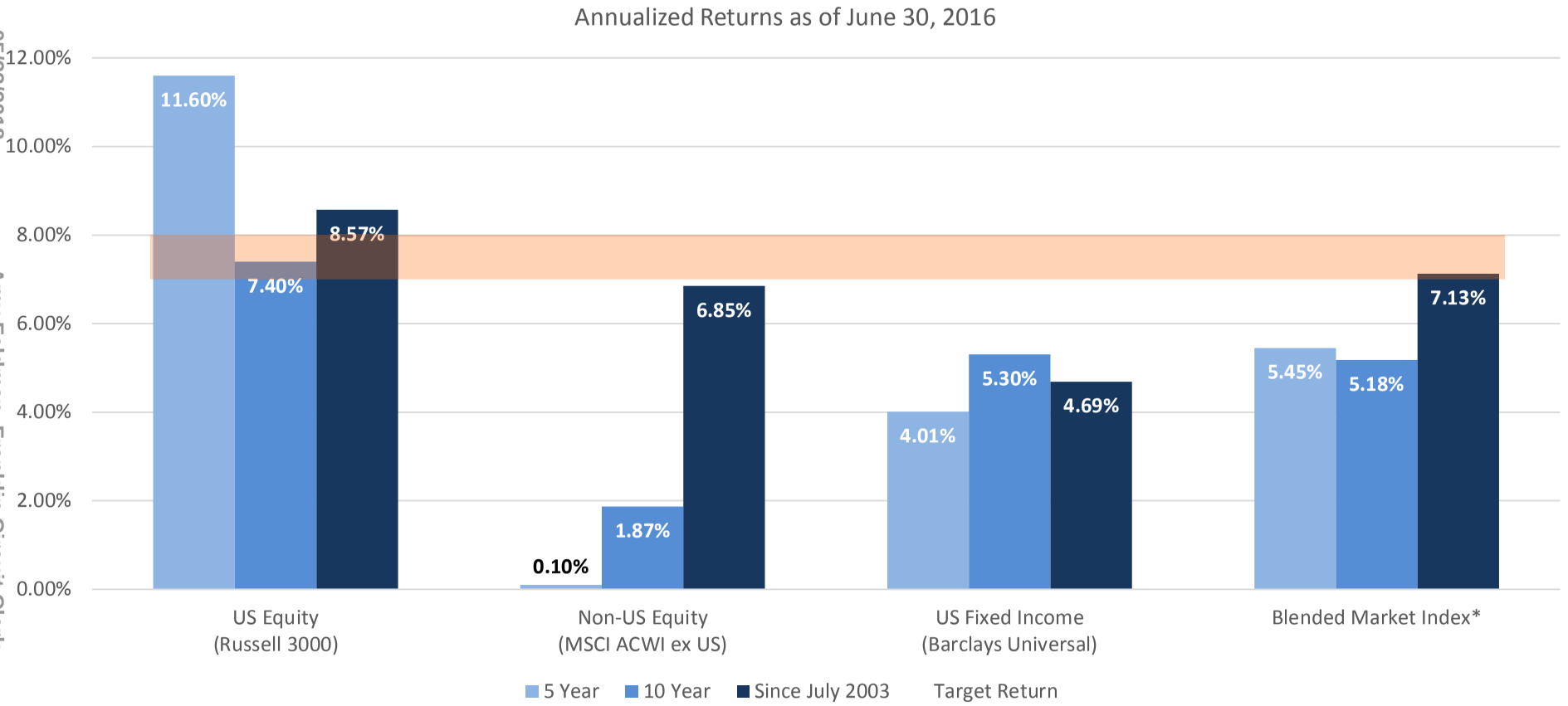
Market Returns Since June 30, 2003

- Investment environment during past decade, including “Great Recession”, has been difficult for retirement plans targeting a 7 – 8% annual return



*Blended Market Index: 35% Russell 3000, 35% MSCI ACWI ex US, 30% Barclays Universal

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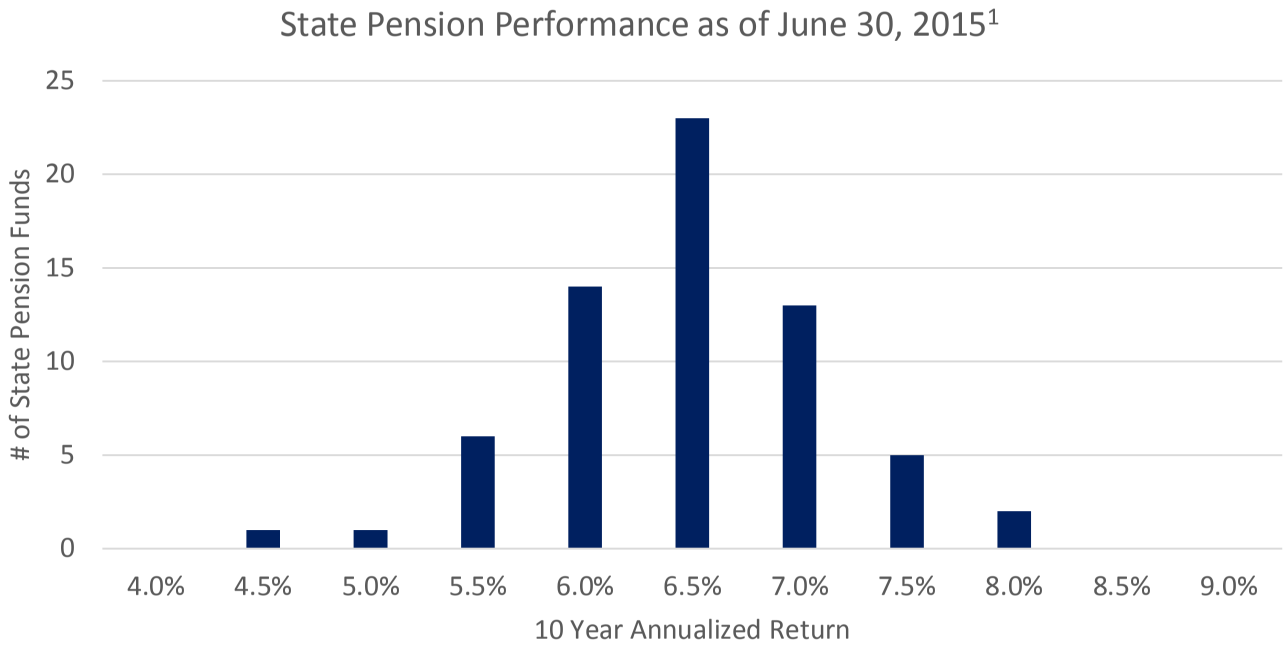
State Pension Plan Investment Returns

- State pension plans as a whole have lagged their investment return assumptions, according to a study conducted by Cliffwater LLC[1]
  - Average state pension plan earned just 6.84% for 10 years ending June 30, 2015
  - Returns ranged from 4.75% - 8.35% with top quartile at only 7.13%
  - Median actuarial return assumption was 8.00%



[1]Cliffwater LLC: "An Examination of State Pension Performance: 2006 to 2015", September 2016

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Asset Allocation & Alternative Investments

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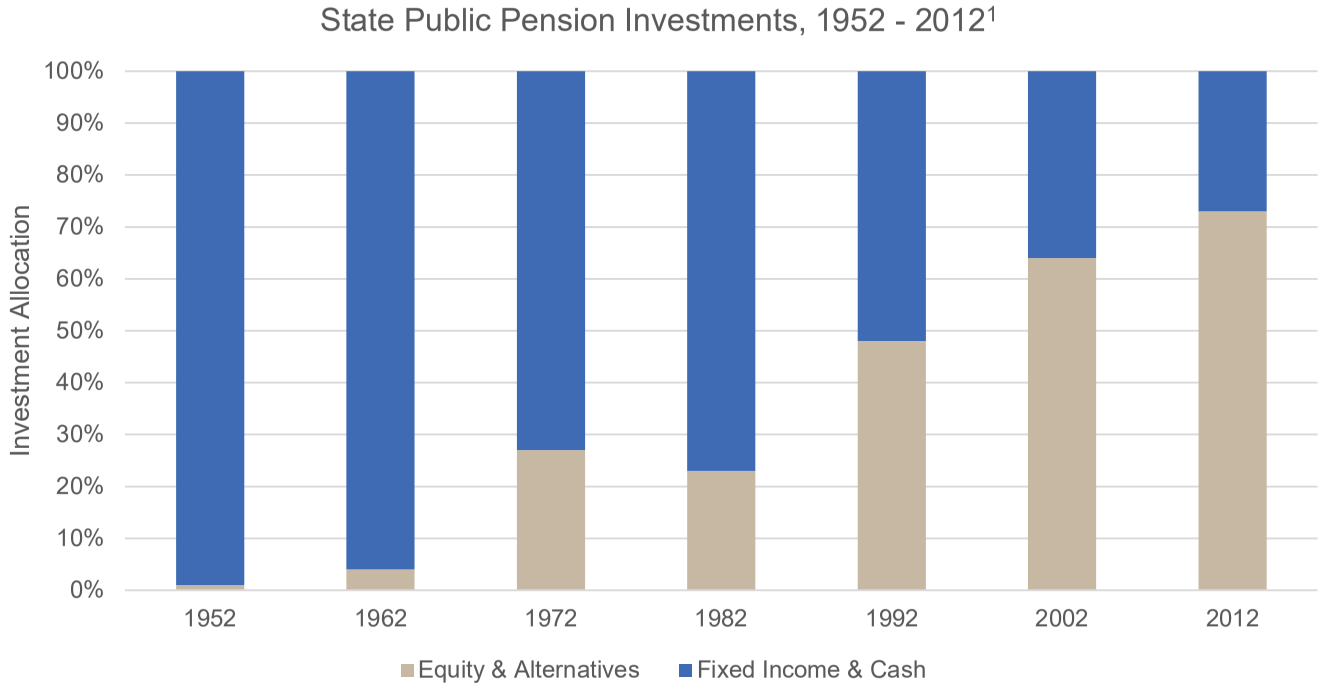
Historical Public Pension Investment Allocations

- Public pension plans have increased investment allocations to more risky assets
  - Decline in 30-year Treasury yields has lowered the probability of achieving investment assumptions and increased investments in alternative asset classes (i.e. hedge funds, private equity, real estate, etc.)
  - Spread between median return assumption and 30-year Treasury yield increased from 0.33% in 1992 to 4.83% in 2012[1]



[1]The Pew Charitable Trusts: "State Public Pension Investments Shift Over Past 30 Years", June 2014

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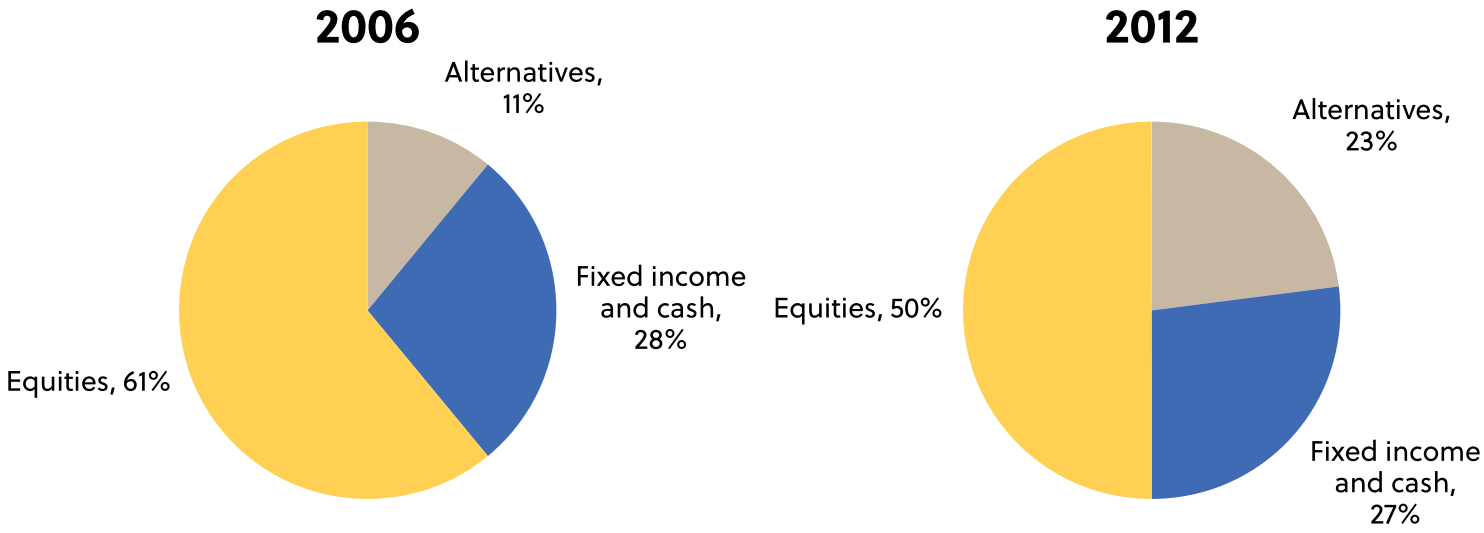
Allocation to Alternative Investments

- Allocations to both equity and fixed income have declined, while allocations to alternative assets has more than doubled from 2006 – 2012
  - Trend is similar to that experienced by many endowment/foundation funds

State Public Pensions Include More Alternative Investments
Share of pension assets in alternatives have more than doubled



[1]The Pew Charitable Trusts: "State Public Pension Investments Shift Over Past 30 Years", June 2014
[2]Analysis by the Pew Charitable Trusts of State Comprehensive Annual Financial Reports, Public 100, and the Federal Reserve Financial Accounts of the United States

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Alternative vs. Traditional Market Returns

- A broad market index of traditional asset classes has fallen short of 7 – 8% retirement plan investment return assumptions over most trailing periods
- Hedge funds have significantly lagged most asset classes for the trailing period analyzed
- Based on representative index data, private equity (including privately-held real estate investments) has preformed better than a broad market portfolio of traditional asset classes since July 2003

As of June 30, 2016	1 Year	3 Years	5 Years	10 Years	Since July 2003
Blended Market Index*	**-1.08%**	**5.67%**	**5.45%**	**5.18%**	**7.13%**
HFRI Fund of Funds Composite Index *(Hedge Funds)*	-5.40%	1.92%	1.63%	1.58%	3.09%
CA US Private Equity Index *(Private Equity)*	10.64%	11.61%	11.52%	7.41%	14.29%
NCREIF Property Index *(Private Real Estate)*	3.20%	11.23%	11.37%	10.76%	9.28%

*Blended Market Index: 35% Russell 3000, 35% MSCI ACWI ex US, 30% Barclays Universal

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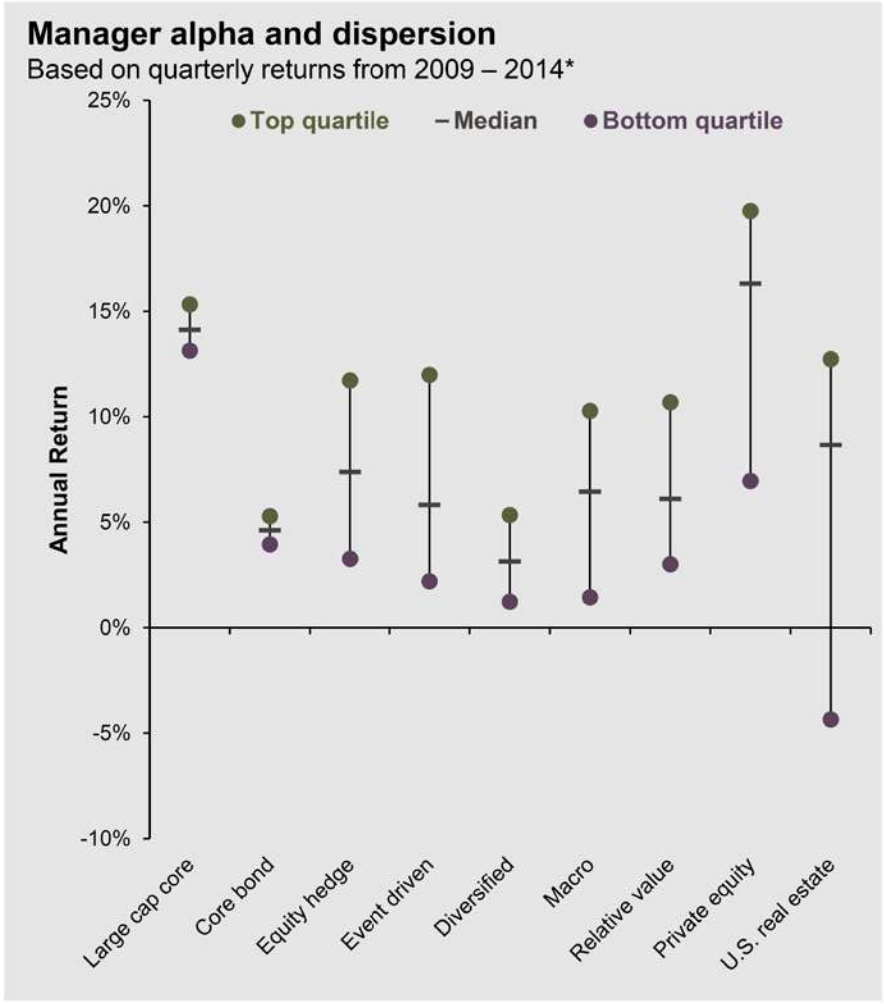
Dispersion: Traditional vs. Alternative Investments



Source: JP Morgan Guide to the Markets, 3Q16

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Comparison to Similar State Plans

Investment Allocations (Red is above average, Green is below average)

	Public Equity	Fixed Income	Real Estate / Real Assets	Hedge Funds	Alternatives	Cash
KRS Pension	50.98%	13.66%	13.18%	10.15%	10.20%	1.83%
KRS Insurance	54.85%	12.16%	13.30%	9.74%	8.13%	1.82%
KTRS Pension	61.00%	24.50%	5.40%	0.00%	5.70%	3.40%
KTRS Insurance	58.30%	32.90%	4.20%	0.00%	3.60%	1.00%
Judicial	74.30%	25.70%	0.00%	0.00%	0.00%	0.00%
Legislative	73.60%	26.40%	0.00%	0.00%	0.00%	0.00%
Average of Comparable States	44.74%	21.48%	13.05%	7.48%	12.08%	1.17%
Median of Comparable States	45.20%	23.00%	13.10%	7.60%	12.60%	0.90%
Illinois	50.70%	22.00%	13.10%	10.00%	4.00%	0.20%
Indiana	22.50%	20.60%	23.70%	9.40%	22.90%	0.90%
Ohio	40.90%	23.00%	10.00%	8.00%	18.10%	0.00%
West Virginia	54.40%	14.50%	10.40%	10.70%	9.60%	0.40%
Tennessee	55.00%	26.50%	12.50%	0.00%	4.90%	1.10%
Virginia	38.70%	28.80%	11.30%	7.60%	12.20%	1.40%
Missouri	24.10%	6.50%	18.00%	29.40%	22.00%	0.00%
Michigan	45.20%	11.60%	15.70%	7.10%	16.00%	4.40%
Georgia	65.30%	27.20%	0.00%	0.00%	0.30%	7.20%
North Carolina	44.40%	28.40%	13.40%	0.00%	12.60%	1.20%
Wisconsin	50.00%	27.00%	16.00%	6.00%	7.00%	-6.00%
South Carolina	32.30%	23.40%	17.30%	9.00%	14.50%	3.50%
Florida	58.10%	19.80%	8.30%	0.00%	12.90%	0.90%

Kentucky data is as of 6/30/2016; Comparative state data is as of 6/30/2015 (Public Pension Oversight Board Report, February 22, 2016); Ohio data is as of 12/31/2015 and Wisconsin data is as of 12/31/2014 per retirement system website

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KRS Pension Plan Overview

- **Asset / Liability Data**
  - Actuarial Value of Assets (6/30/2016): $11.6 Billion
  - Actuarial Accrued Liability (6/30/2016): $29.7 Billion
  - Investment Return Assumption (6/30/2016): 7.50% (down from 8.25% in 2005)
- **Investment Consultants**
  - RV Kuhns (General Advisor)
  - ORG Portfolio Management (Real Estate Advisor)
  - Pension Consulting Alliance (Private Equity Advisor)
  - Albourne America (Hedge Funds & Real Assets Advisor)
- **Investment Managers**
  - 129 total managers/products, including 3 managed internally (S&P 500 Index, Midcap Index, and TIPS portfolio)
- **Custodial Bank**
  - Bank of New York Mellon

Information received from KRS as of 6/30/2016. Asset/Liability Data includes KERS, KERS-H, CERS, CERS-H and SPRS.

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KRS Pension – Performance Attribution

- Total plan actual investment performance falls in the bottom quartile for all trailing periods provided and significantly lags KRS' 7.5% investment return assumption
- Asset allocation has been the primary detractor of relative performance
  - International equity allocation increased from 40% of public equity to 50% of public equity in 2011 and has lagged the Russell 3000 Index by more than 1,100 basis points annualized
  - Hedge fund allocation of roughly 10% was added in 2011 and has lagged the Russell 3000 Index by nearly 800 basis points annualized
  - Real return allocation has averaged 8-10% of the portfolio during the past 5 years and has lagged the Russell 3000 Index by more than 800 basis points annualized
  - Private equity allocation has added value over public equity for most trailing periods, but the investment return has lagged KRS' benchmark (Russell 3000 Index + 3%) by 260 basis points annualized for the past 10 years
- Performance at the asset class level has generally been in-line with the relevant index for longer periods (10+ years), with the exception of real estate, indicating manager selection has not been a significant detractor of performance
- Although the plan has a lower standard deviation (volatility) than most of its peers, it has failed to keep pace in up-markets since 2003

Source: RV Kuhns quarterly performance report as of 6/30/2016

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KRS Pension – Investment Policy Targets

- KRS has changed investment policy targets four times since 2010
- Target asset allocations for Plans began to diverge in 2011 despite having the same target return goal of 7.5%
- Overall target allocations to alternatives have increased and allowable ranges have narrowed

2010 Investment Policy	Target Allocations (All Plans)	Allowable Range
Domestic Equity	30.0%	20 - 50%
International Equity	20.0%	10 - 30%
Fixed Income - TIPS	10.0%	0 - 15%
Fixed Income - Market	20.0%	12 - 32%
Fixed Income - High Yield	5.0%	0 - 10%
Alternative Investments	12.0%	1 - 15%
Cash Equivalents	3.0%	1 - 15%

2015 Investment Policy	KERS	KERS H	CERS	CERS H	SPRS	Allowable Range (+/- Target)
US Equity	22.0%	26.5%	26.5%	26.5%	23.0%	5.0%
Non US Equity	20.0%	26.5%	26.5%	26.5%	23.0%	5.0%
Global Fixed Income	10.0%	6.0%	6.0%	6.0%	9.0%	2.0%
Credit Fixed Income	12.0%	6.0%	6.0%	6.0%	9.0%	2.0%
Real Estate	5.0%	5.0%	5.0%	5.0%	5.0%	2.0%
Absolute Return	10.0%	10.0%	10.0%	10.0%	10.0%	2.0%
Real Return	8.0%	8.0%	8.0%	8.0%	8.0%	2.0%
Private Equity	10.0%	10.0%	10.0%	10.0%	10.0%	3.0%
Cash	3.0%	2.0%	2.0%	2.0%	3.0%	2.0%

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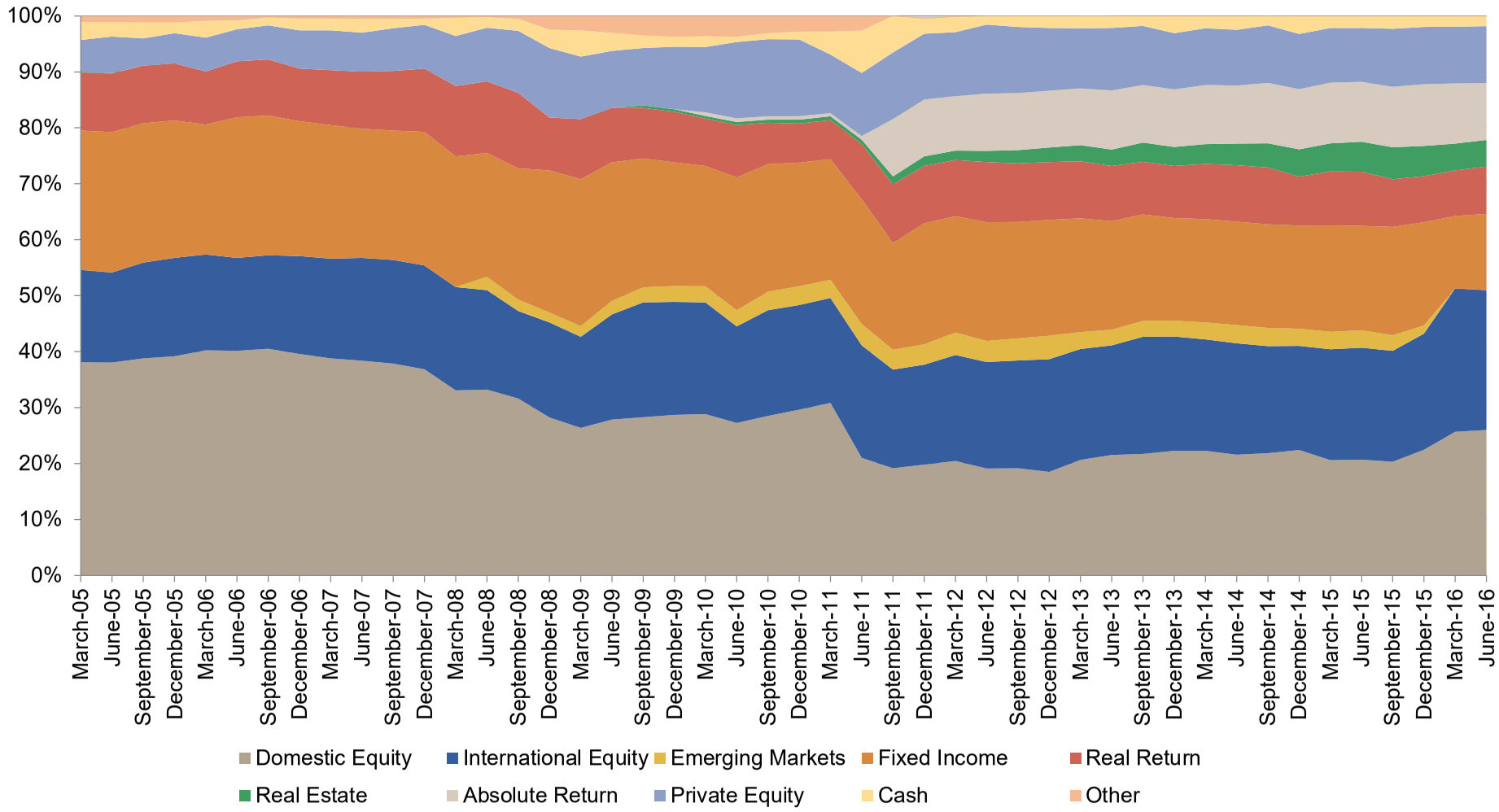
KRS Pension – Historical Asset Allocation



Source: RV Kuhns Quarterly Investment Performance Reports from 2005 - 2016. Reports prior to 2005 were not provided.

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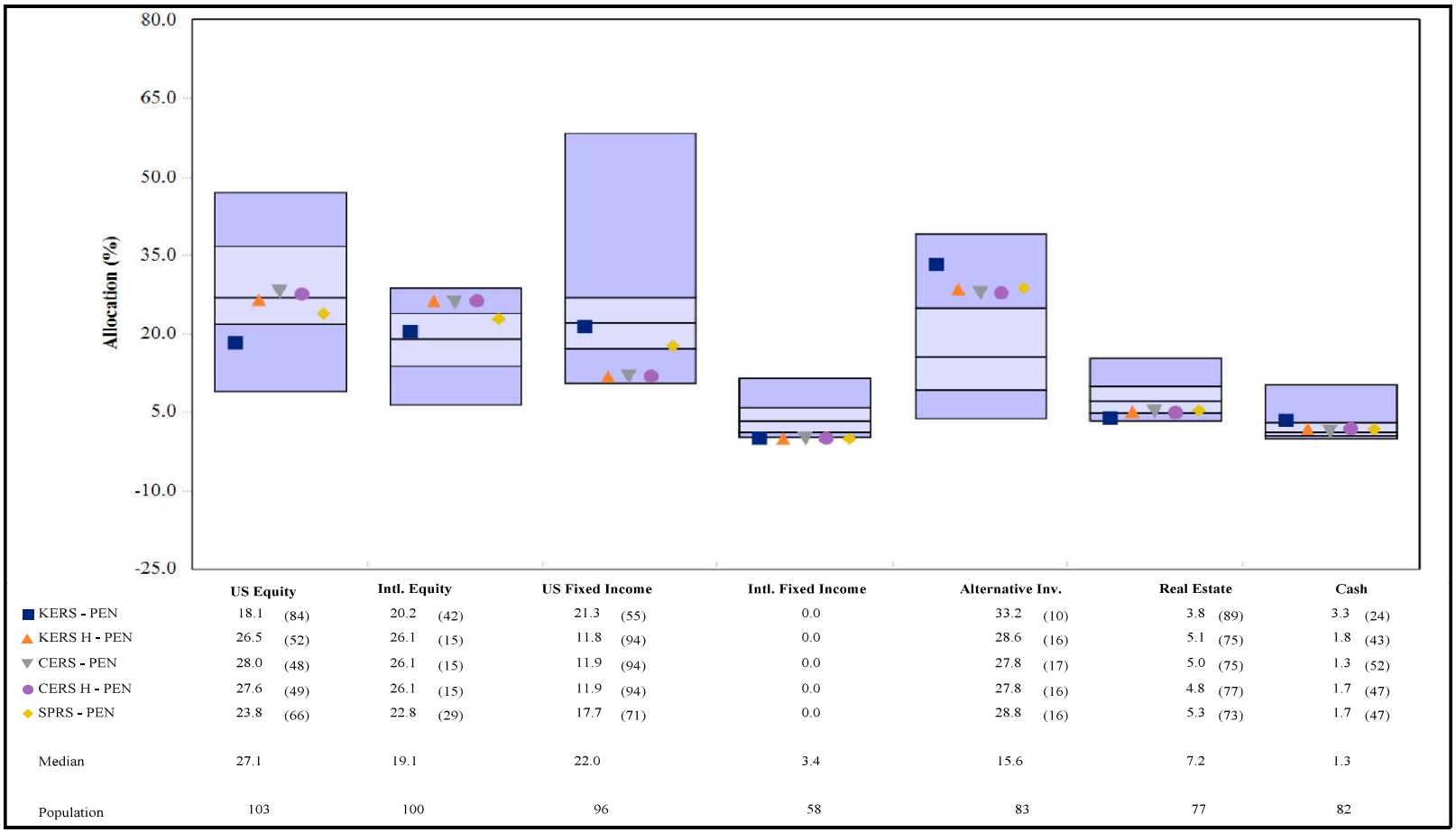
KRS Pension – Asset Allocation Comparison

Asset Allocation Analysis
All Public Plans > $1 Billion
As of June 30, 2016



	US Equity	Intl. Equity	US Fixed Income	Intl. Fixed Income	Alternative Inv.	Real Estate	Cash
KERS - PEN	18.1 (84)	20.2 (42)	21.3 (55)	0.0	33.2 (10)	3.8 (89)	3.3 (24)
KERS H - PEN	26.5 (52)	26.1 (15)	11.8 (94)	0.0	28.6 (16)	5.1 (75)	1.8 (43)
CERS - PEN	28.0 (48)	26.1 (15)	11.9 (94)	0.0	27.8 (17)	5.0 (75)	1.3 (52)
CERS H - PEN	27.6 (49)	26.1 (15)	11.9 (94)	0.0	27.8 (16)	4.8 (77)	1.7 (47)
SPRS - PEN	23.8 (66)	22.8 (29)	17.7 (71)	0.0	28.8 (16)	5.3 (73)	1.7 (47)
Median	27.1	19.1	22.0	3.4	15.6	7.2	1.3
Population	103	100	96	58	83	77	82

Source: RV Kuhns Quarterly Investment Performance Reports as of 6/30/16 and Investment Metrics peer group data. Parentheses contain percentile rankings.

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KRS Pension – Actual Performance vs. Benchmarks

As of June 30, 2016	3 Years	5 Years	7 Years	10 Years	Jul-2003 To Jun-2016
KERS - PEN	4.99	5.11	8.44	4.89	6.23
KERS - PEN Benchmark	5.75	5.82	8.82	5.45	6.55
Over/Under Performance	*-0.76*	*-0.71*	*-0.38*	*-0.56*	*-0.32*
KERS H - PEN	5.35	5.32	8.60	5.00	6.31
KERS H - PEN Benchmark	5.34	5.57	8.64	5.33	6.46
Over/Under Performance	*0.01*	*-0.25*	*-0.04*	*-0.33*	*-0.15*
CERS - PEN	5.07	5.16	8.48	4.91	6.25
CERS - PEN Benchmark	5.32	5.56	8.63	5.32	6.45
Over/Under Performance	*-0.25*	*-0.40*	*-0.15*	*-0.41*	*-0.20*
CERS H - PEN	5.39	5.35	8.62	5.01	6.32
CERS H - PEN Benchmark	5.32	5.56	8.63	5.32	6.45
Over/Under Performance	*0.07*	*-0.21*	*-0.01*	*-0.31*	*-0.13*
SPRS - PEN	4.98	5.10	8.44	4.89	6.23
SPRS - PEN Benchmark	5.43	5.63	8.68	5.35	6.48
Over/Under Performance	*-0.45*	*-0.53*	*-0.24*	*-0.46*	*-0.25*

Source: RV Kuhns Quarterly Investment Performance Reports as of 6/30/16.

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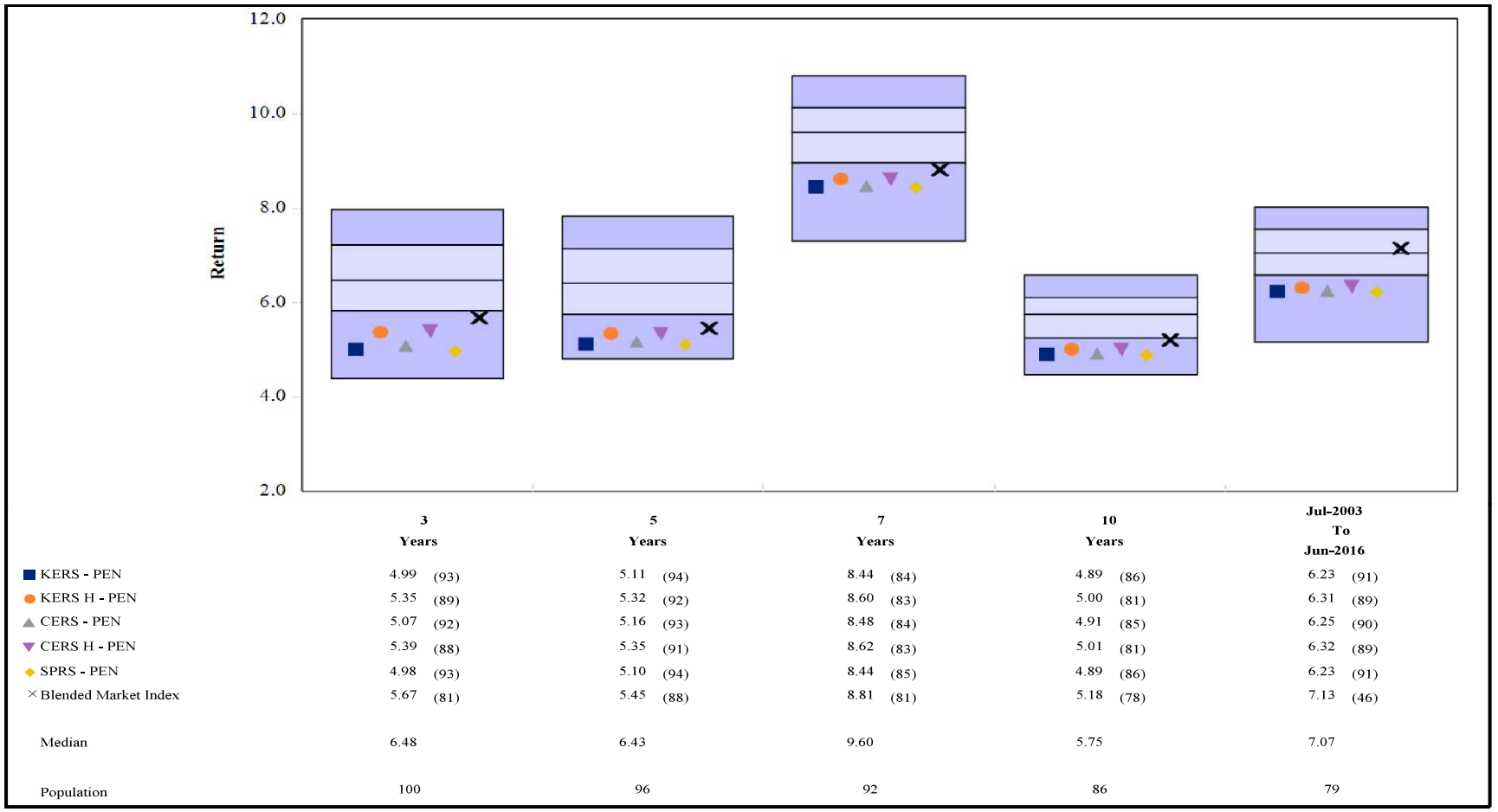
KRS Pension – Trailing Investment Performance

Plan Sponsor Peer Group Analysis
All Public Plans > $1 Billion
As of June 30, 2016



	3 Years	5 Years	7 Years	10 Years	Jul-2003 To Jun-2016
KERS - PEN	4.99 (93)	5.11 (94)	8.44 (84)	4.89 (86)	6.23 (91)
KERS H - PEN	5.35 (89)	5.32 (92)	8.60 (83)	5.00 (81)	6.31 (89)
CERS - PEN	5.07 (92)	5.16 (93)	8.48 (84)	4.91 (85)	6.25 (90)
CERS H - PEN	5.39 (88)	5.35 (91)	8.62 (83)	5.01 (81)	6.32 (89)
SPRS - PEN	4.98 (93)	5.10 (94)	8.44 (85)	4.89 (86)	6.23 (91)
Blended Market Index	5.67 (81)	5.45 (88)	8.81 (81)	5.18 (78)	7.13 (46)
Median	6.48	6.43	9.60	5.75	7.07
Population	100	96	92	86	79

Source: RV Kuhns Quarterly Investment Performance Reports as of 6/30/16 and Investment Metrics peer group data. Parentheses contain percentile rankings.

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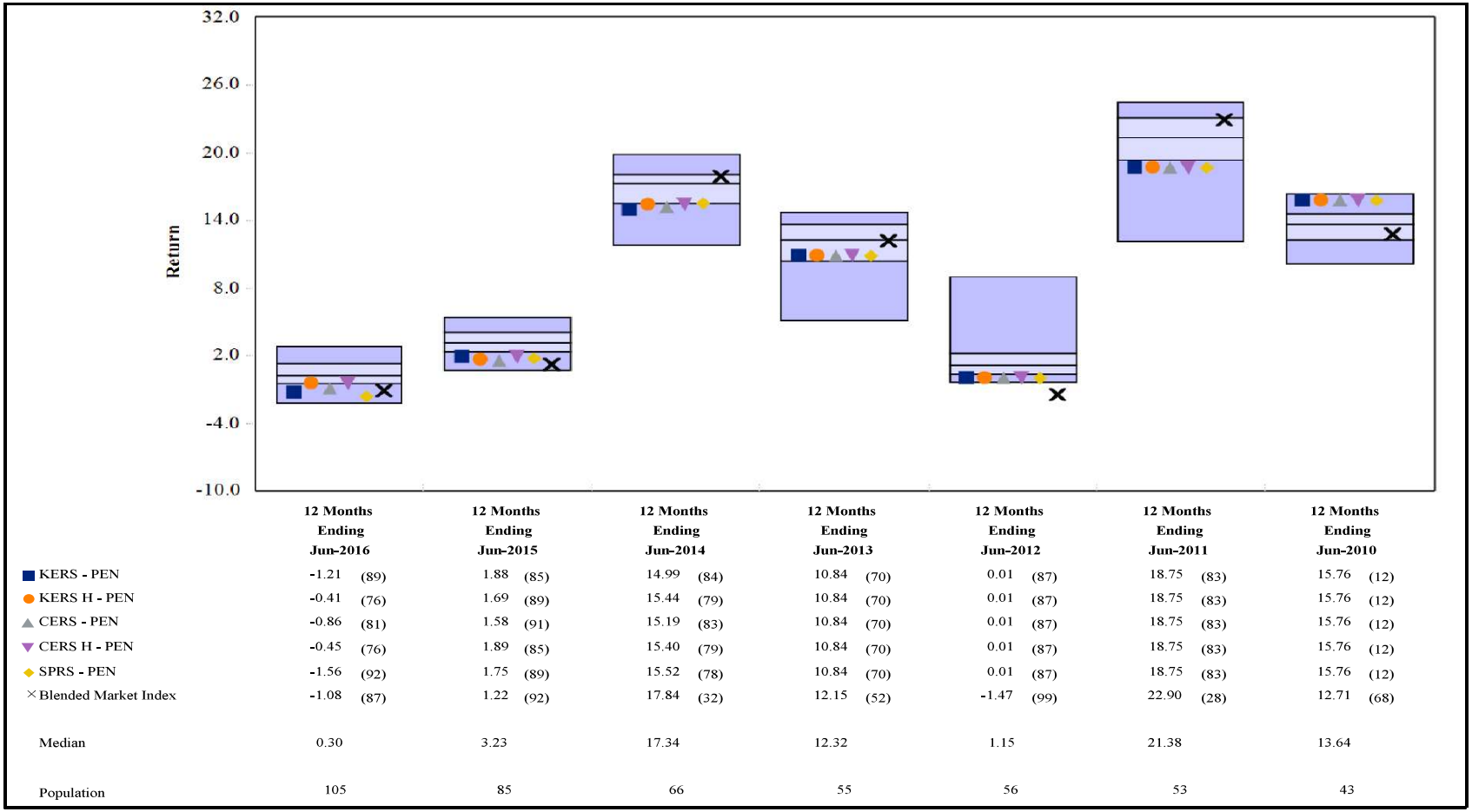
KRS Pension – Fiscal Year Investment Returns

Plan Sponsor Peer Group Analysis
All Public Plans > $1 Billion
As of June 30, 2016



	12 Months Ending Jun-2016		12 Months Ending Jun-2015		12 Months Ending Jun-2014		12 Months Ending Jun-2013		12 Months Ending Jun-2012		12 Months Ending Jun-2011		12 Months Ending Jun-2010	
KERS - PEN	-1.21	(89)	1.88	(85)	14.99	(84)	10.84	(70)	0.01	(87)	18.75	(83)	15.76	(12)
KERS H - PEN	-0.41	(76)	1.69	(89)	15.44	(79)	10.84	(70)	0.01	(87)	18.75	(83)	15.76	(12)
CERS - PEN	-0.86	(81)	1.58	(91)	15.19	(83)	10.84	(70)	0.01	(87)	18.75	(83)	15.76	(12)
CERS H - PEN	-0.45	(76)	1.89	(85)	15.40	(79)	10.84	(70)	0.01	(87)	18.75	(83)	15.76	(12)
SPRS - PEN	-1.56	(92)	1.75	(89)	15.52	(78)	10.84	(70)	0.01	(87)	18.75	(83)	15.76	(12)
Blended Market Index	-1.08	(87)	1.22	(92)	17.84	(32)	12.15	(52)	-1.47	(99)	22.90	(28)	12.71	(68)
Median	0.30		3.23		17.34		12.32		1.15		21.38		13.64	
Population	105		85		66		55		56		53		43	

Source: RV Kuhns Quarterly Investment Performance Reports as of 6/30/16 and Investment Metrics peer group data. Parentheses contain percentile rankings.

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30A9A12D-3AD1-4E48-821D-622EA8D210FC : 000392 of 000607

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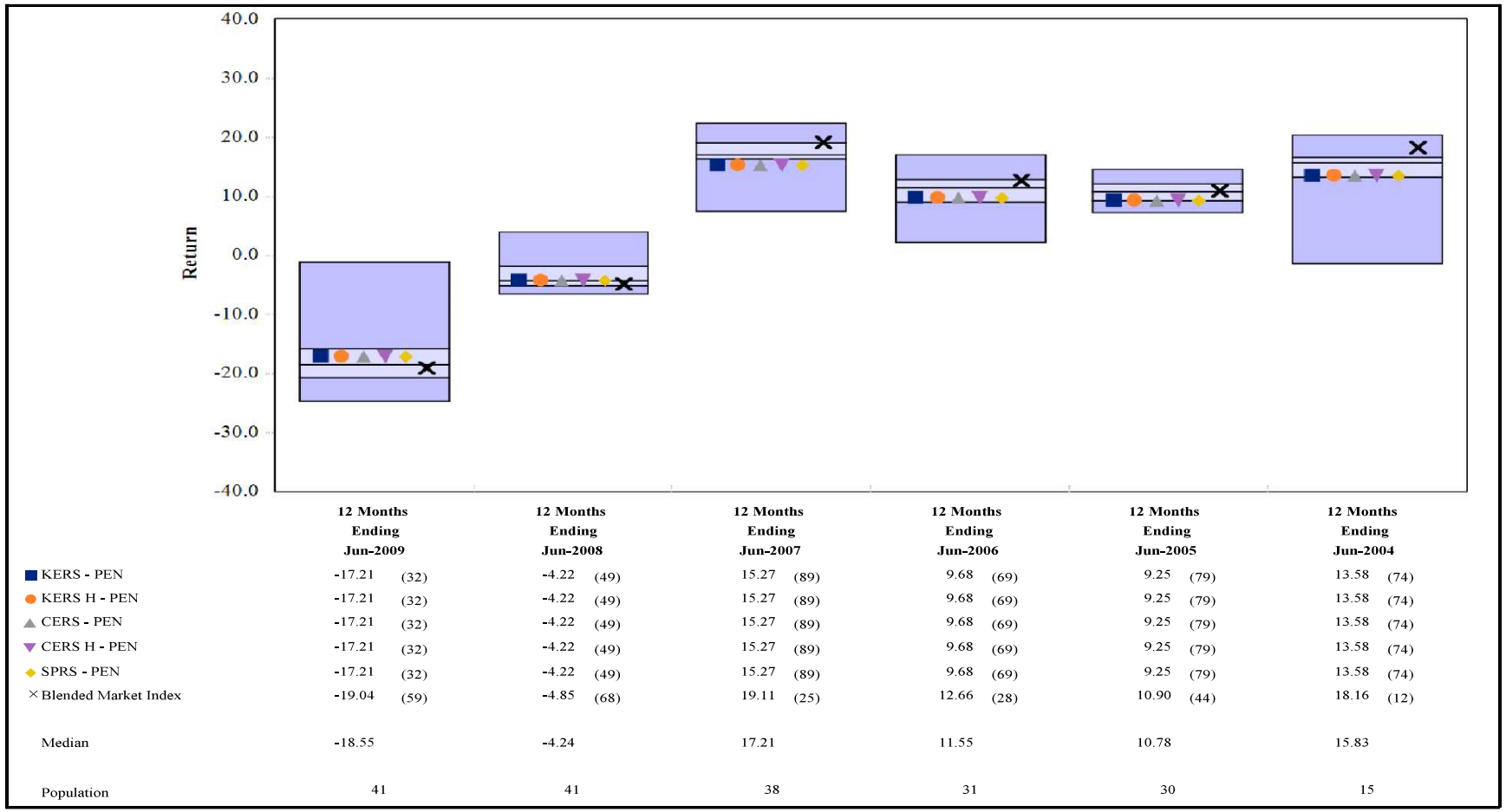
KRS Pension – Fiscal Year Investment Returns

Plan Sponsor Peer Group Analysis
All Public Plans > $1 Billion
As of June 30, 2016



	12 Months Ending Jun-2009		12 Months Ending Jun-2008		12 Months Ending Jun-2007		12 Months Ending Jun-2006		12 Months Ending Jun-2005		12 Months Ending Jun-2004	
KERS - PEN	-17.21	(32)	-4.22	(49)	15.27	(89)	9.68	(69)	9.25	(79)	13.58	(74)
KERS H - PEN	-17.21	(32)	-4.22	(49)	15.27	(89)	9.68	(69)	9.25	(79)	13.58	(74)
CERS - PEN	-17.21	(32)	-4.22	(49)	15.27	(89)	9.68	(69)	9.25	(79)	13.58	(74)
CERS H - PEN	-17.21	(32)	-4.22	(49)	15.27	(89)	9.68	(69)	9.25	(79)	13.58	(74)
SPRS - PEN	-17.21	(32)	-4.22	(49)	15.27	(89)	9.68	(69)	9.25	(79)	13.58	(74)
× Blended Market Index	-19.04	(59)	-4.85	(68)	19.11	(25)	12.66	(28)	10.90	(44)	18.16	(12)
Median	-18.55		-4.24		17.21		11.55		10.78		15.83	
Population	41		41		38		31		30		15	

Source: RV Kuhns Quarterly Investment Performance Reports as of 6/30/16 and Investment Metrics peer group data. Parentheses contain percentile rankings.

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30A9A12D-3AD1-4E48-821D-622EA8D210FC : 000393 of 000607

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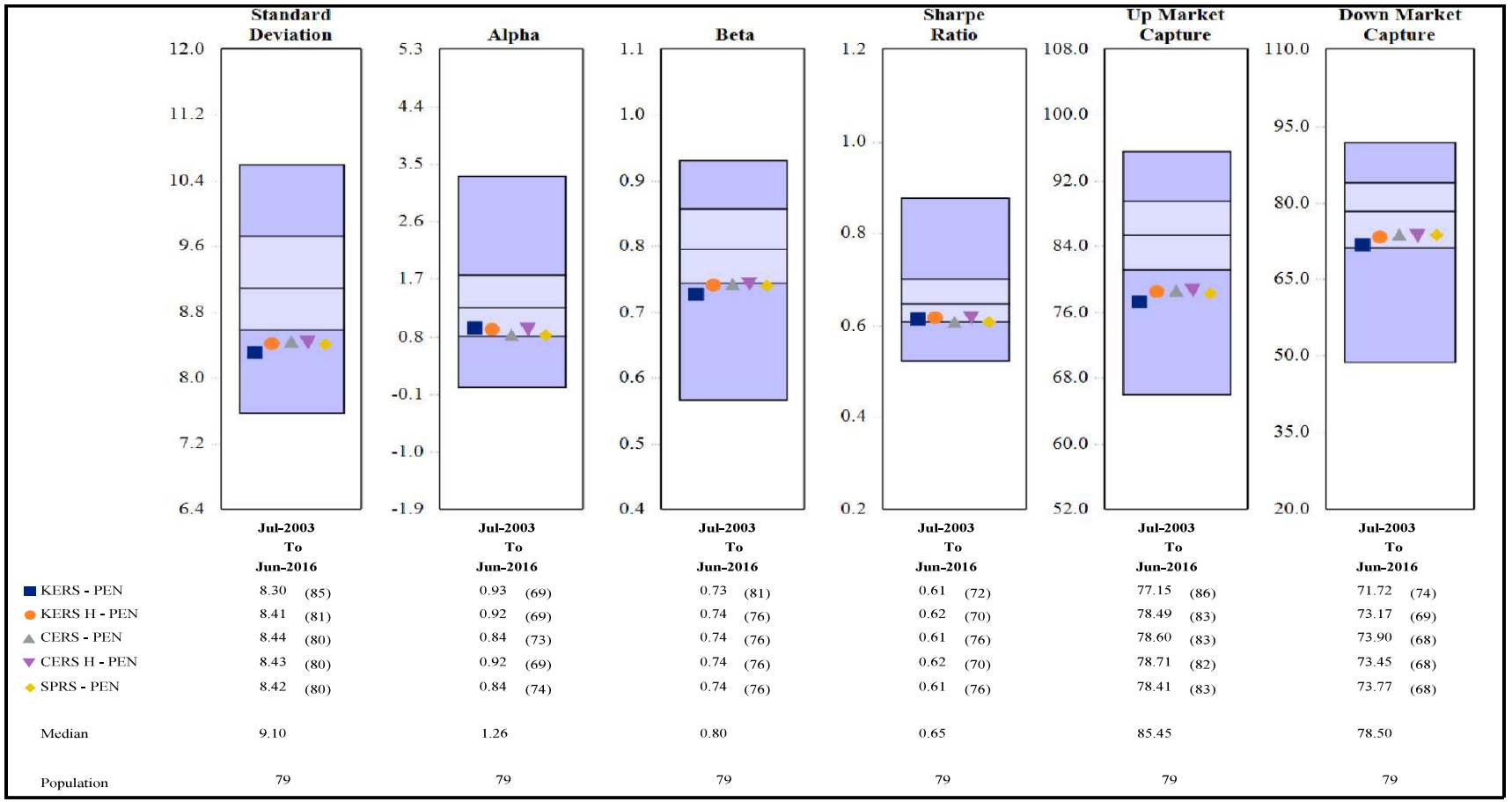
KRS Pension – Investment Risk Statistics

Plan Sponsor Peer Group Analysis-Multi Statistics
All Public Plans > $1 Billion vs. Blended Market Index

As of June 30, 2016



	Standard Deviation Jul-2003 To Jun-2016		Alpha Jul-2003 To Jun-2016		Beta Jul-2003 To Jun-2016		Sharpe Ratio Jul-2003 To Jun-2016		Up Market Capture Jul-2003 To Jun-2016		Down Market Capture Jul-2003 To Jun-2016	
KERS - PEN	8.30	(85)	0.93	(69)	0.73	(81)	0.61	(72)	77.15	(86)	71.72	(74)
KERS H - PEN	8.41	(81)	0.92	(69)	0.74	(76)	0.62	(70)	78.49	(83)	73.17	(69)
CERS - PEN	8.44	(80)	0.84	(73)	0.74	(76)	0.61	(76)	78.60	(83)	73.90	(68)
CERS H - PEN	8.43	(80)	0.92	(69)	0.74	(76)	0.62	(70)	78.71	(82)	73.45	(68)
SPRS - PEN	8.42	(80)	0.84	(74)	0.74	(76)	0.61	(76)	78.41	(83)	73.77	(68)
Median	9.10		1.26		0.80		0.65		85.45		78.50	
Population	79		79		79		79		79		79	

Source: RV Kuhns Quarterly Investment Performance Reports as of 6/30/16 and Investment Metrics peer group data. Parentheses contain percentile rankings.

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KRS Insurance Plan Overview

- **Asset / Liability Data**
  - Actuarial Value of Assets (6/30/2016): $4.6 Billion
  - Actuarial Accrued Liability (6/30/2016): $7.6 Billion
  - Investment Return Assumption (6/30/2016): 7.50% (down from 8.25% in 2005)
- **Investment Consultants**
  - RV Kuhns (General Advisor)
  - ORG Portfolio Management (Real Estate Advisor)
  - Pension Consulting Alliance (Private Equity Advisor)
  - Albourne America (Hedge Funds & Real Assets Advisor)
- **Investment Managers**
  - 132 total managers/products, including 3 managed internally (S&P 500 Index, Midcap Index, and TIPS portfolio)
- **Custodial Bank**
  - Bank of New York Mellon

Information received from KRS as of 6/30/2016. Asset/Liability Data includes KERS, KERS-H, CERS, CERS-H and SPRS.

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KRS Insurance – Performance Attribution

- Total plan actual investment performance falls in bottom quartile for all trailing periods shown and significantly lags KRS' 7.5% investment return assumption
- Asset allocation has been the primary detractor of relative performance
  - International equity allocation increased from 30% of public equity to nearly 50% of public equity in 2011 and has lagged the Russell 3000 Index by more than 1,100 basis points annually
  - Hedge fund allocation of roughly 10% was added in 2011 and has lagged the Russell 3000 Index by nearly 800 basis points annually
  - Real return allocation has averaged 10% of the portfolio during the past 5 years and has lagged the Russell 3000 Index by more than 800 basis points annually
  - Private equity allocation has added value over public equity for most trailing periods, but has lagged its benchmark (Russell 3000 Index + 3%) by 26 basis points annually for past 10 years
- Performance at the asset class level has generally been in-line with the relevant index for longer periods (10+ years), with the exception of real estate, indicating manager selection has not been a significant detractor of performance
- Both the standard deviation and down-market capture have been in the top percentile of peers since 2003, resulting in significant volatility and poor performance

Source: RV Kuhns quarterly performance report as of 6/30/2016

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KRS Insurance – Investment Policy Targets

- KRS has changed investment policy targets four times since 2010
- Target asset allocations for KERS differed from others in 2011 policy but has remained consistent in all other versions (although actual allocations have differed)
- Overall target allocations to alternatives have increased and allowable ranges have narrowed

2010 Investment Policy	Target Allocations (All Plans)	Allowable Range
Domestic Equity	35.0%	25 - 65%
International Equity	30.0%	20 - 40%
Fixed Income - TIPS	12.0%	0 - 15%
Fixed Income - Market	0.0%	0 - 30%
Fixed Income - High Yield	5.0%	0 - 5%
Alternative Investments	15.0%	1 - 20%
Cash Equivalents	3.0%	1 - 10%

2015 Investment Policy	KERS	KERS H	CERS	CERS H	SPRS	Allowable Range (+/- Target)
US Equity	26.5%	26.5%	26.5%	26.5%	26.5%	5.0%
Non US Equity	26.5%	26.5%	26.5%	26.5%	26.5%	5.0%
Global Fixed Income	6.0%	6.0%	6.0%	6.0%	6.0%	2.0%
Credit Fixed Income	6.0%	6.0%	6.0%	6.0%	6.0%	2.0%
Real Estate	5.0%	5.0%	5.0%	5.0%	5.0%	2.0%
Absolute Return	10.0%	10.0%	10.0%	10.0%	10.0%	2.0%
Real Return	8.0%	8.0%	8.0%	8.0%	8.0%	2.0%
Private Equity	10.0%	10.0%	10.0%	10.0%	10.0%	3.0%
Cash	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%

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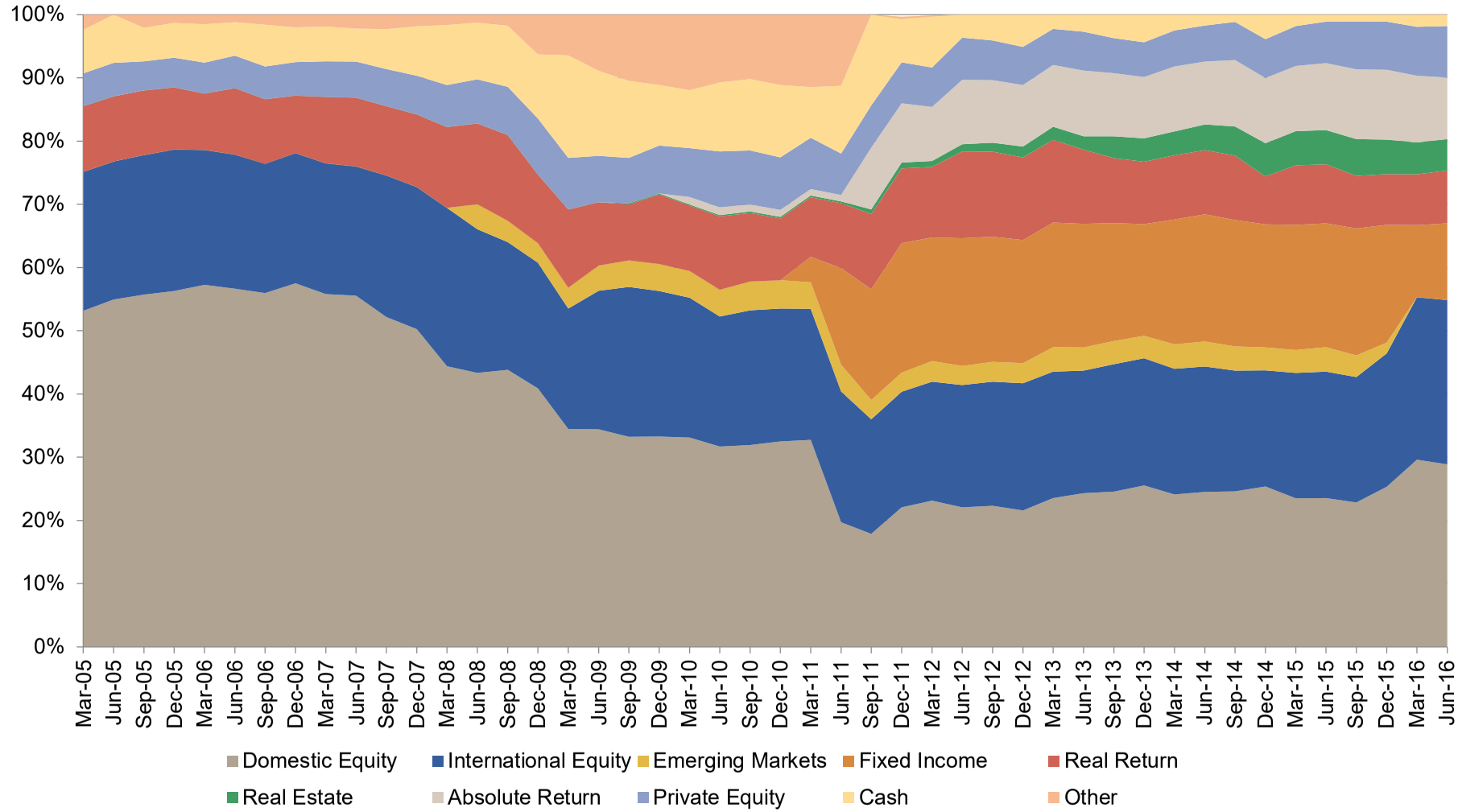
KRS Insurance – Historical Asset Allocation



Source: RV Kuhns Quarterly Investment Performance Reports from 2005 - 2016. Reports prior to 2005 were not provided.

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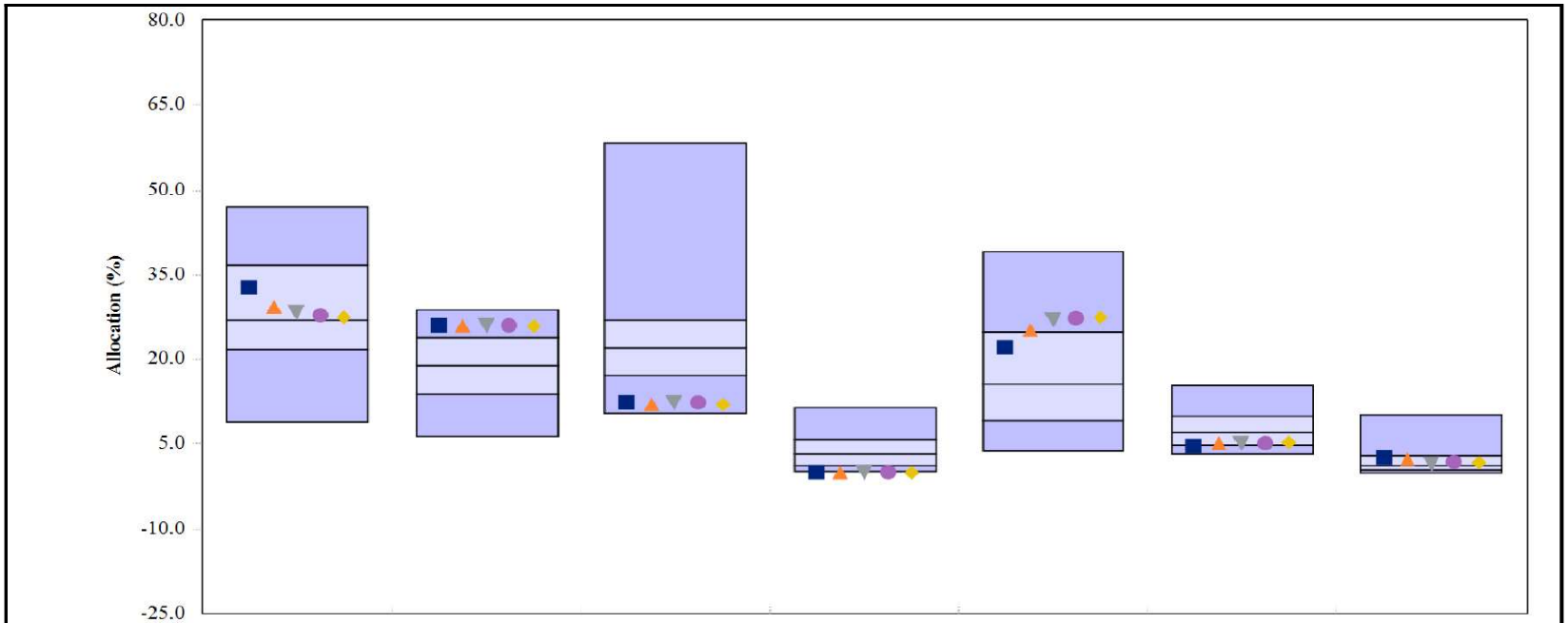
KRS Insurance – Asset Allocation Comparison

Asset Allocation Analysis
All Public Plans > $1 Billion
As of June 30, 2016



	US Equity		Intl. Equity		US Fixed Income		Intl. Fixed Income	Alternative Inv.		Real Estate		Cash	
KERS - INS	32.7	(33)	26.0	(15)	12.2	(93)	0.0	22.2	(33)	4.5	(83)	2.5	(30)
KERS H - INS	29.4	(44)	25.9	(15)	12.1	(93)	0.0	25.2	(25)	5.1	(75)	2.2	(33)
CERS - INS	28.2	(47)	26.0	(15)	12.2	(93)	0.0	27.0	(21)	5.1	(75)	1.5	(48)
CERS H - INS	27.8	(49)	26.0	(15)	12.2	(93)	0.0	27.3	(20)	5.0	(75)	1.8	(44)
SPRS - INS	27.4	(49)	25.9	(15)	12.1	(94)	0.0	27.6	(18)	5.3	(74)	1.8	(44)
Median	27.1		19.1		22.0		3.4	15.6		7.2		1.3	
Population	103		100		96		58	83		77		82	

Source: RV Kuhns Quarterly Investment Performance Reports as of 6/30/16 and Investment Metrics peer group data. Parentheses contain percentile rankings.

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KRS Insurance – Actual Performance vs. Benchmarks

As of June 30, 2016	3 Years	5 Years	7 Years	10 Years	Jul-2003 To Jun-2016
KERS - INS	4.86	4.50	8.55	4.14	5.88
KERS - INS Benchmark	5.41	5.52	9.42	4.69	6.58
Over/Under Performance	*-0.55*	*-1.02*	*-0.87*	*-0.55*	*-0.70*
KERS H - INS	5.35	4.79	8.77	4.28	5.99
KERS H - INS Benchmark	5.51	5.58	9.46	4.72	6.60
Over/Under Performance	*-0.16*	*-0.79*	*-0.69*	*-0.44*	*-0.61*
CERS - INS	5.42	4.83	8.80	4.30	6.01
CERS - INS Benchmark	5.59	5.63	9.50	4.75	6.62
Over/Under Performance	*-0.17*	*-0.80*	*-0.70*	*-0.45*	*-0.61*
CERS H - INS	5.48	4.86	8.83	4.32	6.02
CERS H - INS Benchmark	5.59	5.63	9.50	4.75	6.62
Over/Under Performance	*-0.11*	*-0.77*	*-0.67*	*-0.43*	*-0.60*
SPRS - INS	5.44	4.84	8.81	4.31	6.01
SPRS - INS Benchmark	5.61	5.64	9.51	4.75	6.63
Over/Under Performance	*-0.17*	*-0.80*	*-0.70*	*-0.44*	*-0.62*

Source: RV Kuhns Quarterly Investment Performance Reports as of 6/30/16.

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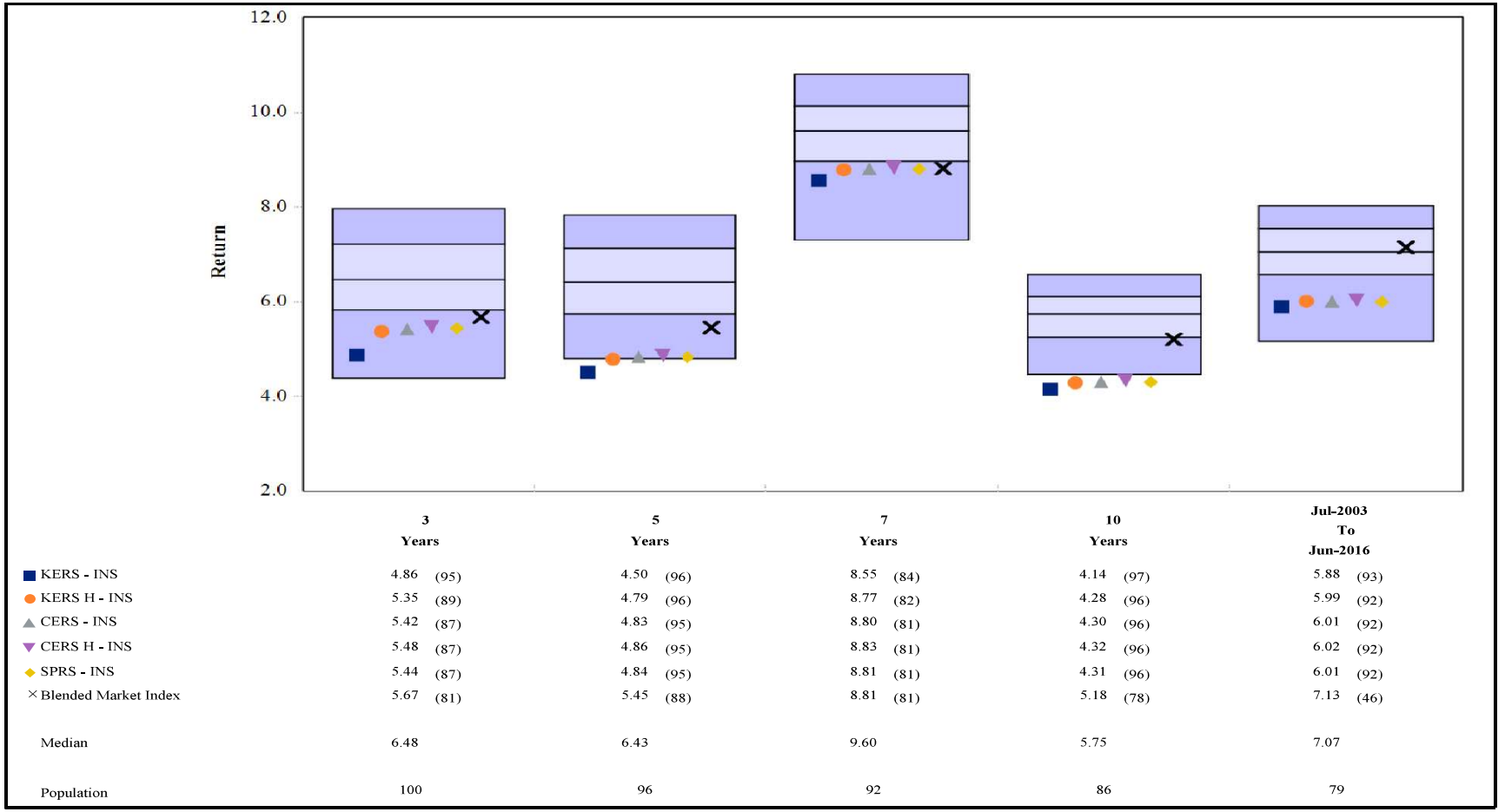
KRS Insurance – Trailing Investment Performance

Plan Sponsor Peer Group Analysis
All Public Plans > $1 Billion
As of June 30, 2016



	3 Years	5 Years	7 Years	10 Years	Jul-2003 To Jun-2016
KERS - INS	4.86 (95)	4.50 (96)	8.55 (84)	4.14 (97)	5.88 (93)
KERS H - INS	5.35 (89)	4.79 (96)	8.77 (82)	4.28 (96)	5.99 (92)
CERS - INS	5.42 (87)	4.83 (95)	8.80 (81)	4.30 (96)	6.01 (92)
CERS H - INS	5.48 (87)	4.86 (95)	8.83 (81)	4.32 (96)	6.02 (92)
SPRS - INS	5.44 (87)	4.84 (95)	8.81 (81)	4.31 (96)	6.01 (92)
× Blended Market Index	5.67 (81)	5.45 (88)	8.81 (81)	5.18 (78)	7.13 (46)
Median	6.48	6.43	9.60	5.75	7.07
Population	100	96	92	86	79

Source: RV Kuhns Quarterly Investment Performance Reports as of 6/30/16 and Investment Metrics peer group data. Parentheses contain percentile rankings.

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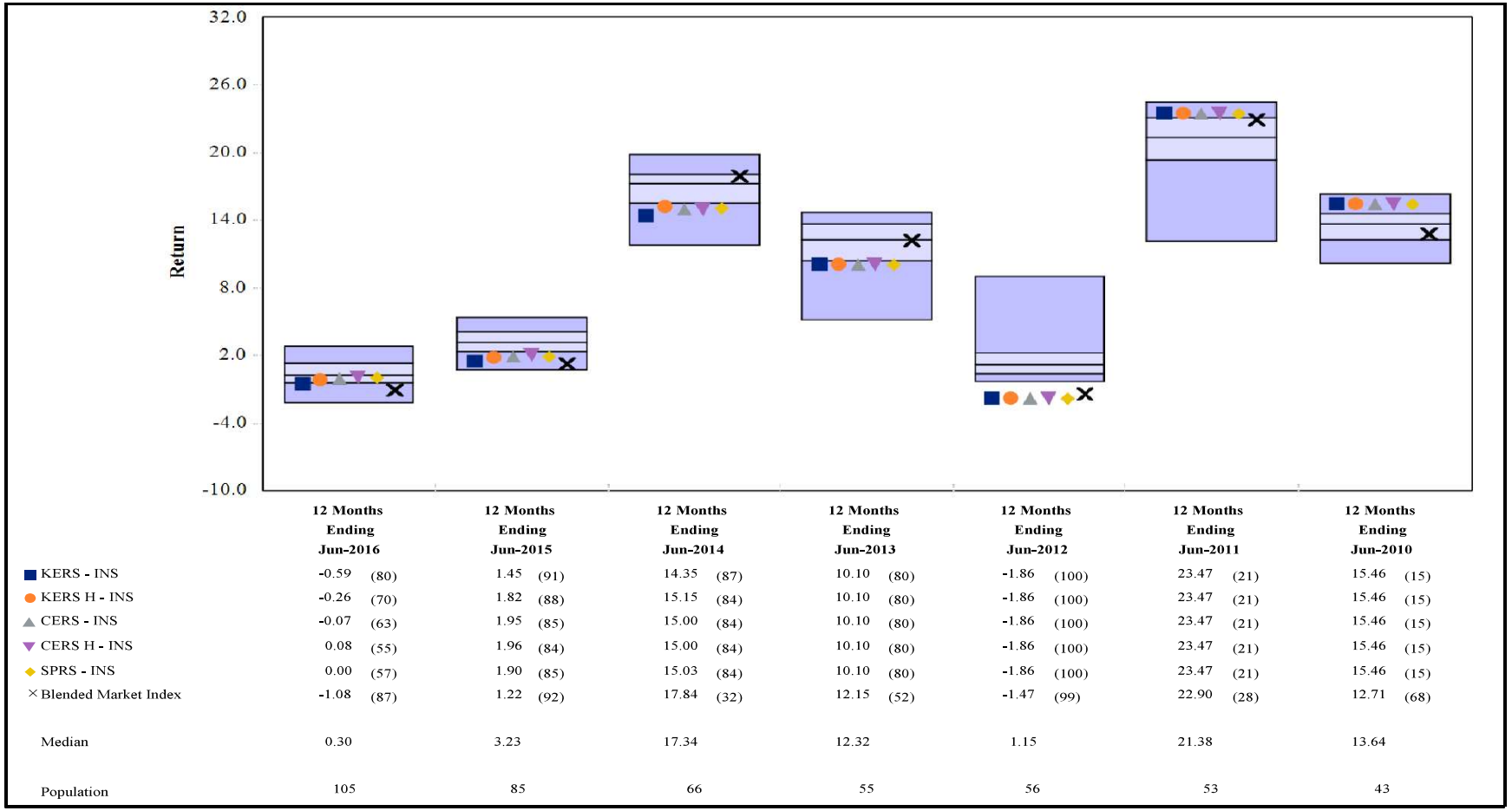
KRS Insurance – Fiscal Year Investment Returns

Plan Sponsor Peer Group Analysis
All Public Plans > $1 Billion
As of June 30, 2016



	12 Months Ending Jun-2016		12 Months Ending Jun-2015		12 Months Ending Jun-2014		12 Months Ending Jun-2013		12 Months Ending Jun-2012		12 Months Ending Jun-2011		12 Months Ending Jun-2010	
KERS - INS	-0.59	(80)	1.45	(91)	14.35	(87)	10.10	(80)	-1.86	(100)	23.47	(21)	15.46	(15)
KERS H - INS	-0.26	(70)	1.82	(88)	15.15	(84)	10.10	(80)	-1.86	(100)	23.47	(21)	15.46	(15)
CERS - INS	-0.07	(63)	1.95	(85)	15.00	(84)	10.10	(80)	-1.86	(100)	23.47	(21)	15.46	(15)
CERS H - INS	0.08	(55)	1.96	(84)	15.00	(84)	10.10	(80)	-1.86	(100)	23.47	(21)	15.46	(15)
SPRS - INS	0.00	(57)	1.90	(85)	15.03	(84)	10.10	(80)	-1.86	(100)	23.47	(21)	15.46	(15)
Blended Market Index	-1.08	(87)	1.22	(92)	17.84	(32)	12.15	(52)	-1.47	(99)	22.90	(28)	12.71	(68)
Median	0.30		3.23		17.34		12.32		1.15		21.38		13.64	
Population	105		85		66		55		56		53		43	

Source: RV Kuhns Quarterly Investment Performance Reports as of 6/30/16 and Investment Metrics peer group data. Parentheses contain percentile rankings.

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30A9A12D-3AD1-4E48-821D-622EA8D210FC : 000402 of 000607

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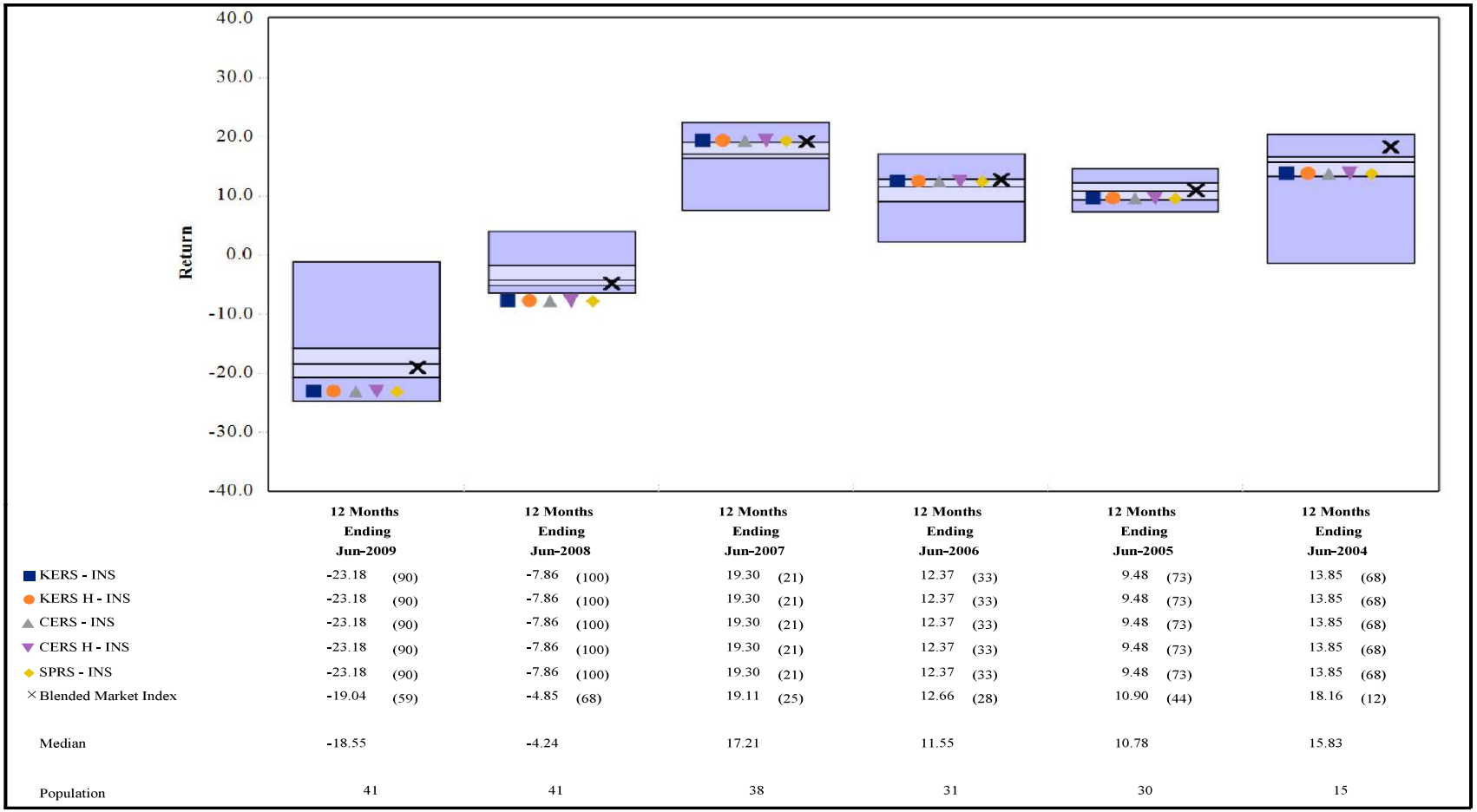
KRS Insurance – Fiscal Year Investment Returns

Plan Sponsor Peer Group Analysis
All Public Plans > $1 Billion
As of June 30, 2016



	12 Months Ending Jun-2009		12 Months Ending Jun-2008		12 Months Ending Jun-2007		12 Months Ending Jun-2006		12 Months Ending Jun-2005		12 Months Ending Jun-2004	
KERS - INS	-23.18	(90)	-7.86	(100)	19.30	(21)	12.37	(33)	9.48	(73)	13.85	(68)
KERS H - INS	-23.18	(90)	-7.86	(100)	19.30	(21)	12.37	(33)	9.48	(73)	13.85	(68)
CERS - INS	-23.18	(90)	-7.86	(100)	19.30	(21)	12.37	(33)	9.48	(73)	13.85	(68)
CERS H - INS	-23.18	(90)	-7.86	(100)	19.30	(21)	12.37	(33)	9.48	(73)	13.85	(68)
SPRS - INS	-23.18	(90)	-7.86	(100)	19.30	(21)	12.37	(33)	9.48	(73)	13.85	(68)
Blended Market Index	-19.04	(59)	-4.85	(68)	19.11	(25)	12.66	(28)	10.90	(44)	18.16	(12)
Median	-18.55		-4.24		17.21		11.55		10.78		15.83	
Population	41		41		38		31		30		15	

Source: RV Kuhns Quarterly Investment Performance Reports as of 6/30/16 and Investment Metrics peer group data. Parentheses contain percentile rankings.

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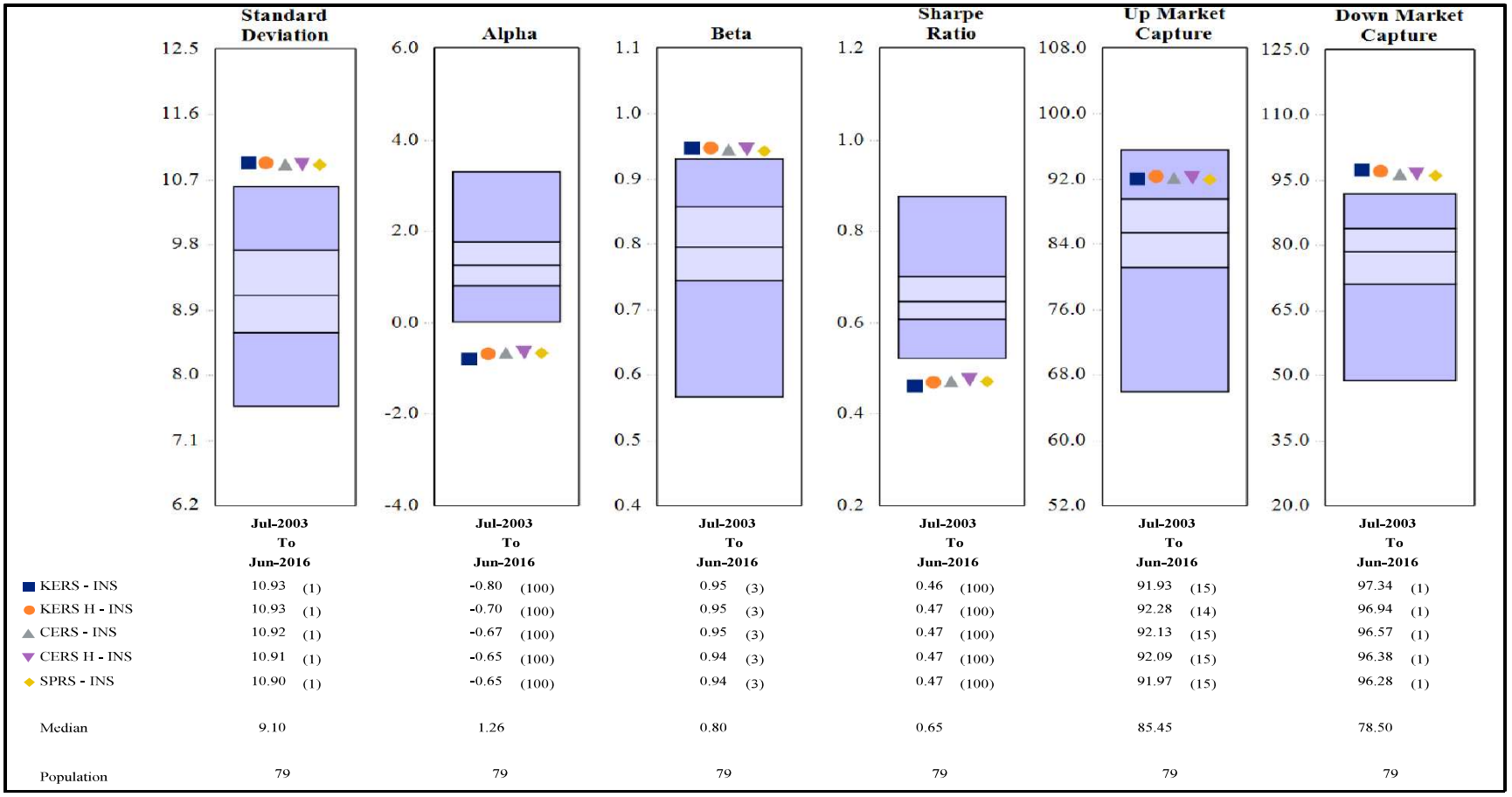
KRS Insurance – Investment Risk Statistics

Plan Sponsor Peer Group Analysis-Multi Statistics
All Public Plans > $1 Billion vs. Blended Market Index

As of June 30, 2016



	Jul-2003 To Jun-2016		Jul-2003 To Jun-2016		Jul-2003 To Jun-2016		Jul-2003 To Jun-2016		Jul-2003 To Jun-2016		Jul-2003 To Jun-2016	
KERS - INS	10.93	(1)	-0.80	(100)	0.95	(3)	0.46	(100)	91.93	(15)	97.34	(1)
KERS H - INS	10.93	(1)	-0.70	(100)	0.95	(3)	0.47	(100)	92.28	(14)	96.94	(1)
CERS - INS	10.92	(1)	-0.67	(100)	0.95	(3)	0.47	(100)	92.13	(15)	96.57	(1)
CERS H - INS	10.91	(1)	-0.65	(100)	0.94	(3)	0.47	(100)	92.09	(15)	96.38	(1)
SPRS - INS	10.90	(1)	-0.65	(100)	0.94	(3)	0.47	(100)	91.97	(15)	96.28	(1)
Median	9.10		1.26		0.80		0.65		85.45		78.50	
Population	79		79		79		79		79		79	

Source: RV Kuhns Quarterly Investment Performance Reports as of 6/30/16 and Investment Metrics peer group data. Parentheses contain percentile rankings.

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TRS

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TRS Pension Plan Overview

- **Asset / Liability Data**
  - Actuarial Value of Assets (6/30/2016): $17.5 Billion
  - Actuarial Accrued Liability (6/30/2016): $32.0 Billion
  - Investment Return Assumption (6/30/2016): 7.50%
- **Investment Consultants**
  - Aon Hewitt (General Advisor)
- **Investment Committee Advisors**
  - Bevis Longstreth
  - George Philip
- **Investment Managers**
  - 90 total managers/products, including 10 managed internally (see Transparency & Fees for detail)
- **Custodial Bank**
  - Bank of New York Mellon

Information received from TRS as of 6/30/2016.

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TRS Pension – Investment Performance Attribution

- Compared to a peer universe of public plans > $1 billion, the Pension Plan's performance ranked in the 19th percentile over ten years (6.29% return) but only 76th since July 2003 (6.58% return), the beginning date of the monthly returns data provided by TRS.
- From FY 2009-2016, the Pension Plan's performance ranked above the 50th percentile in 6 out of the 8 fiscal year periods but ranked close to the 90th percentile each year from FY 2004-2008.
- International equity was absent from the portfolio until July 2005 and has gradually increased to 19%.
  - The low allocation to international equity relative to domestic hurt performance from 2003-2007 but has contributed to the outperformance from 2008-2015.
- The Plan has become more aggressive over time, with fixed income representing 43% of the portfolio in March 2003 and gradually decreasing to 25% as of June 2016.
- The private equity allocation helped overall performance with a return of 9.64% since it was included in the portfolio in July 2008 compared to a return of 8.68% for the Russell 3000.

Source: Segal RogersCasey Quarterly Investment Performance Reports as of 6/30/16
Note: TRS benchmark performance was not provided as part of the monthly return data included in the analysis

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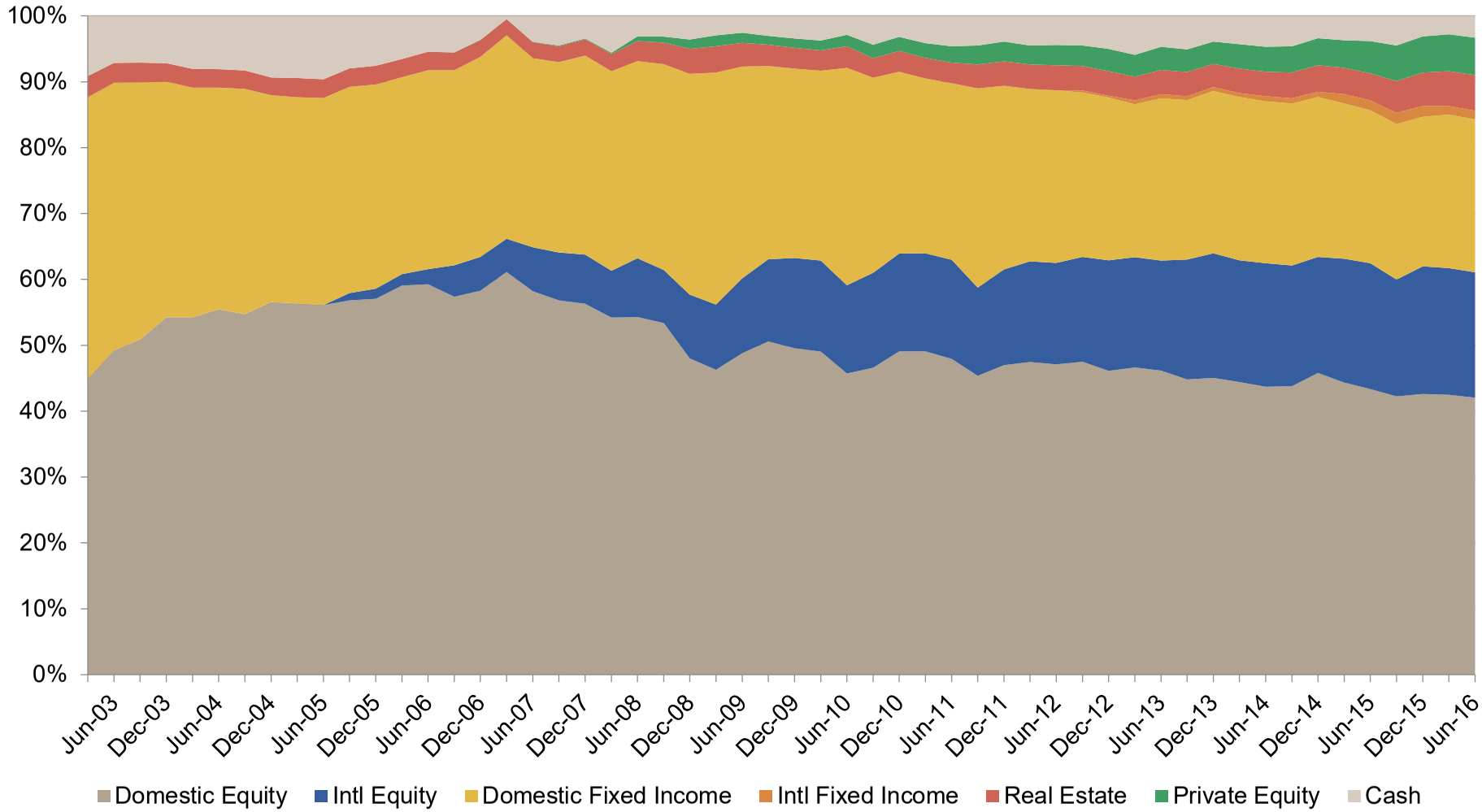
TRS Pension – Historical Asset Allocation



Source: Segal RogersCasey Quarterly Investment Performance Reports from 2003-2016

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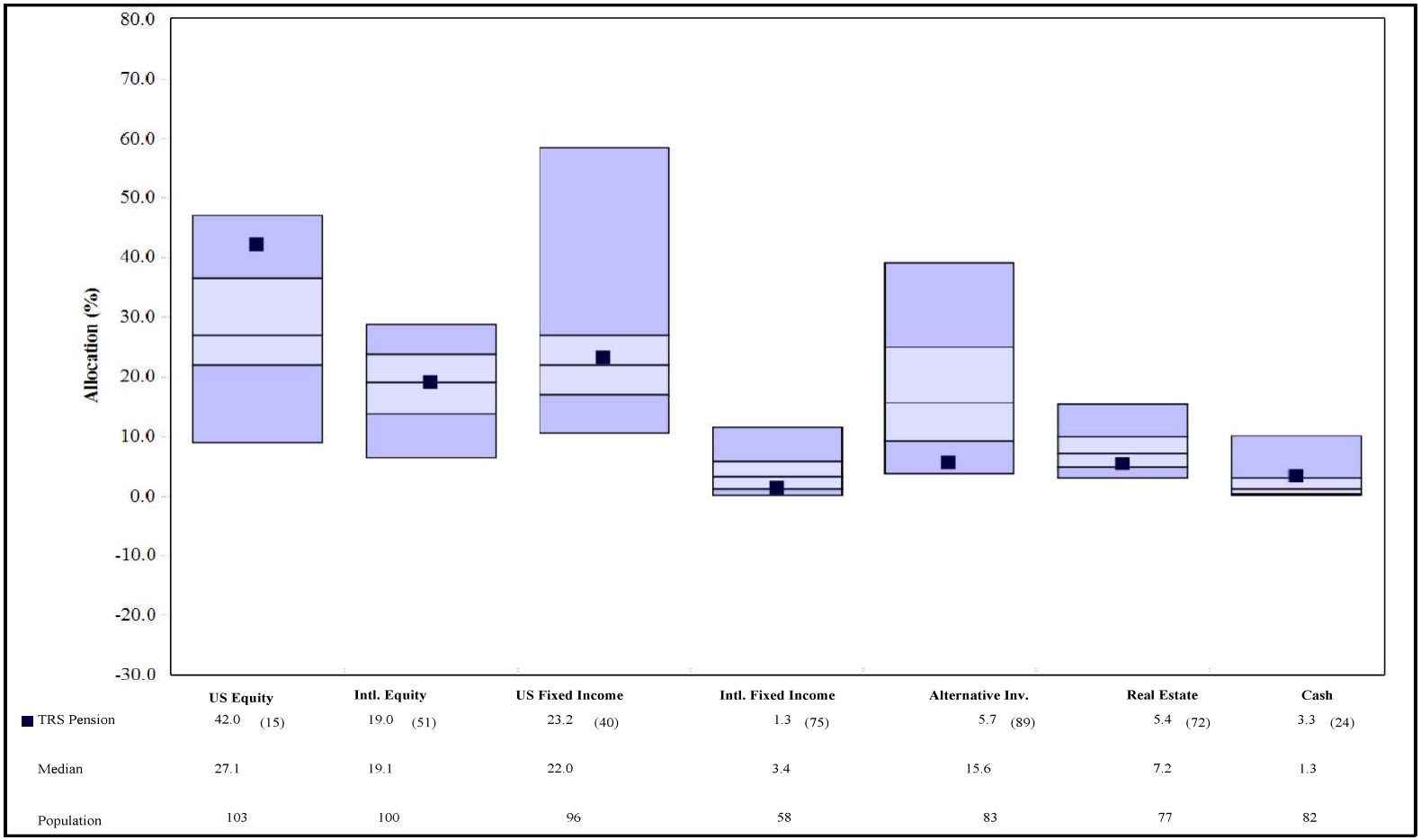
TRS Pension – Asset Allocation Comparison

Asset Allocation Analysis
All Public Plans > $1 Billion
As of June 30, 2016



	US Equity	Intl. Equity	US Fixed Income	Intl. Fixed Income	Alternative Inv.	Real Estate	Cash
TRS Pension	42.0 (15)	19.0 (51)	23.2 (40)	1.3 (75)	5.7 (89)	5.4 (72)	3.3 (24)
Median	27.1	19.1	22.0	3.4	15.6	7.2	1.3
Population	103	100	96	58	83	77	82

Source: Segal RogersCasey Quarterly Investment Performance Reports as of 6/30/16 and Investment Metrics peer group data. Parentheses contain percentile rankings.

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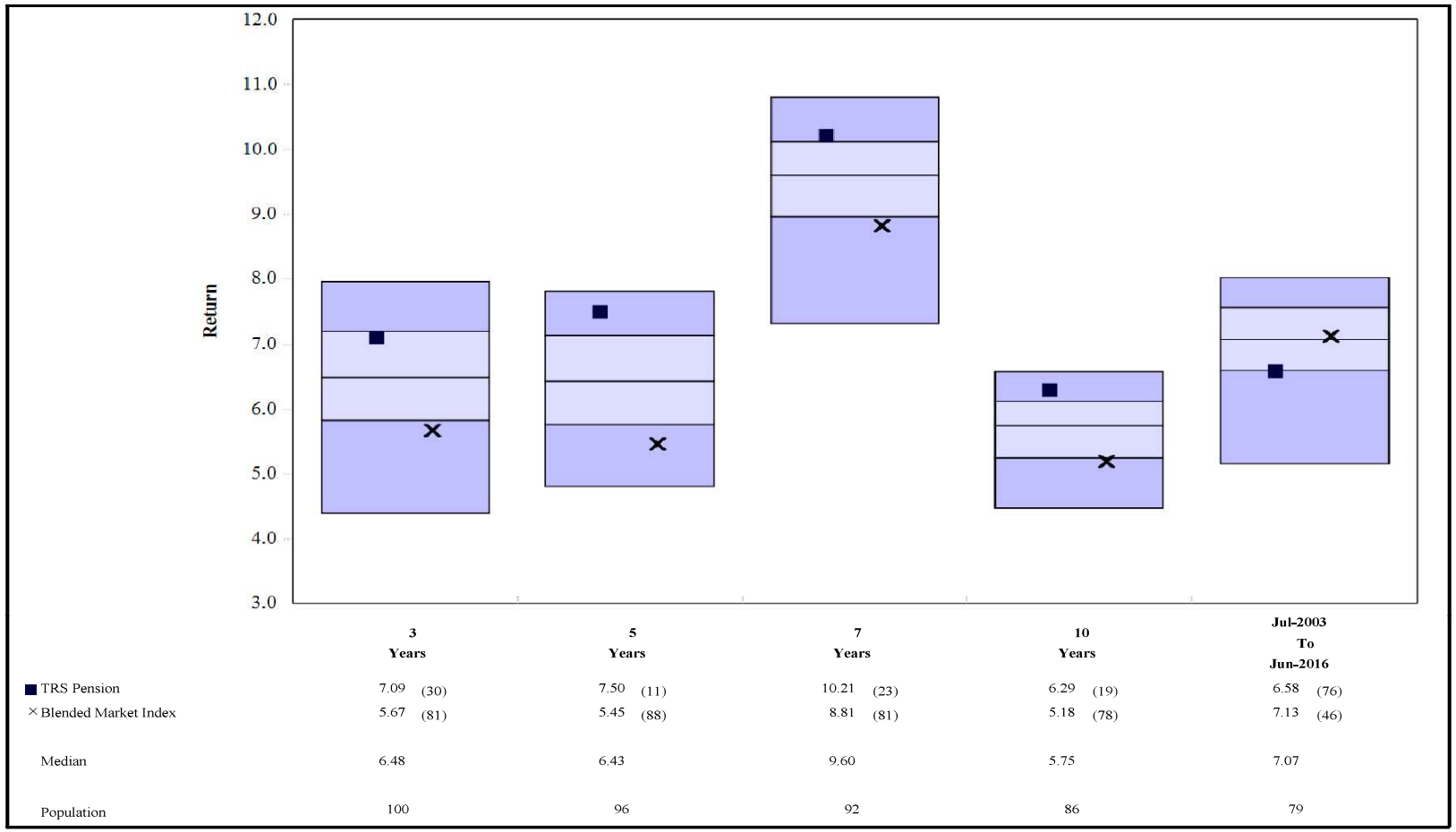
TRS Pension – Trailing Investment Performance

Plan Sponsor Peer Group Analysis
All Public Plans > $1 Billion
As of June 30, 2016



	3 Years	5 Years	7 Years	10 Years	Jul-2003 To Jun-2016
■ TRS Pension	7.09 (30)	7.50 (11)	10.21 (23)	6.29 (19)	6.58 (76)
× Blended Market Index	5.67 (81)	5.45 (88)	8.81 (81)	5.18 (78)	7.13 (46)
Median	6.48	6.43	9.60	5.75	7.07
Population	100	96	92	86	79

Source: Segal RogersCasey Quarterly Investment Performance Reports as of 6/30/16 and Investment Metrics peer group data. Parentheses contain percentile rankings.

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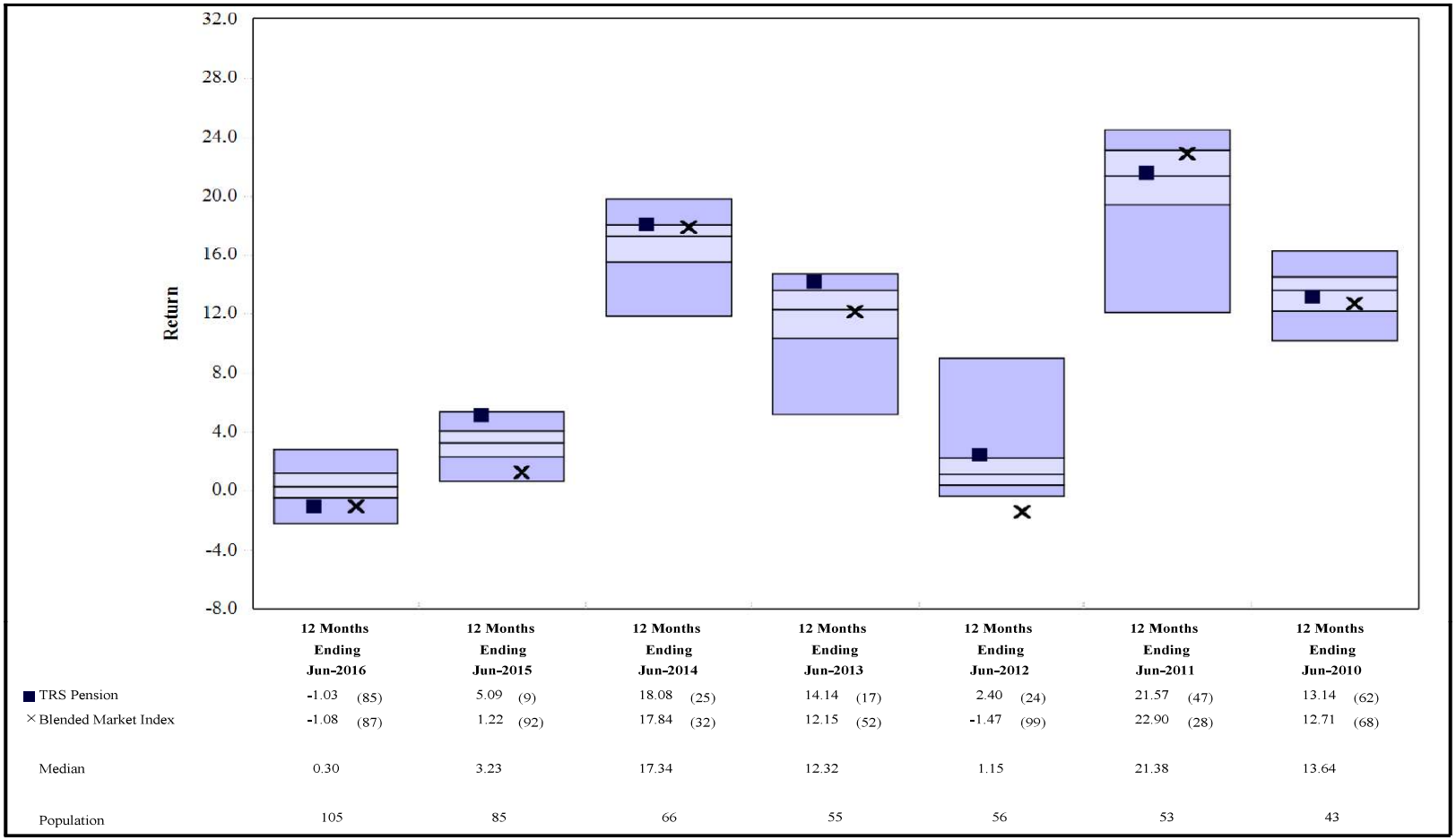
TRS Pension – Fiscal Year Investment Returns

Plan Sponsor Peer Group Analysis
All Public Plans > $1 Billion
As of June 30, 2016



	12 Months Ending Jun-2016	12 Months Ending Jun-2015	12 Months Ending Jun-2014	12 Months Ending Jun-2013	12 Months Ending Jun-2012	12 Months Ending Jun-2011	12 Months Ending Jun-2010
■ TRS Pension	-1.03 (85)	5.09 (9)	18.08 (25)	14.14 (17)	2.40 (24)	21.57 (47)	13.14 (62)
× Blended Market Index	-1.08 (87)	1.22 (92)	17.84 (32)	12.15 (52)	-1.47 (99)	22.90 (28)	12.71 (68)
Median	0.30	3.23	17.34	12.32	1.15	21.38	13.64
Population	105	85	66	55	56	53	43

Source: Segal RogersCasey Quarterly Investment Performance Reports as of 6/30/16 and Investment Metrics peer group data. Parentheses contain percentile rankings.

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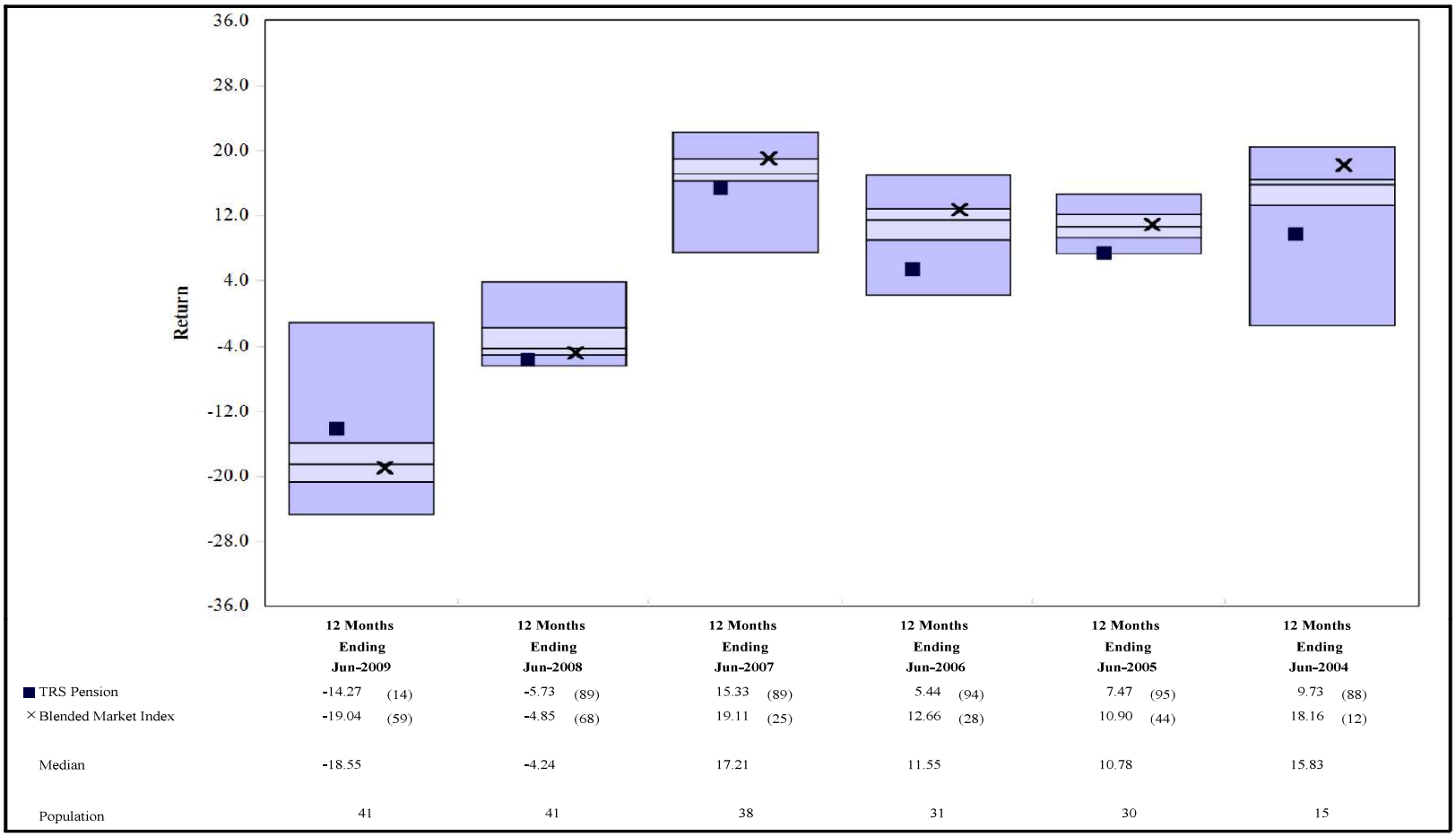
TRS Pension – Fiscal Year Investment Returns

Plan Sponsor Peer Group Analysis
All Public Plans > $1 Billion
As of June 30, 2016



	12 Months Ending Jun-2009	12 Months Ending Jun-2008	12 Months Ending Jun-2007	12 Months Ending Jun-2006	12 Months Ending Jun-2005	12 Months Ending Jun-2004
■ TRS Pension	-14.27 (14)	-5.73 (89)	15.33 (89)	5.44 (94)	7.47 (95)	9.73 (88)
× Blended Market Index	-19.04 (59)	-4.85 (68)	19.11 (25)	12.66 (28)	10.90 (44)	18.16 (12)
Median	-18.55	-4.24	17.21	11.55	10.78	15.83
Population	41	41	38	31	30	15

Source: Segal RogersCasey Quarterly Investment Performance Reports as of 6/30/16 and Investment Metrics peer group data. Parentheses contain percentile rankings.

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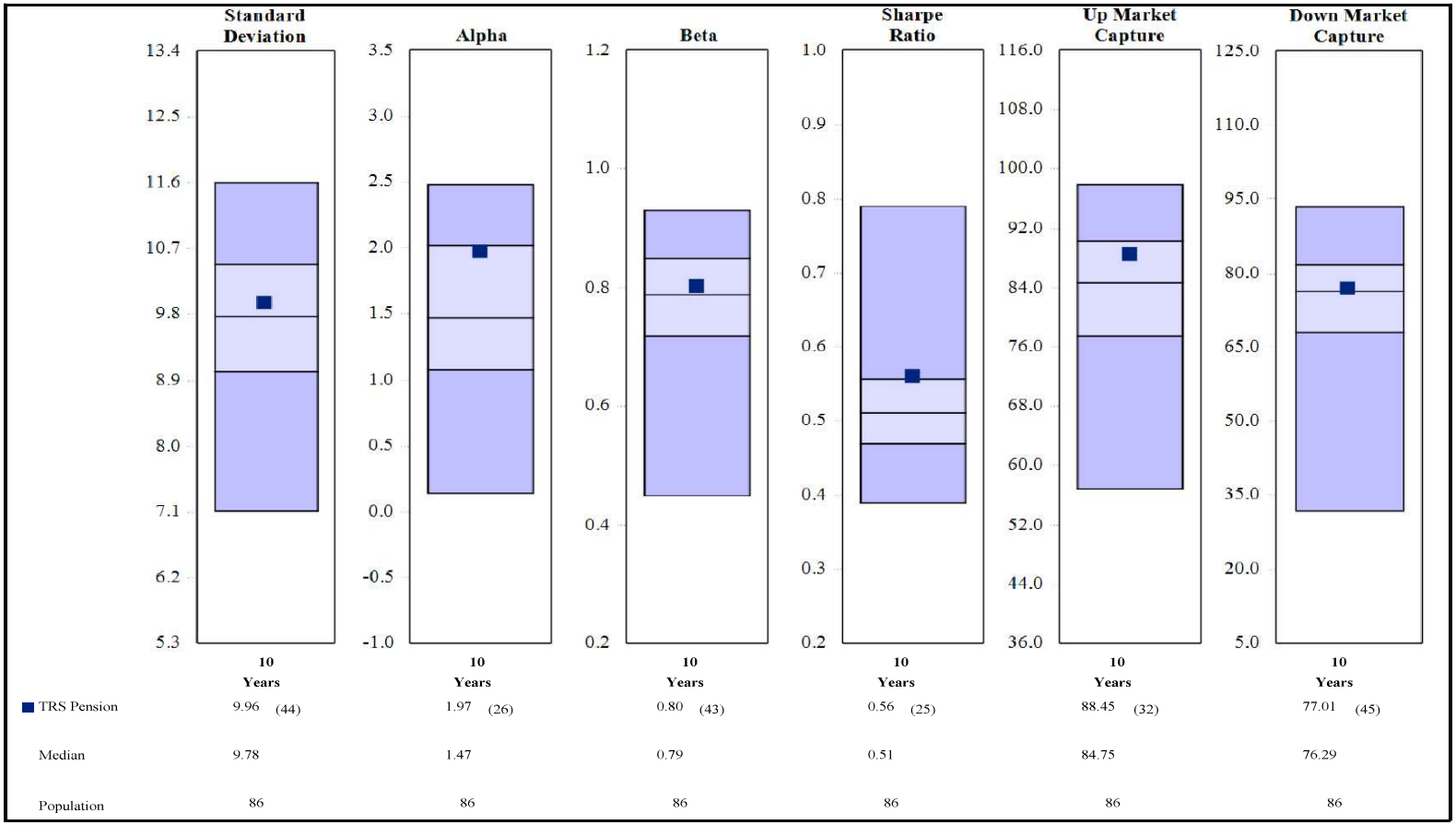
TRS Pension – Investment Risk Statistics

Plan Sponsor Peer Group Analysis-Multi Statistics
All Public Plans > $1 Billion vs. Blended Market Index

As of June 30, 2016



Source: Segal RogersCasey Quarterly Investment Performance Reports as of 6/30/16 and Investment Metrics peer group data. Parentheses contain percentile rankings.

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TRS Medical Overview

- **Asset / Liability Data**
  - Actuarial Value of Assets (6/30/2016): $795.1 Million
  - Actuarial Accrued Liability (6/30/2016): $3.6 Billion
  - Investment Return Assumption (6/30/2016): 8.0% since 2010 (up from 4.5% in 2007)
- **Investment Consultants**
  - Aon Hewitt (General Advisor)
- **Investment Managers**
  - 26 total managers/products, including 1 managed internally (see Transparency & Fees for detail)
- **Custodial Bank**
  - Bank of New York Mellon

Information received from TRS as of 6/30/2016.

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TRS Medical – Investment Performance Attribution

- Compared to a peer universe of public plans > $500 million, the Medical Plan's performance ranked below the 90th percentile for the 1, 3, and 5 year trailing periods. While the underperformance in the earlier years can be attributed to cash needs, the year to date 2016 return of 2.68% ranks in the 61st percentile and the 2015 return of -1.37% ranked in the 88th percentile.
- The portfolio has gradually become more aggressive (risky) over time. When excluding cash, the return seeking investments (public and private equity and real estate) to fixed income ratio went from 50/50 in 2011 to 67/33 in 2016.
- Cash allocation was high, ranging between 9%-27%, until around the beginning of 2015, when it stayed within a 1%-3% range. This was the main detractor of overall underperformance prior to 2015.
- Using a single global equity manager (BlackRock Fund B) gives the manager complete control of the allocation breakout between domestic vs. international equity, rather than the investment advisor, and makes it difficult to evaluate how the overall portfolio allocation has changed over time.
- The private equity and real estate composites have outperformed the global equity manager but the small allocations to these asset classes resulted in only a minor impact to total returns.

As of 6/30/16	1 Year	3 Years
BlackRock Fund B	-3.39%	6.63%
Private Equity Composite	10.68%	13.40%
Non-Core Real Estate	20.32%	N/A

Source: Segal RogersCasey Quarterly Investment Performance Reports as of 6/30/16

Note: TRS benchmark performance was not provided as part of the monthly return data included in the analysis

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30A9A12D-3AD1-4E48-821D-622EA8D210FC : 000415 of 000607

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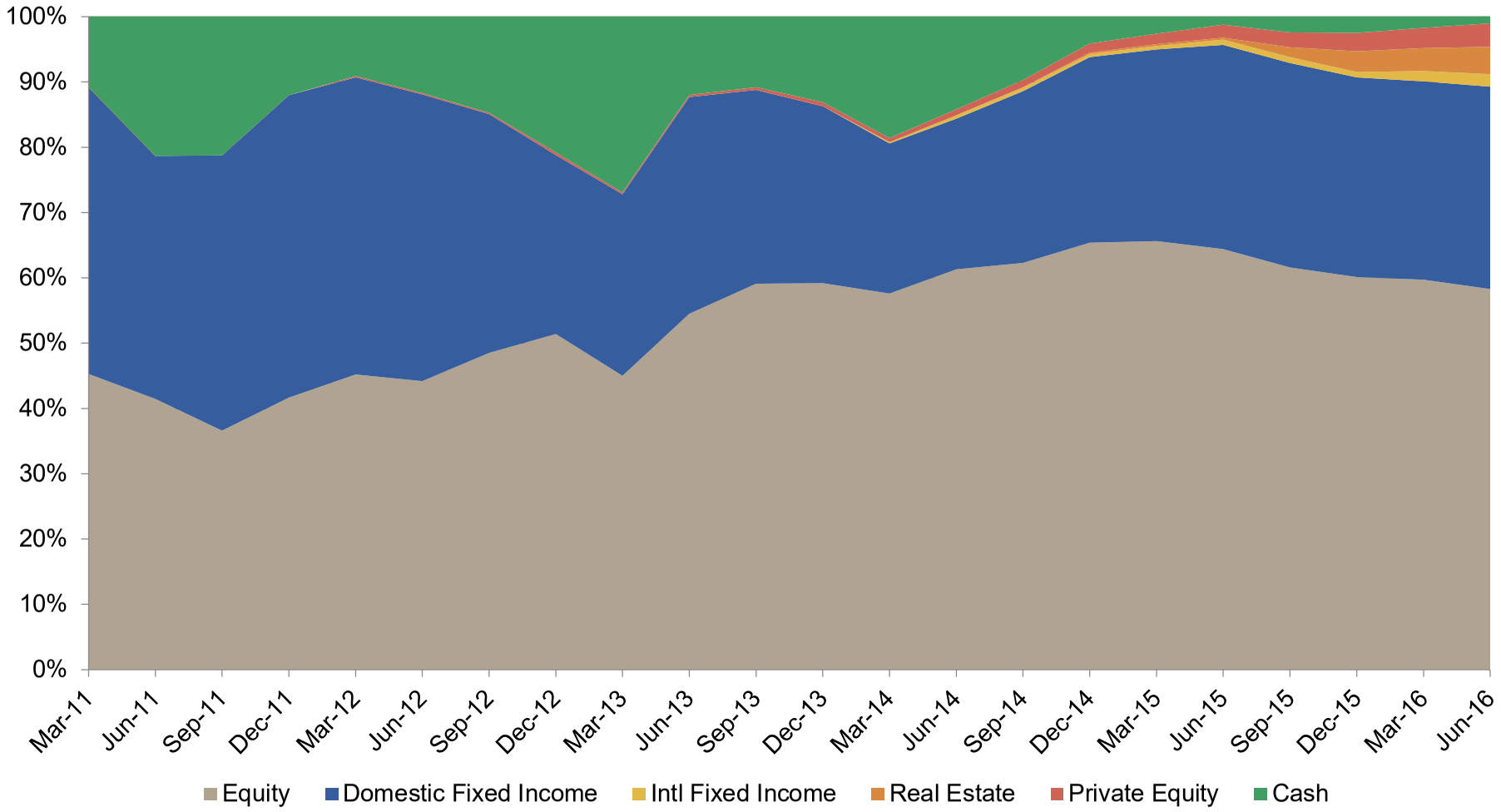
TRS Medical – Historical Asset Allocation



Source: Segal RogersCasey Quarterly Investment Performance Reports from 2011-2016

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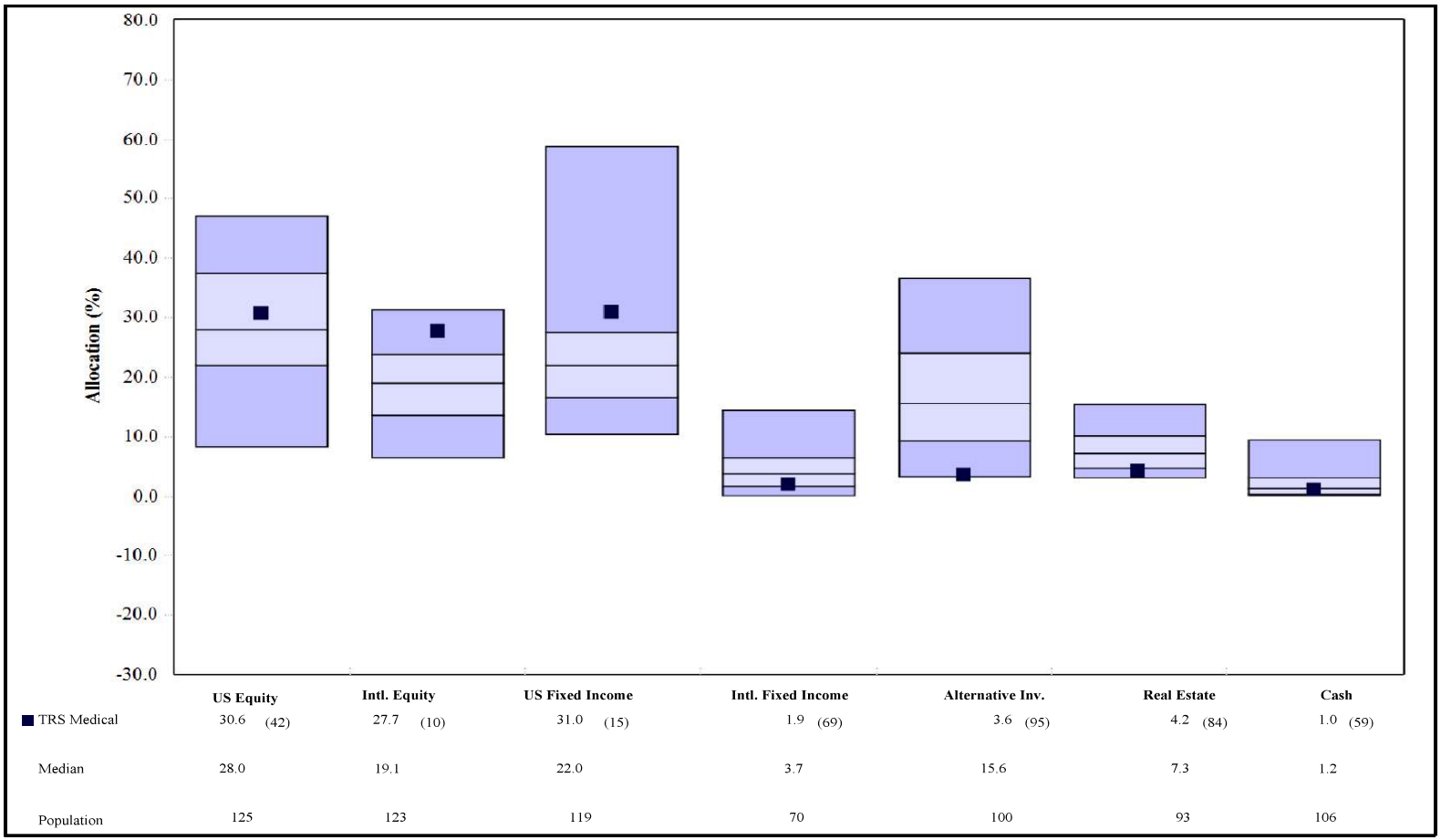
TRS Medical – Asset Allocation Comparison

Asset Allocation Analysis
All Public Plans > $500 Million
As of June 30, 2016



	US Equity	Intl. Equity	US Fixed Income	Intl. Fixed Income	Alternative Inv.	Real Estate	Cash
TRS Medical	30.6 (42)	27.7 (10)	31.0 (15)	1.9 (69)	3.6 (95)	4.2 (84)	1.0 (59)
Median	28.0	19.1	22.0	3.7	15.6	7.3	1.2
Population	125	123	119	70	100	93	106

Source: Segal RogersCasey Quarterly Investment Performance Reports as of 6/30/16 and Investment Metrics peer group data. Parentheses contain percentile rankings.
The US and international equity allocation for the Medical Plan is estimated based on the weights in the MSCI ACWI IMI index as of 10/31/16

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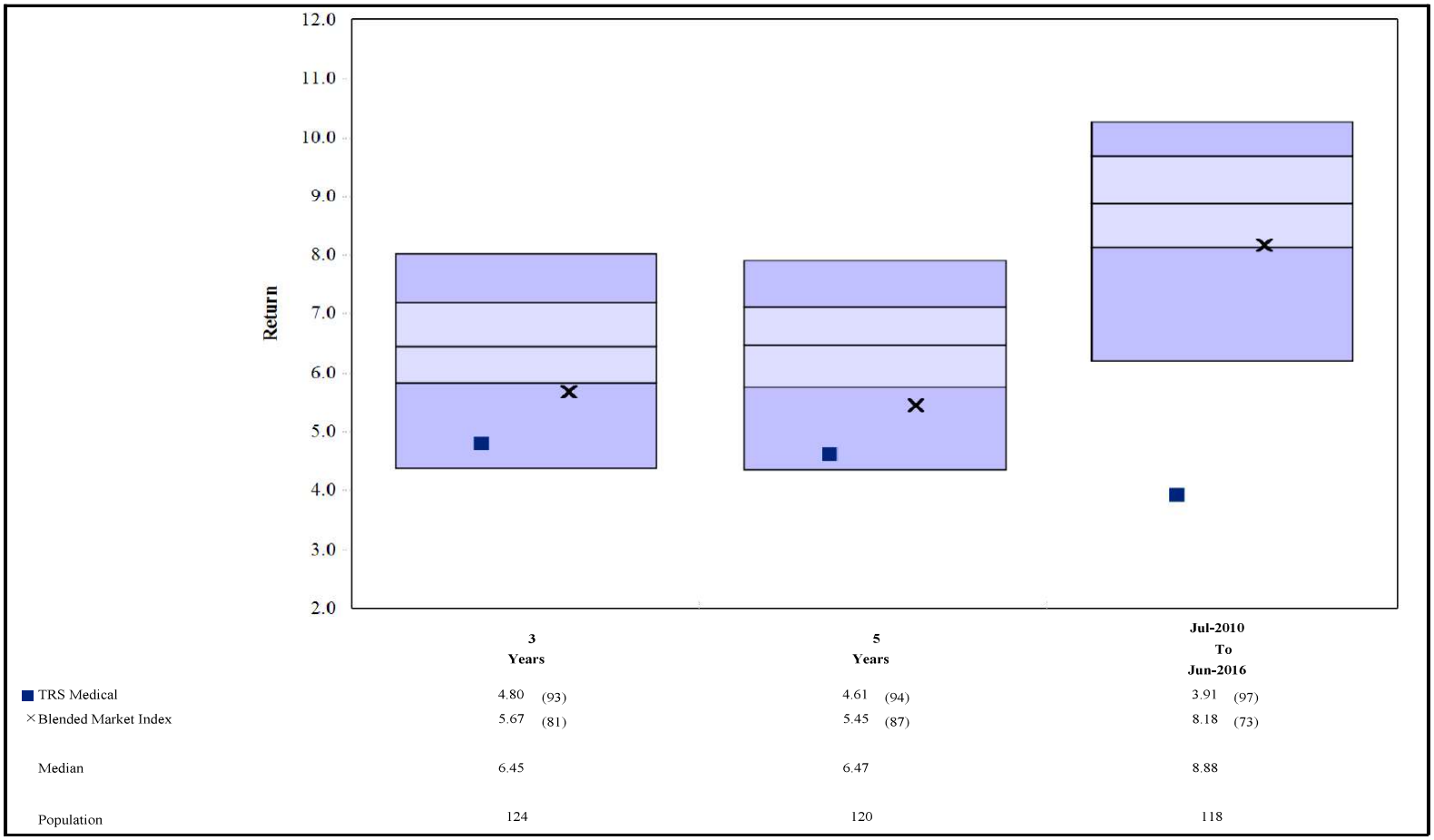
TRS Medical – Trailing Investment Performance

Plan Sponsor Peer Group Analysis
All Public Plans > $500 Million
As of June 30, 2016



	3 Years	5 Years	Jul-2010 To Jun-2016
■ TRS Medical	4.80 (93)	4.61 (94)	3.91 (97)
× Blended Market Index	5.67 (81)	5.45 (87)	8.18 (73)
Median	6.45	6.47	8.88
Population	124	120	118

Source: Segal RogersCasey Quarterly Investment Performance Reports as of 6/30/16 and Investment Metrics peer group data. Parentheses contain percentile rankings.

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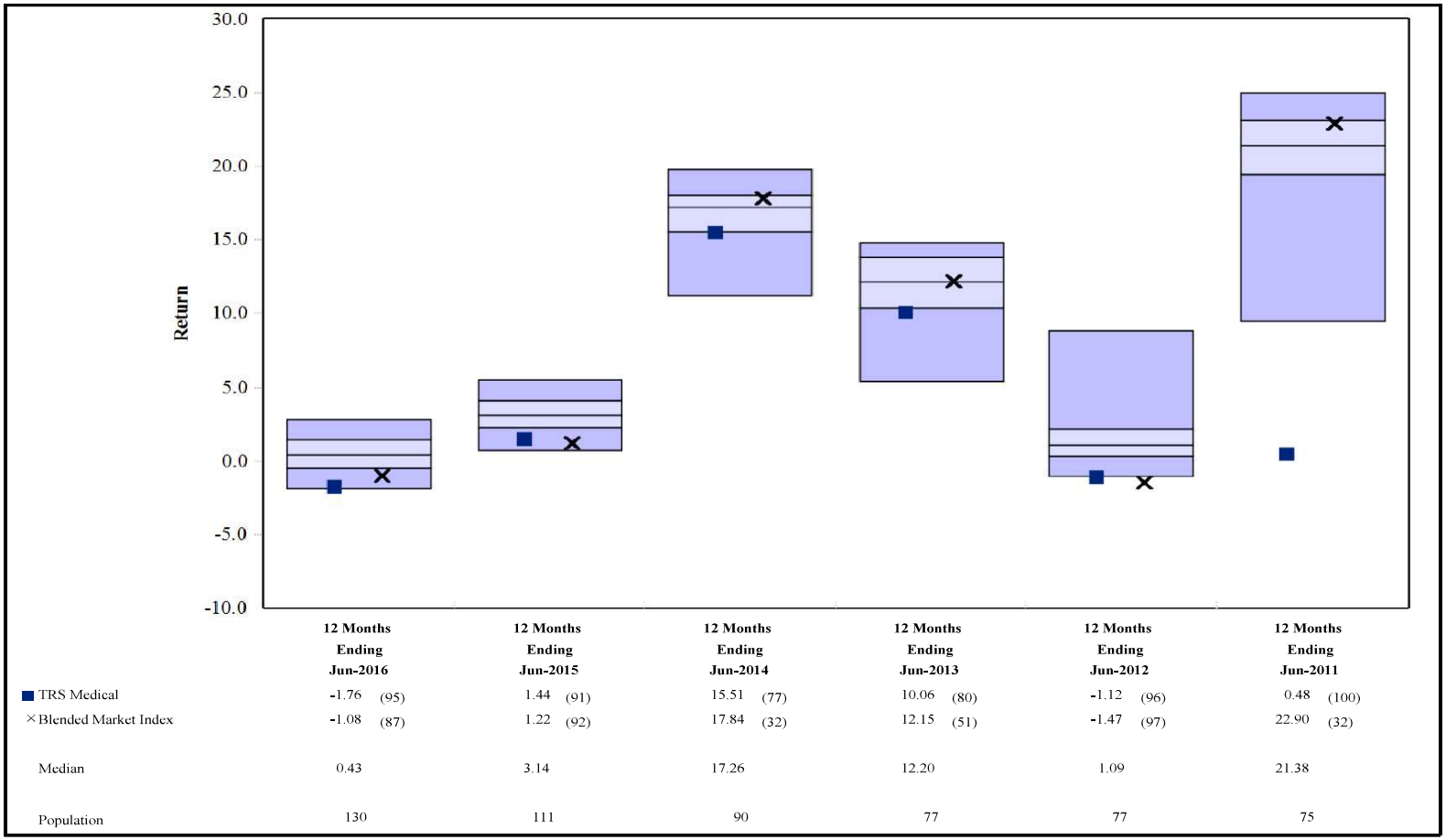
TRS Medical – Fiscal Year Investment Returns

Plan Sponsor Peer Group Analysis
All Public Plans > $500 Million
As of June 30, 2016



	12 Months Ending Jun-2016	12 Months Ending Jun-2015	12 Months Ending Jun-2014	12 Months Ending Jun-2013	12 Months Ending Jun-2012	12 Months Ending Jun-2011
■ TRS Medical	-1.76 (95)	1.44 (91)	15.51 (77)	10.06 (80)	-1.12 (96)	0.48 (100)
× Blended Market Index	-1.08 (87)	1.22 (92)	17.84 (32)	12.15 (51)	-1.47 (97)	22.90 (32)
Median	0.43	3.14	17.26	12.20	1.09	21.38
Population	130	111	90	77	77	75

Source: Segal RogersCasey Quarterly Investment Performance Reports as of 6/30/16 and Investment Metrics peer group data. Parentheses contain percentile rankings.

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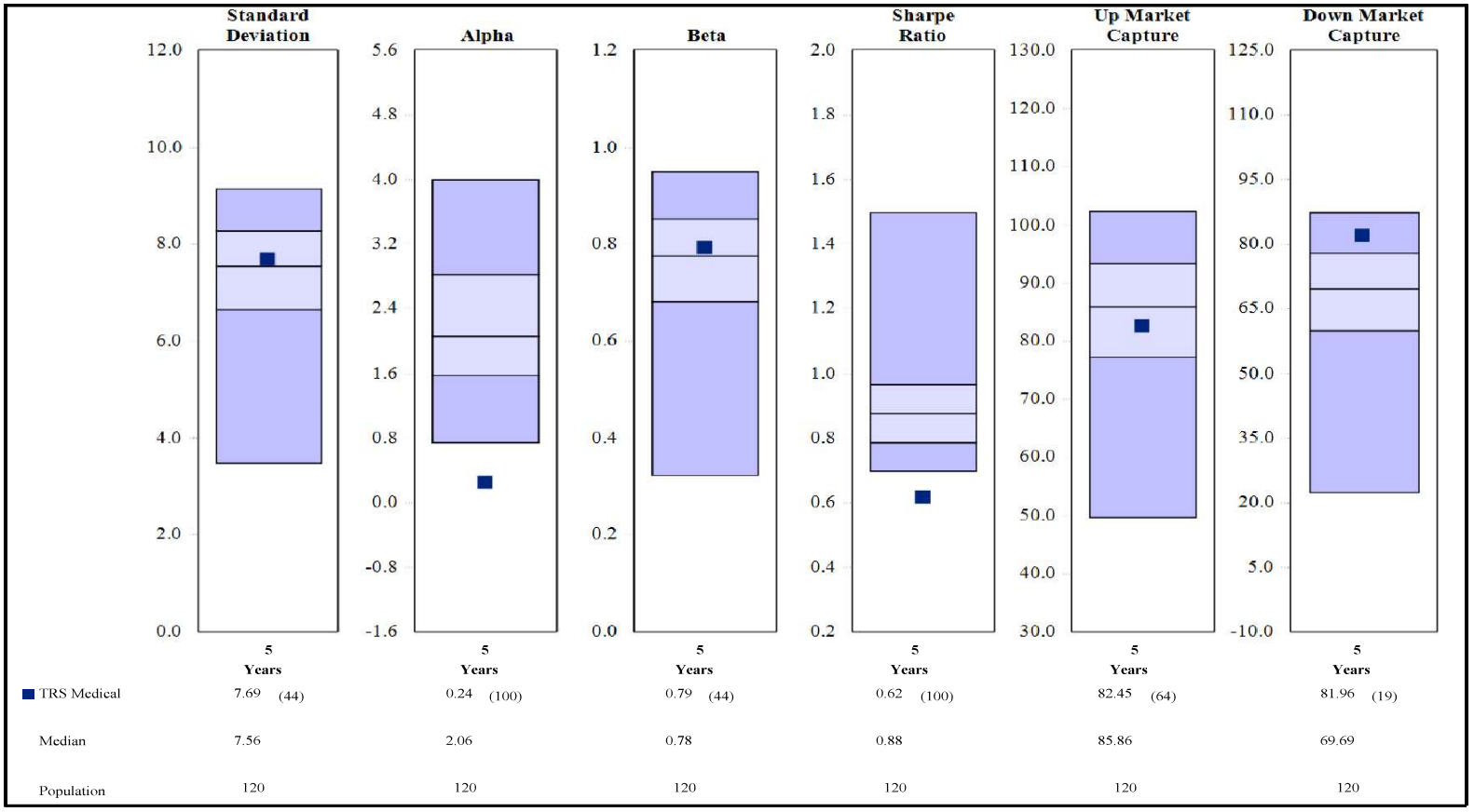
TRS Medical – Investment Return Statistics

Plan Sponsor Peer Group Analysis-Multi Statistics
All Public Plans > $500 Million vs. Blended Market Index

As of June 30, 2016



Source: Segal RogersCasey Quarterly Investment Performance Reports as of 6/30/16 and Investment Metrics peer group data. Parentheses contain percentile rankings.

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KJFRS

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Kentucky Judicial Review

- **Asset / Liability Data**
  - Actuarial Value of Assets (6/30/2016): $325.2 Million
  - Actuarial Accrued Liability (6/30/2016): $441.2 Million
  - Investment Return Assumption (6/30/2016): 7.0% (down from 7.5% in 2009)
- **Investment Consultants/Manager**
  - Hilliard Lyons (General Advisor) – Trades individual securities
- **Custodial Bank**
  - State Street
- **Exclusive Broker**
  - Lexington Investment Company (see KJFRS – Fee Observations for other services they provide)

Information received from KJFRS as of 6/30/2016.

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Kentucky Legislators Review

- **Asset / Liability Data**
  - Actuarial Value of Assets (6/30/2016): $96.0 Million
  - Actuarial Accrued Liability (6/30/2016): $106.9 Million
  - Investment Return Assumption (6/30/2016): 7.0% (down from 7.5% in 2009)
- **Investment Consultants/Manager**
  - Hilliard Lyons (General Advisor) – Trades individual securities
- **Custodial Bank**
  - State Street
- **Exclusive Broker**
  - Lexington Investment Company (see KJFRS – Fee Observations for other services they provide)

Information received from KJFRS as of 6/30/2016.

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KJFRS – Investment Performance Attribution

- Since 2004, both Plans have done very well, ranking in the 9th percentile against the peer universe of public plans < $500 million.
- Equity allocation is invested entirely in US equities, which has been the major contributor to relative outperformance in recent years but hurt performance from 2003-2007.
- Outside of 2008-2009, asset allocations remained relatively consistent and no other asset classes have been introduced.
- Although the performance has been strong, adding other asset groups such as international equities or high yield bonds could diversify the portfolio.

Domestic vs. International Equity Index Returns

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
S&P 500	28.7%	10.9%	4.9%	15.8%	5.5%	-37.0%	26.5%	15.1%	2.1%	16.0%	32.4%	13.7%	1.4%
Russell 3000 Index	31.1%	12.0%	6.1%	15.7%	5.1%	-37.3%	28.3%	16.9%	1.0%	16.4%	33.6%	12.6%	0.5%
MSCI EAFE	38.6%	20.3%	13.5%	26.3%	11.2%	-43.4%	31.8%	7.8%	-12.1%	17.3%	22.8%	-4.9%	-0.8%
MSCI AC World ex USA	40.8%	20.9%	16.6%	26.7%	16.7%	-45.5%	41.4%	11.2%	-13.7%	16.8%	15.3%	-3.9%	-5.7%

Source: Investment Metrics

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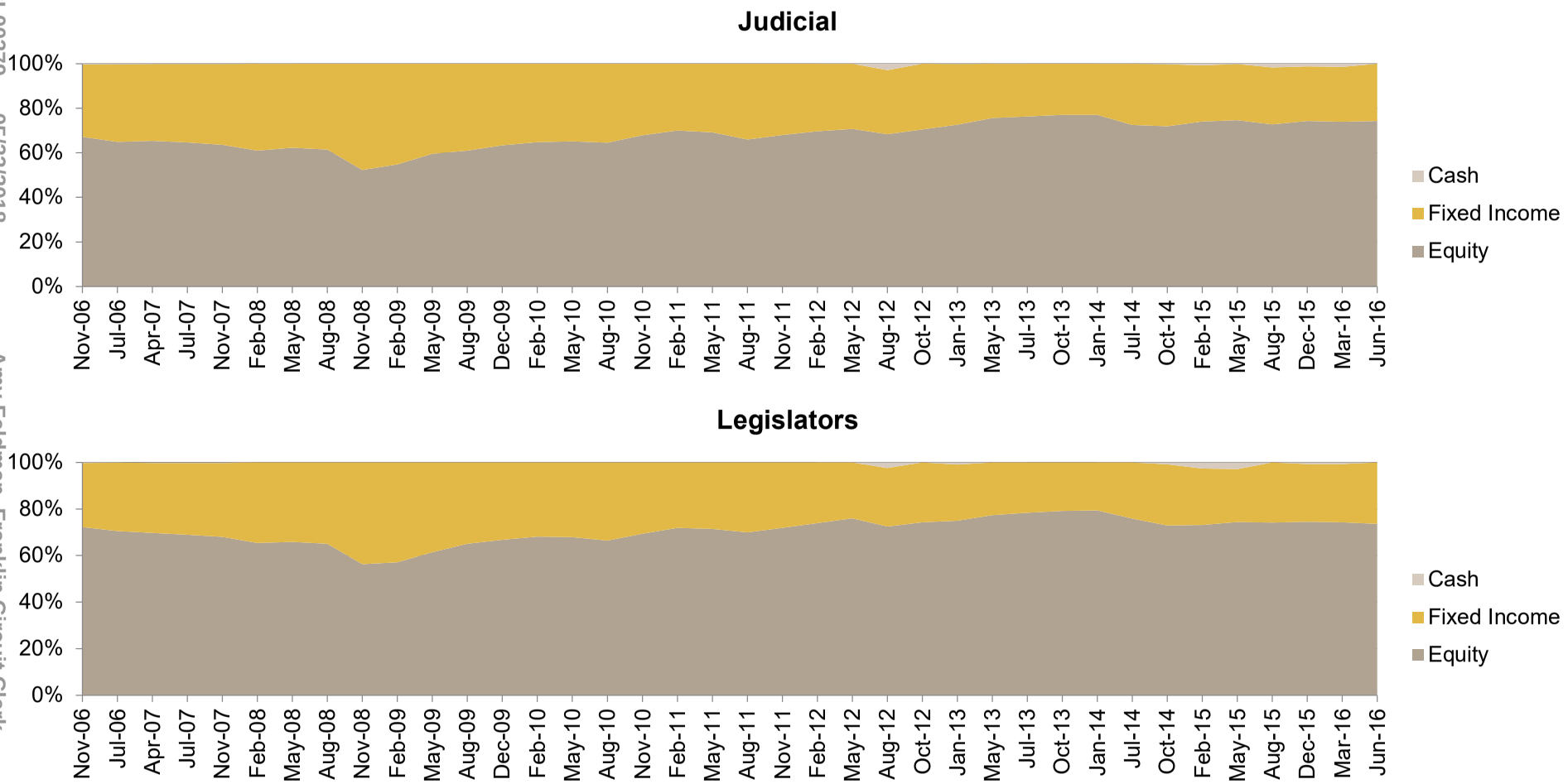
KJFRS – Historical Asset Allocation



Source: Lexington Investment Company Report for Kentucky Judicial & Legislators Retirement Funds from 2006-2016

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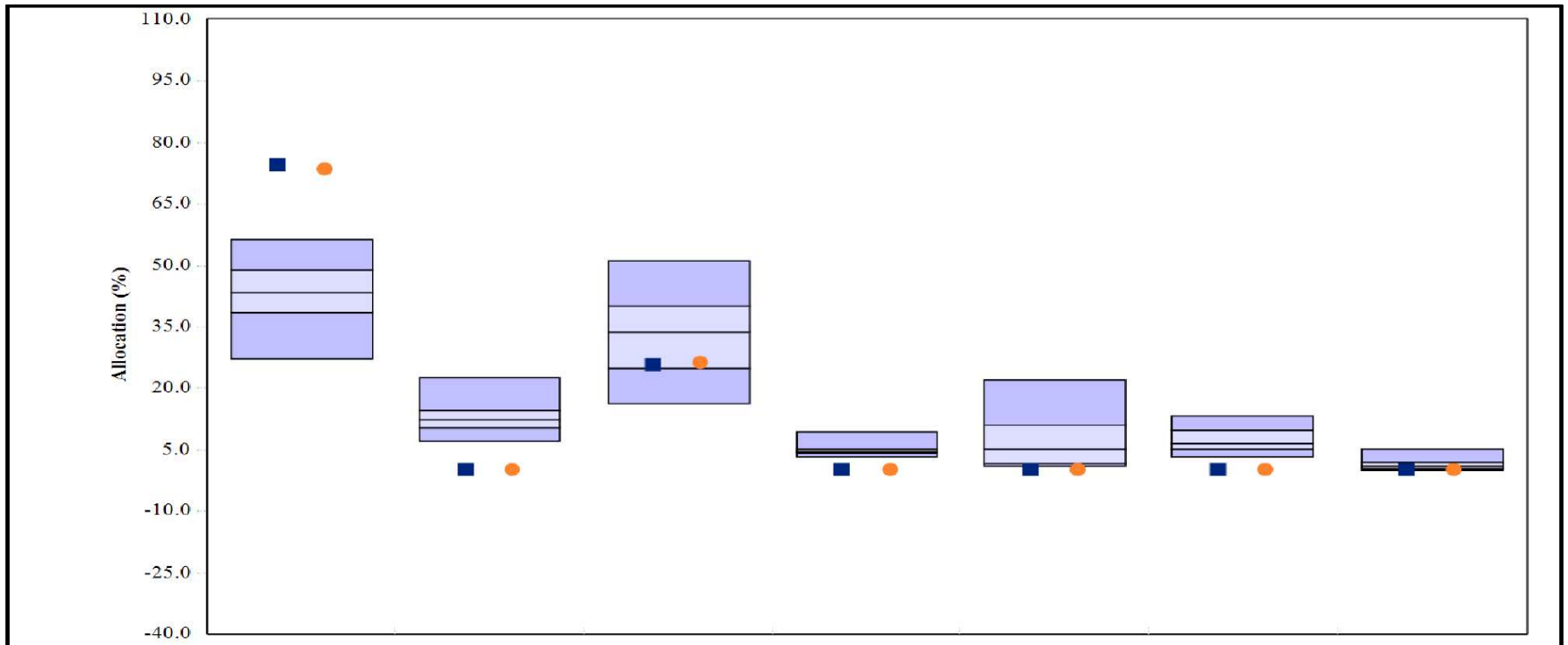
KJFRS – Asset Allocation Comparison

Asset Allocation Analysis
All Public Plans < $500M
As of June 30, 2016



	US Equity	Intl. Equity	US Fixed Income	Intl. Fixed Income	Alternative Inv.	Real Estate	Cash
KY Judicial	74.3 (1)	0.0	25.7 (72)	0.0	0.0	0.0	0.0
KY Legislators	73.6 (1)	0.0	26.4 (69)	0.0	0.0	0.0	0.0
Median	43.5	12.5	33.7	4.8	5.2	6.6	1.2
Population	535	513	533	150	128	396	482

Source: Lexington Investment Company Report for Kentucky Judicial & Legislators Retirement Funds as of 6/30/2016 & Investment Metrics peer group data. Parentheses contain percentile rankings.

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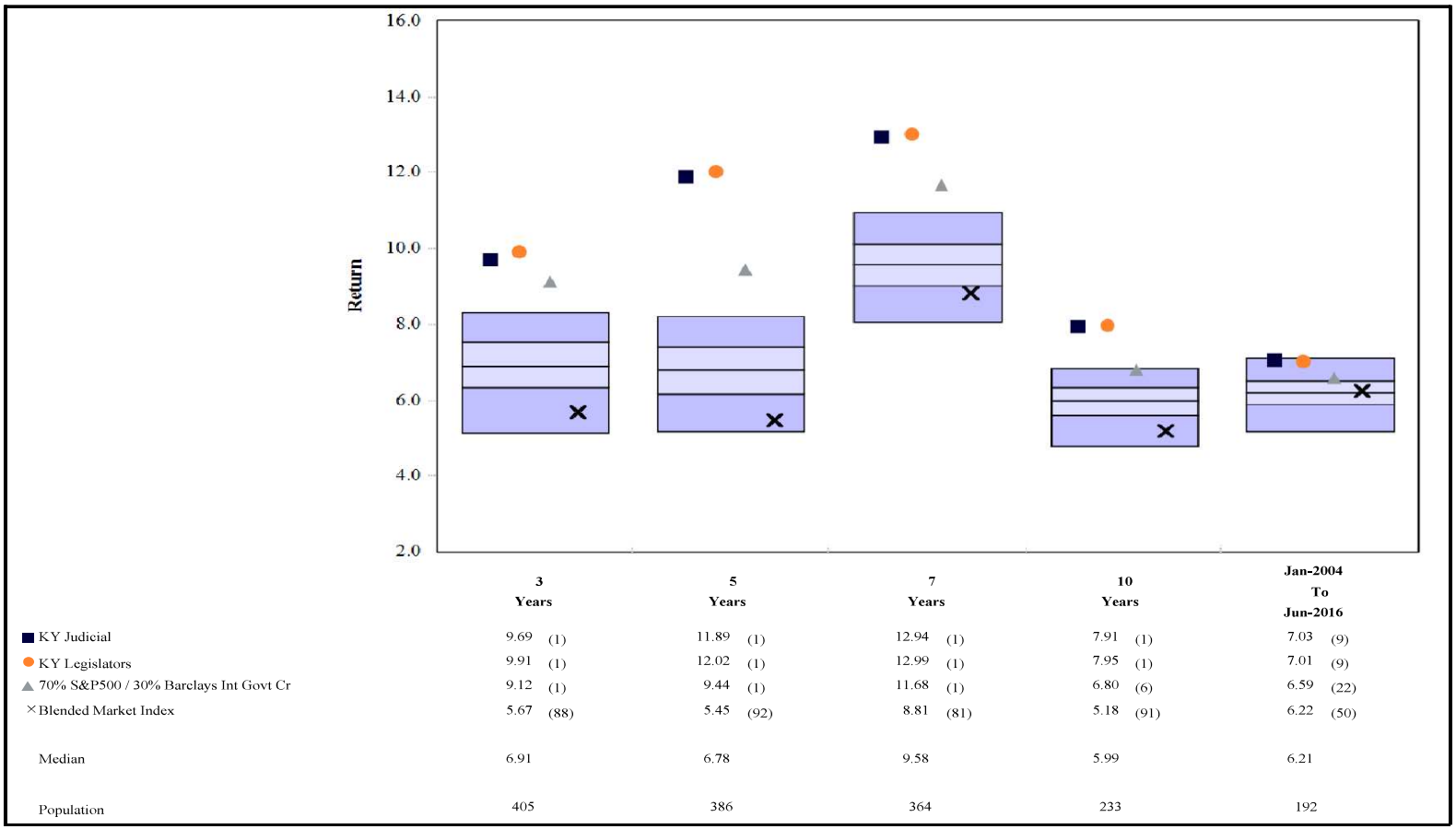
KJFRS – Trailing Investment Performance

Plan Sponsor Peer Group Analysis
All Public Plans < $500 Million
As of June 30, 2016



	3 Years	5 Years	7 Years	10 Years	Jan-2004 To Jun-2016
■ KY Judicial	9.69 (1)	11.89 (1)	12.94 (1)	7.91 (1)	7.03 (9)
● KY Legislators	9.91 (1)	12.02 (1)	12.99 (1)	7.95 (1)	7.01 (9)
▲ 70% S&P500 / 30% Barclays Int Govt Cr	9.12 (1)	9.44 (1)	11.68 (1)	6.80 (6)	6.59 (22)
× Blended Market Index	5.67 (88)	5.45 (92)	8.81 (81)	5.18 (91)	6.22 (50)
Median	6.91	6.78	9.58	5.99	6.21
Population	405	386	364	233	192

Source: Lexington Investment Company Report for Kentucky Judicial & Legislators Retirement Funds as of 6/30/2016 & Investment Metrics peer group data. Parentheses contain percentile rankings.

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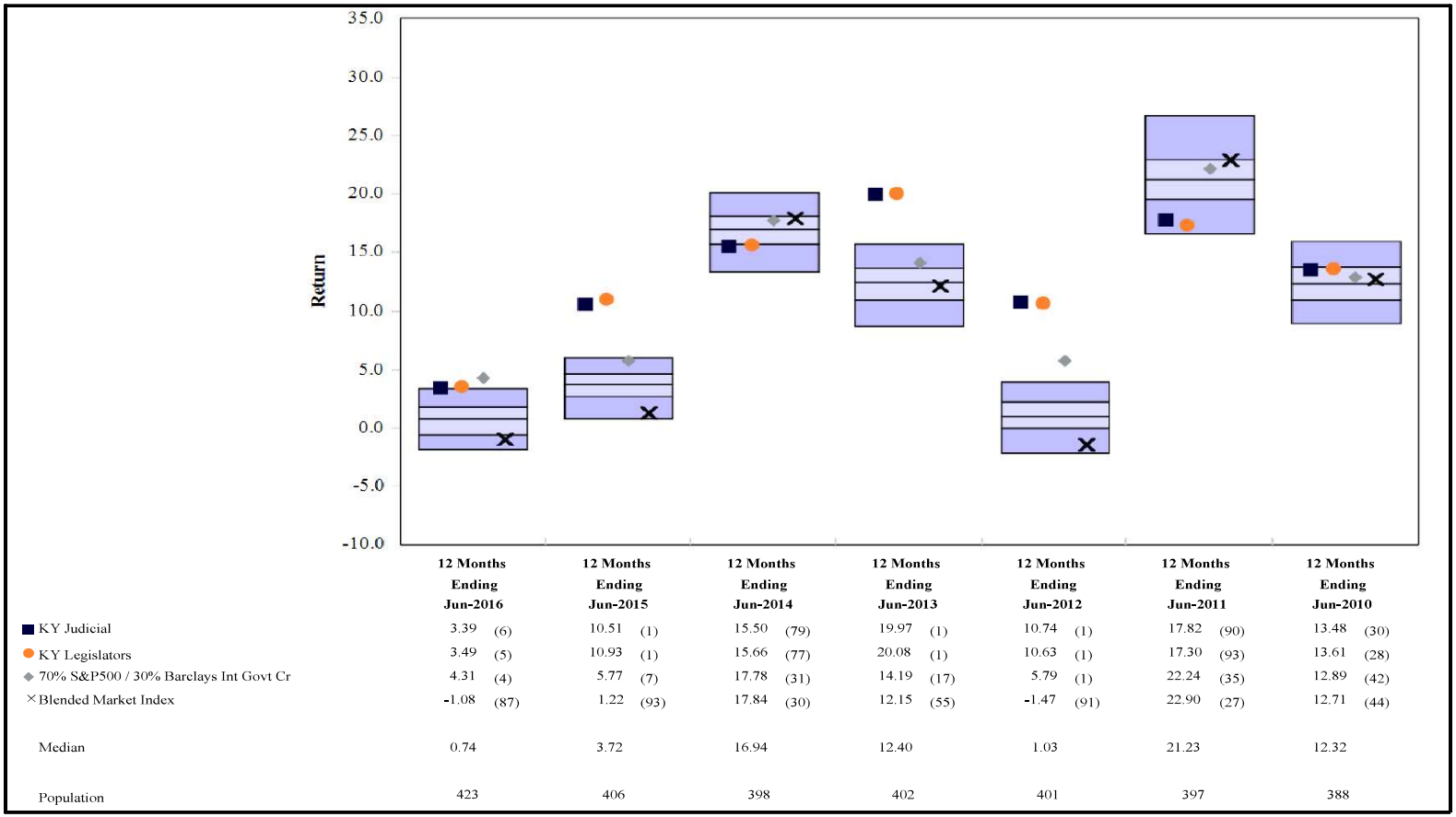
KJFRS – Fiscal Year Investment Returns

Plan Sponsor Peer Group Analysis
All Public Plans < $500M
As of June 30, 2016



	12 Months Ending Jun-2016	12 Months Ending Jun-2015	12 Months Ending Jun-2014	12 Months Ending Jun-2013	12 Months Ending Jun-2012	12 Months Ending Jun-2011	12 Months Ending Jun-2010
KY Judicial	3.39 (6)	10.51 (1)	15.50 (79)	19.97 (1)	10.74 (1)	17.82 (90)	13.48 (30)
KY Legislators	3.49 (5)	10.93 (1)	15.66 (77)	20.08 (1)	10.63 (1)	17.30 (93)	13.61 (28)
70% S&P500 / 30% Barclays Int Govt Cr	4.31 (4)	5.77 (7)	17.78 (31)	14.19 (17)	5.79 (1)	22.24 (35)	12.89 (42)
Blended Market Index	-1.08 (87)	1.22 (93)	17.84 (30)	12.15 (55)	-1.47 (91)	22.90 (27)	12.71 (44)
Median	0.74	3.72	16.94	12.40	1.03	21.23	12.32
Population	423	406	398	402	401	397	388

Source: Lexington Investment Company Report for Kentucky Judicial & Legislators Retirement Funds as of 6/30/2016 & Investment Metrics peer group data. Parentheses contain percentile rankings.

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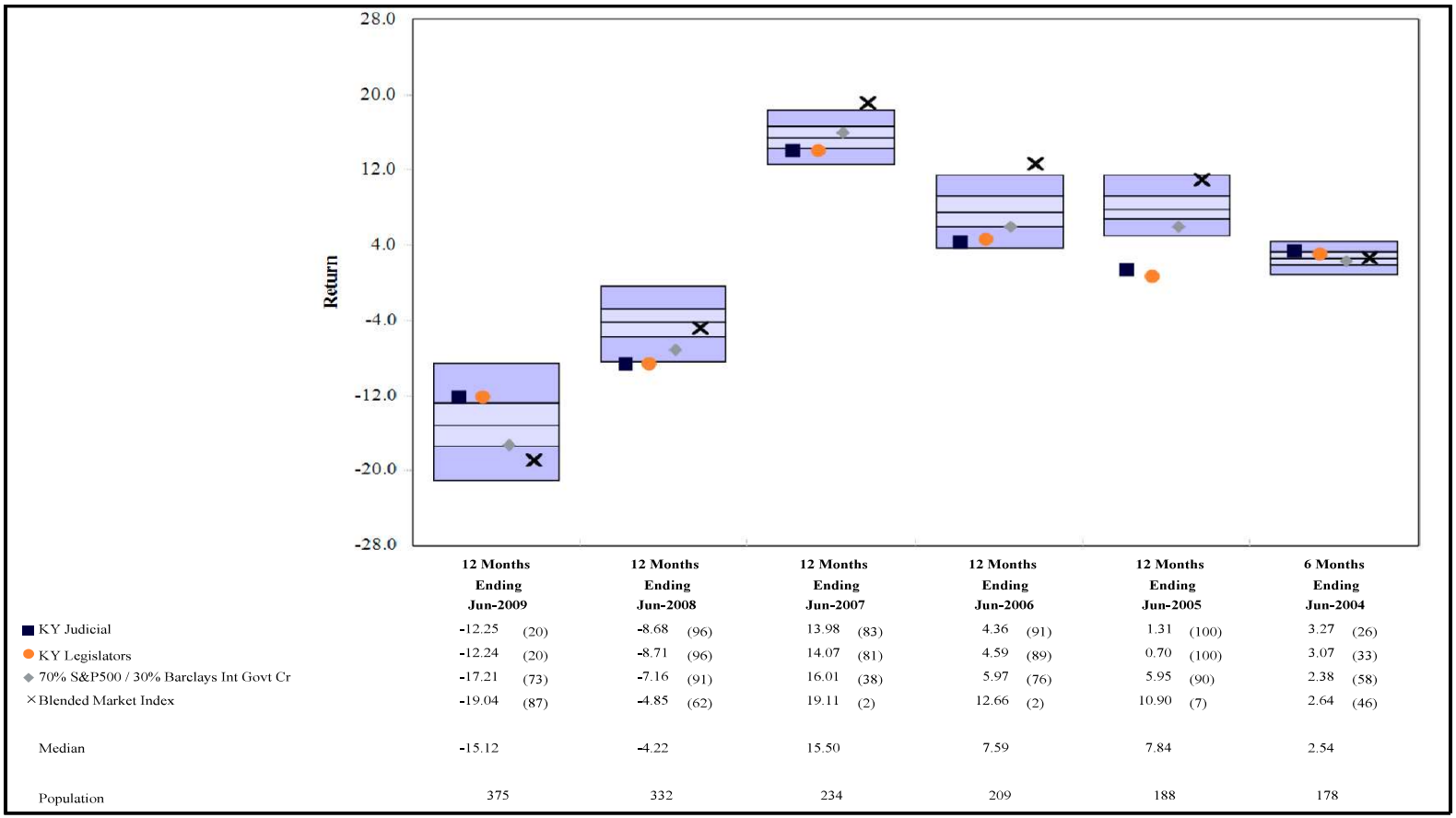
KJFRS – Fiscal Year Investment Returns

Plan Sponsor Peer Group Analysis
All Public Plans < $500M
As of June 30, 2016



	12 Months Ending Jun-2009	12 Months Ending Jun-2008	12 Months Ending Jun-2007	12 Months Ending Jun-2006	12 Months Ending Jun-2005	6 Months Ending Jun-2004
KY Judicial	-12.25 (20)	-8.68 (96)	13.98 (83)	4.36 (91)	1.31 (100)	3.27 (26)
KY Legislators	-12.24 (20)	-8.71 (96)	14.07 (81)	4.59 (89)	0.70 (100)	3.07 (33)
70% S&P500 / 30% Barclays Int Govt Cr	-17.21 (73)	-7.16 (91)	16.01 (38)	5.97 (76)	5.95 (90)	2.38 (58)
Blended Market Index	-19.04 (87)	-4.85 (62)	19.11 (2)	12.66 (2)	10.90 (7)	2.64 (46)
Median	-15.12	-4.22	15.50	7.59	7.84	2.54
Population	375	332	234	209	188	178

Source: Lexington Investment Company Report for Kentucky Judicial & Legislators Retirement Funds as of 6/30/2016 & Investment Metrics peer group data. Parentheses contain percentile rankings.

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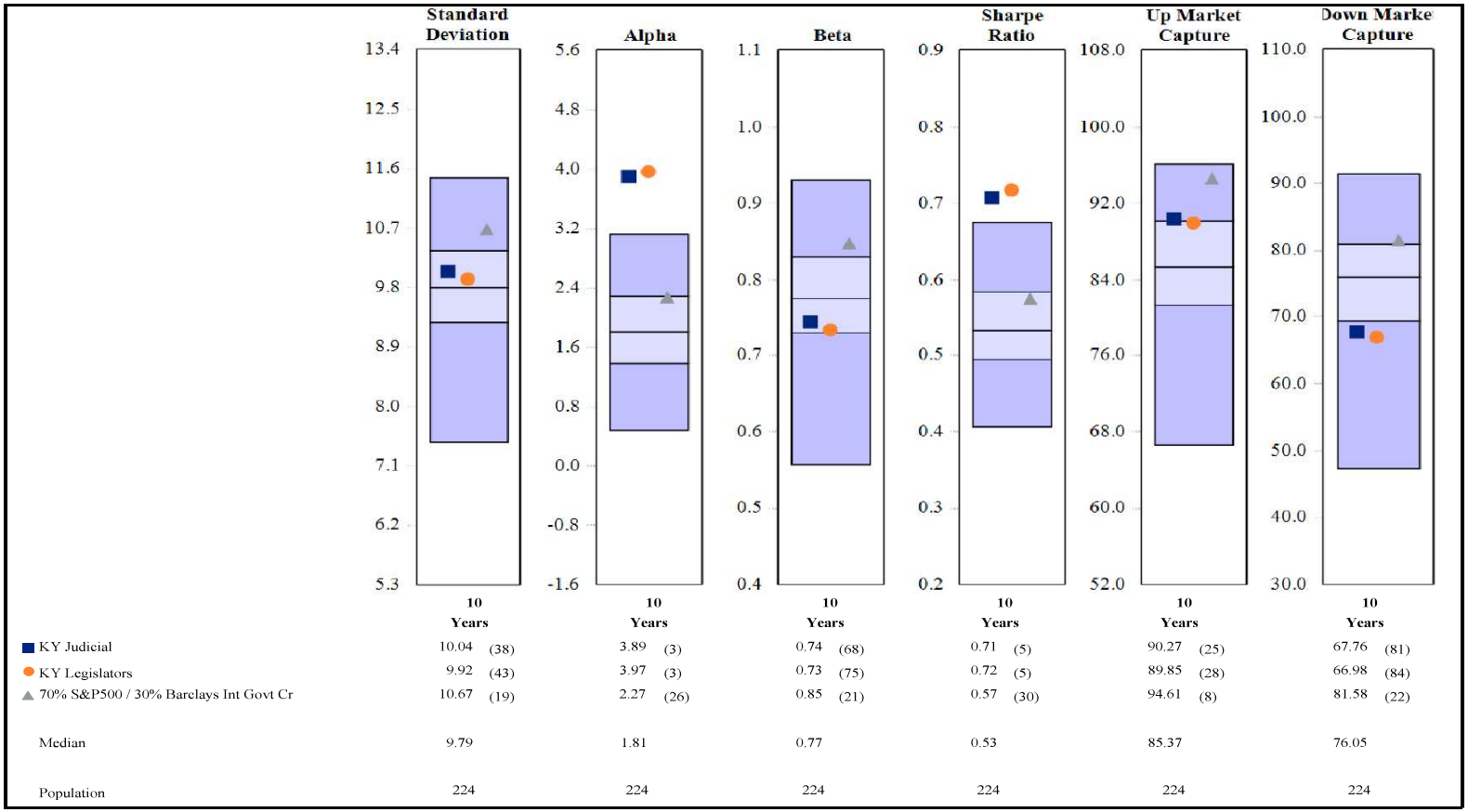
KJFRS – Investment Risk Statistics

Plan Sponsor Peer Group Analysis-Multi Statistics
All Public Plans < $500M vs. Blended Market Index

As of June 30, 2016



Source: Lexington Investment Company Report for Kentucky Judicial & Legislators Retirement Funds as of 6/30/2016 & Investment Metrics peer group data. Parentheses contain percentile rankings.

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Fees

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Transparency & Fees

- Increase in alternative investments has led to demand for greater transparency
  - Traditional equity & fixed income investments typically have a simple and easy-to-compare fee structure
  - Alternative investments typically include both asset-based and performance-fees, hurdle rates, carried interest and other hidden costs that are hard to quantify and compare

- Disclosure requirements have not kept pace with rapid shift to alternative investments
  - GASB 67 states that “investment-related costs should be reported as investment expense if they are separable from (a) investment income and (b) the administrative expense of the plan”
  - Separating performance-based fees for alternatives is difficult and not required by GASB, resulting in inconsistent performance reporting across the universe of plans

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Peer Comparisons are Difficult

- Study by CEM Benchmarking shed light on lack of transparency & consistency[1]
  - Roughly half of the costs incurred by private equity investments are related to performance-based fees
  - Performance-based fees were typically not included in fee disclosures by most state retirement plans
  - South Carolina Retirement System was criticized for having highest fees in the country (1.58% in 2013), but study found they were simply providing more transparency than their peers

- Although transparency is limited, reported fees for state plans increased from 0.28% in 2006 to 0.37% in 2012, largely due to an increase in alternative investments[2]
  - Reported fees are likely significantly understated as most state plans do not report performance-based fees and other hidden costs

[1]CEM Benchmarking: "The Time Has Come For Standardized Total Cost Disclosure For Private Equity", April 2015
[2]The Pew Charitable Trusts: "State Public Pension Investments Shift Over Past 30 Years", June 2014

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Fee Comparison

KRS Combined Pension Plans			
Asset Class	Assets	Weight	Fee
Fixed Income	$1,468,145,621	13.87%	0.43%
US Equity	$2,794,007,868	26.40%	0.12%
Non-US Equity	$2,680,498,325	25.33%	0.31%
Absolute Return	$1,091,634,600	10.32%	0.93%
Real Return	$908,251,594	8.58%	0.82%
Real Estate	$508,967,595	4.81%	1.06%
Private Equity	$1,130,046,686	10.68%	1.31%
Total Portfolio	$10,581,552,289		0.53%

KRS Combined Insurance Plans			
Asset Class	Assets	Weight	Fee
Fixed Income	$510,456,234	12.28%	0.47%
US Equity	$1,212,540,645	29.16%	0.13%
Non-US Equity	$1,089,601,818	26.20%	0.34%
Absolute Return	$405,379,091	9.75%	0.89%
Real Return	$349,720,954	8.41%	0.79%
Real Estate	$208,905,457	5.02%	1.05%
Private Equity	$381,855,078	9.18%	1.35%
Total Portfolio	$4,158,459,277		0.51%

Teachers Pension Plan			
Asset Class	Assets	Weight	Fee
Fixed Income	$2,959,786,075	17.60%	0.01%
Equity	$10,423,111,549	61.97%	0.13%
Additional Categories	$1,337,755,631	7.95%	0.65%
Real Estate	$899,933,835	5.35%	0.78%
Alternatives	$903,427,729	5.37%	1.60%
Cash	$296,766,244	1.76%	
Total Portfolio	$16,820,781,063		0.26%

Teachers Medical Plan			
Asset Class	Assets	Weight	Fee
Fixed Income	$58,096,830	9.12%	
Equity	$341,128,241	53.55%	0.06%
Additional Categories	$199,849,405	31.37%	0.34%
Real Estate	$17,995,520	2.83%	2.80%
Alternatives	$18,251,931	2.87%	4.35%
Cash	$1,654,670	0.26%	
Total Portfolio	$636,976,596		0.34%

Judicial Plan			
Asset Class	Assets	Weight	Fee
US Equity	$250,491,358	74.29%	
Fixed Income	$86,689,198	25.71%	
Total Portfolio	$337,180,556		0.06%

Legislators Plan			
Asset Class	Assets	Weight	Fee
US Equity	$73,298,389	73.59%	
Fixed Income	$26,309,849	26.41%	
Total Portfolio	$99,608,239		0.06%

KRS - As of June 30, 2016. Based on RV Kuhns 2Q16 report. See KRS Manager Fees slides for more detail.
TRS – Market values are based on average assets in each manager based on the prior 4 quarters' portfolio summary.
KJFRS – As of 6/30/16. Fee is estimated based on asset size of each Plan and the maximum Hilliard Lyons fee which is roughly 6 basis points

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KRS – Money Manager Fees

- Internal KRS report includes aggregate management fees for all underlying managers, but is largely inconsistent with detailed fees shown in RV Kuhns report on KRS
  - Weighted average fees based on assets (6/30/16): Pension – 0.66%; Insurance – 0.62%
  - Footnote indicates there are cases where actual negotiated fees are lower than standard fee shown
- RV Kuhns quarterly report includes a fee schedule for all underlying managers, except private equity investments
  - Weighted average fees based on assets (6/30/16): Pension – 0.53%; Insurance – 0.51%
  - Fees for private equity investments were based on internal KRS report
- Fee schedules could not be verified as individual manager contracts were not included in the analysis
- Fees listed above do not include performance-based fees or other hidden costs and do not include administrative/operational costs of internally managed accounts

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KRS – Internally Reported Fees

Combined Pension Fund

Asset Class	Pension Assets	Pension %	Pension Fees ($)	Pension Fees (%)
Fixed Income	$1,464,664,653	13.93%	$6,836,322	0.47%
US Equity	$2,758,985,003	26.24%	$6,138,507	0.22%
Non-US Equity	$2,666,867,817	25.36%	$13,681,936	0.51%
Absolute Return	$1,093,730,099	10.40%	$13,335,942	1.22%
Real Return	$901,317,994	8.57%	$8,418,391	0.93%
Real Estate	$500,421,742	4.76%	$6,026,513	1.20%
Private Equity	$1,130,046,686	10.75%	$14,839,208	1.31%
Total Portfolio	$10,516,033,994		$69,276,819	0.66%

Combined Insurance Fund

Asset Class	Insurance Assets	Insurance %	Insurance Fees ($)	Insurance Fees (%)
Fixed Income	$507,059,837	12.27%	$2,430,580	0.48%
US Equity	$1,197,518,941	28.98%	$2,158,175	0.18%
Non-US Equity	$1,083,850,554	26.23%	$5,440,493	0.50%
Absolute Return	$409,979,004	9.92%	$4,899,846	1.20%
Real Return	$347,109,310	8.40%	$3,051,576	0.88%
Real Estate	$205,027,628	4.96%	$2,451,415	1.20%
Private Equity	$381,855,078	9.24%	$5,166,361	1.35%
Total Portfolio	$4,132,400,352		$25,598,448	0.62%

*As of June 30, 2016. Market values are estimated per report.

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KRS – RV Kuhns Reported Fees

Combined Pension Fund

Asset Class	Pension Assets	Pension %	Pension Fees ($)	Pension Fees (%)
Fixed Income	$1,468,145,621	13.87%	$6,269,459	0.43%
US Equity	$2,794,007,868	26.40%	$3,440,147	0.12%
Non-US Equity	$2,680,498,325	25.33%	$8,281,421	0.31%
Absolute Return	$1,091,634,600	10.32%	$10,103,081	0.93%
Real Return	$908,251,594	8.58%	$7,482,710	0.82%
Real Estate	$508,967,595	4.81%	$5,388,985	1.06%
Private Equity (Based on Internal Fee Report)	$1,130,046,686	10.68%	$14,839,208	1.31%
Total Portfolio	$10,581,552,289		$55,805,011	0.53%

Combined Insurance Fund

Asset Class	Insurance Assets	Insurance %	Insurance Fees ($)	Insurance Fees (%)
Fixed Income	$510,456,234	12.28%	$2,401,800	0.47%
US Equity	$1,212,540,645	29.16%	$1,559,295	0.13%
Non-US Equity	$1,089,601,818	26.20%	$3,737,086	0.34%
Absolute Return	$405,379,091	9.75%	$3,595,628	0.89%
Real Return	$349,720,954	8.41%	$2,760,906	0.79%
Real Estate	$208,905,457	5.02%	$2,192,810	1.05%
Private Equity (Based on Internal Fee Report)	$381,855,078	9.18%	$5,166,361	1.35%
Total Portfolio	$4,158,459,277		$21,413,886	0.51%

*As of June 30, 2016. Market values are estimated per report.

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KRS Money Manager Fees (RV Kuhns Report)

Manager Name	Pension Assets	Pension %	Pension Fees ($)	Pension Fees (%)	Insurance Assets	Insurance %	Insurance Fees ($)	Insurance Fees (%)
Fixed Income	**$1,468,145,621**	**13.87%**	**$6,269,459**	**0.43%**	**$510,456,234**	**12.28%**	**$2,401,800**	**0.47%**
Cerberus	$87,445,902	0.83%	$874,459	1.00%	$37,476,815	0.90%	$374,768	1.00%
Columbia	$246,258,224	2.33%	$961,904	0.39%	$45,012,470	1.08%	$225,062	0.50%
Manulife	$426,047,354	4.03%	$1,177,618	0.28%	$160,585,741	3.86%	$513,964	0.32%
Marathon	$190,615,394	1.80%	$1,620,231	0.85%	$78,048,402	1.88%	$663,411	0.85%
NISA	$303,968,735	2.87%	$501,548	0.17%	$103,128,307	2.48%	$170,162	0.17%
Shenkman	$84,512,993	0.80%	$422,565	0.50%	$39,385,454	0.95%	$196,927	0.50%
Waterfall	$129,297,019	1.22%	$711,134	0.55%	$46,819,045	1.13%	$257,505	0.55%
US Equity	**$2,794,007,868**	**26.40%**	**$3,440,147**	**0.12%**	**$1,212,540,645**	**29.16%**	**$1,559,295**	**0.13%**
Invesco	$190,731,761	1.80%	$228,878	0.12%				
Internal S&P 500	$1,561,176,822	14.75%	$0	0.00%	$741,507,084	17.83%	$0	0.00%
Internal US Mid Cap	$276,038,037	2.61%	$0	0.00%	$146,933,083	3.53%	$0	0.00%
Westfield Capital Management	$106,632,612	1.01%	$670,663	0.63%	$42,659,506	1.03%	$302,287	0.71%
River Road Asset Management - DAV	$96,208,710	0.91%	$507,939	0.53%	$46,919,401	1.13%	$272,097	0.58%
River Road Asset Management - FAV	$34,593,087	0.33%	$121,076	0.35%	$14,825,622	0.36%	$51,890	0.35%
Westwood Holdings Group	$95,566,518	0.90%	$534,766	0.56%	$38,209,587	0.92%	$258,548	0.68%
Systematic Financial Management	$187,042,366	1.77%	$885,669	0.47%	$78,436,467	1.89%	$451,246	0.58%
Sasco Capital	$43,666,843	0.41%	$248,334	0.57%	$18,307,234	0.44%	$121,536	0.66%
Northern Trust Structured	$202,351,112	1.91%	$242,821	0.12%	$84,742,661	2.04%	$101,691	0.12%
Non-US Equity	**$2,680,498,325**	**25.33%**	**$8,281,421**	**0.31%**	**$1,089,601,818**	**26.20%**	**$3,737,086**	**0.34%**
American Century	$328,640,941	3.11%	$1,398,496	0.43%	$131,679,817	3.17%	$600,803	0.46%
Franklin Templeton	$226,294,129	2.14%	$1,067,677	0.47%	$83,790,120	2.01%	$481,451	0.57%
LSV Asset Management	$392,633,740	3.71%	$2,555,802	0.65%	$174,796,841	4.20%	$1,248,781	0.71%
Lazard Asset Management	$471,978,371	4.46%	$2,523,903	0.53%	$168,773,401	4.06%	$1,078,254	0.64%
BlackRock ACWI ex US	$1,101,353,361	10.41%	$605,744	0.06%	$472,809,497	11.37%	$260,045	0.06%
BlackRock ACWI ex US Small Cap					$57,752,142	1.39%	$67,752	0.12%
NTGI International Small Cap	$159,597,783	1.51%	$129,799	0.08%				
Absolute Return	**$1,091,634,600**	**10.32%**	**$10,103,081**	**0.93%**	**$405,379,091**	**9.75%**	**$3,595,628**	**0.89%**
Anchorage	$15,000,000	0.14%	$225,000	1.50%	$5,000,000	0.12%	$75,000	1.50%
BAAM Henry Clay	$302,010,996	2.85%	$1,510,055	0.50%	$119,009,368	2.86%	$595,047	0.50%
BlackRock GAO	$22,500,000	0.21%	$112,500	0.50%	$7,500,000	0.18%	$37,500	0.50%
Coatue Qual Partners	$15,915,885	0.15%	$238,738	1.50%	$5,305,295	0.13%	$79,579	1.50%
Davidson-Kempner	$30,823,466	0.29%	$462,352	1.50%	$10,274,489	0.25%	$154,117	1.50%
DB H2O	$10,872,583	0.10%	$163,089	1.50%				
DSAM	$14,984,208	0.14%	$299,684	2.00%	$4,994,736	0.12%	$99,895	2.00%
Finisterre	$18,750,000	0.18%	$281,250	1.50%	$6,250,000	0.15%	$93,750	1.50%
Glenview Institution	$12,818,087	0.12%	$256,362	2.00%	$4,272,696	0.10%	$85,454	2.00%
HBK	$31,049,500	0.29%	$465,743	1.50%	$10,349,833	0.25%	$155,247	1.50%
JANA Partners	$13,252,019	0.13%	$265,040	2.00%	$4,417,340	0.11%	$88,347	2.00%
Knighthead	$14,012,913	0.13%	$280,258	2.00%	$4,670,971	0.11%	$93,419	2.00%
Libremax Capital	$15,101,448	0.14%	$302,029	2.00%	$5,033,816	0.12%	$100,676	2.00%
Luxor	$10,114,818	0.10%	$177,009	1.75%	$3,371,606	0.08%	$59,003	1.75%
Myriad	$26,638,786	0.25%	$532,776	2.00%	$8,879,595	0.21%	$177,592	2.00%
PAAMCO	$143,282,845	1.35%	$1,074,621	0.75%	$53,960,070	1.30%	$404,701	0.75%
Pine River	$14,491,708	0.14%	$217,376	1.50%	$4,830,569	0.12%	$72,459	1.50%
Prisma	$325,114,412	3.07%	$2,275,801	0.70%	$128,958,399	3.10%	$902,709	0.70%
QMS Diversified	$15,269,414	0.14%	$305,388	2.00%	$5,089,804	0.12%	$101,796	2.00%
Scopia PX	$14,216,472	0.13%	$213,247	1.50%	$4,738,824	0.11%	$71,082	1.50%
Tourbillon Global Equity	$25,415,040	0.24%	$444,763	1.75%	$8,471,680	0.20%	$148,254	1.75%

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KRS Money Manager Fees (RV Kuhns Report)

Manager Name	Pension Assets	Pension %	Pension Fees ($)	Pension Fees (%)	Insurance Assets	Insurance %	Insurance Fees ($)	Insurance Fees (%)
Real Return	**$908,251,594**	**8.58%**	**$7,482,710**	**0.82%**	**$349,720,954**	**8.41%**	**$2,760,906**	**0.79%**
Amerra Agri Fund	$33,352,450	0.32%	$500,287	1.50%	$13,451,087	0.32%	$201,766	1.50%
Amerra Agri Holdings	$31,361,664	0.30%	$470,425	1.50%	$16,887,050	0.41%	$253,306	1.50%
BTG Pactual	$4,848,832	0.05%	$72,732	1.50%	$2,178,461	0.05%	$32,677	1.50%
Magnetar MTP	$71,249,946	0.67%	$1,068,749	1.50%	$22,003,665	0.53%	$330,055	1.50%
Magnetar MTP EOF	$10,582,370	0.10%	$158,736	1.50%	$3,527,457	0.08%	$52,912	1.50%
Nuveen	$214,970,397	2.03%	$1,522,308	0.71%	$87,950,581	2.11%	$684,629	0.78%
Oberland Capital	$3,923,836	0.04%	$78,477	2.00%	$1,762,882	0.04%	$35,258	2.00%
PIMCO All Asset	$317,862,013	3.00%	$2,749,506	0.87%	$104,062,433	2.50%	$900,140	0.87%
Taurus Mine Finance	$7,979,054	0.08%	$99,738	1.25%	$3,520,693	0.08%	$44,009	1.25%
Tortoise	$74,219,810	0.70%	$742,198	1.00%	$22,398,172	0.54%	$223,982	1.00%
Internal TIPS	$136,597,608	1.29%	$0	0.00%	$71,833,626	1.73%	$0	0.00%
Tensaska Power Fund	$1,303,614	0.01%	$19,554	1.50%	$144,847	0.00%	$2,173	1.50%
Real Estate	**$508,967,595**	**4.81%**	**$5,388,985**	**1.06%**	**$208,905,457**	**5.02%**	**$2,192,810**	**1.05%**
DivcoWest IV	$21,415,398	0.20%	$321,231	1.50%	$9,472,192	0.23%	$142,083	1.50%
GAP VI	$21,269,967	0.20%	$319,050	1.50%	$9,348,854	0.22%	$140,233	1.50%
GAP VII	$18,936,751	0.18%	$284,051	1.50%	$8,310,371	0.20%	$124,656	1.50%
H/2 Core Debt	$18,068,902	0.17%	$135,517	0.75%	$7,621,479	0.18%	$57,161	0.75%
H/2 Credit Partners	$72,997,928	0.69%	$729,979	1.00%	$28,388,083	0.68%	$283,881	1.00%
Harrison St. Core Equity	$73,124,850	0.69%	$548,436	0.75%	$28,798,042	0.69%	$215,985	0.75%
L-A VII	$20,065,431	0.19%	$300,981	1.50%	$8,805,692	0.21%	$132,085	1.50%
Mesa West Core Debt	$57,599,432	0.54%	$460,795	0.80%	$30,077,154	0.72%	$240,617	0.80%
Prologis	$57,152,689	0.54%	$571,527	1.00%	$21,973,559	0.53%	$219,736	1.00%
Rubenstein II	$17,492,531	0.17%	$262,388	1.50%	$7,737,081	0.19%	$116,056	1.50%
Stockbridge Smart Markets	$78,096,435	0.74%	$663,820	0.85%	$31,581,045	0.76%	$268,439	0.85%
Walton VI	$19,463,584	0.18%	$291,954	1.50%	$2,162,620	0.05%	$32,439	1.50%
Walton VII	$33,283,697	0.31%	$499,255	1.50%	$14,629,285	0.35%	$219,439	1.50%
Private Equity (Based on Fee Sheet)	**$1,130,046,686**	**10.68%**	**$14,839,208**	**1.31%**	**$381,855,078**	**9.18%**	**$5,166,361**	**1.35%**
Arbor Investments	$3,134,745	0.03%	$62,695	2.00%	$348,305	0.01%	$6,966	2.00%
Arcano Capital	$25,273,331	0.24%	$151,640	0.60%	$2,808,148	0.07%	$16,849	0.60%
Ares	$4,909,105	0.05%	$73,637	1.50%	$2,588,001	0.06%	$38,820	1.50%
Bay Hills Capital I	$48,498,443	0.46%	$363,738	0.75%	$5,388,716	0.13%	$40,415	0.75%
Bay Hills Capital II	$83,965,942	0.79%	$629,745	0.75%	$9,329,549	0.22%	$69,972	0.75%
Bay Hills Capital III	$13,468,792	0.13%	$101,016	0.75%	$11,577,049	0.28%	$86,828	0.75%
BDCM Oppt Fund	$9,017,410	0.09%	$157,805	1.75%	$6,189,013	0.15%	$108,308	1.75%
Blackstone Capital Partners V	$16,986,630	0.16%	$127,400	0.75%	$4,469,890	0.11%	$33,524	0.75%
Blackstone Capital Partners VI	$57,032,988	0.54%	$427,747	0.75%	$38,021,992	0.91%	$285,165	0.75%
CVC European Equity Partners VI	$8,686,609	0.08%	$130,299	1.50%	$4,589,980	0.11%	$68,850	1.50%
CM Growth Partners I	$13,134,725	0.12%	$197,021	1.50%	$1,459,412	0.04%	$21,891	1.50%
Columbia Capital Equity Partners IV	$17,710,905	0.17%	$150,543	0.85%	$1,967,880	0.05%	$16,727	0.85%
Crestview Partners	$8,656,104	0.08%	$129,842	1.50%	$4,660,977	0.11%	$69,915	1.50%
Crestview Partners II	$46,620,487	0.44%	$815,859	1.75%	$5,180,052	0.12%	$90,651	1.75%
Crestview Partners III					$4,593,717	0.11%	$80,390	1.75%
DAG Ventures II	$7,162,240	0.07%	$179,056	2.50%	$795,795	0.02%	$19,895	2.50%
DAG Ventures III	$8,054,924	0.08%	$80,549	1.00%	$894,979	0.02%	$8,950	1.00%
DAG Ventures IV	$91,466,381	0.86%	$914,664	1.00%	$10,162,931	0.24%	$101,629	1.00%
DAG Ventures V	$29,527,028	0.28%	$295,270	1.00%	$25,836,150	0.62%	$258,361	1.00%
DBSOF III	$6,017,774	0.06%	$75,222	1.25%	$18,053,322	0.43%	$225,667	1.25%
DCM Partners	$15,386,744	0.15%	$384,669	2.50%	$1,709,638	0.04%	$42,741	2.50%

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KRS Money Manager Fees (RV Kuhns Report)

Manager Name	Pension Assets	Pension %	Pension Fees ($)	Pension Fees (%)	Insurance Assets	Insurance %	Insurance Fees ($)	Insurance Fees (%)
Essex Woodlands	$22,317,871	0.21%	$446,357	2.00%	$4,959,531	0.12%	$99,191	2.00%
GTCR	$5,607,845	0.05%	$84,118	1.50%	$623,083	0.01%	$9,346	1.50%
Green Equity Investors IV	$5,172,546	0.05%	$51,725	1.00%	$574,727	0.01%	$5,747	1.00%
Green Equity Investors V	$55,664,899	0.53%	$834,973	1.50%	$6,184,989	0.15%	$92,775	1.50%
Green Equity Investors VI	$25,836,759	0.24%	$387,551	1.50%	$22,607,166	0.54%	$339,107	1.50%
Green Equity Investors VII	$25,000,000	0.24%	$375,000	1.50%	$25,000,000	0.60%	$375,000	1.50%
HIG BioVentures II	$2,900,731	0.03%	$58,015	2.00%	$2,470,991	0.06%	$49,420	2.00%
HIG Capital Partner V	$2,586,402	0.02%	$51,728	2.00%	$1,362,305	0.03%	$27,246	2.00%
HIG Ventures II	$8,754,610	0.08%	$196,979	2.25%	$972,734	0.02%	$21,887	2.25%
Harvest Partners V	$12,640,691	0.12%	$63,203	0.50%	$1,404,526	0.03%	$7,023	0.50%
Harvest Partners VI	$23,770,602	0.22%	$159,263	0.67%	$9,709,125	0.23%	$65,051	0.67%
Harvest Partners VII	$20,000,000	0.19%	$400,000	2.00%	$20,000,000	0.48%	$400,000	2.00%
Hellman & Friedman Capital Partners	$4,696,134	0.04%	$35,221	0.75%	$1,761,060	0.04%	$13,208	0.75%
Horsley Bridge Partners	$48,573,789	0.46%	$485,738	1.00%	$5,397,085	0.13%	$53,971	1.00%
Institutional Venture Partners XI					$39,762	0.00%	$795	2.00%
Institutional Venture Partners XII	$11,056,260	0.10%	$221,125	2.00%	$1,228,372	0.03%	$24,567	2.00%
JW Childs Partners	$508	0.00%	$5	1.00%	$56	0.00%	$1	1.00%
Keyhaven Capital Partners	$13,789,036	0.13%	$124,101	0.90%	$1,532,115	0.04%	$13,789	0.90%
Levine Leichtman Capital Partners V	$34,342,539	0.32%	$515,138	1.50%	$17,917,847	0.43%	$268,768	1.50%
Matlin Patterson Global Advisors	$22,815	0.00%	$285	1.25%	$2,536	0.00%	$32	1.25%
Matlin Patterson Global Advisors II	$1,962,091	0.02%	$0	0.00%	$218,009	0.01%	$0	0.00%
Matlin Patterson Global Advisors III	$29,364,410	0.28%	$381,737	1.30%	$3,262,777	0.08%	$42,416	1.30%
Merit Capital Partners, Mezzanine Fund IV	$10,013,049	0.09%	$175,228	1.75%	$1,112,561	0.03%	$19,470	1.75%
Mill Road Capital Management	$22,535,476	0.21%	$450,710	2.00%	$2,503,941	0.06%	$50,079	2.00%
New Mountain Partners II	$466,243	0.00%	$9,325	2.00%	$93,253	0.00%	$1,865	2.00%
New Mountain Partners III	$30,615,947	0.29%	$535,779	1.75%	$6,803,538	0.16%	$119,062	1.75%
New Mountain Partners IV	$16,010,462	0.15%	$280,183	1.75%	$8,395,726	0.20%	$146,925	1.75%
Oak Hill Capital Partners II	$4,535,214	0.04%	$56,690	1.25%	$503,912	0.01%	$6,299	1.25%
Oak Hill Capital Partners III	$21,251,360	0.20%	$371,899	1.75%	$7,870,874	0.19%	$137,740	1.75%
OCM Opportunities Fund VII(b)					$655,666	0.02%	$9,835	1.50%
Riverside Company	$21,895,535	0.21%	$437,911	2.00%	$11,541,428	0.28%	$230,829	2.00%
Sun Capital Partners					$1,261,449	0.03%	$25,229	2.00%
Technology Crossover Ventures, TCV VI					$650,597	0.02%	$11,841	1.82%
Triton Advisors	$9,936,297	0.09%	$168,917	1.70%	$5,237,637	0.13%	$89,040	1.70%
Vantagepoint Venture Capital Partners 2006	$4,739,083	0.04%	$94,782	2.00%	$526,565	0.01%	$10,531	2.00%
Vantagepoint Venture Capital Partners IV	$12,192,735	0.12%	$243,855	2.00%	$1,354,749	0.03%	$27,095	2.00%
Vista Equity Partners III	$20,399,214	0.19%	$407,984	2.00%	$2,266,581	0.05%	$45,332	2.00%
Vista Equity Partners IV	$32,093,448	0.30%	$481,402	1.50%	$27,338,858	0.66%	$410,083	1.50%
Vista Equity Partners VI	$2,999,466	0.03%	$29,995	1.00%	$2,999,466	0.07%	$29,995	1.00%
Warburg Pincus Private Equity IX	$5,899,893	0.06%	$88,498	1.50%	$1,179,979	0.03%	$17,700	1.50%
Warburg Pincus Private Equity X	$19,145,480	0.18%	$287,182	1.50%	$3,705,584	0.09%	$55,584	1.50%
Wayzata Investment Partners II	$1,377,142	0.01%	$20,657	1.50%	$153,053	0.00%	$2,296	1.50%
Wayzata Investment Partners III	$13,032,225	0.12%	$195,483	1.50%	$1,448,024	0.03%	$21,720	1.50%
Wayzata Investment Partners	$12,136,575	0.11%	$182,049	1.50%	$6,397,346	0.15%	$95,960	1.50%
Total Portfolio	**$10,581,552,289**		**$55,805,011**	**0.53%**	**$4,158,459,277**		**$21,413,886**	**0.51%**

*As of June 30, 2016

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KRS – Additional Third-Party Fees

Investment Advisors / Consultants

- RV Kuhns (General Advisor) – $395K in 2011 increasing annually by greater of 2% or CPI plus $20K per custodian search and $55K per asset/liability study
- ORG Portfolio Management (Real Estate Advisor) – $275K in 2008 increasing annually by CPI
- Pension Consulting Alliance (Private Equity Advisor) – $375K in 2014 increasing annually by 3%
- Albourne America (Hedge Funds & Real Assets Advisor) – $240K annually for hedge fund advisory and $240K annually for real assets advisory, plus minor costs for additional scope (i.e. due diligence on funds not covered by Albourne or more than 25 funds in total)

Custody

- Bank of New York Mellon – 0.15bps US assets under custody and 0.50bps – 90bps for non-US assets depending on market, plus various fees for trading and additional services (compliance, performance reporting, portfolio analytics, etc.)

Note: RV Kuhns provides overall investment advisory services, including, but not limited to, asset allocation, manager due diligence and performance reporting. ORG Portfolio Management, Pension Consulting Alliance and Albourne America provide manager sourcing and due diligence for specific alternative asset classes.

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KRS – Impact of Separating CERS from KRS

- Aggregating assets among all plans has resulted in significant purchasing power
  - Pension (6/30/16): $10.8b (KERS: $1.9b; KERS H: $0.5b; CERS: $6.1b; CERS H: $2.0b; SPRS: $0.2b)
  - Insurance (6/30/16): $4.2b (KERS: $0.7b; KERS H: $0.4b; CERS: $1.9b; CERS H: $1.1b; SPRS: $0.2b)
- More than one-third of portfolio is invested in managers with tiered fee schedule, resulting in lower fees when assets are aggregated
- Separating CERS assets from other plans will reduce purchasing power and result in higher fees based on current tiered fee schedules
  - CERS weighted average fees would remain largely unchanged if they could retain the same contract terms, increasing by less than 1bp ($450k for Pension, $210k for Insurance)
  - KERS & SPRS weighted average fees would be more adversely impacted due to smaller asset size, increasing by roughly 3bps ($805k for Pension, $260k for Insurance)
  - Estimates are based on manager fee schedules outlined in RV Kuhns quarterly report plus private equity manager fee schedules from internal KRS report
- Fee impact noted above is likely understated as separation would also limit the ability to negotiate reduced fees in the future as the aggregate asset size is reduced if the plans are separated
  - Separation may also impact ability to negotiate fees with other providers (i.e. consultants, custodian, etc.)
- Separating illiquid alternative assets (private equity, etc.) may not be possible in near-term

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TRS Pension – Money Manager Fees

Manager Name	Average Assets	Weight (%)	Fee ($)	Estimated Fee (%)
US Equity	**7,227,745,605**	**42.97%**	**7,993,371**	**0.11%**
S&P 500 Stock Index	2,407,019,909	14.31%		
S&P 400 Stock Index	358,305,863	2.13%		
S&P 600 Stock Index	228,779,840	1.36%		
GE Asset Management	679,008,206	4.04%	800,000	0.12%
Todd Stocks	1,121,881,910	6.67%	1,295,310	0.12%
Todd Alpha	317,257,741	1.89%		
UBS Global Asset Management	894,108,091	5.32%	2,980,341	0.33%
UBS Alpha Relationship	186,780,288	1.11%		
Wellington Large Cap	577,664,568	3.43%	2,917,720	0.51%
WMC Mid Cap Opportunities Stocks	296,735,033	1.76%		
WMC Small Cap Stocks	160,204,155	0.95%		
Non-US Equity	**3,195,365,944**	**19.00%**	**5,485,385**	**0.17%**
Baillie Gifford	744,403,479	4.43%	2,800,298	0.38%
Baring Asset Management, Inc.	500,864,579	2.98%	2,419,271	0.48%
Todd International	695,244,102	4.13%		
Todd International Intrinsic Opp Value	82,769,864	0.49%		
UBS All Country World Ex US	610,602,503	3.63%		
Blackrock ACWI ex US IMI	561,481,418	3.34%	265,816	0.05%
Fixed Income	**2,959,786,075**	**17.60%**	**379,314**	**0.01%**
Internal Bond	186,162,458	1.11%		
In House Bond	540,116,505	3.21%		
In House Intermediate	731,886,672	4.35%		
In House Long Bond	530,422,646	3.15%		
Tax Shelter Annuity 403 (B)	356,873	0.00%		
Life Insurance Trust (Retired)	88,077,448	0.52%		
Fort Washington Investment Broad Market	428,822,980	2.55%	150,088	0.03%
Galliard Capital Mangement	453,940,493	2.70%	229,226	0.05%

Source: Schedule of Contracted and Administrative Investment Expenses as of June 30, 2016

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TRS Pension – Money Manager Fees

Manager Name	Average Assets	Weight (%)	Fee ($)	Estimated Fee (%)
Real Estate	**899,933,835**	**5.35%**	**7,010,123**	**0.78%**
Real Estate Equity	387,252,470	2.30%		
Prudential PRISA	278,776,042	1.66%	1,814,682	0.65%
Angelo Gordon Net Lease Fund III	17,395,751	0.10%	456,007	2.62%
Blackstone Partners Fund VII, L.P.	51,314,639	0.31%	557,515	1.09%
Blackstone Partners Fund VIII, L.P.	11,863,813	0.07%	666,667	5.62%
Carlyle Realty Partners Fund VI, L.P.	30,781,430	0.18%	381,472	1.24%
Carlyle Realty Partners Fund VII, L.P.	14,363,663	0.09%	652,867	4.55%
Landmark Real Estate Fund VII	16,608,873	0.10%	490,087	2.95%
Rockwood Capital Real Estate Fund IX, L.P.	36,332,699	0.22%	513,750	1.41%
Rockwood Capital Real Estate Fund X, L.P.	0	0.00%	366,694	
TA Realty Associates Fund X, L.P.	52,119,456	0.31%	1,047,882	2.01%
TA Realty Associates Fund XI, L.P.	3,125,000	0.02%	62,500	2.00%
Additional Categories	**1,337,755,631**	**7.95%**	**8,701,619**	**0.65%**
Angelo Gordon Select Partners Advantage Fund	2,370,842	0.01%	22,704	0.96%
Avenue Capital Special Situations Fund VI, L.P.	61,501,601	0.37%	256,879	0.42%
Babson European Capital	101,132,500	0.60%	464,860	0.46%
Columbia High Yield Fund	100,885,523	0.60%	113,586	0.11%
Fort Washington Investments High Yield	290,635,127	1.73%	581,271	0.20%
Golub Capital - Pearls II, LLC	128,684,402	0.77%	1,077,023	0.84%
Highbridge Principle Strategies Fund III, L.P.	44,980,948	0.27%	760,027	1.69%
Marathon Credit Fund	243,235,858	1.45%	2,309,805	0.95%
Marathon European Credit Fund II	63,904,948	0.38%	798,839	1.25%
Marathon European Credit Fund III	16,992,558	0.10%	111,952	0.66%
Oaktree European Capital Solutions Fund, L.P.	3,822,009	0.02%	39,873	1.04%
Oaktree European Dislocation Fund, L.P.	11,921,294	0.07%	304,448	2.55%
Oaktree Opportunities Fund IX, L.P.	47,377,976	0.28%	795,406	1.68%
Oaktree Opportunities Fund X, L.P.	3,179,715	0.02%	215,459	6.78%
Rogge Global International Fund	46,100,732	0.27%	70,924	0.15%
Shenkman Capital	171,029,600	1.02%	778,563	0.46%

Source: Schedule of Contracted and Administrative Investment Expenses as of June 30, 2016

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TRS Pension – Money Manager Fees

Manager Name	Average Assets	Weight (%)	Fee ($)	Estimated Fee (%)
Alternatives	**903,427,729**	**5.37%**	**14,469,348**	**1.60%**
Actis Global Fund IV, L.P.	28,080,076	0.17%	995,000	3.54%
Alinda Infrastructure Fund II, L.P.	56,618,450	0.34%	589,702	1.04%
APAX Fund VIII, L.P.	31,520,067	0.19%	338,829	1.07%
Audax Mezzanine Fund III, L.P.	13,208,100	0.08%	253,149	1.92%
Audax Private Equity Fund IV, L.P.	19,216,226	0.11%		
Audax Private Equity Fund V, L.P.	397,571	0.00%	94,556	23.78%
Capital South Fund III, L.P.	883,440	0.01%		
Carlyle Europe Partners IV, L.P.	13,381,877	0.08%	1,723,472	12.88%
Carlyle Global Finacial Services Fund II, L.P.	14,124,488	0.08%	615,441	4.36%
Chrysalis Fund III, L.P.	20,009,652	0.12%	313,469	1.57%
Fort Washington Fund V, L.P.	11,867,500	0.07%	80,315	0.68%
Fort Washington Fund VI, L.P.	33,271,792	0.20%	200,070	0.60%
Fort Washington Fund VIII, L.P.	8,868,212	0.05%	115,938	1.31%
Fort Washington Fund IX, L.P.	353,633	0.00%	958	0.27%
Fort Washington Fund IX-K, L.P.	350,000	0.00%	1,838	0.53%
Gavea V	3,762,316	0.02%	600,000	15.95%
Hancock Bluegrass LLC Oregon	29,351,758	0.17%	237,592	0.81%
Hellman and Friedman Fund VII, L.P.	44,102,556	0.26%	736,473	1.67%
IFM Global	103,345,006	0.61%	1,006,503	0.97%
JP Morgan Maritime Fund, L.P.	29,226,211	0.17%	493,870	1.69%
KKR Fund 2006, L.P.	16,417,614	0.10%	-31,692	-0.19%
KKR European Fund III, L.P.	50,896,820	0.30%	247,351	0.49%
KKR European Fund IV, L.P.	7,926,225	0.05%	433,593	5.47%
Landmark Equity Partners Fund XIV, L.P.	15,577,542	0.09%	298,400	1.92%
Landmark Equity Partners Fund XV, L.P.	8,588,078	0.05%	283,366	3.30%
Lexington Capital Partners Fund VII, L.P.	16,484,602	0.10%	191,609	1.16%
Lexington Capital Partners Fund VIII, L.P.	6,983,831	0.04%	192,032	2.75%
Molpus Lake Superior Michigan	107,636,974	0.64%	897,165	0.83%
Molpus Lake Superior Hiwassee	8,183,678	0.05%	67,171	0.82%
Molpus Seven States	57,127,279	0.34%	563,282	0.99%
NGP Natural Resources Fund X, L. P.	32,850,959	0.20%	567,649	1.73%
NGP Natural Resources Fund XI, L.P.	6,141,538	0.04%	376,697	6.13%
Oaktree European Principal Fund III, L.P.	23,100,341	0.14%	390,698	1.69%
Oaktrec Mezzanine Fund lll, L.P.	9,574,041	0.06%	125,263	1.31%
Oaktree Mezzanine Fund IV, L.P.	6,817,821	0.04%	69,602	1.02%
Stepstone Partners Fund lll, L.P.	19,917,921	0.12%	173,715	0.87%
Public Pension Capital	3,802,855	0.02%	914,973	24.06%
Riverstone/Carlyle Energy and Power Fund IV, L.P.	26,627,557	0.16%	168,757	0.63%
Riverstone Energy and Power Fund V, L.P.	16,833,126	0.10%	142,542	0.85%
Cash	**296,766,244**	**1.76%**		
Total Portfolio	**16,820,781,063**		**44,039,160**	**0.26%**

Source: Schedule of Contracted and Administrative Investment Expenses as of June 30, 2016

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TRS Medical – Money Manager Fees

Manager Name	Average Assets	Weight (%)	Fee ($)	Estimated Fee (%)
Equity	**341,128,241**	**53.55%**	**191,346**	**0.06%**
Black Rock	341,128,241	53.55%	191,346	0.06%
Fixed Income	**58,096,830**	**9.12%**		
Internal Bond	58,096,830	9.12%		
Real Estate	**17,995,520**	**2.83%**	**503,596**	**2.80%**
Blackstone VIII	2,372,762	0.37%	133,333	5.62%
Carlyle VII	2,872,733	0.45%	130,574	4.55%
Landmark VII	3,321,775	0.52%	98,017	2.95%
Rockwood Capital X		0.00%	76,078	
TA Realty XI	625,000	0.10%	12,499	2.00%
Prudential	8,803,250	1.38%	53,095	0.60%
Additional Categories	**199,849,405**	**31.37%**	**683,241**	**0.34%**
Highbridge Principal Strategies Fund III,L.P.	4,498,095	0.71%	76,002	1.69%
Columbia High Yield Fund	7,389,208	1.16%	12,755	0.17%
Fort Washington Investments High Yield	54,575,528	8.57%	109,151	0.20%
Marathon Credit Fund	98,550,328	15.47%	288,632	0.29%
Marathon European Credit Fund II	4,260,330	0.67%	53,256	1.25%
Marathon European Credit Fund III	2,265,674	0.36%	14,927	0.66%
Oaktree European Capital Solutions	829,568	0.13%	13,613	1.64%
Shenkman Capital	27,480,674	4.31%	114,905	0.42%
Alternative	**18,251,931**	**2.87%**	**794,571**	**4.35%**
Actis Global Fund IV, L.P.	2,808,358	0.44%	100,000	3.56%
Audax Private Equity Fund V	265,047	0.04%	31,519	11.89%
Carlyle Europe IV	2,676,376	0.42%	345,034	12.89%
Fort Washington Private Equity III, L.P.	1,783,506	0.28%	37,500	2.10%
Fort Washington Fund VII, L.P.	3,740,217	0.59%	37,500	1.00%
Fort Washington Fund VIII, L.P.	2,533,782	0.40%	33,125	1.31%
Fort Washington Fund IX, L.P.	99,743	0.02%	270	0.27%
Fort Washington Fund IX-K, L.P.	100,000	0.02%	252	0.25%
KKR European IV, L.P.	1,585,243	0.25%	86,721	5.47%
Landmark Fund XV ,L.P.	1,431,350	0.22%	47,311	3.31%
NGP Natural Resources XI, L.P.	1,228,309	0.19%	75,339	6.13%
Cash	**1,654,670**	**0.26%**		
Total	**636,976,596**		**2,172,754**	**0.34%**

Source: Schedule of Contracted and Administrative Investment Expenses as of June 30, 2016

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TRS – Additional Third-Party Fees

- **Investment Consultants**
  - Aon Hewitt - $358,850
  - Bevis Longstreth - $50,137
  - George Philip - $38,962
- **Custody**
  - The Bank of New York Mellon - $380,233 (Pension) and $30,275 (Medical)
- **Legal & Research**
  - Reinhart Boerner Van Deuren - $5,560
  - Ice Miller - $84,697
- **Other**
  - Other Administrative and Operational (includes Personnel, Subscription services, etc.) - $2,918,364 (Pension) and $77,091 (Medical)

Source: Schedule of Contracted and Administrative Investment Expenses as of June 30, 2016

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TRS Pension and Medical – Fee Observations

- TRS provided a Schedule of Contracted and Administrative Investment Expenses for the year ended June 30, 2016 for both the Pension and Medical Plans. This document had the dollar amounts paid to investment managers but did not include the fee as a percent of assets. To estimate this value, PFM calculated the average assets in each manager based on the 9/30/15, 12/31/15, 3/31/16, and 6/30/16 Portfolio Summary Report and backed into the estimated fee shown in the previous slides.
- Although the overall estimated expense ratio for both Plans is reasonable at 0.26% for the Pension and 0.34% for the Medical, this does not include the cost of the internally managed funds, which represent roughly 30% of total assets for the Pension and 10% for the Medical.
- The real estate and private equity managers generally have the highest fees and reported amounts are likely understated by not including all of the costs associated with managing the funds. However, the Plans maintain a reasonable expense ratio by allocating a majority of the assets to low cost equity and fixed income managers.
- Rockwood Capital Real Estate Fund X, L.P does not appear on any of the Portfolio Summary reports from 9/30/2016 – 6/30/16 but a fee is listed for this fund in the Schedule of Contracted and Administrative Investment Expenses report for the year ended June 30, 2016 for both Plans.
- An average of $883,440 has been invested in Capital South Fund III, L.P. over the past 4 quarters but a fee is not listed (Pension).
- Investment manager agreements were not reviewed but should be used to verify fee schedules

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KJFRS – Fee Observations

- Hilliard Lyons is the manager for both Judicial and Legislators Plans.
  - Stated fee = 8 basis points
  - Maximum fee = $261,000
  - Minimum fee = $214,000
  - 8 basis points of the current market value of both Plans ($436 million) exceeds the maximum fee. The maximum fee translates to approximately 6 basis points of the market value of the Plans.
- Lexington Investment Company is the broker for both Judicial and Legislators Plans.
  - All equity commissions at $0.05 per share
  - Broker also provides:
    - Quarterly performance valuations
    - Indices for use in measurement of performance
    - Asset allocation compliance reports
    - Cash flow projections
    - Determination of cash available for investment

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Steps To Improve Transparency

- The Pew Charitable Trusts has outlined the following steps to improve transparency[1]:
  - Publish investment policy statements and make them accessible to the public
  - Adopt comprehensive fee-reporting standards, such as those proposed by the Institutional Limited Partners Association's Fee Transparency Initiative
  - Report results by asset class, net and gross of fees
  - Disclose bottom-line performance, both net and gross of fees
  - Expand reporting to include performance results for longer periods (10+ years)

[1]The Pew Charitable Trusts: "Making State Pension Investments More Transparent", February 2016

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Glossary of Terms

- **Traditional Investments** – Typically consists of conventional investment types, such as publicly traded stocks, bonds and cash.
- **Alternative Investments** – An asset class that is not one of the traditional investment types and may include hedge funds, private equity, managed futures, real estate, commodities, timber, infrastructure and derivatives. These asset classes may have limited liquidity, high minimums and high fees, but can exhibit a low correlation with traditional investments. They are often organized in a limited partnership structure that are open to a limited number of accredited investors.
- **Standard Deviation** – A statistical measure of the range of a portfolio's performance, the variability of a return around its average return over a specified time period
- **Alpha** – A measure of the difference between a portfolio's actual returns and its expected performance, given its level of risk as measured by beta. It is a measure of the portfolio's historical performance not explained by movements of the market, or a portfolio's non-systemic return.
- **Beta** – A measure of the sensitivity of a portfolio to the movements in the market. It is a measure of a portfolio's non-diversifiable or systematic risk.
- **Sharpe Ratio** – Represents the excess rate of return over the risk free return divided by the standard deviation of the excess return. The result is the absolute rate of return per unit of risk. The higher the value, the better the portfolio's historical risk-adjusted performance.
- **Up Market Capture** – The ratio of average portfolio return over the benchmark during periods of positive benchmark return. Higher values indicate better relative performance.
- **Down Market Capture** – The ratio of average portfolio return over the benchmark during periods of negative benchmark return. Lower values indicate better relative performance.

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Exhibit C

Commonwealth of Kentucky

Pension Performance and Best Practices Analysis

Report #3:

Recommended Options

August 28, 2017

In conjunction with:

PRM Consulting Group
Stites & Harbison PLLC

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I. Executive Summary

Overview

In the aggregate, the Commonwealth of Kentucky's pension plans are among the worst funded in the nation. Without corrective action, the large and growing unfunded liabilities associated with these pension benefits not only threaten the retirement security of plan participants, but they are also eroding the fiscal stability of the state – recently ranked among the bottom five in the nation.[1]

As detailed in our prior interim Reports #1 and #2, these challenges are linked to three major retirement systems sponsored by the Commonwealth, featuring a total of eight distinct pension plans. Collectively, these programs provide pensions and retiree healthcare benefits to tens of thousands of retired state, local government, school district, and nonprofit employees across Kentucky.

Given the high importance of these retirement systems and the severe pressures they now face, a status quo approach is simply untenable.

In this Report #3, we present ideas and alternatives for improving the long-term security, reliability, and affordability of these benefit programs. These recommended options build on our analysis of factors that have led to the current conditions as detailed in Interim Report #2, addressing the full range of causes for the current funding shortfalls:

- Actuarial assumptions
- Benefit levels and risk exposure
- Funding
- Investment practices and approach

As the Commonwealth's policy-makers and stakeholders consider these recommendations, we would like to note the following broad considerations that have informed our recommended approach:

- Through past legislative reforms, recent Board actions, and significant additional funding in FY2017-2018, Kentucky has already taken many positive steps across these critical areas. Without these prior actions, the current situation would be far worse.

- Nonetheless, the continued severity of the Commonwealth's remaining challenge requires further strong, corrective action. Kentucky's remaining underfunding is acute and growing, threatening the solvency of the most underfunded plans, and incremental steps will not suffice to restore stability. The most-stressed plans have limited assets to withstand

[1] *"Ranking the States by Fiscal Condition, 2017 Edition," George Mason University.*

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downturns and, under previous actuarial assumptions and funding schedules, would not have improved their funded status for over a decade.

- If Kentucky plans were subject to federal standards for single-employer private sector plans, all but the Judicial and Legislative plans would be defined as having a severe funding shortfall based on funded status of less than 60%, and would be required to freeze benefit accruals – even as the Commonwealth plans use significantly less conservative discount rate and amortization period assumptions than used by private sector plans.[2]

- Even with a stronger foundation placed quickly and decisively into place, a long-term commitment to reform will also be needed to build on this foundation toward regaining fully sustainable fiscal health.

- The actuarial, funding, benefit, and investment approaches across the Commonwealth's different plans are complex, interconnected, and impact many, diverse stakeholders in varying ways. In our recommendations, we have sought to balance these concerns through a consistent approach that also resolves the current crisis on a sustainable basis.

- In so doing, we have also sought to reflect the policy principles and direction set forth by Governor Bevin and the Commonwealth's leadership – with a focus on strong action that places these systems on a truly sound and realistic foundation without further "kicking the can down the road." The accompanying sidebar highlights these key goals for reform.

- At the same time, we recognize that the process ahead prior to enactment of further change may result in further refinement and adjustments to the specific approaches recommended herein as Kentucky moves forward.

As the next phase of this process soon begins, it is our hope is that this Report #3 and its recommendations will provide a sound framework for the critical work just ahead, contributing to an enduring resolution that sustains competitive benefits on an affordable and sustainable basis for Kentucky's career public employees to retire with security and dignity.

[2] *26 U.S. Code § 436*

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Kentucky Retiree Benefits Reform

Key Policy Principles & Goals

1. The severely distressed condition of the KERS-NH plan, and the systemically high level of unfunded liabilities across all of Kentucky's plans in the aggregate, require strong action to reduce the risks of:
   - Continued increases in funding that crowd out other vital public spending and/or reach levels that cannot be sustained in the budget while keeping the state's taxes at a competitive level to support the Commonwealth's growth.
   - Resorting to the payment of benefits on a pay-as-you-go cash basis, which could also quickly become fiscally unsustainable.
   - Plan insolvency, jeopardizing the retirement security of tens of thousands of former state and local government workers.
2. To the extent possible, accrued benefits for service earned by employees and retirees should be protected within a framework consistent with Kentucky's inviolable contract provisions and federal Employee Retirement Income Security Act ("ERISA") standards for private plans.
3. Long-term solvency of the retirement system as a whole must be ensured so that current retirees and future retirees can rely on secure retirement benefits.
4. Risk levels systemically and for each individual plan should be reduced as much as possible to avoid recurrence of the severe deterioration in the retirement systems' health. Future liabilities should be valued conservatively, and the future risk to the Commonwealth associated with economic conditions, investment returns, demographics, and actuarial methods and assumptions should be minimized.
5. The Commonwealth's benefit structures should also reduce future exposure to risk and the potential for unfunded liabilities to reemerge, in order to safeguard plan sustainability for KRS, TRS, and KJFRS participants, employers and the taxpayers.
6. The Commonwealth's overall approach as an employer should provide career state and local employees and teachers a sufficient and sustainable benefit for a dignified retirement through a combination of benefits from KRS, TRS, and KJFRS, Social Security, and personal savings, while also accommodating and providing flexible and competitive options for workers who may spend only a portion of their career in public service.

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A. Actuarial Method and Assumptions

As detailed in Report #2, the largest factors in the growth of Kentucky's unfunded liability have been linked to the retirement systems' actuarial assumptions and approach:

- The Commonwealth's practice of paying down existing unfunded liabilities on a basis set as a "level percentage of payroll" has had the most significant overall adverse dollar impact. Under the level percentage of payroll approach, payments to amortize unfunded liabilities are scheduled to increase over time – effectively back-loading the pay down of pension debts – on the theory that future payrolls will be higher with greater capacity to help address these liabilities. In practice, this results in actuarially recommended employer contributions that are not sufficient to offset interest on the unfunded liability in the near-to-intermediate term, even if all other plan actuarial assumptions are met.

  For Kentucky's systems, these actuarial shortfalls were compounded by actual payroll growth that was lower than assumed over the period, and actually negative for KERS-NH. As a result, contributions based on payroll fell well short of what had been projected, in turn producing additional unfunded amounts that were continually re-amortized out further into the future on the back-loaded schedule. In addition, the practice of resetting amortization periods adopted by the KRS plans, and the use of open or rolling amortization periods prior to FY2014 in the case of TRS, where the period was reset to 30 years each year, further prevented the plans from reaching the point in the amortization period where principal payments on the unfunded liability would achieve meaningful pay down. Finally, the employer contribution for the KERS-NH, KERS-H, and SPRS plans are set for two-year periods by statute as part of the Commonwealth's biennial budget process, which has also caused shortfalls when actuarially determined funding requirements increase annually.

  In contrast, the alternative "level dollar" amortization approach would pay down the debt by a consistent, fixed amount each year, more akin to how most home mortgages are structured. Although the percentage of payroll approach is not unusual nationally[3], the continued application of this "actuarial back-loading" in Kentucky's challenged systems is projected to result in further growth of the unfunded liabilities for years to come – even if payrolls did increase at the 3.5% to 4% rate historically assumed (but inconsistent with recent experience and trends), with all actuarially recommended contributions made in full.

- Another major contributing factor to the growth in the unfunded liability has been investment performance below the plans' targeted rates of return. While some of this outcome was due to plan performance below market norms, these investment return shortfalls were primarily because the financial markets overall did not produce returns as strong as in prior

[3] *Society of Actuaries, U.S. Public Pension Plan Contribution Indices, 2006-2014, June 2017.*

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generations. Further, as Kentucky's systems (like most of their counterparts nationally) began to reduce investment return assumptions to better align with this experience and revised expectations going forward, the near-term result was a further increase in the reported liabilities for the plans – since projected future liabilities were no longer offset by future, expected growth in the system assets.

Under Kentucky's current statutory framework, as illustrated in the table below, KRS is required to use the "level percentage of pay" method for amortizing unfunded liabilities. In May and July 2017, however, the Kentucky Retirement Systems ("KRS") Board effectively shifted to a funding requirement equivalent to the "level dollar" approach for the Kentucky Employees Retirement System Non-Hazardous employees plan ("KERS-NH"), Kentucky Employees Retirement System Hazardous employees plan ("KERS-H"), and the State Police Retirement System ("SPRS") by adopting the assumption – more consistent with ongoing experience – that future payroll growth will be flat. This revision thereby reduced long-term risk exposure, albeit with an increase to the near-term actuarial funding requirement. For the County Employees Retirement System ("CERS") plans, the payroll growth assumption was lowered to 2%, with similar effects to a more limited degree.

Pension Plan	Funding Method	Source
KERS-NH KERS-H SPRS	Employer contributes the full actuarial contribution (normal cost plus amortization of unfunded liability) as a percentage of creditable compensation (payroll), based on level percent of payroll amortization and entry age normal funding method. The board sets the percentage each biennium based on the prior June 30 valuation. Effective July 1, 2014, the board cannot change rates for the second year of the biennium.	KRS 61.565
CERS-NH CERS-H	Same as KERS-NH et al above, except that the KRS board may change the percentage for the second year of the biennium based on an updated valuation.	KRS 61.565

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Pension Plan	Funding Method	Source
TRS	The Commonwealth pays employer contributions for non-university, board of education employee pensions. The employer matches employee contributions of 9.105% of non-university salaries for pension (7.625% for university salaries), and contributes an additional 3.25% for the system's unfunded obligations with interest and for the medical insurance (OPEB) fund. The amortization of past COLAs, annuities, and sick leave allowances "may be funded by annual appropriations from the state," which was equivalent to a special appropriation rate of 2.94% of salaries for FY2018. TRS annually requests additional appropriations to cover the shortfall between the statutory contribution and the actuarial contribution. Unlike the other systems, the contribution is currently not tied to the actuarial calculation of normal cost or unfunded liability, and the amortization method is set by TRS board policy.	KRS 161.550 KRS 161.553
JRP **LRP**	The state contributes the normal cost plus interest on the unfunded liability plus 1% of the unfunded liability per year. The board adopts the actuarial assumptions, including whether entry age normal or projected unit credit funding method is used.	KRS 21.525

The amortization method for TRS is not set by statute, as the Commonwealth does not fund the system based on an actuarially determined amount. Instead the funding method is based on a fixed percentage of pay, divorced from an actuarial requirement, and the amortization method is left to TRS board policy. To the extent that such policy requires additional Commonwealth funding above the statutory requirement (an "overmatch"), such contributions are contingent on state appropriation.

Also under the current statutory framework, each retirement system board establishes its own actuarial assumptions for investment returns, inflation, mortality, and other factors. This allows for each plan to reflect potential differences in projected cash flow needs and investment strategies and allocations. Again in May and July 2017, the KRS Board adopted changes that, among other adjustments, reduced the investment return assumption from 6.75% to 5.25% for the KERS-NH and SPRS plans, and from 7.5% to 6.25% for KERS-H and CERS.

Recommendations

1. Modify Kentucky statute KRS 61.565 to convert the level percent of payroll amortization method for KRS to a level dollar method. This consistent approach to reducing the

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Commonwealth's long-term pension debt will substantially increase the likelihood of steady and meaningful progress toward regaining healthy funded status.

2. Modify Kentucky statutes KRS 161.550 and KRS 21.525 to apply a level dollar amortization method to TRS and KJFRS.

3. Maintain the current 30-year amortization periods beginning June 30, 2013 and 2014 for KRS and TRS, respectively.

4. Apply a 30-year amortization period for the existing KJFRS unfunded liability, with 20-year closed periods for future unfunded amounts.

5. With the significant shift in assumptions approved in May and July and the resulting escalation in required contributions in the near term, however, a reset period of 30 years under a new level dollar amortization could be considered to modestly smooth the fiscal impact as more prudent funding approaches come into place. Resetting the amortization period with a level dollar amortization would not shift disproportionate amounts of liability principal past the end of the current amortization period, as is the case when level percent of payroll amortization periods are reset – such as following 2013 SB 2. It is important to note, however, that resetting the amortization period is not an optimal practice, and could generate unfavorable actuarial results.

6. Adopt and maintain prudent and realistic investment return assumptions.

    - For a majority of the Commonwealth plans, we recommend investment return assumptions of 6.0-6.25%, more consistent with market experience across the past decade and aligned with the 6.0% rate adopted in May 2017[4] by the credit rating agency, Fitch Ratings, for normalizing their evaluation of retirement systems nationally. While somewhat below the most recent national median rate for major public pension plans, recent trends nationally continue to move toward lower assumed rates of return. Further, this recommended level reflects the comparatively weak funded ratio of most Kentucky plans (with all of the KRS and TRS plans funded at levels below 60% as of the most recent 2016 valuations), such that the use of lower-risk assumptions would be important for improving the likelihood of a return to a sound position.
    - For the most severely underfunded KERS-NH and State Police Retirement System (SPRS) plans, we recommend that even lower rates of 5.0-5.25% be adopted,

[4] *"Revised Pension Risk Measurements," Fitch Ratings, May 31, 2017. In this report, Fitch notes: "Despite recent market gains, relatively limited pension asset growth is likely during the current economic expansion compared to prior expansions. Expectations for returns are dampened by the slow pace of economic growth, driven by a variety of factors. In this environment, Fitch believes that lowering its standard investment return assumption to 6% from 7% better reflects the magnitude of the burden posed by pension commitments."*

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reflective of the greater risk already borne by these plans due to extraordinarily low funded ratios (16.0% for KERS-NH and 30.3% for SPRS as of 2016, even prior to modified assumptions that will lower the reported rates prospectively). In addition, the cash flow pressures on these plans will likely require more conservative/liquid investment allocations.

- For the costing analysis included in this Report #3, unless otherwise noted, we have generally incorporated assumed rates of 5.1% for the KERS-NH and SPRS plans and 6.0% for all other Kentucky plans. These assumptions are broadly consistent with the 5.25% and 6.25% assumptions recently adopted by the KRS Board, and are aligned with our recommendations. The actual assumptions for the Teachers' Retirement System ("TRS") and the Judicial Form Retirement System ("JFRS") remain at 7.5% and 7.0%, respectively (It is our understanding that TRS and KJFRS may consider alternative rates at upcoming board meetings, but have not formally announced any changes).

	2016 Plan Valuation Assumption	Plan Assumption as of July 2017	Recommended Assumption Range	Assumption Used for Report #3 Costing
KERS-NH, SPRS	6.75%	5.25%	5.0%-5.25%	5.1%
KERS-H, CERS	7.5%	6.25%	6.0%-6.25%	6.0%
TRS	7.5%	7.5%	6.0%-6.25%	6.0%
JFRS	7.0%	7.0%	6.0%-6.25%	6.0%

- Because market and plan conditions and expectations will change and evolve over time, system fiduciaries should continue to have the flexibility to reevaluate and modify actuarial assumptions, consistent with mainstream practice among public pension plans, rather than establishing such assumptions in statute. At the same time, as further detailed in Section D below ("Investment Practices and Governance Approach"), below, the Commonwealth could assign this responsibility to a new, statewide investment board – a structure used by some other states to provide for economies, consistency, and transparency in managing investments – as a strategy for elevating review of these important factors.

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B. Benefit Levels and Risk Exposure

From a financial perspective, there are two important dimensions to evaluating the expected cost of retiree benefits:

- How much are such benefits projected to cost assuming that all actuarial assumptions are met in full?
- How much risk exists that these assumptions may not be met, and what is the financial exposure if this occurs?

Looking backward, again, much of Kentucky's current shortfall resulted from actuarial assumptions that were not met – particularly around investment returns, but also involving payroll growth, life expectancy, and other technical factors.

Looking forward, the recommendations outlined in the preceding section are intended to reduce this risk exposure through the adoption of more prudent actuarial assumptions and funding approaches – so that, as the Commonwealth begins to pay down its liabilities, the risk of new shortfalls reemerging is decreased. In tandem with this approach, adjustments to benefit design can also reduce the risk of progress being undermined.

At the same time, retirement benefit structure and design is more than just a financial concern; such benefits are also critical from human resources and talent management perspectives:

- Competitive Salaries: A well-designed total compensation approach includes quality benefits, and also ensures that benefit costs do not consume such a large proportion of the overall dollars available for compensation that the employer can no longer afford competitive salaries. Many Kentucky public employees have seen little or no increase in salaries for many years, in part as a result of the high percentage of available resources being siphoned off to meet rising pension contribution requirements. In turn, low salaries can weaken an employer's ability to recruit and retain strong performers, many of whom focus first on salaries in their personal career decision-making.
- Portability of Benefits: For many workers, portability of retirement benefits is also a priority. Many newer entrants to the workforce value the flexibility associated with benefits that they can take with them if they decide to change employers at some point in future years. At the same time, many talented workers already established in their careers might be interested in switching to public service, and may value a 401(k) style benefit that aligns well with the retirement savings they have already started rather than joining a traditional pension system that requires many years of service to build up value.
- Building Retirement Savings: Whether an employee only dedicates a few years to public employment or their entire career, it is also important to assess whether the full program of benefits as offered provides an opportunity for workers to build toward a secure and

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dignified retirement. This evaluation should include consideration of Social Security benefits (or current lack thereof in the case of Kentucky teachers and many municipal public safety employees), and the ability to build up benefits or savings through programs sponsored by the employer (or employers) over time.

- Income Replacement: When assessing the sufficiency of a retirement program, a common approach is to determine an estimated income replacement ratio – the percentage of pre-retirement income that can be sustained from the overall benefits in combination. Because retirees typically have a different spending profile (e.g., they no longer pay toward Social Security and/or retirement programs, there are no commuting costs, etc.), expert analyses have generally found that an income replacement ratio of approximately 80-85% can maintain the same standard of living experienced prior to retirement.[5]

In developing the recommendations for benefits that follow, we have sought to balance the considerations outlined above. The plan designs described are intended to reduce the risk exposure to the Commonwealth and its local governments – particularly critical in light of the current severity of the existing funding shortfalls, and the strong policy concerns articulated by the Governor and legislative leaders regarding the capacity of Kentucky's taxpayers to bear further risk. At the same time, our recommendations seek to continue to offer competitive benefits, to feature the flexibility attractive to many new and lateral recruits, and to provide career employees with the opportunity to build toward retirement security.

These recommendations are organized within three major sections – the first, addressing pension recommendations for future hires, the second addressing pensions for employees and retirees already participating in the existing programs, and the third addressing retiree healthcare. This approach recognizes that current plan participants are not starting on day one, taking into account the different degrees of practical and legal flexibility available to modify benefits for those already vested. In addition, because different employee groups may have different career trajectories (e.g., earlier retirement eligibility in public safety) and/or different existing retirement benefit structures (e.g., no Social Security for Kentucky teachers), these recommendations are further divided by retirement plan within each of the first two major sections (Future Hires, Current Employees and Retirees).

[5] Aon Consulting's 2008 Replacement Ratio Study. The optimal ratio tends to be lower for those with higher pre-retirement incomes and higher for those with lower pre-retirement incomes. The Aon-Georgia State study found a required replacement ratio of 78% for workers with a pre-retirement income of $90,000, rising to 85% with a pre-retirement income of $40,000. For those earning less prior to retirement, the desired ratio can be even higher.

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Recommended Options – Future hires

KERS NH, CERS NH, JFRS

Since 2014, new hires into the KERS NH, CERS NH, and JFRS plans participate in a cash balance plan (Tier 3 for KRS, Tier 4 for JFRS), which provides a retirement annuity calculated based on a member's account balance as accumulated from employer contributions set at 4% of salary with guaranteed minimum interest earnings at a 4% rate. Under certain circumstances, actual interest earnings in excess of 4% can also be shared with the plan participants.

While this cash balance approach entails significantly less actuarial risk than Kentucky's older pension tiers, it is important to recognize that Tier 3/4 is not completely immune from exposure to market risk. Most notably, the Commonwealth bears the full risk that the guaranteed rate of interest return will actually be achieved.

Further, there is often some misunderstanding regarding the way that cash balance plans are funded. Because such plans are conceptually described in terms of account balances, many observers assume that the Commonwealth is actually contributing 4% of salary each year into a true "savings account" for each plan participant, with interest increasing this tangible balance over time. In practice, however, the "account balance" is a notional amount – not actual dollars in the bank – and the Commonwealth's contributions are only what is actuarially determined to be necessary to set aside order to generate the right amounts when plan participants retire assuming that all actuarial assumptions are met. In turn, because of this funding approach, the Commonwealth remains exposed to actuarial risk.

1. Given the Commonwealth's priority to minimize the risk that pension funding crises will continue to reemerge, an approach to eliminate this exposure going forward would be to provide future KERS NH, CERS NH, and JFRS participants with a defined contribution (DC) retirement benefit – with a mix of employer and employee contributions accumulating over time in true individual accounts.
    - DC retirement savings vehicles are the most common approach in the private sector, and would eliminate prospective actuarial risk.
    - We have evaluated the following potential plan design:
        1. Mandatory employee contribution of 3% of salary.
        2. Guaranteed base employer contribution of 2% of salary.
        3. Further employer match set at 50% of additional employee contributions up to 6% of salary (i.e., up to an additional 3% from the employer).
        4. Maximum employer contribution of 5% and total contribution of 14%.
        5. The employer contributions would vest 100% after 5 years, and 50% after 4 years.
        6. Participants would be eligible for unreduced retirement at age 65.

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- In conjunction with Social Security, toward which the employer already contributes 6.2% of salary, this approach is projected to provide a career employee with income replacement sufficient for a dignified retirement. As noted above, the standard measure for evaluating such preparedness is the income replacement ratio. As detailed in the full Benefit Levels and Risk Exposure section of this report, analysis under reasonable assumptions indicates that this structure would provide a competitive level of income replacement.
- In addition to meeting the goal of eliminating prospective funding risk, this approach would provide a portable benefit attractive to many early career candidates for public employment, as well as a benefit consistent with that received by most mid/late-career job candidates considering a shift from the private sector.
- Relative to the cash balance plan, a DC plan would require increased investment education to encourage full participation in the match, as well as prudent use of the increased flexibility for personal investment approaches, to help participants achieve retirement security.

Summary of Recommended Options – Future Hires		
Plan	Primary Benefit	Other Adjustments
KERS-NH CERS-NH JFRS	Defined Contribution: 2% minimum employer contribution + 50% match on first 6% optional employee contribution above a 3% minimum employee contribution (i.e. 5% employer maximum, 14% total maximum)	No conversion of accrued sick, compensatory, and any other leave time toward pension benefit.

KERS Hazardous, CERS Hazardous, State Police Retirement System

Since 2014, new hires into the KERS Hazardous, CERS Hazardous, and SPRS plans also participate in the cash balance plan (Tier 3) structure, with eligibility for retirement at age 60 with five years of service or at any age with 25 years of service, lower than the minimum age and service requirements for normal retirement under the current Non-Hazardous plan tiers[6].

For public safety employees – given the extraordinary conditions and demands of such work – retirement ages are typically lower than for non-hazardous occupations, and other features of retirement benefit plan design are often also distinct. In addition, some municipal public safety

[6] *Generally, age 65 with five years of service, or when age plus years of service totals 87 with a minimum age of 57.*

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employees do not participate in Social Security, and some Kentucky law enforcement jobs have reported increasing recruitment pressures.

Taking such factors into account, we recommend the following option for KERS Hazardous, CERS Hazardous, and SPRS:

2. Retain the current cash balance structure for Hazardous plan participants at this juncture, modifying only the requirements for normal unreduced retirement eligibility to be age 55 for Tier 1 employees and 60 for Tier 2 and 3 employees – the current age-based criteria - with no provision for unreduced retirement at any age based on years of service. Members could retire early with an actuarially reduced benefit. This adjustment will focus retirement payments on participants' later years. Such a required a minimum retirement age, irrespective of years of service, is consistent with the practices in multiple benchmark states (e.g., Illinois, Iowa, and Missouri).

Summary of Recommended Options – Future Hires		
Plan	Primary Benefit	Other Adjustments
KERS-H CERS-H SPRS	Retain the cash balance structure as now in place for post-2014 hires	Maintain the provision for retirement at age 55 for Tier 1 and 60 for Tiers 2 and 3, but eliminate eligibility for normal retirement at any age with 25 years of service

Teachers Retirement System

In considering retirement security for Kentucky teachers, a key factor in the current approach is that TRS members do not now participate in Social Security. While this structure increases take-home pay for teachers, as neither teachers nor local school districts contribute the 6.2% of salary required under Social Security, it also means that a teacher's TRS benefit is often their primary form of retirement income.[7] In the absence of Social Security, not only does a TRS retiree require a larger overall benefit, but they also do not experience the regular cost-of-living adjustments (COLAs) included in a Social Security benefit.

Looking prospectively, a shift to a combination of Social Security participation and a DC retirement benefit would address key Commonwealth goals with regard to risk exposure, while simultaneously addressing teacher retirement security needs inclusive of Social Security cost-of-living adjustments.

[7] *Some TRS members may qualify for Social Security based on other employment during their working careers, and many will have individual retirement savings.*

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1. Newly hired teachers would enroll in Social Security, providing a significant new defined benefit with inflation-based COLAs.

2. To supplement this benefit, a DC plan would also be established consistent with the proposed approach for KERS and CERS participants:
    - Mandatory employee contribution of 3% of salary
    - Guaranteed base employer contribution of 2% of salary
    - Additional employer match set at 50% of additional employee contributions up to 6% of salary (i.e., up to an additional 3% from the employer)
    - Maximum employer contribution of 5% and total contribution of 14%
    - The employer contributions would vest 50% after 4 years and 100% after 5 years

3. In conjunction with Social Security, this new program would be projected to achieve an income replacement ratio of 79% if retiring at Social Security Normal Retirement Age after 30 years of service.

In evaluating this proposed approach, it should be noted that the current TRS employer normal cost for non-university members – the percentage of payroll that the actuaries calculate should be contributed each year assuming all plan assumptions are met – was reported as 14.94% as of FY2016[8]. Factoring out 9.105% employee contributions, this results in a net employer contribution of 5.835% assuming all actuarial assumptions are met. In comparison, under this new structure, combined employer Social Security contributions (6.2%) and DC plan contributions (2%-5%) would exceed this nominal rate.

At the same time, however, the Commonwealth would no longer be subject to the actuarial risk that investment returns do not reach 7.5% or that other assumptions such as those involving mortality rates are not achieved. Such factors historically have been significant contributors to the 2016 additional TRS actuarially determined contribution rate of 24.92%[9] as amortization payments are required to address a $14.5 billion unfunded liability – for a total net employer rate of 30.755%.

In other words, while the existing TRS structure meets the goals of providing sufficient benefits and (on paper) may achieve financial affordability going forward, this status quo approach also carries significant fiscal risks. By shifting to the proposed new approach, this Commonwealth would achieve its goal of ensuring that such liabilities and increased contribution requirements will not reemerge in association with future hires.

The benefit for Non-University and University members has not previously been aligned because University members participate in Social Security. In this proposed approach, however, all future

[8] *Reflects the rate for non-university members hired on or after 7/1/2008 for pension benefits only.*

[9] *Ibid.*

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hires would be enrolled in Social Security, and the new benefit structure would be the same for both groups.

Summary of Recommended Options – Future Hires		
Plan	Primary Benefit	Other Adjustments
TRS – Non-University and University members	• Social Security (generally not now provided for non-University members) • Defined Contribution: 2% minimum employer contribution + 50% match on first 6% optional employee contribution above a 3% minimum employee contribution (i.e. 5% employer maximum, 14% total maximum)	No conversion of accrued sick, compensatory, and any other leave time toward pension benefit.

Recommended Options – Current Employees and Retirees

While it is necessary that Kentucky's benefits for future hires be structured to become more sustainable, limiting modifications for those yet to be employed will not be sufficient to restore financial health to the systems. By definition, all of the Commonwealth's existing unfunded liabilities are associated with workers who are already employed – or who have already retired from covered employment. Further, as illustrated in the following chart from Report #2 for the KERS-NH plan, most of this liability is linked to older plan tiers.

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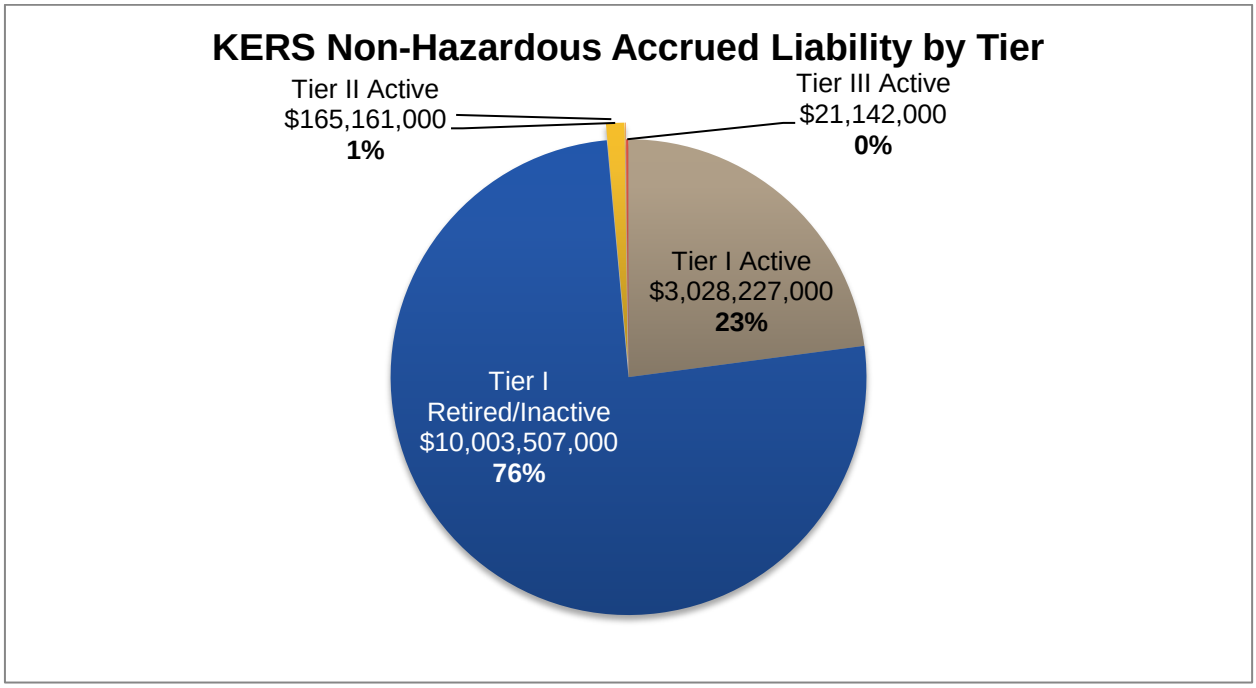

Source: Cavanaugh MacDonald, based on June 30, 2016 actuarial valuation and valuation assumptions including 6.75% earnings assumption and 4% payroll growth.

If you are in a deep hole, you need to first stop digging. But to truly get out of the hole, you still need to do more.

In Kentucky, a key set of considerations to be addressed along the pathway forward involves the Commonwealth's statutory "inviolable contract" provisions. Certain "inviolable contract" statutory provisions were first enacted in 1972 and stated that "benefits provided therein [under various Kentucky retirement statutes] shall . . . not be subject to reduction or impairment by alteration, amendment, or repeal."[10] No Kentucky or other court has ruled on the scope and meaning of these provisions. Some statutory benefit provisions and groups of employees based on their dates of hire are specifically exempted from these inviolable contract provisions. These provisions do not apply to future hires.

While legal challenges to any changes the Kentucky General Assembly may make are almost inevitable, based on the advice of counsel who have studied the Kentucky inviolable contract provisions and related statutes and similar statutes nationwide, it appears that the legislature has many options that could pass judicial scrutiny in light of the extremely serious pension crisis facing all Kentuckians.

[10] *The following statutory inviolable contract provisions apply to each retirement system: KRS 61.692 – KERS, KRS 78.852 – CERS, KRS 16.652 – SPRS, and KRS 21.480 – JRP and LRP (KRS 6.525). KRS 161.714 – KTRS was not enacted until 1978.*

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The severity of the Commonwealth's pension crisis requires the strong consideration of all options that fall within the relevant legal parameters, including the Commonwealth's rights to take action when reasonably necessary to serve a legitimate and important public purpose.

Taking the above considerations into account, the following represent the available and potentially available options recommended for consideration across the Kentucky plans.

KERS-NH, CERS-NH, JFRS

1. Freeze accrued benefits under the applicable existing pension tier(s), consistent with an ERISA approach, and provide the same DC benefit (as outlined above for new hires) for future years of service.
    - For Tier 1 and Tier 2 members, accruals under their current plan would be frozen, although the benefit amount associated with such prior service at the date of the freeze would continue to grow as the multiplier and years of service would be applied to the level of final average compensation attained upon eventual retirement.
    - Eligibility for normal unreduced retirement would be set at age 65 for non-hazardous plan participants age 60 for Tier 2 and 3 hazardous plan participants, and age 55 for Tier 1 hazardous plan participants. For those eligible for an earlier retirement age under prior tiers as of the effective date of plan changes, employees could still retire prior to their designated normal retirement age with an actuarially reduced benefit.
    - For Tier 3 employees hired since 2014, the accrued value in their cash balance plans would be rolled into the new DC accounts.
2. Offer a buyout for the actuarial value of accrued service benefit, with the equivalent cash value to be rolled over to the plan participant's new DC account. This approach, to be provided at the employee's option, would ensure the security of participating individual's retirement benefit, while reducing the unfunded liability and eliminating ongoing risk exposure for the Commonwealth. Please note that such a program would likely require significant administrative resources and certain one-time costs to manage.
3. Eliminate the application of unused sick and compensatory leave to increase pension benefits. Sick leave will instead be cashed out upon retirement at 25% of then-current salary rates. Compensatory time will be used prior to retirement.
4. Consider prospectively eliminating some or all of the portion of any pension benefit payments resulting from COLAs granted between 1996 and 2012 that were provided under statutes excluding such increases from any inviolable contract provisions. Such adjustment to benefit levels would be consistent with the practice in the State of Wisconsin's retirement plan, which incrementally rolls back pension increases when the plan funded status falls below targeted levels.

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This option is one of the more impactful options that may be legally available to address the significant accrued unfunded liabilities that have accumulated due to past actions and inactions now threatening the Commonwealth's financial health, but it would also potentially impose hardships on existing retirees that rely on their current benefit levels. Members of KRS, TRS, or KJFRS plans who retired in 2001 or prior could have their benefit rolled back by 25% or more if past COLAs were completely eliminated from prospective benefit payments to retirees.

While the complete elimination of the past COLAs granted for each plan was modeled for illustrative purposes in this report, we recommend evaluating this option in the context of protections for former retirees, such as maintaining a minimum proportion of inflation-adjusted benefit compared to the benefit at retirement, pre-COLAs, maintaining a minimum benefit/ hold harmless amount in dollars for all retirees, or a maximum dollar reduction in benefit. These options would entail corresponding reductions in the potential liability and savings in the Actuarially Determined Employer Contribution (ADEC).

Recommended Options – Current Employees and Retirees		
Plan	Primary Benefit	Other Adjustments
KERS-NH CERS-NH JFRS	• For Tiers 1 and 2, freeze accrued benefit associated with prior service protected at levels based on plan and date of hire, with no further accrual (although the benefit value will increase as the final average salary component of the defined benefit formula increases) • Tier 3 members would see the account value of their accrued cash balance benefit rolled over into the new defined contribution plan • Future service earns a defined contribution benefit: 2% minimum employer contribution + 50% match on first 6% optional employee contribution above a 3% minimum employee contribution (i.e. 5% employer maximum, 14% total maximum) • All benefit payments for retirees would continue in full at the level in place as of 1996 or any subsequent date of retirement; payment amounts due to COLAs granted from 1996 to 2012 could be reduced prospectively	• Normal retirement age of 65 would apply (employees can retire earlier with an actuarially reduced benefit) • No conversion of accrued sick, compensatory, and any other leave time toward pension benefit • Optional buyout to be developed for accrued pension service under Tiers 1 and 2, with rollover to the new defined contribution plan

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KERS-H, CERS-H, SPRS

1. Hazardous plan participants would retain the primary benefit associated with their current tier, modifying only the requirements for normal retirement eligibility to be age 60, with no provision for unreduced retirement at any age based on years of service.

Recommended Options – Current Employees and Retirees		
Plan	Primary Benefit	Other Adjustments
KERS-H CERS-H SPRS	Retain the primary benefits associated with the member's current tier	Normal retirement age of 55 (Tier 1)/ 60 would apply (employees can retire earlier with an actuarially reduced benefit).

TRS

1. Because there is not a practicable mechanism for transferring current TRS non-university participants into Social Security, a continued plan design with DB characteristics is recommended for incumbent teachers. In order to address the large, unfunded liability associated with the group, the following adjustments are recommended options for such change:
    - Establish a normal retirement age of 65, addressing one of the major outlier characteristics of the current TRS benefit design that also contributes significantly to the cost of the plan (the current design is for retirement eligibility for an unreduced benefit at any age with 27 years of service, or age 55 with 5-10 years of service depending on the date of hire). For those eligible for an earlier retirement under prior tiers, employees could still retire prior to age 65 with an actuarially reduced benefit.
    - Eliminate enhanced benefit features provided outside of any inviolable contract requirements – the provision that benefits shall be calculated based on the highest three years of pay; conversion of accrued leave and compensatory time toward pension credit; and a higher benefit multiplier applied for years of service beyond 30.

2. Consider prospectively eliminating some or all of the portion of any pension benefit payments resulting from COLAs granted between 1996 and 2012. Such adjustment to benefit levels would be consistent with the practice in the State of Wisconsin's retirement plan, which rolls back pension increases when the plan funded status falls below targeted levels.

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As outlined above regarding KERS benefits, this approach is one of the more impactful options that may be legally available to address the significant accrued unfunded liabilities that have accumulated due to past actions and inactions now threatening the Commonwealth's financial health, but it would also potentially impose hardships on existing retirees that rely on their current benefit levels. Members of KRS, TRS, or KJFRS plans who retired in 2001 or prior could have their benefit rolled back by 25% or more if past COLAs were completely eliminated from prospective benefit payments to retirees. While the complete elimination of the past COLAs granted for each plan was modeled for illustrative purposes in this report, we again recommend evaluating this option in the context of protections for former retirees, such as maintaining a minimum proportion of inflation-adjusted benefit compared to the benefit at retirement, pre-COLAs, maintaining a minimum benefit/ hold harmless amount in dollars for all retirees, or a maximum dollar reduction in benefit. These options would entail corresponding reductions in the potential liability and ADEC savings.

3. Suspend future COLAs until the system reaches a minimum 90% funded level using realistic actuarial assumptions. After reaching the 90% funded level COLA payments would apply only to the first $1,500 of monthly benefit.

Recommended Options – Current Employees and Retirees		
Plan	Primary Benefit	Other Adjustments
TRS – Non-University and University	• Retain the primary benefits associated with the member's current tier • All benefit payments for retirees would continue in full at the level in place as of 1996 or any subsequent date of retirement; payment amounts due to COLAs granted from 1996 to 2012 could be reduced prospectively	• Normal retirement age of 65 would apply (employees can retire earlier with an actuarially reduced benefit) • Enhanced benefit features to be eliminated (highest three years of pay; conversion of accrued leave and compensatory time toward pension credit; and a higher benefit multiplier applied for years of service beyond 30) • Suspend future COLAs until the system reaches a minimum 90% funded level using conservative actuarial assumptions. After 90% funded level is reached COLA payments would apply to the first $1,500 of monthly benefit

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Summary of Plan Benefit Recommendations – All Systems

System	Plan	Proposed Plan Reform	Benefit Reform Proposal	Minimum Contribution	Optional Employer Contribution	Average Contribution	Normal Retirement Age: All Employees
KRS	KERS -NH	Freeze All Plan Service Accruals	DC Plan	2% ER 3% EE	50% ER match on first optional EE 6%	3.2% ER, 6.5% EE: 9.7% total	65
	KERS -H	No Change	No Change	No Change	n/a	n/a	55 (Tier 1)/ 60
	SPRS	No Change	No Change	No Change	n/a	n/a	55 (Tier 1)/ 60
	CERS -NH	Freeze All Plan Service Accruals	DC Plan	2% ER 3% EE	50% ER match on first optional EE 6%	3.2% ER, 6.5% EE: 9.7% total	65
	CERS -H	No Change	No Change	No Change	n/a	n/a	55 (Tier 1)/ 60
TRS		Close Plan to New Hires	DC Plan + Social Security	2% ER 3% EE	50% ER match on first optional EE 6%	3.1% ER, 6.5% EE: 9.6% total	65
KJFRS	KJRP	Freeze All Plan Service Accruals	DC Plan	2% ER 3% EE	50% ER match on first optional EE 6%	3.2% ER, 6.5% EE: 9.7% total	65
	KLRP	Freeze All Plan Service Accruals	DC Plan	2% ER 3% EE	50% ER match on first optional EE 6%	3.2% ER, 6.5% EE: 9.7% total	65

Notes:
1) ER= employer contribution; EE=employee contribution
2) Normal retirement age would be applied to all current actives
3) Accruals toward unreduced early retirement provisions based on years of service would be frozen after the cutoff date
4) Average contribution based on expected employee contributions (not all employees are assumed to contribute the maximum optional amount)

Retiree Healthcare

In evaluating overall retiree benefits, it is important to take a holistic view that encompasses post-employment healthcare as well as income replacement. As detailed in Report #2, Kentucky provides public employees with retiree healthcare benefits that significantly enhance the overall retirement package relative to typical private sector benefits, over and above eventual Medicare eligibility. Specific eligibility, coverage, benefit plan designs and retiree premium cost-sharing varies by retirement system as well as by benefit "tier."

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As also detailed in the prior report, Kentucky's retiree health plans are better funded than those of many public employers, as the Commonwealth has established special trusts to accumulate assets to pre-fund the benefits. Nonetheless, Kentucky's Other Post-Employment Benefits (or "OPEB," the accounting term for all non-pension retirement benefits that primarily consist of healthcare) still carry an aggregate unfunded liability of approximately $5.9 billion as of June 30, 2016.

In evaluating this retiree healthcare component of the Kentucky retirement programs, our team's approach sought to identify opportunities for savings – potentially freeing up resources that might be reinvested in strengthening the Commonwealth's pension plans – while continuing to provide quality competitive coverage. Led by team members from PRM Consulting Group, many Commonwealth retirees were found to receive significantly richer, more costly coverage than their active and pre-Medicare retiree counterparts.

By establishing new retiree plans across all systems that provide coverage with an actuarial value comparable to the standard plans for active employees, savings of approximately 25% may be attainable. Under this approach, preliminary analysis further indicates that no employer subsidy would be required for Medicare-eligible coverage above the employee contributions made during active years of service.

Recommended Options

1. Pursue harmonization of the level of retiree healthcare benefits for KRS, LRP, and JRP non-Medicare and Medicare retirees so that the basic plan and benefit provided to the retirees is consistent with the Livingwell PPO coverage provided to active Commonwealth employees, rather than being richer and costing more.
2. Similarly, pursue harmonization of the level of benefits for TRS Medicare-eligible retirees so that the basic plan and benefit provided to the retirees is consistent with the coverage provided to Commonwealth employees. TRS retirees could further be offered a choice between this new lower cost current, richer design – with retirees to be responsible for the full premium of the higher cost more generous coverage.
3. Harmonize the Medicare Advantage plan provided to members of the JFRS with the coverage provided to KRS and TRS members. In addition, by pooling the coverage for purposes of obtaining the premium, the JFRS will be able to leverage the additional scale of the other plans to obtain more competitive premium rates.
4. Limit retiree healthcare eligibility to employees retiring directly from Commonwealth service. This requirement would eliminate the ability of former employees who left public service early in their career (e.g. vested at age 35 with 10 years of service), from collecting Commonwealth-subsidized retiree healthcare when they eventually reach the age for beginning to draw down their public pension.

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C. Funding

Until the 2016-2018 biennium, the Commonwealth routinely contributed less than the actuarially recommended amounts to both the KERS-NH and TRS plans. While not the primary reason for the systems' overall underfunding, this was a material factor. In contrast, other Kentucky plans that historically received a greater proportion of the recommended employer funding – such as the JRP and LRP – are now better funded, and in a better position going forward.

In 2016-2018, Kentucky significantly increased its employer funding levels – actually contributing in excess of the actuarial recommendations for KERS-NH. This represents a highly positive step going forward, as full and consistent funding is one of the hallmarks of stable and sustainable retirement systems.

At the same time, the adoption of more prudent actuarial approaches and assumptions will likely further increase the recommended funding levels in the near-to-intermediate term, and add pressure to the Commonwealth's finances until the plans regain healthier status across the years and decades ahead. Accordingly, retiree benefit adjustments under a balanced and shared overall approach will play a critical role in mitigating these pressures to become more manageable and sustainable.

Within this context, the following are among the recommended options for the Commonwealth.

Recommendations

1. The funding mechanism should be based on the actuarially determined contribution (ADC) in a method sufficient to make the plan actuarially sound and on a sustainable path, and the Commonwealth should commit to full funding of the employer contributions on an annual basis, using prudent actuarial assumptions and methods as outlined within this report. For TRS and KJFRS, this commitment would be enhanced by a change in the current statutory funding requirements, which are not now based actuarial recommendations. Of note, the KJFRS plan actuary has stated that "The current [statutory] method of amortizing unfunded liabilities will not result in the full amortization of those liabilities."[11]
2. Allocate the contribution out to individual employers in KRS plans, including CERS, through a percentage of payroll for the normal cost, where relevant, and a dollar amount for the unfunded liability amortization associated with that employer's liability for service accrued at the employer. This would fairly allocate liability across state departments for employees who worked in multiple departments, for example, rather than charging the last department of employment for the entire liability. If this method is not administratively viable, an alternative would be to charge the normal cost based on a percentage of payroll, and

[11] *KJRP/KLRP Actuarial Valuation and Report as of July 1, 2015*

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allocate unfunded liability based on the headcount of retirees distributed according to their final employer.

It is also essential to recognize that the employers and departments that have participated in the plans share in responsibility for the unfunded liability for actives and retirees based on past service. The shift of future service to the DC plan in KERS-NH, CERS-NH, JRP and LRP requires allocating unfunded liability either as a dollar amount or based on the entire payroll of the employer, as pensionable payroll would no longer be appropriate going forward.

3. Develop a mechanism within the framework of the Commonwealth's biennial budget process to ensure that each year's payments represent the full annual funding requirement. In past years, payment shortfalls have periodically resulted from the disconnect between biennial budgets and annual actuarial valuations. For example, a reserve appropriation might be established to help provide for full annual funding. At a minimum, the actuary should estimate the second year's contribution.

4. If future teachers begin to participate in Social Security in conjunction with a redesigned state retirement benefit, local school districts could be required to pay the 6.2% employer contribution for such Social Security participation. This approach would better align this salary-driven benefit cost with the salary-setting negotiations and decision-making occurring at the local level. Because this cost would only be applicable for new hires, the budget impact for school districts would phase in gradually, providing school districts with time to manage and plan for this new fiscal responsibility. In our benchmarking of 20 states detailed in Report #2, teachers participate in Social Security in 13 of those states, and local school districts often fund some or all of the employer contribution for Social Security.

5. Explore caps or collars on the annual percentage change in the required overall employer contribution percentage for CERS-NH and CERS-H. Participating employers in the CERS plans are required by law to pay the full ADEC in each year, and have done so over time. Changes in actuarial assumptions and losses due to experience can cause sudden and volatile changes in the ADEC. Although deviating from making the actuarially required contribution on a sustained basis is a concern, a cap on how much the employer contribution percentage may change from year to year can help smooth budgetary increases over time while the benefit liabilities are consistently and conservatively valued across all plans on a transparent basis. For example, the employer contribution percentage could be allowed by statute to increase or decrease by no more than 5-10% in an individual fiscal year.

In addition to the recommended options above, we also note that we are <u>not</u> recommending the use of a Pension Obligation Bond ("POB") as a major component of Kentucky's pension reforms at this juncture in the typical form of an open-ended transfer of proceeds to fund assets in the hope of generating positive arbitrage. Although POBs in this form can potentially be appropriate for some

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governments in some circumstances, the issuance of POBs to shore up Kentucky's unfunded liabilities would simply substitute a new, fixed liability (debt) for a portion of the current obligations – with the proceeds still subject to market risk and volatility.

Because one of the primary goals of this reform project is to reduce risk and improve sustainability, a strategy which relies on risk to succeed is not recommended. Further, the rating agencies have taken increasingly critical views of this type of POB, indicating that issuing POBs of the magnitude required to make significant improvement would stress the Commonwealth's bond capacity and potentially lead to negative action, risking an increase to the costs of future borrowing.

The use of a POB as a more targeted means of funding a program to reduce risk and lock in costs, however – such as the following options – merits continued exploration.

6. Offer an optional buyout/conversion of accrued service program to employees other than those in the cash balance plan for KERS-NH and CERS-NH members. The employees in the cash balance plan would have a mandatory conversion of their accrued benefit to the deferred compensation plan. The optional buyout would be based on the actuarially accrued benefit through the date of the proposed freeze or conversion to a DC plan.

   This mechanism would be similar to what was offered in KRS 61.522, which provided for nonprofit nonstock corporations participating in KRS to withdraw from the system by funding their liability. Employees had the option to leave their accrued service with KRS until retirement, or withdraw their account balances, which are defined as the employee's accumulated pension contributions based on the 5% of pay contribution rather than the accrued benefit, and roll it over to the new tax-deferred retirement program offered by the employer. Two employers to date, Kentucky Employers' Mutual Insurance (KEMI) and the Commonwealth Credit Union (CCU), have used KRS 61.522 to withdraw from KRS. KRS provided KEMI employees with a 60-day notice period to declare their intent to transfer to the new KEMI plan. It is our understanding that, by offering in parallel both a DB plan that would maintain the previous benefit structure and carry over the employee's service credit from the KRS plan, and by offering a DC plan with an employer match of 50% or 100% of the employee's account balance, KEMI incentivized all of its employees to transfer from KRS to KEMI.

   The voluntary buyout would allow employees who would prefer to manage their own assets in a DC plan to convert their benefit from the fixed DB plan to a lump sum beginning account balance in the DC plan, on a tax-exempt basis. Since the conversion would be voluntary on an employee-by-employee basis, any applicable rights under the inviolable contract provisions would not be abridged. This conversion would remove the liability from the retirement system, value the employee's accrued service as of the date of the conversion – without applying future pay increases to the frozen portion of the benefit – improve the funded ratio and reduce risk to the plan.

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Savings estimates for such a program were prepared assuming up to 30% of active employees in KERS-NH and CERS-NH selected the buyout of their accrued benefit. The analysis was based on funding the buyout and the individual accounts at 100% of the liability through a POB issued by the Commonwealth. Although CERS-NH potentially has the assets to fund buyouts, particularly at lower levels of participation, the POB funding was used for analysis purposes. Employers that participated in the buyout could repay the Commonwealth under a statutory arrangement similar to the pension contribution. The analysis illustrated below, with additional details in Chapters IV and V, also assumed that the full actuarial value of the accrued benefit at the time of the buyout is offered to the employee. Other alternatives could be pursued that would:

- Potentially result in less participation and benefit to the employee but greater savings to the Commonwealth, such as discounting the value of the accrued benefit, or offering the buyout based on the employee's account balance of accumulated employee contributions to date.
- Provide an additional incentive to participate such as a match from the Commonwealth. However, considering the impact of the more conservative actuarial assumptions adopted by the KRS board, these incentives are unlikely to generate significant savings for the Commonwealth when compared to the cost of borrowing for a POB.

The 30% assumed rate is likely on the high end of the range of potential participation, based on the experience of Florida and Ohio with voluntary conversions to optional DC programs. The savings estimates are relatively linear other than fixed costs of borrowing for a POB, and so smaller buyout participation rates would have corresponding reductions in the savings estimates below.

Voluntary Buyout Estimates: $ in Millions

	KERS-NH Total	CERS-NH Total
Unadjusted Liability: Active Employees	2,655.2	4,287.2
Adjusted Outstanding Liability: Active Employees	1,615.3	2,829.8
Buyout Percentage	30.0%	30.0%
Buyout Cost to Fund	484.6	849.0
Unadjusted/Reported Liability Relief to Plan	796.6	1,286.1
Required Employer Contribution: Revised Baseline	55.0	97.4
Estimated Debt Service	30.2	52.9
Estimated Annual Savings	**24.7**	**44.4**
Estimated Annual General Fund Savings	**14.5**	n/a
Funded Ratio Benefit	**1%**	**5%**

Source: Cavanaugh Macdonald, estimated liability figures; PRM, estimated adjusted liability figures; PFM, estimated other figures

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7. Explore a pension risk transfer buy-out or buy-in program, where a plan sponsor purchases annuities from an insurer to either completely and permanently shift liability, risk, and benefit administration from the system to an insurer, or to shift risk on an annual basis. Although such an approach may not be financially viable on a full scale, the systems could explore whether a partial risk transfer for particular segments or groups of retirees could be effective.

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D. Investment Practices and Governance Approach

In the aggregate across all Kentucky plans, investment performance below actuarial targets drove nearly 23% of the total growth in unfunded pension liabilities from 2005 to 2016 – with more than two-thirds of that investment shortfall attributable to weakness in the overall financial markets, rather than underperformance specific to Kentucky's plans. In other words, investment returns below market averages caused less than 10% of Kentucky's aggregate shortfall.

Nonetheless, any underperformance is of high concern, particularly given the challenged overall condition of the Commonwealth's systems and the critical importance of restoring trust and confidence in these plans.

Earlier in 2017, the Kentucky Legislature and Governor Bevin worked together to enact Senate Bill 2 that took multiple, significant steps toward improving system transparency, governance, and accountability, including, among other reforms:

- Requirements for investment experience to serve on the retirement systems' boards with stricter requirements for financial disclosures.
- Enhanced, uniform requirements for reporting and disclosing investment-related fees
- Senate confirmation for board appointments to the Commonwealth's retirement systems

Looking forward, future changes to governance could potentially further build on these reforms. At the same time, it remains important to ensure that additional governance changes do not risk the creation of new administrative structures and inefficiencies that could potentially reduce the net return on the assets across the Commonwealth's multiple plans.

Recommended Options

1. Establish a single Kentucky Investment Board to provide highly transparent and expert management of assets across all of the Commonwealth's systems, while maintaining independent retirement system boards to continue to provide customized member services and review. As outlined in our Interim Report #1, states such as Wisconsin, Florida, South Carolina, and Massachusetts use variations of this approach as a mechanism for streamlining administrative structures and achieving beneficial economies of scale. Potential advantages of this approach might include:
    - Improved access and leverage with money managers and third-party vendors, as the combined asset base of all three systems will improve the ability to negotiate reduced fee schedules with money managers, consultants, custodians, and other service providers, and may provide access to additional managers, especially for the smaller plans. Based on KRS Pension's manager lineup and tiered fee schedules as of June 30, 2016, aggregating the assets from KRS, TRS and JFRS would reduce the weighted average manager fee by roughly 0.02%, which equates to *a savings of more than $5 million per year* across all

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systems – this does not account for the additional savings through fee negotiation and will become even more significant as the plans shift away from alternative investments that do not typically have tiered or reduced fee schedules

- Improved position for hiring talented investment professionals. Hiring staff for a single team instead of three separate teams will allow the systems to select only the most qualified candidates and the larger combined asset base may attract more talented investment professionals.
- Simplified governance and monitoring, with lower overall costs for staff, infrastructure, and subscriptions.
- Coordinated and consistent investment philosophy, process and outlook. Investment decisions for all plans will be based on the philosophy and outlook of a single investment team and its consultants, resulting in a consistent approach and best ideas being implemented across all plans.
- Improved transparency and monitoring for legislators, taxpayers and other parties. Having a single investment team and a more concentrated list of investment managers and third-party vendors will allow for more consistent reporting and likely improve the ability for interested parties to access public information on the systems.

To maintain strong member services and stakeholder involvement, distinct retirement plans could be maintained for the dimensions of retirement system administration beyond investment management, as well as overall Board oversight and direction. Further, even within a consolidated structure, each plan can still maintain its own return objectives, asset allocation strategy, and liquidity constraints that are customized based on plan demographics and assumptions.

In addition, such a consolidated Kentucky Investment Board could better support the ongoing needs for expert, transparent, and competitively priced investment management in the event that the Commonwealth opts to provide greater independence for the CERS Board, as multiple CERS stakeholders have proposed. Of course, any significant governance change – whether carving out CERS as a separate system and/or creating a newly consolidated Investment Board – would have one-time transition challenges and costs. Over the longer-term, however, the Investment Board approach would be more likely to maximize investment returns and minimize the fees that offset them, relative to further fragmentation into smaller systems without the same economies of scale and access to best pricing structures.

2. Another area of partial consolidation that should be considered is the establishment of a committee to set actuarial assumptions, such as the discount rate. A centralized committee structure for actuarial assumptions as currently used by states such as Florida, Washington and South Carolina, and recently supported in a letter to the State Budget Director from the Kentucky Chamber of Commerce, would potentially include representation from executive

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finance and budget officials, the Legislature and Legislative Research Committee, and other state officials.

This model provides a focused and clear fiduciary role for the members setting the assumptions, and would potentially ensure consistency across the various systems and enhance independence to ensure the actuarial assumptions are realistic by separating benefit administration from the assumptions. This would be helpful with the current structure of three retirement systems, and even more so if CERS is separated as contemplated by 2017 SB 226, creating a fourth system with its own board and actuarial assumptions.

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E. Fiscal Impact: Developing a Balanced Approach toward Sustainable Benefits

The scale and severity of Kentucky's retiree benefit crisis places the Commonwealth's systems among the most at-risk in the nation. In turn, resolving this challenge while adhering to sound principles and policy goals will require both time and shared sacrifices across the full range of the Kentucky retirement systems' stakeholders. The problem is too big and too important to be wished away, or to be quickly solved from any single approach adopted in isolation.

As the first step in moving to fully resolve this crisis, our strong recommendation is for the adoption of an actuarial approach that both eliminates the "back-loading" responsible for much of the growth in unfunded liabilities and bases future funding on assumptions that are realistic and achievable. In turn, under the framework outlined above (level dollar amortization of unfunded liabilities, 5.0-5.25% assumed rate of investment return for KERS-NH and SPRS, 6.0%-6.25% assumed rate of return for all other plans) – and with full annual funding of the recommended employer contribution – the Commonwealth's General Fund pension contribution in FY2019 would be $2.5 billion, an increase of $1.2 billion above current FY2017 funding levels and $1.7 billion above the funding in FY2016.

Through the range of benefit reforms also summarized above, the plan actuaries project the potential for over $1.2 billion in aggregate FY2019 pension savings. At the same time, proposed buyout options and the use of DC plan structures will reduce the Commonwealth's exposure to the risk of new shortfalls emerging. The resulting FY2019 General Fund contribution requirement will still reach over $1.2 billion, but will now fall within the range of recently increased state funding levels. Even more importantly, the rate of growth in these contributions will be at much lower risk of continuing to skyrocket, and is projected to eventually stabilize and even decline over time.

All State Plans

		General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)			
#	Scenario Description	FY19	FY24	FY29	FY34
All Plans	Current Projections	1,410.5	1,724.3	2,041.8	2,421.8
All Plans	Impact of revised baseline, compared to published actuarial assumptions	1,063.2	747.8	317.8	(127.8)
	Revised Baseline	**2,473.7**	**2,472.2**	**2,359.7**	**2,294.0**
All Plans	Savings: net reduction in ADC from combination of all scenarios.	(1,247.9)	(1,237.6)	(1,178.6)	(1,148.1)
	Revised ADC after implementation of all proposed changes, above.	**1,225.8**	**1,234.5**	**1,181.0**	**1,145.9**

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More detailed option-by-option costing and year-by-year projections for all eight plans are included later within the Fiscal Impacts section of this Report. As detailed in that section, the preceding projected impacts are based on a specific set of assumptions and data at a certain point in time. Actual plan experience and Board decisions will result in variances, potentially material, and these broad estimates should not be used for budgeting purposes

In addition to the above pension impacts, the options identified within this Report #3 for retiree healthcare restructuring could help to further improve overall benefit affordability, while still providing quality, competitive benefits as an important complement to income replacement.

Based on these estimated levels of premium reduction, the KRS actuarial liability would decline by about $1.4 billion and the annual employer contribution funding cost would be about $147 million lower as shown in the following table. This corresponds to an estimated $37 million in annual savings in the Commonwealth's General Fund budget for KRS plan OPEB[12], and an additional $40 million in annual General Fund savings attributable to the TRS recommended changes.

KRS (Sum of all five plans)	Current MA PPO ($ Millions)	Proposed MA PPO ($ Millions)
Actuarial Accrued Liability 6/30/2016	$7,639	$6,243
Plan Assets as of 6/30/2016	$4,605	$4,605
Unfunded Actuarial Accrued Liability	$3,034	$1,638
Funded Status	60%	74%
Normal Cost	$149	$126
ARC Funding (Using level dollar method)	$418	$271
FY2017 Annual ARC Savings		$147
FY2017 State General Fund Savings		$37

[12] *Using actuarial figures adjusted by PRM to a level dollar amortization, consistent with the pension estimates. Using the current amortization method and schedule, the estimated savings would be roughly $114 million in employer contribution, and $22 million in annual General Fund savings.*

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In addition to the set of projected fiscal impacts summarized above, the following are among the key outcomes anticipated from the recommended options for reform:

- All future Kentucky state and local government employees would have access to a balanced set of retirement benefits providing positive income replacement levels, including:
  - Social Security participation (not now available to teachers and many local government public safety employees)
  - Additional defined contribution (401(k)-style) plans with significant minimum employer contributions and additional employer matches.
  - Quality retiree healthcare coverage consistent with that provided to active employees.
- All current Kentucky state and local government employees would have the value of their accrued benefits maintained, and receive benefits for future service as good as or better than those available for future hires.
- All retired Kentucky former employees would receive at least the same benefit level they were guaranteed upon retirement, and would see significant improvements to the funding of their benefits – strengthening the solvency of these vital commitments.
- In addition, all Kentucky stakeholders would begin to see steady and meaningful restoration of fiscal stability to the Commonwealth's retirement systems, with greatly reduced risk of renewed pension crises in the years ahead. In turn, this progress would ultimately lead to more resources available for critical investments and services, or fair employee raises going forward, and for improved financial health and credit strength.

As detailed in Interim Report #2, a status quo path is not sustainable. In this Report #3, we have sought to present a range of recommended options to regain a more sustainable direction. In the months ahead, we look forward to working with Kentucky's leadership to help inform the specific decisions that chart this course ahead.

With prior reforms as recently as this year's passage of 2017 Senate Bill 2, important and positive steps have already been taken. While the next steps to come will be even more challenging, they are also that much more critical to lead the Commonwealth forward.

- All future Kentucky state and local government employees would have access to a balanced set of retirement benefits providing positive income replacement levels, including:
  - Social Security participation (not now available to teachers and many local government public safety employees)
  - Additional defined contributions (401(k)-style) plans with significant minimum employer contributions and additional employer matches.
  - Quality retiree healthcare coverage consistent with that provided to active employees

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Summary of Recommendations

Rec.#	Plans	Recommendation
	Actuarial Assumptions	
1	KERS-NH, KERS-H, SPRS, CERS-NH, CERS-H	Modify KRS 61.565 to convert the level percent of payroll amortization method to a level dollar method
2	TRS, KJRP, KLRP	Modify KFRS 161.550 and KRS 21.525 to apply a level dollar amortization method
3	KERS-NH, KERS-H, SPRS, CERS-NH, CERS-H, TRS	Maintain current 30-year amortization periods beginning June 30, 2013 and 2014
4	KJRP, KLRP	Apply a 30-year amortization period for the existing unfunded liability with 20-year closed periods for future unfunded amounts
5	KERS-NH, KERS-H, SPRS, CERS-NH, CERS-H, TRS	Consider resetting amortization periods to 30 years if level dollar amortization is applied to smooth funding impact without elevating risk or back-loading
6	All	Adopt and maintain prudent and realistic investment return assumptions
	Benefit Levels	
1	KERS-NH, CERS-NH, KJRP, KLRP	Provide future participants with a 401(k) style defined contribution (DC) retirement benefit with a mix of employer and employee contributions accumulating over time in truly individual accounts
2	KERS-NH, CERS-NH, KJRP, KLRP	Plan design: Defined Contribution: 2% minimum employer contribution + 50% match on first 6% optional employee contribution above the 3% minimum employee contribution (i.e. 5% employer maximum, 14% total maximum)
3	KERS-H, CERS-H, SPRS	Retain the current cash balance structure for new hazardous plan participants at this juncture, modifying only the requirements for normal retirement eligibility to be age 55 (Tier 1)/ 60, with no provision for retirement at any age based on years of service for those not already eligible

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Rec.#	Plans	Recommendation
4	TRS	Newly hired teachers would enroll in Social Security, providing a significant new defined benefit with inflation-based COLAs
5	TRS	Plan design: Defined Contribution: 2% minimum employer contribution + 50% match on first 6% optional employee contribution above the 3% minimum employee contribution (i.e. 5% employer maximum, 14% total maximum)
6	All	Commonwealth's General Counsel review and address any litigation risk associated with an "ERISA-like" interpretation
7	KERS-NH, CERS-NH, KJRP, KLRP	For Tiers 1 and 2, accrued benefit associated with prior service protected at levels based on plan and date of hire, with no further accrual of service (although the benefit value will increase as the final average salary component of the defined benefit formula increases)
8	KERS-NH, CERS-NH, KJRP, KLRP	Tier 3 members would see the account value of their accrued cash balance benefit rolled over into the new defined contribution plan.
9	KERS-NH, CERS-NH, KJRP, KLRP	Future service earns a defined contribution benefit: 2% minimum employer contribution + 50% match on first 6% optional employee contribution above the 3% minimum employee contribution (i.e. 5% employer maximum, 14% total maximum)
10	All	All benefit payments for retirees would continue in full at the level in place as of 1996 or any subsequent date of retirement; payment amounts due to COLAs granted from 1996 to 2012 would be eliminated prospectively, within parameters protecting retirees to be further evaluated

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Rec.#	Plans	Recommendation
11	KERS-NH, CERS-NH, KJRP, KLRP	Normal retirement age of 65 would apply (employees can retire earlier with an actuarially reduced benefit); No conversion of accrued sick, compensatory, and any other leave time toward pension benefit; Optional buyout to be developed for accrued pension service under Tiers 1 and 2, with rollover to the new defined contribution plan
12	KERS-H, CERS-H, SPRS	Retain the primary benefits associated with the member's current tier; Normal retirement age of 60 would apply (employees can retire earlier with an actuarially reduced benefit)
13	TRS	Continued plan design with DB characteristics for incumbent teachers; establish minimum retirement age of 65;eliminate enhanced benefit features provided outside of inviolable contract requirements
14	TRS	Suspend all prospective COLAs until the system reaches a minimum 90% funded level using conservative actuarial assumptions and apply such increases only to the amount of any benefit above a base level of $1,500 monthly
15	KERS-NH, KERS-H, SPRS, CERS-NH, CERS-H, KJRP, KLRP	Pursue harmonization of the level of benefits for non-Medicare and Medicare retirees in line with the PPO coverage provided to Commonwealth employees
16	TRS	Pursue harmonization of the level of benefits for Medicare retirees in line with the coverage provided to Commonwealth employees
17	TRS	Offer a choice to TRS retirees between the lower cost MA PPO plan and the current MA PPO plan

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Rec.#	Plans	Recommendation
18	KJRP, KLRP	Harmonize the Medicare Advantage offered to members of the Judiciary and Legislator Retirement Systems with the coverage provided to KRS and TRS members
	Funding	
1	All	Funding mechanism should be based on the actuarially determined contribution (ADC) in a method sufficient to make the plan sound and on a sustainable path, and the Commonwealth should commit to full funding of the ADC for each plan
2	KERS-NH, KERS-H, SPRS, CERS-NH, CERS-H	Allocate the contribution out to individual employers through a percentage of payroll for the normal cost, and a dollar amount for the unfunded liability amortization associated with that employer's liability for service accrued at the employer
3	All	Develop a mechanism within the framework of the Commonwealth's biennial budget process to ensure that each year's payments represent the full annual funding requirement
4	TRS	If future teachers begin to participate in Social Security in conjunction with a redesigned state retirement benefit, local school districts could be required to pay the 6.2% employer contribution for such Social Security participation. This approach would align this salary-driven benefit cost with the salary-setting negotiations and decision-making occurring at the local level
5	CERS-NH, CERS-H	Explore a cap or collar on annual percentage change in overall employer contribution percentage
6	KERS-NH, CERS-NH, others optional	Offer a voluntary buyout/conversion of accrued service program to employees other than those in the cash balance plan, which would have a mandatory conversion

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Rec.#	Plans	Recommendation
7	All	Explore whether a pension risk transfer for particular segments or groups of retirees could be effective
Investment Practices and Government Approach		
1	All	Establish a Kentucky Investment Board to provide transparent and expert management of assets across all Commonwealth systems

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II. Recommendations: Actuarial Assumptions

As detailed in Report #2, more than two-thirds (68%) of the total increase in unfunded liability for all the Kentucky retirement plans from FY2005 to FY2016 was related to the actuarial assumptions used. Going forward, realistic and prudent actuarial approaches are critical to achieving and sustaining health plans:

- 25% was attributable to the actuarial back-loading of the liability amortization. The actuarially recommended employer contribution was not sufficient to offset interest on the unfunded liability and prevent the unfunded liability from increasing. This was compounded by reset amortization periods, in the case of KRS plans, and open or rolling amortization periods prior to FY2014 in the case of TRS, which prevented the plans from reaching the point in the amortization period where principal payments on the unfunded liability would rise to the levels needed for significant pay down. In addition, payroll growth was lower than assumed over the period, particularly for KERS-NH, such that actual contributions allocated to employers as a percentage of payroll were consistently lower than assumed in the short term – producing additional unfunded amounts that were continually re-amortized out further into the future. Finally, the employer contribution for the KERS-NH, KERS-H, and SPRS plans are fixed for two-year periods by statute as part of the Commonwealth's biennial budget process, which has also caused shortfalls amortized into the future when contribution requirements have increased annually in between the establishment of new, two-year rates.
- 22% was attributable to the actuarial assumption changes. As assumptions were revised to reflect more conservative expectations for earnings and mortality based on experience and forecasts, the unfunded portion of the liability increased.
- 15% was attributable to actuarial assumptions for investment returns being above the actual performance of the market as a whole.
- 6% was attributable to plan experience. This reflects improved mortality among retirees as well as employees retiring earlier than assumed without an offsetting reduction in benefit.

Report #2 also used more conservative actuarial assumptions for analysis purposes and quantified the potential impact on the Commonwealth's budget of those assumptions for the largest state plans, KERS-NH and TRS. Days before the release of Report #2 and presentation of the findings to the Public Pension Oversight Board on May 22nd, the Kentucky Retirement Systems Board of Trustees voted on May 18th to make significant adjustments to the actuarial assumptions for KERS-NH, KERS-H and SPRS, which were generally consistent with the alternative assumptions used in Report #2.

The following recommendations are based on the analysis prepared to date as well as the objective of reducing risk to the Commonwealth systemically and for each plan. The goal of reducing risk is to avoid recurrence of the volatility and unanticipated deterioration in the financial health of the retirement systems that have followed since 2001.

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Recommendations for Actuarial Method

The current actuarial method for all KRS and TRS plans is the level percent of payroll amortization method. KRS 61.565 specifies that the KRS plans are based on a level percent of payroll amortization, and that the calculated percentage is assessed to employers based on that amortization. The KRS Board of Trustees adopted a 0% payroll growth assumption for KERS-NH and SPRS on May 18, 2017. Although the statutory actuarial method for KRS remains a level percent of payroll amortization allocated to employers as a percentage of payroll for each biennial budget, the new 0% payroll growth assumption in practice will modify the method for these plans to a level dollar amortization.

The actuarial method for the KJFRS plans requires contributions equal to normal cost plus interest on the unfunded liability plus 1 percent of the unfunded liability. The KJFRS actuary stated in the July 1, 2015 valuation report that "It is our professional actuarial option that the current legally prescribed method…is inconsistent with the plan accumulating adequate assets to make benefit payments when due, assuming all actuarial assumptions are realized. The current method of amortizing unfunded liabilities will not result in the full amortization of those liabilities."

Recommendations:

1. Modify Kentucky statute KRS 61.565 to convert the level percent of payroll amortization method for KRS to a level dollar method. This consistent approach to reducing the Commonwealth's long-term pension debt will substantially increase the likelihood of steady and meaningful progress toward regaining healthy funded status.

2. Modify Kentucky statutes KRS 161.550 and KRS 21.525 to apply a level dollar amortization method to TRS and KJFRS.

Recommendations for Actuarial Period

The amortization period for the KRS and TRS plans are closed 30-year periods beginning June 30 2013 and 2014, respectively. The KJFRS plans have a statutory amortization that does not truly eliminate the unfunded liability, as the actuary BPSM observed.

Recommendations:

3. Maintain the current 30-year amortization periods beginning June 30, 2013 and 2014 for KRS and TRS, respectively. Alternatively, although resetting the amortization period as in 2013 SB2 had unfavorable actuarial results, in the case of the significant shift in assumptions approved in May and July and the resulting escalation in required contributions in the near term, a reset period of 30 years under a new level dollar amortization would modestly smooth the impact of the increased contribution without increasing risk by back-loading principal payments as in the level percent of payroll method.

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4. Apply a 30-year amortization period of the existing KJFRS unfunded liability, with 20-year closed periods for future unfunded amounts.

Recommendations for Earnings Assumption/Discount Rate

The recent trend nationally with actuarial discount rates and investment return assumptions is toward rate reduction and de-risking. As NASRA has noted, "among the 127 plans measured, nearly three-fourths have reduced their investment return assumption since fiscal year 2010."[13] The largest public plan, CalPERS, is phasing in a reduction to a 7.0% discount rate, which Moody's viewed as:

> …*credit positive… because it forces improved funding discipline of long-term liabilities, bringing reported costs and liabilities closer to their values under current market interest rates," and "will lessen the risk of unanticipated contribution hikes in the future from adverse investment performance. Investment risk-taking needed to justify a discount rate above declining return expectations would translate to a heightened chance of investment losses, which could ultimately produce even higher contribution requirements.*[14]

Fitch Ratings recently revised their standardized discount rate for adjusting state and local government pension liability from 7.0% to 6.0%, noting:

> *Despite recent market gains, relatively limited pension asset growth is likely during the current economic expansion compared to prior expansions. Expectations for returns are dampened by the slow pace of economic growth, driven by a variety of factors. In this environment, Fitch believes that lowering its standard investment return assumption to 6% from 7% better reflects the magnitude of the burden posed by pension commitments.*[15]

Studies have quantified the additional risk taken on by public plans in order to maintain discount rate assumptions despite large decreases in "risk-free" bond yields over the past decades. Analysis by the Rockefeller Institute indicated the following:

- "Public pension plans in the U.S. now invest nearly two-thirds of their assets in equity-like investments, up from one-quarter in the 1970s and about 40 percent in 1990. While public plans once were more conservative investors than private defined benefit plans, they now have a much greater share of their assets invested in equity-like investments than do private plans."

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[13] *National Association of State Retirement Administrators (NASRA) Issue Brief: Public Pension Plan Investment Return Assumptions, February 2016 and February 2017*

[14] *Moody's Investors Service, CalPERS' Reduction in Assumed Investment Returns is Credit Positive for Governments,*

[15] *Fitch Ratings, Revised Pension Risk Measurements, May 31, 2017*

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- Between 1990 and 2014, “risk-free” ten-year Treasury rates dropped by roughly 6.0 percentage points, while the average public plan return assumption dropped by only roughly 0.5 percentage points.
- Public plan asset allocation to equity-like investments increased from 40% to 70% over this time period.
- Over a similar time period, on average private plan discount rate assumptions decreased from higher than public plan assumptions to over 3.0 percentage points lower.

The consequence of these trends is increased volatility and probability of deviation, losses, and under-funding.[16]

Report #2 used alternative discount rates in order to assess risk and inform analysis of the liabilities. A rate of 5.1% was applied to KERS-NH and SPRS, and a rate of 6.0% was applied to all other plans. The rate of 5.1% was based on our understanding of the process supporting the rates adopted by the KRS Board in May for KERS-NH and SPRS and discussed for other plans, in which the asset allocation approach was revised to reflect the varying degrees of stress and diminished assets of its plans. Based on this approach, we developed alternate return assumptions for a 10-year investment horizon and two levels of increased liquidity positions consistent with an updated KRS policy, with an allocation of up to 25% short-term bonds and 25% cash for the highly stressed plans. These assumptions were based on PFM Asset Management’s expected 10-year return for a portfolio with increased allocation to short-term bonds and cash. The time horizon for the investment return and the matching of asset investments to liabilities and the cash flows of paying benefits reflect the condition of the plans.

Although the policy of KRS does not directly apply to the TRS or KJFRS plans, the persistent underfunding of these plans, corresponding application of the depletion date and blended rate under GASB 67, and the recurring and large negative cash flows projected by the actuary of the TRS plan all supported the application of a similar Revised Asset Allocation rate of 6.0% for the TRS and KJFRS plans.

Furthermore, the systemic underfunding and risk of the Kentucky plans also support a more conservative assumption. The goal of the Bevin Administration is to reduce the systemic risk and adopt a consistent approach to the state-funded retirement systems.

Recommendations

5. Adopt and maintain prudent and realistic investment return assumptions.

[16] *Nelson A. Rockefeller Institute of Government, The State University of New York, How Public Pension Plan Investment Risk Affects Funding and Contribution Risk, January 2017*

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- For a majority of the Commonwealth plans, we recommend investment return assumptions of 6.0-6.25%, more consistent with market experience across the past decade and aligned with the 6.0% rate adopted in May 2017[17] by the credit rating agency, Fitch Ratings, for normalizing their evaluation of retirement systems nationally. While somewhat below the most recent national median rate for major public pension plans, recent trends nationally continue to move toward lower assumed rates of return. Further, this recommended level reflects the comparatively weak funded ratio of most Kentucky plans (with all of the KRS and TRS plans funded at levels below 60% as of the most recent 2016 valuations), such that the use of lower-risk assumptions would be important for improving the likelihood of a return to a sound position.
- For the most severely underfunded KERS-NH and State Police Retirement System (SPRS) plans, we recommend even lower rates of 5.0-5.25% be adopted, reflective of the greater risk already borne by these plans due to extraordinarily low funded ratios (16.0% for KERS-NH and 30.3% for SPRS as of 2016, even prior to modified assumptions that will lower the reported rates prospectively). In addition, the cash flow pressures on these plans will likely require more conservative/liquid investment allocations.
- For the costing analysis included in the Report #3, unless otherwise noted, we have generally incorporated assumed rates of 5.1% for the KERS-NH and SPRS plans and 6.0% for all other Kentucky plans. These assumptions are is broadly consistent with the 5.25% and 6.25% assumptions recently adopted by the KRS Board. The assumptions for Teachers' Retirement System ("TRS") and the Judicial Form Retirement System ("JFRS") remain at 7.5% and 7.0%, respectively.

	2016 Plan Valuation Assumption	Plan Assumption as of July 2017	Recommended Assumption Range	Assumption Used for Report #3 Costing
KERS-NH, SPRS	6.75%	5.25%	5.0%-5.25%	5.1%
KERS-H, CERS	7.5%	6.25%	6.0%-6.25%	6.0%
TRS	7.5%	7.5%	6.0%-6.25%	6.0%
JFRS	7.0%	7.0%	6.0%-6.25%	6.0%

- Because market and plan conditions and expectations will change and evolve over time, system fiduciaries should continue to have the flexibility to reevaluate and

[17] *"Revised Pension Risk Measurements," Fitch Ratings, May 31, 2017. In this report, Fitch notes: "Despite recent market gains, relatively limited pension asset growth is likely during the current economic expansion compared to prior expansions. Expectations for returns are dampened by the slow pace of economic growth, driven by a variety of factors. In this environment, Fitch believes that lowering its standard investment return assumption to 6% from 7% better reflects the magnitude of the burden posed by pension commitments."*

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modify actuarial assumptions, consistent with mainstream practice among public pension plans, rather than establishing such assumptions in statute. At the same time, as further detailed below, the Commonwealth could assign this responsibility to a new, statewide investment board – a structure used by some other states to provide for economies, consistency, and transparency in managing investments – as a strategy for elevating review of these important factors.

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III. Benefit Levels and Risk Exposure

Plan Alternatives

In evaluating reform options, the team was guided by several key goals and objectives identified by the Governor's Office, State Budget Director, and staff. These goals included:

1. The extremely distressed state of the KERS-NH plan, and the systemically high level of unfunded liability and required contributions across all plans, require strong actions to reduce the risks of:
    - Continued increases in required contributions that crowd out other necessary public spending, or reach levels that cannot be sustained in the budget while keeping the state's taxes at a competitive level
    - Resorting to paying benefits on a pay-as-you-go cash basis, which could also quickly become unaffordable within the Commonwealth's budget
    - Plan insolvency
2. The accrued benefits for service earned by employees and retirees should be protected, within a framework consistent with inviolable contract provisions and federal ERISA standards for private plans;
3. Long-term solvency of the retirement system as a whole must be ensured so that current retirees and future retirees can rely on secure retirement benefits;
4. Risk levels systemically and for each individual plan should be reduced as much as possible to avoid recurrence of the drastic deterioration in the retirement systems' health that has occurred since 2001. While underfunding of the actuarially recommended employer contribution was a factor in this deterioration, such funding shortfalls comprised only 15% of the total increase in unfunded liability between 2005 and 2016. The remaining 85% was attributable to actual results being unfavorable compared to actuarial assumptions, COLA benefits awarded without funding, and modifications to the actuarial assumptions to reflect unfavorable experience trends. Future liabilities should be valued conservatively and the future risk to the Commonwealth of economic conditions, investment returns, demographics, and actuarial assumptions should be minimized.
5. In tandem with the goal above, the benefit structure should also reduce future exposure to risk and the reemergence of unfunded liabilities, in order to safeguard plan sustainability for KRS, TRS, and KJFRS participants, employers and the taxpayers;
6. The approach should provide career state and local employees and teachers a sufficient and sustainable benefit for a dignified retirement through a combination of benefits from KRS, TRS, and KJFRS, Social Security, and personal savings, while also accommodating workers who may spend only a portion of their career in public service.

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In the context of the goals outlined above, PFM was tasked with helping to assess and analyze a number of alternative approaches to the redesign of the benefit provisions offered state employees through KRS, TRS, and KJFRS. Within this process, the PFM and Commonwealth teams analyzed the pros and cons of plan design alternatives, and assessed the potential that each would have on the overall goals and objectives outlined above.

The major reform approaches considered included:

1. Modifying key provisions of the current cash balance and defined benefit pension plans;
2. Creating a hybrid DB-DC plan.
3. Creating a pure defined contribution plan with expanded Social Security participation where necessary and possible.

The size and severity of the challenge is such that implementing reforms only for new hires for all plans, which would produce only nominal short-term savings as the impact of plan redesign will in the initial years apply to relatively few newly hired employees, is not likely to achieve sufficient impacts. Reforming future retirement benefits for current and already-retired employees effective immediately is critical for ensuring the system's long-range sustainability for retirees and the Commonwealth.

Modified Cash Balance and Defined Benefit Pension

Under this reform option, the Commonwealth would modify the current defined benefit pension plan for TRS employees, and the cash balance plan authorized in 2013 SB 2 for new hires in KERS, CERS, SPRS, and KJFRS plans. Potential reforms under this approach could include, but would not be limited to, increasing employee contributions, raising retirement eligibility ages, reducing benefit multipliers or the employer match/crediting rate, suspending or eliminating post-retirement COLAs, and other modifications as deemed necessary.

There would be minimal transition issues with establishing a modified cash balance or defined benefit pension plan for new employees. In general, the system would add an additional benefit tier, one for current employees and another for employees hired after the effective date of the enabling legislation.

While this approach would help to reduce system employers' normal cost for new hires, the employers would maintain substantial exposure to investment and other actuarial risks. With a modified defined benefit plan or cash balance plan, the potential would still exist for the system to develop unfunded liabilities notwithstanding the benefit modifications. In turn, these additional unfunded liabilities could add to the Commonwealth's long-term burdens from both a credit rating and balance sheet perspective.

Kentucky followed Kansas and Nebraska among states in introducing a cash balance plan in 2013 for KRS and KJFRS new hires. Cash balance plans are described as a type of hybrid plan that combines elements of a defined contribution and defined benefit pension plan, although they differ

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significantly from a standard hybrid DB-DC model. Under the cash balance approach, all contributions (employee and employer) are credited and tracked on an individual basis. Each year, or as frequently provided by the plan, the contributions to the account are credited with some level of guaranteed minimum interest, which is 4% for Kentucky's plans.

The investment risk primarily remains with the employer in a cash balance plan. Employer and employee contributions are paid into the fund and pooled with the assets of the other employees and retirees. Further, while KJFRS has established a separate fund for the cash balance plan, and therefore prepares a separate actuarial valuation of the cash balance plan fund, the KRS plans pool the assets of the Tier 3 cash balance plan employees with those of the Tier 1 and Tier 2 defined benefit plans. Each Tier 3 cash balance plan member's account is essentially a notional account; unlike a defined contribution plan where the specific contributions associated with that employee are maintained in the employee's account, in the cash balance plan the contributions are pooled in the larger asset base, and benefits at retirement are paid from that common asset base. Cash balance plans still require that an employee be credited with the guaranteed interest rate regardless of investment performance of the common assets of the fund over the employee's career. Compounding this investment risk is the feature in Kentucky's plan that provides employees with an additional 75% of the returns over the guaranteed 4% interest for the previous year, if the five-year average geometrical return exceeds 4%.

Although the cash balance plan is often described as a hybrid plan that features elements of a defined contribution plan, it is in major respects a defined benefit plan with a different benefit calculation than traditional plans. The cash balance plan has an individual employee account like a defined contribution plan, and calculations are made to that employee's account on an annual basis, but the individual account does not hold hard assets equal to the account basis. The contributions into the plan and the assets required to meet the obligation of the employee's future retirement benefit payments are instead managed generally with fund assets by the system, with the same structure of investment consultants, fund managers, actuarial assumptions and calculations, and risks associated with a defined benefit plan, but with reduced risks and more defined contribution and benefit parameters.

Positive Factors of a Modified Defined Benefit Plan

Defined benefit pension plans may contribute to favorable recruitment and retention of employees, particularly when the employer is competing against other public employers with similar plans.

1. There would be minimal administrative burdens on the system if reform is limited to adjusting the existing defined benefit plan, and the overall complexity of the benefit plan for employees would also remain consistent with the status quo.

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Negative Factors of a Modified Defined Benefit Plan

1. Investment and actuarial risks stay entirely with the employer.
2. Unfunded liabilities will likely remain at elevated levels for a long period.
3. Even with employee contributions and modified benefits, continued reliance on a DB plan will risk further growth in long-term employer costs and the potential for additional unfunded liabilities, with inherent volatility in funding requirements.

Positive Factors of a Modified Cash Balance Plan

1. There would be minimal administrative burdens on the system if reform is limited to adjusting the existing cash balance plan, and the overall complexity of the benefit plan for employees would also remain consistent with the status quo.
2. The current tier of benefits provides a comparable and sufficient benefit level (see Report #2 page 108) and reduced investment, longevity and under-funding risk than the legacy defined benefit plans.
3. The cash balance plan was selected in 2013 in part because in the KRS plans the new Tier 3 employees have been entered into the same funds for each plan as the legacy employees, which provided more favorable cash flow to the system than a defined contribution plan would have with segregated assets under the actuarial assumptions and methods in place. However, note that based on the actuarial assumptions adopted for KERS-NH and SPRS at the May 2017 board meeting, where the discount rate was lowered significantly and the payroll assumption was changed to 0%, or effectively a level dollar amortization, the increased contributions in the short term improve cash flow substantially, offsetting the unfavorable cash flow impact of entering new hires in a defined contribution plan.

Negative Factors of a Modified Cash Balance Plan

1. The employer retains investment and actuarial risk.
2. Unfunded liabilities will likely remain at elevated levels for a long period.
3. Although the perception is often that the cash balance plan is like a defined contribution plan where contributions are made, employees have individual accounts, and the plan then runs on “auto-pilot” - and therefore the potential for unfunded liabilities is eliminated - in practice the plans are still subject to investment, under-funding, economic and demographic risks, due to the guaranteed return as well as the employee receiving the majority of sustained upside returns. Although these risks are reduced compared to a traditional defined benefit plan, the perception that the risks have been eliminated in itself raises the possibility that unfunded liabilities can emerge over the long-term.

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Defined Contribution Plan

1. Among state plans, Alaska and Michigan require state civilian employees to participate in a defined contribution plan. Several other states offer an optional defined contribution plan (Colorado, Florida, Montana, North Dakota, Ohio, South Carolina, and Utah, and effective February 1, 2018, the Michigan teachers plan), although they tend to have lower take-up rates.

Positive Factors

1. A defined contribution plan would stabilize the Commonwealth's cost for new hires as a fixed percentage of salary with the potential for slight variations based on how the employer matching contributions are structured, if any.
2. A defined contribution plan will eliminate all investment risk for the employer. A pure defined contribution plan, by definition, eliminates the accrual of unfunded liabilities for new hires, although the Commonwealth would still face sizable liabilities associated with its legacy defined benefit plan.
3. The portability feature of defined contribution plans may enhance the attractiveness of a position in state or local service for some potential employees, although the impact of this feature is likely to vary across different employee groups. For Millennial workers who may have non-traditional employment patterns (i.e., shorter-tenures across more employers), this benefit may be particularly attractive at the time of recruitment. Another area where a defined contribution or hybrid plan may be beneficial is with the recruiting of mid-career professionals with specific skill sets. In some situations, a defined contribution or hybrid plan may also be attractive to recruits with specialized skills who are recruited to public service, but do not anticipate devoting the balance of their career to this endeavor.
4. Administrative burdens on the Commonwealth to administer a pure DC plan could be manageable, as the voluntary DC plan and record-keeper through the Deferred Compensation Authority (DCA) are already in place, if a plan were not established within each system.

Negative Factors

1. While the portability of a DC plan may be attractive for some employees during recruitment, this same characteristic may also weaken the incentive for retention relative to a traditional DB plan.
2. A defined contribution plan has a finite, yet unknown time horizon for each plan participant. As a result, timing and investment environment will drive decisions good or bad. These decisions may have an impact on the predictability of the benefit available for employees in retirement. Losses in individual accounts, as experienced during the most recent recession, may substantially reduce the benefit available for employees nearing retirement and/or alter normal retirement patterns – creating individual hardships and, in some cases, creating pressure on the employer to provide relief.

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3. Members in a DC plan, many of whom have little experience in the market, will be faced with the challenging task of directing their own investments. In simple terms, a defined contribution plan participant's benefit is determined by the level of contributions made (employee and employer) and the rate of return on investments. The rate of return is a factor of overall market performance and the employee's selected asset allocation and investment strategy. Some past studies have indicated that employees directing their own investments often earn lower rates of return than professionally managed defined benefit plans, although others have found that in more recent ten-year periods of analysis the differences between DB and DC plans had been reduced to almost zero and were not statistically significant. One report cited the increased use of balanced default-investment options, target-date funds, and index funds among DC plans as the reason for increasingly comparable performance between DB and DC plans.[18]
4. While the Commonwealth can structure a defined contribution plan to partially insulate members from the impact of poor investment decisions (e.g., by limiting the number of investment options, offering efficient default and target-date options, and/or by monitoring the costs and fees associated with investment options), the Commonwealth will nonetheless need to commit more resources to educational programs to ensure an appropriate level of member understanding.
5. Mutual funds and other investment options commonly found in 401(k) plans assess fees that can vary by the type of investment and whether or not the accounts are actively managed or index based. Professionally managed assets in a defined benefit plan are pooled and, as such, tend to have lower administrative and investment costs, resulting in higher net returns, according to past studies.[19]
6. The transition costs of enrolling new members in a DC plan could be significant. While the administrative burden would be difficult for the retirement systems to absorb, the Commonwealth could negotiate with the record-keeper of the DCA voluntary plan to scale up operations and accommodate the transition.

Hybrid Retirement Plan

Several states in recent years have moved toward providing a hybrid retirement plan, a shift away from the traditional defined benefit pension that has been the historical norm. Under this alternative approach, the retirement benefit combines elements of a reduced defined benefit (DB) pension with an individually directed defined contribution account.

As of July 1, 2012, there were a total of nine states offering a hybrid DB-DC plan (mandatory or optional) to broad groups of public employees, including Georgia, Michigan (teachers), Rhode Island, Utah, and Virginia (prospectively). Federal government employees hired after 1984 also

[18] *Manhattan Institute, Defined Contribution Pensions Are Cost-Effective, August 2015*

[19] *Center for Retirement Research at Boston College, Investment Returns: Defined Benefit vs. Defined Contribution Plans", December 2015*

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have access to a hybrid type retirement benefit. Under the federal model, employees are eligible for a pension with a benefit multiplier ranging from 1.0% to 1.1% (varying by years of service) and are automatically enrolled in the Thrift Savings Plan, a type of defined contribution account with an employer contribution and match.

One of the greatest strengths of a hybrid plan is simply that it balances the inherent advantages and weaknesses of pure DB and DC plans. With a hybrid plan, an employer is able to combine the favorable elements of each plan design, manage to an acceptable level of cost uncertainty, and rebalance the distribution of investment risk.

Positive Factors:

1. The DB component gives the employer the ability to invest a portion of total funds over a longer horizon (greater than any one individual can invest in a DC account), taking advantage of more investment options, increased buying power, and potential for greater returns, while continuing to provide a base level of income in retirement that is guaranteed and less susceptible to market conditions.
2. The DC component incudes the employee in sharing investment risk, while providing individuals with the option to control their asset portfolio according to their own risk appetite and investment preferences.
3. The DC component provides additional flexibility in pre-retirement savings levels. Employees targeting to retire early can boost their savings to generate a larger share of retirement income from the DC plan.
4. The DC component also provides additional flexibility in meeting post-retirement expenses. Employees can access their account to cover large one-time expenses (e.g. costs associated with moving/ selling a home).
5. With less reliance on the defined benefit component, the magnitude of the potential for growth in unfunded pension liabilities would be substantially curtailed.
6. The defined benefit component may be a key contributor to favorable recruitment and retention of some employees. At the same time, the portability feature of the defined contribution component may be seen as a positive factor for some other employees (again, varying by employee).
7. There would be some additional administrative burdens on the Commonwealth to manage both the defined benefit plan and the modified 401(k) or 401(a) plan, but this would also occur while managing legacy DB plans alongside a DC plan for new hires.

Negative Factors:

1. The employer retains some portion of the investment and other funding cost risk from adverse actuarial experience (less than present in a pure DB plan, but more than in a DC plan).

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2. As a result, even with a reduced defined benefit component, the potential exists (albeit mitigated) for unfunded liabilities relative to a pure DC approach, although this risk could be mitigated by cost control provisions as in the Tennessee and new Michigan teachers' plans.
3. There would be an additional layer of complexity for members in understanding the hybrid benefit structure and in making prudent investment decisions. The Commonwealth would likely be called on to devote additional resources in enhanced, ongoing educational programs to help ensure the quality of investment decisions by individual members.

Recommended Options for Future Hires

KERS-NH, CERS-NH, JFRS

To minimize risk moving forward a defined (DC) retirement benefit with a mix of employer and employee contributions should be provided to future participants of KERS-NH, CERS-NH, and JFRS.

Recommended Options – Future Hires

Plan	Primary Benefit	Other Adjustments
KERS-NH CERS-NH JFRS	Defined Contribution: 2% minimum employer contribution + 50% match on first 6% optional employee contribution above a 3% minimum employee contribution (i.e. 5% employer maximum, 14% total maximum)	No conversion of accrued sick, compensatory, and any other leave time toward pension benefit.

KERS-H, CERS-H, SPRS

Maintain the current cash balance structure for KERS-H, CERS-H, and SPRS with a modification to the normal retirement eligibility age to remain at 60 years of age but with no ability for unreduced retirement at any age based on years of service.

Recommended Options – Future Hires

Plan	Primary Benefit	Other Adjustments
KERS-H CERS-H SPRS	Retain the cash balance structure as now in place for post-2014 hires	Maintain the provision for retirement at age 55 for Tier 1 and 60 for Tiers 2 and 3, but eliminate eligibility for normal retirement at any age with 25 years of service

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TRS

To minimize risk and provide teachers with a larger employer-provided benefit future teachers would participate in Social Security, which would provide a new defined benefit with inflation- based COLAs, along with a new primary employer-provided DC plan established similarly to KERS-NH and CERS-NH participants.

Recommended Options – Future Hires

Plan	Primary Benefit	Other Adjustments
TRS – Non-University and University members	• Social Security (generally not now provided for non-University members) • Defined Contribution: 2% minimum employer contribution + 50% match on first 6% optional employee contribution above a 3% minimum employee contribution (i.e. 5% employer maximum, 14% total maximum)	No conversion of accrued sick, compensatory, and any other leave time toward pension benefit.

Recommended Options for Current Employees and Retirees

KERS-NH, CERS-NH, JFRS

Freeze accrued benefits under the applicable existing pension tier(s) and provide a defined contribution plan as noted above. Provide an optional buyout of the actuarial value of accrued services with an equivalent cash value to be rolled over to the plan participant's new DC account. Cash out all sick leave upon retirement at 25% of the then-current salary rates and eliminate the ability to apply unused sick and compensatory leave to pension benefits. Consider prospective elimination of some or all benefit payments as a result of COLAs granted between 1996 and 2012 that are not protected by the inviolable contract provisions.

Plan	Primary Benefit	Other Adjustments
KERS-NH, CERS-NH, JFRS	• For Tiers 1 and 2, freeze accrued benefit associated with prior service protected at levels based on plan and date of hire, with no further accrual (although the benefit value will increase as the final average salary component of the defined benefit formula increases) • Tier 3 members would see the account value of their accrued cash balance benefit rolled over into the new defined contribution plan.	• Normal retirement age of 65 would apply (employees can retire earlier with an actuarially reduced benefit). • No conversion of accrued sick, compensatory, and any other leave time toward pension benefit.

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Plan	Primary Benefit	Other Adjustments
	• Future service earns a defined contribution benefit: 2% minimum employer contribution + 50% match on first 6% optional employee contribution above a 3% minimum employee contribution (i.e. 5% employer maximum, 14% total maximum) • All benefit payments for retirees would continue in full at the level in place as of 1996 or any subsequent date of retirement; payment amounts due to COLAs granted from 1996 to 2012 could be reduced prospectively	• Optional buyout to be developed for accrued pension service under Tiers 1 and 2, with rollover to the new defined contribution plan

KERS-H, CERS-H, SPRS

All hazardous employee plan participants would retain primary benefits associated with their Tier, modifying only the requirements for normal retirement age and eliminating the ability to retire at any age based on years of service.

Plan	Primary Benefit	Other Adjustments
KERS-H, CERS-H, SPRS	• Retain the primary benefits associated with the member's current tier	• Normal retirement age of 60 would apply (employees can retire earlier with an actuarially reduced benefit).

TRS

For incumbent non-university members, a continued defined benefit plan is recommended, with the establishment of a minimum retirement age requirement and elimination of enhanced benefit features provided outside of any inviolable contract requirements. The suspension of all future COLAs until the system reaches a minimum 90% funded level using conservative actuarial assumptions, and apply such increases only to the amount of benefits up to a base level of the first $1,500 monthly.

Plan	Primary Benefit	Other Adjustments
TRS – Non-University and University	Retain the primary benefits associated with the member's current tier	• Normal retirement age of 65 would apply (employees can retire earlier with an actuarially reduced benefit). • Enhanced benefit features to be eliminated (highest three years of pay; conversion of accrued leave and compensatory time toward

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Plan	Primary Benefit	Other Adjustments
		pension credit; and a higher benefit multiplier applied for years of service beyond 30) • Suspend all future COLAs until the system reaches a minimum 80% funded level using realistic actuarial assumptions, and apply such increases only to the amount of any benefit above a base level of $1,500 monthly.

Summary of Plan Benefit Recommendations – All Systems

System	Plan	Proposed Plan Reform	Benefit Reform Proposal	Minimum Contribution	Optional Employer Contribution	Average Contribution	Normal Retirement Age: All Employees
KRS	KERS-NH	Freeze All Plan Service Accruals	DC Plan	2% ER 3% EE	50% ER match on first optional EE 6%	3.2% ER, 6.5% EE: 9.7% total	65
	KERS-H	No Change	No Change	n/a	n/a	n/a	55 (Tier 1)/ 60
	SPRS	No Change	No Change	No Change	n/a	n/a	55 (Tier 1)/ 60
	CERS-NH	Freeze All Plan Service Accruals	DC Plan	2% ER 3% EE	50% ER match on first optional EE 6%	3.2% ER, 6.5% EE: 9.7% total	65
	CERS-H	No Change	No Change	n/a	n/a	n/a	55 (Tier 1)/ 60
TRS		Close Plan to New Hires	DC Plan + Social Security	2% ER 3% EE	50% ER match on first optional EE 6%	3.1% ER, 6.5% EE: 9.6% total	65
KJFRS	KJRP	Freeze All Plan	DC Plan	2% ER 3% EE	50% ER match on first	3.2% ER, 6.5% EE: 9.7% total	65

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System	Plan	Proposed Plan Reform	Benefit Reform Proposal	Minimum Contribution	Optional Employer Contribution	Average Contribution	Normal Retirement Age: All Employees
		Service Accruals			optional EE 6%		
	KLRP	Freeze All Plan Service Accruals	DC Plan	2% ER 3% EE	50% ER match on first optional EE 6%	3.2% ER, 6.5% EE: 9.7% total	65

Notes:

1) ER= employer contribution; EE=employee contribution
2) Normal retirement age would be applied to all current actives
3) Accruals toward unreduced early retirement provisions based on years of service would be frozen after the cutoff date
4) Average contribution based on expected employee contributions (not all employees are assumed to contribute the maximum optional amount)

Replacement of Income at Retirement

When an employee retires, pay stops and the employee must begin using the financial resources accumulated during active work. These resources include pension plans, defined contribution accounts such as 401(k), 457(b), 403(b) or IRAs; Social Security; and personal savings including inheritances.

A person's financial needs decrease at retirement. Broadly speaking, need here is defined as the amount of income a retiree needs to maintain his or her preretirement standard of living after retirement. Several of the factors that might affect a change in financial needs at retirement include:

- Work related expenses are substantially reduced or eliminated altogether.
- Taxes, particularly payroll taxes for FICA/FUTA, are not paid from retirement income.
- Income taxes are lower after retirement because income is typically lower, and because some sources of income, such as Social Security benefits are taxed at lower rates.
- Contributions to savings plans are completed.
- The cost of raising a family typically diminishes.
- There may be some added costs due to travel in retirement, etc.

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- Medical costs may change both at retirement and if retired under age 65, at age 65 when the employee will be covered by Medicare

While the amount of income a person needs is going to vary by individual, it is possible to develop a target income from the analysis of a large group of individuals.

The most recent of periodic studies completed by Aon Hewitt in partnership with Georgia State University examines "retirement income replacement ratios" and that information has been used in assessing the typical range of income replacement needed at retirement for Commonwealth of Kentucky retirees. While published nearly a decade ago, this most recent study remains relevant since federal income tax rates have not changed materially since the 2008 study except at the highest income levels.[20]

Here we define retirement income replacement ratios as:

$$Replacement\ Ratio = \frac{\text{income after retirement}}{\text{income before retirement}}$$

[20] *http://www.aon.com/about-aon/intellectual-capital/attachments/human-capital-consulting/RRStudy070308.pdf*

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Aon Hewitt Study

The underlying data source for this Aon Hewitt report is the U.S. Department of Labor's Bureau of Labor Statistics' Consumer Expenditure Survey (CES). This is essentially the same database that is used to construct the Consumer Price Index and provides a broad look at income needs.

The "Replacement Ratio" is the percentage of an employee's salary that is needed after retirement to maintain the employee's pre-retirement standard of living. Thus, if an employee has a needed replacement ratio of 85%, the employee will need 85% of pre-retirement income after he or she retires. For this analysis, we elected to use what is called the "Base Case" in the Aon Hewitt report. The assumptions are that the employee is married and is the sole wage earner of the family, retiring at age 65, with the spouse three years younger at age 62. Therefore, the family is eligible for family Social Security benefits, which are 1.375 times the wage earner's benefit. The following are the needed replacement income levels at age 65 for a Base Case employee.

Table 1 Replacement Income Needed by Source

Income Before Retirement	From Social Security	Private and Employer Plan	Replacement Needed
$30,000	59%	31%	90%
$40,000	54%	31%	85%
$50,000	51%	30%	81%
$60,000	46%	32%	78%
$70,000	42%	35%	77%
$80,000	39%	38%	77%
$90,000	36%	42%	78%
$150,000	23%	61%	84%

As stated above, these results are for a married individual as a sole wage earner. However, other family situations required only minor adjustments to the replacement ratios so the single wage earner table is used for analysis. Further adjustments can be made to these results, the primary of which are for savings rates and medical costs.

Social Security Benefits

Participants in the KERS Non-Hazardous plan, CERS Non-Hazardous plan, State Police plan, the Judicial Form Retirement System as well as University employees in the Teachers Retirement System are assumed to be eligible for Social Security benefits. Employees who are not enrolled in Social Security (i.e. non-University employees in the Teachers Retirement System and a typical employee in the CERS-Hazardous plan) will not be paying Social Security contributions so will have more take-home pay and greater resources available for personal savings.

Income from Defined Contribution Plans

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Retirees will have considerable flexibility in the amount that they withdraw from their defined contribution accounts each year to supplement their Social Security income and Defined Benefit plan income. For analysis purposes, we have assumed that a smaller percent of the account balance at retirement will be withdrawn for employees retiring at a younger age and a larger percent for employees retiring at older ages, as employees retiring at older ages will have shorter life expectancies. The table below shows the percent of the account balance assumed to be withdrawn at retirement by age at retirement.

Table 2 – Income from Defined Contribution Plans by Age at Retirement

Age at Retirement	Percent Withdrawn as Income
55	7.0%
60	7.6%
62	7.8%
65	8.5%
67	9.0%

For example, an employee with a defined contribution account balance of $200,000 who retires at age 62, is assumed to draw an income of $15,600 per year annually (7.8%, $1,300 per month).

Illustrations in 2018 Dollars

The replacement ratio analysis examines the separate benefit structures for the eight retirement systems (KERS Non-Hazardous, KERS Hazardous, CERS Non-Hazardous, CERS Hazardous, State Police, Teachers, Legislators, and Judiciary), as well as the retirement eligibility and benefit accruals under the different benefit tiers. Sample employees for each retirement system and benefit tiers were selected to illustrate the expected retirement benefit after a career employment with the Commonwealth.

The expected retirement income at retirement is illustrated in 2018 dollars for all benefit tiers. All sample employees, including those with 15 years or past service and newly hired employees have retirement incomes as if they are retiring in 2018 after a full career with the Commonwealth earning a benefit under the appropriate benefit tier.

KERS Non-Hazardous Plan

Based on current pay levels for career employees the illustrations for KERS Non-Hazardous participants assume employees retire at age 65 on a final salary of $60,000. Historical salary levels are projected back to date of hire using a 3% annual rate of pay plus the same merit/promotion rates as set out in the 2016 valuation report.

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For Tier 1 employees (i.e. employees hired before 9/1/2008), the sample employee has 15 years of service in Tier 1 and is assumed to retire with 35 years of total Commonwealth service, so will have 20 years' accrual under the defined contribution plan. The 15 years of Tier 1 service credit will be applied to the final average salary at retirement using the benefit multiplier of 2.0%. For the defined contribution plan the employee is assumed to maximize the employer contribution amount. For illustration purposes, the values are calculated as of January 2018 (i.e. using the expected Social Security Income of $21,300 for someone retiring in 2018 at age 65 on a final salary of $60,000).

For Tier 2 employees (i.e. employees hired between 9/1/2008 and 12/31/2013) the sample employee has 7 years of service in Tier 2 and is assumed to retire with 35 years of total Commonwealth service, so will have 28 years' accrual under the defined contribution plan. The 7 years of Tier 2 service credit will be applied to the final average salary at retirement using the benefit multiplier of 1.1%. For the defined contribution plan the employee is assumed to maximize the employer contribution amounts, so is assumed to contribute 9% of pay.

For Tier 3 employees (i.e. employees hired after 1/1/2014) the sample employee has 4 years of service in the Cash Balance plan. That service will be converted into an account balance as if the new defined contribution plan had been in effect at the date of hire. For the years of service while in the Cash Balance plan the defined contribution account will be developed based on the full 6% employee contribution, and an employer contribution of 5 percent. These contributions are accumulated from date of hire to the new plan date earning 5.25% interest.

New hires will accrue benefits in the defined contribution plan throughout their career. For employees born after 1966, the Social Security Normal Retirement Age is 67. We have therefore illustrated the retirement benefits for a new hire who retires at age 67 with 37 years of service. The "Tier 4" employee is also assumed to retire on a final salary of $60,000.

Table 3 KERS Non-Hazardous Plan

Employee	Final Salary	Age	Service	From Social Security	From KERS DB Plan	From DC Plan	Total Retirement Income	Ratio of Retirement Income to Final Salary
A-Tier 1	$60,000	65	35	$21,300	$16,823	$17,335	$55,458	92%
B-Tier 2	$60,000	65	35	$21,300	$4,318	$26,063	$51,681	86%
C-Tier 3	$60,000	65	35	$21,300	$3,764	$29,595	$54,660	91%
D-New Hire	$60,000	67	37	$24,324	$0	$39,014	$63,338	106%

As noted above in Table 1, the target replacement income for an individual earning $60,000 at retirement is 78% of pre-retirement earnings. Table 3 shows that career employees in KERS Non-Hazardous retiring at age 65 will have retirement resources that exceed this target amount.

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Employees who plan to continue working until Social Security Normal Retirement Age will be able to build above-target replacement income if they maximize the employer match, and can achieve 90% replacement ratio with an optional employee contribution rate below the rate that maximizes the employer match.

KERS Hazardous Plan

Based on current pay levels for career employees the illustrations for KERS Hazardous participants assume employees in Tier 1 today will retire at age 55 on a final salary of $58,000. To estimate final average compensation, historical salary levels are projected back using a 3% annual rate of pay plus the same merit/promotion rates as set out in the 2016 valuation report. For benefit tiers with a Normal Retirement Age of 60, employees are assumed to retire at (or after) Normal Retirement Age.

For Tier 1 employees (i.e. employees hired before 9/1/2008) the sample employee is assumed to retire with 25 years of service. The years of service credit will be applied to the final average salary at retirement using the benefit multiplier of 2.49%. For illustration purposes, the values are calculated as of January 2018.

For Tier 2 employees (i.e. employees hired between 9/1/2008 and 12/31/2013) the sample employees are assumed to have 30 years of service at age 60. One retires at age 60, while the other retires at age 62 (with 32 years of service). The years of service credit will be applied to the final average salary at retirement using the benefit multiplier of 2.5%.

For Tier 3 employees (i.e. employees hired after 1/1/2014) the sample employees are assumed to have 30 years of service at age 60, or with 32 years of service at age 62.

	Table 4 KERS Hazardous Plan							
Employee	Final Salary	Age	Service	From Social Security at 62	From KERS DB Plan	From KERS 4% Cash Balance Plan	Total Retirement Income	Ratio of Retirement Income to Final Salary
A- Tier 1	$58,000	55	25	$12,912	$34,898	$0	$47,810	82%
B - Tier 2	$58,000	60	30	$15,168	$42,046	$0	$57,214	99%
C - Tier 2	$58,000	62	32	$16,224	$44,849	$0	$61,073	105%
D- Tier 3	$58,000	60	30	$15,168	$0	$26,785	$41,953	72%
E - Tier 3	$58,000	62	32	$16,224	$0	$30,366	$46,590	80%

As noted above, the target replacement income for an individual earning $60,000 at retirement is 78% of pre-retirement earnings. Table 4 shows that most employees exceed the target replacement ratios even before including any income sources from employment before entering

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service with the Commonwealth or after retiring from the Commonwealth, or from personal savings. The exception is the Tier 3 employee retiring at age 60 (employee D), who will fall slightly below at a replacement income of 72% of the pre-retirement income if the interest earnings credited to the member's account are at the assumed level of 5.25 per year.

CERS Non-Hazardous Plan

Based on current pay levels for career employees the illustrations for CERS Non-Hazardous participants, we assume employees retire at age 65 on a final salary of $55,000. Historical salary levels are projected back to date of hire using a 3% annual rate of pay plus the same merit/promotion rates as set out in the 2016 valuation report.

For Tier 1 employees (i.e. employees hired before 9/1/2008) the sample employee has 15 years of service in Tier 1 and is assumed to retire with 35 years of total service, so will have 20 years' accrual under the defined contribution plan. The 15 years of Tier 1 service credit will be applied to the final average salary at retirement using the benefit multiplier of 2.2%. For the defined contribution plan the employee is assumed to maximize the employer contribution amount. For illustration purposes, the values are calculated as of January 2018 (i.e. using the expected Social Security Income of $20,592 for someone retiring in 2018 at age 65 on a final salary of $55,000).

For Tier 2 employees (i.e. employees hired between 9/1/2008 and 12/31/2013) the sample employee has seven years of service in Tier 2 and is assumed to retire with 35 years of total CERS service, so will have 28 years accrual under the defined contribution plan. The seven years of Tier 2 service credit will be applied to the final average salary at retirement using the benefit multiplier of 1.1%. For the defined contribution plan the employee is assumed to maximize the employer contribution amounts, so is assumed to contribute 9% of pay.

For Tier 3 employees (i.e. employees hired after 1/1/2014) the sample employee has four years of service in the Cash Balance plan. That service will be converted into an account balance as if the new defined contribution plan had been in effect at the date of hire. For the years of service while in the Cash Balance plan the defined contribution account will be developed based on the full 6% employee contribution, and an employer contribution of 5 percent. The account balance and future defined contribution amounts are accumulated from the new plan date with an assumed earning rate of 5.25%.

New hires will accrue benefits in the defined contribution plan throughout their career. For employees born after 1966, the Social Security Normal Retirement Age is 67. We have therefore illustrated the retirement benefits for a new hire who retires at age 67 with 37 years of service. The new hire employee is therefore assumed to retire two years later on a slightly larger final salary of $58,633.

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Table 5 CERS Non-Hazardous Plan								
Employee	Final Salary	Age	Service	From Social Security	From CERS DB Plan	From DC Plan	Total Retirement Income	Ratio of Retirement Income to Final Salary
A - Tier 1	$55,000	65	35	$20,592	$17,043	$16,283	$53,918	98%
B - Tier 2	$55,000	65	35	$20,592	$3,977	$24,751	$49,320	90%
C - Tier 3	$55,000	65	35	$20,592	$3,741	$28,227	$52,560	96%
D - New Hire	$55,000	67	37	$23,568	$0	$37,537	$61,105	111%

As noted above in Table 1, the target replacement income for an individual earning between $50,000 and $60,000 at retirement is 81% of pre-retirement earnings. Career employees in CERS Non-Hazardous retiring at age 65 will have retirement resources that exceed this target amount. Employees who plan to continue working until Social Security Normal Retirement Age will be able to build above-target replacement income if they maximize the employer match, and can achieve 90% replacement ratio with an optional employee contribution rate below the rate that maximizes the employer match.

CERS Hazardous Plan

Based on current pay levels for career employees, the illustrations for CERS Hazardous participants assume employees today will retire at age 55 on a final salary of $72,000. Historical salary levels are projected back to date of hire using a 3% annual rate of pay plus the same merit/promotion rates as set out in the 2016 valuation report. For benefit tiers with a Normal Retirement Age of 60, employees are assumed to retire at Normal Retirement Age.

For Tier 1 employees (i.e. employees hired before 9/1/2008) the sample employee is assumed to retire with 25 years of service. The years of service credit will be applied to the final average salary at retirement using the benefit multiplier of 2.5%.

For Tier 2 employees (i.e. employees hired between 9/1/2008 and 12/31/2013) the sample employees are assumed to have 30 years of service at age 60. One retires at age 60, while the other retires at age 62 (with 32 years of service). The years of service credit will be applied to the final average salary at retirement using the benefit multiplier of 2.5%.

For Tier 3 employees (i.e. employees hired after 1/1/2014) the sample employees are assumed to retire with 30 years of service at age 60, or with 32 years of service at age 62.

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Table 6 CERS Hazardous Plan (No Social Security)							
Employee	Final Salary	Age	Service	From CERS DB Plan	From CERS CB Plan	Total Retirement Income	Ratio of Retirement Income to Final Salary
A - Tier 1	$72,000	55	25	$43,702	$0	$43,702	61%
B - Tier 2	$72,000	60	30	$52,442	$0	$52,442	73%
C - Tier 2	$72,000	62	32	$55,939	$0	$55,939	78%
D - Tier 3	$72,000	60	30	$0	$35,848	$35,848	50%
E - Tier 3	$72,000	62	32	$0	$40,877	$40,877	57%

As noted above in Table 1, the target replacement income for an individual earning between $70,000 and $80,000 at retirement is 77% of pre-retirement earnings. Table 6 shows that the Tier 1 Hazardous employee retiring at age 55 with 25 years of service would fall short of the target replacement ratio based on just the CERS benefit. As CERS Hazardous employees are not participating in Social Security, they do not pay Social Security taxes and therefore have larger take-home pay and can set aside funds in a personal savings account. If a CERS Hazardous employee saves 6.2% of pay in a personal savings account, the funds would accumulate to produce an additional income of 14% of final salary by age 55 after 25 years, 20% by age 60 with 30 years, and 23% by age 62 with 32 years of contributions. Tier 2 Hazardous employees retiring at age 62 would meet the replacement income target before taking into account any personal savings. Tier 2 Hazardous employees retiring at age 60 would need about 5% of pay from personal savings, which could be achieved by savings about 1.5% of pay during their career. Tier 3 employees retiring at age 62 would meet the replacement income target of 77% with personal savings of 20% of their final pay – which could be achieved by savings about 5.5% of pay during their career (less than the Social Security employee contribution rate of 6.2%). Tier 3 employees retiring at age 60 would need additional income from other sources to cover about 27% of their final pay. This could be achieved by saving 8.4% of pay annually during their career.

State Police Retirement System

Based on current pay levels for career employees the illustrations for SPRS participants assume employees today will retire at age 55 on a final salary of $78,000. Historical salary levels are projected back to date of hire using a 3% annual rate of pay plus the same merit/promotion rates as set out in the 2016 valuation report. For benefit tiers with a Normal Retirement Age of 60, employees are assumed to retire at Normal Retirement Age.

For Tier 1 employees (i.e. employees hired before 9/1/2008) the sample employee is assumed to retire with 25 years of service. The years of service credit will be applied to the final average salary

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at retirement using the benefit multiplier of 2.5%. For illustration purposes, the values are calculated as of January 2018.

For Tier 2 employees (i.e. employees hired between 9/1/2008 and 12/31/2013) the sample employee is assumed to retire with 25 years of service. The years of service credit will be applied to the final average salary at retirement using the benefit multiplier of 2.5%.

For Tier 3 employees (i.e. employees hired after 1/1/2014) the sample employees are assumed to retire with 30 or 32 years of service.

	Table 7 SPRS Plan							
Employee	Final Salary	Age	Service	From Social Security at 62	From SPRS DB Plan	From SPRS CB Plan	Total Retirement Income	Ratio of Retirement Income to Final Salary
A-Tier 1	$78,000	55	25	$16,080	$47,344	$0	$63,424	81%
B-Tier 2	$78,000	60	25	$16,656	$47,344	$0	$64,000	82%
C-Tier 2	$78,000	62	27	$18,072	$51,131	$0	$69,203	89%
D-Tier 3	$78,000	60	30	$19,404	$0	$37,549	$56,953	73%
E-Tier 3	$78,000	62	32	$20,640	$0	$42,883	$63,523	81%

As noted above in Table 1, the target replacement income for an individual earning $80,000 at retirement is 77% of pre-retirement earnings. As shown in Table 7, both the Tier 1 and Tier 2 employees exceed the target ratio. Tier 3 employee E would have sufficient income to maintain his/her standard of living retiring at age 62, whereas employee D to retire comfortably at age 60 would need to supplement their pensions with additional savings.

KTRS Plan

Based on current pay levels for career employees the illustrations for KTRS participants assume employees today will retire at age 55 or 60 with 30 years of service on a final salary of $85,000. Historical salary levels are projected back to date of hire using a 3% annual rate of pay plus the same merit/promotion rates as set out in the 2016 valuation report. For benefit tiers with a Normal Retirement Age of 60, employees are assumed to retire at Normal Retirement Age.

For Tier 1 employees (i.e. employees hired before 9/1/2008) the sample employee is assumed to retire at age 55 with 30 years of service. The years of service credit will be applied to the final average salary at retirement using the benefit multipliers of 2.0% for University and 2.5% for Non-University. For illustration purposes, the values are calculated as of January 2018.

For Tier 2 employees (i.e. employees hired between 9/1/2008 and 12/31/2013) the sample employee is assumed to retire at age 60 with 30 years of service. The years of service credit will be

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applied to the final average salary at retirement using the benefit multiplier of 2.0% for University and 2.5% for Non-University.

For new hires ("Proposal") the sample employees are assumed to retire with 30 and 32 years of service. For the years of service, the account will be developed based on a 9% employee contribution, and an employer contribution of 5%. These contributions are accumulated from date of hire to the new plan date earning 5.25% interest.

Table 8 KTRS

Employee	Final Salary	Age	Service	From Social Security	From KTRS DB Plan	From DC Plan	Total Retirement Income	Ratio of Retirement Income to Final Salary
University - Tier 1	$85,000	55	30	$17,916	$49,125	$0	$67,041	79%
University - Tier 2	$85,000	60	30	$19,080	$49,187	$0	$68,267	80%
Non-University - Tier 1	$85,000	55	30	$0	$61,407	$0	$61,407	72%
Non-University - Tier 2	$85,000	60	30	$0	$61,483	$0	$61,483	72%
New hire	$85,000	65	30	$23,592	$0	$37,699	$61,291	72%
New hire	$85,000	67	30	$27,048	$0	$40,202	$67,250	79%
New hire	$85,000	67	32	$27,660	$0	$43,274	$70,934	83%

Table 8 shows that University employees in Tier 1 or Tier 2 can expect to retire with an income that meets the target replacement ratio of 78%. Non-University employees retiring at or close to age 60 can also expect to meet the target replacement income ratio.

Table 8 also shows that new hires retiring at age 67 with 30 years of service meet the target, while new hires retiring at age 67 with 32 years of service exceed the target.

Employees who are not covered by Social Security will have additional take-home pay during their working career as they will not be paying FICA taxes. These individuals can build additional retirement income from savings to supplement the benefit they receive from the Commonwealth retirement plans.

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KLRP Plan

Based on current pay levels for career employees the illustrations for KLRP participants assume employees retire at age 65 on a final salary of $50,000. Historical salary levels are projected back to date of hire using a 4% annual rate of pay.

For Tier 3 employees (i.e. employees hired between 7/1/1980 and 12/31/2013) the sample employee has 18 years of service in Tier 3 and is assumed to retire with 35 years of total service, so will have 17 years' accrual under the defined contribution plan. The 18 years of Tier 3 service credit will be applied to the final average salary at retirement using the benefit multiplier of 3.5%. For the defined contribution plan the employee is assumed to maximize the employer contribution amount. For illustration purposes, the values are calculated as of January 2018.

For Tier 4 employees (i.e. employees hired after 1/1/2014) the sample employee has 3 years of service in the Cash Balance plan. That service will be converted into an account balance as if the new defined contribution plan had been in effect at the date of hire. For the years of service while in the Cash Balance plan the defined contribution account will be developed based on the full 6% employee contribution, and an employer contribution of 5%. These contributions are accumulated from date of hire to the new plan date earning 5.25% interest.

New members will accrue benefits in the defined contribution plan throughout their legislative service. For employees born after 1966, the Social Security Normal Retirement Age is 67. We have therefore illustrated the retirement benefits for a new hire who retires at age 65 with 35 years of service and at age 67 with 37 years of service. The new employee who retires at age 67 is also assumed to retire on a final salary of $50,000.

Table 9 KLRP

Employee	Final Salary	Age	Service	From Social Security	From KLRP DB Plan	From DC Plan	Total Retirement Income	Ratio of Retirement Income to Final Salary
Tier 3	$50,000	65	35	$17,772	$30,304	$11,487	$59,563	119%
Tier 4	$50,000	65	35	$17,772	$2,144	$23,753	$43,669	87%
New Member	$50,000	65	35	$17,772	$0	$26,481	$44,253	89%
New Member	$50,000	67	37	$20,208	$0	$29,864	$50,072	100%

Table 9 shows that all sample plan members' retirement income exceeds the target replacement ratio of 81% even before including any income sources from employment before entering service with the Commonwealth, during, or after retiring from the Commonwealth.

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KJRP Plan

Based on current pay levels for career employees the illustrations for KJRS participants assume employees retire at age 65 on a final salary of $125,000. Historical salary levels are projected back to date of hire using a 4% annual rate of pay.

For Tier 3 employees (i.e. employees hired between 7/1/1980 and 12/31/2013) the sample employee has 18 years of service in Tier 3 and is assumed to retire with 35 years of total service, so will have 17 years accrual under the defined contribution plan. The 18 years of Tier 1 service credit will be applied to the final average salary at retirement using the benefit multiplier of 2.75%. For the defined contribution plan the employee is assumed to maximize the employer contribution amount. For illustration purposes, the values are calculated as of January 2018.

For Tier 4 employees (i.e. employees hired after 1/1/2014) the sample employee has 3 years of service in the Cash Balance plan. That service will be converted into an account balance as if the new defined contribution plan had been in effect at the date of hire. For the years of service while in the Cash Balance plan the defined contribution account will be developed based on the full 5% employee contribution, and an employer contribution of 4%. These contributions are accumulated from date of hire to the new plan date earning 5.25% interest.

New hires will accrue benefits in the defined contribution plan throughout their career. For employees born after 1966, the Social Security Normal Retirement Age is 67. We have therefore illustrated the retirement benefits for a new hire who retires at age 65 with 35 years of service and at age 67 with 37 years of service. The new employee who retires at age 67 is also assumed to retire on a final salary of $125,000.

Table 10 KJRP

Employee	Final Salary	Age	Service	From Social Security	From KJRP DB Plan	From DC Plan	Total Retirement Income	Ratio of Retirement Income to Final Salary
Tier 3	$125,000	65	35	$30,792	$59,806	$29,896	$120,494	96%
Tier 4	$125,000	65	35	$30,792	$6,283	$64,365	$101,440	81%
New Member	$125,000	65	35	$30,792	$0	$68,531	$99,323	79%
New Member	$125,000	67	37	$35,532	$0	$79,713	$115,245	92%

Based on Table 1, the target replacement ratio range is about 82%. Table 10 shows that the Tier 3 sample employee's retirement income will exceed that target, as do the new members retiring at age 67.

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Retiree Healthcare

In evaluating overall retiree benefits, it is important to take a holistic view that encompasses retiree healthcare as well as income replacement. As detailed in Report #2, Kentucky provides public employees with post-employment healthcare benefits that significantly enhance the overall retirement package relative to typical private sector benefits, over and above eventual Medicare eligibility. Specific eligibility, coverage, benefit plan designs and retiree premium cost-sharing varies by retirement system as well as by benefit "tier".

As also detailed in this prior report, Kentucky's retiree health plans are comparatively better funded than those of many public employers, as the Commonwealth has established separate trusts to accumulate assets to advance fund the benefits. Nonetheless, Kentucky's Other Post-Employment Benefits (or "OPEB," the accounting term for all non-pension retirement benefits that primarily consist of healthcare) still carry an aggregate unfunded liability of approximately $5.9 billion as of June 30, 2016.

In evaluating this retiree healthcare component of the Kentucky retirement programs, our team's approach sought to identify opportunities for savings – potentially freeing up resources that might be reinvested in strengthening the Commonwealth's pension plans – while continuing to provide quality competitive coverage. Led by team members from PRM Consulting Group, this evaluation resulted in the following findings and recommendations.

- Harmonize retiree benefit plans with coverage having the same actuarial value as the standard health benefit plan provided to Commonwealth employees:
    - For retirees under age 65 (i.e. not yet eligible for Medicare), maintain the current program through KEHP.
    - For retirees age 65 and older (i.e. enrolled in Medicare), establish Medicare Advantage plans that provide coverage with an actuarial value comparable to the standard KEHP plan.
- Limit retiree healthcare eligibility to employees retiring directly from Commonwealth service.

KRS, LRP, JRP

For retirees not yet eligible for Medicare, coverage is provided through the Kentucky Employees Health Plan, the plan that covers active employees. Annually, KRS trustees select the specific health care plan that is provided premium-free. Retirees who choose to enroll in another health plan are required to pay the difference in premium. When retirees become eligible for Medicare, coverage is provided through a Medicare Advantage plan. The premium cost-sharing depends on the coverage tier and length of service.

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Benefit Tier	Service Requirement	Commonwealth Funding
Hired before 7/1/2003	20 or more years of service 15-19 years of service 10-14 years of service 4-9 years of service 0-3 years of service	100% KRS paid 75% KRS paid 50% KRS paid 25% KRS paid 0% KRS paid
Hired after 6/30/2003 and before 9/1/2008	10 or more years of service	$12.80 per month for each year of service, increased annually at 1.50%
Hired after 9/1/2008	15 or more years of service	$12.80 per month for each year of service, increased annually at 1.50%

For 2017, KRS trustees chose the Livingwell PPO as the "standard" healthcare plan for non-Medicare retirees. The key features of the plan are shown in the following table and compared to the features of the Medicare Advantage PPO. The table shows that Medicare retirees in the Medicare Advantage PPO have substantially smaller out-of-pocket costs than non-Medicare retirees in the Livingwell PPO. For example for a $100 specialist visit, the Non-Medicare retiree would pay $45 whereas the Medicare retiree would only pay $4 and for a $4,000 2-day hospitalization the non-Medicare retiree's out-of-pocket costs would be $800, whereas the Medicare retiree would pay $231.

Benefits and Coverage	Livingwell PPO		KRS Medicare Advantage PPO
	In-Network Services	Out-of-Network Services	All Services
Annual Deductible Individual	$750	$1,500	$320
Annual Out-of-Pocket Maximum Individual	$2,750	$5,500	$1,000
Primary Care Physician	$25	40%	4%
Specialist	$45	40%	4%
Office Surgery	$25 PCP $45 Specialist	40%	4%
Urgently Needed Care (Contracted Providers) Cost Share (Waived if admitted to the hospital within 24 hours for the same condition).	$50	$50 (conditions must be met)	Lesser of $65 or 4%
Emergency Department Services (waived if admitted to the hospital within 24 hours for the same condition)	$150 then deductible then 20%	$150 then deductible then 20% (conditions must be met)	Lesser of $65 or 4%

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Benefits and Coverage	Livingwell PPO		KRS Medicare Advantage PPO
	In-Network Services	Out-of-Network Services	All Services
Ambulance Services	20%	20% (conditions must be met)	4%
Inpatient Hospital Care	20%	40%	$231 per admit

Members of the Legislative and Judiciary retirement systems and their dependents are also covered for retiree medical benefits. The amount of the premium paid by the retirement system varies by years of service.

Years of Service	Judicial	Legislators
20 or more	100%	100%
15, but less than 20	75%	75%, plus 5% per year in excess of 15
10, but less than 15	50%	50%, plus 5% per year in excess of 10
4, but less than 10	25%	25%
Less than 4	0%	0%

Teachers Retirement System

Similar to KRS participants, Medicare-eligible TRS members receive substantially richer benefits than their active counterparts.

Benefits and Coverage	Livingwell PPO		TRS Medicare Advantage PPO
	In-Network Services	Out-of-Network Services	All Services
Annual Deductible Individual	$750	$1,500	$150
Annual Out-of-Pocket Maximum Individual	$2,750	$5,500	$1,200
Primary Care Physician	$25	40%	4%
Specialist	$45	40%	4%
Office Surgery	$25 PCP $45 Specialist	40%	4%
Urgently Needed Care (Contracted Providers) Cost Share (Waived if admitted to the hospital within 24 hours for the same condition).	$50	$50 (certain conditions must be met)	$35

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Benefits and Coverage	Livingwell PPO		TRS Medicare Advantage PPO
Emergency Department Services (waived if admitted to the hospital within 24 hours for the same condition)	$150 then deductible then 20%	$150 then deductible then 20% (certain conditions must be met)	$50
Ambulance Services	20%	20% (certain conditions must be met)	4%
Inpatient Hospital Care	20%	40%	$200 per admit

Recommended Options

1. Pursue harmonization of the level of benefits for KRS, LRP, and JRP non-Medicare and Medicare retirees so that the basic plan and benefit provided to the retirees is consistent with the Livingwell PPO coverage provided to active Commonwealth employees, rather than being richer and costing more.[21] The premium for a medical plan with benefits comparable to the Livingwell PPO and meeting the requirements of the Centers for Medicare and Medicaid Services is expected to be about 25% lower than the current cost.
2. Similarly, pursue harmonization of the level of benefits for TRS Medicare-eligible retirees so that the basic plan and benefit provided to the retirees is consistent with the Livingwell PPO coverage provided to Commonwealth employees.[22] TRS retirees could further be offered a choice between the lower cost Medicare Advantage PPO plan with benefits comparable to the Livingwell PPO and the current Medicare Advantage PPO plan design. Retirees would be responsible for the full premium of the higher cost more generous coverage, therefore retirees could choose the plan design that best meets their family needs. Under this approach, preliminary analysis indicates that under current market conditions, no employer subsidy would be required for Medicare-eligible coverage above the employee contributions made during active years of service.

[21] *KRS 61.702 (1) (b) "The board may authorize present and future recipients of a retirement allowance from any of the three retirement systems to be included in the state employees' group for hospital and medical insurance and shall provide benefits for recipients equal to those provided to state employees".*

[22] *KRS 61.702 (1) (b) "The board may authorize present and future recipients of a retirement allowance from any of the three retirement systems to be included in the state employees' group for hospital and medical insurance and shall provide benefits for recipients equal to those provided to state employees".*

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3. Harmonize the Medicare Advantage plan provided to members of the KJFRS with the coverage provided to KRS and TRS members. In addition, by pooling the coverage for purposes of obtaining the premium, the KJFRS will be able to leverage the additional scale of the other plans to obtain more competitive premium rates.

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IV. Funding

The current variety of mechanisms for funding pensions has, as illustrated in Report #2, contributed to the growth in unfunded liability and stress on the plans. Improving the financial health of the pension plans requires not just sustainable funding, but a mechanism for assessing and collecting the funding that addresses past deficiencies.

The funding method authorized for each plan is described in the table below:

Pension Plan	Funding Method	Source
KERS-NH, KERS-H, SPRS	Employer contributes the full actuarial contribution (normal cost plus amortization of unfunded liability) as a percentage of creditable compensation (payroll), based on level percent of payroll amortization and entry age normal funding method. The board sets the percentage each biennium based on the prior June 30 valuation. Effective July 1, 2014, the board cannot change rates for the second year of the biennium.	KRS 61.565
CERS-NH, CERS-H	Same as KERS-NH et al above, except that the board may change the percentage for the second year of the biennium based on the updated valuation.	KRS 61.565
TRS	The Commonwealth pays the entire cost of employer contributions for non-university, board of education employee pensions. The employer matches employee contributions of 9.105% of non-university salaries for pension (7.625% for university salaries), and contributes an additional 3.25% for the system's unfunded obligations with interest and for the medical insurance (OPEB) fund. The amortization of past COLAs, annuities, and sick leave allowances "may be funded by annual appropriations from the state," which was specified as a special appropriation rate of 2.94% of salaries for FY2018. TRS requests additional appropriation to cover the shortfall between the statutory contribution and the actuarial contribution. Unlike the other systems, the contribution is currently not tied to the actuarial calculation of normal cost or unfunded liability, and the amortization method is set by board policy.	KRS 161.550 KRS 161.553
JRP, LRP	The state contributes the normal cost plus interest on the unfunded liability plus 1% of the unfunded liability per year. The board adopts the actuarial assumptions, including whether entry age normal or projected unit credit funding method is used.	KRS 21.525

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The funding mechanism should be based on the actuarially determined contribution (ADC) in a method sufficient to make the plan actuarially sound and on a sustainable path. The statutory mechanism for TRS has provided budgetary flexibility to the Commonwealth but not the funding discipline to consistently fund the benefit structure. Tying the employer contribution to a fixed percentage of payroll is associated with significantly lower funding of required contributions. According to a NASRA review of data from FY2001 to FY2013, state plans that had a contribution tied to the actuarial requirement funded on average 98% of the ARC over the period, while the plans that had a fixed contribution, such as TRS, funded only 79% of the ARC.[23]

The timing discrepancies caused by the Commonwealth's biennial budget and the lag between actuarial valuations and application of the recommended employer contribution to the budget are not uncommon among state plans. However, the financial condition of the Kentucky plans highlights the challenge. The high number of quasi-governmental employers participating in the KERS and CERS plans also creates relatively unique issues around enforcement and compliance with a funding method based on a common employer contribution percentage applied to current payroll.

It is also common for state multi-employer plans to allocate pension employer contributions out to employers as a percentage of payroll, even in cases where the amortization method is level dollar rather than level percent. In the last several years, CalPERS has implemented a slightly different method. The valuation report and subsequent bill for the upcoming fiscal year includes a percentage of payroll amount for the normal cost for that employer, and a dollar amount for the unfunded liability associated with that employer's liability based on service accruals earned by employees at that employer. The unfunded liability is presented as a fixed dollar amount due for that fiscal year, with an estimate of the next year's liability payment for planning purposes. The actual unfunded liability amount due for each year is revised annually based on updated valuations. This makes the employer contributions received by non-state CalPERS participating employers more stable and predictable, while reducing incentives to game the system through changes in employment practice and payroll.

Recommendations for Funding Method

1. The funding mechanism for all plans should be based on the actuarially determined contribution (ADC) in a method sufficient to make the plan actuarially sound and on a sustainable path. Commit to full funding of the employer contributions on an annual basis, using prudent actuarial assumptions and methods as outlined within this report.

2. Allocate the contribution out to individual employers in KRS plans, including CERS, through a percentage of payroll for the normal cost, where relevant, and a dollar amount for the unfunded

[23] *NASRA, The Annual Required Contribution Experience of State Retirement Plans, FY 01 to FY 13, March 2015*

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liability amortization associated with that employer's liability for service accrued at the employer. This would fairly allocate liability across state departments for employees that worked in multiple departments, for example, rather than charging the last department of employment for the entire liability. An alternative would be to charge the normal cost based on a percentage of payroll, and allocate unfunded liability based on the headcount of retirees distributed according to their final employer.

It is also essential to recognize that the employers and departments that have participated in the plans share in responsibility for the unfunded liability for actives and retirees based on past service. The shift of future service to the DC plan in KERS-NH, CERS-NH, JRP and LRP requires allocating unfunded liability either as a dollar amount or based on the entire payroll of the employer, as pensionable payroll would no longer be appropriate going forward.

3. Develop a mechanism within the framework of the Commonwealth's biennial budget process to ensure that each year's payments represent the full annual funding requirement. In past years, payment shortfalls have periodically resulted from the disconnect between biennial budgets and annual actuarial valuations. For example, a reserve appropriation might be established to help provide for full annual funding. At a minimum, the actuary should estimate the second year's contribution.

4. If future teachers begin to participate in Social Security in conjunction with a redesigned state retirement benefit, local school districts could be required to pay the 6.2% employer contribution for such Social Security participation. This approach would better align this salary-driven benefit cost with the salary-setting negotiations and decision-making occurring at the local level. Because this cost would only be applicable for new hires, the budget impact for school districts would phase in gradually, providing school districts with time to manage and plan for this new fiscal responsibility. In our benchmarking of 20 states detailed in Report #2, teachers participate in Social Security in 13 of those states, and local school districts often fund some or all of the employer contribution for Social Security. Furthermore, in Kentucky the school districts already pay Social Security for the non-teaching employees that participate in CERS-NH.

5. Explore caps or collars on the annual percentage change in the required overall employer contribution percentage for CERS-NH and CERS-H. Participating employers in the CERS plans are required by law to pay the full ADEC in each year, and have done so over time. Changes in actuarial assumptions and losses due to experience can cause sudden and volatile changes in the ADEC. Although deviating from making the actuarially-required contribution on a sustained basis is a concern, a cap on how much the employer contribution percentage may change from year to year can help smooth budgetary increases over time while the benefit liabilities are consistently and conservatively valued across all plans on a transparent basis. For example, the employer contribution percentage could be allowed by statute to increase or decrease by no more than 5-10% in an individual fiscal year.

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Recommendations for Funding Alternatives

There are several alternative considerations for structuring or re-structuring the funding of the pension systems. These include:

- Pension Obligation Bonds (POBs)
- Voluntary Buyouts/Conversion of Accrued Service to Deferred Compensation Plan
- Pension Risk Transfer

Pension Obligation Bonds

A POB is a taxable bond issued to provide assets to fund pension liabilities. The common structure is for a plan sponsor to issue a POB, using the bond proceeds to provide assets to the pension fund. This increases the funded ratio of the fund with the hope that the proceeds will earn a higher return than the cost of the interest on the bonds, creating positive arbitrage. *We do not recommend the Commonwealth pursue this form of a POB for an open-ended transfer of proceeds to fund assets in the hopes of generating positive arbitrage*. As one of the goals of this reform project is to reduce risk and improve sustainability, a strategy which relies on risk to succeed is not preferred.

Further, the rating agencies have taken increasingly critical views of this type of POB, indicating that issuing POBs of the magnitude required to make significant improvement would stress the Commonwealth's bond capacity and potentially lead to negative action, increasing the costs of future borrowing. Fitch Ratings has stated that it "views the impact of pension obligation bonds (POBs) on an issuer's credit quality to range from neutral to negative in most situations."[24] Moody's and Standard and Poor's have both highlighted the risk involved in the arbitrage strategy. In general terms, Moody's has commented "There is also the risk that returns on the invested pension bond proceeds may underperform expectations, leaving the government to make up the lost investment returns in addition to paying debt service on the bonds. For these reasons, extensive use of bond financing for pensions could be viewed as credit negative."[25]

For example, in late 2016 the State of Alaska authorized as much as $3 billion of POBs, and Moody's responded "While we generally have considered Pension Obligation Bonds neutral at best, in this case we find them to be more negative than usual due to the state's expectation of significant savings, the large role this debt will play in the state's overall debt portfolio, and the fact that under the governor's proposed fiscal structure the state's general fund would be in a weaker position to fund additional pension contributions if the invested pension assets underperform."[26] Standard and

[24] *Fitch Ratings, Pension Obligation Bonds: Weighing Benefits and Costs, March 31, 2015*

[25] *Moody's Investors Service, Adjustments to US State and Local Government Reported Pension Data: Frequently Asked Questions, August 17, 2012*

[26] *Moody's Investors Service, Alaska Pension Obligation Bond Corp. Credit Opinion, October 7, 2016*

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Poor's went further and placed the State on negative watch with the intent to downgrade the State's ratings if it completed the POB transaction, stating "Because of the possibility that pension system investment returns could fall short of actuarial assumptions or worse--below the interest cost on the POBs--we view the state's strategy to debt finance its pension liabilities as increasing the risk to its budget." Ultimately the State of Alaska did not complete the POB transaction.

A use of a POB as a means of funding a program that would terminally fix out liability, reduce risk, and set costs, such as the following options, would however be worth further consideration.

Optional Buyouts/Conversion of Accrued Service to Deferred Compensation Plan

The Commonwealth could offer to buy out or convert accrued service and roll it over to a deferred compensation plan, in conjunction with the proposal to offer defined contribution plans for new service/new hires. This mechanism would be similar to what was offered in KRS 61.522, which provided for nonprofit nonstock corporations participating in KRS to withdraw from the system by funding their liability. Employees had the option to leave their accrued service with KRS until retirement, or withdraw their account balances, which are defined as the employee's accumulated pension contributions based on the 5% of pay contribution, and roll it over to the new tax-deferred retirement program offered by the employer. Two employers to date, Kentucky Employers' Mutual Insurance (KEMI) and the Commonwealth Credit Union (CCU), have used KRS 61.522 to withdraw from KRS. KRS provided KEMI employees with a 60-day notice period to declare their intent to transfer to the new KEMI plan. It is our understanding that, by offering both a DB plan that would maintain the overall benefit structure and carry over the employee's service credit from the KRS plan, and by offering a DC plan with an employer match of 50% or 100% of the employee's account balance, KEMI incentivized all of its employees to transfer from KRS to KEMI.

The State of Florida offered a similar option when it first established the Florida Retirement System (FRS) Investment Plan defined contribution 401(a) plan option in June 2002. A total of over 21,000 existing employees, or 3.5% of covered active members, chose to convert the present value of their FRS pension plan accrued benefit into the Investment Plan option during an initial enrollment period of June 2002 to February 2003.[27] Subsequently, voluntary selection of the Investment Plan option for new hires has ranged between 21% and 30% each year since FY2005. In contrast, the Ohio Public Employees Retirement System has offered the option of a hybrid DB-DC plan (the Combined Plan) and a Defined Contribution plan (the Member-Directed Plan) alongside the traditional Defined Benefit plan since 2003, and roughly 2% of employees hired within 5 years prior to 2003 converted to one of the optional plans, and roughly 5% of hires since 2003 have selected one of the optional plans.[28]

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[27] *Florida Retirement System, Update on Choice in the Florida Retirement System Fact Sheet, March 2017*

[28] *Data file provided by Ohio PERS, November 2016*

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The Fiscal Impacts section has further detail on the estimated potential savings to the Commonwealth and reduction of unfunded liability, based on a range of assumptions and potential outcomes. The estimates assume that the Commonwealth would fund the rollover amounts through POB financing for the KERS-NH and CERS-NH systems. The CERS-NH plan potentially has sufficient assets to fund conversion amounts, but could receive greater funding benefit through a POB financing. As there are many employers in the system, a potential solution to fund a POB for CERS would be for the state or a state-related entity to issue the bonds with debt service supported by an assessment to the CERS employers.

6. Offer an optional buyout/conversion of accrued service program to employees other than those in the cash balance plan for KERS-NH and CERS-NH members. The employees in the cash balance plan would have a mandatory conversion of their accrued benefit to the deferred compensation plan. The optional buyout would be based on the actuarially accrued benefit through the date of the proposed freeze or conversion to a DC plan.

Pension Risk Transfer

An additional option is to enter a transaction with an insurance company to exchange risk and potentially administration burdens. In a risk transfer "buy-out" structure the plan purchases an annuity for all or some portion of retirees. The plan pays the insurance company up-front for the annuity, and the insurer then administers the annuity and takes the investment, longevity, and other risks from the plan in exchange for the up-front fixed fee. This transaction is irrevocable.

An alternative structure is the pension "buy-in," where the plan purchases coverage for retiree liabilities at a set price and the insurer manages the investment, longevity and other risk, but the plan can terminate the agreement, remains the primary obligor of the liability, and continues to administer the benefits.

Pension risk transfer is a $30 billion annual market for private plans in the U.S. including buy-outs and buy-ins.[29] Although pension risk transfer is a developed market in the United Kingdom, it accelerated in the U.S. in 2012 when General Motors and Verizon executed $25 billion and $8 billion buy-outs of their pension liability, respectively.[30] However, there has been little activity in the public sector for a number of reasons:

- A buy-out is priced at the full value of the liability. Since most public plans are funded far below 100%, and are seeking solutions for making annual contributions affordable and plan funding sustainable, plan sponsors lack the ability to fund the transaction.

[29] *LIMRA Secure Retirement Institute Quarterly U.S. Group Annuity Risk Transfer Survey, March 1, 2017*

[30] *Prudential Retirement, Preparing for Pension Risk Transfer, July 2016*

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- The higher discount rates used in the public sector compared to private sector requirements, as illustrated in Report #2, reduce the feasibility of the buy-out or buy-in. The insurance company will price the buy-out based on corporate bond rates similar to those used in private pension accounting, and similar to the type of investments the insurer will use to match the liabilities while meeting regulatory requirements.
- The financial focus in the public sector is typically on balancing budgets and sustainably providing services, rather than reducing liability or managing risk.
- Shifting administration of the retirement benefit through a buy-out annuity can be perceived as “privatizing” the benefit, although the benefit itself is protected and customer service may potentially improve.

The significant reduction in discount rates for the KRS plans from December 2016 through the present improves the relative attractiveness of the pricing of a buy-out or buy-in, compared to other public plans. Applying the discount rates recommended in this report to the other plans would have a similar impact. However, the plan under-funding still provides a challenge to buy-outs in particular. There may be a benefit to the Commonwealth of shifting the risk for particular retiree segments or population groups to an insurance structure.

7. Explore a pension risk transfer buy-out or buy-in program, where a plan sponsor purchases annuities from an insurer to either completely and permanently shift liability, risk, and benefit administration from the system to an insurer, or to shift risk on an annual basis. Although such an approach may not be financially viable on a full scale, the systems could explore whether a partial risk transfer for particular segments or groups of retirees could be effective.

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V. Investment Practices and Approach

The Commonwealth of Kentucky Retirement Systems currently consist of three separate entities with their own investment teams operating autonomously. The three entities consist of the Kentucky Retirement System ("KRS"), Teachers Retirement System ("TRS") and Judicial Form Retirement System ("JFRS"). The governance structure of these three systems is outlined below, including the recent changes as a result of the Governor's reorganization Executive Order dated June 17, 2016 and further reforms enacted in 2017 SB2 on March 10, 2017:

KRS	TRS	JFRS
As provided by KRS 61.645	*As provided by KRS 161.250*	*As provided by KRS 21.540*
13-member Board of Trustees • 6 Trustees Elected o CERS (3), KERS (2), SPRS (1) • 6 Appointed by Governor o 2 with "investment experience" o 1 with knowledge of pension impact on local gov't o 3 from list provided by KLC, KACO, KSBA • Sec. of the Personnel Cabinet	9-member Board of Trustees • 7 Trustees Elected o Active Teachers (4), Retired Teacher (1), "Lay" Trustees (2) • State Treasurer • Commissioner of Education	8-member Board of Trustees • All Appointed o 3 by Supreme Court o 1 by Speaker of House o 1 by Senate President o 1 by Speaker/President jointly o 2 by Governor
As amended by SB 2 (2017 RS)	*As amended by SB 2 (2017 RS)*	*As amended by SB 2 (2017 RS)*
17-member Board of Trustees • 6 Trustees Elected o CERS (3), KERS (2), SPRS (1) • 10 Appointed by Governor o 6 with investment experience o 1 with knowledge of	11-member Board of Trustees • 7 Trustees Elected o Active Teachers (4), Retired Teacher (1), "Lay" Trustees (2) • State Treasurer • Commissioner of Education	8-member Board of Trustees • All Appointed o 3 by Supreme Court o 1 by Speaker of House o 1 by Senate President o 1 by Speaker/President jointly o 2 by Governor with investment experience

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pension impact on local gov'ts o 3 from list provided by KLC, KACO, KSBA • Sec. of the Personnel Cabinet	• 2 Appointed by Governor with investment experience	

Source: Public Pension Investment Return Assumptions / Board Structures, Public Pension Oversight Board, February 27, 2017; 2017 SB2

The above Boards are responsible for oversight of both investment and benefit administration functions for their respective retirement systems and are supported by various staff members. In the following sections, we will explore some of the options that should be considered for improving the overall governance of these systems.

There are a range of governance structures in place at the state level for retirement systems. Variation occurs in how much centralization and consolidation occurs among types of plans and members, i.e. state civilians, public safety, teachers, local government workers, etc., as well as the extent to which administrative and investment functions are consolidated, segregated, or administered by a sole fiduciary or limited group of fiduciaries, usually elected and appointed officials. It is important to note that there are success stores for each variation and structure, and that the structure alone will not produce positive outcomes. However, there are potential benefits to particular structures that can be identified and in some cases quantified, and may better support the Commonwealth's goals and challenges.

Full Consolidation (Administrative & Investment)

The first and most comprehensive option would be the complete consolidation of both the administrative and investment functions for all three systems. This would result in a single administrative board and a single investment board that oversee all of the underlying systems. The most obvious benefit of full consolidation is the significant cost savings from reduced staff, systems, rent, etc., such as the $347 million net present value savings reported by the Indiana Public Retirement System as a result of fully consolidating their separate state and teacher systems (source: Fiscal 2014 Financial Report). Additional benefits would include a greater level of consistency across all three systems and the various investment-related benefits that are outlined in more detailed in the next section. However, this would represent a significant change from the Commonwealth's current structure and would be expected to entail a very difficult transition process over an extended period of time. In the case of Indiana, it took three years for legislative approval and a gradual consolidation process.

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Although the full consolidation approach is likely the most logical if starting a retirement system from scratch, the difficulties involved in the consolidation process represent a significant barrier that may make full consolidation unattractive given the systems' current structure. As discussed in the following section, a partial consolidation approach that focuses on the investment side can achieve many of the same benefits with far less disruption to ongoing operations.

Partial Consolidation (Investment Only)

While there are clear differences in benefits administration between the three systems that would likely make full consolidation challenging, the investment functions and resources needed are very similar and therefore may be redundant in many areas. As a result, PFM believes there may be significant benefits to the systems by consolidating the investment functions under a centralized investment team that reports to a new Investment Committee comprised of board members with financial, investment, accounting, actuarial, or economics expertise. The following is an outline of the potential benefits and costs of consolidating the investment functions:

Benefits of a Single Investment Team

- ***Lower overall costs for staff, infrastructure, subscriptions, etc.***

Consolidation of staff, systems, etc. can be expected to significantly reduce overall costs of managing the systems, similar to the Indiana example above but restricted to investment-related functions.

- ***Improved access and leverage with money managers and third-party vendors***

The combined asset base of all three systems will improve the ability to negotiate reduced fee schedules with money managers, consultants, custodians, etc. and may provide access to additional managers, especially for the smaller plans

Based on the KRS pension fund's manager lineup and tiered fee schedules as of June 30, 2016, *aggregating the assets from KRS, TRS and JFRS would reduce the weighted average manager fee by roughly 0.02%, which equates to a savings of more than $5 million across all systems* – this does not account for the additional savings through further fee negotiation and will become even more significant as the plans shift away from alternative investments that do not typically have tiered or reduced fee schedules.

- ***Easier to hire talented investment professionals***

Hiring staff for a single team instead of three separate teams will allow the systems to select only the most qualified candidates and the larger combined asset base may attract more talented investment professionals.

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- ***Simplified governance and monitoring***

A single investment team will tend to invest the plans in a similar set of managers and utilize a similar set of consultants, greatly reducing the overall time spent on due diligence, monitoring and reporting.

- ***Improved consistency in actuarial return assumptions***

At a minimum the Investment Committee would provide a single set of capital market assumptions to apply to actuarial analysis and valuations. While responsibility for conducting the actuarial valuation, hiring the professionals and adopting the assumptions could be left with the benefits administration systems, as is the case in Massachusetts, Oregon and Wisconsin, which have similar segregated administration and investment entities, it may be more appropriate to charge the Investment Committee with responsibility for adopting the actuarial assumptions and ensuring consistency for the state and local systems and their budgeting. The segregated Investment Board adopts the assumptions in Iowa, for example.

- ***Coordinated & consistent investment philosophy, process and outlook***

Investment decisions for all plans will be based on the philosophy and outlook of a single investment team and its consultants, resulting in a consistent approach and best ideas being implemented across all plans.

- ***Larger plans have been shown to achieve higher returns***

A study by the Center for Retirement Research at Boston College found that returns from 1990 – 2012 increased as plan size increased.[31]

Plan Size (assets)	Geometric Return 1990 - 2012 (DB Plans)
< $100m	6.5%
$100 - $500m	7.5%
$500m - $1b	7.8%
$1b - $5b	8.0%
> $5b	8.3%

- ***Improved transparency and monitoring for legislators, taxpayers and other parties***

Having a single investment team and a more concentrated list of investment managers and third-party vendors will allow for more consistent reporting and likely improve the ability for interested parties to access public information on the systems.

[31] *Center for Retirement Research at Boston College, Investment Returns: Defined Benefit vs. Defined Contribution Plans, December 2015*

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Costs of a Single Investment Team

- ***May lose some customization of strategy for each system***

Consolidated and streamlined investment process may limit the amount of portfolio customization between the plans, but each plan can still maintain its own return objectives, asset allocation strategy, liquidity constraints, etc. that are customized based on plan demographics and assumptions.

For the reasons outlined above, we recommend strong consideration of consolidating the systems' investment functions into a single, centralized team under a common Investment Committee or Board that would handle all investment matters in support of each system. Although there are many benefits to consolidation, likely the most noticeable and immediate will be the monetary savings by removing duplicate staff, infrastructure, subscriptions and other resources, as well as negotiating lower fees with money managers and other plan providers. The savings from consolidation could help increase net investment returns to the plans, thereby improving the future outlook and funded ratios.

In addition, this consolidated investment team approach would mitigate the most adverse consequences of separating CERS from the rest of KRS, as recently contemplated in 2017 SB 226. All of the same benefits and costs outlined above for the consolidation of the investment teams would apply to the decision of whether CERS should remain part of KRS or become a separate entity from an investment standpoint. The following is an excerpt of the analysis provided in Report #2 that discusses just a small aspect of the potential investment-related impact on CERS and the other plans if they were to separate:

> *More than one-third of the portfolios are invested in managers with tiered fee schedules. Separating CERS assets from the other plans will reduce purchasing power and result in higher fees based on the current tiered fee schedules. The CERS weighted average fees would remain largely unchanged if they could retain the same contract terms, increasing by less than 1bp ($450k for Pension, $210k for Insurance). However, KERS & SPRS weighted average fees would be more impacted due to smaller asset size, increasing by roughly 3bps ($805k for Pension, $260k for Insurance). These estimates are based on the manager fee schedules outlined in RV Kuhn's quarterly report plus the private equity manager fee schedules from the internal KRS report. The fee impact noted above is likely understated as it would also limit the ability to negotiate reduced fees in the future as the aggregate asset size is reduced if the plans are separated. This may also impact KRS' ability to negotiate fees with other providers (i.e. consultants, custodian, etc.). Lastly, separating illiquid alternative assets (private equity, etc.) may not be possible in near-term.*

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In addition to the potential additional investment management fees of $1.7 million identified above from separating CERS, a preliminary analysis by KRS leadership estimates potential recurring additional costs from operating separate administrative systems for KERS/SPRS and CERS of at least $3.6 million or more across the systems for duplicative salaries, insurance, custodial and professional services, and IT needs. This represents additional resources that would otherwise be used to build the asset base and pay retiree benefits, redirected to the goal of decentralization that has no corresponding quantitative benefits to offset these added costs.

Partial Consolidation (Actuarial Assumptions)

Another area of partial consolidation that could be considered is the establishment of a joint or conference committee with authority to set actuarial assumptions, such as the discount rate. In the event investment function consolidation is not pursued, this would be an alternative to establishing consistent actuarial methodology and assumptions. A centralized conference committee structure for actuarial assumptions as currently used by states such as Florida, Washington and South Carolina, could potentially include representation from executive finance and budget officials, the Legislature and Legislative Research Committee, and other state officials.

This model would provide a focused and clear fiduciary role for the members setting the assumptions, and would potentially ensure consistency across the various systems and enhance the independence to ensure the actuarial assumptions are realistic by separating benefits from the assumptions. This would be helpful with the current structure of three retirement systems, and even more so if CERS is split off for a fourth system with its own board and actuarial assumptions.

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VI. Fiscal Impact of Recommendations

The revised assumptions already adopted by KRS, recommended changes in assumptions for other plans, and the benefit design recommended options presented here entail significant financial impacts for the Commonwealth and participating local employers. The impacts of these changes and recommendations are broadly illustrated below through the General Fund ADEC impact to the Commonwealth and estimated funded ratio for representative years, including FY2019, the first fiscal year that changes made in 2017 would impact the ADC. The contribution impacts for CERS-NH and CERS-H are illustrated through the employer contribution as a percentage of payroll rather than General Fund contributions.[32]

Please note: the estimated fiscal impacts of recommended options herein are presented for the purposes of evaluating and planning potential reforms. These estimates should not be relied on for actuarial valuation purposes or for the purpose of setting annual budget amounts or required employer contributions. The estimates were prepared based on the actuarial valuation of June 30, 2016, reflecting the then-current actuarial assumptions, alternative assumptions, and plan modifications. Experience over the past year has already deviated from what was assumed, and some of the actuarial assumptions effective at that time have been modified in ways that vary from what has been modeled for this Report. It is our understanding that assumptions at other systems may currently be under review. As such, actual results and future actuarial measurements will vary year-by-year – potentially materially - from the estimates presented in this Report, due to factors such as modification of assumptions, experience differing from that anticipated, and changes in provisions or law.

Scenario Estimates

The revised assumptions are estimated to significantly increase the required employer contribution to KERS-NH in the short-term. The General Fund portion of the KERS-NH employer contribution is estimated to increase by over 70% in FY19 to $521 million. A more moderate impact in annual required contribution compared to the prior/published June 30, 2016 assumptions is estimated by FY29, but by then the funded ratio is estimated to be 45.4%, more than double what it would have been under the old assumptions, when the level percent of payroll amortization would have maintained the same sub-20% funded ratio if all assumptions were met for over ten years.

[32] *Certain actuarial data and calculations were developed by Cavanaugh Macdonald Consulting LLC, plan actuaries for the KRS and TRS systems as of the June 30, 2016 valuation, and Bryan, Pendleton, Swats & Macallister LLC ("BPSM"), plan actuaries for the KJFRS plans as of the June 30, 2016 valuation, under subcontracts with PFM in order to help ensure the accuracy of the estimates and projections herein. Estimates of impacts to the Commonwealth's budget, or of comparisons between scenarios and baselines, were compiled by PFM based in part on information provided by the Office of the State Budget Director. In certain cases, where noted, if information had not been requested of the plan actuaries in time for completion of the report, the calculations by the plan actuaries were supplemented by high-level estimates prepared by PRM.*

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The combined impact of implementing all the recommended and potential benefit options is estimated to reduce the required employer contribution by over $100 million of General Fund impact annually. In the short term, until roughly FY2027, the revised contribution after savings would still be higher than under the previous assumptions as the plans funding levels improve. Later, as the contributions in the old back-loaded schedule increase, the savings result in an estimated reduced General Fund expenditure.

Kentucky Employee Retirement System - Non-Hazardous (KERS-NH)

#	Scenario Description	FY19 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY29 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY34 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY19 Funded Ratio	FY29 Funded Ratio	FY34 Funded Ratio
KERS NH 1	Baseline: - 6.75% discount rate, 4% payroll growth	299.8	445.8	534.6	12.9%	18.0%	32.9%
KERS NH 1	Impact of revised baseline, compared to published actuarial assumptions	221.3	30.9	(82.0)	0.5%	27.4%	31.7%
	Revised Baseline - 5.1% discount rate, 0% payroll growth	**521.1**	**476.7**	**452.6**	**13.4%**	**45.4%**	**64.6%**
KERS NH 2	Savings: Eliminate past COLAs from future payments to current retirees	(54.4)	(52.8)	(50.5)	3.2%	4.1%	3.2%
KERS NH 3	Savings: Freeze service accruals in plan on 7/1/17, future service and new hires in DC plan	(25.5)	(33.6)	(34.3)	-1.2%	-12.2%	-14.8%
KERS NH 4	Savings: Combination of Scenario 3 and conversion of actuarial value of accrued service in Tier 3 plans to a lump sum contribution to the DC plan defined in Scenario 3	(25.8)	(36.9)	(51.1)	-2.1%	-9.5%	-11.4%
KERS NH 5	Savings: Retirement at age 65, eliminate unreduced retirement with 27 years of service or years of service plus age of 87 after 7/1/2017	(47.9)	(43.0)	(38.1)	0.3%	-2.0%	-1.5%
KERS NH 7	Savings: Eliminate use of accrued sick/comp time toward calculations for active employees and new hires, convert time to lump sum payment of 25%	(10.1)	(8.4)	(7.6)	0.1%	-0.3%	-0.2%

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#	Scenario Description	FY19 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY29 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY34 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY19 Funded Ratio	FY29 Funded Ratio	FY34 Funded Ratio
KERS NH 8	Savings: net reduction in ADC from combination of all scenarios above.	(117.0)	(116.2)	(110.4)	2.9%	-9.2%	-12.2%
	Revised ADC after implementation of all scenarios, above.	**404.1**	**360.4**	**342.2**	**16.3%**	**36.2%**	**52.4%**

The revised assumptions would increase the required employer contribution for KERS-H by 85% in FY2019, while having the effect of reducing the estimated funded ratio that year from 59% to 51%. The funded ratio would then increase faster than in the published/baseline assumptions. After assuming implementation of all the recommended scenarios for the hazardous plans, including retaining the existing benefit structure for actives and new hires, the impact of the revised baseline assumptions on the General Fund contribution is roughly halved in FY2019, and the funded ratio would be improved to over 80% by FY2029.

Kentucky Employee Retirement System - Hazardous (KERS-H)

#	Scenario Description	FY19 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY29 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY34 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY19 Funded Ratio	FY29 Funded Ratio	FY34 Funded Ratio
KERS H 1	Baseline: - 7.5% discount rate, 4% payroll growth	20.5	28.1	32.7	59.0%	69.1%	77.6%
KERS H 1	Impact of revised baseline, compared to published actuarial assumptions	17.3	6.8	0.4	-7.9%	6.7%	8.9%
	Revised Baseline - 6% discount rate, 0% payroll growth	**37.8**	**35.0**	**33.2**	**51.2%**	**75.9%**	**86.5%**
KERS H 2	Savings: Eliminate past COLAs from future payments to current retirees	(3.2)	(3.0)	(2.9)	3.6%	2.4%	1.6%
KERS H 6	Savings: Establish minimum retirement age of 60 for all active employees with no future application of the unreduced early retirement provision based on years of service for those not eligible as of 7/1/2017	(3.5)	(2.5)	(2.7)	1.8%	1.7%	1.3%

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#	Scenario Description	FY19 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY29 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY34 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY19 Funded Ratio	FY29 Funded Ratio	FY34 Funded Ratio
KERS H 7	Savings: Eliminate use of accrued sick, comp, and any other time toward pension calculations for new hires and active employees in all plans	(1.2)	(1.0)	(0.7)	0.7%	0.2%	0.1%
KERS H 9	Savings: future service in current tiers continues, new hires continue in Tier 3. Establish minimum retirement age of 55 for Tier 1, and 60 for Tiers 2 & 3, eliminating unreduced early retirement based on years of service,	(7.9)	(6.5)	(6.4)	6.4%	4.5%	3.0%
	Revised ADC after implementation of Alternate Scenario 9, above.	**29.8**	**28.4**	**26.7**	**57.6%**	**80.3%**	**89.4%**

Implementation of the reform scenarios for the State Police system, the second-most stressed system, would have rapid benefits to the system in conjunction with the accelerated funding schedule associated with the level dollar amortization. The estimated funded ratio in FY2019 would be approximately 30%, higher than the 26% estimated under the published/old baseline assumptions and funding method, and by FY2029 would be more than double under the old baseline – 58% rather than 27%.

State Police Retirement System (SPRS)

#	Scenario Description	FY19 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY29 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY34 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY19 Funded Ratio	FY29 Funded Ratio	FY34 Funded Ratio
SPRS 1	Baseline: - 6.75% discount rate, 4% payroll growth	18.4	26.4	31.5	26.3%	27.4%	40.2%
SPRS 1	Impact of revised baseline, compared to published actuarial assumptions	12.8	2.6	(3.5)	-2.4%	22.4%	27.0%

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#	Scenario Description	FY19 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY29 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY34 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY19 Funded Ratio	FY29 Funded Ratio	FY34 Funded Ratio
	Revised Baseline - 5.1% discount rate, 0% payroll growth	**31.3**	**29.0**	**28.0**	**24.0%**	**49.9%**	**67.2%**
SPRS 2	Savings: Eliminate past COLAs from future payments to current retirees	(4.2)	(4.2)	(4.1)	5.3%	5.7%	4.4%
SPRS 6	Savings: Establish minimum retirement age of 60 for all active employees with no future application of the unreduced early retirement provision based on years of service for those not eligible as of 7/1/2017	(0.9)	(0.1)	(0.6)	0.2%	2.8%	3.0%
SPRS 7	Savings: Eliminate use of accrued sick, comp, and any other time toward pension calculations for new hires and active employees in all plans	(0.5)	(0.4)	(0.3)	0.2%	-0.2%	-0.1%
SPRS 9	Savings: future service in current tiers continues, new hires continue in Tier 3. Establish minimum retirement age of 55 for Tier 1, and 60 for Tiers 2 & 3, eliminating unreduced early retirement based on years of service,	(5.6)	(4.7)	(4.9)	5.9%	8.3%	7.0%
	Revised ADC after implementation of all scenarios, above.	**25.6**	**24.3**	**23.0**	**29.9%**	**58.1%**	**74.2%**

Similarly, if all recommended options were fully implemented for CERS-NH, the estimated funded ratio in FY2019 would be higher at nearly 63%, compared to 57% under the published/old baseline, despite the significant short-term reduction of 8% that would be associated with the more conservative assumptions applied in the revised baseline. By FY2029 the employer contributions with the revised baseline and implementation of all scenarios would be roughly equivalent to the published/old baseline at 16.8%, but the estimated funded ratio would be significantly higher, and with a greater degree of confidence due to the reduced investment earnings rate.

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County Employee Retirement System - Non Hazardous (CERS-NH)

#	Scenario Description	FY19 Contribution vs Baseline Increase/ (Savings)	FY29 Contribution vs Baseline Increase/ (Savings)	FY34 Contribution vs Baseline Increase/ (Savings)	FY19 Funded Ratio	FY29 Funded Ratio	FY34 Funded Ratio
CERS NH 1	Baseline: - 7.5% discount rate, 4% payroll growth	383.1	549.8	643.2	57.3%	64.8%	72.4%
CERS NH 1	Impact of revised baseline, compared to published actuarial assumptions	325.2	147.6	8.5	-7.9%	6.0%	8.5%
	Revised Baseline - 6% discount rate, 0% payroll growth	**708.3**	**697.4**	**651.7**	**49.5%**	**70.8%**	**80.9%**
CERS NH 2	Savings: Eliminate past COLAs from future payments to current retirees	(62.8)	(63.2)	(59.3)	3.6%	2.8%	2.0%
CERS NH 3	Savings: Freeze service accruals in plan on 7/1/17, future service and new hires in DC plan	(70.1)	(106.9)	(107.5)	5.9%	-3.7%	-6.1%
CERS NH 4	Savings: Combination of Scenario 3 and conversion of actuarial value of accrued service in Tier 3 plans to a lump sum contribution to the DC plan defined in Scenario 3	(71.7)	(107.2)	(106.4)	5.5%	-4.2%	-6.6%
CERS NH 5	Savings: Establish minimum retirement age of 65 for all active employees with no future application of the unreduced early retirement provision based on years of service for those not eligible as of 7/1/2017	(130.0)	(121.7)	(102.4)	4.4%	1.0%	0.5%
CERS NH 7	Savings: Eliminate use of accrued sick, comp, and any other time toward pension calculations for new hires and active employees in all plans	(28.8)	(25.0)	(21.7)	0.9%	0.4%	0.3%
CERS NH 8	Savings: Combined impact of the above as applicable	(269.5)	(319.2)	(324.8)	13.2%	1.6%	-1.8%
	Revised ADC after implementation of all scenarios, above.	**438.9**	**378.2**	**326.9**	**62.7%**	**72.4%**	**79.1%**

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#	Scenario Description	FY19 Employer Contribution as a % of Payroll vs Baseline Increase/ (Savings)	FY29 Employer Contribution as a % of Payroll vs Baseline Increase/ (Savings)	FY34 Employer Contribution as a % of Payroll vs Baseline Increase/ (Savings)	FY19 Funded Ratio	FY29 Funded Ratio	FY34 Funded Ratio
CERS NH 1	Baseline: - 7.5% discount rate, 4% payroll growth	15.73%	16.81%	16.90%	57.3%	64.8%	72.4%
CERS NH 1	Impact of revised baseline, compared to published actuarial assumptions	12.1%	2.7%	-1.3%	-7.9%	6.0%	8.5%
	Revised Baseline - 6% discount rate, 0% payroll growth	**27.84%**	**19.54%**	**15.59%**	**49.5%**	**70.8%**	**80.9%**
CERS NH 2	Savings: Eliminate past COLAs from future payments to current retirees	-2.5%	-1.8%	-1.4%	3.6%	2.8%	2.0%
CERS NH 3	Savings: Freeze service accruals in plan on 7/1/17, future service and new hires in DC plan	-1.3%	0.7%	1.1%	5.9%	-3.7%	-6.1%
CERS NH 4	Savings: Combination of Scenario 3 and conversion of actuarial value of accrued service in Tier 3 plans to a lump sum contribution to the DC plan defined in Scenario 3	-0.2%	1.8%	2.2%	5.5%	-4.2%	-6.6%
CERS NH 5	Savings: Establish minimum retirement age of 65 for all active employees with no future application of the unreduced early retirement provision based on years of service for those not eligible as of 7/1/2017	-5.2%	-3.3%	-2.4%	4.4%	1.0%	0.5%
CERS NH 7	Savings: Eliminate use of accrued sick, comp, and any other time toward pension calculations for new hires and active employees in all plans	-1.1%	-0.7%	-0.5%	0.9%	0.4%	0.3%
CERS NH 8	Savings: Combined impact of the above as applicable	-6.1%	-2.8%	-1.5%	13.2%	1.6%	-1.8%
	Revised ADC after implementation of all scenarios, above.	**21.7%**	**16.8%**	**14.1%**	**62.7%**	**72.4%**	**79.1%**

The revised assumptions would increase the required employer contribution for CERS-H by 80% in FY2019, while having the effect of reducing the estimated funded ratio that year from 57% to 48%.

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The funded ratio would then increase faster than in the published/baseline assumptions. After assuming implementation of all the recommended scenarios for the hazardous plans, including retaining the existing benefit structure for actives and new hires, the impact of the revised baseline assumptions on the required employer contribution is significantly reduced in FY2019, and the funded ratio would be improved to 76% by FY2029. The CERS-NH impacts are illustrated both by the aggregate dollar value of the employer contribution (ADEC) and by the ADEC as a percentage of payroll, as it is assessed to member employers.

County Employee Retirement System - Hazardous (CERS-H)

#	Scenario Description	FY19 Contribution vs Baseline Increase/ (Savings)	FY29 Contribution vs Baseline Increase/ (Savings)	FY34 Contribution vs Baseline Increase/ (Savings)	FY19 Funded Ratio	FY29 Funded Ratio	FY34 Funded Ratio
CERS H 1	Baseline: - 7.5% discount rate, 4% payroll growth	126.6	179.8	209.4	56.5%	64.8%	72.9%
CERS H 1	Impact of revised baseline, compared to published actuarial assumptions	113.3	46.2	6.5	-8.1%	4.4%	6.6%
	Revised Baseline - 6% discount rate, 0% payroll growth	**239.9**	**226.0**	**215.8**	**48.4%**	**69.3%**	**79.6%**
CERS H 2	Savings: Eliminate past COLAs from future payments to current retirees	(27.9)	(26.3)	(25.2)	4.4%	3.5%	2.6%
CERS H 6	Savings: Establish minimum retirement age of 60 for all active employees with no future application of the unreduced early retirement provision based on years of service for those not eligible as of 7/1/2017	(39.0)	(32.9)	(31.0)	3.3%	2.4%	2.3%
CERS H 7	Savings: Eliminate use of accrued sick, comp, and any other time toward pension calculations for new hires and active employees in all plans	(8.6)	(8.1)	(6.9)	0.8%	0.2%	-0.1%
CERS H 9	Savings: future service in current tiers continues, new hires continue in Tier 3. Establish minimum retirement age of 55 for Tier 1, and 60 for Tiers 2 & 3, eliminating unreduced early retirement based on years of service,	(72.6)	(64.0)	(60.4)	9.0%	6.7%	5.2%

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#	Scenario Description	FY19 Contribution vs Baseline Increase/ (Savings)	FY29 Contribution vs Baseline Increase/ (Savings)	FY34 Contribution vs Baseline Increase/ (Savings)	FY19 Funded Ratio	FY29 Funded Ratio	FY34 Funded Ratio
	Revised ADC after implementation of Alternate Scenario 9, above.	**167.3**	**162.0**	**155.5**	**57.5%**	**75.9%**	**84.8%**

#	Scenario Description	FY19 Employer Contribution as a % of Payroll vs Baseline Increase/ (Savings)	FY29 Employer Contribution as a % of Payroll vs Baseline Increase/ (Savings)	FY34 Employer Contribution as a % of Payroll vs Baseline Increase/ (Savings)	FY19 Funded Ratio	FY29 Funded Ratio	FY34 Funded Ratio
CERS H 1	Baseline: - 7.5% discount rate, 4% payroll growth	25.09%	26.77%	25.95%	56.5%	64.8%	72.9%
CERS H 1	Impact of revised baseline, compared to published actuarial assumptions	20.19%	5.52%	(0.21%)	-8.1%	4.4%	6.6%
	Revised Baseline - 6% discount rate, 0% payroll growth	**45.28%**	**32.29%**	**25.74%**	**48.4%**	**69.3%**	**79.6%**
CERS H 2	Savings: Eliminate past COLAs from future payments to current retirees	(5.19%)	(3.77%)	(2.99%)	4.4%	3.5%	2.6%
CERS H 6	Savings: Establish minimum retirement age of 60 for all active employees with no future application of the unreduced early retirement provision based on years of service for those not eligible as of 7/1/2017	(7.42%)	5(5.86%)	(4.25%)	3.3%	2.4%	2.3%
CERS H 7	Savings: Eliminate use of accrued sick, comp, and any other time toward pension calculations for new hires and active employees in all plans	(1.60%)	(1.13%)	(0.76%)	0.8%	0.2%	-0.1%

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#	Scenario Description	FY19 Employer Contribution as a % of Payroll vs Baseline Increase/ (Savings)	FY29 Employer Contribution as a % of Payroll vs Baseline Increase/ (Savings)	FY34 Employer Contribution as a % of Payroll vs Baseline Increase/ (Savings)	FY19 Funded Ratio	FY29 Funded Ratio	FY34 Funded Ratio
CERS H 9	Savings: future service in current tiers continues, new hires continue in Tier 3. Establish minimum retirement age of 55 for Tier 1, and 60 for Tiers 2 & 3, eliminating unreduced early retirement based on years of service,	(13.60%)	(10.11%)	(7.66%)	9.0%	6.7%	5.2%
	Revised ADC after implementation of Alternate Scenario 9, above.	**31.68%**	**22.18%**	**18.08%**	**57.5%**	**75.9%**	**84.8%**

Applying the more conservative assumptions for TRS also increases the FY2019 estimated General Fund required employer contribution by over 77% from the current assumptions. As the TRS plan has a higher asset base than KERS-NH, the more conservative assumptions would also result in a reduced funded ratio initially, with the increased funding being offset by the lower discount rate. The combined impact of implementing all the recommended benefit options would significantly reduce the required contribution to below the current assumptions/baseline, while also resulting in rapid and immediate improvement to the funded ratio of over 20% in FY2019.

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Teachers Retirement System (TRS)[33]

#	Scenario Description	FY19 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY29 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY34 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY19 Funded Ratio	FY29 Funded Ratio	FY34 Funded Ratio
KTRS 1	Baseline: - 7.5% discount rate, 3.5% payroll growth	1,057.6	1,530.9	1,813.2	55.3%	63.1%	70.8%
KTRS 1	Impact of revised baseline, compared to published actuarial assumptions	819.1	283.4	(37.0)	-8.5%	4.5%	6.3%
	Revised Baseline - 6.0% discount rate, 0% payroll growth	**1,876.7**	**1,814.4**	**1,776.1**	**46.8%**	**67.5%**	**77.2%**
KTRS 2	Savings: Eliminate past COLAs from future payments to current retirees	(201.3)	(200.9)	(202.3)	4.2%	3.9%	3.1%
KTRS 3	Savings: New hires (Non-University and University) in DC plan after 7/1/17	(28.2)	(71.5)	(93.6)	-0.1%	-2.2%	-3.5%
KTRS 4	Savings: Freeze service accruals in plan for University members on 7/1/17, future service and new hires in DC plan	(12.0)	(22.8)	(26.3)	0.1%	-0.2%	-0.3%
KTRS 5	Savings: Retirement at age 65, eliminate unreduced retirement with 27 years of service	(463.5)	(430.7)	(422.7)	5.2%	1.8%	1.8%
KTRS 6	Savings: Eliminate provisions for future service that are not subject to the inviolable contract (3% accrual rate over 30 years, final 3 retiring over age 55 instead of final 5, sick/comp time toward service time)	(56.4)	(56.4)	(56.0)	0.6%	0.1%	0.0%

[33] *Estimates based on the June 30, 2016 valuation but incorporating 0% payroll growth were prepared by PRM.*

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#	Scenario Description	FY19 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY29 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY34 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY19 Funded Ratio	FY29 Funded Ratio	FY34 Funded Ratio
KTRS 7	Savings: Roll back benefits of current retirees to eliminate provisions not subject to the inviolable contract	(45.2)	(43.9)	(43.5)	0.9%	0.8%	0.6%
KTRS 9a	Savings: Suspend future COLAs until the plan is 90% funded, after which the COLA is the lesser of 1.5% or CPI-U, applied to first $1,500 per month only	(497.9)	(474.6)	(460.8)	7.4%	2.8%	1.6%
KTRS 9b	Savings: Suspend future COLAs until the plan is 90% funded, after which the COLA is the lesser of 1.5% or CPI-U, applied to first $2,000 per month only	(497.9)	(474.6)	(460.8)	7.4%	2.8%	1.6%
	Revised Baseline, above	**1,876.7**	**1,814.4**	**1,776.1**	**46.8%**	**67.5%**	**77.2%**
KTRS 10a	Savings: net reduction in ADC from combination of all scenarios above including 9a.	(1,117.2)	(1,051.0)	(1,026.2)	20.6%	10.3%	7.2%
	Revised ADC after implementation of all scenarios, above.	**759.4**	**763.3**	**749.9**	**67.4%**	**77.9%**	**84.4%**
KTRS 10b	Savings: net reduction in ADC from combination of all scenarios above including 9b.	(1,117.2)	(1,024.4)	(1,000.0)	20.6%	9.4%	6.5%
	Revised ADC after implementation of all scenarios, above.	**759.4**	**790.0**	**776.1**	**67.4%**	**76.9%**	**83.7%**

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The impact of a revised baseline for KJRP applying a 6% discount rate rather than a 7% rate is an increase in the required General Fund contribution of 29% in FY2019. Note that the actuarial estimates for KJRP and KLRP differ significantly from other estimates in that a level dollar/ 0% payroll growth assumption was not prepared, and that rather than calculating the ADC, the plan actuary applied the current statutory funding formula, which, as noted previously, is not sufficient to amortize the liability. The combined impact of the recommended options on KJRP, if fully implemented, would offset the reduction in the discount rate and generate an estimated $3 million in FY2019 General Fund savings relative to the published/current assumptions.

Kentucky Judicial Retirement Plan (KJRP)[34]

#	Scenario Description	FY19 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY29 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY34 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY19 Funded Ratio	FY29 Funded Ratio	FY34 Funded Ratio
KJRP Legacy	Current Projections	8.6	5.5	4.6	78.1%	75.9%	72.0%
KJRP Legacy	Impact of revised baseline, compared to published actuarial assumptions	2.5	2.1	1.8	-8.0%	-7.0%	-6.6%
KJRP Legacy	**Revised Baseline - 6.0% discount rate**	**11.1**	**7.6**	**6.4**	**70.0%**	**68.8%**	**65.4%**
KJRP Legacy	Savings: Eliminate past COLAs from future payments to current retirees	(1.3)	(2.0)	(2.2)	7.6%	11.2%	13.8%
KJRP Legacy	Savings: Suspend future COLAs	(1.2)	(0.9)	(0.7)	10.6%	13.1%	14.7%
KJRP Legacy	Savings: Freeze service accruals in plan on 7/1/17, future service and new hires in DC plan	(1.8)	(1.5)	(1.1)	15.9%	19.3%	22.6%

[34] *Estimates with level dollar amortization/0% payroll growth were not obtained for KJRP and KLRP. In addition, the plan actuary prepared estimates applying the existing statutory funding method, which results in a declining funded ratio over time under every scenario, rather than full funding of the liability over the amortization period.*

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#	Scenario Description	FY19 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY29 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY34 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY19 Funded Ratio	FY29 Funded Ratio	FY34 Funded Ratio
KJRP Legacy	Savings: net reduction in ADC from combination of all proposed changes.	(5.5)	(4.5)	(4.2)	9.1%	10.3%	11.4%
	Revised Baseline	**5.6**	**3.1**	**2.2**	**87.2%**	**86.1%**	**83.4%**
KJRP Hybrid	Current Projections	0.07	0.05	0.03	-	-	-
KJRP Hybrid	Savings: net reduction in ADC from combination of all proposed changes.	(0.01)	(0.009)	(0.006)	-	-	-
	Revised Baseline	**0.06**	**0.04**	**0.02**	**-**	**-**	**-**
KJRP New Entrants	Current Projections	0.5	1.1	1.6	-	-	-
KJRP New Entrants	Savings: net reduction in ADC from combination of all proposed changes.	(0.1)	(0.2)	(0.2)	-	-	-
	Revised Baseline	**0.4**	**0.9**	**1.3**	**-**	**-**	**-**
KJRP Combined	Savings: net reduction in ADC from combination of all scenarios.	(5.6)	(4.7)	(4.5)	9.1%	10.3%	11.4%
	Revised ADC after implementation of all proposed changes, above.	**6.1**	**4.1**	**3.6**	**87.2%**	**86.1%**	**83.4%**

The impacts of the revised KJFRS baseline on the KLRP plan would be similar to the KJRP impacts, with the difference that if the recommended options were fully implemented, the estimated funded ratio would actually exceed 100% in FY2019.

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Kentucky Legislative Retirement Plan (KLRP)

#	Scenario Description	FY19 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY29 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY34 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY19 Funded Ratio	FY29 Funded Ratio	FY34 Funded Ratio
KJRP Legacy	Current Projections	1.5	0.8	0.6	85.2%	86.2%	85.4%
KJRP Legacy	Impact of revised baseline, compared to published actuarial assumptions	0.6	0.5	0.4	-9.6%	-10.4%	-11.3%
KJRP Legacy	**Revised Baseline - 6.0% discount rate**	**2.1**	**1.3**	**1.12**	**75.6%**	**75.8%**	**74.0%**
KJRP Legacy	Savings: Eliminate past COLAs from future payments to current retirees	(0.4)	(0.5)	(0.5)	9.5%	11.8%	13.4%
KJRP Legacy	Savings: Suspend future COLAs	(0.7)	(0.5)	(0.4)	17.8%	11.9%	7.1%
KJRP Legacy	Savings: Freeze service accruals in plan on 7/1/17, future service and new hires in DC plan	(0.3)	(0.1)	(0.1)	25.8%	29.3%	34.6%
KJRP Legacy	Savings: net reduction in ADC from combination of all proposed changes.	(1.7)	(1.2)	(1.0)	16.5%	18.7%	22.9%
	Revised Baseline	**0.4**	**0.1**	**0.06**	**101.6%**	**104.9%**	**108.3%**
KJRP Hybrid	Current Projections	0.01	0.01	0.01	-	-	-
KJRP Hybrid	Savings: net reduction in ADC from combination of all proposed changes.	(0.002)	(0.002)	(0.002)	-	-	-
	Revised Baseline	**0.01**	**0.009**	**0.009**	**-**	**-**	**-**

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#	Scenario Description	FY19 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY29 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY34 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY19 Funded Ratio	FY29 Funded Ratio	FY34 Funded Ratio
KJRP New Entrants	Current Projections	0.08	0.1	0.2	-	-	-
KJRP New Entrants	Savings: net reduction in ADC from combination of all proposed changes.	(0.01)	(0.03)	(0.04)	-	-	-
	Revised Baseline	**0.06**	**0.1**	**0.1**	**-**	**-**	**-**
KJRP Combined	Savings: net reduction in ADC from combination of all scenarios.	(1.7)	(1.2)	(1.1)	16.5%	18.7%	22.9%
	Revised ADC after implementation of all proposed changes, above.	**0.4**	**0.2**	**0.2**	**101.6%**	**104.9%**	**108.3%**

Under the framework outlined previously, with level dollar amortization of unfunded liabilities and reduced investment return assumptions for all plans, and full annual funding of the recommended employer contribution, the Commonwealth's General Fund pension contribution in FY2019 would be $2.5 billion, an increase of $1.2 billion above current FY2017 funding levels and $1.7 billion above the funding in FY2016.

Through the range of benefit reforms also summarized above, the plan actuaries project over $1.2 billion in aggregate FY2019 pension savings. At the same time, proposed buyout options and the use of DC plan structures will reduce the Commonwealth's exposure to the risk of new shortfalls emerging. The resulting FY2019 General Fund contribution requirement will still reach over $1.2 billion, but will now fall within the range of recently increased state funding levels. Even more importantly, the rate of growth in these contributions will be at much lower risk of continuing to skyrocket, and is projected to eventually stabilize and even decline over time.

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All State Plans

#	Scenario Description	FY19 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY24 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY29 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)	FY34 General Fund Contribution vs Baseline Increase/ (Savings) ($Millions)
All Plans	Current Projections	1,410.5	1,724.3	2,041.8	2,421.8
All Plans	Impact of revised baseline, compared to published actuarial assumptions	1,063.2	747.8	317.8	(127.8)
	Revised Baseline	**2,473.7**	**2,472.2**	**2,359.7**	**2,294.0**
All Plans	Savings: net reduction in ADC from combination of all scenarios.	(1,247.9)	(1,237.6)	(1,178.6)	(1,148.1)
	Revised ADC after implementation of all proposed changes, above.	**1,225.8**	**1,234.5**	**1,181.0**	**1,145.9**

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Cash Flow

One of the challenges noted in Report #2 was the pattern of recurring negative cash flows historically for KERS-NH, KERS-H, CERS-NH, and TRS, and the significant continued negative cash flows estimated for future years under the published actuarial assumptions for KERS-NH and TRS. Report #2 indicated it is not uncommon for mature systems to operate with negative cash flows and rely on investment earnings, but the size of the negative cash flow, reliance on investment earnings relative to the size of the investment earnings assumption, and level of assets to sustain in years where the earnings assumption is missed, are all concerns.

In addition, one of the potential drawbacks noted earlier of implementing a DC plan is the shift of employee contributions away from the legacy DB plan, which has potential negative implications on cash flows.

The tables below illustrate that the recommended actuarial assumptions and revised baseline for the systems significantly improve cash flows in the next ten years, particularly for the most stressed plans. Although the introduction of a DC plan for future service or new hires partially offsets this improvement, for most of the plans, with the partial exception of CERS-NH as illustrated below, the estimated cash flows incorporating recommendations are favorable to the estimates overall based on the plan benefits and valuation assumptions as of June 30, 2016.

KERS-NH Pension Fund Projected Cash Flows
Employer + Employee Contributions - Benefits - Expenses
($ in 000s)

Year	Published Actuarial Assumptions	Revised Baseline 5.1% Discount Rate, 0% Payroll Growth	Scenario KERS NH 3: Freeze Accruals; DC for Future Service and New Hires	Scenario KERS NH-8: Revised Baseline with Combined Reform Initiatives
FY2019	(230,090)	300,136	108,947	47,704
FY2020	(223,532)	327,315	125,603	62,647
FY2021	(173,440)	319,875	118,733	49,224
FY2022	(159,966)	350,433	141,069	70,003
FY2023	(126,582)	282,896	84,447	26,876
FY2024	(109,920)	315,432	110,939	51,436
FY2025	(83,076)	238,806	47,764	3,323
FY2026	(62,444)	273,779	78,937	30,872
FY2027	(35,031)	194,869	15,587	(17,938)
FY2028	(9,625)	229,731	49,142	11,541
FY2029	19,716	145,857	(15,831)	(38,503)

Source: Cavanaugh Macdonald estimates

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KERS-H Pension Fund Projected Cash Flows Employer + Employee Contributions - Benefits - Expenses ($ in 000s)			
Year	Published Actuarial Assumptions	Revised Baseline 6.0% Discount Rate, 0% Payroll Growth	Scenario KERS H 9: Revised Baseline with Combined Reform Initiatives
FY2019	(18,748)	10,850	108,947
FY2020	(19,607)	10,819	125,603
FY2021	(19,132)	10,549	118,733
FY2022	(20,194)	10,324	141,069
FY2023	(20,680)	5,450	84,447
FY2024	(21,702)	5,221	110,939
FY2025	(22,659)	(871)	47,764
FY2026	(23,951)	(1,483)	78,937
FY2027	(26,222)	(9,186)	15,587
FY2028	(27,837)	(10,280)	49,142
FY2029	(29,473)	(17,538)	(15,831)

Source: Cavanaugh Macdonald estimates

SPRS Pension Fund Projected Cash Flows Employer + Employee Contributions - Benefits - Expenses ($ in 000s)			
Year	Published Actuarial Assumptions	Revised Baseline 5.1% Discount Rate, 0% Payroll Growth	Scenario KERS H 9: Revised Baseline with Combined Reform Initiatives
FY2019	(18,027)	7,699	5,878
FY2020	(17,743)	8,537	7,082
FY2021	(15,808)	8,738	7,466
FY2022	(15,289)	9,842	9,382
FY2023	(13,373)	7,242	7,706
FY2024	(12,696)	8,448	9,656
FY2025	(11,236)	4,660	6,837
FY2026	(10,616)	5,684	8,563
FY2027	(8,907)	1,870	5,700
FY2028	(7,465)	3,656	7,330
FY2029	(5,397)	(90)	4,384

Source: Cavanaugh Macdonald estimates

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The CERS-NH are significantly favorable with the revised assumptions. The application of the DC plan for future service in isolation results in favorable cash flows for the first six years, and modestly unfavorable cash flows compared to the baseline thereafter. The application of the combined reform initiatives is estimated to result in favorable cash flows compared to the baseline in the first three years, and modestly unfavorable (less than 10% more negative) cash flows thereafter.

CERS-NH Pension Fund Projected Cash Flows Employer + Employee Contributions - Benefits - Expenses ($ in 000s)				
Year	Published Actuarial Assumptions	Revised Baseline 6.0% Discount Rate, 0% Payroll Growth	Scenario CERS NH 3: Freeze Service Accruals in Plan, Future Service and New Hires in DC Plan	Scenario CERS NH-8: Revised Baseline with Combined Reform Initiatives
FY2019	(262,586)	31,444	(208,279)	(249,125)
FY2020	(269,835)	24,731	(211,357)	(259,553)
FY2021	(272,036)	15,066	(223,221)	(268,152)
FY2022	(279,677)	2,493	(243,022)	(283,446)
FY2023	(294,996)	(10,056)	(271,445)	(307,183)
FY2024	(310,807)	(22,560)	(299,883)	(330,342)
FY2025	(325,892)	(34,660)	(326,607)	(351,587)
FY2026	(341,181)	(46,921)	(351,189)	(371,069)
FY2027	(357,055)	(59,406)	(374,650)	(390,248)
FY2028	(374,620)	(71,591)	(396,549)	(408,113)
FY2029	(390,277)	(82,877)	(415,803)	(423,560)

Source: Cavanaugh Macdonald estimates

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CERS-H Pension Fund Projected Cash Flows Employer + Employee Contributions - Benefits - Expenses ($ in 000s)			
Year	Published Actuarial Assumptions	Revised Baseline 6.0% Discount Rate, 0% Payroll Growth	Scenario KERS H 9: Revised Baseline with Combined Reform Initiatives
FY2019	(82,024)	31,444	(10,093)
FY2020	(83,716)	24,731	(12,245)
FY2021	(87,539)	15,066	(15,895)
FY2022	(93,606)	2,493	(21,403)
FY2023	(99,580)	(10,056)	(25,871)
FY2024	(105,682)	(22,560)	(30,373)
FY2025	(110,420)	(34,660)	(34,458)
FY2026	(115,827)	(46,921)	(38,752)
FY2027	(121,307)	(59,406)	(44,152)
FY2028	(125,920)	(71,591)	(49,851)
FY2029	(129,871)	(82,877)	(56,192)

Source: Cavanaugh Macdonald estimates

TRS Pension Fund Projected Cash Flows Employer + Employee Contributions - Benefits - Expenses ($ in 000s)			
Year	Revised Baseline 6.0% Discount Rate, 0% Payroll Growth	Scenario KTRS 4: Freeze Accruals; DC - Future Service and New Hires	Scenario KTRS 10a: Revised Baseline with Combined Reform Initiatives
FY2019	182,684	155,358	(659,014)
FY2020	110,434	82,303	(678,583)
FY2021	39,244	10,572	(689,367)
FY2022	(60,361)	(89,288)	(728,502)
FY2023	(110,890)	(140,257)	(706,442)
FY2024	(185,009)	(214,705)	(709,041)
FY2025	(262,379)	(292,290)	(711,836)
FY2026	(341,604)	(371,601)	(714,217)
FY2027	(425,111)	(455,077)	(722,923)
FY2028	(505,445)	(535,326)	(732,267)
FY2029	(581,905)	(611,412)	(746,767)

Source: Cavanaugh Macdonald estimates with adjustments to 0% payroll growth by PRM

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In addition to the fiscal impacts illustrated above, the enrollment of teacher new hires in Social Security is estimated to have gradually building financial impacts on local School Board employers. The estimated Social Security employer tax paid by School Boards in total is approximately $11 million in the initial year, increasing by roughly $10 million per year for the first ten years thereafter. The estimated contribution paid by School Boards in FY2029 is $136 million, further increasing to $201 million by FY2034.

Voluntary Buyouts

As discussed previously in Chapter IV. Funding, Recommendation 7, the Commonwealth could offer to buy out or convert accrued service of active employees and roll it over to a deferred compensation plan, in conjunction with the proposal to offer defined contribution plans for new service/new hires. A voluntary buyout program was modeled for KERS-NH and CERS-NH active employees. The program could similarly be offered to the other plans that would potentially have future service frozen, TRS University, JRP, and LRP, but the amounts involved would be relatively small.

The voluntary buyout would allow employees that would prefer to manage their own assets in a DC plan to convert their benefit from the fixed DB plan to a lump sum beginning account balance in the DC plan, on a tax-exempt basis. Since the conversion would be voluntary on an employee-by-employee basis, rights under the inviolable contract provisions would not be abridged. This conversion would remove the liability from the retirement system, value the employee's accrued service as of the date of the conversion – without applying future pay increases to the frozen portion of the benefit – improve the funded ratio and reduce risk to the plan.

The estimates were prepared based on accrued liability figures as of June 30, 2016 provided by Cavanaugh Macdonald. Our team adjusted those figures to revise the estimated liability to reflect the revised baseline actuarial assumptions, and to reduce the accrued liability for each employee to reflect assumed final compensation at the time of the buyout and rollover, rather than estimated final compensation. This was combined with estimated pricing as of July 1, 2017 for a taxable POB issued by the Commonwealth, in order to fund the full value of the benefit to be rolled over for employees to the DC plan.

The analysis assumed a 30% participation rate in the buyout as an upper bound to identify the potential size of the bond. The analysis illustrated below also assumed that the full actuarial value of the accrued benefit at the time of the buyout is offered to the employee. Other alternatives could be pursued that would:

- Potentially result in less participation and benefit to the employee but greater savings to the Commonwealth, such as discounting the value of the accrued benefit, or offering the buyout based on the employee's account balance of accumulated employee contributions to date.

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- Provide an additional incentive to participate such as a match from the Commonwealth. However, considering the impact of the more conservative actuarial assumptions adopted by the KRS board, these incentives are unlikely to generate significant savings for the Commonwealth when compared to the cost of borrowing for a POB.

The 30% assumed rate is likely on the high end of the range of potential participation, based on the experience of Florida and Ohio with voluntary conversions to optional DC programs. The savings estimates are relatively linear other than fixed costs of borrowing for a POB, and smaller buyout participation rates would have corresponding reductions in the savings estimates below.

	KERS-NH Total	CERS-NH Total
Unadjusted Liability: Active Employees	2,655.2	4,287.2
Adjusted Outstanding Liability: Active Employees	1,615.3	2,829.8
Buyout Percentage	30.0%	30.0%
Buyout Cost to Fund	484.6	849.0
Unadjusted/Reported Liability Relief to Plan	796.6	1,286.1
Required Employer Contribution: Revised Baseline	55.0	97.4
Estimated Debt Service	30.2	52.9
Estimated Annual Savings	**24.7**	**44.4**
Estimated Annual General Fund Savings	**14.5**	n/a
Funded Ratio Benefit	**1%**	**5%**

Source: Cavanaugh Macdonald estimated liability figures; PRM estimated adjusted liability figures; PFM estimated other figures

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Appendix A: Glossary

Accrued Benefit – the amount of the member's benefit that has been earned based on service since hire up to today. The amount is generally determined based on the member's current final average salary and benefit multiplier based on current service.

Accrued Value – the amount of money that has accumulated in an employee's account due to employee and employer contributions and investment earnings on the contributions.

ADC – Actuarially Determined Contribution. A target or recommended contribution to a defined benefit pension plan for the reporting period, determined in conformity with Actuarial Standards of Practice based on the most recent measurement available when the contribution for the reporting period was adopted. This term was adopted in GASB Statements No. 67 and 68 and replaced Annual Required Contribution (ARC) as defined by GASB No. 25, effective FY2015 for plan sponsors.

ADEC – Actuarially Determined Employer Contribution. The portion of the ADC that is the employer's obligation to fund.

Amortization period – Period of time used in determining the amortization payment to discharge or fund and unfunded liability (similar to the number of years of a home mortgage). A closed amortization period reduces the remaining period by one year in the subsequent measurement (similar to a 30-year home mortgage reducing to 29 years remaining at the end of the first year). An "open" or "rolling amortization period" maintains the original period (similar to refinancing a 30-year home mortgage with a new 30-year mortgage each year).

ARC – Actuarially Required Contribution. The sum of the Normal Cost and the chosen amortization of the UAAL, adjusted with interest to the end of the reporting year. Historical information prior to FY2015 was calculated based on the definition of ARC rather than the ADC.

DB – Defined Benefit. A retirement plan design that determines the monthly benefit after employment based on the employee's years of service and salary during employment. Upon retirement, the benefit can be paid in one of several options (e.g. lifetime annuity, joint and survivor annuity, life annuity with period certain).

DC – Defined Contribution. A retirement plan design that develops an individual account. Upon retirement, the amount in the account can be paid out in a number of ways (e.g. lump sum, annuity, etc.).

CERS-H – County Employees Retirement System – Hazardous.

CERS-NH – County Employees Retirement System – Non-Hazardous.

CES – Consumer Expenditure Survey.

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COLA – cost of living adjustment.

DCA – Deferred Compensation Authority.

Early Retirement Age – the age at which a person can retire from service and begin to draw a pension immediately; the amount of the benefit is reduced to account for the longer period of time over which payments are expected to be paid.

Freeze – to pause the benefit multiplier and the employee's years of service at their current levels on the freeze date while still allowing salary used in benefit calculation to increase.

FY – Fiscal Year.

GASB – Governmental Accounting Standards Board.

KERS-H – Kentucky Employees Retirement System – Hazardous.

KERS-NH – Kentucky Employees Retirement System – Non-Hazardous.

KJFRS – Kentucky Judicial Form Retirement System.

KJRP – Kentucky Judicial Retirement Plan.

KLRP – Kentucky Legislators Retirement Plan.

KRS – Kentucky Retirement System.

Level dollar amortization – a method of spreading payments to discharge an obligation in which payments are determined as fixed dollar amounts for each year over the amortization period.

Level percent of payroll amortization – a method of spreading payments to discharge an obligation in which payments are calculated as a fixed percentage of projected payroll over the amortization period.

OPEB – Other Post-Employment Benefits.

Past Service Cost – The liability assigned under the actuarial funding method to benefits accrued based on past employee service rendered prior to the measurement date.

POB – Pension Obligation Bond.

Normal Retirement Age – the age at which a person can retire with full (i.e. unreduced) benefits; employee is not required to retire at this age.

SPRS – State Police Retirement System.

TRS – Teachers Retirement System.

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Exhibit 4

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Work still being done in preparation for special session on pension crisis

Posted Friday, September 15, 2017 5:17 pm

By TOM LATEK, Kentucky Today

FRANKFORT, Ky. (KT) - Preparations continue for an anticipated special session of the General Assembly to address the state's public pension crisis.

One of the rumors heard around Frankfort recently was that the call could come next week, but Gov. Matt Bevin says, although the call will come soon, it's just a rumor.

"We have work that we're still doing with the House and Senate," Bevin said during an interview with Kentucky Today, and complimented the hard work of legislative leaders. "We have had these five-, six-, seven-hour marathon meetings, and we've been having them for months."

But it's not just lawmakers with whom the governor has been huddling.

"We've been meeting with increasing frequency with all the various interest groups that are affected by this, that have a stake in it that have an opinion on it. From KLC to KEA, to KACo, to the FOP, all of them. And we meet with them to bring them up to speed on what we're thinking, to get their thoughts on things," Bevin said.

Bevin calls it a remarkably collaborative effort, so far. "And yet, until we are ready to truly dial it in, I'm not going to call a special session."

He said his intent is to be close to a consensus, before he issues the call. "This is largely going to be pre-baked. You can't, in five days, start from scratch, which is why all this work has been going on for months and months. It's why I've been talking about it since I was elected but, even more specifically, since my last State of the Commonwealth address, where I said it was going to happen this year, and it will."

Bevin has said in the past that he hopes to call lawmakers to Frankfort in October, and that still appears to be the case.

"It's going to be done this fall, and the sooner the better. But I want to make sure we get all the I's dotted and t's crossed, before we gather to finalize the effort."

A report by PFM Group Consulting suggested moving new state government hires to a 401-K type retirement, putting new teachers on the Social Security system, and making those on hazardous duty retirement system wait until the age of 60 before being able to collect benefits. The state's contract with PFM was for $1.1 million.

Senate President Robert Stivers, R-Manchester, said, "There are good discussions going on about the information that was released by PFM."

House Speaker Jeff Hoover, R-Jamestown, agrees with Bevin that action is needed soon to shore up the underfunded pension. "This issue is not just about retirees and current state workers and teachers. It affects everything with regard to the state budget, so it affects every Kentuckian."

Earlier this month, neither legislative leader expected expanded gaming could be a part of the legislation.

Hoover said, "I haven't heard it discussed."

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Stivers agreed, “Never have.”

Bevin and the legislative leaders all insist there will be no emergency clause to any pension reform plan. “There will be plenty of time for current employees to consider their options and what they want to do and have full understanding to make an informed decision,” said Hoover.

Meanwhile, retirements from one of Kentucky's largest public pension systems jumped 37 percent in September.

The Kentucky Retirement Systems says 746 people retired as of Sept. 1 compared with 543 retirements one year ago. The retirements included state workers, police officers, firefighters and other local government workers.

Kentucky taxpayers are at least $33 billion short of the money required to pay retirement benefits over the next 30 years.

(http://kentuckytoday.ads.communityq.com/www/delivery/ck.php?oaparams=2__bannerid=18__zoneid=2__cb=36ad775d56__oadest=https%3A%2F%2Fwww.bigsandysuperstore.com%2Ftv-and-video%2Ftv-specials%2Ftv-specials%3Futm_source%3Dkytoday%26utm_medium%3D728x90%26utm_campaign%3DApril%26utm_content%3Dhdtvs)

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JCTA Analysis of Senate Bill 151

First what is NOT in SB151

It would not be appropriate to consider what is included in SB151 without also reflecting on what the collective efforts of JCTA, KEA, and the other members of the Kentucky Public Pension Coalition and our allies were able to remove and/or keep out of SB151. All the proposals below appeared in either the Governor's "Keeping the Promise" plan from the fall of 2017 or a version of SB1 introduced during the legislative session.

- 3% Pay cut for teachers to pay for medical insurance
- Total elimination of use of sick days to calculate pensions for most teachers
- Elimination of High-3 retirement at age 55
- Elimination of 3.0 multiplier after 30 years of service
- Private sector Defined Contribution plan for future teachers
- Closing TRS to new teachers (thereby reducing TRS returns by 1.5%)
- Freezing or reducing COLAs for current retirees
- Freezing or reducing COLAs for future retirees
- Elimination of disability retirement for future teachers
- Elimination of the law requiring districts to provide teachers a minimum of 10 sick days per year
- Elimination of the law requiring sick day rollover from year to year
- Elimination of the authority of the Public Pension Oversight Board to review and audit educators' pension system (protecting the interests of employees and the public)
- Shifting to a pension board without a majority of the representatives elected by educators
- Immediate implementation of Level Dollar Funding at an additional cost of $250 million per year

Thanks to the engagement of JCTA and KEA members and our allies all over the state, we collectively stood up for ourselves and backed down the Governor and Legislature on all these horrendous proposals. So even as we are rightfully outraged not only by the absolutely unnecessary negative changes in SB151, but also by the reprehensible, undemocratic, non-transparent, and outright illegal manner in which the bill was jammed through the General Assembly in less than a day, it is also important for us to collectively recognize our empowered accomplishments in having stood up to incredible power to successfully get all these devastatingly horrible provisions removed from the final bill that passed.

Current Active Teachers

Sick Leave:

Limits the impact of sick leave payments on retirement benefits to the amount of sick leave accrued as of December 31, 2018.

Discussion:

A recent Attorney General's analysis found this provision to be a violation of the inviolable contract for employees hired prior to 2008. (The legislature made changes to the statute in

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2008 that had the effect of removing inviolable protection of this benefit for new hires after June 30, 2008.) It is important to note that in response to the Governor's draconian proposals in the fall of 2017, a coalition of educational stakeholders that included KEA, JCTA, the KY School Boards Association, the KY Association of School Administrators, and the KY Association of School Superintendents proposed an alternative "Shared Responsibility" plan that included this provision. This plan was shared with KEA and JCTA membership and approved by the KEA and JCTA Boards of Directors at the time.

Current Retired Teachers

Return to Work:
Maintains the same provisions as current law except teachers who retire after January 1, 2019 will no longer be required to make payments into a second retirement account when they return to work.

Discussion:
This is generally a positive change because most teachers who return to work (and are limited in the number of days that they can work in retirement) are not likely to work long enough to become vested in a second TRS retirement account they are required to pay into. Without vesting, only the members contributions with 3% interest can be withdrawn from the second account. This change will mean these TRS deductions will not be subtracted from return to work teachers' paychecks.

Future Teachers

Places future teachers in a hybrid cash balance plan and limits the scope of the Inviolable Contract to only protect the account balance in the cash balance plan.

Details:

- Puts teachers in same type of cash balance plan that KRS employees have been in since 2013.
- Employee contribution rate will be the same as current teachers' rate (9.105% of pay).
- Total Employer contribution will be 8% (state 6% plus local school districts 2%).
- Cash balance accounts will receive annual interest payments equal to 85% of the 10-yearr net return TRS achieves.
- Upon retirement, interest payments end and the account can be cashed out or rolled into a not-for-profit lifetime annuity account managed by TRS (TRS indicates a COLA option for the annuity will be available).
- Retirement Eligibility: Minimum age 57 with "Rule of 87" (age + service = 87) or Age 65 w/ 5 years of service
- Portability: Members are immediately vested for employee contributions and interest credits on employee contributions. Members are fully vested for employer credit and investment returns on employer credits after 5 years.
- Voluntary "Opt-In:" Current TRS members with less than 5 years of service may elect to roll over their accumulated contributions in to the new hybrid cash balance plan.
- Members eligible for retiree health/disability/death before-retirement benefits similar to current members.
- Does not include the current $2,000 pre-retirement life insurance benefit.

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- Does not include the current $5,000 post-retirement life insurance benefit payable to deceased retired members with at least 5 years of service.
- Sick leave payments do not impact retirement benefits.
- "Inviolable contract" will be limited to the account balance in the cash balance plan.

Discussion:
There are major reasons to be concerned about placing future teachers into a cash balance hybrid plan like this. There are also considerations that, to some extent, mitigate the negativity of the cash balance (CB) plan design, particularly as compared to other alternatives considered by the legislature.

Risk:
The CB plan places the retirement security of future teachers at risk because retirement benefits will depend on the investment returns TRS is able to achieve. This particularly problematic for educators because they do not have the safety net of Social Security to insure a minimum retirement income.

Diminished Scope of Inviolable Contract Protections:
Because the Inviolable Contract will only protect account balances for future teachers, it is possible for the plan design to be changed by future legislatures. However, because SB151 limits the state's contribution to a modest fixed contribution of 6% of pay and by design CB plans cannot have unfunded liabilities, the pressure for future legislatures to make changes is likely to be far less than with a DB plan design.

Impact on Educator Recruitment:
There is every reason to believe that SB151 will negatively impact the ability of Kentucky school districts to attract and keep quality educators. On the front end, when competing with other states that offer prospective teachers a defined retirement benefit, the lack of certainty offered by the new CB plan will make Kentucky schools less attractive. Also, the enhanced portability of the new CB plan will make it easier for Kentucky teachers to leave the state and take their retirement benefits with them.

Impact on TRS:
SB151's CB plan will keep new educators in TRS, which will allow TRS to remain an "ageless" system. This is extremely important because the Governor's proposal to place new hires in a 401(a) plan would have closed TRS to new hires and, in doing so, would have caused TRS to become an aging system with no young members entering it. This was projected to reduce the long-term investment returns of TRS by about 1.5% for current DB plan members. The CB plan avoids this negative impact. Also, keeping new educators in TRS maintains a unified educator voice to advocate for TRS.

Likely CB Retirement Benefits Compared to Current DB Plan:
Because the retirement benefits of the new CB plan depend on the future performance of TRS investments, it is not possible to say with certainty how the retirement benefits will compare to the DB plan; however, it is possible, based on past performance, to consider what is likely.

The unions in the KY Public Pension Coalition hired a national pension expert, William Fornia, to assess this question. His analysis indicated that for a 30-year employee, the CB benefits are likely to be at least comparable to current DB benefits. Specifically, in order

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for the CB plan to offer similar benefits to the DB plan, TRS would need to have a long-term (30 year) average rate of return of at least approximately 6.75%. If the return is lower than this, the CB benefits would be less than current DB benefits. If the return is higher, the CB plan would have higher benefits than current DB plan. To put this in context, the current assumed rate of return for TRS matches the median for public sector retirement systems at 7.5%. The 30-year rate of return for TRS for the past 30 years is approximately 8%. But, of course, no one knows what the future performance of TRS will be.

Mr. Fornia indicated that for shorter periods of service, such as those entering teaching as a second career, the CB plan design becomes increasing more disadvantageous than current DB plan design as the years of service decrease.

Impact on School Districts:
The new CB plan will gradually place a financial burden on local school districts because districts will be required to pay 2% of payroll for CB plan members' retirement benefits. Since this extra 2% will only apply to new hires after January 1, 2019, the immediate impact will not be great, but will grow over time as more CB plan members are hired.

0% Guarantee:
CB plan advocates tout the plan's 0% guarantee as a major benefit. It is not. The fine print of the bill says this a 10-year average return guarantee, meaning TRS would have to average a negative return over a period of 10 years in order for this guarantee to be utilized. Even time periods that included the dot com bust of 1999 and the Great Recession of 2008, TRS has not encountered a negative rate of return over a 10-year period.

Retirement Annuity:
Upon retirement, CB accounts stop earning interest because the expectation is that they will be rolled over into lifetime annuities that pay a defined benefit, similar to a DB pension (or into some other retirement plan). Because the annuity will be administered by TRS and will include large numbers of participants, average life expectancies for the entire group and the TRS anticipated rate of return of 7.5% can be used to calculate benefits. And, unlike private sector annuities, there will be no profit margin to diminish returns. Based discussions with TRS officials, it is anticipated that CB retirees will have options to select plans with or without COLA and survivor benefit provisions, similar to the way current DB retirees select what level of survivor benefits they wish to have, with higher levels of optional benefits reducing monthly payments somewhat.

Retirement Age:
The minimum retirement age for the DB plan will be age 57, which is significantly higher than the minimum retirement age for the current DB plan but is two years less than the current average TRS retirement age of 59.

Cost Savings Resulting from CB Plan:
During floor debate in the Senate, the sponsor of SB151 acknowledged that the impact of SB151 on the TRS Unfunded Liability would be to reduce the Unfunded Liability of the system by less than 1%. And most of this tiny reduction will come from requiring school districts to pay an additional 2% for CB plan participants. In other words, the CB plan design itself saves the state almost nothing.

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Other Relevant Provisions of SB151

ARC Payment Requirement:
Retains current statutory fixed TRS funding rate as a base, but additionally establishes a statutory calculation and requirement to pay the full ARC.

Discussion:
This is a very positive provision in the bill. The new language makes it a statutory requirement that the full ARC be calculated and fully paid by the state every year.

Conflict of Interest Provisions:
No member of GA, public servant, trustee or employee of TRS board shall have any interest in the business of KRS while employed/serving AND for five (5) years following employment/service.
Discussion:
This is a positive provision in the bill.

Level Dollar Funding:
Gradually phases into level dollar funding by 2024 (using a 30-year amortization period with 5-year smoothed asset valuation method for TRS pension fund).

Discussion:
The level dollar funding method improves the TRS Unfunded Liability faster than a traditional ARC payment schedule, but significantly increases state pension payments in the short term. This phased in approach is a compromise between pure level dollar funding and a traditional ARC payment schedule which will increase payments to TRS and address the Unfunded Liability somewhat faster than a traditional ARC payment schedule would have.

Progress Reporting:
Requires KRS/TRS staff to provide updates to the Public Pension Oversight Board on the implementation of reform.

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Jefferson County Teachers Association (JCTA)
April 15 · Louisville, KY

Impact of New TRS Cash Balance Plan on Current DB Plan

A number of JCTA members have asked about the how the new TRS Cash Balance (CB) plan will impact the long-term stability of the existing TRS Defined Benefit (DB) plan.

The short answer is that under the provisions of SB151, as it passed, the new CB plan will have no negative impact on the current DB plan and will actually help sustain it. For more details, please read on.

Detailed Explanation:

The governor's original pension reform plan, which called for closing TRS to new hires and replacing it with individual private sector for-profit 401(a) accounts, would have significantly negatively impacted the current DB fund in TRS. This is because closing TRS would have changed it from an ageless system to an aging system, which would have reduced annual investment returns by an average of about 1.5% over the next 30 years. This would have raised the annual required payment (ARC) by about $300 million according to the official scoring of the governor's proposal.

However, JCTA and KEA lobbyists, empowered by the engaged activism of members, were able to stop the governor's plan to close TRS. Instead, the new CB plan will be within TRS and managed by TRS. This means payments by new hires will go into TRS and will be commingled with with existing DB funds for INVESTMENT purposes by TRS. In other words, TRS will have one big pool of funds to invest which will include both DB and CB funds. This will allow TRS to remain an ageless plan and avoids negatively impacting the performance of the existing DB members' investment funds.

Although TRS investments will operate this way, each individual member in the CB plan will have her or his own account. The individual's account balance will be tracked separately for each CB member. Interest will be added to the individual CB accounts annually, based on the 10-year investment returns of the total TRS pool of funds.

Because of its design, the new CB plan cannot accrue an unfunded liability. However, the existing unfunded liability for the current DB plan remains and will have to be paid off over the next 30 years. The total amount of the unfunded liability for the existing DB plan is essentially unchanged by the shift of new hires to the CB plan.

There is some good news in SB151 with regard to the DB plan's unfunded liability. First, SB151 includes new statutory language that more clearly and explicitly requires the state to pay the full ARC every year for TRS. Second, SB151 requires the ARC to be calculated and paid on an accelerated "level dollar payment" schedule. This should increase the rate at which the percent funding level of TRS increases. (Because the state has made full ARC payments for the past two years, the TRS funding level has already increased from 54.6% to 56.4%.)

Finally, and very importantly, the new CB plan does not begin until January 1, 2019. This means everyone who has a TRS account prior to this date will be in and will remain in the current DB plan. This is true even if a member is not currently teaching. This also means that teachers who are hired this summer and fall will still be in the current DB plan. And, since substitute teachers currently pay in to TRS, anyone who has served as a sub prior to January 1, 2019 will have a TRS DB account and will NOT go into the CB plan. Therefore, it is our understanding that we have a brief opportunity to throw a DB life preserver to aspiring educators who can qualify and serve as substitute teachers for at least one day prior to January 1, 2019.

This serves as a good example of one of the many ways the JCTA and KEA lobbying team was able to accomplish significant damage control on the original negative provisions that were proposed.

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Exhibit 6

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COMMONWEALTH OF KENTUCKY
FRANKLIN CIRCUIT COURT
DIVISION I
CASE NO. 18-CI-379
ELECTRONICALLY FILED

COMMONWEALTH OF KENTUCKY,
ex rel. ANDY BESHEAR, ATTORNEY GENERAL, *et al.* PLAINTIFFS

v.

MATTHEW G. BEVIN, in his official capacity
as Governor of the Commonwealth of Kentucky, *et al.* DEFENDANTS

AFFIDAVIT OF RYAN BARROW

Comes the affiant, Ryan Barrow, first being duly sworn, and states as follows:

1. I am over the age of 18 and of sound mind.
2. I am a resident of Fayette County, Kentucky.
3. I have personal knowledge of the facts asserted in this affidavit.
4. I currently serve as the Executive Director of the Office of Financial Management within the Kentucky Finance and Administration Cabinet.
5. As part of my job duties, I am responsible for the administration of the cash investment pools and debt management functions of the Commonwealth. Among other things, this entails conducting the Commonwealth's bond sales, which provide financing for major projects and capital improvements authorized by the General Assembly in various budget bills.
6. My job duties require me to be knowledgeable of the operations and viewpoints of credit rating agencies such as Standard & Poor's and Moody's.

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7. I am aware that Standard & Poor's in their bond report for the State Property and Buildings Commission, Projects No. 119/120 issued May 15, 2018 and Moody's in their April 9, 2018 credit commentary on Senate Bill 151 ("SB 151") state SB 151 is a credit-positive development for the Commonwealth. The aforementioned Standard & Poor's bond report and Moody's credit commentary are attached to this affidavit as Exhibits A and B.
8. This means that credit rating agencies view SB 151 as a favorable development for the Commonwealth in moving to a more fiscally stable budget.
9. I am also aware that if SB 151 were declared unconstitutional or invalid in whole, credit rating agencies would view that development as credit-negative for the Commonwealth.
10. This means that credit rating agencies would view such action in whole as detrimental to the Commonwealth and its fiscal well-being.
11. The Commonwealth has roughly $9 billion in bonds outstanding.
12. The Commonwealth's bond rating is directly correlated to the cost of capital to which the Commonwealth borrows money.

Further the affiant sayeth naught.

Ryan Barrow

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COMMONWEALTH OF KENTUCKY)
)
COUNTY OF FRANKLIN)

Subscribed and sworn to before me this 23rd day of May, 2018, by Ryan Barrow.

Tammy J McCall
Notary Public

My commission expires on the 17th day of March, 2021.

Tammy J. McCall
Notary Public, ID No. 575725
State at Large, Kentucky
My Commission Expires on March 17, 2021

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Exhibit A

S&P Global
Ratings

RatingsDirect®

Kentucky; Appropriations; General Obligation; Public Coll/Univ - Unlimited Student Fees; School State Program

Primary Credit Analyst:
Timothy W Little, Chicago + 1 (212) 438 7999; timothy.little@spglobal.com

Secondary Contact:
Carol H Spain, Chicago (1) 312-233-7095; carol.spain@spglobal.com

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Kentucky; Appropriations; General Obligation; Public Coll/Univ - Unlimited Student Fees; School State Program

Credit Profile		
US$272.72 mil rev bnds (Kentucky) (Project No. 119) due 05/01/2038		
Long Term Rating	A-/Stable	New
US$9.645 mil agy fd rev rfdg bnds (Kentucky) (Project No. 120) due 06/01/2028		
Long Term Rating	A-/Stable	New
Kentucky ICR		
Long Term Rating	A/Stable	Downgraded

Rationale

S&P Global Ratings has lowered its issuer credit rating (ICR) on the Commonwealth of Kentucky to 'A' from 'A+' due to increased budgetary strain from rising costs associated with pension obligations within a constrained revenue-raising environment.

In our opinion, the state is more vulnerable to fiscal stress due to years of uneven budgetary management that has relied on expenditure cuts and weakened reserve levels during a period of economic expansion. The state's high level of fixed costs for its pension obligations and Medicaid are likely to remain such, further pressuring future budgets. Further complicating the state's long-term fiscal health are income levels well below the national average and economic growth that has consistently lagged the nation.

At the same time, S&P Global Ratings lowered its rating on the state's linked appropriation-backed obligations to 'A-' from 'A', affecting issues on lease debt issued by the State Property and Buildings Commission (SPBC) and other state agencies. S&P Global Ratings also lowered its ratings on the commonwealth's state aid intercept programs for schools and universities to 'A-' from 'A'. The program is based on the requirement for the state to withhold appropriated state aid if a school district or university is unable to meet debt service requirements. S&P Global Ratings also lowered its rating to 'BBB+' from 'A-' on Kentucky's lease debt backed by appropriations from the Administration Office of the Courts (AOC), issued for county court projects.

At the same time, S&P Global Ratings assigned its 'A-' long-term rating to the SPBC's revenues bonds (Project No. 119) and agency fund revenue refunding bonds (Project No. 120). The outlook on all ratings is stable.

The ICR reflects what we view as Kentucky's:

- Demographic profile, which is weaker than the national average;
- Significant expenditure cuts in recent years, absent revenue changes, leading to uneven budgetary management;
- Diminished reserve levels to a projected $8 million balance at the end of fiscal 2018;

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- Moderately high debt burden, but moderate debt service carrying charges; and
- Large unfunded pension liability that we expect to continue to weaken based on plan demographics and long-term underfunding of the Teachers' Retirement System (TRS).

Kentucky's chronic underfunding of its pensions has translated into large unfunded liabilities and funded levels that are among the lowest in the nation. The state's overall pension funded ratio of 33.8% as of fiscal 2017 on an actuarial market value basis, is weak, in our view. TRS is the commonwealth's largest pension plan and was 39.8% funded on a Governmental Accounting Standards Board (GASB) basis. Its second-largest plan, the Kentucky Employees Retirement System (KERS) non-hazardous plan, within the Kentucky Retirement System (KRS), was just 13.3% funded on an actuarial market value basis.

Pension contributions make up a sizable share of Kentucky's budget. Total commonwealth contributions across the biennium for all funds are approximately $5 billion. The share coming from the general fund accounts for 16.3% and 15.2% of expenditures in fiscal years 2019 and 2020, respectively, an increase from 13.8% in fiscal 2017 and 13.2% in fiscal 2018. We understand that Kentucky makes pension contributions from funds outside the general fund (including the road fund) as it relates to those respective employees. While Kentucky's proportionate share of KERS non-hazardous and hazardous is 69.5%, the commonwealth is indirectly a contributor on behalf of certain participating employers through general appropriations. While the commonwealth took what we consider the positive step of reducing actuarial assumptions to align with actual experience and fully fund the full actuarially determined employer contribution for the year, it may prove insufficient to curb its escalating pension costs. Most beneficiaries are in plan tiers that cannot be altered based on state law and the prospect of new hires contributing to fund those existing liabilities is unlikely as most state retirement plans have experienced employment contraction.

In our opinion, the KERS non-hazardous plan is extremely underfunded and given current liquidity concerns, some assumptions may be overly optimistic, despite recently being revised. Continued liquidity strain may lead the plan to liquidate long-term investments, resulting in market returns that might be less than assumptions, in our view. Despite reforms enacted this year, the commonwealth is likely to face protracted pension pressures that might further erode its credit quality over time.

For fiscal 2017, the state's general fund revenues ended with $138.5 million or 1.3% less than budgeted and over appropriations were $13.7 million. The state committed in the year to overfund contributions to certain plans for liquidity purposes through funding cuts of 9.0% for various agencies and 4.5% for public colleges and universities, as well as some use of reserves. The budget also included a draw of $106 million on budget reserve trust fund balances and applies remaining general fund balances. At the end of the fiscal year, the budget reserve trust fund declined from a beginning fiscal year balance of $235.8 million to $150.5 million, or 1.4% of actual 2017 revenues for the year.

Fiscal 2018 projections show improvement in revenue compared with earlier projections, but the revenue estimates approved in December 2017 were $138 million less than the original budgeted estimate. The state's third-quarter revenue report shows general fund receipts totaling $2.5 billion, an increase of $125.9 million or 5.3% compared with the previous year. Growth in the final quarter is expected to be 2.3% compared with 2017. Kentucky predicts revenues for the entire year will be $10.8 billion for growth of 3.4%. If the $110.7 million current-year revenue surplus materializes, the state will still need to close a $28 million shortfall. The governor's office had previously enacted a

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budget-reduction order for the year of $158 million. However, the budget reserve trust fund is expected to be depleted to extremely low levels. The beginning $150.5 million balance is expected to be reduced by $56.7 million for appropriated use and $85.7 million for increasing necessary government expenditures. The ending balance is expected to be $8.1 million, a de minimus percent of its budget of 0.1% of revenues. The trust has not been that low since fiscal 2009 at $7.1 million.

The adopted fiscal 2019-2020 biennium budget fully funds required pension contributions for the first time in more than a decade. To make the payments, the state uses $150 million in the permanent pension trust. Additional expenditure cuts of 6.25% were enacted nearly across the board. While there were limited exemptions from spending reductions, the state increased its base per-pupil classroom funding. The budgetary pressures have been compounded by sluggish revenue growth that has missed estimates in recent years. Projections for the current biennium show modest revenue growth of 2.7% ($287.5 million) in fiscal 2019 and 2.6% ($284.1 million) in fiscal 2020. The legislature also enacted a tax reform package (House Bill 366 [HB 366]) to expand the sales tax base and simplify the tax code to a single rate for personal and corporate income taxes. The Office of the State Budget Director (OSBD) expects about $193.7 million and $196.6 million in additional revenue for each respective year of the biennium from the state's tax reform.

The state also made additional appropriations to the budget reserve trust fund, increasing the balance to $41.5 million in 2019 and $195.1 million in 2020. It estimates the 2020 year-end balance at $236.6 million, or 2.1% of the year's budget revenues. This is primarily accomplished through transferring excess reserves in the self-insurance fund. The budget contains about $300 million in one-time measures consistent with previous years, some of which is available reserve for pension contributions and fund transfers to the state's budget reserve trust. In our opinion, the state's recent history of missing revenue and necessary government expenditure estimates will likely result in less-than-projected reserve balances at the end of the biennium.

The budget takes positive strides to increase reserve balances and funding to the state's pension systems. However, Kentucky continues to make broader expenditures cuts that could affect economic growth and, in turn, revenues. The state's history of missing revenue estimates is a credit risk, in our view, and one that is augmented by weak economic demographics. In our opinion, continued revenue shortfalls are likely. As the state continues to reduce expenditures through midyear budget-reduction orders and biennium budgets, the availability of future expenditure cuts to maintain budgetary balance becomes less likely, in our opinion. We view the state's over-reliance on expenditure-cutting measures and reserve drawdowns, during a period where significant pension cost pressures have increased, as uneven budget management.

An ongoing credit risk for the state is the increasing state share of Medicaid expenditures following expansion under the Affordable Care Act (ACA). According to the Kaiser Family Foundation, Kentucky's non-elderly adult uninsured rate fell to 7.2% in 2016 from 16.3% in 2013, and nearly 462,000 adults are enrolled in Medicaid expansion coverage as of fiscal 2016. This has led to significant cost increases, with the state receiving approval for a waiver to change its traditional Medicaid expansion. The cost savings were not included in the budget and, due to the provisions included in the waiver, are likely to face legal challenge. Over the biennium, the state estimated general fund Medicaid benefit and administration costs of $1.8 and $2.0 billion, respectively, or 16.8% and 17.6%, respectively, of the revenues in

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each year of the biennium.

Kentucky lags the nation in key measures such as total employment, population, and personal income growth, despite its healthy recovery from the recession. Over the past 10 years, the state's real GDP increased 0.75% annually compared with the nation's 1.23% growth and 0.95% over the past five years compared with 2.03% nationally. Per capita gross state product (GSP) and personal income were 77% and 78% of the U.S. levels, respectively, in 2017. According to IHS Global Insight, Kentucky's growth will likely continue to lag the nation in 2018 and for the next four years. IHS projects state GDP growth of 2.24% for 2018 compared with 2.73% for the U.S., while employment growth will be a tepid 0.98% compared with 1.68% for the nation.

A limiting factor to diversifying the state's economy and higher-paying job growth is the state's low educational attainment levels. Less than one-third of Kentucky residents hold a post-secondary degree, forcing the state to rely on more traditional manufacturing and service-sector jobs. The adopted biennium budget reduces the base appropriation to all public colleges by 6.25% over the next two years compared with a 4.5% reduction over the previous biennium.

Under our state criteria methodology (published Oct. 17, 2016, on RatingsDirect), Kentucky's overall score is '2.3', on a scale of '1.0' to '4.0', with '1.0' being the strongest, which is associated with an 'A+' indicative credit level. The state's pension funded ratio of 34%, reflects a high level of expected future liabilities, in our view. Given that the funded ratio has fallen below 40% and is expected to remain below 40%, per our criteria, we have applied a one-notch override and assigned an 'A' rating to our ICR on Kentucky.

Project No. 119 And 120 Bonds

The Project No. 119 bonds and the interest thereon are payable solely from the revenues to be derived from the rental payments payable under the Project No. 119 lease and sublease. The project has been leased to the Finance and Administration Cabinet of the Commonwealth of Kentucky in accordance with a lease agreement between the commission, as lessor, and the cabinet, as lessee. To comply with the commonwealth's budget process, the cabinet has subleased portions of the project under subleases to various state agencies. The bonds are not secured by a pledge of, or lien on, any properties constituting the project or by a pledge of or lien on the income derived from the project. The bonds will fund various capital projects across the state.

The Project No. 120 bonds are being issued to refund all existing taxable agency fund revenue bonds (Projects No. 92 and 97) and outstanding Kentucky Asset/Liability Commission project notes, 2005 agency fund taxable first series. The previously issued bonds funded various projects related to the Bluegrass Station in Lexington. The basis of payments under the lease are Department of Military Affairs (DMA) revenues. The appropriations of which are derived from the state's agency fund, separate and distinct from that of the general fund. However, if the DMA fails to pay any amounts due under the Project No. 120 lease, or a deficiency exists in the amount on deposit in the reserve fund, then the Finance and Administration Cabinet of the Commonwealth will seek a general fund appropriation in an amount equal to the debt service obligation to pay such sufficiently for the payment of the debt service on the Project No. 120 bonds and to maintain the reserve fund requirement or maximum annual debt service (MADS).

Under the provisions of the state constitution, the cabinet and the sublessees are prohibited from entering into financing obligations extending beyond the biennial budget. The project's lease is only for two years and is automatically renewed unless written notice of the election by the cabinet or DMA to not so renew is given to the

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commission by the last business day of May, before the beginning of the next succeeding biennial renewal term. The bonds are not secured by a pledge of, or lien on, any properties constituting the project or by a pledge of or lien on the income derived from the project.

Outlook

The stable outlook reflects Kentucky's enacted pension reform, adopted biennium budget that fully funds its required actuarial determined employer contribution to all pension plans, and transferring of funds to its budget reserve trust fund. Despite these developments a history of missed revenue estimates, underestimating necessary government expenditures, and weak economic indicators could indicate further downward rating pressures. However, we do not expect to raise our rating within the two year-outlook period.

The state's fixed-cost pressures from its retirement obligations, Medicaid spending, and other obligations have limited budgetary flexibility, leaving it more vulnerable to an economic downturn. Future upward rating movement will depend on the state's ability to reduce its unfunded pension liabilities while maintaining structural balance. However, current pension pressures are likely to persist despite reform efforts and weak economic indicators may further erode revenues over the biennium. If the state's revenues continue to miss estimates, leading to a lack of reserve replenishment; an increased reliance on one-time revenue measures; or pension pressures further overwhelm the budget, we may lower the rating.

Government Framework

The commonwealth's constitution requires it to approve balanced budgets each biennium. Although the constitution permits deficits, state law prohibits operating deficits. To help manage its budget, the governor is empowered by statute to adjust state spending as needed, when a certified general or road fund revenue shortfall of 5% or less is certified. Shortfalls of more than 5% require legislative action. Legislation permits state employee layoffs and service reductions as part of the spending adjustments. Kentucky has revenue-raising ability and can raise its income and sales tax rates and approve new revenues without the need for voter approval, although this is not a route the state typically takes to manage its budget. Given escalating pension contributions and high fixed costs, the state has relied on expenditure cuts instead of raising revenues.

The state's legal framework for issuing debt is constrained by a state constitutional limit not to incur debt beyond $500,000 without voter approval, which applies to general obligation (GO) debt. As a result, the state has a history of using its appropriation security for bond issuances. During the previous legislative session, there was substantial debate about the state's willingness to fund availability payments related to its series 2015 Economic Development Finance Authority revenue bonds for the state's Next Generation Information Highway Project. The payments were funded through legislation (Senate Bill 200) outside the normal budget bill as an amendment. While the bill does fund the project with $33.4 million and $34.3 million in each year of the biennium, it also raises questions regarding the state's willingness to make these payments in the future. However, the bill authorizes up to $110 million in additional bond financing for the project to cover supervening events related to delays in completing the project, which now is

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estimated at Oct. 21, 2022 (39 months late).

We have assigned a score of '1.3' out of '4.0' to Kentucky's government framework, on a scale where '1.0' is the strongest score and '4.0' the weakest.

Financial Management Assessment

We view the commonwealth's financial management practices as standard based on our Financial Management Assessment (FMA). An FMA score of standard indicates our view that officials maintain adequate policies in some, but not all, key areas.

Management's practices include the following:

- Constitutional and Kentucky statute requires a two-year budget. The consensus forecasting group, an independent body, is statutorily responsible for producing revenue estimates used in forming the budget. Each branch of the government must prepare and submit a recommended budget to the General Assembly for the two fiscal years included in the biennial budget. The legislature reviews the budget requests, makes revisions, and legally adopts the biennial budget for each of the three branches.
- There is no formal process pertaining to monthly expenditures reporting, but the budget is discussed at the legislative level quarterly.
- Kentucky doesn't produce any formal long-term financial plans, but the Office of State Budget director produces updated rolling revenue forecasts each quarter that look out for the next three quarters. Internally, however, the state examines significant budget areas such as Medicaid and retirement obligations and projects out those costs on multiyear terms. Revenues are also projected for internal purposes using econometric models.
- Kentucky has a formal capital plan that extends six years, with the first two years consisting of current appropriations with funding in place. Out-years identify projects and expected costs.
- Kentucky statute has established a state investment commission, which is responsible for setting guidelines for investments and benchmarks.
- The state doesn't have a formal debt management policy. It prepares an analysis of debt before each budget, and the results are presented with the recommended executive budget and reprinted in a summary form with the enacted budget. However, there is no statutory debt cap. Informally, the state targets a debt level of 6% of estimated total revenues (not including federal funds). The AOC leases and availability payments are not considered in the debt policy, but they are part of thresholds in capital planning and budget processes. Capital leases (as defined by statute) have to be a line item in the appropriation act. In that sense, they are brought into the decision-making process.
- Kentucky has by statute set a goal of maintaining a budget reserve trust fund balance of 5% of general fund revenues, although it's currently well below that level, and given recent budget pressures tied to pension funding, we do not expect it to meet this goal over the next few years.
- On a scale of '1' (strongest) to '4' (weakest), we assign a '2.5' to Kentucky's financial management.

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Economy

Kentucky lags the nation in key measures such as total employment, population, and personal income growth, despite its healthy recovery from the recession. Its largest employment sectors include trade, transportation, and utilities (20.9%); government (16.4%); and education and health services (14.2%). The economy relies on traditional manufacturing (13% of employment) with the 10th-highest concentration in the country, according to IHS. In our opinion, the state's GDP growth has consistently been below the U.S. Over the past 10 years, its real GDP increased 0.75% annually compared with the nation's 1.23% growth and 0.95% over the past five years compared with 2.03% nationally. Per capita GSP and personal income were 77% and 78% of the U.S. levels, respectively, in 2017.

According to IHS, Kentucky's growth will continue to lag the nation in 2018 and over the next four years. It projects state GDP growth of 2.24% for 2018 compared with 2.73% for the U.S., while employment growth will be a tepid 0.98% compared with 1.68% for the nation. IHS projects labor market growth on average of 0.8% per year between 2018-2023, below the national average of 1.1%. Expansion in manufacturing is expected to be mixed, with most employment gains in the professional and business services sector. Kentucky's central location has made it attractive both as a manufacturing base and a destination for transportation and warehousing firms. Logistics and service sectors jobs tend to be lower paying than mining and manufacturing, and as Kentucky's economy transitions, this could pose a challenge. The state is expected to benefit from Amazon's $1.5 billion air cargo hub at the Cincinnati-Northern Kentucky International Airport (CVG) that added an additional 210 acres of land to the site. The project, a hub for Prime Air cargo planes, is expected to bring close to 2,700 jobs to the region.

A limiting factor to diversifying the economy and higher-paying job growth reflects the state's low educational attainment levels. Less than one-third of the state's residents hold a post-secondary degree, forcing the state to rely on more traditional manufacturing and service-sector jobs. The adopted biennium budget reduces the base appropriation to all public colleges by 6.25% over the next two years. Despite the low cost of business, we expect the state to experience limited employment and private investment growth due to its reliance on sectors such as manufacturing that are experiencing structural decline. In our opinion, the overall state demographics also limit private investment.

On a scale ranging from '1.0' (strongest) to '4.0' (weakest), we assign a score of '2.7' to Kentucky's economy.

Budgetary Performance

In our opinion, Kentucky is conservative in its revenue forecast and often ends up underspending budgeted appropriations. However, the state has missed revenue estimates in recent years. In addressing periods of economic weakness, officials have used a combination of expenditure cuts, reserves, and other one-time revenues, such as debt restructuring and deficit financing. The state has demonstrated a willingness to trim the budget, both midyear and at budget time, although it has been far less willing to increase taxes. It has used reserves, stimulus funds, and other one-time measures to balance its budget. Although Kentucky has a balanced-budget requirement, it's allowed to fund less than the actuarially required contribution (ARC) for its pensions. Despite limited available reserves, the commonwealth maintains adequate liquidity and has not had to issue tax and revenue anticipation notes since 2008.

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Fiscal 2017 audited results

On a budgetary basis, the state's general fund revenues ended $138.5 million, or 1.3% less than budgeted and over appropriations by $13.7 million. The state's largest revenue sources--sales and use (33% of revenues) and individual income (42% of revenues)--underperformed estimates by negative 1.5% and negative 0.4%, respectively. Compared with the previous two fiscal years, each revenue category saw decelerating growth at only 2.6% for individual income and 0.7% for sales and use compared with the previous year.

To address the shortfall, Kentucky primarily restricted fund transfers ($77.4 million) and reduced executive appropriations ($55.5 million). For the year, it did fund more into its pension system, increasing its historically underfunded teachers' pension contribution to 96% of what was required. To finance significant increases to pension contributions, the state used a combination of structural adjustments and one-time revenues. It cut funding by 9.0% for various agencies and by 4.5% for public colleges and universities, while making no cuts to the kindergarten through grade 12 education funding formula over the biennium. The budget also included a draw of $106 million on budget reserve trust fund balances, and applies the remaining general fund balances.

At the end of the fiscal year, the budget reserve trust fund declined from a beginning fiscal-year balance of $235.8 million to $150.5 million, or 1.4% of actual 2017 revenues for the year.

Fiscal 2018 projections

The state's fiscal 2018 third-quarter revenue report, prepared at the end of April, shows general fund receipts totaling $2.5 billion compared with $2.4 billion in the third quarter of fiscal 2017--an increase of $125.9 million or 5.3%. The state expects growth in the final quarter to be 2.3% compared with the same period the previous year. It also predicts revenues for the entire year to be $10.8 billion, for growth of 3.4%. However, the revenue approved in December was $138 million less than the original budgeted estimate. If the $110.7 million current-year revenue surplus materializes, Kentucky will still need to close a $28 million shortfall.

The governor's office had previously enacted a budget-reduction order for the year of $158 million. However, the state expects the budget reserve trust fund to decline to extremely low levels. It also expects the beginning $150 million balance will drop by $56.7 million for appropriated use and $85.7 million for increasing necessary government expenditures. The state anticipates the ending balance to be $8.1 million, a de minimus percent of its budget (0.1% of revenues). The trust has not been that low since fiscal 2009 at $7.1 million.

The improved revenue landscape in the third-quarter report is welcome news. Combined with the year's budget reduction order, the state is likely to maintain the projected, albeit low, reserve trust balance at the end of the fiscal year.

Fiscal 2019-2020 biennium budget

The governor proposed an austere budget to fully fund retirement contributions reflecting more conservative assumptions. For the general fund, the state's main pension funds will cost $3.3 billion over the biennium, or 14.8% (fiscal 2019) and 14.3% (fiscal 2020) of proposed budgeted expenditures compared with 13.8% and 13.2% of spending in fiscal years 2017 and 2018, respectively. To fund the increasing pension costs, the proposal included 6.25% across-the-board spending cuts and eliminated 70 programs. While there were limited exemptions from spending reductions, the state maintained its base per-pupil classroom funding in the proposal. The budgetary stresses are

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compounded by sluggish revenue growth that has missed estimates in recent years. Projections for the current biennium show modest revenue growth of 2.7% ($287.5 million) in fiscal 2019 and 2.6% ($284.1 million) in fiscal 2020.

The adopted budget was different than what was proposed. The legislature's budget was vetoed by the governor, but overridden by simple majority. The legislature kept the 6.25% across-the-board spending cuts to most agencies, but restored some funding to public education and increased the per-pupil classroom expenditure. It also enacted a tax reform package (HB 366) to expand the sales tax base and simplify the tax code to a single rate for personal and corporate income taxes. The OSBD expects about $193.7 million and $196.6 million in additional revenue for each respective year of the biennium. The appropriations bill (HB 200) included fully funding the required employer pension contribution for all pension plans, something the state has not done for nearly a decade and which we view positively. To make the payments the state uses $150 million in the permanent pension trust fund.

The state also made additional appropriations to the budget reserve trust fund, increasing the estimated balance to $41.5 million in 2019 and $195.1 million in 2020. The estimated year-end balance for fiscal 2020 is $236.6 million, or 2.1% of the year's budget revenues. This is primarily accomplished through transferring excess reserves in the self-insurance fund. The budget contains about $300 million in one-time measures consistent with previous years, some of which is available reserve for pension contributions and fund transfers to the state's budget reserve trust.

In our opinion, the budget takes positive strides to increase reserve balances and funding to the state's pension systems. However, the state continues to make broader expenditures cuts that could affect economic growth and, in turn, revenues. The state's history of missing revenue estimates is a credit risk, one that is augmented by weak economic demographics. In our opinion, continued revenue shortfalls are likely. As Kentucky continues to reduce expenditures through midyear budget reduction orders and adopted biennium budgets, the availability of future expenditure cuts to maintain budgetary balance becomes less likely.

We assign a score of '1.9' out of '4.0' to the commonwealth's budgetary performance, on a scale where '1.0' is the strongest.

Debt And Other Liabilities

Kentucky has not issued GO bonds in more than 40 years; instead, it relies mainly on appropriation-backed obligations and revenue bonds. The General Assembly created various commonwealth corporations, commissions, and authorities to finance projects. In many instances, the agencies are allowed to incur debt only with the assembly's approval of projects and biennial appropriation of debt service. Under financing agreements, the legislature has the biennial decision to appropriate funds to the finance and administration cabinet and other agencies for the payment of debt service.

As of June 30, 2017, the state had $7.5 billion in net tax-supported debt, down from $8.4 billion at fiscal year-end 2014. Kentucky has typically sought to keep appropriation debt service at about 6% of revenues. The state does not include AOC leases and availability payments in its calculation of the 6%. Debt service carrying charge was approximately 3.6% of general fund expenditures in fiscal 2017. Net tax-supported debt was $1,678 per capita, or 4.3% of personal income, and 3.6% of GDP as of fiscal year-end 2017. The adopted biennium includes authorizations of $377.7 million

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that is general fund supported, $602.89 million supported by agency fund appropriations, and $18.75 million supported by the road fund.

Pensions

Kentucky's unfunded pension liability represents its proportionate share of the Kentucky Teachers Retirement System (TRS) and the KRS which includes KERS non-hazardous, KERS hazardous, State Police Retirement System (SPRS), Legislators' Retirement Plan (LRP), and Judicial Retirement Plan (JRP). The average three-year funding ratio of the combined systems was 34.3% as of 2017.

Within its 2017 actuarial valuation, KRS adopted more realistic assumptions, in our view. For the poorly funded KERS non-hazardous plan (13%) and SPRS (27%), the rate of return was reduced to 5.25% from 6.75%, respectively, and payroll growth was reduced to 0.00%, in line with actual plan experience that showed it contracting. In addition to these changes and others to plans in the system, the unfunded liabilities increased by approximately $5 billion. Employer contribution rates likewise saw an increase with KERS non-hazardous at 40.2% of payroll and SPRS at 70.3% of payroll. We believe the lower assumed discount rate and weak recent market returns will depress future reported pension funded ratios, all else being equal, and increase required employer contribution rates that came to a head in the adopted biennium budget. Despite annual valuations, the state does not adjust its pension contributions mid-biennium, resulting in a delayed response to required contribution increases.

For TRS, the state's largest pension plan, the commonwealth has not fully funded its ARC since 2008. However, the adopted biennium budget makes the full actuarially determined contribution (ADC). All employers participating in TRS are responsible for paying a fixed employer contribution rate set forth in state law, which is not actuarially determined. Current biennium contributions above legal requirements were determined by budget negotiations rather than a formula. For the year, plan assets increased substantially due to market returns.

We believe, on the whole, management factors and actuarial inputs for TRS do not significantly encumber or improve our view of the state's overall pension funding discipline. As of the state's June 30, 2017 valuation, Kentucky has a closed amortization period at 27.4 years remaining and a "level percent of pay" method which assumes rising future payroll and results in escalating pension contributions over time. For the year, the annual rate of return net of investment expense was 15.0% compared to a 7.5% assumption. Because of the failure to fund full ADC payments for TRS, and in accordance with GASB Statement No. 67 standards, TRS has projected that its plan fiduciary net position will be depleted, and has adopted a blended discount rate of 4.2% for fiscal 2017, which we view as reasonable. However, we think some assumptions are optimistic and, if revised, could lead to an earlier crossover date. The plan's ratio of active members to beneficiaries equals 1.36, which is not significantly below the median national ratio. However, the plan's weak pension funded ratio is below the median. It is TRS' practice to produce an experience study every five years.

We consider the state's three-year average pension funded ratio weak at 34%. Kentucky's proportionate share of TRS and KRS' net pension liability translates to what we view as a relatively high $8,450 per capita and 21.5% of personal income.

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Effects of pension reform

The state enacted legislation (SB 151) that reformed various benefit provisions of its pension system. While the pension changes are welcome, particularly paying 100% of required contribution, in our opinion, they may prove insufficient and are likely to face legal challenges. A particular issue is how the state funds its existing unfunded liabilities as over 90% are attributable to Tier I and II employees in KRS. Resetting the amortization to 30 years for KRS and TRS adds an additional six and three years to the current plan amortization schedules, respectively.

There were no benefit changes to existing retiree benefits; some changes were enacted for calculating final average salary for those retiring after Jan. 1, 2019. For current KRS cash balance members (Tier III or those hired after July 1, 2014), the future interest credit on cash balance account balances is reduced so that contributing members will receive an annual interest credit of 85% of the plan's 10-year net return. This is changed from a guaranteed 4% credit and 75% of the plan's five-year net return. For new members (Tier IV), the cash balance plan is applicable, but both tier of members have the option to participate in a new 401(a) money purchase plan. For KRS, the inviolable contract now excludes these changes.

For TRS members, there were no changes to existing members or retirees in the plan. For new members, a hybrid cash balance plan is established similar to the KRS plan. Contribution rates are different for TRS members than KRS, with a nonuniversity employer credit of 8% plus interest and a university employer credit of 4% plus interest. The inviolable contract will be limited to the account balance the employee has in each plan.

In addition, all KRS plans will be funded at level-dollar financing of unfunded liabilities over a closed 30-year amortization period, using five-year smoothed asset valuation method for all KRS systems beginning with the 2019 actuarial valuation. The TRS plan will require employers to: fund an additional amount above the base funding formula to pay the actuarially determined employer contribution for pension and life insurance funds, reduce the payroll growth assumption from 3.5% to 0.0% over a four-year period (2021) to implement a level dollar amortization method, and reset the liability amortization to a 30-year closed period beginning with the 2018 actuarial valuation.

The original version of HB 362 allowed various employers the option to withdraw from the plans. Based on actuarial analysis at the time, employers eligible to withdraw from the plan represent 25% of covered payroll for KERS non-hazardous and 2% for KERS hazardous. The bill would apply to about 215 employers between those two plans and the County Employees Retirement System (CERS). The original version could have cost the state nearly $2.0 billion, however the governor vetoed portions of it and the General Assembly replaced portions of it with HB 265 & HB 487 to allow KRS to provide an opt out plan rather than the plan in HB 362. How this plan will be developed is unknown.

The state has allowed some 215 employers to pay their employer contribution rate for 2019 at the 2018 rate, essentially underfunding contributions to the plan for the year. For the non-hazardous plans, those employers represent an estimated $4.0 billion of the retirement and insurance funds' unfunded accrued liability as of June 30, 2018. Given these employers represent a significant portion of the non-hazardous plan's liability, we view the deferral negatively. We would also negatively view increased costs to the state should a significant number of employers withdraw from the plan.

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Other postemployment benefits

Kentucky's OPEB liability is one area where the state has made some improvement. Although relative to the budget, the net OPEB liability remains sizable at $6.2 billion, the state has been able to increase annual contributions to better align these with the OPEB ARC. In April 2010, the governor signed into law HB 540, creating the TRS insurance trust fund to supplement the current medical insurance fund, specifically dedicated to health benefits. The bill's purpose is to increase employee and employer contributions to TRS over a six-year period.

As of June 30, 2017, the KERS and state police component, had a net OPEB liability of $2.7 billion. The TRS' net OPEB liability was $3.6 billion. In fiscal 2017, the state contributed $167.2 million, or 113.8% of the $146.9 million required contribution for KERS' OPEB. For TRS, the state contributed $180.4 million, or 173.6% of the ARC. Based on the new GASB 74 reporting standards, KERS non-hazardous, hazardous, and SPRS had a funding ratio of 24.4%, 98.8%, and 57.1%, respectively. The TRS' OPEB plan is 21.2% funded.

These funded levels, while low, in our opinion, compare favorably with those of other states that do pay-as-you-go OPEB funding. In the past, the state issued notes to cover loans made from the pension fund to the medical insurance trust fund and to cover its funding obligation for medical insurance. In the 2012-2014 biennium budget, Kentucky issued $152 million in notes for this purpose. It has not done so in subsequent years.

We have assign a score of '3.1' out of '4.0' to Kentucky's debt and liability profile, with '1.0' being the strongest score.

Ratings Detail (As Of May 18, 2018)		
Western Kentucky Univ gen rcpts		
Long Term Rating	A-/Stable	Downgraded
Underlying Rating for Credit Program	A-/Stable	Current
Eastern Kentucky Univ gen rcpts		
Long Term Rating	A-/Stable	Downgraded
Eastern Kentucky Univ gen rcpts		
Long Term Rating	A-/Stable	Downgraded
Underlying Rating for Credit Program	A-/Stable	Current
Eastern Kentucky Univ gen rcpts		
Long Term Rating	A-/Stable	Downgraded
Underlying Rating for Credit Program	A-/Stable	Current
Kentucky gen fund rev bnds (Project No. 115) due 04/01/2018-2038		
Unenhanced Rating	A-(SPUR)/Stable	Downgraded
Kentucky gen fund rev bnds (Project No. 115) due 04/01/2038		
Long Term Rating	A-/Stable	Downgraded
Kentucky GO (Proj #115) (BAM) (SECMKT)		
Unenhanced Rating	A-(SPUR)/Stable	Downgraded
Kentucky GO (Proj #115) (BAM) (SEC MKT)		
Unenhanced Rating	A-(SPUR)/Stable	Downgraded
Western Kentucky Univ gen rcpts		
Long Term Rating	A-/Stable	Downgraded
Underlying Rating for Credit Program	A-/Stable	Current

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Western Kentucky Univ gen rcpts		
Long Term Rating	A-/Stable	Downgraded
Underlying Rating for Credit Program	A-/Stable	Current
Western Kentucky Univ gen rcpts rfdg bnds ser 2016A due 09/01/2026		
Long Term Rating	A-/Stable	Downgraded
Underlying Rating for Credit Program	A-/Stable	Current
Western Kentucky Univ gen rcpts (ASSURED GTY)		
Unenhanced Rating	A-(SPUR)/Stable	Downgraded
Western Kentucky Univ gen receipts bnds (Parking Garage Proj) (AGM)		
Unenhanced Rating	A-(SPUR)/Stable	Downgraded
Underlying Rating for Credit Program	A-/Stable	Current
Western Kentucky Univ gen receipts rfdg bnds		
Long Term Rating	A-/Stable	Downgraded
Underlying Rating for Credit Program	A-/Stable	Current
Eastern Kentucky Univ gen receipts ser 2007-A (AMBAC)		
Unenhanced Rating	A-(SPUR)/Stable	Downgraded
Murray St Univ gnl receipts bnds ser 2009A		
Long Term Rating	A-/Stable	Downgraded
Bracken Cnty Sch Dist Fin Corp, Kentucky		
Bracken Cnty Sch Dist, Kentucky		
Bracken Cnty Sch Dist Fin Corp (Bracken Cnty Sch Dist) GO		
Long Term Rating	A-/Stable	Downgraded
Kentucky Asset Liability Comm, Kentucky		
Kentucky		
Kentucky Asset Liability Comm fltg rate nts		
Unenhanced Rating	A-(SPUR)/Stable	Downgraded
Kentucky Asset Liability Comm (Kentucky)		
Long Term Rating	A-/Stable	Downgraded
Kentucky Asset Liability Comm (Kentucky) 2005 agency fd		
Unenhanced Rating	A-(SPUR)/Stable	Downgraded
Kentucky St Prop & Bldg Comm, Kentucky		
Kentucky		
Kentucky St Prop & Bldg Comm (Kentucky) (Project #109) APPROP		
Long Term Rating	A-/Stable	Downgraded
Kentucky St Prop & Bldg Comm (Kentucky) (Project #110) APPROP		
Long Term Rating	A-/Stable	Downgraded
Kentucky St Prop & Bldg Comm (Kentucky) (Project #111) APPROP		
Long Term Rating	A-/Stable	Downgraded
Kentucky St Prop & Bldg Comm (Kentucky) (Project #112) APPROP		

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Long Term Rating	A-/Stable	Downgraded
Kentucky St Prop & Bldg Comm (Kentucky) (Project #112) APPROP		
Long Term Rating	A-/Stable	Downgraded
Kentucky St Prop & Bldg Comm (Kentucky) (Project #113) APPROP		
Long Term Rating	A-/Stable	Downgraded
Kentucky St Prop & Bldg Comm (Kentucky) (Proj #112) APPROP (AGM)		
Unenhanced Rating	A-(SPUR)/Stable	Downgraded
Kentucky St Prop & Bldg Comm (Kentucky) (Proj #112) APPROP (AGM)		
Unenhanced Rating	A-(SPUR)/Stable	Downgraded
Kentucky St Prop & Bldg Comm (Kentucky) (Proj #112) APPROP (AGM) (SECMKT)		
Unenhanced Rating	A-(SPUR)/Stable	Downgraded
Kentucky St Prop & Bldg Comm (Kentucky) (Proj #114) APPROP		
Long Term Rating	A-/Stable	Downgraded
Kentucky St Prop & Bldg Comm (Kentucky) (Proj #114) APPROP (BAM)		
Unenhanced Rating	A-(SPUR)/Stable	Downgraded
Kentucky St Prop & Bldg Comm (Kentucky) (Proj #93) APPROP (AGC)		
Unenhanced Rating	A-(SPUR)/Stable	Downgraded
Kentucky St Prop & Bldg Comm (Kentucky) (Proj #93) APPROP (ASSURED GTY)		
Unenhanced Rating	A-(SPUR)/Stable	Downgraded
Kentucky St Prop & Bldg Comm (Kentucky) (Proj #95) APPROP (AGM)		
Unenhanced Rating	A-(SPUR)/Stable	Downgraded
Kentucky St Prop & Bldg Comm (Kentucky) (Proj #99) APPROP (BAM) (SECMKT)		
Unenhanced Rating	A-(SPUR)/Stable	Downgraded
Kentucky St Prop & Bldg Comm (Kentucky)		
Long Term Rating	A-/Stable	Downgraded
Kentucky St Prop & Bldg Comm (Kentucky) (Proj No. 69)		
Unenhanced Rating	A-(SPUR)/Stable	Downgraded
Kentucky St Prop & Bldg Comm (Kentucky) (Proj No. 77) rev & rev rfdg bnds due 02/01/2004 & 08/01/2004-2019 2023		
Unenhanced Rating	A-(SPUR)/Stable	Downgraded
Kentucky St Prop & Bldg Comm (Kentucky) (Proj No. 83)		
Unenhanced Rating	A-(SPUR)/Stable	Downgraded
Lexington-Fayette Urban Cnty Govt Pub Fac Corp, Kentucky		
Kentucky		
Lexington-Fayette Urban Cnty Govt Pub Fac Corp lse rev bnds (Kentucky)		
Long Term Rating	A-/Stable	Downgraded
McCracken Cnty Pub Prop Corp, Kentucky		
Kentucky		
McCracken Cnty, Kentucky		
McCracken Cnty Pub Prop Corp (McCracken Cnty) 1st mtg rev rfdg bnds (courthouse)		
Unenhanced Rating	BBB+(SPUR)/Stable	Downgraded

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Ratings Detail (As Of May 18, 2018) (cont.)

Many issues are enhanced by bond insurance.

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SECTOR COMMENT
9 April 2018

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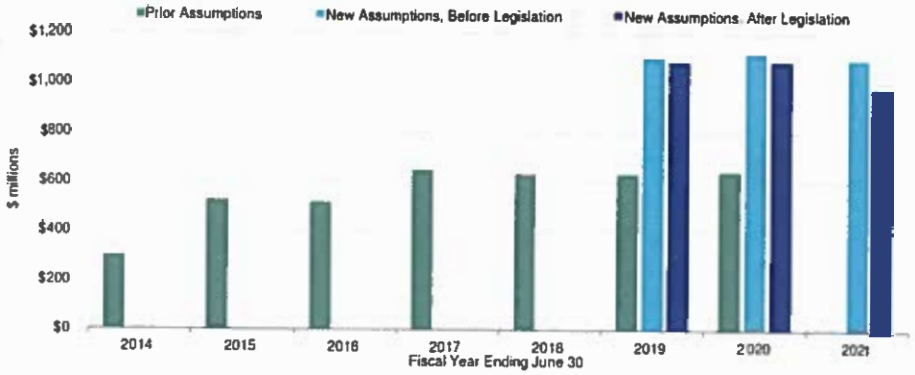
State, local government and higher education - Kentucky

Pension reforms are positive, but high liabilities still drive increased contributions

On March 29, the Commonwealth of Kentucky (Aa3 stable) legislature sent the latest round of pension reforms to the governor for his signature and/or amendments. The legislation is credit-positive for the commonwealth, local governments and public universities. Contribution increases for certain employees will slightly improve retiree health care funding for several plans. Changes to benefit formulas and a mandatory hybrid plan for new teachers will reduce future benefits, and will lower Kentucky's exposure over time to investment performance and longevity risk. The new legislation moves toward a more level repayment for unfunded liabilities of the Teachers' Retirement System (TRS), and largely maintains previously enacted increases in employer contributions to the Kentucky Employees Retirement System (KERS) and County Employees Retirement System (CERS) through actuarial changes. While those are positive for the plan's funding, they also result in higher costs for employers (see Exhibit 1).

Exhibit 1

Kentucky's pension legislation largely maintains key assumptions that increase employer costs
Employer contributions to the KERS, Non-Hazardous (KERS-NH) plan



We estimated "Prior Assumptions" values for fiscal 2019 and 2020, but have not for 2021 because certain data are not yet available. Actuarial funding changes effective in 2019 include a decrease in the discount rate to 5.25% and use of level dollar amortization. The exhibit reflects the entire KERS-NH plan, not just the state's 70% fiscal 2016 allocation.
Sources: Moody's Investors Service, based on plan actuarial valuations and actuarial analysis of legislative changes

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Commonwealth: Contribution increases and modest benefit changes are a positive step; large accrued liabilities remain

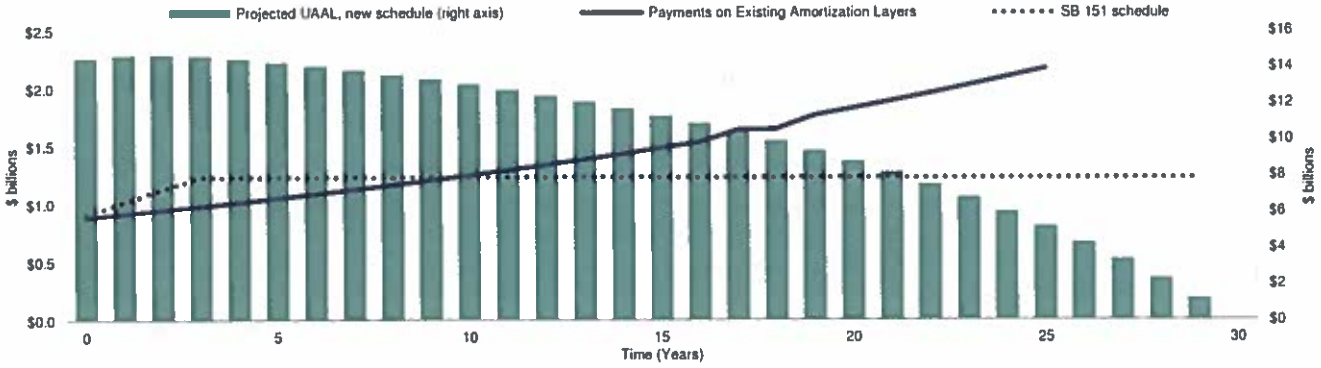
The commonwealth had the fourth largest adjusted net pension liability (ANPL) relative to gross state domestic product out of the 50 states in our most recent survey. Among other factors, Kentucky's track record of weak annual contributions has driven unfunded liability growth and put one of its largest plans, KERS, on the brink of asset depletion. The new legislation, Senate Bill (SB) 151, includes a number of modestly positive changes for KERS. Several special pay types, such as uniform allowances, will now be excluded from final salary calculations, and certain state employees must slightly hike their contributions for retiree medical benefits. SB 151 also creates an optional defined contribution plan for state employees enrolled in the non-hazardous KERS and CERS plans. Significantly higher KERS employer contribution requirements, resulting from the plan's recent actuarial changes, will be largely maintained.

SB 151 also contains positive changes for another large plan, the TRS, although its large unfunded liability is unlikely to decline materially in the near term. The state will continue to assume local school districts' TRS pension costs, but TRS-plan employees hired in 2019 or later must participate in a new hybrid pension plan. The projected impact of the change is not yet available from plan actuaries, but we expect the new hybrid plan to slow the accrual of defined benefit liabilities going forward. In addition, unused sick leave accumulated in 2019 and later will no longer impact final salary formulas used to determine pension benefits, a change that should produce actuarial savings. Higher employee contribution rates for TRS that have been in place since 2015 will be maintained. SB 151 also puts in place a new TRS amortization schedule that will move to a more level repayment approach compared to the status quo (see Exhibit 2).

Exhibit 2

SB 151 moves toward a more level repayment schedule for TRS' unfunded liabilities

Moody's comparison of current Kentucky TRS unfunded liability amortization vs. SB 151



"UAAL" stands for unfunded actuarial accrued liability. Our projections omit asset smoothing for simplicity. Does not reflect any accrued liability reductions that may materialize from SB 151's removal of sick leave from final salary formulas.

Source: Moody's Investors Service, based on Kentucky TRS actuarial valuation and SB 151

Local governments and public universities: Higher employer contributions will more quickly pay down unfunded liabilities but could pressure budgets

Municipal entities such as cities, counties and public universities also participate in statewide pension plans such as TRS and the County Employees Retirement System (CERS). Beginning July 2018, participating governments in CERS face roughly 50% contribution increases for pensions and retiree medical benefits, and SB 151 does not include relief from these increases. The governor vetoed a separate bill that would have limited CERS contribution rate increases, because it included a provision allowing higher ed institutions to stop participating in KERS and CERS. While the governor publicly stated his support for phasing in the local government cost increases, it remains uncertain whether any new bill will be passed (see Exhibit 3).

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on www.moodys.com for the most updated credit rating action information and rating history.

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Exhibit 3

SB 151 does not relieve local governments from contribution jumps in fiscal 2019

Contribution requirements as % of payroll, covering both pension and retiree medical

Year Ending June 30	CERS-H (baseline projection)	CERS-H, after SB151	CERS-NH (baseline projection)	CERS-NH, after SB151
2018	32%	32%	19%	19%
2019	48%	48%	28%	28%
2020	48%	48%	28%	27%
2021	48%	52%	28%	29%

Source: Kentucky Retirement Systems actuarial analysis

The steep increase in employer contribution rates for CERS in fiscal 2019 will create near-term operating pressure for Kentucky local governments, particularly those with limited or declining local economies, as tax rate increases or expenditure cuts may be necessary in order to accommodate the sizable jump in pension costs. Local governments will rely on their generally strong expenditure flexibility and moderate revenue-raising ability to absorb the anticipated hike in contribution rates.

Addressing the sizeable unfunded TRS liability will increasingly contribute to serious budget challenges for the state's universities, both through higher pension contributions and reductions to state appropriations.[1] Though the pension reforms favorably close the gap on unfunded liabilities, participating universities will continue to grapple with rising pension contributions that are consuming a larger share of already stressed operations and revenue collections. Fierce competition for a flat to declining pool of high school graduates is limiting their ability to fund the growing contributions.

Uncertainty over potential legal challenges remains

The changes made under SB 151 have encountered significant political resistance from state teachers, and may face a legal challenge. Opponents assert that a lack of actuarial analysis of the TRS reforms violate procedural requirements. Further, the state attorney general has publicly indicated his view that some benefit changes are legally impermissible, in part due to contractual protections for benefits that are part of existing statutes. The current bill removes the contractual protection barrier going forward, with language that preserves the legislature's right to change pension laws that become effective on or after July 1, 2018. This change may reduce the risk of future legal challenges to benefit changes.

Moody's related publications

Issuer In-Depth

Kentucky faces next step in addressing very high pension liability (October 19, 2017)

Medians - Moderate Adjusted Net Pension Liability Growth in 2016 Precedes Spike in 2017 (September 2017)

Endnotes

1 The University of Kentucky (Aa2 stable) and University of Louisville (A3 negative) do not participate in the state pension systems.

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EMEA	44-20-7772-5454

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Exhibit 8

COMMONWEALTH OF KENTUCKY
FRANKLIN CIRCUIT COURT
DIVISION I
CASE NO. 18-CI-379
ELECTRONICALLY FILED

COMMONWEALTH OF KENTUCKY,
ex rel. ANDY BESHEAR, ATTORNEY GENERAL, *et al.* PLAINTIFFS

v.

MATTHEW G. BEVIN, in his official capacity
as Governor of the Commonwealth of Kentucky, *et al.* DEFENDANTS

AFFIDAVIT OF ERIN SURRATT

Comes the affiant, Erin Surratt, first being duly sworn, and states as follows:

1. I am over the age of 18 and of sound mind.
2. I am a resident of Fayette County, Kentucky.
3. I have personal knowledge of the facts asserted in this affidavit.
4. I currently serve as the Executive Director – Office of Benefits for the Kentucky Retirement Systems.
5. I am familiar with 2018 Senate Bill 151 ("SB 151").
6. In 2017, the General Assembly enacted KRS 61.5955, which purported to allow Tier I and Tier II members of the Kentucky Employees Retirement System, the County Employees Retirement System, or the State Police Retirement System to opt into the hybrid cash balance plan provided to Tier III members.
7. However, KRS 61.5955(6) provides that no one can opt into the hybrid cash balance plan until the Kentucky Retirement Systems receives a favorable private letter

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ruling from the Internal Revenue Service on the issue of opting into the hybrid cash balance plan.

8. The Kentucky Retirement Systems has never sought, much less obtained, a private letter ruling from the Internal Revenue Service on that issue.
9. As a result, not a single Tier I or Tier II member of the Kentucky Employees Retirement System, the County Employees Retirement System, or the State Police Retirement System has ever opted into the hybrid cash balance plan.
10. In fact, Tier I and Tier II members of the Kentucky Employees Retirement System, the County Employees Retirement System, and the State Police Retirement System have not even been given the option of opting into the hybrid cash balance plan.
11. Accordingly, there are no Tier I or Tier II members who will be affected by the provisions of SB 151 as they apply to the hybrid cash balance plan.

Further the affiant sayeth naught.

Erin Surratt

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF FRANKLIN)

Subscribed and sworn to before me this 23rd day of May, 2018, by Erin Surratt.

Notary Public

My commission expires on the 13th day of October, 2018.

ALANE M. FOLEY NOTARY PUBLIC REG # 521151 MY COMMISSION EXPIRES 10/13/2018 STATE AT LARGE, KY

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Exhibit 9

COMMONWEALTH OF KENTUCKY
FRANKLIN CIRCUIT COURT
DIVISION I
CIVIL ACTION NO. 18-CI-379

COMMOMWEALTH OF KENTUCKY, et al. PLAINTIFFS

v. **AFFIDAVIT OF GARY L. HARBIN, EXECUTIVE SECRETARY OF THE TEACHERS' RETIREMENT SYSTEM OF THE STATE OF KENTUCKY**

MATTHEW G. BEVIN, et al. DEFENDANTS

* * * * * * * * * *

Gary L. Harbin, being first duly sworn, states as follows:

1. I am the executive secretary for the Board of Trustees of the Teachers' Retirement System of the State of Kentucky (TRS) in Frankfort, Kentucky. In that capacity and in accordance with KRS 161.340(1), I serve as the chief administrative officer of TRS, and have personal knowledge of the facts and matters in this affidavit.

2. To the best of my knowledge, Senate Bill 151, which was passed during the 2018 session of the General Assembly and signed by Governor Bevin (Senate Bill 151), affects current active TRS members in three ways:

    a. Senate Bill 151 limits both the use of unused sick leave as service credit under KRS 161.623 and the use of unused sick leave as salary credit under KRS 161.155 to the amount accumulated as of December 31, 2018;

    b. Senate Bill 151 prohibits beginning a second retirement account for members who retire and are re-employed on or after January 1, 2019; and

    c. Senate Bill 151 permits current members with less than 5 years of service to voluntarily opt into the cash balance plan once approval from the Internal Revenue Service (IRS) is obtained.

3. Senate Bill 151 does not affect or limit TRS members' use of unused sick leave that has been accumulated prior to January 1, 2019.

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4. Senate Bill 151 does not affect current retired TRS members' retirement allowance in any way.

5. Senate Bill 151 does not affect current active or retired TRS members' past accrued retirement benefits in any way, with the exception that it permits current members with less than 5 years of service to voluntarily opt into the cash balance plan once approval from the IRS is obtained.

6. Under Senate Bill 151, individuals who become members of TRS on or after January 1, 2019 will participate in a hybrid cash balance plan. I am aware that the Jefferson County Teachers Association (JCTA) has publicly stated that the hybrid cash balance plan "will allow TRS to remain an ageless plan and avoids negatively impacting the performance of the existing [defined benefits] members' investment funds." I also am aware that JCTA has publicly stated that the hybrid cash balance plan "will have no negative impact on the current [defined benefits] plan and will actually help sustain it." To the best of my knowledge, I have no basis to disagree with these public statements by JCTA about the hybrid cash balance plan.

7. Under Senate Bill 151, funding for the TRS pension fund will be moved to a level dollar amortization method. I am aware that JCTA has publicly stated that this change "should increase the rate at which the funding level of TRS increases." To the best of my knowledge, I have no basis to disagree with this public statement by JCTA about the level dollar amortization method increasing the rate at which the funded level of TRS increases, at least through the next twenty years. This is the result of the level dollar amortization method providing more funding for TRS in the earlier years than the level percentage amortization method.

8. I am aware that JCTA has publicly stated that Senate Bill 151 "more clearly and explicitly requires the state to pay the full ARC every year for TRS." To the best of my knowledge, I have no basis to disagree with this public statement by JCTA about funding the TRS pension fund.

9. I have reviewed the Complaint filed in the above-referenced action (Complaint). The Complaint does not mention Senate Bill 151's amendment to active current TRS members' ability to use unused sick leave as salary credit under KRS 161.155. The Complaint does not mention Senate Bill 151's prohibition of beginning a second retirement account for members who retire and are re-employed on or after January 1, 2019. The Complaint does not mention the hybrid cash balance plan that those who become TRS members on or after January 1, 2019 will receive. The Complaint also does not mention Senate Bill 151's amendments imposing a level dollar amortization method or the ability of current members with less than 5 years of service to voluntary opt into the cash balance plan once approval from the IRS is obtained.

10. The only aspect of Senate Bill 151 that the Complaint mentions that affects current active TRS members is Senate Bill 151's amendment to KRS 161.623.

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11. KRS 161.623 allows TRS members to use unused sick leave as service credit under certain circumstances. Whether TRS members can use unused sick leave as service credit depends upon, among other things, whether the public school district or other employer of TRS members has opted to allow its employees to use unused sick leave as service credit. The public school district or other employer of TRS members has discretion over whether TRS members can use unused sick leave as service credit. If a TRS member uses unused sick leave as service credit, he or she cannot use unused sick leave as salary credit.

12. Exhibit A, attached hereto and incorporated by this reference, is a true and correct summary of TRS's official records. It shows that 1,379 TRS retirees from January 1, 2008, to the present have used unused sick leave as service credit under KRS 161.623.

13. Exhibit A also identifies the 19 employers of those 1,379 TRS retirees who have used unused sick leave as service credit since January 1, 2008.

14. Since January 1, 2008, no public school district has chosen to offer service credit to its retiring TRS members for unused sick leave under KRS 161.623. Instead, during that period, all public school districts have chosen to offer retiring TRS members salary credit for their unused sick leave under KRS 161.155.

15. At present, Senate Bill 151's amendment to KRS 161.623 does not affect any employees of public school districts.

16. Among TRS employers, only public school districts and their cooperatives are permitted to compensate retiring employees for unused sick leave as salary credit under KRS 161.155 in lieu of sick leave as service credit under KRS 161.623.

17. Of all TRS members, about 96 percent are employees of public school districts. Thus, Senate Bill 151's amendment to KRS 161.623 currently affects approximately 4 percent of TRS members, none of whom are employees of public school districts.

GARY L. HARBIN

STATE OF KENTUCKY)
) ss.
COUNTY OF FRANKLIN)

Subscribed and sworn to before me by Gary L. Harbin on this 21 day of May 2018.

NOTARY PUBLIC Jessica L Penn

My commission expires 9-24-2019

Filed 18-CI-00379 05/23/2018 Amy Feldman, Franklin Circuit Clerk

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Exhibit A

Teachers' Retirement System of the State of Kentucky
Number of Retirees who Received Sick Leave as Service Credit

Employer	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	Total
Career and Technical Education	2	10	14	13	12	17	15	16	12	20	10	0	141
Council on Postsecondary Education	0	1	1	0	0	0	0	0	1	1	0	0	4
Department of Corrections	0	0	0	0	0	0	1	0	0	0	0	0	1
Eastern Kentucky University	8	29	21	24	34	21	48	25	40	32	29	0	311
Education Professional Standards Board	1	2	0	2	2	1	0	1	0	0	0	0	9
Kentucky Community & Technical College System	6	22	13	20	18	27	28	23	26	22	23	0	228
Kentucky Department of Education (Administration)	8	11	7	18	10	7	7	9	12	5	5	0	99
Kentucky Educational Development Corporation	0	0	1	0	0	0	1	0	0	0	0	0	2
Kentucky School Boards Association	0	1	1	0	0	0	2	0	1	0	2	0	7
Kentucky School for the Blind	2	2	2	4	4	2	2	6	2	0	2	1	29
Kentucky School for the Deaf	1	1	8	4	4	2	2	5	2	3	3	0	35
Kentucky State University	7	6	9	6	6	14	18	10	0	0	0	0	76
Legislative Research Commission	0	0	0	0	0	1	0	0	0	0	0	0	1
Morehead State University	5	17	15	11	9	22	6	25	9	19	22	0	160
Murray State University	0	0	0	0	8	10	16	13	14	20	15	0	96
Office of Secretary of Workforce Development	0	0	1	0	0	1	1	0	0	0	0	0	3
Office of Vocational Rehabilitation	3	11	5	12	7	13	2	3	5	5	7	0	73
Teachers' Retirement System of the State of Kentucky	1	1	1	0	2	0	1	1	1	1	2	0	11
Western Kentucky University	3	9	4	13	8	9	7	9	12	12	7	0	93
Totals	47	123	103	127	124	147	157	146	137	140	127	1	1,379

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Exhibit 10

COMMONWEALTH OF KENTUCKY
FRANKLIN CIRCUIT COURT
DIVISION I
CASE NO. 18-CI-379
ELECTRONICALLY FILED

COMMONWEALTH OF KENTUCKY,
ex rel. ANDY BESHEAR, ATTORNEY GENERAL, *et al.* PLAINTIFFS

v.

MATTHEW G. BEVIN, in his official capacity
as Governor of the Commonwealth of Kentucky, *et al.* DEFENDANTS

AFFIDAVIT OF KEVIN CARDWELL

Comes the affiant, Kevin Cardwell, first being duly sworn, and states as follows:

1. I am a Deputy State Budget Director for the Office of State Budget Director (OSBD) in Frankfort, Kentucky. In that capacity, I assist with oversight of the Governor's Office for Policy and Management, which is responsible for the preparation of the Governor's Recommended Budget as well as the implementation and oversight of the Budget of the Commonwealth as enacted by the General Assembly.
2. I have personal knowledge of the facts and matters in this affidavit.
3. I am familiar with 2018 Senate Bill 151 ("SB 151").
4. To the best of my knowledge, SB 151, which was passed during the 2018 regular session of the General Assembly and signed into law by Governor Bevin, is not an appropriations bill.
5. SB 151 does not authorize the expenditure of funds from the State Treasury.

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6. SB 151 does not contain the characteristics of other appropriations bills that the Office of State Budget Director encounters. Instead, 2018 House Bill 200 ("HB 200"), the Executive Branch Budget Bill, is a typical appropriations bill. SB 151 is distinct from HB 200 in the following ways:
    a. SB 151 is not titled the same as other appropriations bills. SB 151 is titled "AN ACT relating to retirement" whereas HB 200, like other appropriations bills, is styled "AN ACT relating to appropriations measures";
    b. SB 151 is not subject to the Governor's line-item veto authority like HB 200 and other appropriations bills;
    c. Unlike HB 200 and other appropriations bills, which authorize the expenditure of specific sums of money, SB 151 does not include appropriation amounts; and
    d. SB 151 endures in perpetuity or until amended by the General Assembly, whereas appropriations bills expire at the end of every biennium.
7. SB 151 does not include any appropriation amounts. All appropriation amounts for the funding of public retirement systems are included in HB 200 and the other budget bills such as 2018 House Bill 201, 2018 House Bill 203, and 2018 House Bill 204.

Further the affiant sayeth naught.

Kevin Cardwell
KEVIN CARDWELL

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF FRANKLIN)

Subscribed and sworn to before me this 22nd day of May, 2018, by Kevin Cardwell.

Julie Shinkle #591360
Notary Public

Julie Shinkle Notary Public State at Large Kentucky

My commission expires on the 7 day of 12, 2021.

Filed 18-CI-00379 05/23/2018 Amy Feldman, Franklin Circuit Clerk

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Exhibit 11

COMMONWEALTH OF KENTUCKY
FRANKLIN CIRCUIT COURT
DIVISION I
CASE NO. 18-CI-379
ELECTRONICALLY FILED

COMMONWEALTH OF KENTUCKY,
ex rel. ANDY BESHEAR, ATTORNEY GENERAL, *et al.* PLAINTIFFS

v.

MATTHEW G. BEVIN, in his official capacity
as Governor of the Commonwealth of Kentucky, *et al.* DEFENDANTS

AFFIDAVIT OF DENNIS PAIVA

Comes the affiant, Dennis Paiva, first being duly sworn, and states as follows:

1. I am over the age of 18 and of sound mind.
2. I am a resident of Franklin County, Kentucky.
3. I have personal knowledge of the facts asserted in this affidavit.
4. I am currently employed as the Director of Accounting and Disbursements in the Department of the Treasury, headed by Allison Ball, the elected Treasurer of the Commonwealth of Kentucky.
5. Pursuant to KRS 41.110, public money may not be withdrawn from the Treasury "unless it has been appropriated by the General Assembly or is a part of a revolving fund."
6. I am familiar with 2018 Senate Bill 151 ("SB 151").
7. Under the restrictions of KRS 41.110, our office would not be authorized to withdraw public money from the Treasury based solely on the provisions of SB 151

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because that bill does not establish a revolving fund and does not appropriate any money.

8. There are no provisions in SB 151 permitting the withdrawal of public money from the Treasury.

9. SB 151 does not make any appropriations.

Further the affiant sayeth naught.

Dennis Paiva

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF FRANKLIN)

Subscribed and sworn to before me this 23 day of May, 2018, by Dennis Paiva.

Samara Hannu
Notary Public

My commission expires on the 28th day of March, 2021.

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