Joint Committee on Pensions

2013 INTERIM REPORT

Annapolis, Maryland
January 2014

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MARYLAND GENERAL ASSEMBLY

JOINT COMMITTEE ON PENSIONS

December 17, 2013

The Honorable Thomas V. Mike Miller, Jr., Co-Chairman
The Honorable Michael E. Busch, Co-Chairman
Members of the Legislative Policy Committee

Ladies and Gentlemen:

The Joint Committee on Pensions herewith submits a report of its 2013 interim activities and legislative recommendations. The joint committee met three times during the 2013 interim and addressed three items and eight legislative proposals requested by the Board of Trustees for the State Retirement and Pension System pertaining to retirement and pensions during these meetings. The joint committee made recommendations on these items at its final meeting for the 2013 interim. The joint committee also had its annual briefings on the actuarial valuation of the system and the system's investments.

We thank the joint committee members for their diligence and attention to the work of the committee. Also, on behalf of the committee members, we thank Phillip S. Anthony, Dana K. Tagalicod, Michael C. Rubenstein, and Cathy Kramer of the Department of Legislative Services and the staff of the Maryland State Retirement Agency for their assistance.

Sincerely,

Verna L. Jones-Rodwell
Senate Chair

Melony G. Griffith
House Chair

VJR:MGG/PSA:DKT:MCR/eck

Enclosure

cc: Ms. Lynne B. Porter
Mr. Karl S. Aro

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Maryland General Assembly
Joint Committee on Pensions

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Committee Staff

Phillip S. Anthony
Dana K. Tagalicod

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2013 Interim Report

Over the course of three meetings during the 2013 interim, the Joint Committee on Pensions addressed three pension topics and eight legislative proposals requested by the Board of Trustees for the State Retirement and Pension System (SRPS).

Results of 2013 Actuarial Valuation and Fiscal 2015 Contribution Rates

Exhibit 1 shows that the employer contribution rate for teachers will increase from 17.94% in fiscal 2014 to 18.64% in fiscal 2015, and the contribution rate for State employees will increase from 16.84% in fiscal 2014 to 18.30% in fiscal 2015. The aggregate State contribution rate, including contributions for public safety employees and judges, increases from 18.54% in fiscal 2014 to 19.48% in fiscal 2015. On a percentage basis, this represents the smallest increase in employer contributions since fiscal 2009. Based on projected payroll growth and other factors, the SRPS actuary estimates that total employer pension contributions will increase by $117 million (6.5%), from $1.79 billion in fiscal 2014 to $1.91 billion in fiscal 2015.

Exhibit 1
State Pension Contributions
Fiscal 2014 and 2015

	2014		2015	
Plan	**Rate (%)**	**$ in Millions**	**Rate (%)**	**$ in Millions**
Teachers	17.94%	$1,129	18.64%	$1,193
Employees	16.84%	532	18.30%	583
State Police	71.85%	59	88.06%	74
Judges	50.92%	21	42.74%	18
Law Enforcement Officers	57.72%	51	46.56%	41
Aggregate	**18.54%**	**$1,792**	**19.48%**	**$1,909**

Note: Except for the Teachers' Combined System (TCS), contribution rates and dollar amounts reflect State funds only, excluding municipal contributions. For TCS, they reflect the combined total of State and local contributions. Figures also reflect the required reinvestment of savings generated by the 2011 pension benefit reforms.

Source: Gabriel, Roeder, Smith & Co.

Employer contribution rates were subject to multiple influences this year, some exerting upward pressure and others downward pressure. For the first time in recent memory, investment returns exerted only minimal upward pressure on contribution rates, as the combination of gains and losses from the last five years largely cancelled out each other. Instead, the two largest influences on contribution rates were statutory changes enacted in the 2011 and 2013 legislative sessions, respectively. Chapters 475 and 476 of 2013 replaced the previous tiered amortization schedule with a single 25-year closed amortization period. By spreading out payment of existing unfunded liabilities over 25 years, Chapters 475 and 476 exerted substantial downward pressure on contribution rates. Conversely, pension reform legislation enacted by Chapter 397 of 2011 requires that $300 million of the total savings generated by the pension benefit reforms be reinvested in the pension system to improve its funded status. This requirement more than counteracted the downward pressure exerted by the change in amortization policy, resulting in an overall increase in contribution rates.

Going forward, another provision of Chapters 475 and 476 will continue to exert mild upward pressure on contribution rates, and thereby help improve the system's financial condition. In addition to altering the amortization policy, Chapters 475 and 476 phase out over 10 years the corridor funding method, which has restricted the growth of contribution rates for the Teachers' Combined System (TCS) and the Employees' Combined System (ECS), the two largest plans within SRPS. Under the corridor method enacted during the 2002 legislative session, the employer contributions in the two plans increase by an amount equal to 20% of the difference between the prior year's rate and the "true" rate required to fully fund the systems. By phasing out the corridor method, Chapters 475 and 476 ensure that in each succeeding year the budgeted "corridor" contribution rate will move closer to the higher "true" rate necessary to fully fund the system, until they are equal.

State Retirement and Pension System Investment Performance

The system's investment return for fiscal 2013 was 10.6% net of management fees, exceeding its investment return target of 7.75% for the fourth time in five years. After struggling through most of fiscal 2012, public equity markets led the resurgence in worldwide financial market performance in fiscal 2013. Broad indices of public equities were all strongly higher: the U.S. domestic Standard & Poor's 500 index rose 27.3% and Morgan Stanley Capital International index rose 18.3%. With public equities making up 42.3% of the portfolio, this impressive performance propelled the system to generate returns well in excess of its target.

The system's assets totaled $40.25 billion as of June 30, 2013. This is just the second time in its history that the fund has exceeded the $40.0 billion level, the first coming just before the 2008 crisis in financial markets. As noted above, the strongest performing asset classes in fiscal 2013 were public equity (19.1%), credit and debt (13.4%), and real estate (12.6%); private equity also did well, earning 11.7%. Driven by low interest rates, the two weakest classes were real return (-1.45%) and fixed income (1.1%). Absolute return also performed poorly (3.4%),

largely due to the underperformance of one manager. Asset class performance is discussed in greater detail later in this report.

There was considerable restructuring of public equity holdings during fiscal 2013, with assets devoted to both domestic and international equity holdings being shifted to global equity. This was prompted, in part, by the persistent underperformance of domestic equity active managers, to which the Department of Legislative Services (DLS) has consistently drawn attention, and the comparatively strong performance of global equity managers. The restructuring also gives the system more flexibility to move funds between domestic and international assets, depending on market conditions. Overall, active management in public equities yielded returns that exceeded plan benchmarks by 13 basis points, net of fees.

According to the Trust Universe Comparison Service (TUCS), the system's fiscal 2013 investment performance was among the worst of 19 public pension funds with at least $25 billion in assets. The system's fiscal 2013 performance placed it at the ninety-third percentile. In TUCS analysis, the one-hundredth percentile is the lowest ranking, and the first percentile is the highest. Maryland's ranking, therefore, represents a significant worsening of its relative performance, down from the seventy-fifth percentile in fiscal 2012. Long-term performance rankings place SRPS either in or near the bottom quartile for every timeframe examined. TUCS rankings are based on returns, gross of fees.

Briefing on Private Sector Employees Pension and Retirement Plans

In an effort to gather information about retirement savings and security among private sector employees, the joint committee was briefed by several panelists who presented information on this topic. The panelists presented information on retirement savings and security concerns among private sector employees, and the panelists suggested different approaches to improve retirement savings and security for private sector employees. Additionally, information was presented on recent actions other states have taken to address private sector employee retirement security.

Retirement Savings and Security Concerns

Individuals representing the National Conference on Public Employee Retirement Systems (NCPERS), the American Society of Pension Professionals and Actuaries (ASPPA), the Service Employees International Union (SEIU), and the Center for American Progress (CAP) presented information on retirement savings and security concerns for private sector employees. The information presented showed the potential for a retirement savings crisis among private sector employees in the United States because certain groups of private sector employees have saved very little for retirement, and the number of private sector employees who have access to workplace retirement benefits is at its lowest percentage in over 30 years. Information on Maryland private sector employees' savings and access to workplace retirement benefits was also presented.

Information was presented indicating that since Social Security benefits provide approximately one-third of the income necessary for a secure retirement, the other two-thirds must come from personal savings or a pension plan or a combination of both. For an individual to maintain the same standard of living in retirement, the individual should have a retirement income of approximately 80% of salary for higher income workers and approximately 90% of salary for lower income workers.

Suggested Approaches to Improve Retirement Savings and Security

The panelists suggested different approaches to improve retirement savings and security for private sector employees. The executive director and counsel for the NCPERS recommended a public-private partnership that would draw on the documented performance and efficiencies of public sector pension management, such as professional fund management and large asset pools that allow for greater diversification, and extend it to the private sector. The plan would be a multiple-employer hybrid defined benefit pension plan administered by a Board of Trustees composed of state, private employer, and private employee and retiree representatives. Participation in the plan would be voluntary and under an ideal scenario, contributions would be made to the plan by both employees and employers.

The executive director of ASPPA recommended using automatic payroll deduction Internal Revenue Administrations (auto-IRAs). The joint committee discussed a report by the United States Government Accountability Office, which indicated that individuals across all income groups could see an increase in their retirement savings if auto-IRAs were implemented nationwide.

The Retirement Security Campaign director for SEIU emphasized the importance of making a retirement savings plan mandatory for employers with automatic enrollment of employees, unless the employee chooses to opt out. This panelist urged mandatory participation and automatic enrollment in order to amass the large volume of participants necessary to achieve low fees and economies of scale. Additionally, this panelist recommended other guiding principles for designing a retirement security plan such as employers should be required to remit employee contributions through the payroll system to a retirement trust, the plan should pool employees' savings into a collective investment trust, the plan should be overseen by the state treasurer or by a board with diverse representation of stakeholders, trust funds should be used only for paying benefits and administration costs and for investments, and the plan should include enforcement mechanisms if employers fail to timely remit contributions.

The director of the American Worker Project at CAP recommended a similar approach that would automatically enroll employees in a retirement savings plan and allow employees to opt out. The employer's role would be to deduct a certain percentage of each employee's pay and send that contribution to the retirement plan. The plan would maximize retirement savings through a low fee structure, professional fund management, and pooling of assets.

State Actions to Address Private Sector Employee Retirement Security

Information was presented regarding recent actions taken in three states to address private sector employee retirement security. In 2012, Massachusetts enacted legislation that will allow nonprofit organizations with fewer than 20 employees to enter into a contributory retirement plan overseen by the State Treasurer's Office. Currently, the treasurer's office oversees a contributory plan for public sector employees with $5 billion in assets that covers approximately 300,000 workers; therefore, adding the plan for nonprofit organizations is not expected to have a significant impact on operations. The treasurer's office will create a trust to receive qualified contributions from nonprofit employers and employees, and will establish a nonprofit defined contribution committee that will include the treasurer and four other members.

Also in 2012, California enacted legislation to establish a statewide retirement savings plan called the California Secure Choice Retirement Savings Program (SCRSP). Employers that have five or more employees and do not provide an employer sponsored retirement savings plan are required to participate, and there are penalties for noncompliance. Employees also are required to participate unless they actively chose to opt out. Before the SCRSP becomes operational, the SCRSP Board created by the law must conduct a market analysis to determine various factors concerning implementing the SCRSP and report its findings to the legislature. Once created, administrative costs for the SCRSP will be paid from earnings on investments into the trust. The administrative costs are capped at no more than 1% annually of the total program fund assets.

In 2013, Oregon enacted legislation to establish a task force to explore options for private sector employees who do not have access to a retirement savings plan at their workplace. Among other things, the seven-member Oregon Retirement Savings Task Force will develop recommendations for increasing the percentage of employees enrolled in a retirement plan and for creating tax incentives and marketing strategies to encourage businesses to offer retirement savings plans to their employees.

Briefing on Transfers Between Systems Under Title 37 of the State Personnel and Pensions Article

The 2013 *Joint Chairmen's Report* directed the State Retirement Agency (SRA), in consultation with the DLS, to provide a report to the Joint Committee on Pensions on transfers of service credit as governed by Title 37 of the State Personnel and Pensions Article. Specifically, the budget committees requested that DLS and SRA examine issues relating to Title 37 system transfers, including the legislative history of Title 37 and intent of the General Assembly in the enactment of Chapter 337 of 2007, whether any State or local retirement or pension systems are experiencing issues regarding § 37-203(f) of the State Personnel and Pensions Article, and how State or local retirement or pension systems are interpreting and implementing § 37-203(f).

SRA and DLS submitted a report of the findings of the study to the joint committee. The report discussed the legislative history of Title 37, noting a longstanding policy of providing portability for employees transferring between the various defined benefit systems offered by State and local governments. The report also reviewed a 2006 Attorney General opinion discussing the interpretation of what rate of interest on member contributions should be applied when individuals transfer from a non-contributory system to a contributory system, and subsequent legislation enacted in 2007. The report noted that transfers between State and local systems are relatively infrequent, and that with the exception of one county, the regular rate of interest was being used in calculating deficiencies on member accounts. The report concluded with a discussion of factors to consider when evaluating legislation that would make changes to the provisions of Title 37.

Correctional Officers' Retirement System

Chapter 556 of 2013 required SRA and DLS to study the history of the Correctional Officers' Retirement System (CORS). Specifically, the legislature requested that these agencies determine the origins of those provisions included in the State Personnel and Pensions Article that require members of CORS to join the Employees Pension System (EPS) if they are promoted into certain job classifications.

History

Leading into the 1974 legislative session, the Joint Committee of Budget and Audit recommended a series of retirement bills, including legislation that would provide special retirement benefits in the Employers' Retirement System (ERS) for certain correctional officers. Prior to this, individuals serving as correctional officers were enrolled in ERS and received benefits similar to other members of the plan. At the time that the legislation was recommended, a member of ERS was eligible to receive a basic retirement benefit of one-fifty-fifth of the member's average final compensation multiplied by the member's total years of service, after accruing 30 years of service.

The Joint Committee of Budget and Audit explained in its report to the General Assembly in 1974 that the purpose for its recommending legislation for special retirement benefits for correctional officers was to recognize that correctional officers have conditions of employment that are quite similar to those of the State Police, and accordingly, their retirement benefits should also be substantially similar. The joint committee noted that while it did believe retirement benefits between correctional officers and State Police should be similar, the basic benefit in its recommended legislation for correctional officers did provide for a slightly lesser basic benefit for correctional officers than the basic benefit received by the State Police. In 1974, the basic benefit for the State Police was one-forty-fifth of the average final compensation multiplied by the member's total years of service, with the joint committee's recommendation for correctional officers set at one-fifty-fifth of the average final compensation multiplied by the

member's total years of service. The difference in benefits was explained as an adjustment for Social Security benefits to which correctional officers are subject to and State Police are not.

Initially, the retirement bill proposed by the Joint Committee of Budget and Audit recommended retirement benefits for Grade I-VI correctional officers after 25 years of service with a basic benefit of one-fifty-fifth of the officer's average final compensation multiplied by the member's total years of service. However, after the legislation was introduced, the eligibility for retirement was reduced from 25 years to 20 years of service. An additional criterion was also added, stating that a correctional officer could only retire after 20 years if the officer had service as a Grade I-VI correctional officer for 5 or more years immediately preceding retirement. This legislation was enacted in 1974 as Chapter 697, and while technically, these correctional officers remained in ERS, the passage of Chapter 697 established what would later become CORS.

In 1979, ERS was closed, and EPS was established through the enactment of Chapters 23 and 24 of 1979. Special provisions were included in Chapters 23 and 24 that allowed new correctional officers to maintain a 20-year benefit equal to one-fifty-fifth of average final compensation multiplied by the member's total years of service and not be required to join EPS. In fact, Chapters 23 and 24 went so far as to separate the correctional officers from ERS for benefit purposes and officially establish CORS under § 156 of Article 73B. However, no written testimony or other documentation could be found to indicate that the legislature's basis for establishing CORS was related in any way to its original justification for providing correctional officers with a benefit more in line with the State Police.

Benefits

With the establishment of CORS in 1979, the legislature provided benefits for Grade I-VI correctional officers who serve in the cellblocks at State penal institutions. In 1983, the legislature expanded the membership of CORS to include security attendants at the Clifton T. Perkins Hospital Center. Since 1983, membership in CORS has been increased to include (1) detention center officers employed by a participating governmental unit; (2) correctional dietary, maintenance, laundry, or supply officers; and (3) Maryland Correctional Enterprises officers, officer trainees, plant supervisors, plant managers, and regional managers.

Yet, notwithstanding this expansion of membership in CORS, the original limitation that was placed on the eligible correctional officers who were permitted to receive retirement benefits from CORS (correctional officers serving in the first six job classifications), remains in the law today. Once a member advances beyond the first six job classifications for a correctional officer, that individual is required to join EPS. The benefits accrued by a CORS member at the time the individual is required to join EPS may remain in CORS to be collected at the time of the member's retirement from both CORS and EPS. The member may also transfer the accrued CORS service credit to EPS. If the member chooses this option, the member will no longer have any benefit in CORS at the member's retirement from EPS, and accordingly, will only receive a benefit from EPS.

Following the enactment of the 2011 pension reforms, individuals who were CORS members before July 1, 2011, and then promoted out of CORS into EPS after this date, were concerned that they would now be subject to a higher member contribution rate, lower benefit multiplier, and longer vesting because they were not members of EPS before July 1, 2011. To address this issue, the legislature enacted Chapters 608 and 609 of 2012. The effect of this legislation, in part, is to allow a CORS member who was a member on June 30, 2011, and is promoted into EPS on or after July 1, 2011, to be eligible for Alternate Contributory Pension Selection (ACPS) benefits that apply to an individual who was an ACPS member on June 30, 2011, before the reforms were enacted. In other words, an individual who was a CORS member before July 1, 2011, and is promoted out of CORS and into EPS after July 1, 2011, would be subject to the 7.0% member contribution rate, but would not be subject to the new 1.5% benefit multiplier or 10-year vesting. Instead, that individual would still be subject to a 1.8% benefit multiplier and 5-year vesting (ACPS pre-reform provisions).

While Chapters 608 and 609 do correct the concerns of the individuals who were CORS members before July 1, 2011, the individuals who have joined CORS since that date and are now being offered promotions that would require them to join EPS, would not be able to benefit from the 2012 legislation. If these individuals accept promotions above the first six job classifications as a correctional officer, they will be subject to the provisions of the Reformed Contributory Pension Selection – 7.0% member contribution rate, 1.5% benefit multiplier, 10-year vesting, Rule of 90, and five-year Average Final Compensation. This, in effect, may now begin to serve as a disincentive for CORS members to accept promotions beyond the first six job classifications.

There is no record why, in 1974, the Joint Committee of Budget and Audit limited their original recommendation for special retirement benefits for correctional officers to the first six job classifications, or why after being promoted above a Grade VI correctional officer, an individual would receive benefits from ERS. However, the Joint Committee on Pensions did note in their 1980 interim report to the General Assembly that eligibility for the 1974 benefits was limited, specifically to those serving in a custody and security role in the budget program "Custodial Care." Additionally, there is no indication why provisions were included in Chapter 697 of 1974 that would require a CORS member to serve as a correctional officer in one of the first six job classifications for 5 or more years immediately preceding retirement in order to be eligible to retire after accruing 20 years of service credit as a correctional officer. No other system included in SRPS has a similar requirement.

Despite the legislature's recognition in 1974 that correctional officers have conditions of employment that are quite similar to those of the State Police and that their retirement benefits should be substantially similar, to date, benefits for correctional officers in the first six job classifications almost mirror benefits for EPS members participating in ACPS. As correctional officers progress in their career, they will lose their eligibility to begin receiving a benefit after 20 years (the one similarity with the public safety plans) in CORS, and as members of EPS, will not be eligible to receive a benefit until they have vested in EPS by accruing an additional 10 years of service. Moreover, once these individuals have vested in EPS after 10 years, to be

eligible to retire from EPS, they must be at least 65 years old or have satisfied the requirements of the Rule of 90.

CORS Data

SRA analyzed data from CORS for the past 10 years. With regard to the active membership, for fiscal 2013, there were 8,012 members in CORS. The average age of a CORS member, in fiscal 2013, was 41.30 with 9.87 years of service, and an average salary was $44,264.

Similar data was analyzed for retirees of CORS. In fiscal 2013, 160 CORS members retired. This is a dramatic decrease from both the previous fiscal year and fiscal 2004. In fiscal 2012, 257 CORS members retired, while 294 members retired in fiscal 2004. There are currently 2,827 CORS retirees. In fiscal 2013, the average age at retirement for CORS members was 54.25 years. In fiscal 2013, the average years of service was approximately 18.89 years, a slight decrease of 0.36 years since fiscal 2004. From fiscal 2004 through 2012, the average monthly benefit for a CORS retiree steadily increased from $1,280 to $1,830. Yet, in fiscal 2013, the average monthly benefit decreased to $1,624. This decrease is attributable to the decline in active members retiring in fiscal 2013 coupled with a decline in service credit at the time of retirement.

Finally, SRA reviewed CORS data since1980 with regard to the number of CORS members who have been promoted out of CORS into EPS. On average, 7 members are promoted out each year. In 1982, no members were promoted, while 20 were promoted in 2005. There is no noticeable pattern to the number of individuals promoted each year. SRA analyzed the records of the 14 members that retired in 2012. Of the 14 members, 8 who were promoted out of CORS and into EPS chose to transfer their CORS service into EPS. The amount of service transferred ranged from 13 months to 148 months of service credit. Of the 6 CORS members who opted to maintain their CORS membership after joining EPS, 3 were not vested in CORS at the time of their promotion. For these 3 members, they will only receive a return of member contributions plus interest from CORS at the time of their retirement from EPS. The remaining 3 CORS members, who did not transfer service to EPS, had service of 66 months, 275 months, and 284 months. The actuary for SRA has determined that, if there were no "promotion out" provisions in place for CORS members and each of these 14 members had remained in CORS, the cost to the State would be approximately $450,000.

The joint committee had an extensive discussion concerning the issues arising out of membership in CORS being restricted to certain job classifications. Though the joint committee expressed concerns about the restrictions on CORS membership, the joint committee did not elect to sponsor legislation on the topic for the 2014 legislative session.

Board Requested Legislation

Reemployment – Earnings Limitation

In 2010, legislation was enacted to raise the cap on average final compensation from $10,000 to $25,000 under which retirees of ERS, Teachers' Retirement System (TRS), EPS, Teachers' Pension System (TPS), or CORS are exempt from the reemployment earnings limitation. Additional legislation was enacted in 2011 and 2012 to reduce the period of time a retiree of ERS, EPS, TRS, TPS, CORS, or SPRS is subject to the earnings limitation from nine full calendar years to five full calendar years.

The Local Fire and Police System (LFPS) currently includes a cap on average final compensation of $10,000 and a nine-year application of the reemployment earnings limitation, which was consistent with the other system plans prior to the changes made in 2010, 2011, and 2012. Because LFPS was closed in 2004, it was inadvertently overlooked when the board requested legislation to make the changes to the earnings limitation for the other plans. SRA reports that there are reemployed LFPS retirees who have been retired more than five years but less than nine years and continue to be subject to the earnings limitation.

The board recommended legislation to amend the cap on average final compensation and the nine-year limitation in LFPS to be consistent with the other plans in the system. The recommended changes would result in a consistent standard for the reemployment earnings limitation and would simplify SRA's communications to its members as well as simplify the administration of the retire/rehire program.

The joint committee will sponsor the requested legislation.

Law Enforcement Officers' Pension System and State Police Retirement System Deferred Retirement Option Program – Special Disability Retirement Allowance

Sections 24-401.1(k)(2) and 26-401.1(k)(2) of the State Personnel and Pensions Article provide that if a retiree of SPRS or the Law Enforcement Officers' Pension System (LEOPS) is participating in the Deferred Retirement Option Program (DROP) and is awarded a special disability retirement from SPRS or an accidental disability retirement from LEOPS, that retiree may elect to receive the disability retirement allowance or continue participating in the DROP. However, §§ 29-109 and 29-111 of the State Personnel and Pensions Article state that a member shall be granted an accidental or special disability retirement only if the medical board has certified that:

(i) the member is mentally or physically incapacitated for the further performance of the normal duties of the member's position;

(ii) the incapacity is likely to be permanent; and

(iii) the member should be retired.

As the law requires an individual to be certified to be permanently mentally or physically incapacitated for further performance of normal duties, the board's position is that it is not reasonable for a member to be permitted to continue working after the member has been certified as incapacitated. Therefore, the board recommended removing the language in §§24-401.1(k)(2) and 26-401.1(k)(2) that allows the DROP member to choose between these options. The board cited COMAR 17.04.03.16E as support for its recommendation. That provision provides that "[i]f an employee is approved for disability retirement by the SRA, unless the employee resigns or is removed earlier, the employee shall be considered resigned from State service as of the 120th day after the approval." The board pointed out that this regulation suggests that there can be no election available for SPRS or LEOPS retirees who are participating in the DROP and have been awarded an accidental disability retirement.

The joint committee will sponsor the requested legislation.

Pension Systems – Withdrawn Contributions

An individual, who withdraws his or her accumulated contributions from the pension system, forfeits all rights to future benefits in that system. Section 29-302 of the State Personnel and Pensions Article governs vested allowances for members of the retirement systems. Subsection (f) states that when a former member withdraws his or her accumulated contributions before the payment of a vested allowance begins, the former member is not entitled to further benefits.

Section 29-303 governs vested allowances for members of the pension systems. However, unlike § 29-302, § 29-303 is silent when addressing the consequences to a former member of a pension system who withdraws his or her accumulated contributions. To avoid any ambiguity concerning the consequences of the withdrawal of accumulated contributions from one of the pension systems, the board recommended adding a provision to § 29-303 to be consistent with the language found under § 29-302(f).

The joint committee will sponsor the requested legislation.

Teachers' Pension System – Purchase of Service Credit

Chapter 493 of 2005 provided that purchase of service credit in each of the several systems made on an installment basis would no longer be permitted. However, SRA staff recently discovered that § 23-308(c)(1) of the State Personnel and Pensions Article continues to include language that would allow purchase of service credit on an installment basis. The board recommended that this provision be repealed. Additionally, the 2005 legislation allowed for a six-month window of time to elect to purchase service credit on an installment basis before those

sections were repealed. The board recommended that the repeal of § 23-308(c)(1) also provide that same six-month window to be consistent with the application of the 2005 repeal.

The joint committee will sponsor the requested legislation.

Former Non-vested Members – Interest on Accumulated Contributions

A non-vested member of one of the several systems who leaves employment with a participating employer remains a member of his or her system for four additional years following the member's termination of employment. If the non-vested member does not resume employment with a participating employer within four years, provisions of the State Personnel and Pensions Article state that membership in that individual's system is terminated. In addition, provisions of the State Personnel and Pensions Article also provide that a member shall earn regular interest on the individual's member contributions. However, current law is silent as to whether regular interest is earned on member contributions for more than four years after a non-vested member leaves employment with a participating employer. Since a former non-vested member's membership is terminated after four years of leaving employment with a participating employer, it has been the longstanding practice of SRA to stop any future interest from accumulating on these contributions at the end of the four-year period. The board recommended codifying this practice.

The joint committee will sponsor the requested legislation.

Rollover Employee Contributions to Roth Individual Retirement Accounts

Section 21-602 of the State Personnel and Pensions Article states that a non-spouse designated beneficiary may roll over an eligible rollover distribution to an individual retirement account or individual retirement annuity established for the purpose of receiving that distribution. Legal counsel to the board has advised staff for SRA that it should interpret "individual retirement account" to include Roth individual retirement accounts. The board is recommended amending § 21-602 to clarify "individual retirement account" to include both "traditional and Roth" individual retirement accounts.

The joint committee will sponsor legislation to clarify that employee contributions may be rolled over into Roth individual retirement accounts as well as other eligible retirement accounts.

2011 Pension Reform Technical Correction

Chapter 397 of 2011 enacted the 2011 Pension Reform (Reform). Within the Reform, two provisions were included that staff for SRA believes should be clarified. Section 23-215.1 of the State Personnel and Pensions Article provides that an individual who was a member of the ACPS prior to July 1, 2011, and separates from employment for four years or less, returning to

employment with a participating employer that participates in ACPS, may resume membership in ACPS and is not required to join the Reformed Contributory Pension Benefit (RCPB). However, the language in § 23-215.1 is vague insofar as it only states that an individual who is rehired into a position that is included in EPS or TPS, shall resume participation in ACPS. As this reads, it could be interpreted to mean that an individual who was a member of ACPS prior to July 1, 2011, left employment, and returned to work for Prince George's County within four years of leaving, is entitled to resume membership in ACPS. The result of this interpretation would be that Prince George's County, an employer participating in the Non-contributory EPS, is now required to pay employer contributions for an ACPS benefit. The board does not believe this was the intent of the legislature when it included § 23-215.1 in the 2011 reforms. The board recommended that § 23-215.1 be amended to clarify that an individual who was a member of ACPS prior to July 1, 2011, separates from employment for four years or less, and returns to employment with a participating employer that participates in ACPS may resume membership in ACPS and is not required to join RCPB if the individual is rehired into a position that is included in ACPS of EPS or TPS.

The second provision included in the Reform that SRA staff believes should be clarified, is found in § 23-225(b) of the State Personnel and Pensions Article. This provision was intended to clarify that a participating governmental unit (PGU) participating in the Non-contributory or Contributory EPS prior to July 1, 2011, is not subject to RCPB. As written, however, § 23 225(b) creates an ambiguity for all PGUs, since it only states that RCPB does not apply to an employee of a PGU participating in EPS that has not elected to participate in ACPS. As it currently reads, § 23-225(b) suggests that a PGU joining the system today would not be subject to RCPB given that it has not elected to participate in ACPS. To correct this ambiguity, the board recommended amending § 23-225(b) to state that RCPB does not apply to an employee of a PGU that, prior to July 1, 2011, is participating in EPS but has not elected to participate in ACPS.

The joint committee will sponsor the requested legislation.

Reemployment – Late or Non-reporting Penalties

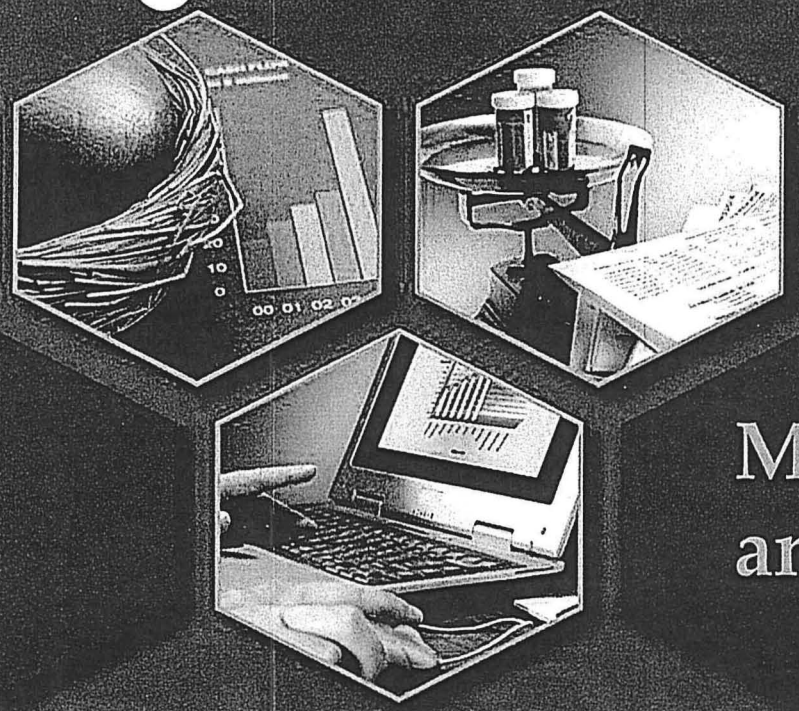
A local school system is required to report to SRA whether a rehired retiree is eligible to participate in the Retire/Rehire program under §§ 22-406 and 23-407 of the State Personnel and Pensions Article. If a rehired retiree is not eligible for an exemption and a school fails to report this to SRA, the local school system is required to pay to SRA the reemployment earnings offset that would have been taken from that retiree if that individual had not been reported as exempt. Sections 22-406 and 23-407 also provide a similar penalty for a local school system that fails to report, or reports late, an individual who is participating in the Retire/Rehire program and is eligible to participate. Under those provisions, if a retiree is reemployed in a position that qualifies as exempt under the Retire/Rehire program, but the local school system reemploying that retiree fails to report, or reports late, the retiree's eligible status to SRA and the Maryland State Department of Education, that school system is required to pay a penalty to SRA equal to the earnings offset the retiree would have been subject to if the retiree were not exempt under the Retire/Rehire program. In accordance with these provisions of the State Personnel and Pensions

Article, SRA has charged local school districts as much as $25,000 for failing to report an eligible reemployed retiree who is not subject to the earnings limitation and no offset has been made to that retiree's benefit.

SRA recognizes that when a local school system fails to report, or reports late, SRA will assume the retiree is subject to the earnings limit when comparing the retiree's earning limit against the annual wage files reviewed by staff each year. If it appears that the retiree is going to exceed his or her earnings limit, SRA will begin correspondence with the intent of notifying the retiree that the retiree's benefit will be offset in the following calendar year. It is at this point that the retiree will inform SRA that he or she is exempt from the earnings limit and SRA will then confirm this with the retiree's local school district.

Because there is no offset that should be received by SRA, the board's position is that charging a local school district the full amount of any offset that could have been taken if the retiree was not eligible is excessive. The board recommended that a more reasonable penalty for failure to report, or late reporting, should be $50 per employee for each month that the local school system fails to report, or reports late, not to exceed $1,000.

The joint committee will sponsor the requested legislation.



Maryland State Retirement and Pension System

Annual Results of the Fiscal 2013 Actuarial Valuation and Fiscal 2015 Contribution Rates

November 19, 2013 Meeting of the Joint Committee on Pensions

GRS
Gabriel Roeder Smith & Company
Consultants & Actuaries
www.gabrielroeder.com

Table of Contents

- 2013 Actuarial Valuation
- GASB Changes

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Purpose of the Actuarial Valuation

- Measure the financial position of SRPS
- Assist the Board in establishing State and PGU contribution rates:
  - Allocate investment income among pools within Systems
  - Work closely with SRA staff exchanging and reconciling information
  - Determine amortization bases and payments
- Determine actuarial and statutory contribution rates with reinvested savings for FY 2015
- Provide disclosure information for financial reporting
- Analyze aggregate experience over the last year

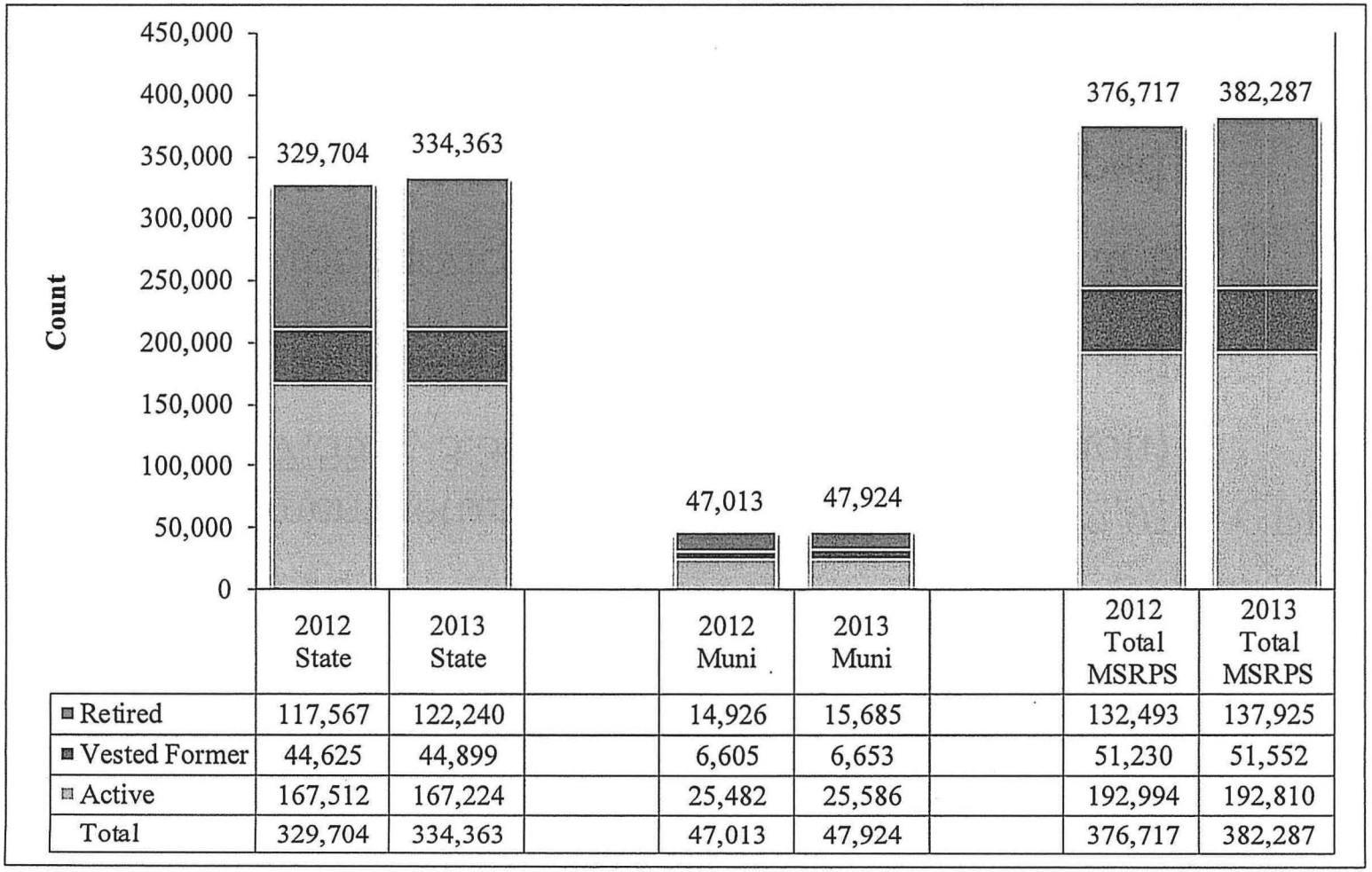
Variables Affecting Valuation Results

- Benefits (Retirement, Disability, Survivor)
- Actual past experience
- Legislative Changes
  - 2011 General Assembly reforms results in a gradually decreasing normal cost rate.
- Assumption Changes
  - 7.70% investment return; 3.45% payroll growth; 2.95% CPI for June 30, 2013
  - The ultimate assumptions of 7.55% investment return, 3.30% payroll growth, and 2.80% CPI are being phased in over 4 years.
- Funding Policy Changes
  - 25-year closed amortization of unfunded actuarial accrued liability for each State System
  - 10-year phase out of corridor funding method for TCS and ECS

Primary Assumptions & Methods

- Demographic actuarial assumptions based on the 2006-2010 experience study (new for 2012 Valuation)
- 7.70% investment return; 3.45% payroll growth; 2.95% CPI (changing to 7.55%, 3.30%, 2.80% by 2016 valuation)
- 2.70% COLA for service where COLA is capped at 3%
- 2.92% COLA for service where COLA is capped at 5%
- 2.95% COLA for service where COLA is not capped
- 1.69% COLA for service earned after July 1, 2011 where COLA is capped at 2.5% in years when the System earns at least the investment assumption (7.70% for FY 2013) or capped at 1% in years when the System earns less than the investment assumption

State and Municipal Demographic Data



	2012 State	2013 State		2012 Muni	2013 Muni		2012 Total MSRPS	2013 Total MSRPS
Retired	117,567	122,240		14,926	15,685		132,493	137,925
Vested Former	44,625	44,899		6,605	6,653		51,230	51,552
Active	167,512	167,224		25,482	25,586		192,994	192,810
Total	329,704	334,363		47,013	47,924		376,717	382,287

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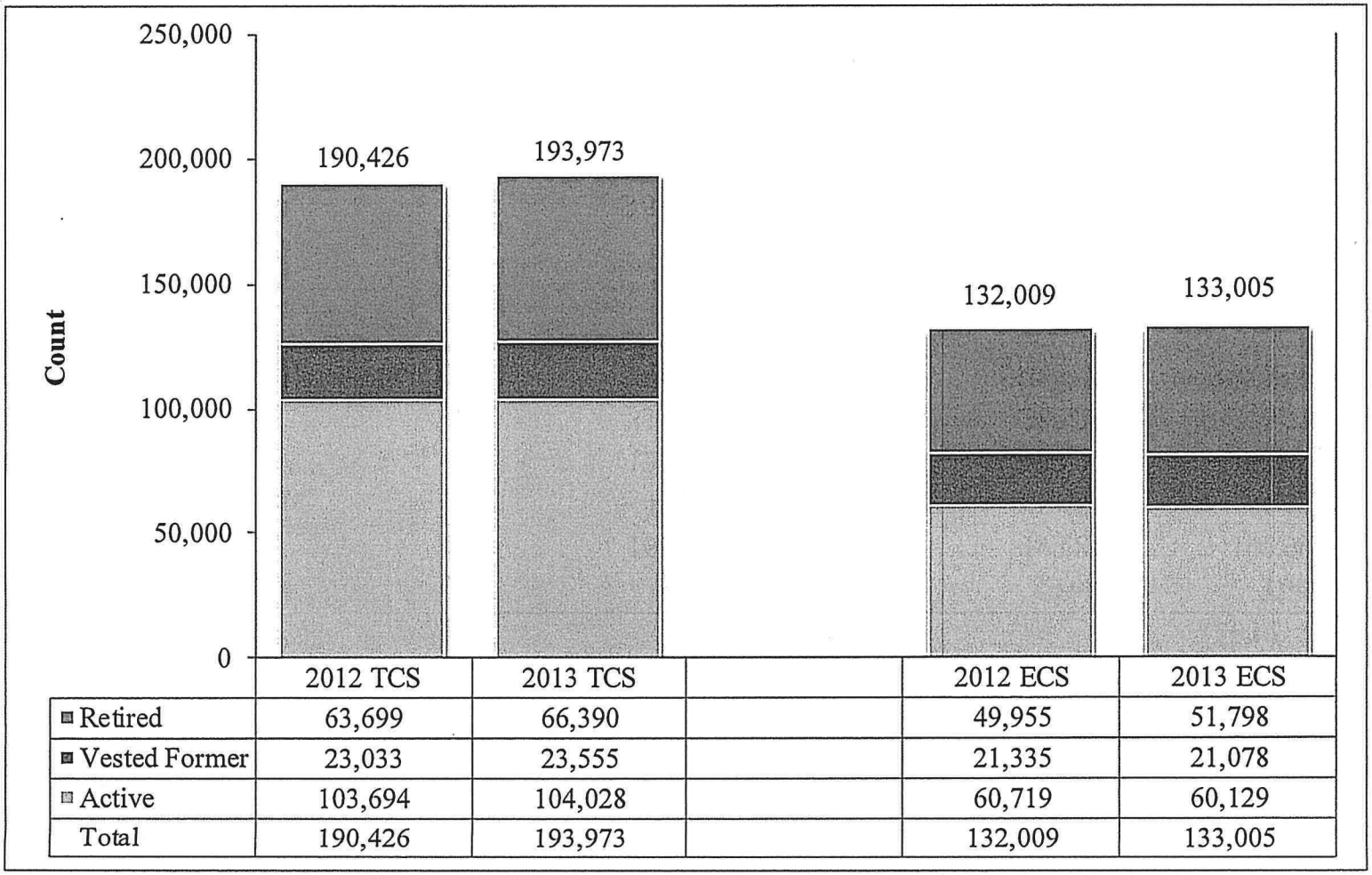
Demographic Data

	2013			2012	
Number Counts	**State**	**PGU**	**Total**	**Total**	**% Chg**
Active Members	167,224	25,586	192,810	192,994	-0.1%
Vested Former Members	44,899	6,653	51,552	51,230	0.6%
Retired Members	122,240	15,685	137,925	132,493	4.1%
Total Members	334,363	47,924	382,287	376,717	1.5%
Total Valuation Payroll ($ in Millions)	$9,415.8	$1,061.7	$10,477.5	$10,336.5	1.4%
Active Member Averages					
Age	46.0	48.8	46.4	46.4	0.1%
Service	12.8	11.7	12.7	12.7	0.0%
Pay	$ 56,307	$ 41,496	$ 54,341	$ 53,559	1.5%
Total Retiree Benefits ($ in Millions)	$2,786.6	$ 202.0	$ 2,988.6	$ 2,812.5	6.3%
Average Retiree Benefit	$ 22,796	$ 12,878	$ 21,668	$ 21,227	2.1%

State Demographic Data by System



	2012 TCS	2013 TCS		2012 ECS	2013 ECS
Retired	63,699	66,390		49,955	51,798
Vested Former	23,033	23,555		21,335	21,078
Active	103,694	104,028		60,719	60,129
Total	190,426	193,973		132,009	133,005

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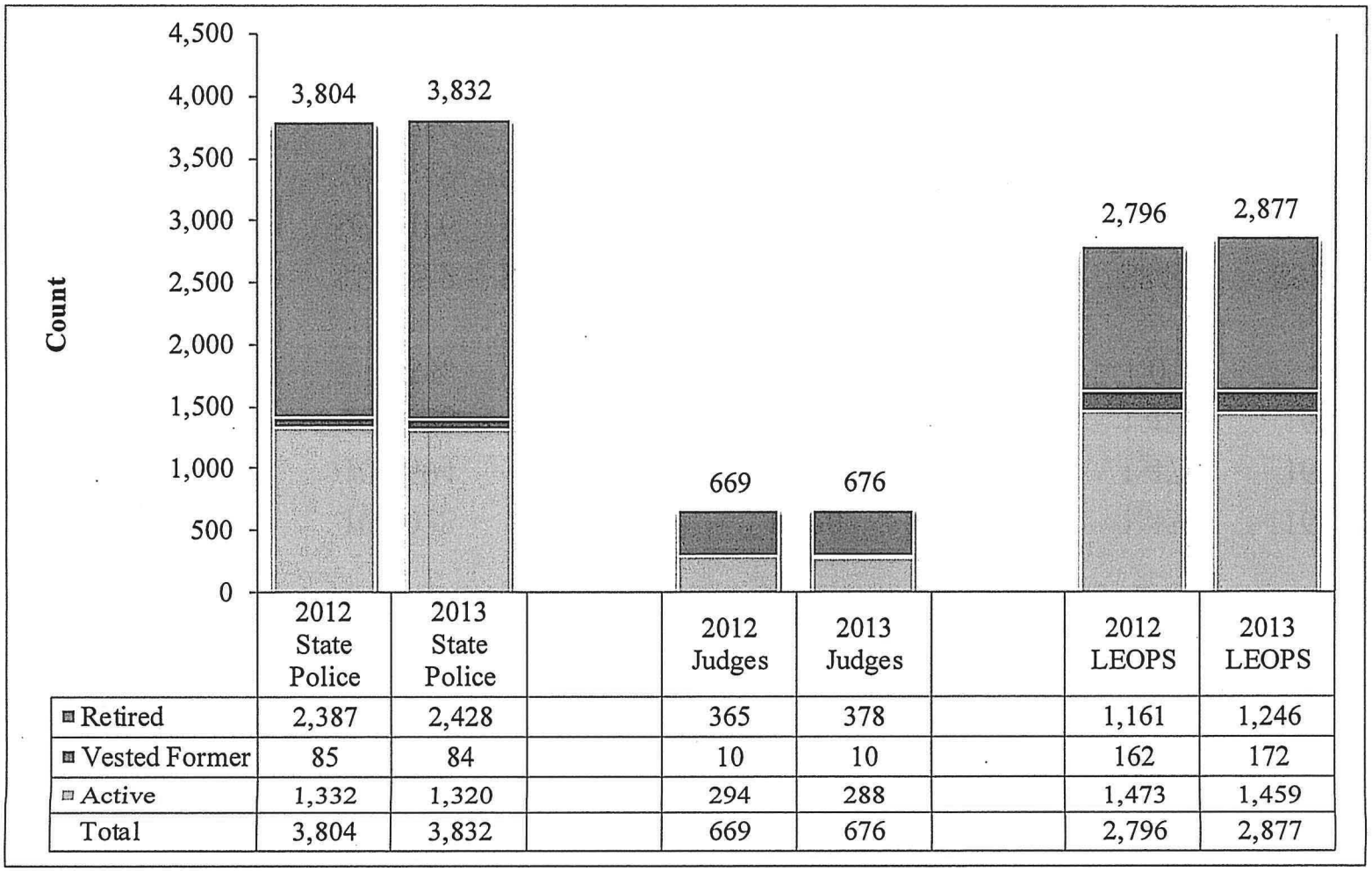
State Demographic Data by System



	2012 State Police	2013 State Police		2012 Judges	2013 Judges		2012 LEOPS	2013 LEOPS
Retired	2,387	2,428		365	378		1,161	1,246
Vested Former	85	84		10	10		162	172
Active	1,332	1,320		294	288		1,473	1,459
Total	3,804	3,832		669	676		2,796	2,877

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State Demographic Data by System

	TCS	ECS	State Police	Judges	LEOPS	Total
Active Members						
2013 Count	104,028	60,129	1,320	288	1,459	167,224
2012 Count	103,694	60,719	1,332	294	1,473	167,512
2011 Count	105,528	60,834	1,295	286	1,483	169,426
% Change 2013/2012	0.3%	-1.0%	-0.9%	-2.0%	-1.0%	-0.2%
2013 Payroll ($Mill)	$6,185.2	$3,026.1	$79.8	$40.0	$84.7	$9,415.8
2012 Payroll ($Mill)	$6,080.6	$3,001.2	$77.7	$40.0	$83.7	$9,283.1
2011 Payroll ($Mill)	$6,196.9	$3,019.2	$75.6	$38.8	$84.0	$9,414.5
% Change 2013/2012	1.7%	0.8%	2.8%	0.1%	1.3%	1.4%
2013 Average Pay	$ 59,457	$ 50,326	$ 60,491	$ 138,891	$ 58,077	$ 56,307
2012 Average Pay	$ 58,640	$ 49,428	$ 58,326	$ 135,903	$ 56,803	$ 55,418
2011 Average Pay	$ 58,723	$ 49,630	$ 58,378	$ 135,664	$ 56,642	$ 55,567
% Change 2013/2012	1.4%	1.8%	3.7%	2.2%	2.2%	1.6%

State Demographic Data by System

	TCS	ECS	State Police	Judges	LEOPS	Total
Retired Members						
2013 Count	66,390	51,798	2,428	378	1,246	122,240
2012 Count	63,699	49,955	2,387	365	1,161	117,567
2011 Count	60,565	48,508	2,371	358	1,094	112,896
% Change 2013/2012	4.2%	3.7%	1.7%	3.6%	7.3%	4.0%
2013 Benefits ($ Mill)	$1,758.6	$851.2	$109.9	$26.5	$40.4	$2,786.6
2012 Benefits ($ Mill)	$1,657.5	$801.1	$106.0	$25.2	$36.9	$2,626.6
2011 Benefits ($ Mill)	$1,524.8	$750.9	$102.5	$24.6	$33.9	$2,436.7
% Change 2013/2012	6.1%	6.3%	3.7%	5.4%	9.6%	6.1%
Vested Former Members						
2013 Count	23,555	21,078	84	10	172	44,899
2012 Count	23,033	21,335	85	10	162	44,625
2011 Count	22,617	21,482	91	11	158	44,359
% Change 2013/2012	2.3%	-1.2%	-1.2%	0.0%	6.2%	0.6%

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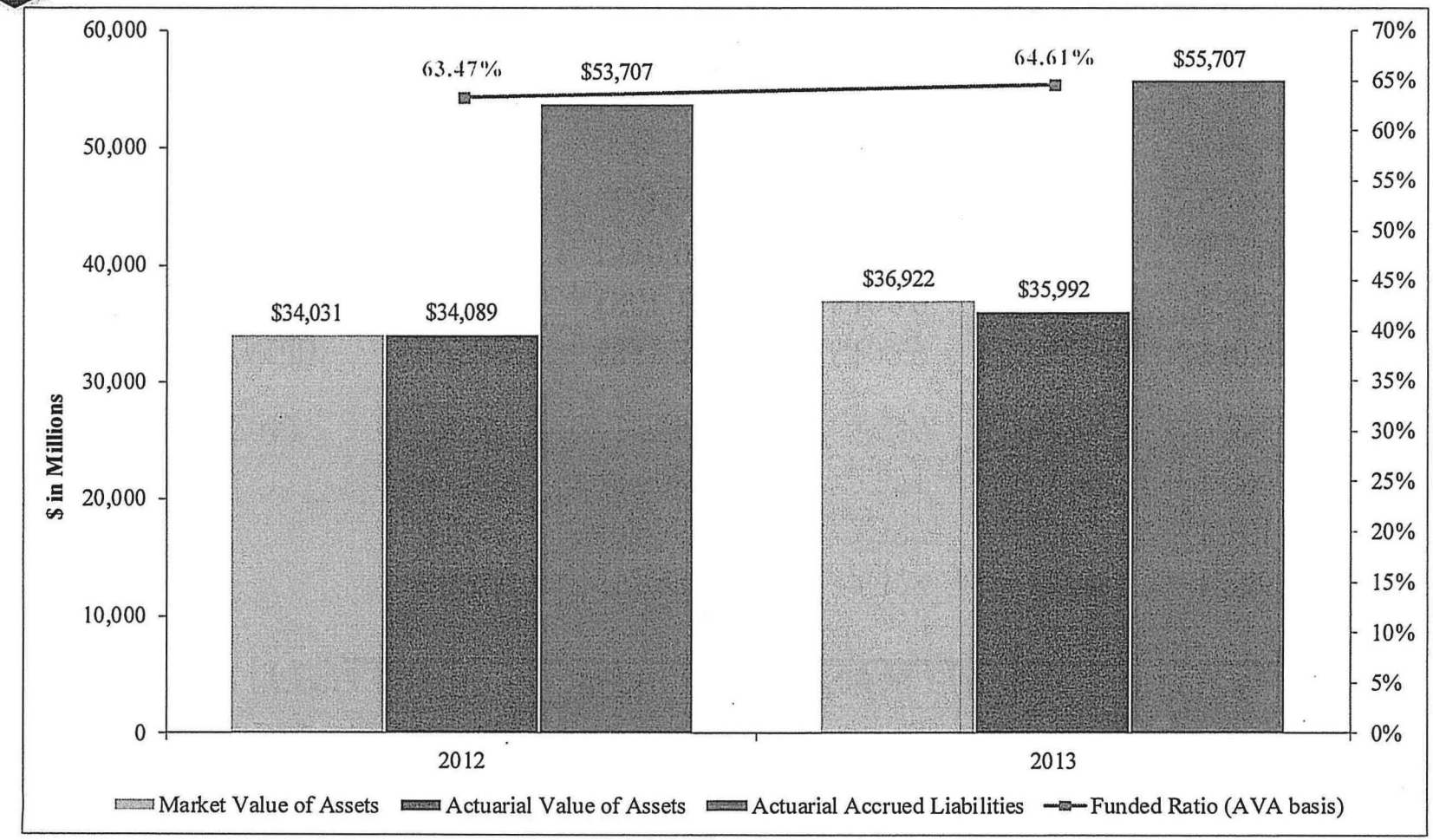
Valuation Results – Combined State Systems *($ in Millions)*



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Year to Year Comparison of Results

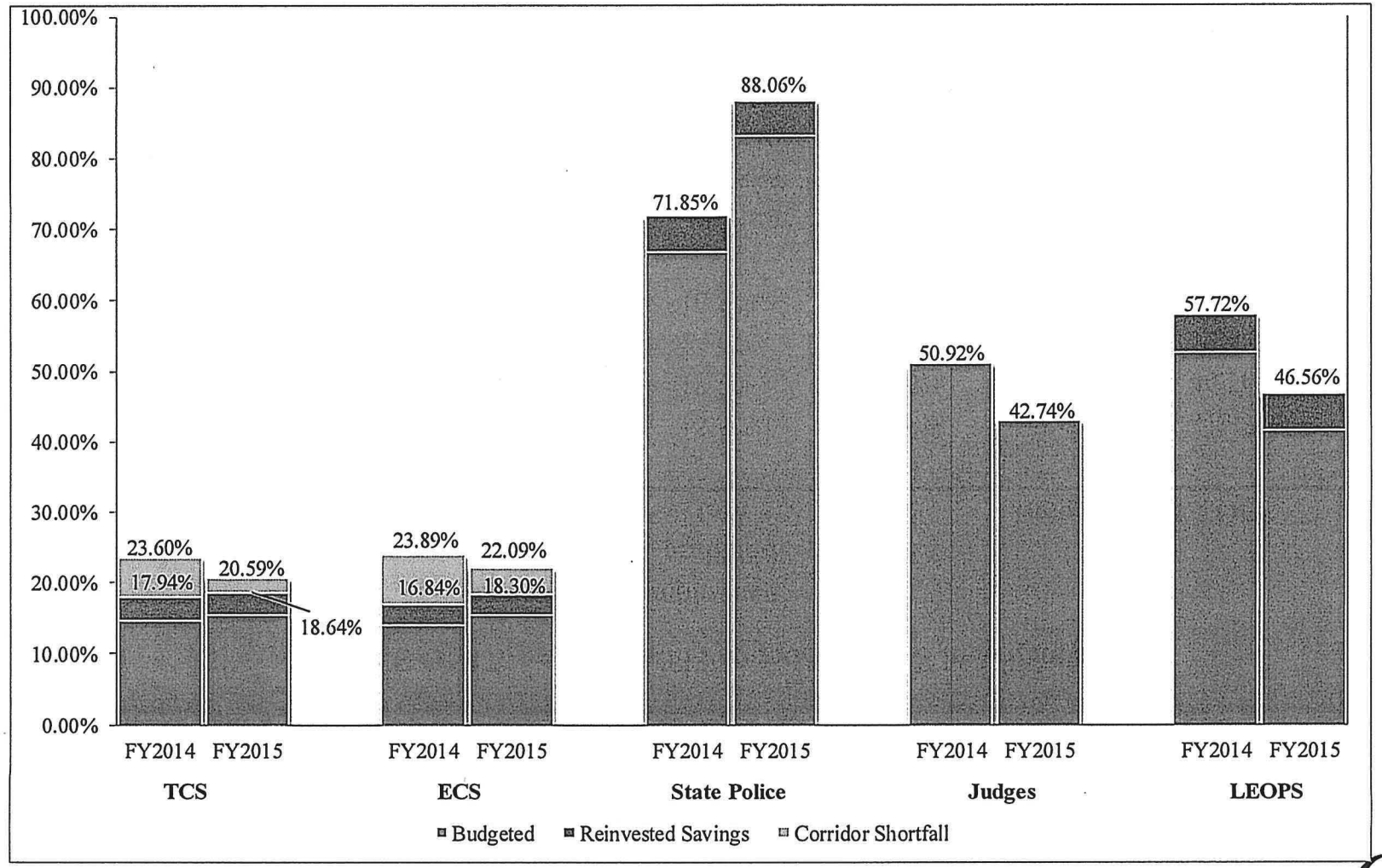
(STATE ONLY except Total Funded Ratios, $ in Millions)

	Teachers' Combined System *	Employees' Combined System *	State Police	Judges	LEOPS	Total
FY 2015 Contribution Rate	15.47%	15.53%	83.06%	42.74%	41.37%	16.41%
FY 2015 Contr. Rate (w. Reinv. Savings)	18.64%	18.30%	88.06%	42.74%	46.56%	19.48%
FY 2014 Contribution Rate	14.71%	14.05%	66.71%	50.92%	52.47%	15.43%
FY 2014 Contr. Rate (w. Reinv. Savings)	17.94%	16.84%	71.85%	50.92%	57.72%	18.54%
2013 Actuarial Value of Assets	$ 23,846	$ 10,149	$ 1,164	$ 355	$ 478	$ 35,992
2013 Unfunded Actuarial Liability	$ 11,685	$ 6,866	$ 718	$ 84	$ 362	$ 19,716
2012 Unfunded Actuarial Liability	$ 11,729	$ 6,749	$ 692	$ 91	$ 357	$ 19,618
Funded Ratios						
2013 (Total includes Municipal)	67.1%	59.7%	61.8%	80.9%	56.9%	65.5%
2012 (Total includes Municipal)	65.8%	58.9%	62.1%	78.4%	55.0%	64.4%

* *Includes effect of corridor.*

Municipal Actuarial Value of Assets of $3,359 Million and Municipal Unfunded Actuarial Liability of $994 Million are also included in the development of the Total Funded Ratio of 65.5%. State only 2013 Funded Ratio is 64.6%.

Actuarially Determined Contribution Rates



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Reconciliation of Employer Contribution Rates

(STATE ONLY)

	Teachers' Combined System	Employees' Combined System	State Police	Judges	LEOPS	Total
Actuarially Determined Calculations						
FY2014 Contribution Rate	20.37%	21.10%	66.71%	50.92%	52.47%	21.42%
Change due to Investment Return	0.05%	0.07%	0.35%	0.21%	0.07%	0.06%
Change due to Demographic Experience	-0.41%	-0.34%	-0.01%	-0.54%	0.35%	-0.38%
Change due to Corridor	0.29%	0.45%	0.00%	0.00%	0.00%	0.34%
Change due to Other	-0.08%	0.10%	-0.28%	0.73%	0.50%	-0.02%
Change due to Method Changes	-2.88%	-2.30%	16.11%	-8.60%	-12.15%	-2.63%
Change due to Assumption Changes	0.08%	0.24%	0.18%	0.01%	0.13%	0.12%
FY2015 Contribution Rate	**17.42%**	**19.32%**	**83.06%**	**42.74%**	**41.37%**	**18.91%**
Application of Corridor Method (Before Reinvested Savings)						
FY2014 Corridor Contribution Rate	14.71%	14.05%				15.43%
28% of Difference between FY2015 Actuarial Rate and FY2014 Corridor Rate	0.76%	1.48%				
FY2015 Budgeted Contribution Rate	15.47%	15.53%	83.06%	42.74%	41.37%	16.41%
Reinvested Savings Rate	3.17%	2.77%	5.00%	0.00%	5.19%	3.07%
Final FY2015 Total Budgeted Contr. Rate	**18.64%**	**18.30%**	**88.06%**	**42.74%**	**46.56%**	**19.48%**
Effect of Corridor	-1.95%	-3.79%				-2.50%

Sources of change due to demographic experience described on slides 25 and 26.

Calculation of Contribution Rate Attributable to Reinvestment Amounts

(STATE ONLY, $ in Millions)

	Teachers' Combined System	Employees' Combined System	State Police	Judges	LEOPS	Total
% of Total Pension Reform Savings#	67.7%	29.4%	1.4%	0.0%	1.5%	100.0%
Reinvested Savings	$203.1	$88.1	$4.2	$0.0	$4.6	$300.0
FY 2015 Contributions						
Illustrated Dollar Contributions	$ 989.8	$ 494.5	$ 69.8	$ 18.0	$ 36.9	$ 1,609.0
Reinvested Savings	$ 203.1	$ 88.1	$ 4.2	$ -	$ 4.6	$ 300.0
Total Illustrated Contributions	$ 1,192.9	$ 582.6	$ 74.0	$ 18.0	$ 41.5	$ 1,909.0
FY 2014 Illustrated Contributions	$ 1,128.9	$ 532.1	$ 58.8	$ 21.4	$ 50.8	$ 1,792.0
Employer Contribution Rate	15.47%	15.53%	83.06%	42.74%	41.37%	16.41%
Reinvested Savings Rate^	3.17%	2.77%	5.00%	0.00%	5.19%	3.07%
Total Contribution Rate	18.64%	18.30%	88.06%	42.74%	46.56%	19.48%

 # Based on Calculations from June 30, 2011 Valuation.

^ Rate calculated based on allocated reinvested dollars and FY 2015 projected payroll. It is our understanding that the Retirement Agency will monitor contributions to ensure that the System receives the proper amount of reinvested savings during Fiscal Year 2015.

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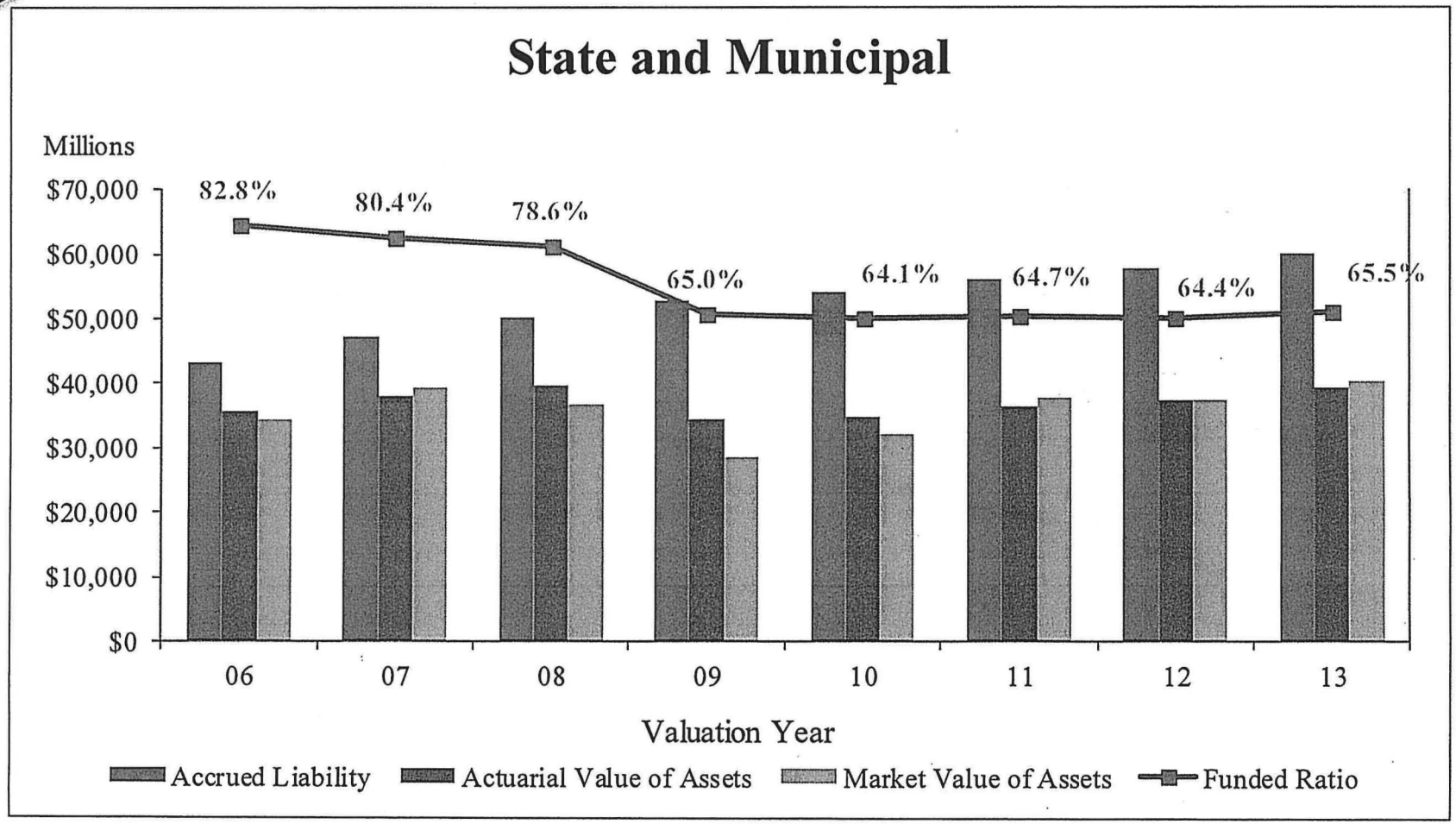
Historical Trends – Change in Funded Status, 2006 to 2013



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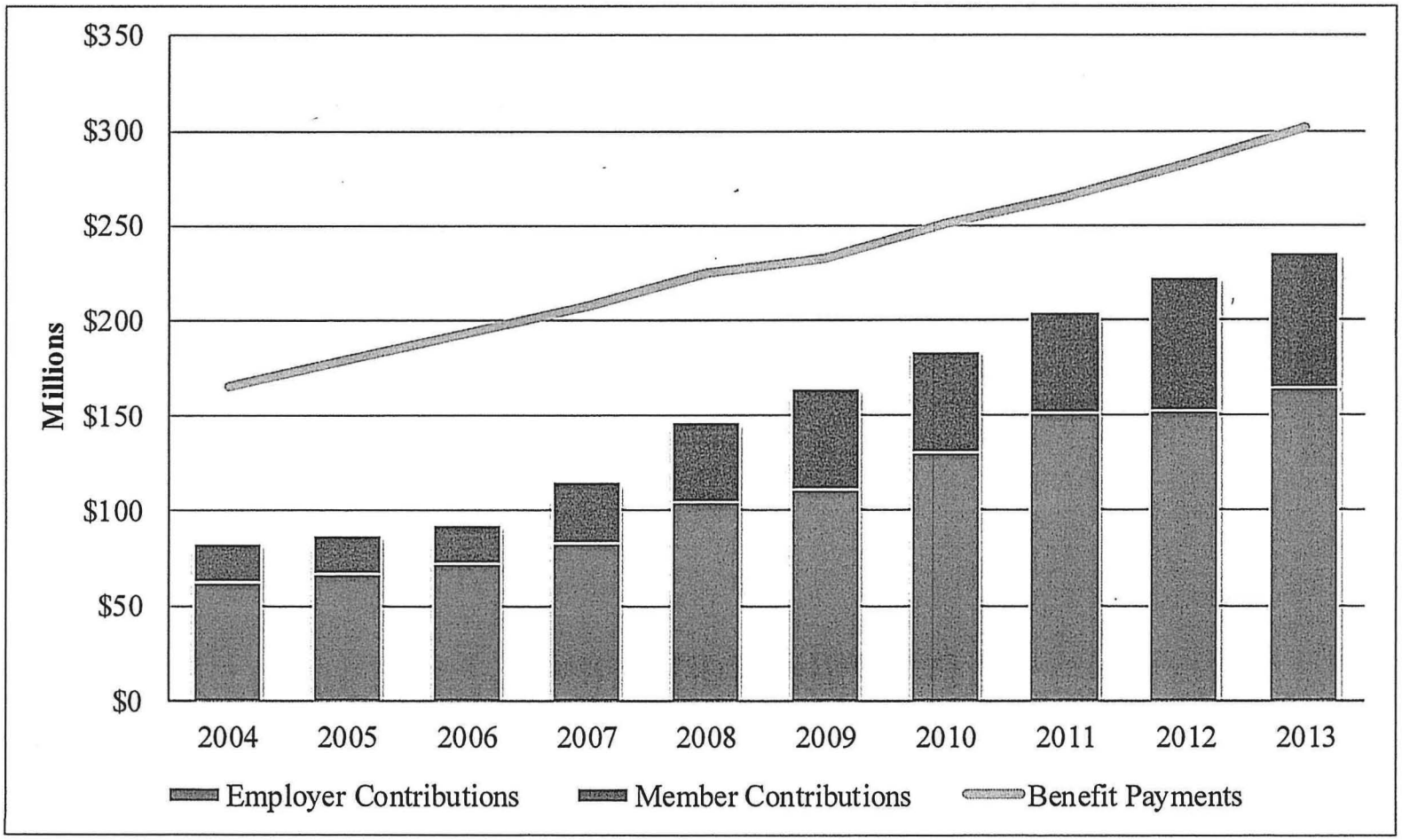
Historical Trends – Non-Investment Cash Flow (State and Municipal)



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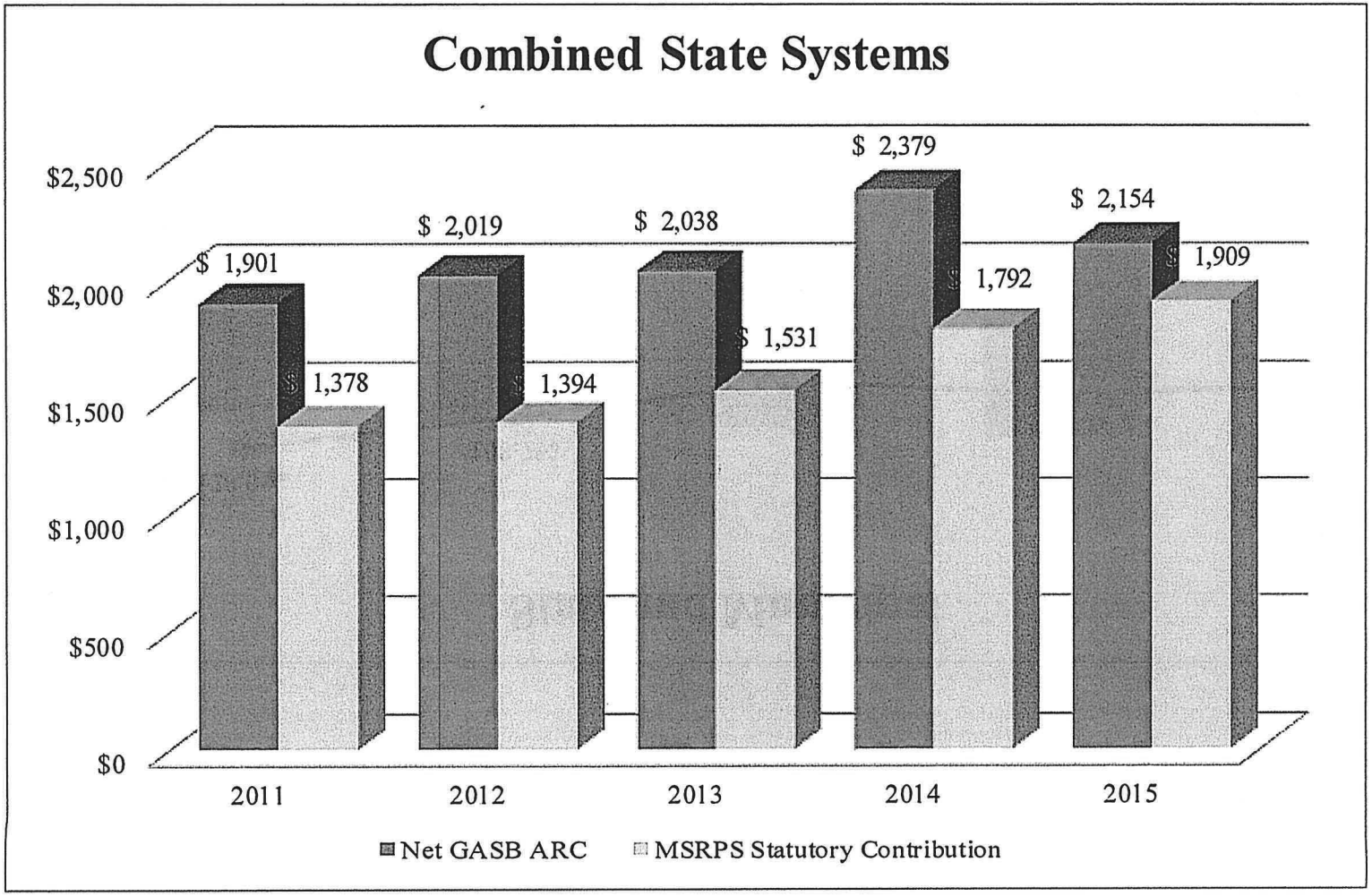
Statutory Contributions vs. Annual Required Contributions *($ in Millions)*



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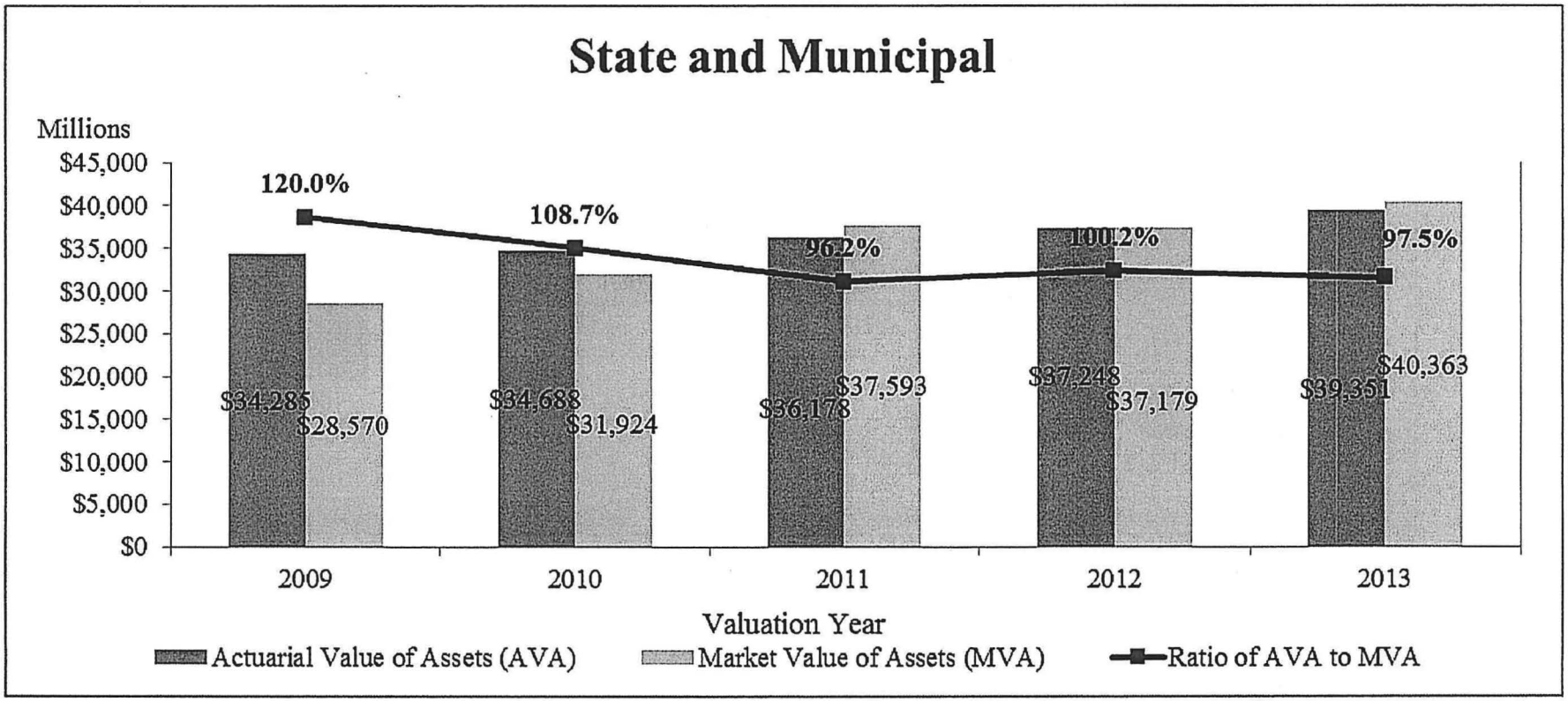
Actuarial Value of Assets - ($ Millions)



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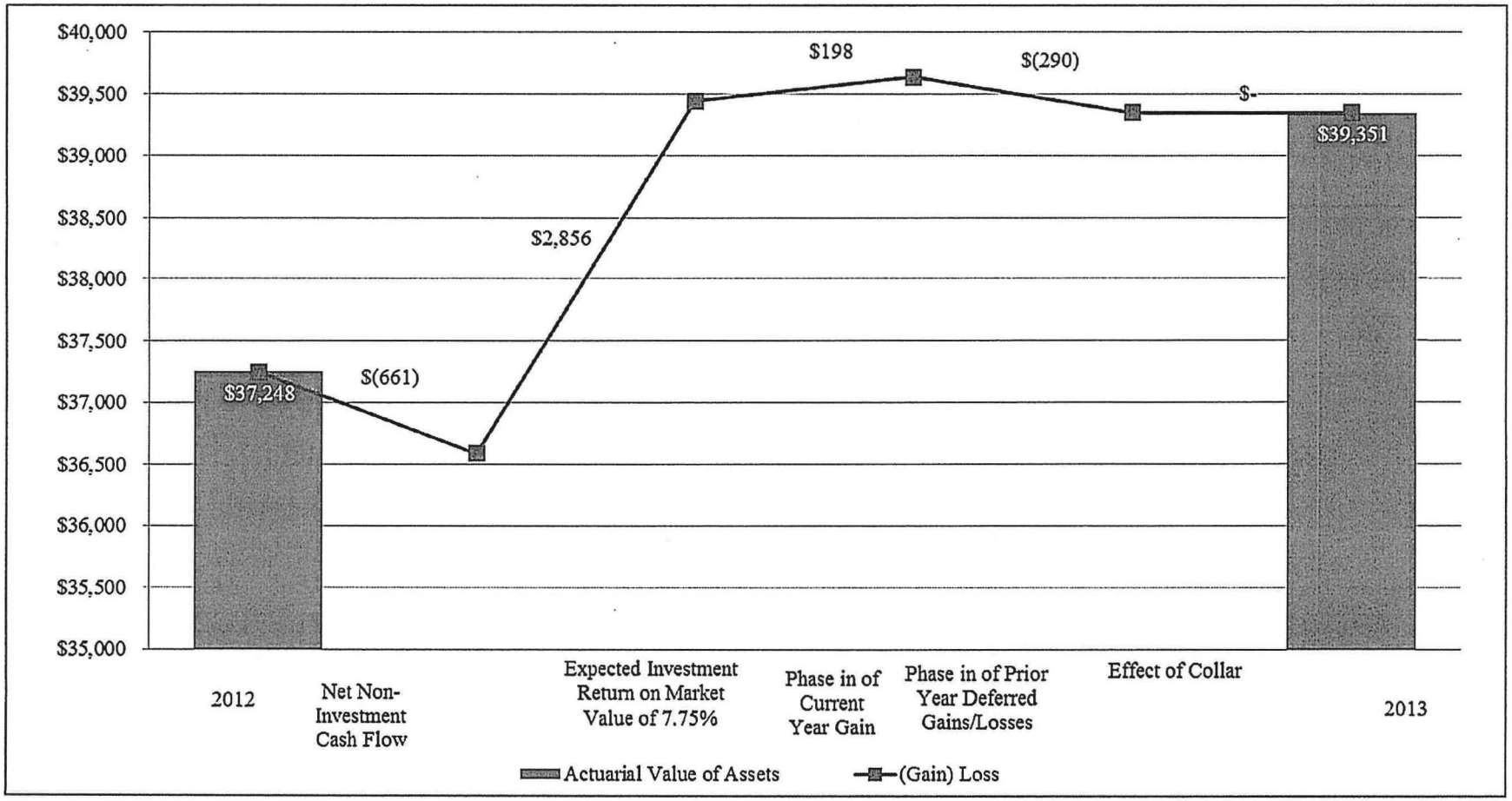
Actuarial Value of Assets - ($ Millions)

The actuarial valuation is not based directly upon market value, but rather uses a smoothed value of assets that phases in each year's gain or loss above/below the investment return assumption over 5 years. The chart below compares actuarial value to market value over the last five years.

	2009	2010	2011	2012	2013
Actuarial Value (AV) End of Year	$34,285	$34,688	$36,178	$37,248	$39,351
Market Value (MV) End of Year	28,571	31,923	37,593	37,179	40,363
Difference between AV and MV	$ (5,714)	$ (2,765)	$ 1,415	$ (70)	$ 1,012
Ratio of AV to MV	120%	109%	96%	100%	97%

The actuarial value of assets development contains a market value "collar" feature that requires that the actuarial value be within 20% of market value. The next slide gives the detail of how the phase-in actually works.

Actuarial Value of Assets - ($ Millions)



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Actuarial Value of Assets – ($ Millions)
Phase In of Deferred Gains and Losses

	2013	2014	2015	2016	2017
1. Value at July 1, 2012	$37,248.4				
2. Net Cash Flow	(661.3)				
3. Investment Return	3,845.8				
4. Expected Return	2,856.2				
5. Gain or loss (3-4)	989.6				
6. Amount for full recognition	2,856.2				
7. Phase-in amounts					
7a. From this year	197.9				
7b. From one year ago	(557.9)	$ 197.9			
7c. From two years ago	764.4	(557.9)	$ 197.9		
7d. From three years ago	365.5	764.4	(557.9)	$ 197.9	
7e. From four years ago	(862.2)	365.5	764.4	(557.9)	$ 197.9
8. Total Phase-ins	(92.3)	769.9	404.4	(360.0)	197.9
9. Final Value: 1+2+6+8	39,351.0				

Comments on Asset Value

- There is a net gain of about $1 billion to be recognized in the future ($930 Million State and $82 Million Municipal)
- Projected gains and (losses) affecting the State for the next several years:
  - June 30, 2014 $708 Million
  - June 30, 2015 $371 Million
  - June 30, 2016 $(330) Million
  - June 30, 2017 $181 Million

FY2013 Experience

The following items increased the contribution rates:

1. Corridor method for Teachers and Employees
2. Lower payroll than expected leads to higher % of pay contribution for unfunded liability. Total payroll was expected to increase by 3.5% over last year and actual payroll changed as follows:
   a. Teachers increased by 1.7%
   b. Employees Combined increased by 0.8%
   c. State Police increased by 2.8%
   d. Judges increased by 0.1%
   e. LEOPS increased by 1.3%

FY2013 Experience

The following items decreased or offset increases to the contribution rates:

1. Lower salary increases than expected
2. Lower COLA than expected for service earned prior to July 1, 2011 (2.07% for most retirees)
3. Lower benefits for members participating in reformed systems (hired on or after July 1, 2011)

Allocation of Contribution to Local Employers

Allocation of Contributions to Local Employers

- Beginning in fiscal year 2013, local employers will contribute a portion of the statutory normal cost contribution for the Teachers Combined System
- Normal cost contribution amounts for local employers for fiscal years 2013 through 2016 are defined in statute
- Beginning in fiscal year 2017, local employers will contribute the normal cost contribution for their employees

Allocation of Contribution to Local Employers

Teachers Combined System

	FY2015 Contribution ($ in Millions)			
	% of Pay	Total	Local Employers#	State
Employer Normal Cost	5.64%	$ 360.9	$ 221.6	$ 139.3
UAAL Amortization*	9.83%	629.3	-	629.3
Reinvested Savings	3.17%	202.7	-	202.7
Total	18.64%	$ 1,192.9	$ 221.6	$ 971.3

** Includes impact of corridor funding.*

 # Amounts are taken from Senate Bill 1301.

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Concluding Comments

- Employer contributions changed in approximately the manner in which was projected from the June 30, 2012 valuation results. Overall, the experience was slightly more favorable than anticipated for the fiscal year ending June 30, 2013 which led to slightly lower FY 2015 illustrative contributions for the State (and local employers) than was projected.
- The Teachers' and Employees' Combined Systems are finally on a path to converge with the actuarially determined rates by 2022. The State Police System will not face a significant contribution rate increase in 2020 and the effective amortization period is no longer over 50 years.

Conclusion

- What Is Needed to Sustain MSRPS?
  - Continued reasonable forecasts of resources and obligations
  - Continued sound investment program
  - Continued long-term approach to changes

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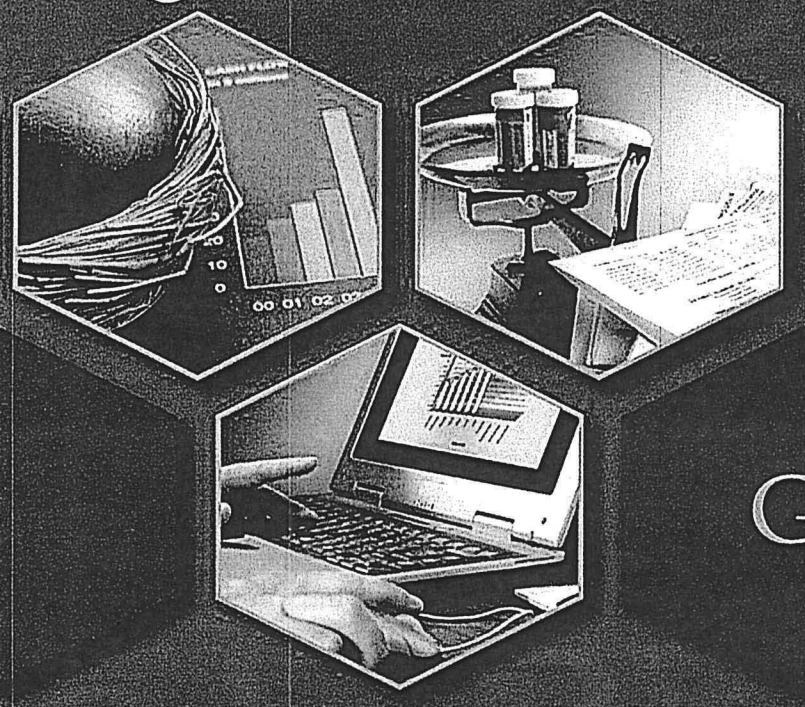

GASB Changes

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Proposed Timetable for GASB 67/68 Implementation

Action Step	Preliminary Due Date
Planning meeting	December, 2013
Prepare a projection of 2013 plan assets and the 2013 PV of benefits to determine if MSRPS requires the use of a blended interest rate. Use result to determine the Total Pension Liability and subtract the market of assets (Plan Fiduciary Net Position) to determine beginning of year Net Pension Liability (NPL)	January, 2014
Prepare a pro-forma of the annual pension expense and NPL under the new accounting standards	March, 2014
Complete methodology for the allocation of the plan's NPL and annual pension expense to each Participating Governmental Unit (PGU)	April - June, 2014

Additional Employer Accounting Discussion

- What information will be needed for the State?
- What information and/or reports will be prepared for the cost sharing employers?
- Who will prepare the information?
- When will it be prepared and delivered to the cost sharing employers?
- Will you assess the employers' a cost for the preparation of their "pro-rata" allocations of liability and expense?
- Check GASB 68 Implementation Guide for TCS local employers allocation of the NPL and share of annual pension expense

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GASB Changes - Overview

- New GASB Accounting Standards No. 67 and No. 68 will create accounting results separate from funding results
  - Funding calculations **are not impacted**
  - GASB created a new Net Pension Liability (NPL) and Pension Expense
  - Statement No. 67 replaces Statement No. 25
  - Statement No. 68 replaces Statement No. 27

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GASB Changes - Overview

- Requires recognition of a version of unfunded liability on each employer's balance sheet
  - Formerly only in footnotes
- Changes calculation of annual cost
  - No longer equal to required contribution (ARC)
- Meant to improve transparency and comparability – market assets, single funding method, rigid amortization rules

GASB Changes - Overview

- Special Rules
  - All pension plans (single, cost sharing, and agent employers) have to disclose its assets in great detail as well as plan description, board composition, investment policies, etc. Identify participating GAAP entities
  - Single and cost-sharing plans have to disclose TPL, NPL, etc, but agent plans do not

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GRS

GASB Changes - Overview

- Key differences for employer accounting
  - New GASB rules do not allow smoothing of assets
  - New GASB rules may require lower (or blended) discount rate to value liabilities
- Key takeaways
  - New GASB rules do NOT change the funding contribution rate or methods
  - New GASB rules do provide a second set of actuarial numbers

Disclosures

- Circular 230 Notice: Pursuant to regulations issued by the IRS, to the extent this presentation concerns tax matters, it is not intended or written to be used, and cannot be used, for the purpose of (i) avoiding tax-related penalties under the Internal Revenue Code or (ii) marketing or recommending to another party any tax-related matter addressed within. Each taxpayer should seek advice based on the individual's circumstances from an independent tax advisor.
- This presentation shall not be construed to provide tax advice, legal advice or investment advice.
- The actuaries submitting this presentation (Brian Murphy, Brad Armstrong, and Amy Williams) are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.
- The purposes of the actuarial valuation are to measure the financial position of MSRPS, assist the Board in establishing employer contribution rates necessary to fund the benefits provided by MSRPS, and provide actuarial reporting and disclosure information for financial reporting.

Disclosures

- Future actuarial measurements may differ significantly from the current and projected measurements presented in this presentation due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law.
- This is one of multiple documents comprising the actuarial reports for the combined systems and the municipal corporations. Additional information regarding actuarial assumptions and methods, and important additional disclosures are provided in the Actuarial Valuations as of June 30, 2013.
- If you need additional information to make an informed decision about the contents of this presentation, or if anything appears to be missing or incomplete, please contact us before relying on this presentation.

PENSION ACCOUNTING CHANGES

GASB
Governmental Accounting Standards Board

Joint Committee on Pensions

Senator Verna L. Jones–Rodwell, Co-Chair
Delegate Melony Griffith, Co-Chair

A NEW WORLD FOR PUBLIC PENSION PLANS: *MULTIPLE REPORTS OF LIABILITIES*

- For Funding Purposes – Not to change materially from those developed under current GASB standards
- For Accounting Purposes – New GASB standards
- For Third Party Analysis Purposes – e.g., New Moody's methodology

GASB IMPLEMENTATION

- Effective for MSRPS FY 2014
  - Statement 67, Financial Reporting for Pension Plans
- Effective for State FY 2015
  - Statement 68, Accounting and Reporting for Pensions

GASB – PURPOSE OF CHANGES

- Divorces pension system funding and financial reporting
  - Will no longer be an ARC for accounting purposes
  - Focus has been whether the government was making its ARC payments each year
  - Now, focused on size and growth of the "Net Pension Liability (NPL)"
    - Similar to Unfunded Actuarial Liability (UAAL)
- Part of normal review cycle and intended to improve reporting:
  - Transparency
    - NPL goes on balance sheet
    - Presently, the UAAL appears in footnotes
  - Consistency
  - Comparability amongst systems

REPORTING CHANGES

- Adds Net Pension Liability (NPL) – similar to the UAAL
- To calculate NPL (as with UAAL) we compare the present value of the total pension liability to the assets available to pay that liability
  - UAAL – liability discounted at plan's assumed rate (7.70) and assets smoothed
  - NPL – liability may be discounted using "blended rate" with assets valued at fair value = more volatility
- Adds a new pension expense calculation that replaces the current Annual Pension Cost under GASB 27

REPORTING CHANGES

- Pension expense – The State's "cost" of pension benefits; calculated under new rules such as immediate recognition of benefit changes, gains/losses of assets
  - Recasts pension expense to reflect changes in the NPL from year to year
- Greater volatility of this number, year to year
  - Recognize full amount of change in NPL due to benefit changes immediately
    - Demographic gains/losses and assumption changes are expensed using average expected working lifetime of all members
    - Pension expenses
      - Investment gains/losses smoothed over five years (we currently do)
      - For NPL, market value is used

REPORTING CHANGES

- Creates a blended rate that must be used if a plan is projected to deplete assets
  - The plan uses the assumed rate of return up to the point the plan no longer has assets to pay benefits
    - Includes assumption of all future contributions and earnings
    - Excludes future normal cost of future hires
  - The remaining liability must be discounted with a high quality municipal bond rate
  - For FY 2013, had GASB standards been in effect, the blended rate would not be necessary for MSRPS
    - Because of new funding policy (closed 25 year amortization)

MSRPS CURRENT POSITION IF NEW GASB WERE IN EFFECT TODAY

	Unfunded Actuarial Accrued Liability*	GASB No. 27	GASB No. 67	
		Net Pension Obligation*	Net Pension Liability*	Crossover Date
Teachers'	$ 11,684,823	$ 1,383,374	$ 11,060,815	NA
Employees'	6,866,129	1,489,746	6,602,216	NA
State Police	718,284	59,348	693,939	NA
LEOPS	362,369	-	352,079	NA
Judges	83,937	-	76,504	NA
Combined State	$ 19,715,542	$ 2,932,468	$ 18,785,554	

* In thousands

GASB – DISCLOSURE APPEARANCE

- GASB requirements significantly increase the *appearance* of the liability for accounting purposes only, but ***will not change*** the actual liability amount as it is used to determine State contributions

IMPACT TO STATE

- Entire $18.8 billion NPL will appear on the State's financial statements, whereas until the State's FY 2015 financial statements are prepared, only the Net Pension Obligation ($2.9 B in FY 2013) has to be reported
  - Will vary upward or downward, year to year, depending on market value of assets

GASB – ACTUARIAL CONSIDERATIONS

- Requires Entry Age Normal for all Financial Reporting Actuarial Valuations (Maryland already uses EAN)
- Actuary will now need to create two valuation reports annually: one for funding and one for financial reporting
- Participating employers will require information and guidance from MSRPS in order to prepare their financial statements
- Because county boards of education are now paying normal cost, there will be a new reporting requirement for all county financial statements
- GASB requires plan employers to report a proportionate *share of the plan's NPL*

COMPARING ACCOUNTING RULES

	MSRPS	GASB
Discount Rate	7.70% decreasing to 7.55%	Blended
Amortization Period	25 years	Some expensed immediately, some over future working lifetimes, investment returns over 5 years
Asset Value	5-year smoothing	FMV
Annual Pension Expense	Normal Cost plus Amortization of unfunded liability over 25	Normal Cost plus Interest on difference between Total Pension Liability and Market Value of Assets plus Recognition of gain/loss, benefit changes, assumption changes over periods from 0-7 years

EFFECT ON BOARDS OF EDUCATION

Boards of Education

Estimated normal cost for each year

State of Maryland

- All unfunded liability as of the transition date of July 1, 2016
- All changes in the unfunded liability resulting from changes in actuarial assumptions as of July 1, 2016 and from actual results
- All changes in unfunded liability because of actuarial changes or actual results for the post fiscal year 2017 estimate normal cost that was paid by the Boards of Education

COMMUNICATIONS

- Challenge of explaining multiple numbers to
  - Plan Sponsors
  - Plan Members
  - Media/General Public

[redacted]

[redacted]

MOODY'S – ANALYSIS OF PENSION LIABILITIES

All public entities issuing debt are now analyzed using the same standards:

- Actuarial liabilities measured using high-grade long-term taxable bond index discount rate (4.63% as of 6/27/2013)
- Asset smoothing replaced with market value
- Resulting net pension liability amortized over 20 years
- Participating employers will be allocated plan liabilities based on their proportionate share of total plan contributions

COMPARING ACCOUNTING RULES

	MSRPS	GASB	Moody's
Discount Rate	7.70% decreasing to 7.55%	Blended	4.63% (as of 6/27/2013)
Amortization Period	25 years	Some expensed immediately, some over future working lifetimes, investment returns over 5 years	20 years
Asset Value	5-year smoothing	FMV	FMV
Annual Pension Expense	Normal Cost plus Amortization of unfunded liability over 25	Normal Cost plus Interest on difference between Total Pension Liability and Market Value of Assets plus Recognition of gain/loss, benefit changes, assumption changes over periods from 0-7 years	Normal Cost at new discount rate plus Amortization of unfunded liability over 20 year period

COMPARISON OF REPORTED PENSION LIABILITIES

	MSRPS Actuarial Valuation	New GASB	Moody's
Maryland Liabilities	$19.7 B*	$18.8 B*	$28.7 B**

* FY 2013 valuation

** FY 2011 valuation

Annual State Retirement and Pension System's Investment Overview

Presented to the
Joint Committee on Pensions

Department of Legislative Services
Office of Policy Analysis
Annapolis, Maryland

November 2013

Annual State Retirement and Pension System's Investment Overview

At the request of the Joint Committee on Pensions, the Department of Legislative Services (DLS) annually reviews the investment performance of the State Retirement and Pension System (SRPS) for the preceding fiscal year. This report is intended to provide an overview of the SRPS performance, a comparison of this performance to its peers, and an identification of issues meriting consideration by the joint committee during the upcoming legislative session.

State Retirement and Pension System Investment Performance

The system's investment return for fiscal 2013 was 10.6% net of management fees, exceeding its investment return target of 7.75% for the fourth time in the last five years. After struggling through most of fiscal 2012, public equity markets led the resurgence in worldwide financial market performance in fiscal 2013. Broad indices of public equities were all strongly higher: the U.S. domestic S&P 500 index rose 27.3% and the MSCI international index rose 18.3%. With public equities making up 42.3% of the portfolio, this impressive performance propelled the system to generate returns well in excess of its target.

As shown in **Exhibit 1**, the system's assets totaled $40.25 billion as of June 30, 2013, an increase of 8.5% over fiscal 2012 after accounting for benefit payouts and other expenses. This is just the second time in its history that the fund has exceeded the $40.0 billion level, the first coming just before the crisis in financial markets of 2008. As noted above, the strongest performing asset classes in fiscal 2013 were public equity (19.1%), credit and debt (13.4%), and real estate (12.6%); private equity also did well, earning 11.7%. Driven by low interest rates, the two weakest classes were real return (-1.45%) and fixed income (1.1%). Absolute return also performed poorly (3.4%), largely due to the underperformance of one manager. Asset class performance is discussed in greater detail later in this report.

Exhibit 1
State Retirement and Pension System of Maryland
Fund Investment Performance for Periods Ending June 30[1]
($ in Millions)

			Time Weighted Total Returns		
	Assets	**% Total**	**1 Year**	**5 Years**	**10 Years**
Domestic Equity	$4,649.9	11.6%	21.6%	6.8%	7.3%
International Equity	5,539.9	13.8%	16.4%	-0.4%	8.4%
Global Equity	6,839.1	17.0%	20.6%	3.3%	n/a
Fixed Income	6,510.6	16.2%	1.1%	6.4%	5.3%
Credit and Debt	3,380.5	8.4%	13.4%	n/a	n/a
Real Estate	2,322.2	5.8%	12.6%	1.4%	9.0%
Real Return	5,068.1	12.6%	-1.45%	4.7%	n/a
Private Equity	2,504.9	6.2%	11.7%	5.8%	12.3%
Absolute Return	2,925.0	7.3%	3.4%	3.2%	n/a
Cash	510.6	1.3%	1.5%	3.2%	n/a
Total Fund	**$40,250.7**	**100.0%**	**10.6%**	**4.0%**	**6.6%**

[1] Data presented here includes money invested by the system on behalf of the Maryland Transit Administration.

Note: Returns beyond one year are annualized. Returns are net of fees, except for 10-year returns, which are gross of fees. Columns may not add to total due to rounding.

Source: State Street Investment Analytics

Terra Maria Program

The Terra Maria program, the system's emerging manager program, rebounded from weak performance in fiscal 2012 to outperform program benchmarks in fiscal 2013. Now in its seventh year, the program experienced some retrenchment in size as managers with track records of poor performance were terminated. After hitting its peak of 110 asset managers in each of the past two years, the Terra Maria program finished fiscal 2013 with just 94 managers. Total assets devoted to the program continued their decline, dropping by 11.3% ($352.7 million) compared with fiscal 2012, to their current level of almost $2.8 billion. With total system assets increasing year-over-year, Terra Maria's relative size also decreased, from 8.4% of total assets in fiscal 2012 to 6.9% of total assets in fiscal 2013. These trends are driven in part by manager performance as well as by the system's overall move away from active domestic equity management, which represents the program's largest single asset class. **Exhibit 2** provides an overview of the Terra Maria program by program manager and asset class.

Exhibit 2
Terra Maria Program Performance
June 30, 2013
($ in Millions)

		Performance			
Program Manager	**Total Assets**	**Fiscal 2013 Actual**	**Fiscal 2013 Benchmark**	**Inception Actual**	**Inception Benchmark**
Attucks	$389.7	17.6%	15.5%	16.9%	16.1%
Bivium	330.0	16.7%	16.3%	15.3%	15.1%
Capital Prospects	388.4	18.8%	18.5%	19.6%	19.1%
FIS Group	359.1	17.5%	16.6%	15.5%	14.7%
Leading Edge	380.0	13.7%	13.6%	16.3%	14.6%
Northern Trust	624.2	14.3%	14.4%	4.1%	2.8%
Progress	293.5	2.0%	1.5%	11.0%	11.6%
Asset Class					
U.S. Equity	$1,197.4	21.4%	21.7%	6.8%	5.7%
International Equity	844.7	14.8%	13.8%	-0.1%	-2.2%
Global Equity	18.2	14.8%	16.5%	11.3%	12.7%
Fixed Income	488.6	0.4%	-0.7%	8.4%	9.7%
Credit/Debt	183.2	11.0%	8.9%	9.0%	9.3%
Real Return	32.8	-4.6%	-2.0%	6.7%	6.9%
Total	**$2,764.9**	**14.3%**	**13.8%**	**4.5%**	**2.9%**

Note: Actual returns are net of fees; returns beyond one year are annualized. Total assets may not sum to total due to rounding.

Source: State Retirement Agency

For fiscal 2013, six of the seven program managers met their performance benchmarks, and on the whole, program performance exceeded its benchmark by 52 basis points. Results are more mixed when asset class performance is considered. Managers in three of the six asset classes failed to meet asset class benchmarks, including domestic equity, by far the largest component of the Terra Maria program. Therefore, it was very strong performance relative to benchmarks among international equity and fixed income managers that enabled the program to exceed its overall benchmark.

Since its inception, the Terra Maria program continues to add value to the portfolio, beating its overall composite benchmark by 156 basis points. However, only domestic and

international equity managers have exceeded benchmarks since inception, with managers in the remaining four asset classes falling short. Among program managers, all but one (Progress) continue to beat their benchmarks since inception.

DLS recommends that State Retirement Agency and board explain the reasons for the continued shrinking of the Terra Maria program and whether they expect program retrenchment to continue.

Performance Compared to Other Systems

According to the Trust Universe Comparison Service (TUCS), the system's fiscal 2013 investment performance was among the worst of 19 public pension funds with at least $25 billion in assets. The system's fiscal 2013 performance placed it at the ninety-third percentile, as shown in **Exhibit 3.** In the TUCS analysis, the one-hundredth percentile is the lowest ranking, and the first percentile is the highest. Maryland's ranking, therefore, represents a significant worsening of its relative performance, down from the seventy-fifth percentile in fiscal 2012. Long-term performance rankings place SRPS either in or near the bottom quartile for every time frame examined. TUCS rankings are based on returns gross of fees.

Exhibit 3
TUCS Percentile Rankings for Periods Ending June 30
Fiscal 2010-2013

	2010	2011	2012	2013
1 Year	28	87	75	93
3 Years	76	55	60	87
5 Years	78	87	81	68
10 Years	97	100	93	99

TUCS: Trust Universe Comparison Service

Source: Trust Universe Comparison Service

The TUCS rankings are useful for providing a snapshot assessment of the system's performance relative to other large public pension plans. However, the rankings do not identify the other funds against which SRPS is measured, and provides only limited information on their asset allocation, which has been shown to be responsible for most variation in performance among investment portfolios. Therefore, the rankings offer little by way of explaining why Maryland's performance lags behind that of other funds. However, data provided by TUCS on asset allocation provides some explanation for the system's poor relative performance. Among the large public funds against which Maryland is measured, the median allocation to domestic equity was 30.6%, compared with 25.7% for Maryland. In a year in which domestic equity led

all asset classes in performance, Maryland's underweight to that asset class clearly impeded its relative performance.

A more in-depth examination of asset allocation and returns in comparable state pension plans further illustrates the relationship between allocations to public equity and fund performance. DLS identified eight other state pension funds with asset levels that exceed $25.0 billion, which is considered the SRPS peer group; these are shown in **Exhibit 4**. Five of these funds outperformed SRPS in fiscal 2013, and three underperformed the State. Among the nine states, Maryland has the fourth lowest allocation to public equity, and correspondingly the fourth lowest annual return. Three of the four states with the highest annual returns also had among the highest allocations to public equity. Conversely, two of the three states with worse performance were among those with lower allocations to public equity than Maryland; the third (North Carolina) had a slightly higher allocation to public equity than Maryland, but also had the highest allocation among the nine states to fixed income, which was the lowest-performing asset class this year. North Carolina has a fully-funded pension plan, so its asset allocation tends to be more conservative than most states, as reflected by its overweight in fixed income.

Exhibit 4
Performance and Asset Allocation of Public Pension Fund Peers
As of June 30, 2013

			Asset Allocation			
	Fiscal 2013 Performance	**Assets ($ in Millions)**	**Public Equity**	**Fixed Income**	**Real Estate**	**Alternatives/ Other**
Massachusetts	14.3%	$54.4	46.2%	21.1%	8.3%	24.4%
Florida	13.1%	132.4	59.1%	22.0%	7.7%	11.2%
Washington	12.4%	67.9	37.9%	21.2%	13.6%	27.3%
New Jersey	11.8%	74.5	49.7%	18.6%	3.5%	28.2%
Virginia	11.8%	58.3	44.1%	22.2%	8.1%	25.6%
Maryland	**10.6%**	**40.3**	**42.3%**	**16.2%**	**5.8%**	**35.7%**
South Carolina	10.0%	26.8	28.3%	23.3%	3.7%	44.7%
North Carolina	9.5%	74.9	46.4%	33.8%	8.1%	11.7%
Pennsylvania Teachers	8.0%	49.3	19.3%	13.8%	14.3%	52.6%

Note: Massachusetts' Fiscal 2013 return is gross of fees; all others are net of fees. Alternatives include, among others, private equity, hedge funds, commodities, inflation-protected bonds, and risk parity.

Source: State Retirement and Pension System; investment reports of state pension funds

Although Washington's allocation to public equity was substantially lower than Maryland's, it still generated among the highest annual returns for fiscal 2013. A key reason for this is that Washington has among the most mature private equity programs in the country, which provides it with equity-like returns and reduced volatility. By increasing its allocation to private equity over the past five years (and reducing its reliance on public equity), Maryland is striving to reap the benefits of a mature private equity program in the future.

Looking Ahead: The Future of SRPS Investments

Asset Allocation Continues Transition to Long-term Targets

In its annual spring review of asset allocation, the board made one set of adjustments to its long-term targets that were in effect at the close of the fiscal year in June. The absolute return target was increased from 7.0 to 10.0%, and public equity, real return, and cash were each lowered by 1.0%. Actual allocation to public equity did not progress toward its lowered target during the year, holding steady at 42.4%. However, there was considerable restructuring of public equity holdings, with assets devoted to both domestic and international equity holdings being shifted to global equity, as reflected in **Exhibit 5**. This was prompted, in part, by the persistent underperformance of domestic equity active managers, to which DLS has consistently drawn attention, and the comparatively strong performance of global equity managers. The restructuring also gives the system more flexibility to move funds between domestic and international assets, depending on market conditions.

Exhibit 5 also shows that, besides public equity, the system is still implementing changes in asset allocation that were adopted beginning in fiscal 2008, with allocations moving closer to their long-term targets. Most notably, fixed income dropped from 19.2 to 16.2%, moving closer to its target of 10.0%. There were corresponding increases to private equity, real return, and absolute return.

Exhibit 5
State Retirement and Pension System Asset Allocation
Fiscal 2011-2012

	Strategic Target 6/30/2013	Actual 6/30/2013	Actual 6/30/2012	Actual 6/30/2011
Equity				
Domestic Stocks		11.6%	13.0%	16.3%
International Stocks		13.8%	15.0%	18.7%
Global Equity		17.0%	14.4%	12.2%
Total Public Equity	**35.0%**	**42.4%**	**42.4%**	**47.2%**
Private Equity	10.0%	6.2%	5.7%	4.3%
Real Estate	10.0%	5.8%	6.4%	5.8%
Fixed Income	10.0%	16.2%	19.2%	20.3%
Real Return Strategies	14.0%	12.6%	10.0%	10.4%
Absolute Return	10.0%	7.3%	6.8%	4.4%
Credit/Debt	10.0%	8.4%	7.8%	5.9%
Cash and Other	1.0%	1.3%	1.7%	1.7%
Total Assets	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Note: Data reflects all system assets held at State Street. Columns may not add to total due to rounding.

Source: State Retirement Agency

Appendix 1 presents the fiscal year-end performance by each investment manager for fiscal 2011 and prior periods, by asset class, and subclass.

Active Management, Alternatives Drive Fee Increases

SRPS incurred $274.9 million in investment management fees in fiscal 2013, a 13.5% increase over fiscal 2012 fees. As shown in **Exhibit 6**, management fees for the plan as a whole have grown substantially since fiscal 2008, when the system adjusted its asset allocation to invest more heavily in alternative asset classes with higher fee structures. The shift of public equity assets to global equity managers, which are almost all active managers, contributed significantly to the growth in fees this year. However, the shift was also responsible for a significant improvement in public equity performance this year relative to its benchmark.

Exhibit 6
Asset Management Fees Paid by Asset Class
Fiscal 2008-2013
($ in Millions)

	2008	2009	2010	2011	2012	2013
Public Equity	$40.6	$23.3	$55.4	$64.3	$49.5	$67.2
Fixed Income	10.0	7.3	7.9	9.7	9.4	11.5
Real Estate	20.9	17.6	25.1	24.1	30.0	24.7
Private Equity	12.6	27.9	35.6	37.6	44.6	53.8
Real Return	n/a	7.0	15.9	20.0	20.9	24.0
Credit and Debt Related	n/a	0.3	10.3	20.2	33.0	46.3
Absolute Return	n/a	11.8	13.5	23.4	26.0	34.7
Currency	n/a	1.3	14.4	13.4	9.2	9.0
Service Providers/Other	5.2	0.2	1.4	1.7	3.1	3.7
Terra Maria	n/a	6.9	n/a	5.2	16.5	n/a
Total	**$89.3**	**$103.7**	**$183.7**	**$219.6**	**$242.3**	**$274.9**

Note: Columns may not sum to total due to rounding.

Source: State Retirement Agency

System fees are not only high relative to previous years but also to fees paid by other institutional investors. **Appendix 2**, which provides additional data regarding fees paid by the system, shows that total fees amounted to 62.0 basis points in fiscal 2013. By contrast, a recent study by Callan Associates, reported in *Pensions & Investments*, found that the average fees paid by 49 institutional investors surveyed, including public and corporate pension funds as well as endowments, was 43.7 basis points. Although this is not an ideal comparison, it does indicate that SRPS fees tend to run higher than those of other institutional investors. One particular finding in the Callan report is cause for concern. Callan found that private equity fees have been declining in recent years and now represent an average of 173.0 basis points for surveyed plans. By contrast, private equity fees for SRPS have been increasing relative to market value and now total 224.3 basis points. **DLS recommends that the board and SRA justify the fees paid to private equity managers and report on current and future strategies to negotiate lower fees for private equity and other alternative asset classes.**

Service Provider Fees Are Not Treated in Consistent Manner

Historically, investment management fees have been nonbudgeted; therefore, they are not subject to annual appropriation or oversight by the General Assembly. In fiscal 2003, in response to prompting by the General Assembly, SRPS hired its first general investment

consultant, EnnisKnupp (now Hewitt EnnisKnupp, or HEK), to advise it on asset allocation and other related matters. From the beginning, HEK's contract has been a budgeted expense; in fiscal 2014, the working appropriation for that contract is $615,000. Following its retention of HEK, however, the board has elected over time to hire multiple specialized consultants to advise it on manager selection in private equity (Altius), real estate (Pension Consulting Alliance), and hedge funds (Albourne). It also retains outside legal counsel to review partnership agreements for private equity and private real estate investments. In addition, Record Currency provides currency management services. In performing its contractual duties, Record does not directly manage any SRPS assets but is paid a fee to provide protection against losses resulting from international exchange rate fluctuations. In fiscal 2013, fees paid to these multiple service providers totaled $12.7 million.

Unlike the HEK contract, fees paid to specialized consultants, outside legal counsel, and Record are not budgeted expenses. However, they cannot be characterized as investment management fees since none of the service providers actually manage system assets. DLS notes that all service providers are retained in accordance with State procurement laws and procedures, and all service provider fees are reported on the system's financial statements as direct deductions from the State's pension fund. However, unlike the HEK contract or similar contracts with other professional service providers, such as the system's actuary or outside tax counsel, these service contracts are not subject to appropriation or to the system's statutory expenditure cap. **Therefore, DLS requests that the board develop a policy for inclusion in its Investment Policy Manual that includes criteria to be applied consistently in determining when fees paid to investment-related service providers are to be considered budgeted or nonbudgeted expenditures. The policy should be submitted to the Senate Budget and Taxation Committee and the House Appropriations Committee by September 1, 2014; the committees shall have 45 days for review and comment.**

Investment Division Managers Receive Authorized Pay Increases

Chapters 561 and 562 of 2012 authorize the Board of Trustees to set or increase the salaries of the Deputy Chief Investment Officer (DCIO) and four managing directors within the Investment Division, subject to specified restrictions. The salary for the DCIO may not exceed the maximum salary in the ES11 range within the State's Executive Pay Plan (EPP), and the salaries for the managing directors may not exceed the maximum salary in the ES9 range within EPP. At the time, the DCIO's salary was $114,985, and the maximum ES11 salary was $169,404. Salaries for the managing directors ranged from $106,159 to $110,297, with the maximum salary under ES9 being $146,136.

However, Chapters 561 and 562 placed additional restrictions on annual salary increases for these five individuals, which could not exceed 10% of the lowest salary for the position in the prior fiscal year. There is only one DCIO, so the initial salary increase could not exceed $11,498 (10% of $114,985). For the managing directors, the initial salary increase could not exceed $10,615 (10% of the lowest salary of $106,159). SRA advises that following the enactment of Chapters 561 and 562, the DCIO received a salary increase of $9,190, which is within the

allowable range. In addition, two of the four managing directors received salary increases of $2,123 and $7,721, respectively, which are also well within the allowable range. The remaining two managing directors did not receive any salary increase. The total cost of the salary increases was $19,035. Although these salary increases took effect in fiscal 2013, they were granted too late to be reflected in the agency's fiscal 2014 budget, so the agency absorbed the cost of the increase in fiscal 2014.

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2013

STATE STREET.

SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
U.S. EQUITY												
RHUMBLINE RUSSELL 1000	**1,160.84**	**2.9**	**-1.35**	**2.67**	**13.90**						**15.99**	**11-01-12**
RUSSELL 1000			*-1.36*	*2.65*	*13.91*						*16.00*	
EXCESS			*0.01*	*0.02*	*-0.01*						*-0.01*	
SSGA RUSSELL 3000 INDEX	**1,039.52**	**2.6**	**-1.28**	**2.66**	**13.92**	**21.23**	**21.23**				**12.23**	**07-01-11**
RUSSELL 3000			*-1.30*	*2.69*	*14.06*	*21.46*	*21.46*				*12.31*	
EXCESS			*0.02*	*-0.03*	*-0.14*	*-0.23*	*-0.23*				*-0.08*	
D.E. SHAW ALL CAP CORE ENHANCED	**387.77**	**1.0**	**-1.16**	**3.09**							**3.09**	**04-01-13**
RUSSELL 3000			*-1.30*	*2.69*							*2.69*	
EXCESS			*0.14*	*0.40*							*0.40*	
RELATIONAL INVESTORS	**219.61**	**0.5**	**-1.66**	**1.73**	**23.55**	**27.26**	**27.26**	**19.08**	**7.00**	**8.17**	**9.00**	**01-01-98**
S&P 500			*-1.34*	*2.91*	*13.82*	*20.60*	*20.60*	*18.45*	*7.01*	*7.30*	*5.20*	
EXCESS			*-0.32*	*-1.18*	*9.73*	*6.66*	*6.66*	*0.63*	*-0.01*	*0.87*	*3.80*	
T. ROWE PRICE ENHANCED	**533.39**	**1.3**	**-1.44**	**2.85**	**13.56**	**20.44**	**20.44**	**18.25**	**7.18**		**5.77**	**05-01-06**
S&P 500			*-1.34*	*2.91*	*13.82*	*20.60*	*20.60*	*18.45*	*7.01*		*5.11*	
EXCESS			*-0.10*	*-0.06*	*-0.26*	*-0.16*	*-0.16*	*-0.20*	*0.17*		*0.66*	
UBS US EQUITY HALO	**0.01**	**0.0**										**07-01-09**

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Returns for periods prior to 7/1/2008 are Gross of Fees

Provided by State Street Investment Analytics

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2013

STATE STREET.

SUMMARY OF PERFORMANCE

		MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
	ZEVENBERGEN CAPITAL INV.	**111.35**	**0.3**	**-0.07**	**10.10**	**23.03**	**26.55**	**26.55**	**16.51**			**25.14**	**12-01-08**
1	*Custom Zevenbergen Index*			*-1.78*	*2.19*	*12.23*	*17.56*	*17.56*	*17.91*			*21.01*	
	EXCESS			*1.71*	*7.91*	*10.80*	*8.99*	*8.99*	*-1.40*			*4.13*	
	TOTAL U.S. EQUITY ACTIVE	**1,252.12**	**3.1**	**-1.27**	**3.32**	**16.68**	**22.53**	**22.53**	**16.10**	**4.79**	**5.68**		**06-01-94**
2	*ACTIVE US EQ BM*			*-1.37*	*2.78*	*13.59*	*20.24*	*20.24*	*18.33*	*6.85*			
	EXCESS			*0.10*	*0.54*	*3.09*	*2.29*	*2.29*	*-2.23*	*-2.06*			
	TOTAL TERRA MARIA US EQUITY	**1,197.42**	**3.0**	**-1.19**	**2.94**	**13.88**	**21.38**	**21.38**	**18.06**	**9.10**		**6.80**	**04-01-07**
3	*TERRA MARIA US EQUITY BENCHMARK*			*-1.21*	*2.69*	*14.20*	*21.66*	*21.66*	*19.11*	*9.11*		*5.75*	
	EXCESS			*0.02*	*0.25*	*-0.32*	*-0.28*	*-0.28*	*-1.05*	*-0.01*		*1.05*	
	TOTAL TM US EQUITY + ACTIVE U.S. EQUIT	**2,449.54**	**6.1**	**-1.23**	**3.14**	**15.02**	**21.89**	**21.89**	**17.03**	**6.98**		**6.98**	**07-01-08**
2	*TM US EQ + ACTIVE US EQ BM*			*-1.29*	*2.73*	*13.97*	*21.12*	*21.12*	*18.73*	*7.76*		*7.76*	
	EXCESS			*0.06*	*0.41*	*1.05*	*0.77*	*0.77*	*-1.70*	*-0.78*		*-0.78*	
	TRANSITION ACCOUNT	**0.00**	**0.0**										**07-01-83**
4	**TOTAL U.S. EQUITY**	**4,649.90**	**11.6**	**-1.27**	**2.93**	**14.53**	**21.59**	**21.59**	**17.64**	**6.82**	**7.34**	**8.03**	**04-01-94**
5	*MSRA CUSTOM US EQUITY INDEX*			*-1.30*	*2.69*	*14.06*	*21.46*	*21.46*	*18.63*	*7.25*	*7.88*	*9.06*	
	EXCESS			*0.03*	*0.24*	*0.47*	*0.13*	*0.13*	*-0.99*	*-0.43*	*-0.54*	*-1.03*	
2	*US EQUITY DYNAMIC BENCHMARK*			*-1.31*	*2.70*	*13.97*	*21.18*	*21.18*	*18.54*	*7.35*			

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Provided by State Street Investment Analytics

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2013

STATE STREET.

SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
INTERNATIONAL EQUITY												
SSGA INTERNATIONAL FUND	**1,829.87**	**4.5**	**-3.72**	**-1.41**	**3.22**	**17.28**	**17.28**	**9.71**	**-0.45**	**8.76**	**9.50**	**05-01-03**
6 *SSGA INTERNATIONAL CUSTOM INDEX*			*-3.75*	*-1.61*	*3.01*	*17.07*	*17.07*	*9.43*	*-0.77*	*8.53*	*9.27*	
EXCESS			*0.03*	*0.20*	*0.21*	*0.21*	*0.21*	*0.28*	*0.32*	*0.23*	*0.23*	
SSGA EMERGING MARKETS INDEX FUND	**615.54**	**1.5**	**-6.36**	**-7.96**	**-9.89**	**2.52**	**2.52**				**3.99**	**06-01-12**
MSCI EMERGING MARKETS (NET)			*-6.37*	*-8.08*	*-9.57*	*2.87*	*2.87*				*6.30*	
EXCESS			*0.01*	*0.12*	*-0.32*	*-0.35*	*-0.35*				*-2.31*	
ARTISAN PARTNERS, L.P.	**530.66**	**1.3**	**-2.98**	**0.25**	**7.53**	**22.45**	**22.45**	**15.98**	**3.82**		**9.95**	**11-01-03**
7 *ARTISAN CUSTOM BENCHMARK*			*-3.75*	*-1.61*	*3.01*	*17.07*	*17.07*	*9.73*	*0.15*		*7.84*	
EXCESS			*0.77*	*1.86*	*4.52*	*5.38*	*5.38*	*6.25*	*3.67*		*2.11*	
EARNEST PARTNERS INTL EQUITY	**302.25**	**0.8**	**-5.08**	**-4.59**	**-1.80**	**16.18**	**16.18**	**9.62**			**7.06**	**10-01-09**
MSCI AC WORLD ex US (NET)			*-4.34*	*-3.11*	*-0.04*	*13.63*	*13.63*	*7.99*			*4.09*	
EXCESS			*-0.74*	*-1.48*	*-1.76*	*2.55*	*2.55*	*1.63*			*2.97*	
DFA NON US GDP STRATEGY	**0.82**	**0.0**										**01-01-10**
BROWN CAPITAL MANAGEMENT INT'L	**214.09**	**0.5**	**-2.75**	**0.16**	**9.98**	**26.35**	**26.35**	**10.45**			**16.91**	**12-01-08**
MSCI All Country World ex US IMI net			*-4.43*	*-3.27*	*0.18*	*13.91*	*13.91*	*8.13*			*12.61*	
EXCESS			*1.68*	*3.43*	*9.80*	*12.44*	*12.44*	*2.32*			*4.30*	

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Returns for periods prior to 7/1/2008 are Gross of Fees

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2013

STATE STREET.

SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
MCKINLEY CAPITAL MANAGEMENT	**0.35**	**0.0**										**04-01-09**
INVESCO INTERNATIONAL EQUITY	**0.19**	**0.0**										**10-01-09**
UBS INTERNATIONAL EQUITY	**288.78**	**0.7**	**-3.51**	**-1.18**	**3.75**	**18.33**	**18.33**	**8.68**			**4.12**	**11-01-09**
MSCI WORLD EX US (NET)			*-3.75*	*-1.61*	*3.01*	*17.07*	*17.07*	*9.43*			*4.96*	
EXCESS			*0.24*	*0.43*	*0.74*	*1.26*	*1.26*	*-0.75*			*-0.84*	
DFA INTERNATIONAL CORE EQUITY	**205.15**	**0.5**	**-3.84**								**-5.33**	**05-01-13**
MSCI WORLD EX US (NET)			*-3.75*								*-5.90*	
EXCESS			*-0.09*								*0.57*	
DFA SMALL CAP INTERNATIONAL	**222.94**	**0.6**	**-2.65**	**-2.25**	**3.84**	**18.86**	**18.86**	**11.23**	**2.31**		**3.44**	**03-01-06**
DFA Custom Benchmark			*-3.95*	*-3.49*	*3.50*	*17.82*	*17.82*	*11.18*	*2.24*		*2.02*	
EXCESS			*1.30*	*1.24*	*0.34*	*1.04*	*1.04*	*0.05*	*0.07*		*1.42*	
GENESIS ASSET MANAGERS LTD	**206.40**	**0.5**	**-6.78**	**-7.10**	**-6.70**	**6.86**	**6.86**	**6.43**			**12.93**	**07-01-09**
MSCI EMERGING MARKETS (NET)			*-6.37*	*-8.08*	*-9.57*	*2.87*	*2.87*	*3.38*			*8.00*	
EXCESS			*-0.41*	*0.98*	*2.87*	*3.99*	*3.99*	*3.05*			*4.93*	
ROBECO EMERGING MARKETS EQUITY	**185.32**	**0.5**	**-7.18**	**-8.93**	**-9.99**	**3.05**	**3.05**				**-3.66**	**10-01-10**
MSCI EMERGING MARKETS (NET)			*-6.37*	*-8.08*	*-9.57*	*2.87*	*2.87*				*-2.37*	
EXCESS			*-0.81*	*-0.85*	*-0.42*	*0.18*	*0.18*				*-1.29*	

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Returns for periods prior to 7/1/2008 are Gross of Fees

Provided by State Street Investment Analytics

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2013

STATE STREET.

SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
CAPITAL INTERNATIONAL EMERGING MAR	**39.16**	**0.1**	**-7.34**	**-7.91**	**-8.59**	**3.95**	**3.95**				**-5.82**	**10-01-10**
MSCI Emerging Markets IMI Index (Net)			*-6.67*	*-8.01*	*-8.89*	*3.66*	*3.66*				*-2.41*	
EXCESS			*-0.67*	*0.10*	*0.30*	*0.29*	*0.29*				*-3.41*	
TOTAL ACTIVE EMERGING MARKET	**430.88**	**1.1**	**-7.00**	**-7.97**	**-8.32**	**4.99**	**4.99**	**1.47**			**1.47**	**07-01-10**
MSCI EMERGING MARKETS (NET)			*-6.37*	*-8.08*	*-9.57*	*2.87*	*2.87*	*3.38*			*3.38*	
EXCESS			*-0.63*	*0.11*	*1.25*	*2.12*	*2.12*	*-1.91*			*-1.91*	
GLOBEFLEX CAPITAL, L.P.	**0.01**	**0.0**										**02-01-06**
TOTAL ACTIVE INTERNATIONAL EQUITY	**2,196.14**	**5.5**	**-4.18**	**-2.72**	**1.45**	**16.78**	**16.78**	**8.13**	**-0.95**	**8.06**		**01-01-95**
2 *ACTIVE INTL EQ BM*			*-4.45*	*-3.60*	*-0.50*	*13.13*	*13.13*	*7.78*	*-0.51*			
EXCESS			*0.27*	*0.88*	*1.95*	*3.65*	*3.65*	*0.35*	*-0.44*			
TOTAL TERRA MARIA INT'L EQUITY	**844.69**	**2.1**	**-3.87**	**-2.35**	**1.35**	**14.77**	**14.77**	**9.24**	**3.04**		**-0.09**	**11-01-07**
9 *TERRA MARIA INT'L EQ BENCHMARK*			*-4.32*	*-3.11*	*-0.01*	*13.78*	*13.78*	*8.20*	*0.94*		*-2.19*	
EXCESS			*0.45*	*0.76*	*1.36*	*0.99*	*0.99*	*1.04*	*2.10*		*2.10*	
TOTAL TM INTL EQUITY + ACTIVE INTL EQ	**3,040.83**	**7.6**	**-4.09**	**-2.62**	**1.44**	**16.30**	**16.30**	**8.34**	**-0.15**		**-0.15**	**07-01-08**
2 *TM INTL EQ + ACTIVE INTL EQ BM*			*-4.42*	*-3.46*	*-0.36*	*13.31*	*13.31*	*7.88*	*-0.43*		*-0.43*	
EXCESS			*0.33*	*0.84*	*1.80*	*2.99*	*2.99*	*0.46*	*0.28*		*0.28*	
TOTAL INTL EQUITY EX OVERLAY	**5,486.23**	**13.6**	**-4.23**	**-2.84**	**0.64**	**14.96**	**14.96**	**8.29**	**-0.57**	**8.27**		**01-01-95**
10 *MSRA CUSTOM INTERNATIONAL INDEX*			*-4.34*	*-3.11*	*-0.04*	*13.63*	*13.63*	*7.99*	*-0.61*	*8.73*	*5.41*	
EXCESS			*0.11*	*0.27*	*0.68*	*1.33*	*1.33*	*0.30*	*0.04*	*-0.46*		

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State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2013

STATE STREET.

SUMMARY OF PERFORMANCE

		MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
	RECORD CURRENCY MANAGEMENT	**53.65**	**0.1**										**05-01-09**
11	**TOTAL INTERNATIONAL EQUITY**	**5,539.88**	**13.8**	**-4.45**	**-2.45**	**1.92**	**16.43**	**16.43**	**7.43**	**-0.39**	**8.36**	**6.46**	**01-01-95**
10	*MSRA CUSTOM INTERNATIONAL INDEX*			*-4.34*	*-3.11*	*-0.04*	*13.63*	*13.63*	*7.99*	*-0.61*	*8.73*	*5.41*	
	EXCESS			*-0.11*	*0.66*	*1.96*	*2.80*	*2.80*	*-0.56*	*0.22*	*-0.37*	*1.05*	
2	*INTL EQUITY DYNAMIC BENCHMARK*			*-4.42*	*-3.39*	*-0.35*	*13.30*	*13.30*	*8.00*	*-0.87*			

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State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2013

STATE STREET.

SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
GLOBAL EQUITY												
SSGA GLOBAL INDEX FUND	**335.71**	**0.8**	**-2.89**	**-0.35**	**6.12**	**16.65**	**16.65**				**9.99**	**05-01-12**
MSCI AC WORLD (NET)			*-2.92*	*-0.42*	*6.05*	*16.57*	*16.57*				*9.65*	
EXCESS			*0.03*	*0.07*	*0.07*	*0.08*	*0.08*				*0.34*	
TOTAL PASSIVE GLOBAL EQUITY	**335.71**	**0.8**	**-2.89**	**-0.35**	**6.12**	**16.65**	**16.65**				**9.99**	**05-01-12**
MSCI AC WORLD (NET)			*-2.92*	*-0.42*	*6.05*	*16.57*	*16.57*				*9.65*	
EXCESS			*0.03*	*0.07*	*0.07*	*0.08*	*0.08*				*0.34*	
ACADIAN ASSET MGT	**594.36**	**1.5**	**-3.87**	**-0.74**	**8.34**	**19.45**	**19.45**	**14.82**	**0.10**		**4.29**	**10-01-05**
MSCI AC WORLD (NET)			*-2.92*	*-0.42*	*6.05*	*16.57*	*16.57*	*12.36*	*2.30*		*4.40*	
EXCESS			*-0.95*	*-0.32*	*2.29*	*2.88*	*2.88*	*2.46*	*-2.20*		*-0.11*	
TEMPLETON INVESTMENT MGT	**625.14**	**1.6**	**-3.10**	**2.94**	**8.87**	**25.87**	**25.87**	**17.00**	**5.21**		**6.66**	**01-01-06**
MSCI AC WORLD (NET)			*-2.92*	*-0.42*	*6.05*	*16.57*	*16.57*	*12.36*	*2.30*		*4.10*	
EXCESS			*-0.18*	*3.36*	*2.82*	*9.30*	*9.30*	*4.64*	*2.91*		*2.56*	
T. ROWE PRICE GLOBAL	**0.04**	**0.0**										**01-01-08**
BAILLIE GIFFORD	**649.25**	**1.6**	**-2.94**	**1.11**	**1.42**	**11.27**	**11.27**	**13.42**	**2.03**		**2.54**	**02-01-08**
MSCI AC WORLD (NET)			*-2.92*	*-0.42*	*6.05*	*16.57*	*16.57*	*12.36*	*2.30*		*1.60*	
EXCESS			*-0.02*	*1.53*	*-4.63*	*-5.30*	*-5.30*	*1.06*	*-0.27*		*0.94*	
MARATHON LONDON	**0.89**	**0.0**										**03-01-09**

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State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2013

STATE STREET.

SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
ALLIANCE BERNSTEIN ALL COUNTRY BLE	**0.07**	**0.0**										**10-01-09**
LONGVIEW PRTNRS GLOBAL EQUITY	**324.66**	**0.8**	**-1.14**	**4.64**	**14.76**	**27.82**	**27.82**	**17.61**			**13.55**	**10-01-09**
MSCI AC WORLD (NET)			*-2.92*	*-0.42*	*6.05*	*16.57*	*16.57*	*12.36*			*8.23*	
EXCESS			*1.78*	*5.06*	*8.71*	*11.25*	*11.25*	*5.25*			*5.32*	
BROWN CAPITAL GLOBAL EQUITY	**269.39**	**0.7**	**-2.75**	**-2.31**	**8.66**	**21.99**	**21.99**	**13.47**			**8.71**	**01-01-10**
MSCI AC WORLD (NET)			*-2.92*	*-0.42*	*6.05*	*16.57*	*16.57*	*12.36*			*7.45*	
EXCESS			*0.17*	*-1.89*	*2.61*	*5.42*	*5.42*	*1.11*			*1.26*	
GSAM GLOBAL RESPONSIBLE EQUITY	**319.91**	**0.8**	**-2.76**	**0.53**	**6.90**	**20.66**	**20.66**	**13.27**			**12.55**	**07-01-09**
Custom GSAM Global Responsible BM			*-2.92*	*-0.42*	*6.05*	*16.57*	*16.57*	*12.64*			*12.75*	
EXCESS			*0.16*	*0.95*	*0.85*	*4.09*	*4.09*	*0.63*			*-0.20*	
AQR CAPITAL- GLOBAL EQUITY	**577.24**	**1.4**	**-2.20**	**0.92**	**8.30**	**20.56**	**20.56**				**11.94**	**08-01-10**
MSCI AC WORLD (NET)			*-2.92*	*-0.42*	*6.05*	*16.57*	*16.57*				*9.76*	
EXCESS			*0.72*	*1.34*	*2.25*	*3.99*	*3.99*				*2.18*	
D.E. SHAW INV -GLOBAL EQUITY	**462.42**	**1.1**	**-2.21**	**1.43**	**10.05**	**20.97**	**20.97**				**12.86**	**08-01-10**
MSCI WORLD (NET)			*-2.46*	*0.65*	*8.43*	*18.58*	*18.58*				*11.14*	
EXCESS			*0.25*	*0.78*	*1.62*	*2.39*	*2.39*				*1.72*	
SSGA MSCI ACWI MINIMUM VOLATILITY	**392.19**	**1.0**	**-0.70**	**-1.37**	**7.56**						**7.56**	**01-01-13**
MSCI AC WORLD (NET)			*-2.92*	*-0.42*	*6.05*						*6.05*	
EXCESS			*2.22*	*-0.95*	*1.51*						*1.51*	

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Returns for periods prior to 7/1/2008 are Gross of Fees

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2013

STATE STREET.

SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
TOTAL ACTIVE GLOBAL EQUITY	**4,215.56**	**10.5**	**-2.55**	**0.90**	**7.93**	**19.76**	**19.76**	**14.26**	**3.25**		**5.21**	**10-01-05**
MSCI AC WORLD (NET)			*-2.92*	*-0.42*	*6.05*	*16.57*	*16.57*	*12.36*	*2.30*		*4.40*	
EXCESS			*0.37*	*1.32*	*1.88*	*3.19*	*3.19*	*1.90*	*0.95*		*0.81*	
MARSHALL WACE EUREKA FUND	**237.58**	**0.6**	**2.35**	**5.04**	**13.45**						**18.79**	**10-01-12**
MSCI AC WORLD (NET)			*-2.92*	*-0.42*	*6.05*						*9.11*	
EXCESS			*5.27*	*5.46*	*7.40*						*9.68*	
STELLIAM FUND	**100.00**	**0.2**										**06-01-13**
SCOPIA PX LLC	**215.98**	**0.5**	**2.21**	**6.38**	**7.50**	**7.99**	**7.99**				**7.99**	**07-01-12**
HFRI Equity Hedge (Total) Index			*-1.56*	*0.10*	*5.04*	*10.66*	*10.66*				*10.66*	
EXCESS			*3.77*	*6.28*	*2.46*	*-2.67*	*-2.67*				*-2.67*	
AMICI QUALIFIED ASSOCIATES LP	**207.90**	**0.5**	**-3.63**	**-3.55**	**1.84**						**3.95**	**09-01-12**
HFRI Equity Hedge (Total) Index			*-1.56*	*0.10*	*5.04*						*9.07*	
EXCESS			*-2.07*	*-3.65*	*-3.20*						*-5.12*	
HOPLITE ONSHORE	**212.84**	**0.5**	**-0.51**	**1.78**							**6.42**	**02-01-13**
HFRI Equity Hedge (Total) Index			*-1.56*	*0.10*							*1.64*	
EXCESS			*1.05*	*1.68*							*4.78*	

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Returns for periods prior to 7/1/2008 are Gross of Fees

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2013

STATE STREET.

SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
TIGER CONSUMER MANAGEMENT	**101.96**	**0.3**	**-1.56**	**1.96**							**1.96**	**04-01-13**
HFRI Equity Hedge (Total) Index			*-1.56*	*0.10*							*0.10*	
EXCESS			*0.00*	*1.86*							*1.86*	
NEON LIBERTY CAPITAL MANAGEMENT	**102.54**	**0.3**	**0.76**	**2.54**							**2.54**	**04-01-13**
MSCI EMERGING MARKETS (NET)			*-6.37*	*-8.08*							*-8.08*	
EXCESS			*7.13*	*10.62*							*10.62*	
INDUS PACIFIC OPPORTUNITIES FUND	**98.84**	**0.2**	**-1.16**								**-1.16**	**06-01-13**
MSCI AC Asia Pacific Net Index			*-2.90*								*-2.90*	
EXCESS			*1.74*								*1.74*	
TOTAL EQUITY HEDGE FUND	**1,277.64**	**3.2**	**-0.06**	**2.09**	**6.90**	**10.23**	**10.23**				**10.23**	**07-01-12**
HFRI Equity Hedge (Total) Index			*-1.56*	*0.10*	*5.04*	*10.66*	*10.66*				*10.66*	
EXCESS			*1.50*	*1.99*	*1.86*	*-0.43*	*-0.43*				*-0.43*	
TOTAL TERRA MARIA GLOBAL EQUITY	**18.20**	**0.0**	**-3.55**	**-1.79**	**4.21**	**14.82**	**14.82**	**9.80**			**11.30**	**12-01-08**
TERRA MARIA GLOBAL EQ BM			*-2.92*	*-0.42*	*6.05*	*16.52*	*16.52*	*12.62*			*12.71*	
EXCESS			*-0.63*	*-1.37*	*-1.84*	*-1.70*	*-1.70*	*-2.82*			*-1.41*	
TOTAL TM GLB EQ + ACTIVE GLB EQ + HF	**5,511.40**	**13.7**	**-2.03**	**1.23**	**8.11**	**19.20**	**19.20**	**13.97**	**3.05**		**3.05**	**07-01-08**
TM GLOBAL + ACTIVE GLOBAL BM + EQ HF			*-2.76*	*-0.35*	*6.09*	*16.31*	*16.31*	*12.35*	*2.30*		*2.30*	
EXCESS			*0.73*	*1.58*	*2.02*	*2.89*	*2.89*	*1.62*	*0.75*		*0.75*	

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Returns for periods prior to 7/1/2008 are Gross of Fees

Provided by State Street Investment Analytics

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2013

STATE STREET.

SUMMARY OF PERFORMANCE

		MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
	TOTAL GLOBAL EQUITY EX OVERLAY	**6,822.97**	**17.0**	**-2.18**	**1.04**	**7.92**	**20.17**	**20.17**	**14.22**	**3.24**		**5.20**	**10-01-05**
13	*MSRA CUSTOM GLOBAL INDEX*			*-2.92*	*-0.42*	*6.05*	*16.57*	*16.57*	*12.36*	*2.54*		*4.56*	
	EXCESS			*0.74*	*1.46*	*1.87*	*3.60*	*3.60*	*1.86*	*0.70*		*0.64*	
	RECORD CURRENCY - GLOBAL	**16.09**	**0.0**										**05-01-09**
	GLOBAL EQUITY TRANSITION ACCOUNT	**975.87**	**2.4**										**06-01-11**
	TOTAL GLOBAL EQUITY	**6,839.07**	**17.0**	**-2.29**	**1.12**	**8.36**	**20.57**	**20.57**	**13.57**	**3.32**		**5.25**	**10-01-05**
13	*MSRA CUSTOM GLOBAL INDEX*			*-2.92*	*-0.42*	*6.05*	*16.57*	*16.57*	*12.36*	*2.54*		*4.56*	
	EXCESS			*0.63*	*1.54*	*2.31*	*4.00*	*4.00*	*1.21*	*0.78*		*0.69*	
2	*GLOBAL EQUITY DYNAMIC BENCHMARK*			*-2.77*	*-0.35*	*6.09*	*16.34*	*16.34*	*12.36*	*2.31*			

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State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2013

STATE STREET.

SUMMARY OF PERFORMANCE

		MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
	PUBLIC EQUITY												
	TOTAL PUBLIC EQUITY	**17,028.85**	**42.3**	**-2.75**	**0.37**	**7.67**	**19.11**	**19.11**	**12.66**	**3.44**	**7.04**		**04-01-94**
14	*PUBLIC EQ BM 2*			*-2.97*	*-0.55*	*5.90*	*16.74*	*16.74*	*12.77*	*3.31*			
	EXCESS			*0.22*	*0.92*	*1.77*	*2.37*	*2.37*	*-0.11*	*0.13*			
2	*PUBLIC EQ BM*			*-2.95*	*-0.62*	*5.76*	*16.61*	*16.61*	*12.97*	*3.10*			

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Returns for periods prior to 7/1/2008 are Gross of Fees

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2013

STATE STREET.

SUMMARY OF PERFORMANCE

		MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
FIXED INCOME													
	SSGA PASSIVE FIXED INCOME	**515.93**	**1.3**	**-1.67**	**-2.62**	**-2.71**	**-0.87**	**-0.87**	**3.53**	**5.20**	**4.54**	**4.64**	**05-01-03**
15	*Custom BC Agg Intermediate / BC Agg*			*-1.55*	*-2.32*	*-2.44*	*-0.69*	*-0.69*	*3.51*	*5.19*			
	EXCESS			*-0.12*	*-0.30*	*-0.27*	*-0.18*	*-0.18*	*0.02*	*0.01*			
	PIMCO	**736.91**	**1.8**	**-2.17**	**-3.13**	**-2.46**	**0.25**	**0.25**	**4.14**	**5.46**	**5.06**		**06-01-84**
16	*PIMCO CUSTOM INDEX*			*-1.55*	*-2.32*	*-2.44*	*-0.69*	*-0.69*	*3.51*	*4.97*	*4.51*	*8.09*	
	EXCESS			*-0.62*	*-0.81*	*-0.02*	*0.94*	*0.94*	*0.63*	*0.49*	*0.55*		
	Barclays Aggregate Bond			*-1.55*	*-2.32*	*-2.44*	*-0.69*	*-0.69*	*3.51*	*5.19*	*4.52*		
	WESTERN ASSET MANAGEMENT	**732.41**	**1.8**	**-1.88**	**-2.67**	**-2.23**	**1.39**	**1.39**	**5.77**	**8.69**		**6.87**	**09-01-03**
17	*Custom BC Agg Int/BC Agg/US Universal BM*			*-1.55*	*-2.32*	*-2.44*	*-0.69*	*-0.69*	*3.51*	*4.97*		*4.91*	
	EXCESS			*-0.33*	*-0.35*	*0.21*	*2.08*	*2.08*	*2.26*	*3.72*		*1.96*	
	Barclays US Intermediate Aggregate Index			*-1.12*	*-1.78*	*-1.63*	*-0.12*	*-0.12*	*3.03*	*4.76*		*4.59*	
	PYRAMIS GLOBAL ADVISORS	**571.25**	**1.4**	**-1.59**	**-2.40**	**-2.46**	**-0.13**	**-0.13**	**4.24**	**6.25**		**5.76**	**02-01-08**
17	*Custom BC Agg Int/BC Agg/US Universal BM*			*-1.55*	*-2.32*	*-2.44*	*-0.69*	*-0.69*	*3.51*	*4.97*		*4.46*	
	EXCESS			*-0.04*	*-0.08*	*-0.02*	*0.56*	*0.56*	*0.73*	*1.28*		*1.30*	
	Barclays US Intermediate Aggregate Index			*-1.12*	*-1.78*	*-1.63*	*-0.12*	*-0.12*	*3.03*	*4.76*		*4.32*	
	ABERDEEN ASSET MGMT, INC	**574.88**	**1.4**	**-1.86**	**-2.24**	**-2.08**	**0.81**	**0.81**	**5.09**	**5.59**		**5.30**	**04-01-08**
17	*Custom BC Agg Int/BC Agg/US Universal BM*			*-1.55*	*-2.32*	*-2.44*	*-0.69*	*-0.69*	*3.51*	*4.97*		*4.56*	
	EXCESS			*-0.31*	*0.08*	*0.36*	*1.50*	*1.50*	*1.58*	*0.62*		*0.74*	
	Barclays US Intermediate Aggregate Index			*-1.12*	*-1.78*	*-1.63*	*-0.12*	*-0.12*	*3.03*	*4.76*		*4.34*	

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Returns for periods prior to 7/1/2008 are Gross of Fees

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2013

STATE STREET.

SUMMARY OF PERFORMANCE

		MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
	GOLDMAN SACHS FI CORE PLUS	**394.73**	**1.0**	**-1.65**	**-2.26**	**-2.34**	**0.83**	**0.83**	**4.54**			**6.87**	**03-01-09**
17	*Custom BC Agg Int/BC Agg/US Universal BM*			*-1.55*	*-2.32*	*-2.44*	*-0.69*	*-0.69*	*3.51*			*5.65*	
	EXCESS			*-0.10*	*0.06*	*0.10*	*1.52*	*1.52*	*1.03*			*1.22*	
	Barclays US Intermediate Aggregate Index			*-1.12*	*-1.78*	*-1.63*	*-0.12*	*-0.12*	*3.03*			*4.80*	
	DODGE & COX - FI CORE	**399.38**	**1.0**	**-1.63**	**-1.72**	**-1.18**	**2.22**	**2.22**	**4.94**			**7.24**	**03-01-09**
15	*Custom BC Agg Intermediate / BC Agg*			*-1.55*	*-2.32*	*-2.44*	*-0.69*	*-0.69*	*3.51*			*5.34*	
	EXCESS			*-0.08*	*0.60*	*1.26*	*2.91*	*2.91*	*1.43*			*1.90*	
	PRINCIPAL CORE BOND	**563.94**	**1.4**	**-1.76**	**-2.41**	**-2.47**	**0.24**	**0.24**	**4.27**			**6.08**	**07-01-09**
15	*Custom BC Agg Intermediate / BC Agg*			*-1.55*	*-2.32*	*-2.44*	*-0.69*	*-0.69*	*3.51*			*4.97*	
	EXCESS			*-0.21*	*-0.09*	*-0.03*	*0.93*	*0.93*	*0.76*			*1.11*	
	TOTAL US ACTIVE FIXED INCOME	**3,973.50**	**9.9**	**-1.82**	**-2.48**	**-2.22**	**0.74**	**0.74**	**4.72**	**6.11**		**6.11**	**07-01-08**
15	*Custom BC Agg Intermediate / BC Agg*			*-1.55*	*-2.32*	*-2.44*	*-0.69*	*-0.69*	*3.51*	*5.19*		*5.19*	
	EXCESS			*-0.27*	*-0.16*	*0.22*	*1.43*	*1.43*	*1.21*	*0.92*		*0.92*	
18	**TOTAL TERRA MARIA US FIXED INCOME**	**488.63**	**1.2**	**-1.82**	**-2.51**	**-2.35**	**0.37**	**0.37**	**4.26**			**8.42**	**11-01-08**
19	*TERRA MARIA FI BENCHMARK*			*-1.55*	*-2.32*	*-2.44*	*-0.69*	*-0.69*	*3.50*			*9.67*	
	EXCESS			*-0.27*	*-0.19*	*0.09*	*1.06*	*1.06*	*0.76*			*-1.25*	
	TOTAL US FIXED INCOME ACTIVE + TM	**4,462.14**	**11.1**	**-1.82**	**-2.49**	**-2.24**	**0.70**	**0.70**	**4.68**	**6.08**		**6.08**	**07-01-08**
15	*Custom BC Agg Intermediate / BC Agg*			*-1.55*	*-2.32*	*-2.44*	*-0.69*	*-0.69*	*3.51*	*5.19*		*5.19*	
	EXCESS			*-0.27*	*-0.17*	*0.20*	*1.39*	*1.39*	*1.17*	*0.89*		*0.89*	

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State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2013

STATE STREET.

SUMMARY OF PERFORMANCE

		MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
	TOTAL US FIXED INCOME	**4,978.07**	**12.4**	**-1.81**	**-2.52**	**-2.33**	**0.39**	**0.39**	**4.45**	**6.31**		**6.31**	**07-01-08**
15	*Custom BC Agg Intermediate / BC Agg*			*-1.55*	*-2.32*	*-2.44*	*-0.69*	*-0.69*	*3.51*	*5.19*		*5.19*	
	EXCESS			*-0.26*	*-0.20*	*0.11*	*1.08*	*1.08*	*0.94*	*1.12*		*1.12*	
	WESTERN ASSET GLOBAL AGGREGATE B	**759.88**	**1.9**	**-1.99**	**-1.89**	**-1.29**	**3.83**	**3.83**	**5.34**			**6.70**	**09-01-09**
20	*CUSTOM GLOBAL FIXED INCOME BM*			*-1.39*	*-1.73*	*-1.17*	*1.71*	*1.71*	*3.47*			*2.96*	
	EXCESS			*-0.60*	*-0.16*	*-0.12*	*2.12*	*2.12*	*1.87*			*3.74*	
	PIMCO GLOBAL AGGREGATE BONDS	**752.05**	**1.9**	**-2.19**	**-3.22**	**-1.97**	**3.73**	**3.73**	**5.80**			**6.56**	**09-01-09**
20	*CUSTOM GLOBAL FIXED INCOME BM*			*-1.39*	*-1.73*	*-1.17*	*1.71*	*1.71*	*3.47*			*2.96*	
	EXCESS			*-0.80*	*-1.49*	*-0.80*	*2.02*	*2.02*	*2.33*			*3.60*	
	WESTERN ASSET - ISRAEL BD	**20.60**	**0.1**	**0.11**	**0.25**	**0.51**	**1.03**	**1.03**	**1.92**	**2.88**		**3.42**	**06-01-05**
	WESTERN ASSET ISRAEL BOND INDEX			*0.09*	*0.80*	*1.45*	*3.66*	*3.66*	*2.67*	*0.82*		*0.10*	
	EXCESS			*0.02*	*-0.55*	*-0.94*	*-2.63*	*-2.63*	*-0.75*	*2.06*		*3.32*	
	TOTAL GLOBAL FIXED INCOME	**1,532.53**	**3.8**	**-2.06**	**-2.52**	**-1.61**	**3.72**	**3.72**	**5.49**	**5.93**		**5.93**	**07-01-08**
20	*CUSTOM GLOBAL FIXED INCOME BM*			*-1.39*	*-1.73*	*-1.17*	*1.71*	*1.71*	*3.47*				
	EXCESS			*-0.67*	*-0.79*	*-0.44*	*2.01*	*2.01*	*2.02*				
	TOTAL FIXED INCOME												
	TOTAL FIXED INCOME	**6,510.60**	**16.2**	**-1.87**	**-2.52**	**-2.19**	**1.07**	**1.07**	**4.67**	**6.39**	**5.31**	**7.69**	**07-01-86**
21	*Custom Fixed Income Benchmark*			*-1.52*	*-2.21*	*-2.19*	*-0.21*	*-0.21*	*3.50*	*4.97*	*4.56*		
	EXCESS			*-0.35*	*-0.31*	*0.00*	*1.28*	*1.28*	*1.17*	*1.42*	*0.75*		
2	*FIXED INCOME DYNAMIC BENCHMARK*			*-1.51*	*-2.18*	*-2.15*	*-0.17*	*-0.17*	*3.52*	*5.33*			

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Returns for periods prior to 7/1/2008 are Gross of Fees

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2013

STATE STREET.

SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
CREDIT/DEBT												
OAKTREE CAPITAL MANAGEMENT	**373.64**	**0.9**	**-2.86**	**-1.80**	**0.79**	**8.31**	**8.31**	**9.35**			**15.51**	**03-01-09**
Barclays US High Yield - 2% Issuer Cap			*-2.62*	*-1.44*	*1.42*	*9.49*	*9.49*	*10.69*			*19.54*	
EXCESS			*-0.24*	*-0.36*	*-0.63*	*-1.18*	*-1.18*	*-1.34*			*-4.03*	
KKR FLEXIBLE CREDIT	**544.44**	**1.4**	**-0.92**	**0.16**	**2.98**	**8.92**	**8.92**				**8.03**	**09-01-10**
Custom KKR Index			*-1.61*	*-0.58*	*1.91*	*8.45*	*8.45*				*8.07*	
EXCESS			*0.69*	*0.74*	*1.07*	*0.47*	*0.47*				*-0.04*	
NEUBERGER BERMAN FLEX CREDIT	**398.32**	**1.0**	**-2.56**	**-1.56**	**0.48**	**10.65**	**10.65**				**7.94**	**10-01-10**
50% BC CREDIT & 50% BC HIGH YIELD			*-2.74*	*-2.44*	*-1.12*	*5.10*	*5.10*				*6.73*	
EXCESS			*0.18*	*0.88*	*1.60*	*5.55*	*5.55*				*1.21*	
REXITAR EMERGING MARKET DEBT	**212.89**	**0.5**	**-4.53**	**-7.35**	**-7.98**	**-0.24**	**-0.24**				**2.03**	**10-01-10**
JP Morgan GBI EM Global Diversified			*-4.13*	*-7.04*	*-7.15*	*1.32*	*1.32*				*2.17*	
EXCESS			*-0.40*	*-0.31*	*-0.83*	*-1.56*	*-1.56*				*-0.14*	
PERELLA WEINBERG	**263.42**	**0.7**	**0.85**	**3.34**	**6.64**	**13.57**	**13.57**	**11.73**			**11.73**	**07-01-10**
HFRI ED: Distressed/Restructuring Index			*-1.24*	*2.56*	*7.04*	*14.94*	*14.94*	*7.57*			*7.57*	
EXCESS			*2.09*	*0.78*	*-0.40*	*-1.37*	*-1.37*	*4.16*			*4.16*	
ANCHORAGE CAPITAL GROUP	**187.82**	**0.5**	**-0.45**	**6.08**	**10.81**	**20.04**	**20.04**				**14.49**	**11-01-11**
HFRI ED: Distressed/Restructuring Index			*-1.24*	*2.56*	*7.04*	*14.94*	*14.94*				*10.39*	
EXCESS			*0.79*	*3.52*	*3.77*	*5.10*	*5.10*				*4.10*	

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Returns for periods prior to 7/1/2008 are Gross of Fees

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2013

STATE STREET.

SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
KING STREET CAPITAL	**174.56**	**0.4**	**-0.98**	**2.76**	**6.74**	**12.63**	**12.63**				**10.08**	**12-01-11**
HFRI ED: Distressed/Restructuring Index			*-1.24*	*2.56*	*7.04*	*14.94*	*14.94*				*11.45*	
EXCESS			*0.26*	*0.20*	*-0.30*	*-2.31*	*-2.31*				*-1.37*	
BRIGADE LEVERAGED CAP STR FD	**133.13**	**0.3**	**-1.39**	**-0.35**	**1.77**	**4.96**	**4.96**				**4.84**	**03-01-12**
HFRI ED: Distressed/Restructuring Index			*-1.24*	*2.56*	*7.04*	*14.94*	*14.94*				*9.88*	
EXCESS			*-0.15*	*-2.91*	*-5.27*	*-9.98*	*-9.98*				*-5.04*	
TOTAL CREDIT HEDGE FUND	**758.93**	**1.9**	**-0.29**	**3.20**	**6.76**	**13.23**	**13.23**	**10.38**			**10.38**	**07-01-10**
HFRI ED: Distressed/Restructuring Index			*-1.24*	*2.56*	*7.04*	*14.94*	*14.94*	*7.57*			*7.57*	
EXCESS			*0.95*	*0.64*	*-0.28*	*-1.71*	*-1.71*	*2.81*			*2.81*	
23 **TOTAL DISTRESSED DEBT**	**539.58**	**1.3**	**1.04**	**3.90**	**10.08**	**19.10**	**19.10**	**6.51**			**8.30**	**01-01-10**
23 **TOTAL MEZZANINE DEBT**	**365.18**	**0.9**	**0.61**	**3.37**	**4.59**	**10.97**	**10.97**	**10.80**			**7.68**	**01-01-10**
TOTAL PUBLIC-PRIVATE INVESTMENT PRO	**4.33**	**0.0**	**4.15**	**7.69**	**3.53**	**39.87**	**39.87**	**20.40**			**18.65**	**12-01-09**
18 **TOTAL TERRA MARIA CREDIT/DEBT**	**183.19**	**0.5**	**-2.14**	**0.15**	**4.07**	**11.02**	**11.02**	**9.63**			**8.98**	**01-01-10**
TERRA MARIA CREDIT/DEBT BENCHMARK			*-2.19*	*-0.71*	*2.25*	*8.87*	*8.87*	*9.55*			*9.25*	
EXCESS			*0.05*	*0.86*	*1.82*	*2.15*	*2.15*	*0.08*			*-0.27*	
TOTAL CREDIT/DEBT STRATEGIES	**3,380.51**	**8.4**	**-1.02**	**0.84**	**4.15**	**13.42**	**13.42**	**9.88**			**14.43**	**03-01-09**
24 *MSRA CUSTOM CREDIT/DEBT BM*			*-2.74*	*-2.44*	*-1.12*	*5.10*	*5.10*	*8.12*			*12.69*	
EXCESS			*1.72*	*3.28*	*5.27*	*8.32*	*8.32*	*1.76*			*1.74*	

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Returns for periods prior to 7/1/2008 are Gross of Fees

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2013

STATE STREET.

SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
REAL RETURN												
SSGA PASSIVE US TIPS	**1,504.22**	**3.7**	**-3.78**	**-7.56**	**-8.07**						**-8.71**	**12-01-12**
Barclays US TIPS Index			*-3.77*	*-7.39*	*-7.84*						*-8.51*	
EXCESS			*-0.01*	*-0.17*	*-0.23*						*-0.20*	
TOTAL U.S. TIPS	**1,504.22**	**3.7**	**-3.78**	**-7.56**	**-8.10**	**-5.60**	**-5.60**	**4.22**	**4.97**		**5.52**	**02-01-06**
CUSTOM US TIPS MD BM			*-3.77*	*-7.39*	*-7.84*	*-5.31*	*-5.31*	*4.44*	*4.29*		*5.15*	
EXCESS			*-0.01*	*-0.17*	*-0.26*	*-0.29*	*-0.29*	*-0.22*	*0.68*		*0.37*	
PIMCO GLOBAL-LINKED	**927.43**	**2.3**	**-4.75**	**-7.91**	**-5.55**	**-2.29**	**-2.29**	**4.98**			**6.11**	**09-01-09**
BC World Inflat-Linked Bond Index-Hedged			*-3.93*	*-6.33*	*-4.64*	*-1.99*	*-1.99*	*4.49*			*5.13*	
EXCESS			*-0.82*	*-1.58*	*-0.91*	*-0.30*	*-0.30*	*0.49*			*0.98*	
WESTERN ASSET GLOBAL-LINKED	**537.52**	**1.3**	**-4.34**	**-6.75**	**-5.24**	**-2.37**	**-2.37**	**3.35**			**3.77**	**10-01-09**
BC World Inflat-Linked Bond Index-Hedged			*-3.93*	*-6.33*	*-4.64*	*-1.99*	*-1.99*	*4.49*			*4.88*	
EXCESS			*-0.41*	*-0.42*	*-0.60*	*-0.38*	*-0.38*	*-1.14*			*-1.11*	
NEW CENTURY ADVISORS (NT)	**32.81**	**0.1**	**-4.54**	**-7.24**	**-5.76**	**-4.58**	**-4.58**	**4.33**			**6.74**	**12-01-08**
BC World Inflat-Linked Bond Index-Hedged			*-3.93*	*-6.33*	*-4.64*	*-1.99*	*-1.99*	*4.49*			*6.88*	
EXCESS			*-0.61*	*-0.91*	*-1.12*	*-2.59*	*-2.59*	*-0.16*			*-0.14*	
TOTAL GILB	**1,497.76**	**3.7**	**-4.60**	**-7.56**	**-5.46**	**-2.46**	**-2.46**	**4.31**			**6.62**	**12-01-08**
BC World Inflat-Linked Bond Index-Hedged			*-3.93*	*-6.33*	*-4.64*	*-1.99*	*-1.99*	*4.49*			*6.88*	
EXCESS			*-0.67*	*-1.23*	*-0.82*	*-0.47*	*-0.47*	*-0.18*			*-0.26*	

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Returns for periods prior to 7/1/2008 are Gross of Fees

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2013

STATE STREET.

SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
TOTAL TIPS/GILBS	**3,001.98**	**7.5**	**-4.19**	**-7.56**	**-6.75**	**-3.94**	**-3.94**	**4.45**	**4.99**		**4.99**	**07-01-08**
26 *TIPS/GILBS Index*			*-3.85*	*-6.86*	*-6.25*	*-3.56*	*-3.56*	*4.68*	*4.49*		*4.49*	
EXCESS			*-0.34*	*-0.70*	*-0.50*	*-0.38*	*-0.38*	*-0.23*	*0.50*		*0.50*	
BLACKROCK DJ-UBS COMMODITY INDEX	**86.99**	**0.2**										**10-01-11**
GRESHAM INVESTMENT MGMT, LLC	**292.56**	**0.7**	**-5.04**	**-8.40**	**-10.56**	**-7.37**	**-7.37**	**2.21**			**2.26**	**09-01-09**
Dow Jones-UBS Commodity Index TR			*-4.71*	*-9.45*	*-10.47*	*-8.01*	*-8.01*	*-0.26*			*-0.17*	
EXCESS			*-0.33*	*1.05*	*-0.09*	*0.64*	*0.64*	*2.47*			*2.43*	
VERMILLION/CELADON COMMODITIES	**173.88**	**0.4**	**-3.49**	**-11.64**	**-12.50**	**-15.10**	**-15.10**	**-2.12**			**-3.80**	**04-01-10**
Dow Jones-UBS Commodity Index TR			*-4.71*	*-9.45*	*-10.47*	*-8.01*	*-8.01*	*-0.26*			*-1.74*	
EXCESS			*1.22*	*-2.19*	*-2.03*	*-7.09*	*-7.09*	*-1.86*			*-2.06*	
ASTENBECK COMMODITIES FUND III	**116.43**	**0.3**	**-5.54**	**-7.96**	**-4.48**						**-2.91**	**09-01-12**
Dow Jones-UBS Commodity Index TR			*-4.71*	*-9.45*	*-10.47*						*-14.71*	
EXCESS			*-0.83*	*1.49*	*5.99*						*11.80*	
SCHRODER COMMODITY FUND	**102.66**	**0.3**	**-3.30**	**-8.20**	**-10.37**	**-7.29**	**-7.29**	**1.44**			**0.70**	**10-01-09**
27 *MD/Schroder Custom Benchmark*			*-2.24*	*-7.42*	*-7.40*	*-2.29*	*-2.29*	*3.01*			*2.05*	
EXCESS			*-1.06*	*-0.78*	*-2.97*	*-5.00*	*-5.00*	*-1.57*			*-1.35*	
Dow Jones-UBS Commodity Index TR			*-4.71*	*-9.45*	*-10.47*	*-8.01*	*-8.01*	*-0.26*			*-0.59*	

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Returns for periods prior to 7/1/2008 are Gross of Fees

Provided by State Street Investment Analytics

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2013

STATE STREET.

SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
ARBALET COMMODITY STRATEGIES FUND	**39.23**	**0.1**	**-3.96**	**-4.41**	**-6.67**	**-8.40**	**-8.40**				**-10.06**	**06-01-12**
HFRX Macro: Commodity-Index			*1.17*	*0.41*	*1.39*	*1.89*	*1.89*				*4.36*	
EXCESS			*-5.13*	*-4.82*	*-8.06*	*-10.29*	*-10.29*				*-14.42*	
BLACKRIVER COMMODITY TRADING FUND	**103.87**	**0.3**	**2.66**	**2.15**	**0.18**	**7.58**	**7.58**				**1.73**	**11-01-10**
HFRX Macro: Commodity-Index			*1.17*	*0.41*	*1.39*	*1.89*	*1.89*				*-0.88*	
EXCESS			*1.49*	*1.74*	*-1.21*	*5.69*	*5.69*				*2.61*	
KOPPENBERG MACRO COMMODITY FUND	**39.73**	**0.1**	**1.10**	**5.46**	**7.18**						**4.55**	**10-01-12**
HFRX Macro: Commodity-Index			*1.17*	*0.41*	*1.39*						*-1.20*	
EXCESS			*-0.07*	*5.05*	*5.79*						*5.75*	
TAYLOR WOODS PARTNERS L.P.	**52.87**	**0.1**	**5.73**								**5.73**	**06-01-13**
HFRX Macro: Commodity-Index			*1.17*								*1.17*	
EXCESS			*4.56*								*4.56*	
CCM DIVERSIFIED I	**200.00**	**0.5**										**06-01-13**
LD COMMODITIES DYNAMIC AGRICULTUR	**30.96**	**0.1**	**-3.50**	**-8.69**	**-11.54**						**-11.54**	**01-01-13**
DJ UBS Agriculture Total Return			*-4.16*	*-4.48*	*-7.50*						*-7.50*	
EXCESS			*0.66*	*-4.21*	*-4.04*						*-4.04*	

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State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2013

STATE STREET.

SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
TOTAL COMMODITIES	**1,239.17**	**3.1**	**-2.86**	**-6.92**	**-8.03**	**-5.67**	**-5.67**	**0.84**			**0.74**	**09-01-09**
Dow Jones-UBS Commodity Index TR			*-4.71*	*-9.45*	*-10.47*	*-8.01*	*-8.01*	*-0.26*			*-0.17*	
EXCESS			*1.85*	*2.53*	*2.44*	*2.34*	*2.34*	*1.10*			*0.91*	
TORTOISE CAPITAL DOMESTIC EQ	**127.30**	**0.3**	**3.77**	**3.76**	**25.33**	**35.77**	**35.77**	**23.84**			**26.60**	**08-01-09**
S&P MLP Total Return Index			*3.37*	*2.56*	*23.03*	*29.50*	*29.50*	*21.45*			*24.46*	
EXCESS			*0.40*	*1.20*	*2.30*	*6.27*	*6.27*	*2.39*			*2.14*	
HARVEST FUND ADVISORS	**122.93**	**0.3**	**3.13**	**3.35**	**25.89**	**37.04**	**37.04**	**30.22**			**30.67**	**11-01-09**
S&P MLP Total Return Index			*3.37*	*2.56*	*23.03*	*29.50*	*29.50*	*21.45*			*25.01*	
EXCESS			*-0.24*	*0.79*	*2.86*	*7.54*	*7.54*	*8.77*			*5.66*	
28 TOTAL ENERGY FUNDS	**352.47**	**0.9**	**0.00**	**5.12**	**10.04**	**6.99**	**6.99**	**15.29**			**13.17**	**01-01-10**
TOTAL INFRASTRUCTURE	**31.65**	**0.1**	**0.00**	**0.46**	**-1.18**	**0.19**	**0.19**	**2.73**			**2.03**	**10-01-09**
TIMBER LP FUNDS	**192.57**	**0.5**	**0.00**	**3.04**	**4.48**	**7.58**	**7.58**	**14.20**			**13.40**	**05-01-10**
TOTAL PRIVATE REAL RETURN	**826.92**	**2.1**	**1.02**	**3.96**	**12.49**	**14.58**	**14.58**	**18.54**			**19.56**	**08-01-09**
CPI + 5%; 8% Max			*0.65*	*1.54*	*4.20*	*6.83*	*6.83*	*7.19*			*7.01*	
EXCESS			*0.37*	*2.42*	*8.29*	*7.75*	*7.75*	*11.35*			*12.55*	
TOTAL REAL RETURN	**5,068.07**	**12.6**	**-2.92**	**-5.50**	**-3.97**	**-1.45**	**-1.45**	**5.24**	**4.70**		**5.40**	**02-01-06**
29 *CUSTOM REAL RETURN BENCHMARK*			*-3.66*	*-6.81*	*-6.49*	*-3.82*	*-3.82*	*3.20*	*2.26*		*3.81*	
EXCESS			*0.74*	*1.31*	*2.52*	*2.37*	*2.37*	*2.04*	*2.44*		*1.59*	

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Provided by State Street Investment Analytics

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2013

STATE STREET.

SUMMARY OF PERFORMANCE

		MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
	PRIVATE EQUITY												
30	**TOTAL PRIVATE EQUITY**	**2,504.90**	**6.2**	**1.46**	**3.81**	**6.09**	**11.72**	**11.72**	**14.33**	**5.81**	**12.25**	**6.08**	**03-01-94**
31	*Custom MD/SS PEI Index*			*1.04*	*3.38*	*6.95*	*8.88*	*8.88*	*12.52*	*4.00*	*12.65*		
	EXCESS			*0.42*	*0.43*	*-0.86*	*2.84*	*2.84*	*1.81*	*1.81*	*-0.40*		
	STATE STREET PE 1 QTR LAG			*3.38*	*3.38*	*6.95*	*8.88*	*8.88*	*12.52*	*4.00*	*12.65*		
	RUSSELL 3000 + 300BPS			*-1.05*	*3.44*	*15.72*	*25.05*	*25.05*	*22.14*	*10.45*			
	State St. PEI - Domestic qtr lag			*4.36*	*4.36*	*7.81*	*10.64*	*10.64*	*13.54*	*5.36*	*12.08*		
	State St. PEI - Non U.S. qtr lag			*0.84*	*0.84*	*4.71*	*4.13*	*4.13*	*9.81*	*-0.70*	*15.10*		
	State St. PEI - Buyout qtr lag			*3.41*	*3.41*	*7.87*	*9.55*	*9.55*	*13.01*	*4.09*	*14.53*		
	State St. PEI - Venture Cap qtr lag			*2.30*	*2.30*	*2.35*	*3.09*	*3.09*	*11.28*	*0.59*	*5.62*		
	SS PEI Mezz-Dist-Spec Sit qtr lag			*4.31*	*4.31*	*6.71*	*11.41*	*11.41*	*11.42*	*8.25*	*13.08*		

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State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2013

STATE STREET.

SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
ABSOLUTE RETURN												
BGI GLOBAL ASCENT	**402.30**	**1.0**	**-1.51**	**-1.71**	**0.37**	**1.83**	**1.83**	**0.25**	**0.64**		**1.73**	**04-01-08**
32 *Custom Absolute Return Benchmark*			*-1.30*	*0.12*	*3.44*	*7.35*	*7.35*	*3.02*	*-0.60*		*-0.27*	
EXCESS			*-0.21*	*-1.83*	*-3.07*	*-5.52*	*-5.52*	*-2.77*	*1.24*		*2.00*	
BRIDGEWATER PURE ALPHA	**478.01**	**1.2**	**-2.78**	**-0.63**	**-1.59**	**1.59**	**1.59**	**6.44**	**4.97**		**5.84**	**05-01-08**
32 *Custom Absolute Return Benchmark*			*-1.30*	*0.12*	*3.44*	*7.35*	*7.35*	*3.02*	*-0.60*		*-0.38*	
EXCESS			*-1.48*	*-0.75*	*-5.03*	*-5.76*	*-5.76*	*3.42*	*5.57*		*6.22*	
MELLON GLOBAL ALPHA II	**195.65**	**0.5**	**-0.68**	**0.37**	**0.74**	**1.28**	**1.28**	**1.68**	**0.43**		**0.43**	**07-01-08**
32 *Custom Absolute Return Benchmark*			*-1.30*	*0.12*	*3.44*	*7.35*	*7.35*	*3.02*	*-0.60*		*-0.60*	
EXCESS			*0.62*	*0.25*	*-2.70*	*-6.07*	*-6.07*	*-1.34*	*1.03*		*1.03*	
ROCK CREEK POTOMAC FUND LTD	**461.61**	**1.1**	**-1.11**	**0.99**	**6.37**	**12.26**	**12.26**	**6.19**			**4.94**	**02-01-10**
HFRI Fund of Funds Composite Index			*-1.30*	*0.12*	*3.44*	*7.35*	*7.35*	*3.02*			*2.40*	
EXCESS			*0.19*	*0.87*	*2.93*	*4.91*	*4.91*	*3.17*			*2.54*	
DGAM DIVERSIFIED STRATEGIES FUND	**325.60**	**0.8**	**-0.72**	**-0.93**	**2.18**	**6.30**	**6.30**				**3.95**	**01-01-11**
HFRI Fund of Funds Composite Index			*-1.30*	*0.12*	*3.44*	*7.35*	*7.35*				*0.87*	
EXCESS			*0.58*	*-1.05*	*-1.26*	*-1.05*	*-1.05*				*3.08*	
33 **PIMCO REAL RETURN ALL ASSET**	**325.42**	**0.8**	**-3.81**	**-4.19**	**-3.35**	**5.76**	**5.76**	**7.35**	**5.97**		**5.27**	**03-01-08**
34 *Custom PIMCO All Asset Index*			*0.65*	*1.54*	*4.20*	*6.83*	*6.83*	*10.21*	*5.60*		*5.33*	
EXCESS			*-4.46*	*-5.73*	*-7.55*	*-1.07*	*-1.07*	*-2.86*	*0.37*		*-0.06*	

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Returns for periods prior to 7/1/2008 are Gross of Fees

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2013

STATE STREET.

SUMMARY OF PERFORMANCE

		MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
33	**BRIDGEWATER ALL WEATHER**	**736.39**	**1.8**	**-6.16**	**-8.47**	**-7.85**	**-1.53**	**-1.53**	**10.74**			**12.38**	**07-01-09**
35	*Custom Bridgewater Benchmark*			*0.53*	*1.60*	*3.23*	*6.58*	*6.58*	*8.63*			*8.83*	
	EXCESS			*-6.69*	*-10.07*	*-11.08*	*-8.11*	*-8.11*	*2.11*			*3.55*	
	TOTAL ABSOLUTE RETURN	**2,924.99**	**7.3**	**-3.02**	**-3.02**	**-1.55**	**3.42**	**3.42**	**5.19**	**3.21**		**4.10**	**04-01-08**
32	*Custom Absolute Return Benchmark*			*-1.30*	*0.12*	*3.44*	*7.35*	*7.35*	*3.02*	*-0.60*		*-0.27*	
	EXCESS			*-1.72*	*-3.14*	*-4.99*	*-3.93*	*-3.93*	*2.17*	*3.81*		*4.37*	

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Returns for periods prior to 7/1/2008 are Gross of Fees

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2013

STATE STREET.

SUMMARY OF PERFORMANCE

		MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
	REAL ESTATE												
	LASALLE ADVISORS REIT	**291.97**	**0.7**	**-1.29**	**0.12**	**4.51**	**5.95**	**5.95**	**17.66**	**5.52**	**10.95**		**04-01-93**
36	*LASALLE REIT BENCHMARK*			*-1.70*	*-1.41*	*5.89*	*8.38*	*8.38*	*18.30*	*7.03*	*10.88*	*10.09*	
	EXCESS			*0.41*	*1.53*	*-1.38*	*-2.43*	*-2.43*	*-0.64*	*-1.51*	*0.07*		
	MORGAN STANLEY INVESTMENT MGMT	**363.92**	**0.9**	**-3.40**	**-4.25**	**-0.91**	**20.46**	**20.46**	**13.18**	**3.66**		**0.92**	**11-01-06**
37	*MSIM Cus FTSE EPRA NAREIT Dev ex US(Ne*			*-3.40*	*-5.76*	*-1.20*	*18.40*	*18.40*	*13.82*	*2.48*		*0.20*	
	EXCESS			*0.00*	*1.51*	*0.29*	*2.06*	*2.06*	*-0.64*	*1.18*		*0.72*	
	FTSE EPRA/NAREIT Developed x US TR			*-3.37*	*-5.57*	*-0.95*	*18.81*	*18.81*	*14.23*	*2.86*		*0.54*	
	FTSE EPRA/NAREIT Developed x US (Net)			*-3.40*	*-5.75*	*-1.19*	*18.41*	*18.41*	*13.82*	*2.48*		*0.20*	
	RECORD CURRENCY MANAGEMENT-REITS	**7.36**	**0.0**										**04-01-11**
	TOTAL REITS	**663.25**	**1.6**	**-2.45**	**-1.50**	**2.87**	**15.00**	**15.00**	**15.83**	**4.85**	**10.48**		**04-01-94**
38	*CUSTOM MD REIT BM*			*-2.65*	*-3.87*	*1.84*	*13.28*	*13.28*	*15.86*	*4.51*	*9.64*	*9.90*	
	EXCESS			*0.20*	*2.37*	*1.03*	*1.72*	*1.72*	*-0.03*	*0.34*	*0.84*		
	TOTAL PRIVATE REAL ESTATE	**1,659.00**	**4.1**	**2.52**	**3.13**	**5.61**	**10.63**	**10.63**	**13.53**	**-0.83**	**7.53**	**8.67**	**03-01-94**
39	*CUSTOM MD PRIVATE REAL ESTATE BM*			*1.96*	*2.57*	*5.17*	*10.52*	*10.52*	*13.30*	*2.32*	*8.51*	*9.22*	
	EXCESS			*0.56*	*0.56*	*0.44*	*0.11*	*0.11*	*0.23*	*-3.15*	*-0.98*	*-0.55*	
	NCREIF PROPERTY INDEX QTR LAG			*2.57*	*2.57*	*5.17*	*10.52*	*10.52*	*13.30*	*2.32*	*8.51*		

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Returns for periods prior to 7/1/2008 are Gross of Fees

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2013

STATE STREET.

SUMMARY OF PERFORMANCE

		MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
	TOTAL REAL ESTATE	**2,322.25**	**5.8**	**1.06**	**1.97**	**5.06**	**12.55**	**12.55**	**14.70**	**1.35**	**9.01**	**6.17**	**07-01-87**
40	*REAL ESTATE CUSTOM INDEX*			*0.61*	*0.84*	*4.48*	*12.01*	*12.01*	*14.78*	*3.46*	*9.31*	*7.82*	
	EXCESS			*0.45*	*1.13*	*0.58*	*0.54*	*0.54*	*-0.08*	*-2.11*	*-0.30*	*-1.65*	
	NCREIF PROPERTY INDEX QTR LAG			*2.57*	*2.57*	*5.17*	*10.52*	*10.52*	*13.30*	*2.32*	*8.51*		
39	*CUSTOM MD PRIVATE REAL ESTATE BM*			*1.96*	*2.57*	*5.17*	*10.52*	*10.52*	*13.30*	*2.32*	*8.51*		
	WILSHIRE RESI			*-1.70*	*-1.41*	*5.89*	*8.38*	*8.38*	*18.30*	*7.03*	*10.88*		
37	*MSIM Cus FTSE EPRA NAREIT Dev ex US(Ne*			*-3.40*	*-5.76*	*-1.20*	*18.40*	*18.40*	*13.82*	*2.48*			

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Returns for periods prior to 7/1/2008 are Gross of Fees

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2013

STATE STREET.

SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
CASH												
MARYLAND CASH ACCOUNT	**507.90**	**1.3**	**0.31**	**0.44**	**0.64**	**1.48**	**1.48**	**3.39**	**3.48**			**09-01-94**
CITIGROUP 3 MONTH T-BILL			*0.00*	*0.02*	*0.03*	*0.08*	*0.08*	*0.09*	*0.23*	*1.63*	*2.99*	
EXCESS			*0.31*	*0.42*	*0.61*	*1.40*	*1.40*	*3.30*	*3.25*			
SELF LIQUIDATING ACCOUNT	**2.66**	**0.0**	**0.18**	**8.39**	**10.16**	**11.20**	**11.20**	**14.99**	**10.15**	**17.72**		**06-01-84**
CITIGROUP 3 MONTH T-BILL			*0.00*	*0.02*	*0.03*	*0.08*	*0.08*	*0.09*	*0.23*	*1.63*	*4.10*	
EXCESS			*0.18*	*8.37*	*10.13*	*11.12*	*11.12*	*14.90*	*9.92*	*16.09*		
TOTAL CASH AGGREGATE	**510.56**	**1.3**	**0.31**	**0.43**	**0.63**	**1.47**	**1.47**	**3.40**	**3.21**		**3.21**	**07-01-08**
CITIGROUP 3 MONTH T-BILL			*0.00*	*0.02*	*0.03*	*0.08*	*0.08*	*0.09*	*0.23*		*0.23*	
EXCESS			*0.31*	*0.41*	*0.60*	*1.39*	*1.39*	*3.31*	*2.98*		*2.98*	

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Returns for periods prior to 7/1/2008 are Gross of Fees

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2013

STATE STREET.

SUMMARY OF PERFORMANCE

		MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
	TOTAL PLAN												
	TOTAL PLAN	**40,250.73**	**100.0**	**-1.92**	**-0.66**	**3.21**	**10.57**	**10.57**	**10.03**	**3.97**	**6.62**	**8.24**	**07-01-86**
41	*TOTAL PLAN POLICY INDEX*			*-2.15*	*-1.34*	*2.12*	*8.54*	*8.54*	*9.36*	*3.39*	*6.37*		
	EXCESS			*0.23*	*0.68*	*1.09*	*2.03*	*2.03*	*0.67*	*0.58*	*0.25*		
42	*TOTAL PLAN CUSTOM STATIC INDEX*			*-1.97*	*-1.27*	*2.14*	*8.36*	*8.36*	*9.24*	*4.30*			

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Returns for periods prior to 7/1/2008 are Gross of Fees

STATE STREET.

SUMMARY OF PERFORMANCE

Endnotes

1 Since 07/01/2012: 100% Russell 3000 Growth
From 10/1/2010 to 06/30/2012: 100% Russell 3000
Prior to 10/1/2010: 100% Russell 2500 Growth

2 Benchmark is dynamically calculated using Beginning Market Value weights of the underlying portfolios and their benchmarks

3 Since 11/1/2008: Benchmark is dynamically calculated using Average Balance (BMV+ Weighted Net Cash Flows) weights of the underlying portfolios and their corrosponding indices. From 9/1/2008 - 10/31/2008: Benchmark was dynamically calculated based on the beginning weights of the underlying portfolios and their corresponding indices From 5/1/2008 - 8/31/2008: 11.1% S&P 500; 13.3% Russell 1000 Value; 33.3% Russell 1000 Growth; 16.7% Russell Mid Cap Growth; 25.6% Russell 2000 Value 11/1/2007 - 4/30/2008: 10.9% S&P 500; 13.1% Russell 1000 Value; 33.3% Russell 1000 Growth; 17.2% Russell Mid Cap Growth; 25.6 Russell 2000 Value Prior to 11/1/2007: 11% S&P 500; 13.1% Russell 1000 Value; 32% Russell 1000 Growth; 16.5% Russell Mid Cap Growth; 27.4% Russell 2000 Value

4 7/1/2008: The US Emerging Managers were added to the aggregate

5 Since 7/1/2008: 100% Russell 3000 From 1/1/2005 to 6/30/2008: 100% Dow Jones Willshire 5000 Prior to 1/1/2005: 100% Russell 3000

STATE STREET.

Endnotes - continued

6 Since 09/01/2009: 100% MSCI EAFE + CANADA (NET)
From 01/01/2005 to 08/31/2009: 100% MSCI AC WORLD ex US (NET)
From 05/01/2003 to 12/31/2004: 100% MSCI EAFE (NET)

7 From 11/1/2003: 100% of MSCI AC WORLD ex US (NET)

From 7/1/2012: 100% of MSCI WORLD EX US (NET)

8 From 03/01/2006 - 06/30/2012: 100% MSCI EAFE SMALL CAP(G)
Since 07/01/2012: 100% MSCI WORLD EX US SMALL CAP (NET)

9 Since 11/1/2008: Benchmark is dynamically calculated using Average Balance (BMV+ Weighted Net Cash Flows) weights Prior to 11/1/2008: 100% MSCI EAFE (net)

10 Since 7/1/2010: 100% MSCI All Country World ex. U.S.
From 7/1/2009 to 6/30/2010: 100% MSCI All Country World ex. U.S. IMI Net
From 1/1/2003 to 6/30/2009: 100% MSCI All Country World ex. U.S.
Prior to 1/12003: 100% MSCI EAFE

STATE STREET.

SUMMARY OF PERFORMANCE

Endnotes - continued

11 7/1/2008: International Equity Emerging Managers were added to the aggregate.

12 Since 06/01/2011 100% MSCI AC World (NET)
From 07/01/2009 to 05/31/2011: 100% MSCI ACWI IMI Net

13 Since 7/1/2010: 100% MSCI AC WORLD NET
From 7/1/2009 to 6/30/2010: 100% MSCI ACWI IMI NET
Prior to 7/1/2009: 100% MSCI AC WORLD NET

14 Benchmark is dynamically calculated using the weights of the US Equity, International Equity, and Global Equity aggregates and the corrosponding asset class benchmarks

15 Since 07/01/2013: 100% Barclays US Intermediate Aggregate Index
Prior 07/01/2013: 100% Barclays Aggregate Bond

16 Since 07/01/2013: 100% Barclays US Intermediate Aggregate Index 7/1/2009 - 06/30/2013: 100% BC Aggregate From 11/1/2003 - 6/30/2009: 100% BC US Universal Prior to 11/1/2003: 100% Citigroup BIG

STATE STREET.

SUMMARY OF PERFORMANCE

Endnotes - continued

17 Since 07/01/2013: 100% Barclays US Intermediate Aggregate Index

From 7/1/2009 - 06/30/2013:100% BC Aggregate Prior to 7/1/2009: 100% BC U.S. Universal Index

18 As of 1/1/2010 all high yield and convertible managers were moved out of the Fixed Income asset class and into the Credit/Debt asset class. Historical returns for high yield and convertible managers remain in Fixed Income composite.

19 Benchmark is dynamically calculated based on the Average Balance (BMV + Weighted Net Cash Flows) weights of the underlying portfolios and their corresponding indices

20 Since 07/01/2013: 100% BC Global Aggregate 1-10 Year Hedged Index

From 07/1/2010 to 06/30/2013: 100% BC Global Aggregate Hedged

Prior to 7/1/2010: 100% BC Global Aggregate Unhedged

21 Since 07/01/2013: 80% BC Aggregate Intermediate, 20% BC Global Aggregate 1-10 Year Hedged

From 7/1/2010 to 06/30/2013: 80% BC Aggregate, 20% BC Global Bond Aggregate Hedged

From 1/1/2010 to 6/30/2010: 80% BC Aggregate, 20% BC Global Bond Aggregate Unhedged

From 7/1/2009 to 12/31/2009: Benchmark is dynamically calculated using Beginning Market Value weights of the underlying portfolios and their benchmarks

Prior to 7/1/2009: Benchmark is BC US Universal.

STATE STREET.

Endnotes - continued

22 50% S&P/LSTA & 50% B of A ML High Yield Master II

23 Prior to 2010, assets were included in Private Equity Asset Class.

24 Since 07/01/2013: 50% BC High Yield / 20% BC Credit / 20% JP Morgan GBI EM Global Diversified/ 10% S&P/LSTA Leveraged Loan Index From 01/01/2010 - 06/30/2013: 50% BC Credit / 50% BC High Yield Prior to 1/1/2010: 75% BC Credit / 25% BC High Yield

25 As of 12/1/2012: 100% of Barclays US TIPS Index, B Series.

From 2/1/2006 - 11/30/2012: 100% of Barclays Global Inflation Linked:US TIPS, L Series.

26 Since 12/1/2012: 50% Barclays Global Inflation Linked:US TIPS; 50% Barclays World Inflat-Linked Bond Index

Prior to 11/30/2012: 65% Barclays Global Inflation Linked:US TIPS; 35% Barclays World Inflat-Linked Bond Index

27 25% Rogers International Commodities Index / 25% RJ/CRB Total Return Series / 25% Dow Jones-UBS Commodity Total Return Index / 25% S&P GSCI Total Return Index

STATE STREET.

Endnotes - continued

28 Prior to Jan 2010, assets were included in Private Equity Asset Class.

29 Since 12/1/2012: 30% - DJ UBS Commodities Index (Total Return), 10% - CPI + 5%; 8% Max , 60% - 50% BC US TIPS Index/50% BC World Inflat-Linked Bond Index

From 7/1/2011 - 11/30/2012: 30% - DJ UBS Commodities Index (Total Return), 10% - CPI + 5%; 8% Max , 60% - 65% BC US TIPS Index/35% BC Global Inflation Linked (USD Hedged) Index

From 7/1/2009 - 6/30/2011: 20% - DJ UBS Commodities Index (Total Return), 20% - CPI + 5%; 8% Max , 60% - 65% BC US TIPS Index/35% BC Global Inflation Linked (USD Hedged) Index

7/1/2008 - 6/30/2009: Benchmark is dynamically calculated using Beginning Market Value weights of the underlying portfolios and their benchmarks Prior to 7/1/2008: 100% Barclays US TIPS Index

30 Prior to 2010, Private Equity also includes Total Distressed Debt, Total Mezzanine Debt and Total Energy Fund.

31 The Private Equity benchmark is the State Street Private Equity Index (1 quarter lag). However, in non-quarter end months, the actual Private Equity return will be applied. In the third month of the quarter, the return will be calculated so that when geometrically linked with months 1 and 2, the three month return equals the published SS PEI (1 quarter lag).

STATE STREET.

Endnotes - continued

32 As of 7/1/2008 benchmark is HFRI Fund of Funds index. Prior to 7/1/2008 benchmark was the Citigroup 3-Month T-bill + 500 bps.

33 Prior to 7/1/2011 this portfolio was included in the Real Return Asset Class

34 Since 7/1/2011 100% CPI + 5%. From 7/1/2008 through 6/30/2011: 35% MSCI AC World (net) index / 65% Barclays Multiverse index Prior to 7/1/2008: 100% Barclays TIPS 1-10 Year

35 Since 7/1/2011 Benchmark is composed of 100% 3 month T-Bill + 6.5%

From 7/1/2009 - 6/30/2011 Benchmark is composed of 75% Barclays Capital US TIPS , 10% DJ-AIG Commodities Total Return Index and 15% MSCI ACWI.

36 Since 5/1/1999: 100% Wilshire RESI Prior to 5/1/1999: 100% NAREIT Equity Share Price Index

37 Since 11/2007 benchmark is 100% FTSE EPRA NAREIT Developed Ex US (Net) index. Prior to 11/2007, the net version of the index was calculated by and provided to State Street by MSIM

STATE STREET.

Endnotes - continued

38 From 11/1/2006: Benchmark is dynamically calculated using BMV weights of the underlying portfolios and their benchmarks.

From 4/1/1994: 100% of LaSalle REIT Benchmark.

39 The Private Real Estate benchmark is the NCREIF ODCE (1 quarter lag) since 07/01/2013. However, in non-quarter end months, the actual Maryland Private Real Estate return will be applied. In the third month of the quarter, the return will be calculated so that when geometrically linked with months 1 and 2, the three month return equals the published NCREIF ODCE (1 quarter lag).

Prior 07/01/2013, the Private Real Estate benchmark is the NCREIF PROPERTY INDEX QTR LAG.

40 Since 07/01/2013, a dynamic blend of the Wilshire RESI, NCREIF ODCE (one qtr lag), and the MSIM Custom EPRA/NAREIT Global ex US

Prior 07/01/2013, a dynamic blend of the Wilshire RESI, NCREIF Property (one qtr lag), and the MSIM Custom EPRA/NAREIT Global ex US

Prior to 7/1/2008: 50% Wilshire RESI & 50% NCREIF Property (one qtr lag)

41 Since 7/1/2008: Calculated monthly using transitional weights and asset class benchmarks. Prior to 7/1/2008: MSRA TOTAL PLAN STATIC POLICY

42 Calculated monthly using the strategic target weights and asset class benchmarks

State Retirement and Pension System
Asset Management Fees
($ in Millions)

Asset Class	Market Value	Fiscal 2013 Performance	Fiscal 2013 Fees ($)	Fiscal 2013 Fees (bps)
Domestic Equity – Passive	$2,201.4	21.2%	$263,666	
Domestic Equity – Active	1,252.1	22.5%	4,783,074	
Subtotal	**$3,453.5**		**$5,046,740**	**11.1**
Int'l Equity – Passive	$1,829.9	17.3%	$578,004	
Int'l Equity – Active & Emerging	2,811.7	16.8%	14,356,900	
Subtotal	**$4,641.5**		**$14,934,904**	**30.6**
Global Equity – Passive	$335.7	16.7%	$243,471	
Global Equity – Active	5,191.4	19.8%	32,585,325	
Subtotal	**$5,527.1**		**$32,828,796**	**54.4**
Public Equity – Terra Maria	$2,060.3	n/a	$14,394,462	55.3
Public Equity – Total	**$15,682.5**	**19.1%**	**$67,204,902**	**37.2**
Domestic Fixed Income – Passive	$515.9	-0.9%	$166,767	1.8
Domestic Fixed Income – Active	3,994.1	0.7%	6,557,643	16.2
Global Fixed Income	1,511.9	3.7%	2,901,859	19.3
Fixed Income –Terra Maria	704.6	0.4%	1,892,991	26.3
Subtotal	**$6,726.6**	**1.1%**	**$11,519,260**	**20.3**
Private Equity	$2,504.9	11.7%	$53,838,189	224.3
Real Estate	$2,314.9	12.6%	$24,690,889	173.8
Alternatives				
Real Return – Inflation Linked	$2,969.2	-3.9%	$2,499,440	6.6
Real Return – Commodities, etc.	2,066.1	n/a	21,492,765	102.7
Credit and Debt– Funds	1,529.3	n/a	5,922,744	43.1
Credit and Debt – Other Alternative	1,668.0	n/a	40,337,243	241.8
Absolute Return	2,925.0	n/a	27,166,055	97.6
Hedge Funds	1,277.6	n/a	7,526,216	58.4
Cash	$510.6	1.5%	$0	0.0
Service Providers	n/a	n/a	$12,693,738	n/a
Total	**$40,174.6**	**10.6%**	**$274,891,441**	**62.0**

bps: basis points

Source: State Retirement and Pension System

NCPERS Testimony for Briefing On Private Sector Pension/Retirement Plans

by Hank Kim, Esq.
Executive Director and Counsel
National Conference on Public Employee Retirement Systems (NCPERS)
Before the MD Joint Committee on Pensions

October 23, 2013

Introduction

Chairs Verna L. Jones-Rodwell and Melony G. Griffith, and members of the committee, thank you for allowing my organization, the National Conference on Public Employee Retirement Systems (NCPERS), to testify before you today.

NCPERS is the largest trade association for public sector pension funds, representing more than 550 funds throughout the United States and Canada. It is a unique non-profit network of public trustees, administrators, public officials, and investment, actuarial and legal professionals who collectively manage more than $3 trillion in pension assets. Founded in 1941, NCPERS is the principal trade association working to promote and protect pensions by focusing on advocacy, research and education for the benefit of public sector pension stakeholders. Further, NCPERS promotes retirement security for *all* workers – in both the public and private sectors – through access to defined benefit pension plans.

In addition to serving as Executive Director and Counsel for NCPERS, I currently serve as Vice-Chair of the Fairfax County Uniform Retirement System, $1.3 billion public employee retirement system providing pension coverage for the Fire & Rescue Department, Sheriff's Department, and certain other sworn employees of Fairfax, Virginia. I also serve as Treasurer of the National Institute on Retirement Security, a Washington, D.C. based think tank focusing on retirement security. Previously, I've served on the Morningstar Pension Endowments and Foundations Steering Committee and the City of Virginia Beach Mayor's Committee on Employee Pensions.

America's Retirement Crisis

The U.S. is facing a retirement crisis in the private sector. Today, there is a retirement savings deficit somewhere upwards of $14 trillion. This retirement saving deficit is calculated by determining what 401(k) account holders should have in their accounts to

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maintain their standard of living in their retirement and comparing that with what they actually do have in their accounts. Recently, the Wall Street Journal ran on its front page a story about the retirement savings crisis. Entitled "Workers Saving Too Little to Retire," the article noted that fifty-seven percent of U.S. workers surveyed reported less than $25,000 in total household savings for retirement. This is extremely troubling because as documented in our publication *The Secure Choice Pension: A Way Forward for Retirement Security in the Private Sector*, Social Security gets a typical retiree about one-third of the way towards a secure retirement. The remaining two-thirds must be made up from personal savings solely or in conjunction with an employer sponsored pension plan.

According to US Bureau of the Census data, one million working Marylanders work for employers who offer no retirement plan, while another 200,000 do not participate in their employer plans. Less than half of small Maryland employers, those with fewer than 100 workers, offer a retirement arrangement. The result is that there are generations of Marylanders moving through their working years with little or no retirement savings and will have only Social Security to rely on. This lack of retirement income will impact individuals and the communities in which they reside. Nearly 90% of retirees stay in their communities. Without adequate income, these individuals will not be able to contribute to the tax base to pay for public services and may require income-support assistance. Appended to this written testimony are charts that delve further into Maryland-specific retirement security demographics.

Most acutely, the 78 million baby-boomers who are now at or nearing retirement may not have enough time left in the workforce to earn back what they have lost in retirement assets during the Great Recession. Our ability as a nation to sustain our economy at a time when a record number of workers are entering their retirement years should be an important part of our national debate. Retirement security for *all* Americans – whether they work in the public or private sector – must become a national priority.

A New Approach

The growing national debate over retirement security has forced many thought leaders and policymakers to take a fresh look at this growing crisis.

At NCPERS, this examination began in late 2010. We knew that not only was there a need for revitalization of pensions in the private sector, but there was a keen desire by working Americans for the type of retirement security that public sector employees have earned and enjoy. So for a year we embarked upon a journey to study what the next evolution of pensions for the private sector might be. We dubbed this exercise "Pensions 2.0." We asked ourselves what a private sector pension would look like if it reflected the realities of the 21st Century. Namely, the pension plan had to be flexible to reflect economic conditions, portable so that

participants can carry it from job to job, simple to administer, and most importantly sustainable for not just the next 20 years but for the next 200 years.

Our answer is the Secure Choice Pension (SCP). The SCP is envisioned as a public-private partnership to provide retirement security for American workers, particularly those who work for small businesses, and who don't currently have a defined benefit pension. The plan draws on the documented performance and efficiencies of public sector pension management, and extends it to those in the private sector who face what is becoming a national retirement crisis. The concept is that the states – individually, or possibly in groups – would enact legislation to establish a state or regional SCP plan. SCPs would be multiple-employer hybrid defined benefit pension plans. Each SCP would have a board of trustees composed of state, private employer and private employee/retiree representatives. The board would hire a chief executive officer and administrative staff to administer the SCP. The board and staff would have fiduciary duty to the SCP plan and its participants.

Participation in the SCP would be voluntary. Contributions to the SCP would come ideally from both employers and employees. In our model plan the combined contribution is set at 6% of pay and would replace approximately one-third of average career salary at retirement. For participating employers, administrative and fiduciary duties would be largely removed and placed upon the board of trustees and administrator of the plan. The only real obligation and administrative task for employers would be to make their portion of the contribution – thus making participation in the SCP affordable and simple for private sector employers, in terms of both time and financial cost. While each SCP participant would have a participant account, all contributions to the SCP would be pooled and professionally invested to achieve economies of scale and to negotiate lower fees from investment firms hired by the SCP board.

The participant accounts would grow at an interest rate that the SCP board would set annually, but the SCP plan guarantees a minimum of three percent return. At retirement, employees participating in a SCP would be guaranteed an income for life – an income immune to stock market fluctuations and sudden economic downturns.

Once we had the SCP plan design and actuarially determined funding approach, we developed rigorous modeling and stress tested the SCP concept to assess its performance. We believe that the SCP is the most detailed and most thoroughly tested public-private partnership pension concept available. It is in part for this reason that NCPERS has been asked to assist in developing and drafting state-based private sector retirement savings legislation.

It is worth noting that concerns about a lack of retirement security among their citizens – and the potential negative consequences on their economies and tax revenues – has prompted a number of states to explore public-private partnerships to provide retirement savings plans for private sector workers.

In March of 2012, the Massachusetts legislature passed, and the governor signed, a law titled "An Act to Provide Retirement Options for Nonprofit Organizations." The new law – one of the first of its kind – will allow nonprofit organizations with fewer than 20 employees to enter into a contributory retirement plan overseen by the state treasurer's office. Currently, the treasurer's office oversees a contributory plan for public sector employees with $5 billion in assets that covers approximately 300,000 workers. Adding the plan for nonprofit organizations will not have a significant impact on operations. The treasurer's office will create a trust to receive qualified contributions from nonprofit employers and employees, and will establish a non-profit defined contribution committee that will include the treasurer and four other members.

Last September, California's legislature passed, and its governor signed, a law to create a statewide retirement savings plan known as the California Secure Choice Retirement Savings Program (SCRSP). The plan is for private workers who do not participate in any other type of employer sponsored retirement savings plan. Contributions by employees will be voluntary. Before the SCRSP becomes operational, the SCRSP Board created by the law must conduct a market analysis to determine various factors concerning implementing the SCRSP and report its findings to the Legislature. Once created, administrative costs for the SCRSP will be paid for from earnings on investments into the trust – not by California taxpayers. Those administrative costs are capped at no more than 1 percent, annually, of the total program fund assets.

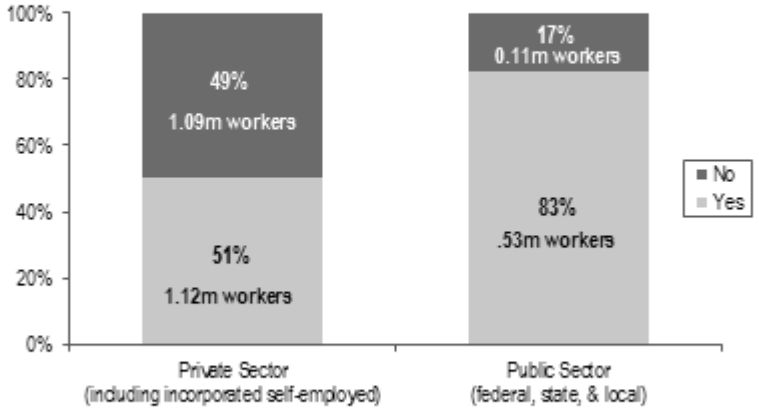
In an effort to follow in the footsteps of Massachusetts and California, Oregon's legislature passed a bill in July to form a task force to explore options for helping private sector workers who do not have access to retirement savings plans at their workplace. Roughly half of Oregon's private workers have no access to such a plan, and access is lowest among lower-income minority workers. And only 40 percent of private sector workers participate in workplace retirement plans. Among other things, the seven-member Oregon Retirement Savings Task Force will develop recommendations for increasing the percentage of Oregonians enrolled in a retirement plan and for creating tax incentives and marketing strategies to encourage businesses to offer retirement savings plans to their employees. The legislation was backed by AARP, labor groups and small businesses.

Conclusion

NCPERS wishes to thank the Committee for this opportunity to express our views and offer our insights as Maryland contemplates an important step toward addressing the private sector retirement crisis facing this state and the nation as a whole. NCPERS stands ready to assist state policymakers with facts, research, and expertise as they delve into policy discussions on retirement security. We invite this committee to contact us should you need additional information.

Access to a Retirement Plan

MARYLAND WORKERS
Does your employer offer a pension or retirement plan?
By Sector



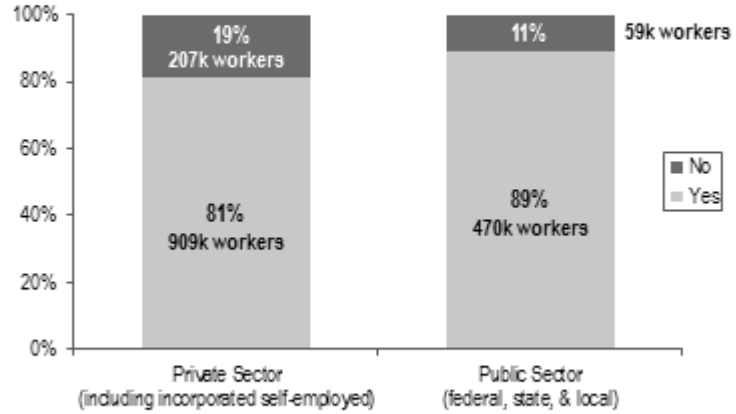
About 1 million private sector workers in Maryland do not have access to an employer-sponsored retirement plan.

Source: Analysis of Current Population Survey, March 2012 Supplement

SEGAL 1

Participation in a Retirement Plan

MARYLAND WORKERS
Do you participate in the retirement plan?
By Sector



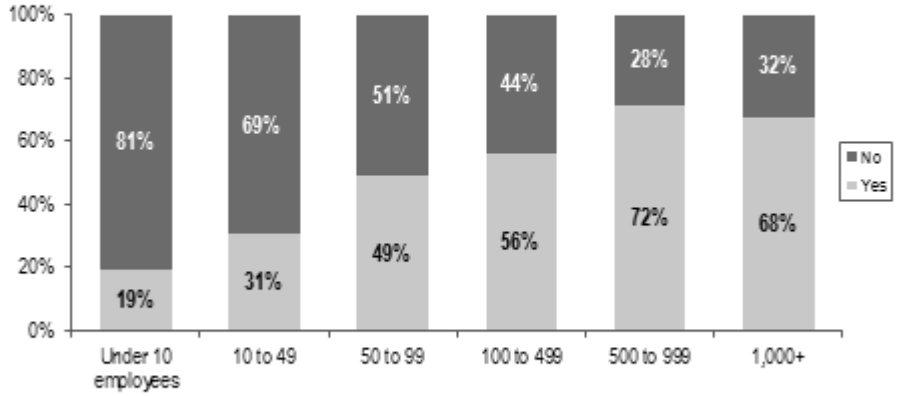
Another 207,000 private sector workers in Maryland do not participate in their employer's retirement plan.

Source: Analysis of Current Population Survey, March 2012 Supplement

SEGAL 1

Access to a Retirement Plan by Employer Size

MARYLAND PRIVATE SECTOR WORKERS:
Does your employer offer a pension or retirement plan?
By Size of Employer

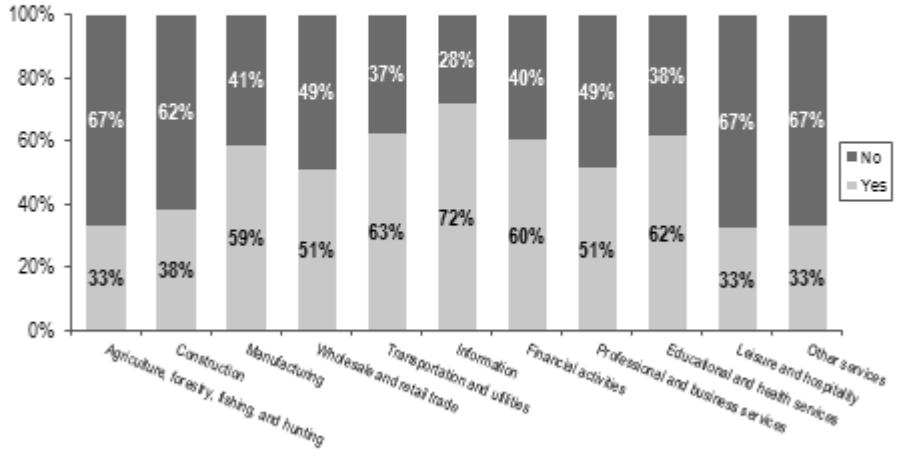


A majority of private sector employees in smaller firms (<100 employees) say that their employer does not offer a pension or retirement plan (652,000 people).

Source: Analysis of Current Population Survey, March 2012 Supplement

Access to a Retirement Plan by Industry

MARYLAND WORKERS:
Does your employer offer a pension or retirement plan?
By Industry



Source: Analysis of Current Population Survey, March 2012 Supplement

ASPPA®
AMERICAN SOCIETY OF PENSION PROFESSIONALS & ACTUARIES
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Testimony of Brian H. Graff
on behalf of the
American Society of Pension Professionals and Actuaries

Maryland Joint Committee on Pensions Briefing on
Private Sector Pension/Retirement Plans

October 23, 2013

Thank you Chairwoman Jones-Rodwell, Chairwoman Griffith, and members of the Maryland Joint Committee on Pensions for the opportunity to speak with you today on the important topic of expanding retirement plan coverage in the private workforce. My name is Brian Graff, and I serve as Executive Director and Chief Executive Officer of the American Society of Pension Professionals and Actuaries ("ASPPA").

ASPPA is an organization representing more than 16,000 retirement plan professionals nationwide. Our members provide consulting and administrative services for qualified retirement plans covering millions of American workers. Our members are retirement professionals of all disciplines, including: consultants, administrators, actuaries, accountants, attorneys, and investment professionals that are united by a common dedication to the private employer-based retirement system.

ASPPA has consistently and actively supported proposals to expand retirement plan coverage. This has included auto-enrollment IRA proposals supported by the Obama Administration that would require employers to offer payroll reduction savings at work through private sector providers while encouraging employers to set up private sector qualified retirement plans, as well as similar state-based proposals such as the California Secure Choice Retirement Savings Trust Act, as enacted in 2012. The private employer-based retirement system works well for those who have access to it. The challenge is to expand the availability of workplace retirement savings.

The Current Retirement System Works Well but It Is Not Perfect

Workplace based retirement plans have been successful at providing retirement benefits for tens of millions of American workers. These plans primarily benefit middle class families. Data from the Statistics of Income Division within the Internal Revenue Service ("IRS") show that almost 80% of participants in 401(k) and profit sharing plans make less than $100,000 per year. 43% of participants make less than $50,000.

The primary factor that determines whether or not these middle class families save for retirement is if there is a retirement plan available at the workplace. Data from the Employee Benefits Research Institute ("EBRI") shows that workers earning between $30,000 and $50,000 per year are fifteen times more likely to save at work than to go out and set up an IRA to save on their own. In other words, workplace payroll deduction savings works when it is available.

The Bureau of Labor Statistics ("BLS") found that 78 percent of all full time civilian workers had access to retirement benefits at work, with 83 percent of those workers participating in these arrangements. For private sector workers, BLS found the access and participation rates are 74 percent and 80 percent respectively. Availability and take up rates are substantially lower for part-time workers, so if part time workers are included, BLS found that 68 percent of civilian workers had access to retirement plans, and 80 percent of those actually participate in the offering. For the private sector only, the access and participation rates for all workers are 64 percent and 76 percent respectively.[1]

Alternate research suggests these estimates are less than what is actually happening in the workplace,[2] but regardless of what the exact percentages may be there are tens of millions of workers across the country that do not have a workplace retirement savings plan. More than one million of these workers who do not have access to a workplace retirement plan live in Maryland, and find it challenging to save for retirement. That is why it is so critical that the availability of payroll deduction retirement savings be expanded.

Automatic IRA Arrangements Will Increase Retirement Savings and Plan Coverage

These stark facts are the reason why ASPPA has long supported the concept of automatic payroll deduction IRAs ("auto-IRAs") at both the federal and state levels. The United States Government Accountability Office ("GAO") agrees that auto-IRAs would increase retirement savings. An August 2013 GAO report on auto-IRAs found that 36% of households across all income groups could see an increase in their retirement savings if auto-IRAs were implemented nationwide. In addition, households in the lowest earnings quartile would benefit the most, as the GAO calculated that the projected median annuity for those households could increase by 66%.

Because contribution limits for IRAs are less than for employer-sponsored 401(k) plans, auto-IRAs are expected to expand the availability of retirement savings, not replace current 401(k) plans. In fact, once employers and employees get used to payroll withholding for retirement savings through auto-IRAs, employers may be more comfortable moving up to a plan that includes employer contributions, such as a SIMPLE plan or 401(k) arrangement.

California Secure Choice Retirement Savings Trust Act

The California Secure Choice Savings Trust Act (SB 1234) that became law was a very different bill than the state-run cash balance defined benefit plan that was first proposed. The legislature realized that a state-run defined benefit plan for private employers just did not make sense. After

[1] Bureau of Labor Statistics, *Employee Benefits Survey: Retirement Benefits, March 2013: Retirement benefits: access, participation, and take-up rates: National Compensation Survey March 2013* available at http://www.bls.gov/news.release/pdf/ebs2.pdf (hereinafter "BLS Survey").

[2] Irena Dushi, Howard M. Iams, and Jules Lichtenstein, *Assessment of Retirement Plan Coverage by Firm Size, Using W-2 Records*, Social Security Bulletin (2011), available at http://www.ssa.gov/policy/docs/ssb/v71n2/v71n2p53.pdf.

substantial amendment, the program that actually became law is a state-based automatic enrollment IRA program similar to the federal auto-IRA proposal offered by Rep. Neal (D-MA, 1st), and included in the Obama Administration's budget. The Act requires all non-governmental California employers with 5 or more employees to make workplace retirement savings available to employees. Workplace retirement savings could be any type of employer-sponsored program, from a defined benefit or 401(k)-type plan to an automatic payroll-deduction IRA arrangement. A Retirement Investments Clearinghouse, funded by interested vendors, will be made available on the program website to provide information on registered vendors, and the types of employer-sponsored retirement savings plans that are available to employers.

Once the program is in place, employers with 5 or more employees who have not chosen to offer another retirement program through a private provider would automatically enroll employees in a default state-sponsored payroll-deduction retirement savings program called the California Secure Choice Retirement Savings Program ("CSCRS"), withholding 3% of pay and forwarding these contributions to the state-run program for investment. The CSCRS Investment Board could adjust the default withholding amount from 2-4%. Employers with fewer than 5 employees could choose to participate in the program, but would not be required to do so. *The bill makes it clear that at any time, any employer can choose to set up a retirement plan with a private provider and stop withholding contributions for the state program.*

The Act explicitly requires the CSCRS program to be IRAs, and *not* to be an employee benefit plan under the Employee Retirement Income Security Act ("ERISA"). Employers are to have no responsibility or liability other than to withhold contributions from employees' pay and forward the contributions on for investment.

Background on the Automatic IRA

The concept of the auto-IRA was first detailed in a paper for the Retirement Security Project (RSP) authored by David John of the Heritage Foundation and Mary Iwry of the Brookings Institution in 2006. Since that time proposals to codify these arrangements into law have been included in presidential budget submissions, and in both federal and state legislation.

The auto-IRA proposal, offered in legislation by former Senator Jeff Bingaman (D-NM) and Representative Richard Neal (D-MA, 1st), included a requirement that employers with 10 or more employees who do not sponsor another retirement plan offer the auto-IRA arrangement. Other proposals (Senator Baucus' Savings Competitiveness Act of 2006 and Rep. Kind's SAVE Act first offered in 2008) included a framework and incentives, but no requirement that employers offer the arrangement.

Auto-IRA Is a Good Fit for State Proposals

A number of state legislatures, including California, Connecticut, Illinois and Maryland, have considered mandating retirement plan coverage for private employers at the state level. To date, California is the only state to pass such legislation, and further legislative action will be required to enable operation of the California law. Proposals mandating retirement plan coverage for private employers remain attractive to state legislators who recognize that failure to address the coverage gap means future retirees could be more dependent on social services, straining state resources. Because of a desire to avoid fiduciary obligations under ERISA, it is makes sense that, like California, state proposals take the form of auto-IRA for employers of a certain size, with a marketplace open to private providers, and a state-run default option.

Unlike auto-IRA arrangements, a state-run qualified retirement plan, whether a 401(k)-type plan or a defined benefit plan, would make the state subject to ERISA fiduciary liability**.** The state would become a fiduciary on all plans that are covered by their program because the state would be selecting the investments and presumably serving as plan administrator. There are also other risks associated with non-compliance with federal rules under both ERISA and the Internal Revenue Code ("IRC"), such as a loss of expected tax deductions for employers who adopt the plan if any mistake is made, and penalties if required disclosures are not completed on a timely basis. These rules are important – they are designed to protect rank and file workers. They are also complicated, time consuming to administer, and generally apply separately to each adopting employer. Although the state could contract the fulfillment of these ERISA and IRC responsibilities to an outside vendor, the state would retain ultimate legal responsibility for the plans' administration and operation.

Proposals that mandate a state-run cash balance-type of defined benefit plan for private sector employees at the state level add an additional layer of concerns. Under current federal law, employee contributions to a defined benefit plan for non-governmental employees must be "after-tax" contributions, not "salary deferrals". Furthermore, employer contributions to a defined benefit plan are not made on behalf of a particular employee, and are not a fixed percentage of pay. Employer contributions to a cash balance plan vary from year to year because under a cash balance plan, an individual's "account balance" is a theoretical amount, not simply a share of the total assets of the trust. The plan defines what contribution and interest credits are added to an individual's theoretical account each year (or more frequently). All assets in the defined benefit plan are available to pay benefits (generally the amount of the theoretical account balance) due to anyone in the plan. If assets are insufficient because of improper funding or poor investment performance, the employer is responsible for making up the difference. This means employer contributions vary with investment performance, and the amount credited to an employee's theoretical account balance is not equal to the employer contribution.

Private sector defined benefit plans also have very specific and complicated compliance tests, minimum and maximum contribution requirements, and restrictions on both benefit payments and new benefit accruals that can kick in if a plan's assets sink below a certain percentage of the liability for promised benefits. To complicate matters, many compliance requirements would apply on an employer-by-employer basis. An enrolled actuary would have to be engaged to determine at least the maximum deductible and minimum required contributions for each employer. (In practice, an employer should also receive guidance on a recommended funding schedule).

Using auto-IRA arrangements as the basis for a state proposal avoids many of the complications of a qualified retirement plan. A state proposal requiring employers of a certain size that do not already sponsor a qualified retirement plan to auto-enroll employees into an IRA program allows for expansion of payroll-deduction retirement savings without placing additional responsibility and liability on the small business owners that are most likely to be affected by a state proposal, as well as on the state itself.

Private Sector Role is Critical

ASPPA strongly recommends that the private sector manage and administer the auto-IRA program. An entire pension industry of record keepers, financial services companies, consulting firms, and other professional firms, is already in place and in some cases are already maintaining

payroll deduction accounts that function exactly like the proposed auto-IRA arrangement. The number of small accounts established under an auto-IRA mandate would present special challenges. The majority of these accounts are expected to have small balances and it is critical that employee savings not be eaten up by fees. However, using collective investment and uniform administrative processes allows providers to keep fees low. Competition among private sector firms will drive innovation resulting in better services for participants. And importantly, it is private sector providers that will be encouraging employers that are offering auto-IRA to step up to a more robust arrangement that includes employer contributions.

The California program encourages private sector involvement through an online clearinghouse where employers will be able to identify private sector providers that are offering auto-IRA arrangements. The Maryland program should follow this online clearinghouse approach. Maryland is home to financial service companies, such as Legg Mason, that are supportive of adopting a California approach to auto-IRA. The support of these institutions will be very helpful in moving such a proposal forward, as well as in providing Maryland residents with high quality competitive savings opportunities when the program becomes operational.

Conclusion

The current system is working very well for millions of working Americans. Expanding availability of workplace savings is the key to improving the system. There is no need for dramatic changes, but Maryland could take a big step forward by adopting an auto-IRA proposal like the California model to make it easier for employers, particularly small businesses, to offer a workplace savings plan to their employees.

Thank you and I will be happy to discuss these issues further and answer any questions that you may have.

Center for American Progress Action Fund

Prepared Remarks for the Maryland Joint Committee on Pensions

David Madland,
Director, American Worker Project, Center for American Progress Action Fund,
October 23, 2013

Thank you for inviting me here today to discuss how to improve retirement savings in Maryland.

My name is David Madland and I'm the Director of the American Worker Project at the Center for American Progress Action Fund, an independent, nonpartisan, and progressive education and advocacy organization dedicated to improving the lives of Americans through ideas and action.

I appreciate the opportunity to present my views on this important topic, a topic about which I have been researching for some time. I have written extensively in academic and popular publications about retirement policy and am also the author of a proposal for a new private-sector retirement plan type called the Secure, Affordable, Flexible, and Efficient (SAFE) Retirement Plan.

In my testimony, I will discuss the many problems of our current private-sector retirement system but focus especially on how Maryland can help address these problems with proposals like the SAFE plan that combine elements of a traditional pension—including regular lifetime payments in retirement, professional management, and pooled investing—with elements of a 401(k), such as predictable costs for employers and portability for workers.

Social Security provides an essential baseline of income for retirees and must be strengthened to ensure that it continues to do so for generations to come, as the Center for American Progress has proposed.[1] However, Social Security was only intended to be one leg of a three legged approach to retirement savings. Employer-sponsored retirement plans and individual savings are supposed to be the two other legs.

Unfortunately, the private-sector workplace retirement system is broken. As the first generation to rely primarily on 401(k) plans begins to retire, we can see the cracks in the system.

Boston College's National Retirement Risk Index estimates that 53 percent of households are at risk of having an insecure retirement, meaning they will be unable to maintain their pre-retirement standard of living.[2]

Not surprisingly, the public is deeply concerned about their ability to retire. According to a 2013 report by the National Institute on Retirement Security, 85 percent of Americans are concerned

that current economic conditions are affecting their ability to achieve a secure retirement, with 55 percent saying they are very concerned.[3]

The current system is failing in a variety of ways including a lack of coverage, high costs, and high levels of risk for savers. I'll now turn to each of these issues and discuss how the SAFE Retirement Plan would address them.

Coverage

The first major problem Maryland should address is coverage. Our current workplace retirement system allows too many workers to fall through the cracks.

In the state of Maryland, almost half of workers either do not have or do not participate in an employer-sponsored retirement plan.[4] Workers without a retirement plan at work are unlikely to save enough for a comfortable retirement: among Marylanders aged 55 to 64, the median household without a retirement plan has only $30,000 in assets, nowhere near enough to maintain their standard of living in retirement.[5]

Some might respond that plans that allow workers to save on their own can solve this problem. Yet, only 16 percent of households made contributions to Individual Retirement Accounts in tax year 2011.[6]

All workers – regardless of whether their employer offers a plan – should be able to save for retirement through their paycheck in a regular and automatic fashion.

The SAFE plan would automatically enroll workers in a plan and allow workers to opt out if they chose. Previous studies have demonstrated automatic enrollment to be an effective tool for increasing employee participation, with research finding that between 85 and 90 percent of workers may stay in a plan if the default is to participate.[7]

The employer's role would merely be to deduct a certain percentage of each worker's pay and send that contribution to the retirement plan. Any potential costs to employers of simply facilitating such deductions should be quite low for the majority of businesses.[8] Employers that do not offer a workplace retirement plan should be required to facilitate these payroll deductions, otherwise retirement coverage will remain low. The goal is to ensure that all workers save for retirement, regardless of the characteristics of their employer.

Costs

The excessive cost of retirement savings is the second major problem that Maryland should address. High fees and common investment mistakes make saving for retirement far more costly for most workers than it should be.

The SAFE plan maximizes retirement savings through its low fee structure and professional fund management, which ensures a balanced portfolio and a patient investment strategy.

Professional money managers may have a hard time beating market averages,[9] but they do much better than individual investors by avoiding common investing mistakes – such as failing to diversify. [10] The SAFE plan would also have higher returns due to the collective pooling of assets. Individuals need to become more conservative with their investments as they age, but the continued entrance of younger workers into the investing pool of the SAFE plan allows the fund to maintain a balanced portfolio over a long period of time – increasing returns. The increased returns from this phenomenon, known as intergenerational risk sharing, can raise pension returns by approximately 0.53 percentage points a year according to one study.[11]

High fees in retirement plans can eat away total accumulations in workers' accounts. Typical fees for a 401(k) plan are around 1 percent and are commonly much higher in plans with only few participants.[12] These high fees can reduce employee savings by 30 percent.[13] Fees for Individual Retirement Accounts are typically even higher than in a 401(k).[14] In contrast, large investment pools can have much lower fees – often around 0.25 percent of assets managed.[15]

All of these factors combined means that achieving retirement security would be much cheaper for a participant in a collectively managed fund, like the SAFE Plan, compared to a participant in an IRA or 401(k). To ensure that participants can accumulate sufficient retirement savings, Maryland should ensure that workers can save in an efficient, low cost plan.

Risk

The final problem Maryland should seek to address is the excessive risk born by most IRA and 401(k) participants – such as the possibility participants will outlive their savings or suffer a significant drop in the value of their account just as they are about to retire.

Providing a steady stream of income in retirement that cannot be outlived would significantly boost retirement security. Savers in an individual plan often don't have access to such an annuity. Only one in five 401(k) plans offer an annuity.[16] Even if a saver purchases an annuity herself, the cost of purchasing one in the individual market is often quite high.[17] The SAFE plan is designed so that it provides lifetime payments at a low cost.

Similarly, savers in a 401(k) plan or IRA are unnecessarily exposed to the risk that a large market crash happens just as they are about to retire. The typical near retirement age worker saw their account balances drop by 17.4 percent on average between December 2007 and June 2009, the duration of the Great Recession.[18] For many savers this meant that they faced a lower standard of living in retirement or the need to continue working past their expected retirement age.

Plans like the SAFE plan can spread this kind of timing risk out so that no individual saver is on their own during a market downturn by withholding some of the upside during bull markets to smooth out returns in bear markets. By spreading out the risk of a market downturn and providing a secure stream of lifetime income, collective retirement plans help workers better cope with the risks of retirement.

Conclusion

Maryland has an opportunity to significantly improve retirement security for its residents by implementing a plan with automatic enrollment, low-costs, professional management, and collective savings. The opportunities for improvement are very significant.

Through automatic enrollment, Maryland could move from having only about half of workers covered by an employer-based retirement plan to having nearly all workers participating in a retirement plan.

The cost savings and risk reductions possible are equally dramatic, according to the detailed, actuarial modeling we have performed to compare the SAFE plan to the typical 401(k) or IRA. I submit in the appendix of my testimony the full report describing the analysis, but briefly the results are as follows:

- A worker with a SAFE plan would have to contribute only half as much of their paycheck as a worker saving in a typical 401(k) plan to have the same likelihood of maintaining their standard of living upon retirement.
- A worker with a SAFE plan is nearly 2.3 times as likely to maintain their standard of living in retirement as a worker with a typical 401(k) account making identical contributions.

In short, there are significant improvements to be made to the current retirement system and Maryland can help lead the way.

Endnotes and Appendix

[1] Christian E. Weller, "Building It Up, Not Tearing It Down: A Progressive Approach to Strengthening Social Security" (Washington, Center for American Progress, 2010).
[2] Alicia H. Munnell, Anthony Webb, and Francesca Golub-Sass, "The National Retirement Risk Index" (Chestnut Hill, MA: Center for Retirement Research at Boston College, 2012).
[3] Diane Oakley and Kelly Kenneally, "Pensions and Retirement Security 2013" (Washington: National Institute on Retirement Security, 2013).
[4] Joelle Saad-Lessler, Teresa Ghilarducci, and Lauren Schmitz, "Are Maryland Workers Ready for Retirement?" (New York: Schwartz Center for Economic Policy Analysis at the New School, 2013).
[5] Ibid.
[6] Investment Company Institute, "The Role of IRAs in Households' Saving for Retirement, 2012" *ICI Research Perspective* 18 (8) (2008): 1-35. Note this figure overstates IRA contributions, because it includes workplace IRAs. Note also that previous research has also found even lower contribution rates. For example, see Craig Copeland, "Ownership of Individual Retirement Accounts (IRAs) and 401(k)-Type Plans, 1996-2009" (Washington: Employee Benefit Research Institute, 2011) who found that only 5.4 percent of workers age 21 through 64 made contributions to traditional IRAs in 2009, despite 20.8 percent of workers in that age group owning such IRAs.
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Center for American Progress

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American Retirement Savings Could Be Much Better

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Contents

Introduction and summary

The personal retirement-savings plans that most Americans use, such as 401(k)s and Individual Retirement Accounts, or IRAs, are unnecessarily costly and needlessly risky. But instituting another kind of retirement plan that combines the best elements of both defined-contribution and defined-benefit plans—such as the Center for American Progress's proposed Secure, Accessible, Flexible, and Efficient, or SAFE, Retirement Plan,[1] or the related USA Retirement Funds proposal from Sen. Tom Harkin (D-IA)[2]—could provide a more secure retirement at a far lower cost, according to a new analysis by the Center for American Progress.

These two proposals, also known as collective defined-contribution plans, improve upon the 401(k) model in a number of ways. As described in greater detail in a fall 2012 report, titled "Making Saving for Retirement Easier, Cheaper, and More Secure,"[3] CAP's SAFE Retirement Plan combines elements of a traditional pension—including regular lifetime payments in retirement, professional management, and pooled investing—with elements of a 401(k), such as predictable costs for employers and portability for workers. (see text box)

Our actuarial analysis finds that CAP's SAFE Retirement Plan significantly outperforms both 401(k)s and IRAs on cost and risk measures. The results of our study are striking:

- **The SAFE Plan costs only half as much for workers.** A worker with a SAFE Plan would have to contribute only half as much of their paycheck as a worker saving in a typical 401(k) plan to have the same likelihood of maintaining their standard of living upon retirement.

- **The SAFE Plan reduces risk dramatically.** A worker with a SAFE Plan is nearly 2.3 times as likely to maintain their standard of living in retirement as a worker with a typical 401(k) account making identical contributions.

The makings of a SAFE Retirement Plan

Some of the plan's key features include the following:

- Plans would be organized as nonprofit organizations run by independent boards with significant participant representation. Their sole objective would be to maximize long-term benefits for all participants.
- Plans would be available to all workers regardless of whether their employer offered retirement benefits prior to the introduction of the plan.
- Investments would be professionally managed. SAFE Retirement Plan boards would be able to contract with professional investment-management providers.
- Benefits would be portable when workers change jobs and would be payable for life.
- Each worker would select a plan, and his or her employer would only need to facilitate enrollment and any required payroll deductions. If employers make contributions, employer costs would be fixed as a percentage of pay, and employers would not be faced with administrative or fiduciary obligations.
- The risks of the SAFE Retirement Plan would be spread among workers and retirees rather than borne solely by employers, as they are in a traditional pension plan, or individual workers, as they are in a 401(k).
- While payout levels in the SAFE Retirement Plan would not be guaranteed, the plan would be far less risky for workers and retirees than a 401(k), with a higher likelihood of achieving target benefit levels.
- The plan would also be much more efficient than a 401(k) in achieving required investment returns at a low cost.
- This hybrid model would not require employers to take on the risk of guaranteeing returns as they must with traditional pensions, nor would it impose any additional costs or risk on government.

The results of our study are relevant not only to federal policymakers, but also to state leaders considering new types of retirement plans for workers in their states.[4] The SAFE Retirement Plan improves retirement-saving outcomes through two primary paths:

1. Eliminating the glaring inefficiencies common in 401(k)s and IRAs, including their high fees and the behavioral mistakes that workers saving in individual accounts commonly make, such as failing to diversify investments.

2. Mitigating risk to individual participants. In the typical 401(k) and IRA, individuals are left to fend for themselves and are fully exposed to many risks during their working years and in retirement. In the SAFE Plan, risks are shared among workers and among retirees, providing a kind of insurance that reduces risks for all participants.

While some individuals have been able to save significant sums with 401(k)s and IRAs, the weaknesses of these plans have been apparent for some time. These problems are only being fully recognized now, however, as the first generation to primarily depend on defined-contribution plans such as the 401(k)—as opposed to traditional pensions—starts to retire. Less than half of all workers have a retirement plan at work,[5] and even the typical near-retirement worker with a 401(k) plan only has enough money in their retirement accounts to provide a monthly check of $575[6]—nowhere near enough money for a secure retirement. These retirees are still subject to great risks: The vast majority of retirees must hope that they don't outlive their small pool of money, and many retirees worry that inflation will erode their purchasing power.

Social Security, of course, provides an essential baseline of income for retirees and must be strengthened so it can continue to do so for generations to come, as the Center for American Progress has already proposed.[7] But Social Security was never intended to be people's only source of income in retirement. To maintain their standard of living, retired Americans also depend on workplace retirement plans such as 401(k)s, pensions, and, to a smaller degree, private savings.

The cost and risk advantages of the SAFE Retirement Plan are discussed at length below. We first describe the various challenges inherent in saving for retirement and explain why most 401(k)s and IRAs are not as well suited to handle these challenges as a SAFE Retirement Plan. We then describe in more detail how a SAFE Retirement Plan would operate. Finally, using two models based on historical and projected data, we demonstrate how a SAFE Plan performs under many different economic conditions and show that the typical worker would fare much better in a SAFE Plan than in even the best 401(k) plan.

The bottom line is that the current 401(k) system is so inefficient and risky that there are many ways to dramatically improve outcomes for participants that would lower both the costs and risks that workers and retirees face. The SAFE Retirement Plan incorporates a number of these improvements and offers a substantially better way to save for retirement.

The challenges of saving for retirement

Planning for retirement is a multidecade process that requires saving and investing throughout a worker's career and then withdrawing funds during a retirement period that can last many years. Risks include uneven investment returns, inflation, and an unknown life expectancy, while costs include fees paid to manage assets or purchase particular products.

Unfortunately, the typical 401(k) and IRA is not well designed enough to manage the costs and risks of retirement. A better retirement-plan design—such as the SAFE Retirement Plan—can significantly reduce these costs and risks.

When economists and policy experts talk about these issues, they typically describe them as specific kinds of risks and inefficiencies that can be minimized, hedged, or borne. But a more intuitive way to look at these problems is to see how a typical saver would respond to hypothetical questions about their retirement savings if they were a member of a SAFE Retirement Plan, compared to how they would answer if they were participating in a 401(k) plan or IRA. This section illustrates that a member of a SAFE Retirement Plan would be much more comfortable with their answers to the following questions.

How much should I save? And when should I start?

The current 401(k) system leaves decisions about contributions—how much and starting when—to the individual saver. Workers are given the opportunity to contribute as much or as little to their 401(k) plans without much guidance as to the appropriate level. Furthermore, workers have to decide on their own when to start saving, which can lead to procrastination and a higher risk of not saving enough for retirement.

Aspects of the SAFE Retirement Plan can help alleviate these problems. First, all employees would have a set portion of their paycheck automatically deducted and contributed to the SAFE Retirement Plan they have chosen. Employees would, however, have the opportunity to voluntarily stop contributions by opting out of the payments, although when any worker begins a new job, he or she would by default be re-enrolled. Such auto-enrollment policies have been found to be very successful in spurring saving for retirement.[8] One careful study of Danish savers found that approximately 85 percent of savers are "passive," and their retirement savings won't increase in response to tax subsidies but will increase when automatic contributions are set for them.[9]

Second, the contribution level could also be increased over time using a policy known as auto-escalation. If a worker starts out contributing 3 percent of his or her pay, for example, the policy would increase his or her contributions over time as the worker's salary increases. Previous research has found this method to be an effective way to increase savings rates. A study by economists Richard H. Thaler and Shlomo Benartzi found that savings rates of workers who joined such an auto-escalation plan increased their level of savings from 3.5 percent to 13.6 percent over 40 months—a growth rate that many plans would envy.[10] While auto-enrollment and auto-escalation are becoming more common, as of 2011 only 56 percent of employers who offer a 401(k) plan use auto-enrollment and 51 percent use auto-escalation.[11]

What if I change jobs?

Because our current 401(k) system is employer based, workers face the problem of having their savings interrupted when they switch jobs. A worker contributing to a 401(k) plan at one job has to start contributing to a new plan if one is offered when he or she begins a new job. The worker then has to choose what to do with the funds remaining in the old 401(k) account—a process that can be complicated and results in many workers losing significant portions of their savings as they either delay moving their money into a new investment fund or cash out their savings early.[12] These problems are a significant source of 401(k) "leakage" and undermine workers' ability to accumulate sufficient savings for their retirement.

Indeed, it is estimated that about 4 in 10 workers choose to cash out some portion of their 401(k) balance when they change jobs rather than go through the complex process of rolling over their funds into new accounts.[13] These cash outs represent permanent losses to the retirement system and may be very difficult for workers to recoup later in life. Workers who cash out their 401(k) plans and delay contributing to their new plan for five years may see a 10 percentage-point decrease in their likelihood of replacing most of their income in retirement, according to a study by the Defined Contribution Institutional Investment Association.[14]

Savers in a SAFE Retirement Plan would avoid these pitfalls since the system is not employer based. A worker's contributions will flow to the fund of his or her choice regardless of where he or she works. If a worker leaves his or her current job and starts a new one, retirement contributions flow to the same fund and the only change is that there is a different employer facilitating the flow of money.

What is the right investment strategy?

Savers' greatest concern is that they won't have enough money at retirement. Part of this calculation has to do with how much either the employer or the saver contributes to the retirement fund. However, the returns earned on those contributions are a critical determinant. Economists refer to this as "investment risk," or the risk that investments won't have earned enough in the years leading up to retirement.[15] SAFE Retirement Plans would have lower investment risks and higher rates of investment return than traditional 401(k) plans.

One of the main ways that a SAFE Retirement Plan would help workers save more efficiently is by minimizing the costs of investing. Most 401(k) plans have relatively high costs, which make saving for retirement a much more expensive exercise than it should be. The average 401(k) plan has fees that are approximately 1 percent of assets managed,[16] while large pooled retirement-investment funds such as corporate and public-sector pensions have fees that are significantly lower.[17] One study by researchers at the Center for Retirement Research at Boston College found that public-sector pensions had an average management fee of 0.25 percent of assets managed, compared to average costs of more than 1 percent for 401(k) plans with actively traded funds.[18]

A major reason fees are so high in most 401(k)s is because the high fixed costs of managing a fund are generally borne by a small number of savers. Research attests to this fact and has found that plan size is a significant determinant of a plan's fees as a percentage of assets.[19] Costs are also high because savers in 401(k) plans often invest in actively managed mutual funds, which have much higher fees than more passive investments such as index funds.[20] All told, studies indicate that high fees in 401(k)s can eat away as much as one-quarter to one-third of returns on retirement assets.[21] Unfortunately, fees for Individual Retirement Accounts are even higher than 401(k) plans.[22]

SAFE Retirement Plans would have comparatively low fees because the large size of the fund would spread out the fixed costs of investing and administering the plan. Participants' accounts would be pooled together to hire investment managers, who would then work to further keep costs down by pursuing lower-cost investment strategies that invest heavily in index funds.

In addition to low fees, savers will also benefit from the SAFE Plan's professional money management. 401(k) plans require that the individual saver manage his or her investments. The average investor has his or her own job and most likely is not a finance expert familiar with investment strategies. In fact, individual investors frequently fall prey to a variety of pitfalls that reduce investment returns.

One common investment mistake made by individuals is the failure to properly allocate assets. Over the course of a lifetime, an investor should transition his or her allocation from mostly equities early in life to mostly bonds later in life, as he or she moves from a riskier portfolio to a more conservative one. Many individual investors, however, fail to do this. According to data from TIAA-CREF, many investors simply invest half their money in bonds and half their funds in equities, and this tendency is not restricted to low-information investors.[23] Indeed, even Nobel Prize-winning economist Harry Markowitz has admitted that he did not invest based on modern portfolio theory—the theory that helped him win the Nobel Prize—but rather split his contributions 50-50 between bonds and equities.[24] Markowitz has acknowledged that his investment strategy wasn't optimal, noting that "In retrospect, it would have been better to have been more in stocks when I was younger."[25]

Other common misallocations include investing either entirely in equities or bonds or overinvesting in local companies and funds, the latter being a trend economists refer to as "home bias." For example, data from the Vanguard Group show that nearly 20 percent of savers in their plans had 100 percent of their assets in either all equities or all bonds.[26] These kinds of mistakes can leave investors vulnerable to market fluctuations due to their lack of asset diversification.[27]

Savers also often make the mistake of taking out funds in response to market declines and thus missing out on higher returns when the market rebounds, as it tends to do over the long term. One study by researchers Thomas Bridges and Frank P. Stafford at the University of Michigan found that individuals made significant withdrawals from their retirement accounts after the dot-com stock-market bubble popped in 2001 and after the financial crisis of 2008.[28] If individuals do not pull their money out of the market entirely, they often shift their investments to less-risky bonds, taking the full hit of the market decline but missing out on the future recovery. Many investors will then only put their money back in stocks when the market is strong, perpetuating a perverse investment cycle that significantly undermines individuals' ability to grow their nest egg over time.[29]

For these reasons and many others, professional money managers—who are more patient with their investments, avoid many common investment biases and are able to diversify fund investments among a multitude of asset classes that include some not available to individual investors—have higher average returns than individual investors.[30] While such money managers rarely beat market averages,[31] their goal in managing SAFE Retirement Plan investments would be to meet the average returns of the various markets they invest in, something that individual investors fail to do but professional managers commonly achieve. In short, professional money managers would ensure that SAFE Retirement Plan investments are properly diversified and invested for the long term, allowing them to achieve higher returns than workers in a typical 401(k). Based on previous research, this could amount to an annual average increase in returns of approximately 1 percentage point.[32]

The final reason why SAFE Retirement Plans would better enable the average saver to reach their investment goals when compared to savers with traditional 401(k)s is that the accounts of both older and younger workers are pooled together, enabling fund managers to maintain a balanced portfolio that achieves smoother and potentially higher returns over time. This is because individuals with a 401(k) cannot always maintain an ideal asset mix since they must become more conservative with their investments as they age because they have less time

to recover from any possible losses, which can result in lower returns. This benefit of the SAFE Plan, called intergenerational risk sharing, ensures that workers' savings are optimally invested at all times, providing returns that are both more stable over time and—according to research by economist Christian Gollier of the Toulouse School of Economics—potentially up to 0.53 percentage points higher than those achieved in the average defined-contribution plan.[33]

What about the risk of losses?

Another major concern for savers in defined-contribution plans is that they may save enough for retirement, only to see their investments suddenly drop in value as a recession hits the economy just as they are about to retire. In a traditional 401(k) plan, the saver takes on the entirety of this timing risk. If the worker is about to retire when the market crashes, he or she must drastically increase his or her contributions or continue to work past his or her expected retirement date to make up for the difference and avoid having a lower-than-planned standard of living.

A SAFE Retirement Plan would reduce the risk of market losses by smoothing out the investment returns from years when returns are particularly high or low. This would be done by creating what is known as a "collar," which would function as follows: In most years, participant accounts would be credited with market returns, but in particularly good or bad years, the full market return would not immediately be credited. Rather, years of higher returns would be saved away and returned over time in weaker-performing years. The idea of using a collar to smooth returns in pension funds originated in a paper co-authored by Harvard economist Martin Feldstein.[34] Through the use of collars, the SAFE Retirement Plan can spread out risk among generations, helping to ensure that no individual is fully exposed to extreme market losses.[35]

Take the real-world example of the time span between December 2007 and June 2009, the duration of the Great Recession. Workers who were near retirement—ages 55 to 64—and who had been investing in a 401(k) for 20 to 29 years saw their account balances decrease an average of 17.4 percent.[36] By early 2013 the stock market had recovered all of the losses suffered during the Great Recession, but in order for a person's 401(k) to benefit fully from this recovery, the person needed to be invested in the market during this period and not taking any withdrawals to fund his or her retirement. Few retirement-age individuals on their own have assets to tide them over until the market recovers, but plans such as the SAFE

Plan do have the time and the financial strategy to provide more stable investment returns. Indeed, estimates from 2012 suggested that the benefits provided by collective defined-contribution plans in the Netherlands—which are similar to the SAFE Plan—may only need to be reduced by approximately 2 percent to 3 percent on average because of investment losses suffered during the Great Recession, representing far less of a hit than that felt by individuals with 401(k)s.[37]

A more detailed explanation of the how the SAFE Retirement Plan's collar would function and an example of exactly how it would have protected individuals' account balances from market fluctuations over the past 25 years can be found in the appendix.

Will I outlive my savings?

No matter how much workers save, there is still a chance they can outlive their assets. The risk that a worker might outlive their savings is known as longevity risk.

This risk can be hedged by purchasing an annuity. The saver buys an annuity that guarantees a certain amount of payments over the years depending upon the amount of savings in their individual account. But only one in five 401(k) plans offers an annuity option.[38] For those without the ability to do so in a 401(k), purchasing an annuity in the individual market is more expensive than in the group market, as all of the fees for managing the annuity are borne by the individual.[39]

Many workers with a 401(k) attempt to manage longevity risk by only withdrawing a small amount of their assets each year, but this process doesn't always work. Indeed, research on the topic has found withdrawal methods such as these, including the "4 percent rule"—where a retiree annually spends down 4 percent of his initial wealth—to be very inefficient.[40] It is virtually impossible to support a constant spending plan when market returns on the underlying investments can vary significantly from year to year. As a result, savers may end up significantly over-withdrawing from their retirement accounts and prematurely burning through their savings if their actual investment returns fall below the assumptions they used when initially calculating the size of their fixed annual withdrawal. Further, such withdrawal methods can also be inefficient because savers who wish to be certain they will never run out of money but don't know how long their retirement will last must always keep extra money in savings and never completely draw down their accounts.

Even if a worker purchases an annuity, he or she still faces several risks. One risk is that interest rates will be very low when the worker is ready to retire and to purchase an annuity. Since the price of an annuity goes up when interest rates go down, the cost of purchasing an annuity would be elevated in a period of low interest rates. When interest rates are low, more money is required to generate the same amount of payouts in retirement.[41]

A SAFE Retirement Plan would minimize these risks by providing an annuitized stream of payments that increases in value over time and cannot be outlived. The SAFE Retirement Plan does this by providing payments out of an annuity fund for retirees that is conservatively invested—primarily in bonds with some stocks to enable payments to keep up with inflation over time—and by spreading out the impact of years of very high and very low returns in a similar manner as is done during the accumulation phase.

How do I deal with inflation?

Once a worker retires, he or she faces the risk that steady price increases will erode the value of his or her savings. Under the current 401(k) system, the individual is not protected against the risk of inflation eroding his or her buying power. Even if a worker purchases an annuity, the stream of payments is most likely not hedged against inflation.

The SAFE Retirement Plan would deal with the problem of inflation by providing cost-of-living adjustments to retirees receiving payments from the annuity fund. These payments would help protect against the risk of inflation. The retirees would also receive bonus checks from the annuity fund when the returns are particularly good and the fund is deemed to be sufficiently healthy.

The overall benefits of the SAFE Retirement Plan

As a number of studies have found, plans such as the SAFE Retirement Plan are more efficient and less risky than defined-contribution, or DC, plans such as 401(k)s. Plans that combine elements of defined-benefit pensions with defined-contribution plans are often called collective defined-contribution, or CDC, plans, and though their exact features may differ slightly, researchers have found that this basic model is very effective. A study commissioned by the Organisation for Economic Co-operation and Development found that one such stylized CDC plan significantly reduced the chances that a worker didn't have enough funds to maintain his or her standard of living in retirement compared to an individual in a defined-contribution plan such as a 401(k).[42] Similarly, a study by the British government found that a CDC plan would impose less risk on an individual than a 401(k)-style plan by making the worker "less dependent on whether the individual happens to retire in a downturn or in a boom."[43]

Academics have come to similar and more specific conclusions. Dutch researchers Eduard H.M. Ponds and Bart van Riel estimate that overall investment returns in CDC funds will average about 2 percentage points higher than in a DC plan.[44] They also find that individual DC plans have a "high downside risk," meaning that individuals in a DC plan are much more likely to have a lower standard of living in retirement than are savers in a CDC plan.

In perhaps the most comprehensive study of the collective defined-contribution concept, Judith Verheijden, a Dutch retirement researcher, estimated contribution levels necessary to provide a high level of certainty of having adequate income in retirement under several different kinds of retirement plans. Drawing on previous analyses of defined-contribution plans' comparability to defined-benefit plans, she found that in order to have an equally secure retirement, a worker would need to contribute between 70 percent and 74 percent more in a 401(k)-style plan than they would in a collective defined-contribution plan.[45] For example, a worker would have to contribute 17 percent of their pay to an individual DC plan to get the same security as contributing 10 percent of their pay to a CDC fund.

While these studies describe many of the general advantages of the CDC model over the individual defined-contribution system, they do not directly compare a CDC-style system to the current DC system in the United States. For example, the Verheijden study models a best-case individual DC plan type. Unfortunately, the reality of our current system is far from that ideal due to high fees, lack of coverage, and preretirement leakage of savings. Further, the studies are generally based on retirement plans from other countries that are analogous but not identical to the types of plans in the United States. Most importantly, these studies do not model our specific proposal for a SAFE Retirement Plan.

With that in mind, the next section of this paper lays out the specifics of our proposal for a SAFE Retirement Plan and then uses economic modeling to show the cost and risk reductions available from the new retirement plan. This modeling enables us to answer questions such as: What level of contribution is required in a SAFE Retirement Plan compared to a 401(k) to get to an adequate level of retirement income with a reasonably high probability? And how do the downside risks compare?

The mechanics of the SAFE Retirement Plan

Above we offered a general description of the cost and risk advantages of a SAFE Retirement Plan model. Now we will describe specific elements of the plan and modeling choices so that we can provide a detailed analysis of the plan's performance and then compare it to other plans. The specific design parameters we use for the SAFE Plan have been tested, and we have confirmed that they can provide a sustainable platform for efficient retirement saving. Other design parameters within the same framework would also be workable, however, so the reader should consider our SAFE Plan design as one example within a group of viable options.

In outlining the specific features of the SAFE Retirement Plan, it is worth emphasizing that the plan reduces the costs of saving for retirement and lowers the risks, but it does not eliminate either entirely. This is because retirement planning involves some inherent tradeoffs between costs and risks. To understand why this is so, consider one way to reduce retirement risks: by investing solely in government-backed Treasury bonds that will pay out guaranteed interest for a number of years. The problem is that this practice is prohibitively expensive for most people—saving for retirement in this manner would require the typical worker to save an estimated 23 percent of his or her salary every year for 37 years.[46]

Reducing costs to more manageable levels requires taking some risks such as investing a portion of one's savings in the stock market. Over long periods of time, this should produce higher returns than Treasury bonds, though such investments can also fail to produce expected returns and can even lose value. Managing other risks—such as inflation risk—involves similar tradeoffs.

As a result, the SAFE Retirement Plan necessarily takes some risks but seeks to keep both cost and risk to manageable levels.

The accumulation phase

In our model, 65 percent of funds in the main accumulation fund would be invested in stocks, and 35 percent would be invested in bonds. Of course, SAFE Retirement Plans could be less or more aggressive in their investing by allocating less or more to equities. In our modeling, however, this allocation provided stable and manageable results and provided a reasonable tradeoff between cost and risk.

While the funds would be collectively managed, each member of the fund would have a "notional account." The member wouldn't have any control over the contents of the fund, as is the case in a 401(k). The account would exist solely to keep track of each member's savings contributions and investment credits, which are simply the rate of return credited to each member of the plan that year. As mentioned above, the fund would use a financial instrument called a collar to distribute investment returns through a base investment credit each year. In addition, bonus investment credits will often be added to the base credit if the plan has accumulated surplus assets, which is expected.

In our SAFE Retirement Plan model, the collar we used has a floor of a zero percent rate of return and a ceiling of an 8 percent rate of return.[47] If the market rate of return is between zero percent and 8 percent, members of the fund are credited with that rate of return. If the market rate of return is below zero percent, however, the fund still credits each account with a zero percent return and uses accumulated funds from a notional "reserve" fund to cover any losses. If the rate of return is larger than 8 percent, the fund only credits the accounts with an 8 percent investment credit, and the excess returns are used to replenish the reserve fund.

Members of the fund may receive investment credits in excess of those distributed by the collar depending upon the health of the overall fund. The fund's health would be evaluated using the current-value ratio—the value of all the assets in the fund divided by the total value of all member retirement accounts. When the fund does well and has accumulated sufficient assets in its reserve fund, each account would receive bonus investment credits. The exact schedule that we used to distribute bonus credits in our model plan is provided in the appendix.

For example, if the current-value ratio is at least 130 percent, each member of the fund would receive an extra 3 percent investment credit. So in a year with a 6 percent market rate of return, a fund with a current-value ratio of at least 130 percent would give investment credits of 9 percent to all its members. In our model, bonus credits would be dispensed about two-thirds of the time, and the average bonus credit, when payable, is 4 percent.

On the other hand, if the fund is severely underfunded, it can reduce members' account balances, although this happens only rarely in our modeling. More information on such potential reductions is available in the appendix.

Note that it takes a number of years for a new SAFE fund to build up the reserve cushion, so "bonus" payouts in the early years are likely to be lower than after the fund reaches a "mature" state. All of our results reflect expectations for a fully mature fund.

For our baseline modeling, we assume members of the fund would contribute 12 percent of their pay into the collective fund. The 12 percent of pay could be split between an individual employee and an employer. For example, an employee might contribute 9 percent of his or her pay, and his or her employer would pick up the other 3 percent. The 12 percent figure was chosen as an approximation of the standard recommendation of industry professionals, who generally place the required figure at between 10 percent and 15 percent of income, with some placing the minimum recommended contribution at exactly 12 percent.[48] We also provide results for larger and smaller contribution levels, but use 12 percent of pay as a baseline. No auto-escalation feature was included in this model, but its incorporation may merit consideration going forward.

The payout phase

When a member reaches retirement, funds equal to their accumulated account balance would be transferred to a separate annuity fund, which would pay out annuities to members in retirement. Our model annuity fund would invest 35 percent of its funds in equities and 65 percent in bonds, a more conservative asset mix than the accumulation fund.

The fund would seek to provide a 2 percent annual cost-of-living adjustment in its lifetime payments to participants. This fixed adjustment simplifies the annuity pricing at retirement and is designed to cover most of the prospective inflation risk, even before recognition of the bonus checks described below. As with the accumulation fund, the payouts from the annuity fund could change with the health of the fund. If the funded ratio of the annuity fund fell below 90 percent for two out of three years, the cost-of-living adjustment would be suspended. The adjustment wouldn't return until the annuity fund had a funded ratio of at least 100 percent for two out of three years. In our modeling, suspension of cost-of-living adjustments in any year occurred with a probability of about 14 percent.

On the upside, bonus checks above the regular benefit can be distributed. In our modeling runs, bonus payments are made whenever the funded ratio for the annuity fund exceeds 110 percent. Under this rule, bonus payments are made in about 67 percent of years and, when they are paid out, average about 27 percent of the regular benefit. Over the typical payout period, the fixed 2 percent cost-of-living adjustment, plus the bonus checks paid, will most often exceed what a full inflation cost-of-living adjustment would have provided. The exact schedule we used to determine when the annuity fund would make bonus payouts can be found in the appendix of this report.

To price annuities, we use a nominal interest rate of 5 percent. (Note that our overall model allows interest rates to vary; we make the fixed 5 percent assumption for pricing because it works well and is sustainable, even when market yields from our stochastic model are quite volatile). For example, at this rate a retiree with an account balance of $200,000 at age 67 would receive an initial monthly benefit of $1,160, with scheduled increases of 2 percent each year after retirement. The average bonus check for this retiree would total approximately $290 initially, but would also increase as the regular benefit grows with the cost-of-living adjustment. If the bonus checks become increasingly regular, the board of the fund may permanently increase annuity payments.

Evaluating the SAFE Retirement Plan

We test the plan's performance using two different methods. The fact that both methods produce similar results gives us great confidence in our findings. Additional details on the methods are available in the appendix.

One method is based on historical returns. Here, we simply run our models based on the past 87 years of stock and bond market returns, interest rates, and wage growth.

The other process we use to evaluate the plan is known as stochastic modeling. The word "stochastic," simply put, means random. In a stochastic model, inputs such as the rates of return on stocks and bonds and factors such as inflation are allowed to vary randomly based on the guidelines chosen. The model then runs the event studied many times with different input values. For our study, the model simulates a saver earning the U.S. median income and making contributions from age 30 to age 67—the retirement age to receive full Social Security benefits—and then runs that simulation 1,000 times. The result is a distribution of outcomes.

Using both of these methods, we compare three different retirement-plan types: our SAFE Retirement Plan, a "perfect-world" 401(k) plan, and a typical "real-world" 401(k) plan.

The "perfect-world" 401(k) has very low fees of 0.25 percent of assets—the same level of fees as the SAFE Retirement Plan. All funds are invested in low-cost target-date funds that shift from stocks when a saver is young to less-risky bonds when he or she is older. At retirement, an annuity is purchased at the low-cost group rate. We also assume universal coverage and no leakage from preretirement withdrawals. We include this "perfect" model to show that a SAFE Retirement Plan would still be an improvement over the best possible 401(k) situation.[49]

The "real-world" 401(k) has fees of 1 percent of assets, which is more representative of current practice.[50] We continue to assume that all funds are invested in target-date funds—although this is a very generous assumption since many current 401(k) participants use much less disciplined investment practices. At retirement, we assume the retiree uses the 4 percent rule to develop their regular withdrawals since annuity purchases are extremely rare.[51] We also continue to assume universal coverage and no leakage from preretirement withdrawals, which is again a very generous interpretation of actual outcomes in today's 401(k) environment.

The results we show for the "real-world" 401(k) plan are therefore representative of those workers who have had the opportunity to participate in a typical 401(k) plan and who have made all the correct choices: get into the plan early and make continuous contributions, use a disciplined target-date fund for investments, and keep all the funds in the plan with no early cash outs or loans. Of course, many workers do not even have a plan,[52] and many of those who do have a plan will not make all the correct choices.[53] Consequently, any survey of results across the full spectrum of workers would produce results that are much worse than what we show here for the typical "real-world" 401(k) plan.

Modeling assumptions

Features	Real-world 401(k)	Perfect 401(k)	SAFE Retirement Plan
Fees	1 percent of assets managed[54]	0.25 percent of assets managed	0.25 percent of assets managed
Annuities	Assumes retiree uses the "4 percent rule"[55] to "self-annuitize"	Group annuity payout purchased	Lifetime payout from annuity fund
Investment decisions	Target-date fund	Low cost, target-date fund	Low cost, professional management
Risk borne by	Individual savers	Individual savers	Pooled among plan participants

We use one main metric to measure the outcomes of the retirement plans: the replacement rate. This metric tells us what percent of a saver's income at the time of retirement will be replaced by their retirement savings, taking into account any cost-of-living adjustments made to annual payouts from all three plans.[56] A replacement rate of 100 percent is unnecessary because a retiree does not need to cover many of the expenses of those still in the workforce. For example, a retiree doesn't need to contribute to their retirement plan or to Social Security. In addition, Social Security benefits aren't fully taxable. While there are no hard and fast rules, most retirement planners argue that a replacement rate of around 70 percent to 80 percent is a good target to preserve a preretirement standard of living.[57] In our results, we highlight the 70 percent replacement-rate target, providing a minimum that retirees need to hit in order to maintain their standard of living.

In all of our results, we assume that the retiree replaces approximately 36 percent of their preretirement income with Social Security benefits, which is the median salary replacement expected at age 67 for someone now age 30.[58] This means that in order to provide a 70 percent income-replacement rate—and thus maintain their preretirement standard of living—the typical retiree needs to replace about 34 percent of income from another source of savings. Workers whose earnings are above the median will need to replace a greater share of income, as Social Security will replace a smaller percentage of their preretirement earnings, while workers whose earnings are below the median will need to replace a smaller share of income since Social Security provides a greater replacement rate for them.

In short, a replacement rate of 34 percent or better from a SAFE Retirement Plan or 401(k) is necessary for a typical worker to maintain their preretirement standard of living throughout retirement.

How a SAFE Retirement Plan would work for the average worker

The mechanics of a SAFE Retirement Plan are best understood by looking at how a typical worker—we'll call him Joe Average—might experience saving for retirement as a member of the plan.

Joe is handed a form on the first day of his very first job. The form explains that his employer will be deducting a set percentage of his wages to deposit into a SAFE Retirement Plan of his choosing. In addition, the employer will be contributing a few extra percentage points of his pay as part of their plan to attract qualified workers. Joe isn't particularly interested in thinking about retirement but decides to accept the default and participate because he knows he should be saving.

Over the years Joe changes jobs several times but continues contributing to the fund along with his new employers. Each year his account receives an investment credit based on the returns of the fund. When the fund has a negative return one year due to a recession, Joe's account balance remains unchanged. He receives a zero percent credit because this is the minimum credit under a smoothing process the fund calls a collar. A few years later the fund returns 12 percent, but Joe only receives an 8 percent investment credit due to the ceiling rate of the collar. He understands that the remaining 4 percent investment return stays in the fund to function as a "rainy-day" cushion to help provide the downside protection needed if markets tank again at some point in the future.

After several years Joe is pleased to find that the fund is providing bonus credits because investment returns have been strong for a while and the overall cushion in the fund has grown in size. In a year where the fund's return is 6 percent, he receives a total investment credit of 9 percent—6 percent from market returns plus a bonus credit of another 3 percent.

All of these specifics are explained to Joe every quarter when he receives a report from the board of directors and the fund manager. The individualized statement shows Joe how much he has already earned in the fund, as well as all the costs of operating the fund. The statement also shows projected retirement income amounts at age 67 based on certain assumptions about future contribution rates and fund investment returns. Joe likes that the projected retirement figures are highlighted because they help make his planning easy. Occasionally he is required to vote for the members of the board who oversee the fund. Despite the fact that he changes jobs several times, he is still a member of the same fund.

When Joe reaches retirement age, he knows how much he'll receive from the fund in the form of a monthly check to supplement his Social Security check and any of his other savings. In retirement he'll continue to vote on board members to ensure that the fund is managed properly. Joe also understands that after retirement his savings are invested more conservatively in the annuity fund than while he was working. This allows the fund to provide for lifetime retirement payments, so he doesn't have to worry about outliving his savings. In most years Joe's check increases by an automatic 2 percent cost-of-living adjustment to help keep up with inflation, and he also often receives additional bonus payments when the annuity fund has had favorable investment returns.

The results

Any way that we slice our results, the SAFE Retirement Plan outperforms a realistic 401(k) and even a perfect-world 401(k) on measures of both cost and risk. This holds true for stochastic modeling as well as modeling using historical returns—evidence that the results are quite reliable. Because IRAs usually have even higher fees than the typical 401(k), the SAFE Retirement Plan outperforms an IRA to an even greater degree than it does the typical 401(k), though we don't show these results here.

Historical model results

Let's first look at the modeling based on historical experience.

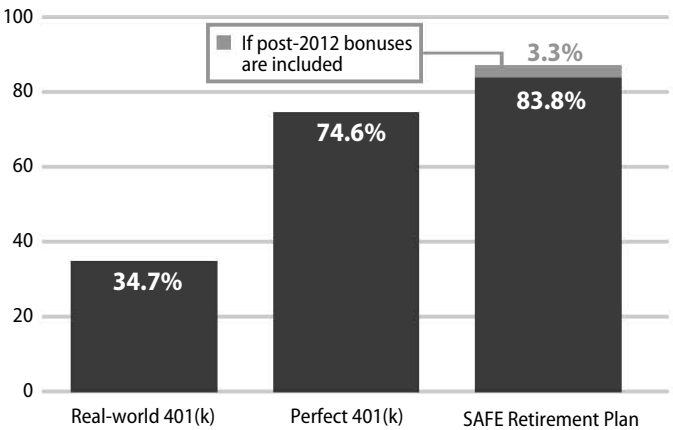
In this model, as in the stochastic modeling, we assume that a worker earns the median salary, contributes 12 percent of income into a retirement plan for 37 years, retires at age 67, and that Social Security replaces 36 percent of preretirement income. We provide results only for workers that retired after 1966 because this is the first cohort that contributed to their retirement funds for their entire careers and for whom complete historical market data is available.

The first metric that can be used to compare the three plans is the average replacement rate provided to all workers who retired between 1966 and 2012. On this measure the SAFE Plan proves clearly superior, replacing an average of 87.1 percent of workers' preretirement earnings if bonuses projected to be awarded to retirees in the years after 2012 are taken into account. Even in a worst-case scenario in which no bonuses were awarded after 2012, retirees would still receive an average of 83.8 percent of their preretirement income.[59] This compares to average replacement rates of 74.6 percent and 34.7 percent provided by the perfect 401(k)

FIGURE 1

SAFE Retirement Plan would have provided a higher average standard of living to retirees

Average replacement rate for all cohorts retiring between 1966 and 2012



Source: Figures produced by historical model. Authors' analysis based on contributions of 12 percent of pay and other assumptions as described in report.

and real-world 401(k), respectively. These differences are substantial, as a worker who retired with the SAFE Plan would have been able to maintain at least 12 percent more of their preretirement income than those with a perfect 401(k) and at least 141 percent more than those with an average 401(k).

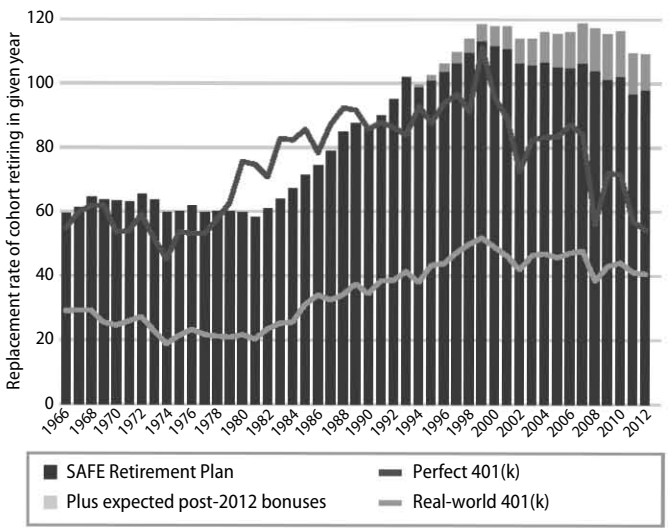
While all of the plans were able to achieve replacement-rate averages above the 34 percent target needed to reach the total basic target rate of 70 percent including Social Security, the variation experienced by individual cohorts retiring in particular years should also be taken into account. Indeed, while the replacement rates of retirees using the SAFE Plan or a perfect 401(k) never dipped below the 34 percent threshold in any year, savers with a real-world 401(k) would have failed to meet the target in 21 of the 47 years considered. In other words, compared to workers with typical 401(k)s, those utilizing a SAFE Plan would have been nearly twice as likely to be able to maintain their standard of living in retirement.

Furthermore, when considering the best and worst single-year performances of each plan, the SAFE Plan again outperforms both 401(k)s as shown in the following chart.[60] The SAFE Plan's worst single-year replacement rate was significantly higher than the worst rates of both the perfect and real-world 401(k)s. On the upper end of the spectrum, the highest single-year replacement rates offered by the SAFE Plan were also greater than the best rates offered by either 401(k).

It should be noted that the perfect 401(k) did provide higher replacement rates to some cohorts retiring in the 1980s. This was, however, largely due to the plan's ability to purchase annuities at extremely favorable interest rates during this period, and in many ways these results further demonstrate just how dependent even the best 401(k)s are on volatile economic factors. Indeed, the perfect 401(k)s' performance after 1990, when conditions were not as favorable, illustrates what can happen to workers' retirement security when all such factors are not perfectly aligned. In this time period—and indeed most time periods—the SAFE Plan significantly outperformed the perfect 401(k). Additionally, it must be remembered that the perfect 401(k) is in no way representative of the

FIGURE 2

SAFE Retirement Plan would have routinely outperformed 401(k)s



Source: Figures produced by historical model. Authors' analysis based on contributions of 12 percent of pay and other assumptions as described in report.

average worker's retirement plan, which is more accurately portrayed by the much less impressive performance of the real-world 401(k).

Taken together, all of these facts mean that not only would the average standard of living provided by the SAFE Retirement Plan have been significantly greater, but retirees' worst-case and best-case outcomes would have been superior as well. This is because of the way the SAFE Plan protects workers from the volatility of the market by providing smooth returns—reserving excess returns during good times and using them to subsidize the payouts to workers unlucky enough to retire during market downturns.

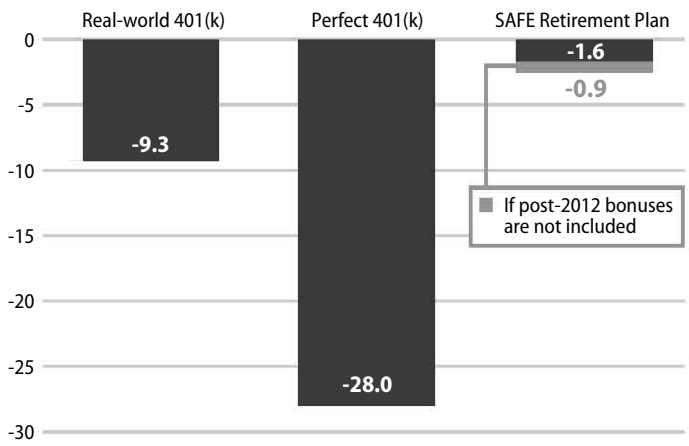
Perhaps nothing more clearly illustrates the importance of this smoothing mechanism than looking at how the three plans would have fared during the Great Recession. Compared to workers retiring in 2007, those retiring in 2008 with a real-world 401(k) or a perfect-world 401(k) would have seen their replacement rates plunge by 9.3 percentage points and 28 percentage points, respectively. What these declines actually mean, however, is that these workers would receive annual payments from their retirement plans that would be nearly 20 percent lower than those received by workers who retired only a year before if both groups had a typical 401(k) and more than 33 percent lower if both groups had a perfect-world 401(k). Note that while the drop-off in the perfect-world 401(k) results were worse than the real-world 401(k)s in percentage terms, the perfect 401(k) was starting from a much higher point and ended at a higher point than the real-world 401(k).

Workers retiring with a SAFE Plan, however, would have seen their replacement rates fall by only 2.5 percentage points if they were assumed to receive no bonuses after 2012 and only 1.6 percentage points if they did receive forecast bonuses. This means that in the worst-case scenario, these workers' annual checks would be only 2.4 percent smaller than those received by workers who retired the year before, and in the best case they would be only 1.4 percent smaller. Given the magnitude of the economic crisis experienced during this period, the ability of the SAFE Plan to cushion the blow felt by workers to this extent is exceptional.

FIGURE 3

SAFE Retirement Plan would have protected workers retiring during the Great Recession

Percentage-point change in replacement rates for retiring workers between 2007 and 2008



Source: Figures produced by historical model. Authors' analysis based on contributions of 12 percent of pay and other assumptions as described in report.

Stochastic model results

The stochastic modeling yields similar results, with the SAFE Retirement Plan generally outperforming both types of 401(k)s. Note that these strong results occur even though our stochastic modeling assumptions are somewhat conservative relative to historical experience, reflecting consensus estimates for future market performance. These conservative assumptions provide a tough test for the sustainability of a pooled investment fund—a test that our model SAFE Plan passes. They also lead to overall replacement rates that are lower than those produced by the historical modeling, but even under these conditions, participants in the SAFE Plan were still generally able to maintain preretirement standards of living.

Annual contributions of 12 percent of salary over 37 years give a worker in a SAFE Plan an 83.5 percent chance of maintaining his or her standard of living in retirement. In contrast, to get that same probability, a worker in a perfect 401(k) would have to contribute 14 percent of his or her salary. This number would jump to more than 24 percent of pay for a worker in a typical 401(k) plan—double the cost for the SAFE Plan.

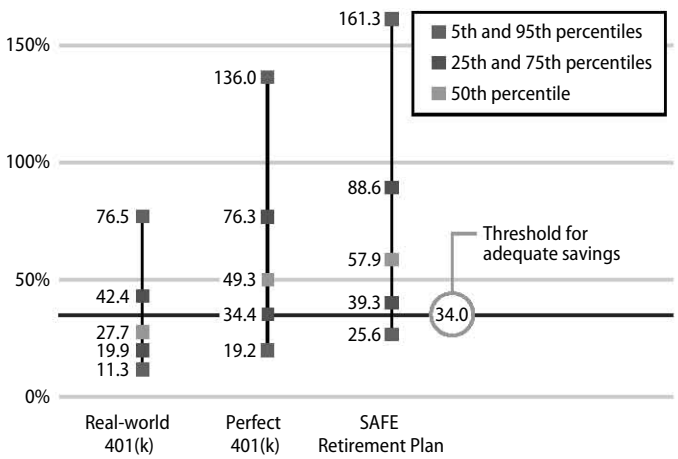
To put these cost differences in perspective, for a 30-year-old making $30,000 a year, an extra 12 percent of salary is $3,600 a year. These additional contributions would need to continue for 37 working years and would increase in dollar value over a person's career as his or her salary rises. Over a typical worker's career, he or she would need to pay an extra $170,000—and this is before inflation—if he or she were an average saver with a real-world 401(k) and wished to have the same likelihood of a secure retirement as offered by the SAFE Plan.

When considering the risk that a worker's savings will fail to provide him or her with a sufficient standard of living in retirement, fixed contributions of 12 percent of salary give a worker in a SAFE Retirement Plan 2.3 times the likelihood of maintaining his or her standard of living compared to a typical 401(k).

FIGURE 4

SAFE Retirement Plan leads to a better distribution of retirement outcomes

Distribution of provided replacement rates



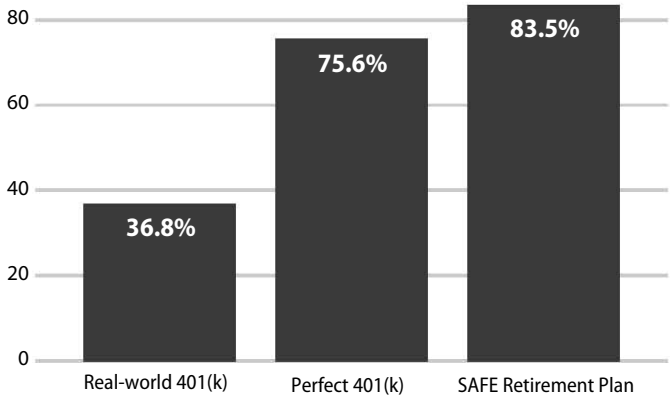
Source: Figures produced by stochastic model. Authors' analysis based on contributions of 12 percent of pay and other assumptions as described in report.

The distribution of outcomes for the SAFE Plan is also better than that for a perfect-world 401(k), with SAFE Plan participants having a 10 percent greater likelihood of achieving the target replacement rate of 70 percent.

FIGURE 5

Savers in a SAFE Retirement Plan are more likely to maintain standard of living in retirement

Probability of meeting target replacement rate of 34 percent



Source: Figures produced by stochastic model. Authors' analysis based on contributions of 12 percent of pay and other assumptions as described in report.

Another way of thinking about risk is to consider the very worst possible outcomes. Here again, the SAFE Plan shines: The risk for a SAFE Retirement Plan participant of falling significantly below preretirement standards of living is much lower. The average shortfall risk for the worst 5 percent of outcomes is one way to capture this extreme risk. We define the shortfall risk as the difference between the modeled result and the 34 percent target needed to achieve the total 70 percent replacement rate including Social Security. For example, if one of our results produces a replacement rate of only 25 percent, then the shortfall risk measure would be 9 percentage points.

For the SAFE Plan, the shortfall risk for the worst 5 percent of outcomes is 12.3 percentage points, compared with 18.4 percentage points and 25 percentage points for the perfect 401(k) and the real-world 401(k), respectively. What this actually means once payments from Social Security are taken into account is that even the worst outcomes possible with the SAFE Plan still provide plan participants with a retirement income only 17.6 percent below their target income, while a participant in a perfect 401(k) would have an income 26.3 percent below their target income, and a typical 401(k) participant would have an income 35.7 percent below their target income.

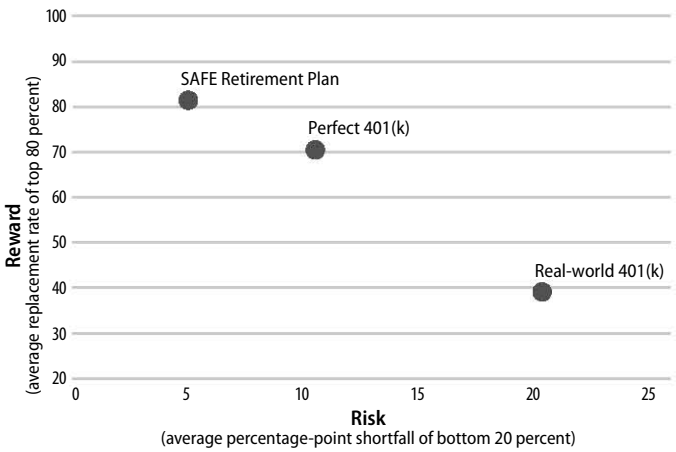
Still another way to think about the potential outcomes is to consider the better outcomes as the "reward" and the worst potential outcomes as the "risk." Let's define reward in this instance as the average replacement rate for the top 80 percent of outcomes and the risk as the average replacement-rate shortfall for the bottom 20 percent of outcomes. Once again, the shortfall is the difference between the modeled result and the 34 percent target needed to achieve the total 70 percent replacement rate including Social Security.

Using these definitions, the reward for a member of a SAFE Retirement Plan would be 81.3 percent, compared with 70.5 percent and 39.1 percent for the perfect and real-world 401(k)s, respectively. On the risk side, the SAFE Plan has a 5.1 percentage-point average shortfall, while the perfect 401(k) has a 10.6 percentage-point shortfall risk, and the real-world 401(k) has a 20.4 percentage-point shortfall risk. In other words, the SAFE Plan is able to provide a higher reward measure, even while reducing the risk.

Finally, an evaluation of different levels of contributions also shows how much better the SAFE Retirement Plan performs. In all these scenarios, the SAFE Retirement Plan achieves better outcomes. For example, consider contribution rates of 10 percent, or roughly the median total contribution—worker plus employer—for workers who participate in a 401(k) plan.[61] In this scenario, the reward—again, defined as the average replacement rate of the best 80 percent of outcomes—is 67.8 percent for a SAFE Retirement Plan, 58.7 percent for a perfect 401(k), and 32.6 percent for a typical 401(k). Similarly, for the bottom 20 percent of outcomes, the shortfall risk of a SAFE Retirement Plan is only 9.9 percentage points, while it is 14.5 percentage points for a perfect 401(k) and 22.7 percentage points for a typical 401(k). On every measure we use with our stochastic modeling, the SAFE Retirement Plan outperforms both the model 401(k) and the realistic 401(k) in providing a more secure retirement.

FIGURE 6

SAFE Retirement Plan is less risky and has higher reward than other plan types

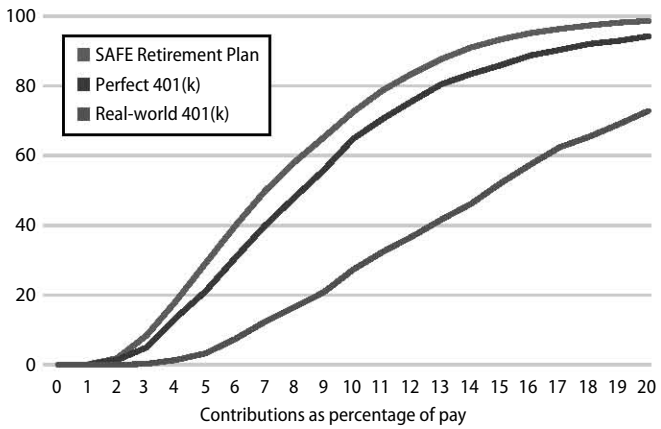


Source: Figures produced by stochastic model. Authors' analysis based on contributions of 12 percent of pay and other assumptions as described in report.

FIGURE 7

SAFE Retirement Plan more likely to lead to adequate retirement saving than 401(k) plans at every contribution level

Probability of meeting target replacement rate of 34 percent



Source: Figures produced by stochastic model. Authors' analysis based on contributions of 12 percent of pay and other assumptions as described in report.

No matter which model is used—historical or stochastic—the SAFE Retirement Plan comes out ahead. On almost every metric, it outshines not only the typical 401(k) but also the idealized 401(k) representing the best possible outcomes for a 401(k) plan. This is due to the SAFE Plan's ability to keep fees low, spread costs over a much larger number of workers, and use the surplus returns from particularly good years to safeguard the quality of life of workers who might experience especially poor returns at key points in their lifetime.

Conclusion

Our private-sector retirement system is broken. Yet as this report has shown, the creation of a SAFE Retirement Plan would significantly improve our private-sector retirement system. A SAFE Plan would better handle the risks and costs of retirement compared to the typical and perfect-world 401(k) plan. A saver in one of these funds would be better protected against market downturns and the erosion of his or her retirement benefits while contributing a smaller share of his or her salary. The SAFE Retirement Plan presented in this paper should serve as a model for policymakers as they consider reforming our retirement system.

About the authors

Rowland Davis is a Senior Fellow at American Progress. He is a nationally known actuary and pension consultant who heads his own firm—RMD Pension Consulting, created in 1997—that specializes in asset and liability modeling, risk management, and asset-allocation studies for pension funds. He has developed his own proprietary simulation models and risk-reward models. Working both independently and through a strategic alliance with the investment consulting firm of Ennis, Knupp & Associates, Rowland has conducted numerous policy studies for large pension funds across the country.

Formerly a vice president and consulting actuary at Towers Perrin Forster & Crosby, Inc., or TPF&C, he was also the national director of the asset and liability forecasting and asset-allocation practices at TPF&C. Prior to this national role, Rowland was the senior actuary in TPF&C's Chicago office and lead consultant for several of their largest clients.

Rowland left TPF&C in 1992 with three other partners to form a new actuarial and benefits consulting firm, Davis Conder Enderle & Sloan. Previously, Rowland also worked as a consultant with Meidinger, Inc. and Hewitt Associates.

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Madland has a doctorate in government from Georgetown University and received his bachelor of science from the University of California, Berkeley. He is the co-author of Interest Groups in Elections, a book about the role and influence of interest groups in American democracy and is the author of a number of academic articles. He has worked on economic policy for Rep. George Miller (D-CA) and has consulted for several labor unions.

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Appendix

Because retirement account balances are influenced by a number of variables whose values we cannot predict with certainty—such as investment returns, inflation, wage growth, and annuity purchase rates—we used a Monte Carlo simulation method to model this uncertainty and ran 1,000 simulations.

Monte Carlo simulations require that each input variable such as investment returns be assigned a probability distribution—defined primarily by a mean expected-value assumption and a standard deviation, or volatility, assumption—to reflect the uncertainty of the outcome. These values are based on the following assumptions.

Price inflation

We assume the expected value of price inflation to be 2.5 percent, which is consistent with long-term expectations and current Federal Reserve policy as reflected in market break-even inflation rates. The standard deviation is assumed to be 1.7 percent. The inflation model used is nonlinear, meaning that inflation will revert to the mean, simulating the actions of the Federal Reserve, and includes random bouts of inflation that can become reinforcing.

Wage inflation

Wage inflation is assumed to have an expected value of 3.6 percent and a standard deviation of 1.4 percent. The real wage growth rate of 1.1 percent is the same assumption used by the actuaries at the Social Security Administration when they project the health of the fund in the long run.

Core fixed-income returns

We assume that fixed-income assets such as bonds have a return with an expected nominal value of 4.6 percent and a standard deviation of 5 percent. The 2.1 percent real return is consistent with historical experience.

Equity returns

We assume the return on equities or stocks has an expected nominal value of 8.1 percent and a standard deviation of 20 percent. We assume a blend of 75 percent stocks listed in the United States and 25 percent stocks that are listed outside the United States. The expected return assumes a 3.5 percent equity risk-premium level, compared to the fixed-income portfolio, which is consistent with actual historical results averaged over long periods during the past 50 years. The standard deviation is consistent with historical experience, but the distribution is not normal. We use a model that allows for markets to become turbulent, and the probability of large negative returns is higher than in a normal distribution. In other words, our distribution is "fat-tailed," which captures extra downside risk.

Career pay progression

We assume that over the course of an individual's career, his or her pay increases by an average annual rate of 1.6 percent until he or she is 50 years old, and then an average annual rate of 0.25 percent until he or she is 65, at which point wages are, on average, flat until retirement at age 67. This wage growth would then include a random wage inflation described above. We assume that the starting pay for the median-income earner in our model is $34,600 at age 30. The starting pay level and the career progression assumptions are based on Current Population Survey data.

Mortality rates

The base mortality table used is the Retirement Plan-2000 mortality table, which was released by the Society of Actuaries in July 2000. The rates contained in this table were then projected forward to 2048 and adjusted using the recommended Scale BB projection factors to account for expected improvements in mortality rates over time. The rates utilized are a unisex set of rates based on 50 percent male and 50 percent female weights. Using these rates, the expected future lifetime for an individual retiring at age 67 is 23 years (to age 90). This relatively high age is a consequence of projected mortality improvements.

The collar

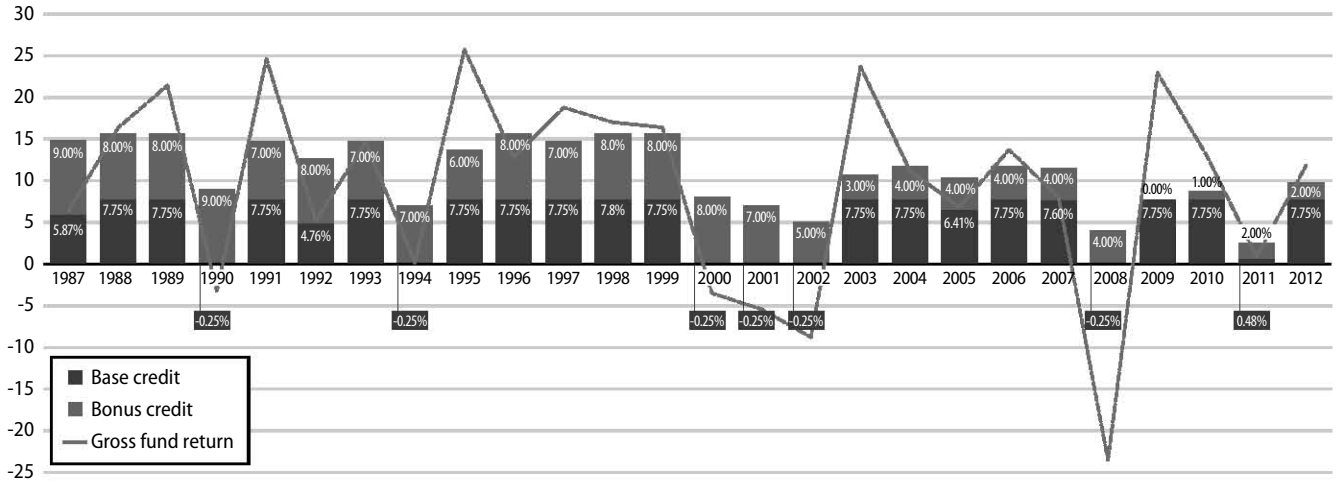
A brief explanation of a collar is as follows. Technically, in financial markets, a collar is created by buying a put option—the right to sell the underlying asset if it falls below a set price—and selling a call option, which is the obligation to sell the underlying asset if it rises above a set price. The result is that the owner of the collar is protected against a large decline but must also give up the returns above a certain level to pay for that protection. In a SAFE Retirement Plan, the main fund would be the buyer of the collar, and the plan's notional reserve fund would be the seller. In practice this would mean that excess gains from particularly good years would be put aside in the notional reserve fund to supplement workers' returns in down years.

An example of how the collar would have protected individuals' account balances over the past 25 years can be seen below. The results contained in the graph were produced by the historical model described in the report. Despite the volatility of market returns over this time period, SAFE Plan accounts always accrued investment credits of at least 2.4 percent.

The base-credit figures shown below are net of fees, which is why even when a 0 percent return was credited to member accounts, it appears as -0.25 percent, and why the highest base credit in any given year was only 7.75 percent.

APPENDIX FIGURE 1

Projected actual fund return versus investment credits provided to individual SAFE Retirement Plan accounts over past 25 years



Source: Figures produced by historical model. Authors' analysis based on contributions of 12 percent of pay and other assumptions as described in report.

Account balance reductions

In the event that SAFE Plans find themselves severely underfunded, they may reduce members' account balances for a period of time until the funds' current-value ratios climb above their designated threshold. In our models, we set a current-value ratio of 30 percent as the threshold for a fund being considered underfunded, although such thresholds are clearly a matter that can be debated and adjusted if necessary in the future. Given this assumption, such account-balance reductions occurred in only 5 of the 1,000 model runs.

APPENDIX TABLE 1

Bonus investment credit schedule

If current-value ratio exceeds	Bonus (value of investment credit)
110%	1%
120%	2%
130%	3%
140%	4%
150%	5%
160%	6%
170%	7%
180%	8%
190%	9%
200%	10%

APPENDIX TABLE 2

Annuity-fund bonus check schedule

If funded ratio exceeds	Bonus (percent of regular benefit)
110%	5%
120%	15%
130%	25%
140%	50%
150%	75%

APPENDIX TABLE 3

Replacement rates provided for cohorts retiring in given year by each plan

	Retirement plan			
Year	Real-world 401(k)	Perfect 401(k)	SAFE Retirement Plan; no post-2012 bonuses	SAFE Retirement Plan; with post-2012 bonuses
1966	29.1%	54.7%	59.4%	59.4%
1967	29.2%	59.7%	61.4%	61.4%
1968	29.2%	61.7%	64.6%	64.6%
1969	25.5%	61.9%	63.6%	63.6%
1970	24.6%	53.6%	63.5%	63.5%
1971	25.9%	53.9%	63.2%	63.2%
1972	27.2%	59.0%	65.5%	65.5%
1973	22.9%	51.6%	63.6%	63.6%
1974	18.8%	45.1%	59.7%	59.7%
1975	21.4%	53.7%	60.2%	60.2%
1976	23.3%	53.1%	61.9%	61.9%
1977	21.7%	53.1%	59.7%	59.7%
1978	21.2%	57.5%	60.1%	60.1%
1979	20.9%	62.7%	60.0%	60.0%
1980	21.6%	75.5%	59.8%	59.8%
1981	20.3%	74.6%	58.2%	58.2%
1982	23.4%	0.0%	60.9%	60.9%
1983	25.2%	82.7%	63.9%	63.9%
1984	25.6%	82.2%	67.3%	67.3%
1985	31.1%	85.5%	71.4%	71.4%
1986	34.0%	78.3%	74.5%	74.5%
1987	32.5%	87.1%	78.9%	78.9%
1988	34.1%	92.2%	84.9%	84.9%
1989	37.5%	91.5%	87.7%	87.7%
1990	34.4%	85.6%	86.4%	86.4%
1991	38.4%	87.8%	90.1%	90.1%
1992	38.7%	86.1%	95.0%	95.0%
1993	41.3%	83.9%	102.1%	102.1%
1994	38.0%	92.7%	98.8%	99.6%
1995	43.3%	87.6%	100.8%	102.4%
1996	43.8%	93.7%	103.6%	106.2%
1997	47.2%	96.5%	106.2%	109.7%
1998	49.9%	91.2%	109.5%	114.0%
1999	51.8%	111.1%	113.0%	118.5%
2000	49.0%	95.5%	111.6%	117.8%
2001	46.2%	89.0%	110.7%	117.7%
2002	42.0%	72.6%	106.3%	113.8%
2003	46.4%	82.4%	105.6%	114.0%
2004	46.9%	83.1%	106.5%	115.9%
2005	45.7%	83.3%	105.0%	115.3%
2006	47.1%	87.0%	104.8%	116.0%
2007	47.7%	84.0%	106.3%	118.9%
2008	38.5%	56.1%	103.8%	117.2%
2009	43.0%	71.9%	101.1%	115.2%
2010	44.1%	71.5%	102.1%	116.4%
2011	41.1%	56.9%	96.5%	109.5%
2012	40.6%	54.3%	97.7%	109.2%

APPENDIX TABLE 4

Replacement rate distributions with contributions of 12 percent of pay

	Retirement plan		
Percentile	Real-world 401(k)	Perfect 401(k)	SAFE Retirement Plan
100	182.2%	346.3%	472.7%
99	113.1%	211.5%	235.6%
98	93.4%	184.9%	201.7%
97	84.1%	153.1%	184.2%
96	79.0%	140.7%	171.3%
95	76.5%	136.0%	161.3%
94	73.4%	130.2%	152.6%
93	69.5%	125.8%	145.2%
92	66.0%	120.9%	138.6%
91	64.4%	116.7%	132.9%
90	63.1%	112.2%	128.1%
89	61.3%	109.2%	123.9%
88	58.9%	105.9%	120.2%
87	55.5%	102.9%	116.8%
86	54.0%	100.4%	113.7%
85	53.1%	97.0%	111.0%
84	52.1%	93.5%	108.0%
83	50.2%	90.9%	105.3%
82	48.6%	87.7%	102.8%
81	47.0%	85.0%	100.4%
80	46.2%	84.0%	98.2%
79	45.1%	82.8%	95.9%
78	44.4%	79.3%	93.9%
77	43.6%	78.7%	92.0%
76	43.0%	77.2%	90.3%
75	42.4%	76.3%	88.6%
74	41.5%	74.7%	86.8%
73	40.9%	73.0%	85.0%
72	40.4%	71.9%	83.4%
71	39.5%	70.6%	81.8%
70	39.0%	68.7%	80.4%
69	38.1%	67.5%	79.1%
68	37.2%	66.4%	77.7%
67	36.7%	65.8%	76.5%
66	36.0%	64.4%	75.2%
65	35.2%	63.0%	73.9%
64	34.3%	61.9%	72.7%
63	33.9%	60.8%	71.3%
62	33.5%	60.0%	70.2%
61	33.1%	58.9%	68.9%
60	32.2%	57.6%	67.7%
59	31.6%	56.5%	66.6%
58	31.3%	55.6%	65.7%
57	30.8%	54.8%	64.6%

Continues

Appendix Table 4 continued

	Retirement plan		
Percentile	Real-world 401(k)	Perfect 401(k)	SAFE Retirement Plan
56	30.4%	53.6%	63.6%
55	29.7%	52.8%	62.6%
54	29.3%	52.2%	61.6%
53	28.8%	51.5%	60.7%
52	28.4%	50.8%	59.8%
51	28.0%	50.0%	58.9%
50	27.7%	49.3%	57.9%
49	27.5%	48.6%	57.1%
48	27.2%	48.1%	56.2%
47	26.9%	47.6%	55.3%
46	26.5%	46.8%	54.4%
45	26.3%	45.8%	53.6%
44	26.0%	45.3%	52.7%
43	25.7%	44.7%	51.9%
42	25.3%	44.4%	51.0%
41	25.0%	43.7%	50.1%
40	24.8%	43.1%	49.3%
39	24.5%	42.6%	48.4%
38	24.2%	42.0%	47.7%
37	23.7%	41.7%	46.9%
36	23.1%	41.1%	46.2%
35	22.8%	40.6%	45.5%
34	22.5%	40.0%	44.8%
33	22.1%	39.3%	44.1%
32	21.9%	38.5%	43.4%
31	21.5%	38.0%	42.8%
30	21.2%	37.5%	42.2%
29	20.9%	36.7%	41.7%
28	20.7%	36.3%	41.1%
27	20.3%	35.4%	40.5%
26	20.2%	34.7%	39.9%
25	19.9%	34.4%	39.3%
24	19.7%	33.8%	38.7%
23	19.3%	33.3%	38.0%
22	18.7%	32.7%	37.5%
21	18.4%	32.2%	36.9%
20	18.0%	31.7%	36.3%
19	17.6%	31.1%	35.6%
18	17.2%	30.4%	35.0%
17	16.8%	29.5%	34.3%
16	16.5%	28.8%	33.7%
15	16.2%	27.9%	33.0%
14	15.9%	27.2%	32.4%
13	15.4%	26.6%	31.8%
12	15.2%	26.1%	31.2%
11	15.0%	25.3%	30.5%

Continues

Appendix Table 4 continued

	Retirement plan		
Percentile	Real-world 401(k)	Perfect 401(k)	SAFE Retirement Plan
10	14.6%	24.2%	29.9%
9	13.5%	23.6%	29.1%
8	13.3%	22.7%	28.3%
7	12.5%	21.4%	27.5%
6	12.1%	20.7%	26.5%
5	11.3%	19.2%	25.6%
4	10.5%	18.4%	24.4%
3	10.0%	17.0%	23.0%
2	8.9%	15.3%	21.7%
1	7.8%	12.5%	19.1%
0	4.5%	7.3%	11.8%

APPENDIX TABLE 5

Probability of meeting target replacement rate of 34% at different contribution levels

	Retirement Plan		
Contribution as percentage of pay	Real-world 401(k)	Perfect 401(k)	SAFE Retirement Plan
1%	0.0%	0.0%	0.1%
2%	0.0%	1.4%	1.9%
3%	0.3%	5.0%	8.4%
4%	1.4%	13.5%	18.3%
5%	3.3%	21.1%	29.1%
6%	7.4%	30.6%	39.8%
7%	12.3%	39.8%	49.7%
8%	16.5%	47.9%	58.0%
9%	20.8%	55.8%	65.2%
10%	27.3%	64.8%	72.5%
11%	32.4%	70.5%	78.7%
12%	36.8%	75.6%	83.5%
13%	41.7%	80.5%	87.7%
14%	46.2%	83.4%	91.0%
15%	52.1%	85.9%	93.3%
16%	57.4%	88.7%	95.1%
17%	62.4%	90.3%	96.3%
18%	65.4%	92.0%	97.3%
19%	69.0%	92.9%	98.1%
20%	72.8%	94.2%	98.6%

Endnotes

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59 All replacement-rate estimates produced by the historical model are differentiated between those that take into account possible post-2012 bonus payments to retirees and those that do not. This is because it is not yet possible to know exactly what bonus payments will be made in the years after 2012 to those cohorts currently in the early or middle portion of their payout period since the bonuses' frequency and size will be dependent on future fund performance. To ensure that this uncertainty was taken into account, two separate sets of results were calculated. The first simply assumes that there will be no future bonus payments to retirees, while the second assumes that future bonus payments would follow expected patterns based on our simulation results. Consequently, those results that do not take into account any projected bonuses should be considered the worst-case-scenario results, while those that do take them into account represent a more likely set of outcomes based on past market performance.

60 The SAFE Plan's worst single-year replacement rate of 58.2 percent in 1981 was higher than the worst rates of both the perfect and real-world 401(k)s, which were 45.1 percent and 18.8 percent, respectively, in 1974. The best single-year rate provided by the real-world 401(k) was only 51.8 percent in 1999. The SAFE Plan offered a worst-case maximum rate of 113 percent in 1999 and a best-case maximum of 118.9 percent in 2007, compared to the perfect 401(k)'s best single-year rate of 111.1 percent in 1999.

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Overview of Title 37: Transfers Between Retirement or Pension Systems

Presented to the
Joint Committee on Pensions

Maryland State Retirement Agency

and

Department of Legislative Services

November 19, 2013

Overview of Title 37: Transfers Between Retirement or Pension Systems

The Report on the Fiscal 2014 State Operating Budget (HB 100) and the State Capital Budget (HB 101) and Related Recommendations as prepared by the Chairmen of the Senate Budget and Taxation Committee and House Appropriations Committee directed the State Retirement Agency, in consultation with the Department of Legislative Services, to provide a report to the Joint Committee on Pensions on transfers of service credit as governed by Title 37 of the State Personnel and Pensions Article. Specifically, the budget committees requested the Department of Legislative Services and the State Retirement Agency to examine issues relating to Title 37 system transfers, including the legislative history of Title 37 and intent of the General Assembly in the enactment of Chapter 337 of 2007, whether any State or local retirement or pension systems are experiencing issues regarding § 37-203(f) of the State Personnel and Pensions Article, and how State or local retirement or pension systems are interpreting and implementing § 37-203(f). This report offers the findings of the study conducted by the State Retirement Agency and Department of Legislative Services.

Legislative History

Title 37 of the State Personnel and Pensions Article of the Annotated Code of Maryland governs transfers of service credit between Maryland's state and local public pension plans. While all other titles of the State Personnel and Pensions Article govern the State Retirement and Pension System, Title 37 is the only title in the article that governs all public pension plans throughout the state.

The concepts of Title 37 were first introduced by Chapter 664 of 1947, when the Maryland General Assembly added provisions to the pension laws of the state to permit, for the first time, the transfer of service credits between public pension systems. The purpose of these provisions was to provide portability of service credit between public pension plans. This was accomplished by allowing a member of a Maryland state or local public plan who accepted new employment that required the member to join a different Maryland state or local public plan, to transfer the service credit the member earned in the old system to the member's new system. Specifically, Chapter 664 provided that a member of a public retirement system was eligible to transfer creditable service in one public system to another public system when the member accepted employment with another jurisdiction, if the member transferred the member's employee contributions when the member accepted the new position of employment. Employer assets were not transferred.

These provisions remained unchanged for over 30 years. The Joint Committee on Pensions Report of the 1980 Interim stated that the original transfer provisions (largely affecting the state, Baltimore County, and Baltimore City) worked smoothly because the jurisdictions on each end of the transfer required employee contributions. However, in 1979, Chapters 23 and 24 of 1979 established the Employees' Pension System and the Teachers' Pension System. Both of these plans did not require member contributions for most employees participating in these

systems. Additionally, Baltimore City also established a non-contributory pension system for Baltimore City employees during this period. The 1980 Report observed that the establishment of these non-contributory plans required the General Assembly to review Chapter 664 of 1947 because it was now unworkable since the provisions in the state's pension law that governed transfers of service credit were dependent upon the transfer of the employee's member contributions. The Joint Committee stated "this inability to transfer service credit from one public jurisdiction to another within Maryland goes into the face of the concept of portability that was included in Maryland law as long ago as 1947."

1981 Legislation

In light of its concerns regarding portability of service credit through workable transfer provisions, the Joint Committee on Pensions recommended substantial revisions to the 1947 transfer provisions for the 1981 legislative session. Its recommendations were enacted through Chapter 394 of 1981. Specifically, Chapter 394 addressed four different types of transfers: (1) transfers from contributory to contributory systems; (2) transfers from contributory to non-contributory systems; (3) transfers from non-contributory to contributory systems; and (4) transfers from non-contributory to non-contributory systems.

Contributory to Contributory Systems – The member will receive service credit in the new system equal to the service credit earned in the previous system, if the member deposits into the new system, within one year of joining the that system, the total accumulated contributions to the member's credit from the previous system. In addition, all employer contributions, with interest, on behalf of the member shall also be transferred. The amount of employer contributions to be transferred shall be determined by an actuarial valuation, the cost of which shall be borne equally by both systems.

Contributory to Non-contributory Systems – The member will receive service credit in the new system equal to the service credit earned in the previous system, if the member makes the claim to transfer service credit within one year of joining the new plan. Upon verification that the transfer was completed, the system from which the transfer is made may not provide any benefit for the service credit transferred. The member's accumulated contributions in the previous system will be refunded to the member upon request. In addition, all employer contributions, with interest, on behalf of the member shall also be transferred. The amount of employer contributions to be transferred shall be determined by an actuarial valuation, the cost of which shall be borne equally by both systems.

Non-contributory to Contributory Systems –The member will receive service credit in the new system equal to the service credit earned in the previous system, if the member makes a claim for this service credit within one year of joining the new system. At the time of retirement, the member's benefit in the new system shall be reduced by the actuarial equivalent of the accumulated contributions with interest that have not been deducted. Upon verification that the transfer was completed, the system from which the transfer is made may not provide any benefit for the service credit transferred. Any accumulated contributions in the previous system to the credit of the member will be

refunded to the member upon request. In addition, all employer contributions, with interest, on behalf of the member shall also be transferred. The amount of employer contributions to be transferred shall be determined by an actuarial valuation, the cost of which shall be borne equally by both systems.

Non-contributory to Non-contributory Systems –The member will receive service credit in the new system equal to the service credit earned in the previous system, if the member makes a claim for this service credit within one year of joining the new system. Upon verification of the service credit, the old system may not provide any benefit for the service credit transferred. Any accumulated contributions to the credit of the member in the system from which the member transfers shall be refunded upon request. However, if any of the accumulated contributions to the credit of the member in the old system are applicable to the receipt of service credit or benefits in the new system, the accumulated contributions may not be refunded. In addition, all employer contributions, with interest, on behalf of the member shall also be transferred. The amount of employer contributions to be transferred shall be determined by an actuarial valuation, the cost of which shall be borne equally by both systems.

1988 Legislation

The provisions of Chapter 394 remained in place until the 1988 legislative. Throughout the seven years Chapter 394 was in effect, the provisions requiring members to transfer within their first year of employment in their new position and to transfer their accumulated contributions from their previous system at the time of transfer were regularly implemented. However, the provisions involving the transfer of the employer contributions were never applied. According to the Joint Committee on Pensions Report of the 1993 Interim, no one system knew, or could agree on what basis employer contributions should have been determined. Furthermore, the 1993 Report goes on to state that most systems did not wish to bear the added expense of an actuarial valuation. Therefore, state and local systems continued to transfer service credits for transferring employees without an actuarial valuation and without the corresponding transfer of employer contributions. The Joint Committee on Pensions concluded that the rationale for not transferring employer contributions was based on the public systems assuming that over an extended period of time, transfers between systems would balance out. Individual gains and losses experienced at any one point in time also would balance out over that extended period. In response to the Joint Committee on Pensions reporting the requirement to transfer employer contributions was not being implemented when a member of a Maryland state or local public plan transferred service credit to another Maryland state or local pension plan, Chapter 780 of 1988 was enacted. Under this law, the provisions for transferring employer assets following an actuarial valuation were repealed.

2006 Attorney General Opinion and 2007 Legislation

Following the enactment of Chapter 789 of 1988, very few amendments were made to the provisions of Title 37 of the State Personnel and Pensions Article from that time until 2006 when the Baltimore County Council requested an attorney general opinion for interpretation of § 37-203(f)(2) of the State Personnel and Pensions Article.[1] The interpretation of the following language was in question:

> Except as provided in § 37-204 of this subtitle, if an individual transfers from a noncontributory system to a contributory system, on retirement the individual's retirement allowance shall be reduced by the actuarial equivalent of the accumulated contributions that would have been deducted if the individual had earned the transferred service credit under the new system, including interest on those contributions.

The question was whether "interest on those contributions" referred to a specific rate on interest. The Attorney General concluded that "[g]iven the definitions of the terms 'accumulated contributions' and 'regular interest', a transferee system is not free to use any interest rate it wished when...imputing a contribution deficiency in the individual's annuity account. Rather, a State transferee system must apply the regular rate of interest...". In reaching this conclusion, the Attorney General relied on the definitions of "accumulated contributions" and "regular interest" found under § 20-101 of the State Personnel and Pensions Article.

With respect to a local system, § 37-201 defines "accumulated contributions" as the meaning most closely analogous to the meaning stated under § 20-101. Under that section, "accumulated contributions" are defined as the amounts credited to a member's individual account. "Accumulated contributions" consist of member contributions, additional contributions, and regular interest. "Regular interest" is defined as the interest payable on accumulated contributions. The Attorney General's opinion concluded that the local analog of "regular interest" would be the rate the local system pays on its member contributions.

The opinion notes that the reference to inclusion of "interest on those contributions" appeared superfluous since "accumulated contributions" is defined to include regular interest. However, the opinion further reasons that the additional reference to "interest on those contributions" is listed separately to clarify that regular interest should be included in the adjustment, since the provision pertains to accumulated contributions "that would have been deducted". The separate reference to interest was explained as clarifying, since contributions are deducted, while interest is credited.

Following the Attorney General opinion, legislation was passed in the 2007 session which made changes to § 37-203(f)(2). Chapter 337, entitled "Alternate Contributory Pension Selection – Clarifications" contained provisions needed for technical and clarifying purposes following the creation of the Alternate Contributory Pension Selection in 2006. Included within this bill was an amendment to the language found under § 37-203(f)(2) which changed "accumulated contributions" to "member contributions", and changed "including interest on

[1] The opinion was published on November 1, 2006 as 91 Md. Op. Atty. Gen. 219 (2006).

those contributions" to "including regular interest on those contributions". These changes are consistent with the interpretation stated in the 2006 Attorney General opinion, and are assumed to have been intended as clarifying and in direct response to the 2006 Attorney General opinion. The provision has not been altered since the passage of chapter 337.

Recent Transfer Activity

State Retirement and Pension System

The State Retirement Agency reviewed its records for fiscal years 2013 and 2014 to determine the number of individuals that transferred into the State Retirement and Pension System from a local retirement or pension system. In fiscal year 2013, three individuals transferred into the system, while to date, only one member has transferred previous service credit during fiscal year 2014. Table 1 shows the state or local system from which the member is transferring, the amount of service credit the member transferred, and the amount of the deficiency the member currently has on the member's account.

Table 1.
Title 37 Transfers of Service Credit
Fiscal Years 2013 - 2014

	Previous System	New System	Service Transferred (in months)	Deficiency
2013	Baltimore City ERS	TPS	112	$ 30,155
2013	Baltimore City ERS	EPS	69	$ 8,999
2013	MTA Pension Plan	EPS	240	$ 7,739
2014	Baltimore City ERS	EPS	19	$ 6,454

Local Systems

Local governments in Maryland that provide defined benefit plans do so either by participating in a State system (as a participating governmental unit) or have established their own plan. Local plans vary as to whether they require employee contributions, and among the plans that do require employee contributions the amount of the required contribution varies. In addition to the pool of employees participating in a local noncontributory plan, there is a pool of State employees who have accumulated service credit in the Employees' and Teachers' Pension Plans while those plans were noncontributory.

The Maryland Association of Counties conducted a survey of its members inquiring whether they have experienced any issues with the implementation of transfers of employees from noncontributory systems into contributory systems, specifically the calculation of any deficiency adjustments using the regular interest rate. Of the counties that responded, only one county expressed having an issue with using the regular rate of interest. The remainder of the

respondents stated that their policy was to use the regular rate of interest, or that they had not had any transfers from noncontributory systems for a number of years.

Considerations for Any Future Proposed Changes to the Title 37 Transfer Provisions

The longstanding policy of the State has been to provide portability for employees transferring between the various defined benefit systems offered by State and local governments. This has been achieved by implementing a uniform standard when requiring the transfer of accumulated contributions from members when a member transfers from one system to another. Because the various defined benefit systems offered by governments in Maryland have varied over time with regard to whether employees make contributions, and the amounts of any such contributions, the policy of the State has been to allow equitable and fair transfers that do not provide windfalls or undue burdens to transferring employees. The standard has been to use member contributions and regular interest as the measuring stick to determine any actuarial adjustment to the benefit of a member who transfers into a new system.

Any changes to the interest rate used in calculating a transfer deficiency would need to apply prospectively. Given the potential for a large passage of time between when a member transfers into a system and when that member retires from the second system, prospective application would likely result in locking in the method for calculating a deficiency at the time of the transfer. A member who transfers from one system to another may do so in reliance that the determination of a deficiency will be calculated in a certain manner. If a change in the deficiency calculation were enacted in a manner that would apply to a transferee years after the transfer, an argument could be made that any changes would be a contractual impairment. An individual affected by such a change could claim that the individual relied on the provisions in place at the time of changing jobs, and would not have changed employment had different provisions been in effect.

Any changes to the use of member contributions and regular interest would have the potential to make transfers into a particular system either more advantageous or less advantageous to the transferring member. A system that would apply an interest rate which is above the regular interest rate would result in a deficiency in a transferring member's account, and would serve as a disincentive to seek employment with that employer. Conversely, if a system were to apply a rate lower than the regular interest rate, it would increase the value of a members transferred accumulations, and create an incentive for an employee to seek employment with that employer.

Historical Overview of the Correctional Officers' Retirement System

Presented to the
Joint Committee on Pensions

Maryland State Retirement Agency

and

Department of Legislative Services

October 23, 2013

Historical Overview of the Correctional Officers' Retirement System

Chapter 556 of 2013 charged the State Retirement Agency and the Department of Legislative Services to study the history of the Correctional Officers' Retirement System. Specifically, the legislature requested these agencies to determine the origins of those provisions included in the State Personnel and Pensions Article that require members of the Correctional Officers' Retirement System to join the Employees' Pension System if they are promoted into certain job classifications. This report offers the findings of that study.

CORS History

Leading into the 1974 legislative session, the Joint Committee of Budget and Audit recommended a series of retirement bills, including legislation that would provide special retirement benefits in the Employees' Retirement System (ERS) for certain correctional officers. Prior to this, individuals serving as correctional officers were enrolled in the ERS and received benefits similar to other members of the plan. At the time the legislation was recommended, a member of the ERS was eligible to receive a basic retirement benefit of $1/55^{th}$ of the member's average final compensation multiplied by the member's total years of service, after accruing 30 years of service.

The Joint Committee of Budget and Audit explained in its Report to the General Assembly of 1974 that the purpose for its recommending legislation for special retirement benefits for correctional officers was to recognize that correctional officers have conditions of employment that are quite similar to those of the State Police, and accordingly, their retirement benefits should be substantially similar also. The joint committee noted that while it did believe retirement benefits between correctional officers and State Police should be similar, the basic benefit in its recommended legislation for correctional officers did provide for a slightly lesser basic benefit for correctional officers than the basic benefit received by the State Police. In 1974, the basic benefit for State Police was $1/45^{th}$ of the average final compensation multiplied by the member's total years of service, with the joint committee's recommendation for correctional officers set at $1/55^{th}$ of the average final compensation multiplied by the member's total years of service. The difference in benefits was explained as an adjustment for social security benefits to which correctional officers are subject and State Police are not.

Initially, the retirement bill proposed by the Joint Committee of Budget and Audit recommended retirement benefits for Grade I –VI correctional officers after 25 years of service with a basic benefit of $1/55^{th}$ of the officer's average final compensation multiplied by the member's total years of service. However, after the legislation was introduced, the eligibility for retirement was reduced from 25 years to 20 years of service. An additional criterion was also added, stating that a correctional officer could only retire after 20 years if the officer had service as a Grade I – VI correctional officer for five or more years immediately preceding retirement. This legislation was enacted in 1974 as Chapter 697 of 1974, and while technically, these

correctional officers remained in the ERS, the passage of Chapter 697 established what would later become the Correctional Officers' Retirement System (CORS).

In 1979, the ERS was closed and the Employees' Pension System (EPS) was established through the enactment of Chapters 23 and 24 of 1979. Special provisions were included in Chapters 23 and 24 of 1979 that allowed new correctional officers to maintain a 20-year benefit equal to 1/55th of average final compensation multiplied by the member's total years of service and not be required to join the EPS. In fact, Chapters 23 and 24 went so far as to separate the correctional officers from the ERS for benefit purposes and officially establish the CORS under § 156 of Article 73B. However, no written testimony or other documentation could be found to indicate that the legislature's basis for establishing the CORS was related in any way to its original justification for providing correctional officers with a benefit more in line with the State Police. In fact, a review of § 156 indicates that the provisions providing for disability and death benefits were to be computed in the same manner as disability and death benefits for ERS members. Moreover, with regard to the administration of the CORS, § 156(d) stated, "[t]he administration, management and funding of the benefits for correctional officers shall be the same as those provided by the Employees' Retirement System of the State of Maryland." This language remains today in § 25-102 of the State Personnel and Pensions Article.

CORS Benefits v. EPS Benefits

With the establishment of the CORS in 1979, the legislature provided benefits for Grade I – VI correctional officers who serve in the cellblocks at state penal institutions. In 1983, the legislature expanded the membership of the CORS to include security attendants at the Clifton T. Perkins Hospital Center. Since 1983, membership in the CORS has been increased to include (1) detention center officers employed by a participating governmental unit; (2) correctional dietary, maintenance, laundry, or supply officers; and (3) Maryland Correctional Enterprises officers, officer trainees, plant supervisors, plant managers, and regional managers.

Yet, notwithstanding this expansion of membership in the CORS, the original limitation that was placed on the eligible correctional officers who were permitted to receive retirement benefits from the CORS (correctional officers serving in the first six job classifications), remains in the law today. Once a member advances beyond the first six job classifications for a correctional officer, that individual is required to join the EPS. The benefits accrued by the CORS member at the time the individual is required to join the EPS may remain in the CORS to be collected at the time of the member's retirement from both the CORS and EPS. However, the member may also transfer the accrued CORS service credit to the EPS. If the member chooses this option, the member will no longer have any benefit in the CORS at the member's retirement from the EPS, and accordingly, will only receive a benefit from the EPS.

Prior to the enactment of the 2011 pension reforms, the member contribution rates for the CORS and the EPS were both set at 5% of a member's earnable compensation. Following the enactment of the reforms, the EPS member contribution rate was increased to 7%. This rate applied to members of the Alternate Contributory Pension Selection (ACPS) and the Reformed Contributory Pension Selection (RCPS). Also, as of 1998 and prior to the 2011 reforms, the benefit formulas for the CORS and EPS were almost identical. The CORS benefit formula was

set at 1.82% (1/55th) of the highest three years' average final salary multiplied by the number of years of creditable service, while the ACPS benefit formula of the EPS was set at 1.8%. However, following the passage of the reforms, the CORS benefit formula did not change, but the RCPS benefit formula of the EPS was established and resulted in a reduction from the ACPS benefit to 1.5% for any individual joining the EPS on or after July 1, 2011. Additionally, the 2011 pension reforms increased vesting in the RCPS of the EPS and in the CORS from 5 years to 10 years for any individual joining the EPS or the CORS on or after July 1, 2011.

Immediately following the enactment of the 2011 pension reforms, individuals who were CORS members before July 1, 2011 and then promoted out of the CORS into the EPS after this date, were concerned that they would now be subject to a higher member contribution rate, lower benefit multiplier, and longer vesting because they were not members of the EPS before July 1, 2011. To address this issue, the legislature enacted Chapters 608 and 609 of 2012. The effect of this legislation, in part, is to allow a CORS member who was a member on June 30, 2011, and is promoted into the EPS on or after July 1, 2011, to be eligible for the ACPS benefits that apply to an individual who was an ACPS member on June 30, 2011, before the reforms were enacted. In other words, an individual who was a CORS member before July 1, 2011 and is promoted out of CORS and into the EPS after July 1, 2011 would be subject to the 7% member contribution rate, but would not be subject to the new 1.5% benefit multiplier or 10-year vesting. Instead, that individual would still be subject to a 1.8% benefit multiplier and 5-year vesting (the ACPS pre-reform provisions).

While Chapters 608 and 609 of 2012 do correct the concerns of the individuals who were CORS members before July 1, 2011, the individuals who have joined the CORS since that date and are now being offered promotions that would require them to join the EPS, would not be able to benefit from the 2012 fix. If these individuals accept promotions above the first six job classifications as a correctional officer, they will be subject to the provisions of the Reformed Contributory Pension Selection – 7% member contribution rate, 1.5% benefit multiplier, 10-year vesting, Rule of 90, and 5-year AFC. This, in effect, may now begin to serve as a disincentive for CORS members to accept promotions beyond the first six job classifications.

There is no record why, in 1974, the Joint Committee of Budget and Audit limited their original recommendation for special retirement benefits for correctional officers to the first six job classifications or why after being promoted above a Grade VI correctional officer an individual would receive benefits from the ERS. However, the Joint Committee Pensions did note in their 1980 Interim Report to the General Assembly that eligibility for the 1974 benefits was limited specifically to those serving in a custody and security role in the budget program "Custodial Care". Additionally, there is no indication why provisions were included in Chapter 697 of 1974 that would require a CORS member to serve as a correctional officer in one of the first six job classifications for five or more years immediately preceding retirement in order to be eligible to retire after accruing 20 years of service credit as a correctional officer. No other system included in the SRPS has a similar requirement.

Moreover, it is interesting to note, that other than offering members of the CORS a 20-year retirement plan, no other changes to their benefits have been made since 1974 that would bring them more in line with the other public safety plans. Despite the legislature's recognition

in 1974 that correctional officers have conditions of employment that are quite similar to those of the State Police and that their retirement benefits should be substantially similar, to date, benefits for correctional officers in the first six job classifications almost mirror benefits for EPS members participating in the ACPS. In fact, as correctional officers progress in their career, they will lose their eligibility to begin receiving a benefit after 20 years in the CORS (the one similarity with the public safety plans), and as members in the EPS will not be eligible to receive a benefit until they have vested in the EPS by accruing an additional 10 years of service. Moreover, once these individuals have vested in the EPS, to be eligible to retire from this system, they must be at least 65 years old or have satisfied the requirements of the Rule of 90.

CORS Data

The State Retirement Agency compiled data from the CORS for the past 10 years. Specifically, data for active members including the average age of an active CORS member, the current average years of service for active CORS members, and the average salary for an active CORS member were collected. The results of that analysis are provided in Table 1.

Table 1
Correctional Officers' Retirement System
Active Membership
(Fiscal 2005 – 2014)

Fiscal Year	Active Membership	Average Age	Average Years of Service	Average Annual Salary
2005	6,578	39.20	9.63	$36,944.38
2006	7,291	39.45	9.72	$40,997.35
2007	7,514	39.11	9.35	$42,236.89
2008	7,443	39.68	9.3	$43,719.42
2009	8,035	39.92	9.18	$45,032.24
2010	7,972	40.63	9.56	$44,835.02
2011	7,884	40.87	9.70	$44,388.11
2012	7,976	41.10	9.76	$43,829.16
2013	8,012	41.30	9.87	$44,264.21

In addition, data for retired CORS members was also collected, including average age at retirement, average years of service at retirement, and current average benefit of a CORS retiree. The data is provided in Table 2.

Table 2
Correctional Officers' Retirement System
Retiree Membership
(Calendar Year 2005 – 2014)

Calendar Year	Retiree Membership	Average Age at Retirement	Average Years of Service at Retirement	Average Monthly Benefit
2004	294	47.68	19.25	$1,279.91
2005	281	48.71	19.51	$1,373.69
2006	283	49.15	18.65	$1,347.10
2007	344	49.62	19.13	$1,413.23
2008	348	50.46	19.24	$1,473.51
2009	219	52.42	19.56	$1,522.78
2010	281	52.52	20.65	$1,675.36
2011	313	52.83	20.37	$1,715.51
2012	257	52.87	20.30	$1,829.95
2013*	160	54.25	18.89	$1,623.58

* (as of 6/30/13)

Finally, the State Retirement Agency reviewed CORS data since1980 with regard to the number of CORS members who have been promoted out of the CORS into the EPS. On average seven members are promoted out each year. In 1982, no members were promoted, while 20 were promoted in 2005. There is not a noticeable pattern to the number of individuals promoted each year. The State Retirement Agency analyzed the records of the 14 members that retired in 2012. Of the 14, eight CORS members who were promoted out of the CORS and into the EPS chose to transfer their CORS service into the EPS. The amount of service transferred ranged from 13 months to 148 months of service credit. Of the six CORS members who opted to maintain their CORS membership after joining the EPS, three were not vested in CORS at the time of their promotion. For these three members, they will only receive a return of member contributions plus interest from the CORS at the time of their retirement from the EPS. The remaining three CORS members who did not transfer service to the EPS, had service of 66 months, 275 months, and 284 months. The actuary for the State Retirement Agency has determined that if there were no "promotion out" provisions in place for CORS members and each of these 14 members had remained in the CORS, the cost to the state would be approximately $450,000. This assumes that each year, a similarly constituted group makes similar choices.

Board of Trustees
2014 Legislative Proposals

Prepared by
The Maryland State
Retirement & Pension System

October 23, 2013

2014 Board Requested Legislation

The following proposals are offered by the Board of Trustees for the State Retirement and Pension System for the Joint Committee on Pensions' consideration to sponsor as legislation for the 2014 legislation session. These legislative proposals are divided into two parts. The first part relates to code simplification and correction of technical errors and includes seven proposals intended to reduce the complexity of Maryland's pension law. The second part consists of a separate proposal intended to correct a perceived inequity within existing law.

Code Simplification – Technical Changes

The State Retirement Agency (SRA) has identified several provisions of the State Personnel and Pensions Article believed to be in need of simplification.

Reemployment – Earnings Limitation

In 2010, legislation was enacted to raise the cap on average final compensation from $10,000 to $25,000 under which retirees of the Employees' Retirement System (ERS), Teachers' Retirement System (TRS), Employees' Pension System (EPS), Teachers' Pension System (TPS), or Correctional Officers' Retirement System (CORS) are exempt from the reemployment earnings limitation. Additional legislation was enacted in 2011 and 2012 to reduce the period of time a retiree of the ERS, EPS, TRS, TPS, CORS, or the State Police Retirement System (SPRS) is subject to the earnings limitation from nine full calendar years to five full calendar years.

The Local Fire and Police System (LFP) currently includes a cap on average final compensation of $10,000 and a nine-year limitation provision similar to the provisions that were previously included in the other plans. Because the LFP was closed in 2004, it was inadvertently overlooked when the board requested legislation to address these issues was presented to the Joint Committee on Pensions over the past several years. Staff has recently been made aware of reemployed LFP retirees who have been retired for more than five years but less than nine and continue to be subject to the earnings limitation.

The board recommends legislation to amend the cap on average final compensation and the nine-year limitation in the LFP to five years in order to be consistent with the ERS, EPS, TRS, TPS, CORS, and SPRS. Moreover, a consistent cap on average final compensation and a consistent period of time when the reemployment earnings limitation is in effect will simplify the State Retirement Agency's communications to its members with regard to reemployment earnings limitation issues, as well as simplify its administration of the retire/rehire program.

There is no cost associated with this proposal.

Law Enforcement Officers' Pension System and State Police Retirement System DROP – Special Disability Retirement Allowance

Sections 24-401.1(k)(2) and 26-401.1(k)(2) of the State Personnel and Pensions Article provide that if a retiree of the State Police Retirement System (SPRS) or the Law Enforcement Officers' Pension System (LEOPS), respectively, is participating in the Deferred Retirement Option Program (DROP) and is awarded a special disability retirement from the SPRS or an accidental disability retirement from the LEOPS, that retiree may elect to receive the disability retirement allowance or continue participating in the DROP. However, §§ 29-109 and 29-111 of the State Personnel and Pensions Article state that a member shall be granted an accidental or special disability retirement only if the medical board has certified that:

(i) the member is mentally or physically incapacitated for the further performance of the normal duties of the member's position;
(ii) the incapacity is likely to be permanent; and
(iii) the member should be retired.

Inasmuch as provisions of the State Personnel and Pensions Article state that in order to receive a special or accidental disability, an individual must be certified to be permanently mentally or physically incapacitated for the further performance of normal duties, it is not reasonable that the member would be permitted to continue working. Therefore, the board recommends removing the language in §§ 24-401.1(k)(2) and 26.401.1(k)(2) that allows the DROP member to choose between these options. This recommendation is supported by a Department of Budget and Management regulation, COMAR 17.04.03.16E. Specifically, that regulation provides that "[i]f an employee is approved for disability retirement by the SRA, unless the employee resigns or is removed earlier, the employee shall be considered resigned from State service as of the 120th day after the approval." Consequently, this regulation would suggest there can be no election available for SPRS or LEOPS retirees who are participating in the DROP and have been awarded an accidental disability retirement.

There is no additional cost associated with this proposal.

Pension Systems - Withdrawn Contributions

An individual, who withdraws his or her accumulated contributions from the pension system, forfeits all rights to future benefits in that system. Section 29-302 of the State Personnel and Pensions Article governs vested allowances for members of the retirement systems (ERS, TRS, CORS, SPRS, and JRS). Specifically, § 29-302(f) addresses the consequences of a former member withdrawing his or her accumulated contributions before the payment of the vested allowance begins:

(f) (1) If a former member who elected a vested allowance requests the return of accumulated contributions before payment of the vested allowance begins, the Board of Trustees shall return the accumulated contributions to the former member.
(2) When accumulated contributions are returned to a former member, the former member is not entitled to further benefits on account of the former member's previous membership.

Section 29-303 governs vested allowances for members of the pension systems (EPS, TPS, and LEOPS). However, this section of the State Personnel and Pensions Article is silent when addressing the consequences to a former member of the pension system who withdraws his or her accumulated contributions. To avoid any ambiguity with regard to the consequences when a former member of the pension systems considers withdrawing his or her accumulated contributions from one of the pension

systems, the board recommends adding to § 29-303, similar clarifying language currently included in § 29-302(f).

There is no additional cost associated with this proposal.

Teachers' Pension System – Purchase of Service Credit

The pension simplification bill sponsored by the joint committee in 2005 (Chapter 493 of the Acts of 2005) provided in part that purchases of service credit in each of the several systems made on an installment basis would no longer be permitted. This provision was included in Chapter 493 at the request of the board because at that time no individual had requested to purchase service credit on an installment basis for several years prior to 2005. The joint committee agreed to include this provision in the 2005 pension simplification bill under the condition this particular provision would have a 6-month delayed effective date to allow any member considering this buyback method additional time to elect this method before the provision was removed from the law.

Chapter 493 removed five references to installment payments throughout the provisions of the several systems. However, staff recently discovered that § 23-308(c)(1) of the State Personnel and Pensions Article continues to include language that would permit a purchase of service credit on an installment basis. Accordingly, the board recommends that this provision be repealed. In addition, in recognizing the General Assembly's previous intent to grant any individual who was a member of one of the several systems in 2005, a six- month window to elect to purchase service credit on an installment basis, before repealing those sections in Chapter 493, the board would also recommend a six-month delayed effective date for the repeal of § 23-308(c)(1).

There is no additional cost associated with this proposal.

Former Non-Vested Members – Interest on Accumulated Contributions

In accordance with various provisions of the State Personnel and Pensions Article, a non-vested member of the one of the several systems who leaves employment with a participating employer remains a member of his or her system for four additional years following the member's termination of employment. If the non-vested member does not resume employment with a participating employer within four years, provisions of the State Personnel and Pensions Article state that membership in that individual's system is terminated. In addition, provisions of the State Personnel and Pensions Article also provide that a member shall earn regular interest on the individual's member contributions, However, current law is silent as to whether regular interest is earned on member contributions for more than four years after a non-vested member leaves employment with a participating employer. Nevertheless, inasmuch as a former non-vested member's membership is terminated after four years of leaving employment with a participating employer, it has been the longstanding practice of the State Retirement Agency to stop any future interest from accumulating on these contributions at the end of the four-year period.

The board recommends codifying this practice. There is no additional cost associated with this proposal.

Rollover Employee Contributions to Roth IRA's

Section 21-602 of the State Personnel and Pensions Article states that a non-spouse designated beneficiary may roll over an eligible rollover distribution to an individual retirement account or individual retirement annuity established for the purpose of receiving that distribution. Legal counsel has advised staff for the SRA that it should interpret "individual retirement account" to include Roth individual retirement accounts. Accordingly, the board is recommending amending § 21-602 to clarify "individual retirement account" to include both "traditional and Roth" individual retirement accounts.

Pension Reform Technical Correction

Chapter 397 of the Acts of 2011 enacted the 2011 Pension Reform (Reform). Within the Reform, two provisions were included that staff for the SRA believes should be clarified. Section 23-215.1 of the State Personnel and Pensions Article provides that an individual who was a member of the Alternate Contributory Pension Selection (ACPS) prior to July 1, 2011, and separates from employment for four years or less returning to employment with a participating employer that participates in the ACPS, may resume membership in the ACPS and is not required to join the Reformed Contributory Pension Benefit. (RCPB). However, the language in § 23-215.1 is vague insofar as it only states that an individual who is rehired into a position that is included in the EPS or TPS, shall resume participation in the ACPS. As this reads, it could be interpreted to mean that an individual who was a member of the ACPS prior to July 1, 2011, left employment, and returned to work for Prince George's County within four years of leaving, is entitled to resume membership in the ACPS. The result of this interpretation would be that Prince George's County, an employer participating in the Non-Contributory EPS, is now required to pay employer contributions for an ACPS benefit. The board does not believe this was the intent of the legislature when it included § 23-215.1 in the 2011 reforms. Accordingly, § 23-215.1 should be amended to clarify that an individual who was a member of the ACPS prior to July 1, 2011, separates from employment for four years or less returning to employment with a participating employer that participates in the ACPS, may resume membership in the ACPS and is not required to join the RCPB if the individual is rehired into a position that is included ***in the ACPS*** of the EPS or TPS.

The second provision included in the Reform that staff believes should be clarified, is found in § 23-225(b) of the State Personnel and Pensions Article. This provision was intended to clarify that a participating governmental unit (PGU) participating in the Non-Contributory or Contributory EPS prior to July 1, 2011, is not subject to the RCPB. Yet, as it is written, § 23-225(b) creates an ambiguity for all PGUs, since it only states that the RCPB does not apply to an employee of a PGU participating the EPS that has not elected to participate in the ACPS. As it currently reads, § 23-225(b) suggests that a PGU joining the system today would not be subject to the RCPB given that it has not elected to participate in the ACPS. To correct this ambiguity, the board recommends amending § 23-225(b) to state that the RCPB does not apply to an employee of a PGU, ***that prior to July 1, 2011*** is participating in the EPS but has not elected to participate in the ACPS.

There is no additional cost associated with this proposal.

Reemployment - Late or Non-Reporting Penalties

A local school system that reports to the State Retirement Agency (SRA) and the Maryland State Department of Education (MSDE) that a retiree is eligible to participate in the Retire/Rehire program under §§ 22-406 and 23-407 of the State Personnel and Pensions Article, when, in fact, that retiree is not eligible, is required to pay to the SRA the reemployment earnings offset that would have been taken from

that retiree if that individual had not been reported as exempt. Sections 22-406 and 23-407 also provide a similar penalty for a local school system that fails to report, or reports late, an individual who is participating in the Retire/Rehire program and is eligible to participate. For example, §§ 22-406 and 23-407 provide that if a retiree is reemployed in a position that qualifies as exempt under the Retire/Rehire program, but the local school system reemploying that retiree fails to report, or reports late, the retiree's eligible status to the SRA and MSDE, that school system is required to pay a penalty to the SRA equal to the earnings offset the retiree would have been subject to if the retiree were not exempt under the Retire/Rehire program. In accordance with these provisions of the State Personnel and Pensions Article, the SRA has charged local school districts as much as $25,000 for failing to report an eligible reemployed retiree who is not subject to the earnings limitation and no offset has been made to that retiree's benefit.

The SRA recognizes that when a local school system fails to report, or reports late, the SRA will assume the retiree is subject to the earnings limit when comparing the retiree's earning limit against the annual wage files reviewed by staff each year. If it appears that the retiree is going to exceed his or her earnings limit, the SRA will begin correspondence with the intent of notifying the retiree that the retiree's benefit will be offset in the following calendar year. It is at this point that the retiree will inform the SRA that he or she is exempt from the earnings limit and SRA will then confirm this with the retiree's local school district.

Because there is no offset that should be received by the SRA, the board believes that charging a local school district the full amount of any offset that could have been taken if the retiree was not eligible, is excessive. The board recommends that a more reasonable penalty for failure to report, or late reporting, should be $50 for each month the local school system fails to report, or reports late, not to exceed $1,000.

There is no additional cost associated with this proposal.