

Michigan Public School Employees' Retirement System

Public Act 300 of 2012 Study

November 15, 2012

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November 15, 2012

Mr. John Nixon, Budget Director
Mr. Jase Bolger, Speaker of the House
Mr. Randy Richardville, Senate Majority Leader
Michigan State Capitol Building
100 Capitol Avenue
Lansing, Michigan 48933

Re: Public Act 300 of 2012

Gentlemen:

We are pleased to submit this report containing our study related to Public Act 300 (PA 300) of 2012 for the Michigan Public School Employees' Retirement System. We look forward to reviewing this report with you and answering any questions you may have.

Sincerely,

THE SEGAL COMPANY

A handwritten signature in black ink that reads "Kim Nicholl".

Kim Nicholl, FSA, FCA, MAAA, EA
Consulting Actuary

kn/ns

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1. EXECUTIVE SUMMARY

The Segal Company has been engaged by the State Budget Director, the Senate Majority Leader, and the Speaker of the House to prepare a study regarding the Michigan Public School Employees' Retirement System (MPSERS).

BACKGROUND

Enacted PA 300 of 2012 gives new employees the choice between participating in the existing Hybrid plan or in a defined contribution plan with a matching employer contribution. In addition, the bill requires that a study be conducted to evaluate the existing Hybrid plan and the impact of implementing a defined contribution plan for all new hires.

The objectives of this study are as follows:

1. Explore the advantages and disadvantages of implementing benefit design changes, including how a defined contribution plan identical to the plan available to State employees compares to the Hybrid plan in terms of normal costs, transition costs, stable contribution rates, unfunded liability implications, and benefit adequacy.
2. Prepare an evaluation of the effectiveness of the assumptions used by the retirement system, including the probability that actuarial and statutory assumptions are met and the effect on employer contributions if the assumptions are not met.
3. Assist the State in working to ensure that the retirement system is affordable and adequately funded into the future, as well as the pros and cons of funding in accordance with guidelines contained in Governmental Accounting Standards Board statements.
4. Provide a review of plan design, funding methods, benefits provided and other features in other public state school employee plans and private retirement plans covering comparable employees.
5. Review impact of amendments to the Hybrid plan features such as reporting unit and member contributions, vesting, service credit purchases, retirement allowances calculations and cost of living allowances, rate of investment returns, discount rates, mortality and longevity rates, payroll increase rates and other similar features.
6. Identify and analyze pros and cons, economic impact and funding implications relating to costs of the plans, investment return risks, funding or not funding the annual required contribution amount, stranded cost implications, adequacy of benefits and attraction and long-term retention of employees, including portability of benefits and utility as a workforce management tool, and implications to bond rating agencies.

7. Review and identify short-term and long-term normal costs and transition costs of closing the Hybrid plan and implementing a defined contribution plan for new members identical to the current plan for State employees hired after March 31, 1997.
8. Review the current payroll funding method, outline options for alternative funding methods (including implications to the School Aid Fund), and evaluate each alternative.

The study must also discuss and identify pros, cons, and funding implications related to a change in the funding of retiree health benefits from a cash disbursement method, which is a pay as you go method, to prefunding benefits. The study must also analyze the changes made to retiree health benefits under MPSERS by PA 300 of 2012, and the likely impact of those changes on the funded status of retiree health benefits.

The key findings of this report are below along with recommendations of areas that need additional review.

- There are numerous risks that exist in pension and retirement plans including contribution volatility, accounting, investment return, diversification, time horizon, demographic, inflation, and longevity risk. Risk assignment is primarily a function of design. Employers assume most of the risk for defined benefit plans (DB), risk is shared between employers and employees in hybrid plans, and employees bear the majority of risk in defined contribution plans (DC).
- The legacy systems (MIP and Basic) are DB plans and the employers bear the majority of risk, especially for contribution volatility, accounting risk and funding of any unfunded accrued liabilities. In the existing State DC and proposed DC plan for teachers, employees take on the longevity, diversification, inflation, and investment risk. In the current Hybrid plan, most risks are shared with the employer retaining the contribution volatility risk and employees bearing the inflation risk. (See Table 1 to compare the risks among plans.)
- If given a choice of participating in the Hybrid plan or a DC plan, employees will select the plan that most benefits them based on cost, career plans, and perceived value of the benefit. While the costs of the DC plan are fixed for the employers, offering employees a choice would be expected to increase the per-person cost of the Hybrid plan.
- MPSERS' peer group offers DB plans. The ten peer plans were founded during the period 1917-1953 and have rich histories of adapting to changing workforce and governmental priorities. Most of these plans have made recent design changes such as lowering benefit levels for new hires, lowering cost-of-living adjustments for all participants, and raising the age and/or service for retirement eligibility. No peer system has closed its DB plan and transitioned new hires to a DC plan. The MPSERS smoothing period, return assumption and amortization period are within a comparable range of its peers. There are variations in the employer costs of the plans among the peer group because of different benefit structures provided to members, funding approaches, contribution determination methods (i.e., statutory or actuarially determined), split between employer and employee contributions, economic and demographic assumptions, and amortization periods.

- Over the past 25 years, private sector employers have transitioned a majority of their retirement arrangements to DC plans. It should be noted that over half of private sector workers are not offered a retirement plan through their employers according to the US Census Bureau. This absence of DB plans and limited access to employer-sponsored retirement savings programs raises concern of inadequate retirement income for these workers. Currently, 30 percent of full-time private-sector workers are covered by a DB plan (some of these plans are closed to new participants) with 55 percent covered by DC plans. The trend in the private sector, if an employer offers a plan, is that it will be a DC-type plan.
- Variation in plan design and economic experience greatly influence a plan's long-term cost and risk. Establishing design and demographic elements such as vesting period, service credit purchase, cost-of-living allowances and mortality rates need to be carefully considered and their impact on funding understood. One of the most expensive cost components of a DB plan is the cost-of-living adjustment so it should be designed to be flexible while still protecting retirees from significant diminishment of benefits over time. Equally important is the impact of market volatility and the investment return assumption. MPSERS utilizes an 8 percent assumed investment return for the legacy DB plan and 7 percent for the Hybrid plan, both of which are within the reasonable range for public plans. A rule-of-thumb is that for a 1 percent decrease in the return assumption there is a 15-20 percent increase in liabilities. Moreover, the rate is set as an average to be achieved over a long period (50 years or more). Within that period, there will be significant swings in the actual rates of return from year-to-year causing contribution volatility.
- Benefit adequacy is measured by the level of pre-retirement income that is replaced by a retirement arrangement. There are studies that indicate that between 75-95 percent of post retirement income should be available from all sources (i.e., employer sponsored retirement plans, Social Security, and personal savings) in retirement. The replacement ratio needed increases as the pre-retirement income decreases. This study reviews the replacement ratios and benefit amounts for sample employees under the PA 300 DC plan, State DC plan and the Hybrid plan. The replacement ratios are highest in the Hybrid plan and lowest in PA 300 DC plan for all test cases. When combined with Social Security the Hybrid plan meets the replacement ratio adequacy test. Conversely, the PA 300 DC plan, when combined with Social Security, falls short of the replacement ratio adequacy test. (See Tables 7, 8 and 10 for detail.)
- Retirement benefits are one of the tools that employers can use to manage its workforce. Plan design can attract, motivate, and retain talent. Plan design can also encourage individuals to terminate employment or to retire. Employers need to assess their current and future workforce needs and then design retirement arrangements that support those needs. Generally, DB plans encourage longer-term employment but may not be as useful as DC plans in attracting workers who do not intend to remain with an employer for a long period and desire portability. Hybrid plans can be attractive options as they combine the attributes of both DC and DB plans. Knowing what the workforce goals are is essential to a viable retirement benefit strategy.

- When moving from one plan structure to another, the transition effects and cost must be considered in order to assess the impact of the change. These transition items include administrative processes, vendor selection and management, employee communication, and education. To compare the cost of the existing Hybrid plan and the State DC plan we compared the annual contributions over a 30- year period. Over this period, the annual contributions to the Hybrid plan would increase by \$500 million and to the State DC plan by \$1.6 billion (see Chart 7). As PA 300 provides a choice for new hires to select the DC plan, determining an actual cost is difficult but over time is expected result in cost savings.
- The MPSERS Legacy plan unfunded accrued liability must addressed. Currently, the unfunded liability is being amortized over a 25-year period. If the existing plan were closed to new members, with new hires entering the DC plan, the closed group’s active payroll would decrease resulting in the need to accelerate contributions. This study projects the required employer contribution for transition costs to be approximately \$4.5 billion over the first ten years (see Chart 9).
- MPSERS faces many challenges in funding retirement benefits. The costs are shared across many employers through pooled contributions. The contributions are equal to the normal cost plus an amortization payment toward the unfunded accrued liability. Each employer pays a contribution based upon that employer’s payroll. The payment of the unfunded liability has been negatively impacted in three ways: (1) decline in active workforce, (2) increase in inactive liabilities, and (3) privatization of non-educational service further reducing payroll based contributions. The combined impact is that certain participating employers are covering the “stranded costs” for those employers whose payrolls have declined, therefore making lower contributions. This report makes recommendations that MPSERS may want to consider to adjust contribution levels to more fairly distribute cost among employers.
- Any viable solution to managing the rising costs of retiree health benefits while addressing the impact of liabilities should be two-fold: (1) government employers must set retiree health benefits at sustainable levels by coordinating the benefits with the funds that can be reasonable obtained from employers and employees to finance the benefits, and (2) the unfunded retiree health liabilities must be amortized through payments from employers that exceed the pay as you go annual payments. By establishing a retiree health benefits trust fund and investing the assets, MPSERS has a vehicle to accumulate funds to pay future benefits. Under PA 300, much of the retiree health care financing is transferred to the employees, which should be considered when measuring the adequacy of the overall retirement benefit.
- The Office of Retirement Services solicited input from constituency organizations. The Coalition for Secure Retirement supports retention of the current retirement plan structure. The Michigan Association of Retired School Personnel also supports retention of the current retirement plan structure with modifications to the retirement age eligibility. The Michigan School Business Officials recommend a study to identify a method that fairly allocates the unfunded liability to the school districts responsible for the costs with all public schools sharing in the solution.

2. PLAN DESIGN COMPARISON

DEFINED BENEFIT PLANS, DEFINED CONTRIBUTION PLANS, AND HYBRID PLANS

Governmental employers sponsor retirement plans in order to provide post-retirement income to their employees through pre-retirement contributions. These plans can be divided into three main categories: defined benefit (DB) plans, defined contribution (DC) plans, and hybrid plans. These classifications are defined by the forms of benefits that are provided and by the funding mechanisms used to supply those benefits.

Defined benefit plans are common in the public sector and are often referred to as “traditional” pension plans. Under a DB plan, the pension amount is defined at retirement for each participant. The benefit is commonly based upon factors such as the participant’s age, service, and salary at retirement. The contributions necessary to fund these benefits are adjusted, as needed, to ensure adequate funding of benefits. DB plans typically pay benefits as a monthly annuity for the life of the retiree, often with additional survivor benefits that can be elected upon retirement. Additional options that may be offered in DB plans include active death and disability benefits (“ancillary benefits”), subsidized early retirement benefits, and post-retirement cost-of-living adjustments. From the employer perspective, the amount of benefits that will be paid from the plan will drive the ultimate costs.

Defined contribution plans are common in the private sector, often in the form of a 401(k) plan or in the public sector, in the form of a supplemental 457(b) plan, referring to the sections of the IRS code that govern their administration. Under a DC plan, the contributions into the trust are fixed and the amount of benefits that each participant receives is unknown. At retirement, the benefit is simply the total of contributions allocated to the employee, with interest. DC plans typically pay a lump sum amount at retirement, although some DC plans also offer annuity options. Since the participant’s benefit is defined to be their account balance, disability and death benefits are limited to this amount. Unlike DB plans, DC plans sometimes provide an active employee access to funds through loans or hardship distributions. From the employer perspective, the ultimate cost of the plan is fixed and will determine the amount of benefits that will be paid from the plan.

Hybrid plans have a combination of defined benefit and defined contribution attributes. Hybrid plans have gained popularity in the last few decades, and are in effect for state employees in Oregon, Georgia, Utah, Washington, and Nebraska, among others. In addition to Michigan, teachers currently participate in hybrid retirement plans in 11 other states and the District of Columbia (Source: Ronald Snell, “State Cash Balance, Defined Contribution and Hybrid Retirement Plans, National Conference of State Legislatures, July, 2012).

Examples of hybrid plans include DB/DC offset plans, cash balance plans, combined plans, and variable annuity plans. Hybrid plans can result in reduced cost volatility to the employer, depending upon how they are structured.

In most cases, DC plans are designed to have lower employer costs than DB or hybrid plans. The lower cost structure is a result of the transfer of risks from the employer to the employees. Generally, benefits provided from a DC plan are lower than benefits provided from a DB plan with similar employer costs. A DC or hybrid plan can be designed with the same cost as a DB plan but the resulting benefits would likely be less than those provided from a DB plan would be. In a DB plan, primarily the employer assumes the risks, while in a DC plan the risks are borne by the employee. Hybrid plans were developed in part to share these risks between employers and employees.

SUMMARY OF CURRENT PLANS

The Michigan Public School Employees' Retirement System is a statewide public employee defined benefit plan qualified under section 401(a) of the Internal Revenue Service Code operating under the provisions of Michigan's Public Act 300 of 1980, as amended (Michigan Compiled Laws 38.1301 et seq.).

Until 1974, both employers and employees contributed to the pension fund. By 1977, the system was funded entirely through employer contributions — a noncontributory plan today known as the Basic Plan. MPSERS has evolved through a series of changes to benefits and contributions in order to adapt to challenges faced over the past 25 years.

The Member Investment Plan (MIP) is a DB plan that was introduced in late 1986. Those who were Basic Plan members at the time could choose the MIP, which took effect January 1, 1987. Basic Plan members again had the opportunity to select the MIP in the fall of 1991.

Features of the MIP include:

- Retirement benefits equal to credited service times 1.5% of final average compensation (highest three consecutive years)
- Unreduced retirement benefits at any age with 30 years of service or age 60 with 10 years of service (5 years if consecutive and immediately preceding retirement)
- Early retirement benefits at age 55 with 15 years of service, reduced ½% for each month that benefits commence prior to age 60
- Deferred retirement benefits after 10 years of service, commencing at retirement age
- Duty and non-duty disability benefits
- Duty and non-duty death benefits
- For retirees after January 1, 1987, a choice between post-retirement increases related to the excess of plan earnings above 8% (Basic plan) or a fixed 3% simple increase (MIP); and for retirees before January 1, 1987, the greater of these two increases

Similar benefits apply to members of the Basic Plan (also a DB plan), with retirement eligibility at age 55 with 10 years of service or age 60 with 10 years of service.

Public school employees hired on or after July 1, 2010 participate in the Pension Plus Plan (PPP), a Hybrid plan with a DB and a DC component.

Features of the Hybrid plan include:

- Retirement benefits equal to credited service times 1.5% of final average compensation (highest five consecutive years), plus the DC account balance
- Retirement at age 60 with 10 years of service
- Employee contributions of 2% of pay to a DC account, matched at 50% by the employer up to a maximum of 1% of pay
- No early retirement benefits
- Deferred retirement benefits after 10 years of service, commencing at retirement age
- Duty and non-duty disability benefits
- Duty and non-duty death benefits
- Immediate vesting in employee contributions
- Four-year vesting in employer contributions
- No post-retirement cost of living adjustments

PA 300 of 2012 allowed members first hired before July 1, 2010 a choice between a reduction in the rate of future accruals or an increase in the required employee contribution rate (to maintain the current rate of benefit accrual). The projected financial savings of this election is illustrated in Chart 12 in the Appendix. PA 300 also allows members hired on or after September 4, 2012 a choice between participation in the Hybrid plan described above or an optional defined contribution plan. Chart 8 illustrates that over the long-term, the optional DC plan is more costly for employers than the value of employer-provided benefits (i.e., the employer normal cost rate) under the Hybrid plan.

All State of Michigan employees hired on or after March 31, 1997, are part of a DC plan with mandatory employer contributions of 4% and an employer matching contribution of 100% of the first 3% of employer contributions. Employer contributions are placed into a 401(k) plan and employees can direct their contributions into a 401(k) or 457 plan.

As part of this study, Segal was asked to explore the risks associated with these plans and how these risks would be affected if new employees participate in the State DC plan or are given the choice of participating in the Hybrid plan or another DC arrangement.

CHOICE AND ANTISELECTION RISK

An important concept in retirement planning and design is the risk posed from participant antiselection. Antiselection is the tendency of employees to make financial choices that reflect knowledge of their personal situation and that are in their own best interests. This can create unexpected costs to the plans if the choices are not properly anticipated.

A simple example of this in practice is the election that a retiring employee makes between a lump sum and an annuity. Retirees will factor how healthy they are into this decision. Relatively healthy participants will expect to live longer and will be more likely to elect to receive an annuity. Retirees in poor health will be more likely to take a lump sum with the expectation of not living as long. Employees will make the election that they believe will benefit themselves the most. As a result, those taking the annuity will likely live longer than the average retiree, increasing the cost of the plan. Even though the benefits may be actuarially equivalent in the aggregate, the individual selections of participants tend to increase the overall costs to the plan.

This concept would also apply when participants are offered the choice of participation in more than one retirement plan. Participants who are younger and more likely to leave service before retirement may elect to participate in a DC plan that features a more portable benefit. Participants who are hired mid-career may plan to remain until retirement and elect for a more stable DB retirement benefit, such as is present in the Hybrid plan. This could have the effect of making the DB plan more costly to the employer, since – in the case where participants are not given a choice between plans – younger, lower service participants who are more likely to withdraw often subsidize the cost of older, higher service participants who are more likely to stay until retirement.

CONCLUSION: If future employees are given the choice of participating in the Hybrid plan or a DC plan, it should be expected that employees would elect the plan that benefits them the most. While the costs of the DC plan are fixed for the employers, offering employees a choice would be expected to have the effect of increasing the per-person employer cost of the Hybrid plan.

The overall risk profiles of the MIP, Basic plan, Hybrid plan, and proposed DC plans are discussed below in light of additional risks faced by employees and contributing employers.

CONTRIBUTION VOLATILITY RISK

DB plans are pre-funded based upon annual actuarial valuations. The actuarially calculated employer contribution will increase or decrease each year based upon the actuarial gains and losses the plan experiences. In particular, unanticipated changes in demographics and asset returns directly affect the unfunded actuarial accrued liability (UAAL). Periods of volatile asset returns will result in volatility of the actuarially calculated contribution rate. When employee contributions are fixed at a set percentage of payroll, employers are responsible for the remaining portion of the contributions, so contribution volatility is the employers' responsibility.

Employers may be better able to accept this risk than employees, whose take-home pay would be directly affected by changes in the employee contribution rates.

DC plan contributions are fixed by the plan provisions as a percent of covered payroll. Changes in demographics or asset returns will affect the ultimate benefit received by the participants, but will have no effect on employer costs. In addition, the employee's contribution will not change because of changes in demographics or asset returns. Employee contributions will change only through an election by the employee to do so, if it is allowed.

It is important to note that in a transition from a DB plan with an unfunded liability to a DC plan, the unfunded liability will remain throughout the transition. If payments toward the unfunded liability are being made based on DB plan member payroll, the payments will need to be accelerated, as the DB plan member payroll will decline over time. This will result in increased contributions to the closed DB plan until the unfunded liability is amortized.

CONCLUSION: The MIP and Basic plans are DB plans where the employers assume all of the contribution volatility risk. The Hybrid plan combines a DB benefit with a DC account. The employers assume the contribution volatility risk for the DB portion of the benefit.

Implementing a DC plan for new employees would eliminate this risk for employer contributions on behalf of newly hired employees. The risk profile for the current plan members would remain the same. Over time, as employees in the DC plan replace those in the Hybrid plan (approximately 20-30 years), the risk would be reduced. Not until the last retired member in the Hybrid plan dies would the risk be eliminated. In addition, the risk of determining the appropriate contribution level to fund a secure retirement would also be shifted to the employees.

ACCOUNTING RISK

Just as volatility in demographics and asset returns creates volatility in contributions, the same can be said for liabilities and expenses that must be reported on the plan's financial statements. The Governmental Accounting Standards Board (GASB) issues standards that govern the reporting of retirement plans on the employers' financial statements. For a DC plan, the annual expense is equal to the employer contribution, which is relatively stable. For DB plans, however, the reported Annual Required Contribution (ARC) will fluctuate with gains and losses in the underlying plan.

These risks will be even more pronounced with the adoption of GASB Statements 67 and 68, which will begin to take effect in 2014. These Statements require contributing employers to allocate their portion of the unfunded liability (called the net pension liability or NPL) on their balance sheets. As long as contributions to MPSERS are based on an actuarially determined basis, the NPL should be based on the current interest rate assumption. If contributions fall below this amount, the interest rate used to determine the NPL would be lower, resulting in a greater NPL. In addition, the NPL is based on the market value of assets so it will be subject to market volatility.

Under GASB Statements 67 and 68, the pension expense is no longer equal to the ARC. Instead, pension expense is equal to the change in the NPL from one year to the next with certain

deferrals allowed. Changes in the NPL due to plan amendments are recognized immediately and other changes, such as gains and losses, are amortized over a very short time period (between 5 and 10 years). Pension expense will also be volatile and contributing employers will report their share of pension expense in their financial statements.

CONCLUSION: Accounting risks only apply to the employers. Employees do not face accounting risk. The MIP and Basic plans are DB plans where the employers assume all of the accounting risk. The Hybrid plan combines a DB benefit with a DC account. The employers assume the accounting risk for the DB portion of the benefit.

Moving to a DC plan for new employees would eliminate this risk for newly hired employees. The risk profile for current plan members would remain the same. Over time, as employees in the DC plan replace those in the Hybrid plan, the risk would be reduced. Not until the last retired member in the Hybrid plan dies would the risk be eliminated. However, moving to a DC plan would not affect the current liabilities of the System or change how they are accounted for.

INVESTMENT RETURN RISK

In a DB plan, the investment risk is mostly borne by the plan sponsor or employers. Benefits paid to members are defined by a formula and based upon each employee's age, service, and salary history at retirement. An estimate of these benefits is projected as part of the actuarial valuation process and contributions are made in order to meet those obligations. These contributions and the investment returns that result fund the benefits. Since the factors that determine benefits are independent of these returns, the ratio of assets to liabilities of the plan must be carefully monitored. Even if asset returns fall short of expectations, the employer is obligated to make these benefit payments.

Most public sector DB plans require contributions by the employee in addition to those made by the employer. If employee contributions adjust each year with the actuarial valuation, employees would share a large portion of investment return risk. If employee contributions are fixed by statute, they would not directly share this risk. However, employees share some risk even if contributions are fixed; the political risk of legislated contribution increases as a result of poor returns.

In a DC plan, the investment risk is assumed by the employee. Since the benefit is equal to the employee's account balance, no unfunded liability will develop for the employer as a result of poor asset returns. If returns are not enough to fund an adequate benefit, the employee can be faced with an "unfunded liability" for the shortfall that is needed. The employer is responsible only for making scheduled contributions to the employees' accounts, at which time the risk of poor investment returns is shifted to the employee. Because employers often employ full-time professionals to manage their portfolios and benefit from economies of scale, it is widely viewed that employers are better able to accept investment return risk than employees.

CONCLUSION: The MIP and Basic plans are DB plans where the employers assume all of the investment return risk. The Hybrid plan combines a DB benefit with a DC account. This structure spreads the investment return risk between employers and employees.

Moving to a DC plan for new employees would shift all of this risk to newly hired employees. The risk profile for the current plan members would remain the same. Over time, as employees in the DC plan replace those in the Hybrid plan, the risk would be completely shifted to employees.

INVESTMENT DIVERSIFICATION RISK

A DB plan is able to pool the assets for thousands of participants in a single fund. With the help of professional managers, a DB plan may diversify investments over a broad universe of securities. DB plans may also benefit from economies of scale in making relatively large purchases, and lowering investment expenses. DB plans also benefit from professional managers who continuously monitor and rebalance the risk/reward profiles of the fund.

In a DC plan, investment diversification is limited to the available asset choices. Certain investment options, such as Real Estate, Hedge Funds, and Private Equity, may not be available. Because of the smaller universe of investment options, an individual investment account would expect lower returns for the same amount of risk.

A recent study concluded that the effect of this efficiency for DB plans was approximately 26%, implying that a DB plan would cost 26% less than a DC plan purely as a result of this diversification effect. (*Source: A Better Bang for the Buck: The Economic Efficiencies of Defined Benefit Pension Plans. NIRS August 2008*)

CONCLUSION: The MIP and Basic plans are DB plans where very little investment diversification risk exists. Because the Hybrid plan has a DB and a DC component, the investment diversification risk is found in the DC plan portion, which is assumed by the employees. This is somewhat offset by the lack of investment diversification risk in the DB component.

Moving to a DC plan for new employees would shift all investment diversification risk to newly hired employees. The risk profile for the current plan members would remain the same. Over time, as employees in the DC plan replace those in the Hybrid plan, the risk would be completely shifted to employees.

INVESTMENT TIME HORIZON RISK

Investment time horizon risk is the risk that the timing of benefit payments will affect the rate of return on assets. Typically, an investor with a shorter time horizon must invest less aggressively in order to minimize the possibility of large losses. Investors with longer time horizons are typically more willing to invest aggressively and earn a higher rate of return.

DB plan assets are managed for all participants in the aggregate. Since the time horizon of the fund is essentially infinite, the plan may choose a risk/reward profile that can yield a greater expected rate of return. While the returns may be more volatile, the plan may use actuarial mechanisms to dampen the effect on contributions.

In a DC plan, the participant receives a lump sum payment at retirement and, if the goal is lifetime income, must manage the risk of the fund for a shorter time horizon. This generally

means investment in less risky, lower return asset classes to lower the probability of a large loss. Because of the long-term nature of pension plans, employers are better able to accept time horizon risk than employees are.

In the case of a closed DB plan, where the assets are declining as the remaining retired members are receiving benefit payments, time horizon risk is realized by the plan. As the plan's lifespan decreases, the plan may be forced to manage the risk over a shorter time horizon, lowering the return expectations.

CONCLUSION: The MIP and Basic plans are DB plans where very little investment time horizon risk exists. However, as the plans experience decreasing membership the time horizon risk will begin to appear. If the current Hybrid plan remains in place and since assets of all three plans are managed as one pool, the time horizon risk is mitigated.

Because the Hybrid plan has a DB and a DC component, the investment time horizon risk is also found in the DC plan portion, which is assumed by the employees.

Moving to a DC plan for new employees would shift the investment time horizon risk to newly hired employees. The risk profile for the current plan members would remain the same. Over time, as employees in the DC plan replace those in the Hybrid plan, the investment time horizon risk would be completely shifted to employees.

DEMOGRAPHIC RISK

Demographic risk results from changes to the demographic nature of the plan participants and will affect plan costs. Demographic factors that affect pension plan liabilities include mortality, rates of retirement, disability, withdrawal, and salary increases.

A DB plan is able to collect the risks of many participants and combine them into a single pool. As long as actuarial assumptions are met, those participants who are less expensive offset participants who are more expensive to the plan (*i.e.*, those who live longer than expected). Since the plan is large relative to the risks of individual participants, the risk can be spread efficiently over the entire group without an individual's benefits being affected. However, a DB plan still experiences demographic risks through actuarial losses, which could increase required employer contributions.

A DC plan accumulates assets for one participant and the assets are paid over this participant's period of retirement. The retiree is responsible for managing this account and must decide when to withdraw funds. In order to optimize the benefits paid from the fund after retirement, the retiree must estimate the amount of time they expect to live. A participant who lives longer than expected could potentially outlive their savings. A participant who lives shorter than expected will have assets remaining after death.

For example, based upon recent mortality tables, the median life span of a 65 year old male retiree is approximately 22 years, so one half of the annuitants would expect to live longer than this period. The 99th percentile life span is approximately 44 years, so approximately one in

every hundred retirees is expected to live at least double this period. (source: “Quantifying Key Risks in Retirement”, Institutional Retirement Income Council, Vol 3, Number 3).

This risk can be mitigated somewhat by the purchase of an annuity with the DC balance proceeds. However, the annuity will come at an additional cost to the participant. Because of the risk-pooling arrangement that pension plans provide, employers are better able to manage demographic risks than individual employees.

CONCLUSION: The MIP and Basic plans are DB plans where the employers assume demographic risk. Because the Hybrid plan has a DB and a DC component, demographic risk is shared between employers and employees.

Moving to a DC plan for new employees would shift demographic risk to newly hired employees. The risk profile for the current plan members would remain the same. Over time, as employees in the DC plan replace those in the Hybrid plan, demographic risk would be completely shifted to employees.

POST-RETIREMENT COST-OF-LIVING RISK

A DB plan calculates a benefit for each participant at the date of retirement. This benefit, once calculated, does not generally change during the period of retirement. As the retiree ages, inflation has the effect of eroding the purchasing power of the benefit. Even modest inflation can have a large impact on purchasing power through this compounding effect. A 2% annual rate of inflation will reduce the effective value of \$1,000 to \$740 over fifteen years.

DB plans are able to mitigate this risk through retiree benefit cost-of-living increases that can be granted on a systematic or an ad-hoc basis. These increases are typically limited to a maximum percent or tied to “excess” returns on assets, so the risk is not completely eliminated. If no cost-of-living increases are provided, the risk will be completely assumed by the retirees.

In a DC plan, some inflation protection is available during the period of retirement. The DC assets earn interest during the participant’s retirement, which can help mitigate this risk. However, retirees must assume the risk of not meeting the minimum rate of return necessary to outpace inflation.

CONCLUSION: The legacy, or now-closed MIP and Basic plans are DB plans that feature limited cost-of-living increases or additional payment provisions for retirees. Post-retirement cost-of-living risk is partially assumed by the employers. The employee bears the remaining risk for inflation that is greater than the plan’s increases.

The Hybrid plan for employees hired on or after July 1, 2010 (or moving to a DC plan for new employees) shifts post-retirement cost of living risk to members. The risk profile for the current plan members would remain the same.

SUMMARY

The risks discussed above are summarized in the following table.

TABLE 1 – Bearers of Risks

	Current Plan	Proposed Plan	Legacy Plan
Risks	Hybrid	DC	MIP/Basic
Contribution Volatility Risk	EMPLOYERS	N/A	EMPLOYERS
Accounting Risk	EMPLOYERS	N/A	EMPLOYERS
Return Risk	SHARED	EMPLOYEES	EMPLOYERS
Diversification Risk	SHARED	EMPLOYEES	EMPLOYERS
Time Horizon Risk	SHARED	EMPLOYEES	EMPLOYERS
Demographic Risk	SHARED	EMPLOYEES	EMPLOYERS
Cost-of-Living Risk	EMPLOYEES	EMPLOYEES	SHARED

3. PEER GROUP PLAN SURVEY

In order to compare the plan design, funding method, benefit provisions, and other features of MPSERS, we have assembled information from other public state school employee retirement programs. This “peer” group consists of plans from ten states in the same geographic region as Michigan and is often used as comparators when evaluating MPSERS and the other retirement programs sponsored by the state. The ten plans included are:

- Illinois — Teachers’ Retirement System
- Indiana — Teachers’ Retirement Fund (a component of the Indiana Public Retirement System)
- Iowa — Public Employees’ Retirement System
- Kentucky — Teachers’ Retirement System
- Minnesota — Teachers Retirement Association
- Missouri — Public School Retirement System
- New York — State Teachers’ Retirement System
- Ohio — State Teachers Retirement System
- Pennsylvania — Public School Employees' Retirement System
- Wisconsin — Wisconsin Retirement System

Teachers’ Retirement System of Illinois

The Teachers’ Retirement System (TRS) was established by the State of Illinois on July 1, 1939, to provide retirement, disability, and death benefits to teachers employed by Illinois public elementary and secondary schools outside the city of Chicago. In 1996, with a then-current funded ratio of 58%, the state introduced its “50-year funding plan” whereby contributions would be determined such that TRS would be 90% funded by fiscal 2045. The funding plan included a phase-in for the first 15 years. The State has been contributing the statutorily determined amount since the inception of the policy. However, the statutorily determined contribution during the 15-year phase in period falls well below an actuarially determined contribution amount.

A new tier of benefits was implemented for teachers hired on or after January 1, 2011. The new tier delayed retirement eligibility, extended the averaging period for final average compensation from four years to eight years, capped the salary at the Social Security wage base, and lowered the COLA. The assumed return on investments was recently lowered from 8.5% to 8.0%. The funded status as of June 30, 2012 was reported to be 42.5%. It is expected that additional changes will be made due to the poor funded status.

Indiana State Teachers' Retirement Fund

The Indiana General Assembly created the Indiana State Teachers' Retirement Fund (TRF) in 1921 as a pay-as-you-go defined benefit retirement plan to provide pension and disability benefits to its members and their beneficiaries. In 1995, legislation was introduced that closed the pay-as-you-go portion of the plan (effective June 30, 1995) and created a new tier called the 1996 Account. Benefits accrued under the 1996 Account are funded with actuarially determined contributions. The 1995 legislation also included the creation of the Pension Stabilization Fund, which provides some level of funding for the Pre-1996 Account.

There are no employee contributions required to fund the defined benefit portion of TRF. However, employees are required to contribute 3% of salary to an Annuity Savings Account (ASA), where, at retirement, members can withdraw their ASA balances in a lump sum or they can convert their balances into an annuitized amount that is added to their defined benefit.

Iowa Public Employees' Retirement System

The Iowa Public Employees' Retirement System (IPERS) was established by the Iowa Legislature on July 4, 1953 and covers all public employees in the state, including teachers and school employees (and excluding university and community college personnel who elect other coverage). In 2010, the Iowa Legislature passed a bill that included changes to the contribution rates and benefits for the Regular membership. Beginning July 1, 2011, the combined employee and employer contribution rate was 13.45% of pay, with 40% paid by employees and 60% paid by employers. Beyond 2011, IPERS is authorized to adjust the total contribution rate up or down each year, by no more than one percentage point, based upon the actuarially required contribution rate.

Other changes to benefits, which went into effect July 1, 2012, include extending the averaging period for final average compensation from three years to five years and increasing the early-retirement reduction for members who retire before reaching normal retirement age. In addition to applying to employees hired on or after July 1, 2012, these changes affect future accruals for existing members.

Kentucky Teachers' Retirement System

Since its inception in July 1940, the Kentucky Teachers' Retirement System provides a defined benefit retirement program for local school districts and other public educational agencies in the state. Employee/employer contribution rates and provisions of the benefit formula are different for members covered under university employment versus non-university employment. Major pension reform legislation was passed under House Bill 1 (HB 1) in a 2008 special legislative session. HB 1 created a new tier of benefits for members hired on or after July 1, 2008. Members in this tier require more service for early retirement eligibility, have higher early retirement reductions, and accrue benefits under a lower formula.

Minnesota Teachers Retirement Association

The Minnesota Teachers Retirement Association (TRA) began providing defined benefit pension coverage to educators in 1931. Effective July 1, 1989, a new tier of benefits and eligibility was created for members hired on or after that date. The new tier (Tier II) delayed retirement eligibility, removed the Rule of 90 eligibility criteria, implemented actuarially equivalent early retirement reduction factors, and modified the benefit formula. Additional changes were made to those Tier II members who are hired on or after July 1, 2006 (longer vesting requirement and additional changes to early retirement benefits). The 2006 pension package also contained a prospective-only formula multiplier improvement for some existing TRA members, as well as 0.5% contribution rate increases for both members and employers.

Legislation enacted in 2010 affected the COLA applicable to existing retirees in payment status. Since 1980, postretirement benefit increases had been provided from the Minnesota Post Retirement Investment Fund (referred to as the “Post Fund”). Prior to 2010, the Post Fund based annual increases for in-payment-status benefits on investment yields over 5%. Under legislation passed in 2008, the Post Fund was merged in with the active member funds and the COLA was fixed at 2.5% annually (effective July 1, 2010). Then in May of 2010, additional legislation was passed that temporarily suspended the COLA for 2 years (2011 and 2012), and beginning January 1, 2013, annual increases would be fixed at 2% per year until the funded percentage of TRA (based on the market value of assets) reaches 90%. Once this threshold is achieved, the annual increase will be restored back to 2.5% annually. The decrease in COLA for current benefit recipients from the 2010 legislation was challenged in the courts, but on June 29, 2011, a judge upheld the constitutionality of the State laws that enacted the decrease.

Public School Retirement System of Missouri

The Public School Retirement System was established by the Public School Retirement Act of Missouri in May 1945, to provide retirement, disability, and death benefits to certificated public school employees and their families. A sister system — the Public Education Employee Retirement System of Missouri (formerly known as the Non-Teacher School Employee Retirement System) — provides benefits to non-certificated public school personnel. With a funded percentage as of June 30, 2011 over 85%, PSRS is one of the best funded plans in the survey group. It also has the highest required member contribution rate (14.5% effective July 1, 2011) among plans in the survey group.

New York State Teachers’ Retirement System

The State Teachers’ Retirement System was established in 1921 by the New York State Legislature to provide retirement, disability, and death benefits to eligible New York State public school teachers and administrators (excluding public schools in New York City). For over fifty years, NYSTRS operated as a single tier defined benefit program. In response to rising costs, a second tier of benefits (that generally provided reduced benefits) was implemented for members hired on or after July 1, 1973. Additional tiers (Tier 3 and Tier 4) were created in 1976 and 1983, which again provided lower benefits and — for the first time — required contributions to be made by active members.

In response to the recent recession, the legislature has implemented two additional tiers of benefits: Tier 5 for members hired between January 1, 2010 and March 31, 2012 and Tier 6 for members hired on or after April 1, 2012. These tiers further delay retirement eligibility, reduce benefit accruals, increase reductions for early retirement, and require increased contributions from active members. The State is required to pay the actuarially determined contribution amount, which is 11.11% of payroll as of the last reported actuarial valuation (2011). The benefit/member contribution structure of Tier 6 is expected to allow the State to continue to afford the cost of sponsoring NYSTRS into the future.

State Teachers Retirement System of Ohio

STRS Ohio was established on May 8, 1919, as a retirement plan to teachers and faculty members of public schools, boards of education, state-supported colleges, and universities in the state of Ohio. In addition to a defined benefit plan (which currently requires a 10% contribution from active members and 14% from employers), STRS also offers a defined contribution plan option and a “Combined Plan” option to members who opt out of defined benefit plan coverage. The defined contribution plan provides a 20.5% contribution (10% member/10.5% employer) into a defined contribution account. The Combined Plan option allows members to contribute 10% of their salary to their defined contribution account and the 14% employer contribution goes to fund a reduced defined benefit portion.

In March 2009 — amidst the 2008-2009 financial crisis — the STRS Board initiated a long-term planning process to address the impending funding challenge created by the market downturn. The process culminated with the passing of Substitute Senate Bill 342 on September 12, 2012, which contained pension reform provisions applicable to existing members and current retirees. Normal service retirement eligibility is changed from any age with 30 years of service to a minimum age of 60 with 35 years of service and is phased in over the period August 1, 2015 through July 1, 2023. Early retirement eligibility is changed from age 55 with 25 years of service to age 55 with 30 years of service (and actuarial reductions), and will be phased in over the same time period. Additional changes include a 3% increase in the member contribution rate phased in over three years, a change in the benefit formula (with some element of grandfathering), an increase in the final average salary period from three years to five years, and a decrease in COLA from a 3% simple increase to a 2% simple increase.

In addition to those changes to benefits and contributions listed above, Sub. SB 342 also included various other changes such as the elimination of purchased service subsidies, rules for reemployment at retirement, and inclusion of interest on the cost to purchase a past leave of absence.

Pennsylvania Public School Employees’ Retirement System

On July 18, 1917, the Pennsylvania Public School Employees’ Retirement Act (PSERS) became law establishing a defined benefit retirement system covering teachers and school employees. Although minor changes in benefits and eligibility had been enacted over time, including a 1% increase in member contribution rate in 1983, a new tier of benefits was introduced in 2001 that provided a 2.5% benefit multiplier, but also a higher member contribution rate. This so-called “Tier D” was available to existing member that elected to pay the higher contribution rate.

Act 120 of 2010 was passed by the General Assembly on November 15, 2010, and signed by the Governor on November 23, 2010. Act 120 creates two tiers of benefits for individuals who become new members of PSERS on or after July 1, 2011. Tier E provides for a 2% benefit multiplier and 7.5% member contribution rate while Tier F provides a 2.5% multiplier and 10.3% contribution rate. Both Tier E and Tier F extend retirement eligibility beyond that allowed for in prior tiers and only allow purchases of prior service credit at the full actuarial cost. In addition, the member contribution rates contain a “shared risk” provision that can cause the rate to increase by up to 2%. Act 120 also included a requirement for the employer contribution to be funded on an actuarial basis, subject to limits on how much the contribution requirement can increase from year to year.

Wisconsin Retirement System

The Wisconsin Retirement System provides retirement, death, and disability benefits to all public sector workers, including teachers and non-teaching education personnel, in the state of Wisconsin (excluding the City of Milwaukee and Milwaukee County). WRS also covers executives, elected officials and workers in protective service classifications, but these members have a separate benefit, eligibility, and contribution structure. Benefits are calculated under two methods and retiring members receives the greater of the two calculations. The first calculation is formula based using a benefit multiplier, final average earnings, and years of service. The second calculation is a money purchase calculation based on an employee’s required contributions plus an equal amount of employer contributions plus accumulated interest. A member has the option of participating in the “Variable Fund”, which allows their contributions to grow at “market” investment returns rather than the “Core” interest credit.

TABLE 2 - Actuarial Methods*Asset Smoothing*

	Smoothing period	Corridor¹	Return assumption
Michigan	5 years	No corridor	8.00% non-Hybrid, 7.00% Hybrid
Illinois	5 years	No corridor	8.00%
Indiana	4 years	20% corridor	7.00%
Iowa	4 years	20% corridor	7.50%
Kentucky	5 years	No corridor	7.50%
Minnesota	5 years	No corridor	8.50%
Missouri	5 years	No corridor	8.00%
New York	5 years, based on 3%	No corridor	8.00%
Ohio	4 years	9% corridor	7.75%
Pennsylvania	10 years	No corridor	7.50%
Wisconsin	5 years	No corridor	7.20%

UAL Amortization for Annual Required Contribution

	Amortization method	Payroll growth	Amortization period
Michigan	Level % of pay	3.50%	Closed period (25 years remaining)
Illinois	Level % of pay	4.40% (approx.)	30 year open
Indiana	Level dollar	N/A	Closed period (30 years remaining)
Iowa	Level % of pay	4.00%	30 year open
Kentucky	Level % of pay	4.00%	30 year open
Minnesota	Level % of pay	3.75%	Closed period (26 years remaining)
Missouri	Level % of pay	3.50%	30 year layered (20 years for benefit changes)
New York	Level % of pay	N/A (unknown)	Average future working lifetime (Aggregate)
Ohio	Level % of pay	3.5% for 7 years, 4.0% thereafter	30 year open
Pennsylvania	Level dollar	N/A	30 year open
Wisconsin	Level % of pay	3.20%	Closed period (18 years remaining)

¹ E.g., a 20% corridor means that the calculated actuarial value of assets cannot be less than 80% of market value or greater than 120% of market value

TABLE 3 - Retirement Plan Structure

	Coverage	Tiers
Michigan	Teachers and public school employees	Most pre 7/1/10 hires are MIP; members hired between 7/1/10 and 9/3/12 go into Hybrid/PPP; members hired on or after 9/4/12 can choose between Hybrid or DC
Illinois	Teachers employed by public common and charter school districts located outside the city of Chicago	Tier I: membership prior to 1/1/11; Tier II: membership on or after 1/1/11
Indiana	Teachers in a public school corporation, certain TRF employees, and some employees in charter schools and public universities	Pre-1996 Account (closed group); 1996 Account (post 7/1/95 hires)
Iowa	Regular members (incl. teachers), sheriffs, deputies, and protection occupations	Single tier
Kentucky	Any position requiring teacher certification in certain state agencies	Members hired before 7/1/08; Members hired on and after 7/1/08
Minnesota	Teachers and educators	Members hired before 7/1/89; Members hired on and after 7/1/89
Missouri	Certificated, full-time employees of public school districts in Missouri (except St. Louis city and Kansas City), public 2-year colleges, and certain statewide non-profit educational associations that have elected to join	Single tier
New York	Teachers and public school employees	Tier 1: membership prior to 7/1/73; Tier 2: membership 7/1/73 - 7/26/76; Tier 3: membership 7/27/76 - 8/31/83; Tier 4: membership 9/1/83 - 12/31/09; Tier 5: membership 1/1/10 - 3/31/12; Tier 6: membership on or after 4/1/12
Ohio	Licensed teachers and other faculty members	Single tier
Pennsylvania	Teachers and public school employees	T-C (legacy), T-D (post 7/1/01 hires), T-E and T-F (both post 7/1/11 hires)
Wisconsin	General Employees (incl. teachers), Executives & Elected Officials, Protectives	Single tier

TABLE 4 - Contributions

Employee Contribution Rate	
Michigan	Basic, electing reduced future accrual under PA 300: None; Basic, electing to maintain current accrual under PA 300: 4.0%; MIP, electing reduced future accrual under PA 300: Pre 7/1/90 hire: 3.9%; Hired between 1/1/90-6/30/08: 3% of first \$5,000 + 3.6% of next \$10,000 + 4.3% in excess of \$15,000; Hired on or after 7/1/08: 3% of first \$5,000 + 3.6% of next \$10,000 + 6.4% in excess of \$15,000; MIP, electing to maintain current accrual under PA 300: 7.0%; Hybrid plan: 3% of first \$5,000 + 3.6% of next \$10,000 + 6.4% in excess of \$15,000
Illinois	9.40%
Indiana	None
Iowa	5.78% (Regular Membership only)
Kentucky	7.625% (University); 9.105% (Non-university)
Minnesota	Currently 6.00%; 3x0.5% increases beginning 7/1/12 (7.50% ultimate)
Missouri	14.50%
New York	Tiers 3-4: 3% for first 10 years; Tier 5: 3.5%; Tier 6: 3.5% through 3/31/13, then a percentage (3% to 6%) dependent on salary
Ohio	Currently 10%; 3x1% increases beginning 7/1/12 (13% ultimate)
Pennsylvania	T-C: 5.25% pre 7/22/83 hire, 6.25% post 7/22/83 hire; T-D: 6.5% pre 7/22/83 hire, 7.5% post 7/22/83 hire; T-E: 7.5%, but can increase as high as 9.5% ("shared risk" provision); T-F: 10.3%, but can increase as high as 12.3% ("shared risk" provision); Average: 7.40%
Wisconsin	5% (General employees only)

TABLE 4 - Contributions (continued)

	Employer Contribution Basis	Funding the ARC?	Employer Contribution Rate
Michigan	Actuarially-determined contribution	Yes	20.90% ² ; (20.97% for Basic and MIP, 19.70% for PPP)
Illinois	Amount to achieve 90% funded ratio by 2045	No	28.63%
Indiana	Pre-1996 Account funded by State appropriations (pay-as-you-go); 1996 Account funded by contribution rate set by Board and paid by employers	No	7.50%
Iowa	Currently: Statutory fixed rate; beginning 7/1/12: actuarially determined, change in rate cannot exceed 1.0% per year	No	8.67% (Regular Membership only)
Kentucky	Actuarially-determined contribution	Yes	Univ.: 22.365% (<08), 23.365% (>08); Non-univ.: 23.845% (<08), 24.845% (>08)
Minnesota	Statutory fixed rate	No	Currently 6.69% (wtd. avg., incl. Supplemental); 3x0.5% increases beginning 7/1/12
Missouri	Statutory fixed rate	No	14.50%
New York	Actuarially-determined contribution	Yes	11.11%
Ohio	Statutory fixed rate	No	14.00%
Pennsylvania	Normal Cost + 24 year amortization of UAL (layered), subject to pension rate collar	No	12.36% (reflects Act 120 Pension Collar)
Wisconsin	Actuarially-determined contribution	Yes	6.9% (General employees only)

The variations in the level of employer contribution rates is due to the basis for determining the contribution (*i.e.*, statutory or actuarially determined), the funded status of the plan, the amortization period, the economic assumptions, the benefit structures provided to members, and the level of employee contributions.

² The 20.90% rate for Michigan PSERS is based on the actuarially determined contribution using the funded position of the System as of September 30, 2011.

TABLE 5 - Retirement Eligibility Criteria

	Normal retirement age	Early retirement age
Michigan	Basic plan: 55/30; 60/10 MIP: 30 years; 60/5 (if earn .1 year of service each of last 5 years; otherwise 60/10) Hybrid plan: 60/10	Basic plan and MIP: 55/15 Hybrid plan: none
Illinois	Tier 1: 35 years; 60/10; 62/5 Tier 2: 67/10	Tier 1: 55/20 Tier 2: 62/10
Indiana	65/10; 60/15; Rule of 85 with at least age 55	50/15
Iowa	Age 65; 62/20; Rule of 88 with at least age 55	Age 55
Kentucky	27 years; 60/5	Pre-7/1/08 hire: 55/5; Post-7/1/08 hire: 55/10
Minnesota	Pre-7/1/89 hire: 65/3; 62/30; Post-7/1/89 hire: SSNRA, not to exceed age 66	Pre-7/1/89 hire: 55/3; 30 years; Rule of 90; Post-7/1/89 hire: 55/3
Missouri	60/5; 30 years; Rule of 80	55/5; 25 years
New York	Tier 1: 35 years, 55/20; Tiers 2-4: 30 years, 62/5; Tier 5: 62/10, 57/30; Tier 6: 63/10	Tiers 1-4: 55/5; Tiers 5-6: 55/10
Ohio	Currently 30 years or 65/5; phasing into 60/35 by 2023	Currently 55/25 or 60/5; phasing into 55/30 or 60/5 by 2023
Pennsylvania	T-C & T-D: 35 years; 60/30; 62/1; T-E & T-F: Rule of 92 with 35 years; 65/3	55/25 for "special" early retirement
Wisconsin	Age 65; 57/30	Age 55

TABLE 6 - Retirement Benefits**Final Average Compensation and Benefit Formula**

Michigan	<p>Basic plan and Hybrid plan: 5 year FAC; MIP: 3 year FAC</p> <p>1.5% x FAC x svc (Basic and MIP members electing reduced future accrual under PA 300 will have future service credited at a 1.25% multiplier)</p>
Illinois	<p>Tier I: 4 year FAC; Tier II: 8 year FAC</p> <p>Tier I (pre-7/1/05): Max[$\min(2.2\% \times \text{FAC} \times \text{svc}, 75\% \text{ FAC})$], Money Purchase annuity (2.4x)]</p> <p>Tier I (post-7/1/05) and Tier II: $\text{Min}(2.2\% \times \text{FAC} \times \text{svc}, 75\% \times \text{FAC})$</p>
Indiana	<p>5 year FAC</p> <p>1.1% x FAC x svc</p>
Iowa	<p>Currently: 3 year FAC; beginning 7/1/12: 5 year FAC</p> <p>2% x FAC on 1st 30 years + 1% x FAC on next 5 years, maximum 35 years (65% x FAC)</p>
Kentucky	<p>In general: 5 year FAC; 55/27: 3 year FAC</p> <p>University pre-7/1/08 hire: 2% x FAC;</p> <p>University post-7/1/08 hire: 1.5% x FAC (if $\text{svc} \leq 10$), 1.7% x FAC ($10 < \text{svc} \leq 20$), 1.85% x FAC ($20 < \text{svc} \leq 27$), 2% x FAC (if $\text{svc} \geq 27$);</p> <p>Non-university pre-7/1/02 hire: 2% x FAC for pre-7/1/83 svc + 2.5% x FAC for post-7/1/83 svc on svc up to 30 + 3% x FAC on svc in excess of 30;</p> <p>Non-university 7/1/02-6/30/08 hire: 2% x FAC (if $\text{svc} < 10$), 2.5% x FAC (if $\text{svc} \geq 10$) on svc up to 30 + 3% x FAC on svc in excess of 30;</p> <p>Non-university post-7/1/08 hire: 1.7% x FAC (if $\text{svc} \leq 10$), 2% x FAC ($10 < \text{svc} \leq 20$), 2.3% x FAC ($20 < \text{svc} \leq 26$), 2.5% x FAC ($26 < \text{svc} \leq 30$), 3% x FAC (if $\text{svc} \geq 30$)</p>
Minnesota	<p>5 year FAC</p> <p>Pre-7/1/89 hire: Max[$1.2\% \times \text{FAC}$ first 10 years + 1.7% x FAC over 10 years prior to 7/1/06 and 1.9% after 7/1/06, 1.7% x FAC prior to 7/1/06 and 1.9% after 7/1/06 with 3% augmentation to/actuarial reduction from age 65, Money Purchase annuity (2.2x)];</p> <p>Post-7/1/89 hire: 1.7% x FAC prior to 7/1/06 and 1.9% after 7/1/06 with 3% (2.5% for post-6/30/06 hires) augmentation to/actuarial reduction from SSNRA, not to exceed 66</p>
Missouri	<p>3 year FAC</p> <p>2.5% x FAC; up to 7/1/2013, a member may retire with 2.55% x FAC with 31+ years</p>

TABLE 6 - Retirement Benefits (continued)

Final Average Compensation and Benefit Formula

New York	<p>Tiers 1-5: 3 year FAC; Tier 6: 5 year FAC</p> <p>Tiers 1-2: $\text{Min}[1.8\% \times \text{FAC for pre-7/1/59 svc} + 2\% \times \text{FAC for post-7/1/59 svc}, 79\% \times \text{FAC}]$; Tiers 3-4: $1.67\% \times \text{FAC (if svc} < 20)$, $2\% \times \text{FAC (} 20 \leq \text{svc} < 30)$, $60\% + 1.5\% \times \text{FAC (each year over 30)}$; Tier 5: $1.67\% \times \text{FAC (if svc} < 25)$, $2\% \times \text{FAC (} 25 \leq \text{svc} < 30)$, $60\% + 1.5\% \times \text{FAC (each year over 30)}$; Tier 6: $1.67\% \times \text{FAC (if svc} < 20)$, $1.75\% \times \text{FAC (if svc} = 20)$, $35\% + 2\% \times \text{FAC (each year over 20)}$</p>
Ohio	<p>Currently: 3 year FAC; beginning 8/1/15: 5 year FAC</p> <p>Currently: $\text{Max}[2.2\% \times \text{FAC first 30 years}, 2.5\% \times \text{FAC for 31st year}, + 0.1\% \times \text{FAC each year thereafter, up to a maximum of } 100\% \times \text{FAC, Money Purchase calculation}]$; Beginning 8/1/15: $2.2\% \times \text{FAC for all service}$</p>
Pennsylvania	<p>3 year FAC</p> <p>T-C & T-E: $2\% \times \text{FAC} \times \text{svc}$; T-D: $2.5\% \times \text{FAC for "School" service} + 2\% \times \text{FAC for "Non-school" service}$; T-F: $2.5\% \times \text{FAC} \times \text{svc}$</p>
Wisconsin	<p>3 year FAC</p> <p>$\text{Max}[\text{min}(2.165\% \times \text{FAC for pre-2000 service} + 2\% \times \text{FAC for post-1999 service}, 70\% \times \text{FAC})]$, Money Purchase calculation]</p>

TABLE 6 - Retirement Benefits (continued)

Early Retirement Reductions

Michigan	Basic plan and MIP: Reduced for commencement prior to age 60, 6% per year; Hybrid plan: no early commencement
Illinois	Tier I: 6% per year prior to age 60 Tier II: 6% per year prior to age 67
Indiana	1.2% per year from 65 to 60, 5% per year from 60 to early retirement
Iowa	Currently: 3% per year prior to NRA; beginning 7/1/12: 6% per year prior to age 65 (with transition rules for existing members)
Kentucky	Pre-7/1/08 hire: 5% per year prior to earlier of age 60 or 27 years; Post-7/1/08 hire: 6% per year prior to earlier of age 60 or 27 years
Minnesota	Pre-7/1/89 hire: 3% per year on step-rate component; actuarial on augmented component; Post-7/1/89 hire: actuarial reductions
Missouri	Actuarial reductions; up to 7/1/2013, a member under age 55 with 25 to 29.9 years can retire under a modified formula ranging from 2.2% to 2.4% with no reduction
New York	Tier 1: 5% for each year less than 20 years, not to exceed 50%; Tiers 2-4: 6% for first 2 years prior to 62, 3% thereafter; Tier 5: 6.7% for first 2 years prior to 62, 5% thereafter; Tier 6: 6.5% per year
Ohio	Currently 3%/year from 65 for first 5 years; 5% thereafter (max reduction of 5% for 29 years, 10% for 28 years, 15% for 27 years, 20% for 26 years, and 25% for 25 or less years); Beginning 8/1/15: actuarial reductions
Pennsylvania	"Special" early retirement: 3% per year to a maximum reduction of 15%; otherwise actuarial equivalence
Wisconsin	4.8% per year from NRA; 4.8% is reduced by .001111% for each month of creditable service after attainment of age 57

TABLE 6 - Retirement Benefits (continued)

Post-retirement Increases

Michigan	MIP: 3% simple; Basic plan: supplemental/13th check only (based on investment earnings); Hybrid plan: none
Illinois	Tier I: 3% compound; Tier II: Min(3%, 1/2 of CPI) compound, starting at 67
Indiana	No automatic increases after retirement are provided; periodically, unscheduled increases have been made (valued as 1% compound COLA)
Iowa	Retired prior to 7/1/90: Min[CPI, 3%] Retired after 6/30/90: Favorable Experience Dividend reserve account
Kentucky	1.5% compound
Minnesota	No increase in 2012; 2% increases starting in 2013. When funding ratio reaches 90%, increases will revert to 2.5% (compound).
Missouri	Approved by Board, subject to guidelines, with 80% maximum increase; 2% compound in 2012
New York	50% of CPI, not less than 1% nor greater than 3%, payable on the first \$18,000, beginning at age 62 (retired for 5 years) or age 55 (retired for 10 years)
Ohio	Currently: 3% simple; Beginning 7/1/12: 2% simple, starting at 60 for new retirees
Pennsylvania	None
Wisconsin	Annuities increased if investment income credited to retired life funds exceeds 5% (and resulting adjustment would be at least 0.5%)

TRENDS IN PRIVATE SECTOR PLAN DESIGN

The general trend for retirement benefits in the private sector has been a decline in participation in DB plans and a rise in participation in DC arrangements. In addition, all types of private sector retirement plans are less common than in the past.

In the mid-1980s, over 90% of full-time employees of medium and large private sector organizations participated in employer-sponsored retirement plans. Approximately 80% of employees were covered under a DB plan and 40% covered under some sort of DC arrangement. Twenty-five years later, retirement plan coverage in the private sector has dropped to 66%, with only 30% of full-time employees covered under a DB plan. Despite the large drop in retirement plan coverage, the prevalence of DC plans has actually increased, with coverage rising to approximately 55%. (Source: *Employee Benefit Research Institute Databook on Employee Benefits, May 2011*.) Another study shows that participation in DB plans has dropped from over 80% of the private sector workforce in 1979 to less than 40% in 2007 (Source: *EBRI, Fast Facts, June 2007*).

Several factors have contributed to the shift from DB plans to DC plans in the private sector. A primary reason is the increased volatility of DB plan costs relative to the predictable cost of DC plans, particularly as it relates to retirement plan expense and liabilities reported in employer's financial statements. DC plans have no unfunded liability to report on the balance sheet. Furthermore, employer contributions and financial statement expenses for DC plans are not subject to investment volatility.

Unlike DB plans in the public sector, private sector DB plans are typically 100% employer-funded. Private sector DC plans typically feature an employee contribution component. A recent survey of plans indicates that the average participant deferral rate to a DC plan in 2011 was 7.1% (the median deferral rate was 6.0%). The average total participant and employer contribution rate was 10.4% (median of 9.6%). The report also cites that 90% of plans provide for some type of employer contribution; 45% provide a matching contribution only, 8% provide a nonmatching contribution only, and 37% provide both a matching and nonmatching contribution. The most common matching arrangement (23% of plans covered in this study) is 50 cents on the dollar on the first 6% of pay employee deferral. This mirrors the PA 300 DC plan design; refer to Section 5, including Tables 7 and 8, for a discussion and illustrations on the adequacy of this benefit. The average value of the "promised match" (*i.e.*, the maximum value of the match promised by the employer via the matching formula) in 2011 was 4.3%; median was 3.0%. (Source: *Vanguard-How America Saves, June 2012*.)

SUMMARY

The retirement systems that are peers to MPSERS all have a defined benefit plan structure. Changes have been implemented to most of the peer systems to provide lower benefits to new hires through increasing retirement ages and lowering accruals. Some peer systems have lowered future accruals for existing plan members. Two systems have reduced COLAs for existing members as well as retirees. No system has implemented a mandatory DC plan for new employees.

4. PLAN DESIGN AND ECONOMIC IMPACT OF VARIABILITY IN PLAN EXPERIENCE

REVIEW OF PLAN AMENDMENTS AND ACTUARIAL ASSUMPTIONS

Employer and Employee Contributions

DB plans are funded by contributions and associated investment returns. In a rising asset market, contributions are more valuable when made sooner rather than later due to investment earnings on these contributions.

The benefit provided in a DC plan is equal to the total of accumulated contributions to the member's account. Therefore, increased contributions would result in increased expected benefits for employees. However, requiring that employees increase contributions could have workforce management implications, since this would effectively reduce the employees' take home pay.

The MIP and Basic plans are DB plans for which increased contribution would raise the funded level on a long-term basis.

The Hybrid plan combines a DB benefit with a DC account. Increases in contributions to the DB portion would raise the funded level of the plan. Increases in contributions to the DC plan will not affect the DB plan funded level, but would result in potentially larger benefits for employees.

Vesting Requirements

In a DB plan, the length of the vesting period determines how long an employee must participate in the plan before being eligible for benefits. Typically, public sector plans have vesting periods of five to ten years for retirement benefits. In almost all cases, employee contributions are considered fully vested with no requirement for service. This allows for non-vested participants to withdrawal benefits that are equal to the member's contributions.

A longer vesting period is less costly to the plan than a short one, since employees who leave prior to the vesting period receive minimal benefits. Furthermore, employer contributions that are made on behalf of an employee who leaves prior to becoming vested remain in the plan and can be used to fund other participant's benefits. This makes the plan less expensive on a per person basis.

The MIP and Basic plans are DB plans with a ten-year vesting requirement. Lengthening this requirement would reduce employer contributions, but vesting periods of longer than ten years are uncommon in the public sector.

The Hybrid plan combines a DB benefit with a DC account. The DB component has a ten-year vesting requirement for most benefits. The DC component has employee contributions that are immediately vested and employer contributions are vested after four years.

Service Credit Purchases

Public retirement systems often allow participants to purchase service credits in order to increase their benefits under the plan or to create continuity of employment (i.e. Out of System purchases, military time, maternity/paternity leave, etc.). Purchases are typically made through lump sum payments or payroll deductions over a set period. The cost of the service is determined using actuarial tables that generally attempt to make the purchases cost-neutral to the plan in aggregate. In some cases, the cost to purchase service is subsidized, meaning that there is an increase in unfunded liability when a service purchase is made.

Service purchases are subject to the anti-selection risks. Participants who purchase service and elect annuities at retirement typically do so with the expectation of living longer than the average retiree lives. This often has the effect of making purchases more expensive to the plan than normal accrued service.

While service purchases are not allowed under the Hybrid plan, the legacy DB plan currently allows for service purchases on a subsidized basis. A complete review of the service purchase factors is outside the scope of this report. However, a periodic review of service purchase experience, along with adjustments to the factors, if necessary, could reduce the costs associated with service purchases.

Cost of Living Allowances (COLAs)

Allowances for adjustments to retiree benefits are a feature that is very common in the public sector. Increases may be granted on an ad-hoc or systematic basis. COLAs may be granted at a fixed amount (such as the MIP) or on a level that is tied to asset returns (like the Basic plan). COLAs are generally very expensive relative to other plan provisions, so changes in COLAs would have a large effect on liability and resulting contributions.

As with any reduction in benefits, reducing or eliminating COLAs would make the plan less attractive to new members. In addition, the ability to reduce COLAs for active employees and retirees receiving benefits has faced legal challenges in several jurisdictions. Several of these cases are currently pending.

The MIP plan offer systematic COLAs for all retirees. Reducing these COLAs for current members would reduce costs, but may not be legally permissible in Michigan. The Hybrid plan does not offer COLAs.

Rate of Investment Return

The actuarial assumption that has the greatest effect on overall plan position is the expected rate of investment return. The rate of return is inversely related to the liabilities of the plan, so a lower rate of return yields a higher liability amount. The amount of liabilities is highly sensitive to this assumption. A common actuarial rule-of-thumb suggests that a single percentage point decrease in this assumption will result in a 15%-20% increase in the liabilities of a pension plan.

The rate of investment return should be carefully considered and should reflect the investment policies of the plan and be aligned with other actuarial assumptions. The plan's investment objectives and risk tolerance should be determined before the actuarial rate of investment return assumption is considered. An important consideration is that the assumed rate of return should cover the period for which payments from the plan will be made. This is a very long-term horizon that could be up to 50-70 years or beyond.

If the rate of investment return is too high, the plan's liabilities will appear lower than appropriate. This could result in inadequate funding. If the investment return rate is too low, the liabilities will appear higher than appropriate and may cause unnecessary alarm.

The MIP and Basic plans use an assumed rate of return of 8% and the Hybrid plan assumes a return of 7%. These are both within the reasonable range of rates currently being used in the public sector of the 126 state retirement plans listed in a recent survey; all but sixteen used an investment return assumption between 7% and 8%, inclusive (*NASRA Issues Brief – August 2012*). Lowering these assumed rates would increase liabilities and require additional contributions, while increasing these assumed rates would decrease liabilities and required contributions.

Mortality Rates

Rates of mortality determine how long retirees will receive payments. They are also used to project death benefits for active and inactive members. Typically, mortality assumptions are applied by gender (male/female) and age.

For all but the largest retirement systems, standard industry mortality tables are used as the basis to determine the probability of death at each age. Systems that are very large may use mortality tables that are created based upon their own experience.

Over the last several decades, advancements in medicine have decreased mortality rates at most every age. These improvements are expected to continue by most in the industry. To the extent that plans do not reflect a margin for future mortality improvements, plans will experience unanticipated costs in future years as retirees live longer than expected and receive more payments.

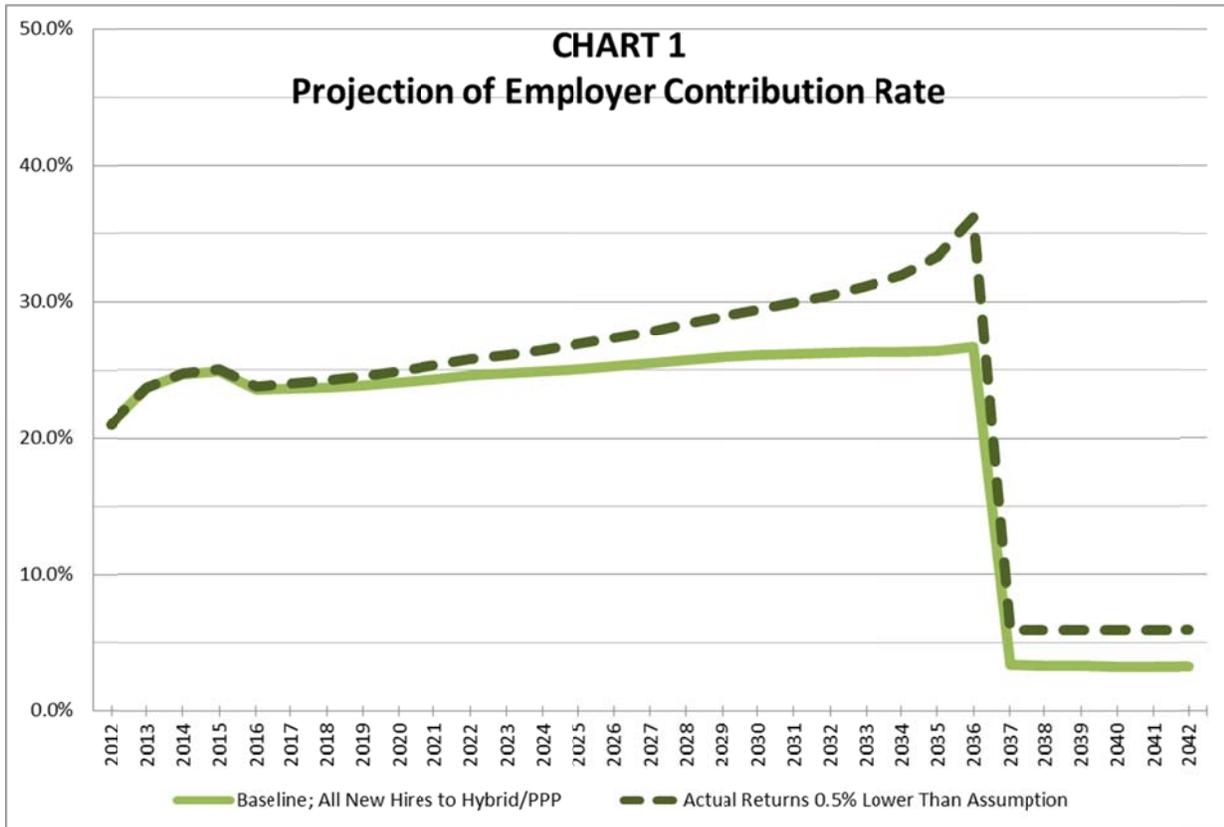
We have reviewed the mortality tables used for MPSERS and find that they are reasonable.

ECONOMIC IMPACT OF VARIABILITY IN EMERGING EXPERIENCE

Funding of MPSERS relies on assumptions as to future experience of the plan. Some of these assumptions correspond to risks generally borne by the employers mentioned above, such as investment return risk, contribution risk and demographic/longevity risk. When actual experience is worse than assumed (*e.g.*, actual investment return lower than expected), the plan sustains actuarial losses that increase the cost of the plan. The following charts demonstrate the effect of adverse experience on projected employer contributions of the current MPSERS (pre-PA 300).

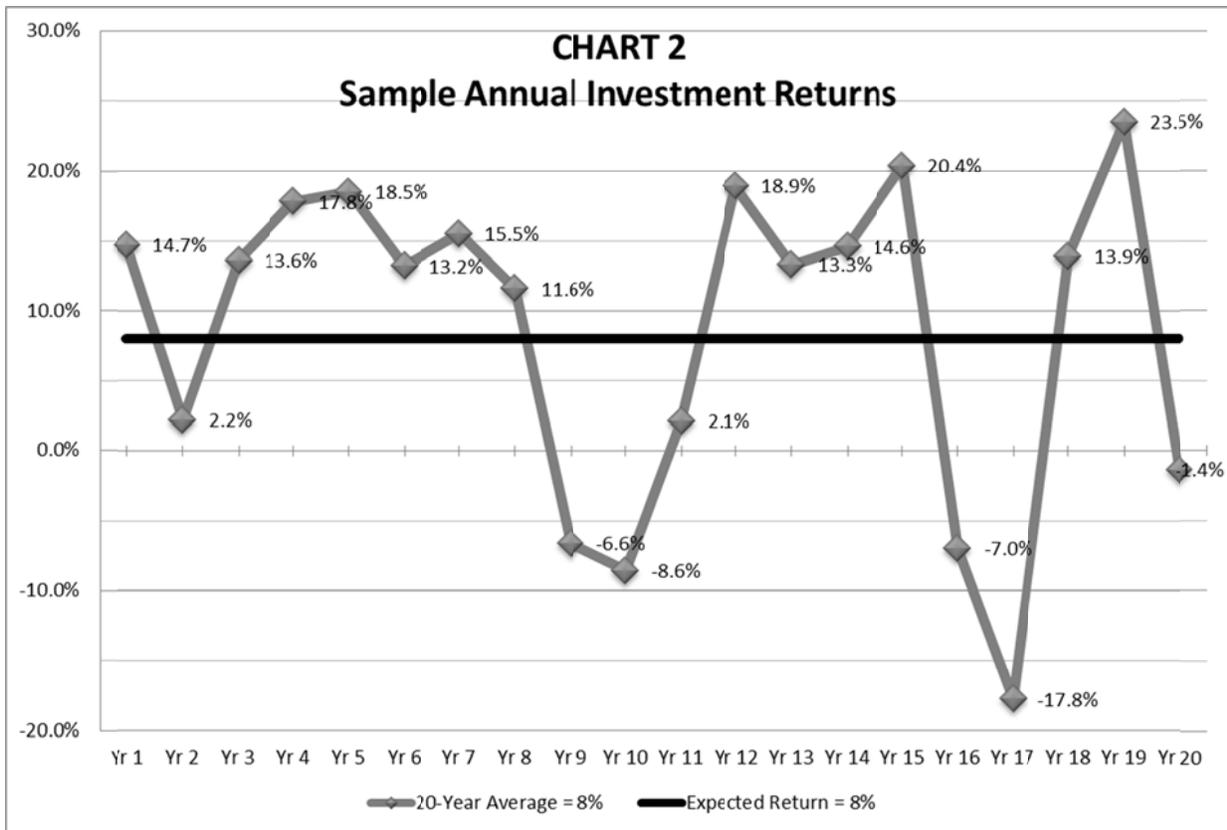
Investment Return Risk and Volatility

The current actuarial assumption for future investment return is 8% per year for the legacy portion of the plan and 7% per year for the Hybrid component. The following graph shows a 30-year projection of the actuarially required employer contribution rate under two scenarios: 1) the investment return assumptions are met, and 2) the investment return falls short by 50 basis points each year in the future (*i.e.*, 7.5% earned on the legacy portion and 6.5% earning on the Hybrid portion).

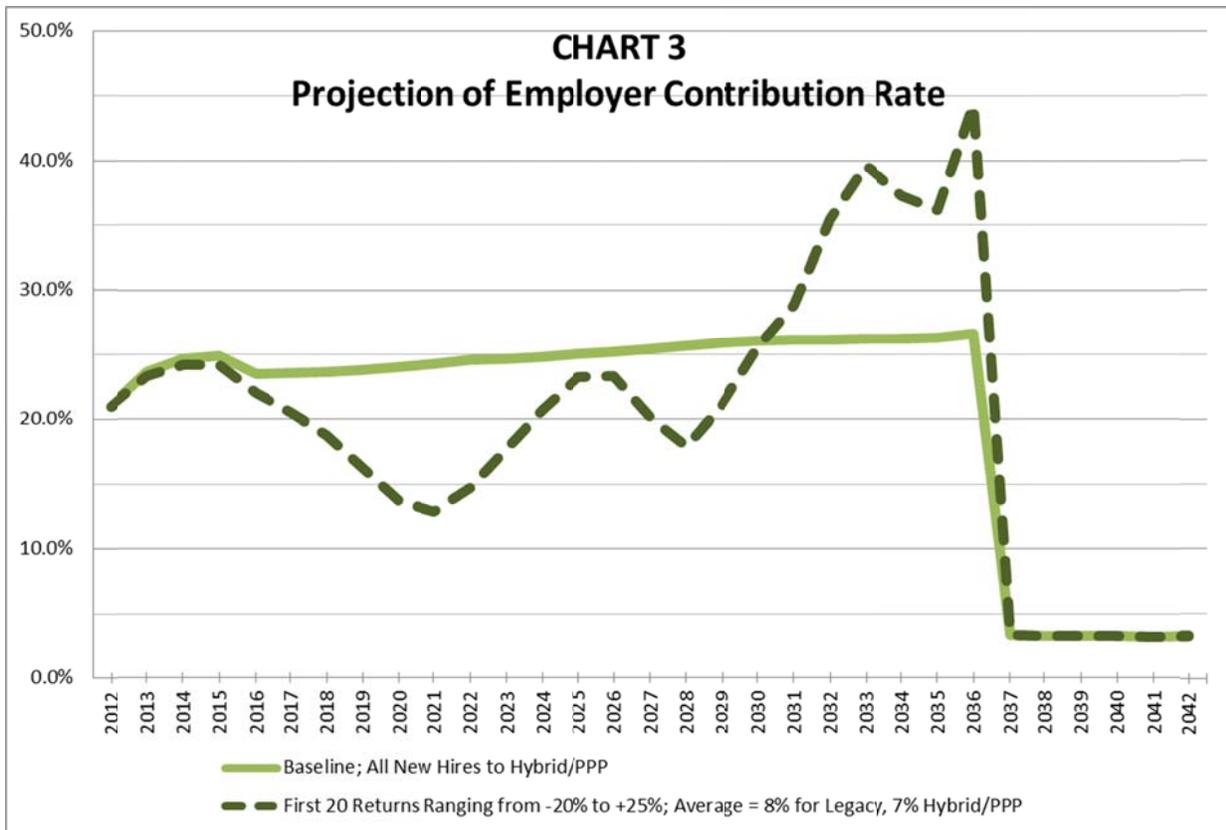


If expected returns are underperformed every year, the actuarial losses generated each year produce a compounding effect that is projected to increase the employer contribution by 10% of payroll in twenty years.

Another characteristic of investment return risk is contribution rate volatility that stems from volatility in the actual returns experienced by MPSERS. In the table above, the baseline projection assumes that the assumed returns are achieved in each future year, and therefore, on average over the projection period. In actuality, even if an average return equal to the assumed return was experienced over a period of time, there would likely be large deviations in year-by-year returns, thus creating volatility in the projected required contribution rates. As an example, consider the following pattern of investment returns over a 20-year period that yield an average of 8% (non asset-weighted).



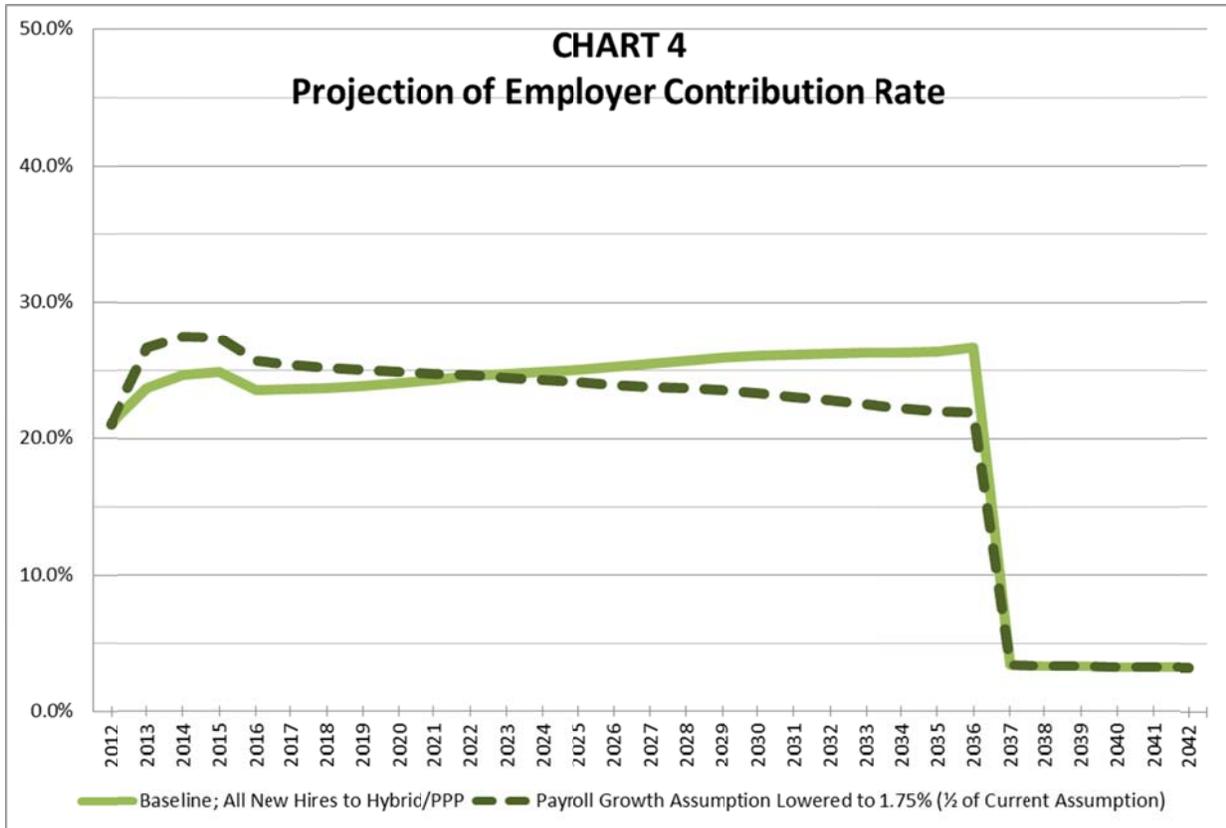
This 20-year sample is not unlike the pattern of actual investment returns many systems have experienced over the past 20 years. While the geometric average of the returns equates to 8%, the impact of the volatility on the contribution requirement can be significant, as demonstrated on the following chart (a similar pattern with a 7% average is applied to the Hybrid plan).



Ultimately, the contribution requirement approaches the same level after 20 years, but the rate ranges from +/-12% as compared to the baseline. It is worth noting the actuarial asset values used in the above projection smooth investment gains and losses over a period of five years. Without this smoothing mechanism in place, the contribution rate volatility would be magnified.

Contribution Risk

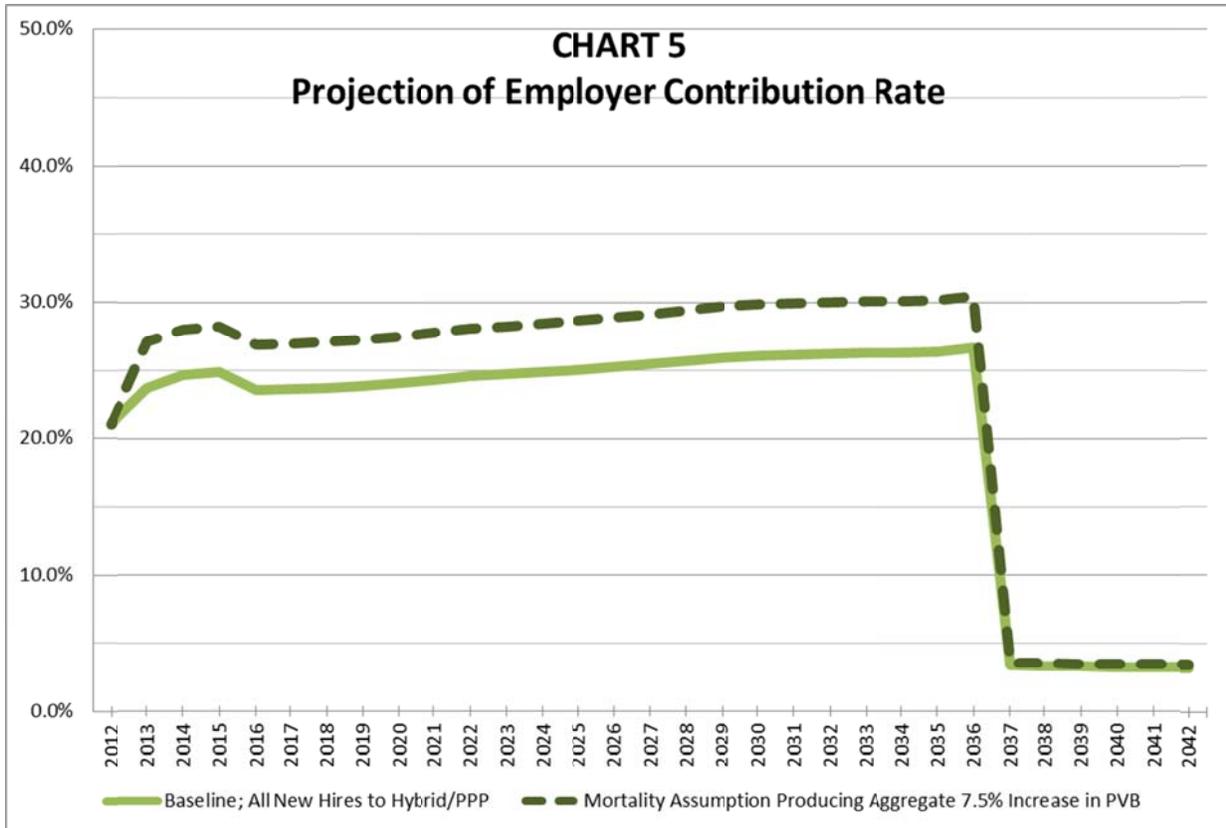
MPSERS amortizes the existing unfunded accrued liability as a level percentage of payroll. The current assumption for payroll growth is 3.5%. This means that the amortization payments are back-loaded since the dollar amount of the amortization payment increases each year (by 3.5%, in this case). However, if the 3.5% assumption is not achieved, the adverse experience (related to the “underpayment” of the required amortization payment) generates an actuarial loss that added to the unfunded liability. The following chart shows a projection of the required contribution rate under the baseline scenario compared to a scenario where the payroll growth assumption is lowered to one-half of the current assumption.



As demonstrated above, anticipating a reduced rate of increase in future covered payroll removes some of the “back-loading” in the amortization contribution, but increases the contribution requirement in the short-term.

Demographic/Longevity Risk

In a defined benefit plan, all longevity risk is borne by the retirement system. However, with an appropriate assumption for future mortality improvements, the cost associated with retirees living longer can be pre-funded. An inadequate mortality assumption will result in mortality losses that increase the unfunded liability of the plan. The graph below illustrates the impact on projected contribution rates of MPSERS if the current mortality assumption were not adequately accounting for improvements in future rates of mortality (approximated by way of a 7.5% increase on aggregate liabilities). Note that we have reviewed the current MPSERS mortality assumption and believe that is reasonable within the context of the current set of actuarial assumptions. However, as mortality is expected to continue to improve, the assumption will need to be updated to reflect these improvements.



The impact on projected contributions is an average increase of approximately 3.0-3.3% in the required employer rate. To reiterate, we have reviewed the current mortality table used in the valuation of MPSERS’ liabilities and have determined that it is appropriate.

Implications of Funding or Not Funding the Annual Required Contributions or other Annual Funding Requirements

Contributions to MPSERS are made on an actuarially determined basis under a funding policy that intends to amortize the unfunded liabilities over a 25-year period. This funding policy ensures that assets will continue to be available to pay benefits as they become due. If the funding policy were modified so that contributions were no longer actuarially determined, the unfunded liabilities would increase. The public sector retirement plans that have the poorest funded ratios are those where the contributions have been less than the actuarially determined amount. These plans are under severe financial stress and the contributions needed to address this issue are so great that in many cases they are prohibitive. A retirement system is viable for the long term as long as contributions are made on an actuarially determined basis.

Rating agencies, such as Moody’s consider the funded ratio and the level of required contributions when setting bond ratings for state and local governments. The bond ratings for state and local governments whose plans are poorly funded are lower than governments with better funded pension plans. Moody’s has recently issued a Request for Comment on its proposal to implement four adjustments to pension liabilities and cost information.

Moody's proposed adjustments include;

- Actuarial accrued liability discounted using a high-grade long-term corporate bond index rate. (For adjustments to 2010 and 2011 pension data, discount rate would be 5.5%)
- Assets smoothing is eliminated – results based on fair value
- Annual pension contributions are based on 5.5% discount rate
- Unfunded actuarial accrued liability amortized over 17 years as a level dollar amount
- For multiple employer cost-sharing pension plans, the liabilities will be allocated proportionally based on employer's share of total contribution

If Moody's adopts its proposal, those plans with poor funded ratios on an actuarial basis will have adjusted unfunded liabilities and contributions that are much greater than better funded plans.

5. BENEFIT ADEQUACY ANALYSIS

Retirement benefit programs are intended to provide a source of post-employment income. Defined benefit (DB) type plans provide retirement income in the form of an annuity (payable for the life of the member and the member's beneficiary). Defined contribution (DC) plans accumulate contributions and investment income into a "nest egg" that is available to draw upon at retirement. Given the different style of retirement benefit provided by each plan, it is challenging to compare the value of one versus the other. In order to accomplish this, the benefit yielded by one plan must be "converted" to the form of the other vehicle.

A common approach is to annuitize any DC account balances into monthly streams of income payable for life to match the form of payment provided by a DB plan. This accomplishes two things. First — now on an apples-to-apples basis — the value of a defined contribution plan can be compared to a defined benefit counterpart. Second, both benefit types can be converted to a "replacement ratio" and the adequacy of all benefits combined can be assessed and evaluated.

The replacement ratio is the ratio of total retirement income available from all sources compared to an employee's earnings just prior to retirement. For example, if a retiring employee has monthly earnings of \$5,000 and has two retirement plans available — a defined benefit program that provides monthly income of \$1,500 and a defined contribution account that yields \$1,500 per month when converted to a life annuity — this individual would have a replacement ratio of 60%, or \$3,000/\$5,000.

As part of this type of analysis, a determination can be made of benefit adequacy and how much retirement income is actually needed to maintain a similar standard of living in retirement that was enjoyed while actively working. As a retired individual's circumstances are different from what they were while earning a living, it is not necessary to replace 100% of pre-retirement income in order to maintain the same standard of living. For example, generally speaking, housing expenditures in retirement are usually lower (either by downsizing or having a home fully paid off), and work-related expenses (*e.g.*, clothing, commuting, etc.) no longer exist. Research indicates that middle-income employees (those earning \$20,000 to \$90,000 per year) will need a 94 percent to 78 percent replacement ratio to maintain a similar lifestyle in their post-retirement years³. The lower range of replacement applies to higher income individuals. The sources of retirement income include Social Security, employer-sponsored retirement plans and personal savings.

³ These replacement ratios are noted on page ii of the 2008 *GSU/Aon RETIRE Project Report*: <http://rmictr.gsu.edu/Papers/RR08-1.pdf>

We have assessed the retirement programs available to Michigan public school employees in two phases. First, we have analyzed the retirement options available to new hires under Public Act 300 (PA 300) of 2012, as well as the DC plan that covers state of Michigan employees. Second, we have analyzed the retirement programs available to public school employees hired prior to July 1, 2010 (included as Appendix 1). This analysis examines several "straw" employees as the basis for comparison. The straw employees are:

- 1) hire age of 25, earning \$25,000, retiring at (a) age 55 and (b) age 60 (with 30 and 35 years of service, respectively)
- 2) hire age of 35, earning \$27,500, retiring at (a) age 55 and (b) age 60 (with 20 and 25 years of service, respectively)
- 3) hire age of 45, earning \$30,000, retiring at (a) age 55 and (b) age 60 (with 10 and 15 years of service, respectively)

Newly hired employees currently have the choice between two retirement programs when they are hired. The default option is the Hybrid plan, which consists of both a defined benefit plan and a defined contribution plan. The alternative option is a defined contribution only plan, which allows members to defer a percentage of their pay on a pre-tax basis and the employer provides a matching contribution on a portion of those deferrals. The State DC plan provides for a flat 4% employer contribution, plus an additional matching contribution. In order to maximize the employer matching contribution in the optional DC plan (which is 50% up to a maximum 3% contribution), we have assumed the member will defer 6% of pay in the DC only scenarios.

TABLE 7 – New Employee Replacement Ratio Analysis, 7% Investment Return Assumption

	Hire Age	Retirement Age	Years of Service	Annual Compensation	New Employee Electing Hybrid/PPP Participation				
					Replacement Ratio @ Ret	Monthly Ben @ Ret	Repl. Ratio @ Ret + 10	Monthly Ben @ Ret + 10	Present Value @ Ret
Straw Employees									
Sample 1: a	25	55	30	\$25,000	8%	\$375	49%	\$2,418	\$284,824
b	25	60	35	\$25,000	60%	\$2,975	60%	\$2,975	\$444,657
Sample 2: a	35	55	20	\$27,500	5%	\$159	33%	\$1,026	\$120,828
b	35	60	25	\$27,500	43%	\$1,349	43%	\$1,349	\$201,613
Sample 3: a	45	55	10	\$30,000	2%	\$62	16%	\$427	\$50,080
b	45	60	15	\$30,000	25%	\$671	25%	\$671	\$100,288

	Hire Age	Retirement Age	Years of Service	Annual Compensation	New Employee Electing DC Plan Participation				
					Replacement Ratio @ Ret	Monthly Ben @ Ret	Repl. Ratio @ Ret + 10	Monthly Ben @ Ret + 10	Present Value @ Ret
Straw Employees									
Sample 1: a	25	55	30	\$25,000	27%	\$1,338	27%	\$1,338	\$216,174
b	25	60	35	\$25,000	39%	\$1,954	39%	\$1,954	\$292,158
Sample 2: a	35	55	20	\$27,500	18%	\$549	18%	\$549	\$88,642
b	35	60	25	\$27,500	27%	\$849	27%	\$849	\$126,851
Sample 3: a	45	55	10	\$30,000	8%	\$209	8%	\$209	\$33,778
b	45	60	15	\$30,000	14%	\$384	14%	\$384	\$57,353

	Hire Age	Retirement Age	Years of Service	Annual Compensation	New Employee Under the State DC Plan				
					Replacement Ratio @ Ret	Monthly Ben @ Ret	Repl. Ratio @ Ret + 10	Monthly Ben @ Ret + 10	Present Value @ Ret
Straw Employees									
Sample 1: a	25	55	30	\$25,000	37%	\$1,839	37%	\$1,839	\$296,994
b	25	60	35	\$25,000	54%	\$2,682	54%	\$2,682	\$400,872
Sample 2: a	35	55	20	\$27,500	24%	\$760	24%	\$760	\$122,786
b	35	60	25	\$27,500	37%	\$1,173	37%	\$1,173	\$175,363
Sample 3: a	45	55	10	\$30,000	11%	\$291	11%	\$291	\$47,076
b	45	60	15	\$30,000	20%	\$533	20%	\$533	\$79,720

Assumptions:

* Employee contributions are assumed to be the same across both plans. Total contributions are allocated (as applicable) between DB contributions, DC contributions, and personal (pre-tax) savings.

* Account balances from DC and personal savings arrangements are projected to retirement at an assumed investment return of 7.0% and converted to life annuities using two-thirds female mortality and 5.0% interest.

* Monthly benefits shown above are adjusted for inflation (3.5%) between age at hire and retirement age.

* Outlined cells represent ages where the retiring individual is not eligible to begin receiving payments from the DB plan. In these cases, payments would commence five years after retirement (at age 60).

The tables above show, for each sample employee, the underlying data, the replacement ratio at retirement, the monthly retirement benefit at retirement, the replacement ratio and monthly benefit ten years after retirement, and the actuarial present value of retirement income as of the member’s retirement date. The replacement ratio and monthly benefit amount are shown at ten years into retirement to illustrate that payments from the DB plan may not be immediately available at certain age/service retirement combinations and the value of any post-retirement

increases (relevant for when the discussion includes the legacy defined benefit plan, as shown in the Appendix). Dollar amounts above have been adjusted to remove inflation, which can be an obstacle to understanding the numbers. For example, a 35-year career employee (Sample 1b) is shown to have a monthly retirement benefit of \$2,975 per month, which is on par with recent amounts of new retirees with long service. Without an adjustment for inflation, the benefit amount shown would be nearly \$10,000 per month.

An additional item to note is that in order to make the comparison more equitable, we have set the value of employee contributions such that they are the same across all plans. For example, the Sample 1 member contribution to the Hybrid plan in the first year is 6.60% of pay (4.60% to the DB portion, based upon the graded contribution schedule, plus an additional 2.0% to the DC portion). In order to have the member contribution the same for all three plans, we assume Sample 1 makes an additional contribution (0.60% in the first year, for example) in the DC only scenarios in addition to the regular 6% assumption.

Since the Hybrid plan does not provide for an early retirement benefit prior to age 60, the only retirement income available immediately in the scenarios with age 55 retirement (Sample 1a, 2a, and 3a) are from the DC plans. The benefit from the DB plan under the Hybrid scenario would commence at age 60; this amount is included in the column that shows the monthly benefit ten years after retirement.

This analysis shows that for a career employee retiring at age 60 (Sample 1b), 60% of pre-retirement income would be replaced by the Hybrid plan. Factoring in Social Security would result in the total replacement ratio meeting or exceeding the targets for adequacy⁴. Social Security, adjusted for inflation, is expected to replace 20% to 25% of pre-retirement income, depending on when those payments commence. In general, Social Security Normal Retirement Age — the age that full benefits can be received — is age 67, with a reduced benefit payable for earlier commencement.

In comparison, if Sample 1b elects participation in the DC plan, the value of the account balance at age 60 is expected to replace 39% of pre-retirement income. Even after considering Social Security, the total replacement ratio would still be less than the adequacy target. When including the additional 4% employer contribution in the State DC plan scenario, the total replacement ratio for Sample 1b is much closer to the 60% from the Hybrid plan.

One advantage that the DC plan has is the ability to access the value of the account balance prior to age 60. In the example of Sample 1a, the retiring member could begin receiving monthly income at age 55 that is over 3.5 times the amount available under the Hybrid plan. Even with this advantage, the actuarial present value at retirement of the Hybrid plan is greater than the optional DC plan for each straw employee. However, under the State DC arrangement, with the additional 4% employer contribution, the actuarial present value for Sample 1a and Sample 1b is slightly larger than under the Hybrid plan.

⁴ Adjusting for inflation and using the 2008 *GSU/Aon RETIRE Project Report* as a guide, adequacy targets would be approximately 80% for Sample 1, 85% for Sample 2, and 90% for Sample 3.

In the first set of tables, contributions made to DC accounts were assumed to earn annual investment return of 7% each year in the future. To the extent that actual returns are less than 7%, the DC accounts will generate lower replacement ratios (and lower monthly income). The benefit provided from the DB portion of the Hybrid plan is the same regardless of actual investment performance. To demonstrate the sensitivity of the DC benefits to a lower investment return, the following tables are based on assumed investment returns of 6% per year.

TABLE 8 – New Employee Replacement Ratio Analysis, 6% Investment Return Assumption

	Hire Age	Retirement Age	Years of Service	Annual Compensation	New Employee Electing Hybrid/PPP Participation				
					Replacement Ratio @ Ret	Monthly Ben @ Ret	Repl. Ratio @ Ret + 10	Monthly Ben @ Ret + 10	Present Value @ Ret
Straw Employees									
Sample 1: a	25	55	30	\$25,000	7%	\$326	48%	\$2,369	\$276,865
b	25	60	35	\$25,000	58%	\$2,890	58%	\$2,890	\$432,034
Sample 2: a	35	55	20	\$27,500	5%	\$144	32%	\$1,011	\$118,457
b	35	60	25	\$27,500	42%	\$1,320	42%	\$1,320	\$197,367
Sample 3: a	45	55	10	\$30,000	2%	\$59	16%	\$424	\$49,608
b	45	60	15	\$30,000	25%	\$663	25%	\$663	\$99,088

	Hire Age	Retirement Age	Years of Service	Annual Compensation	New Employee Electing DC Plan Participation				
					Replacement Ratio @ Ret	Monthly Ben @ Ret	Repl. Ratio @ Ret + 10	Monthly Ben @ Ret + 10	Present Value @ Ret
Straw Employees									
Sample 1: a	25	55	30	\$25,000	24%	\$1,166	24%	\$1,166	\$188,294
b	25	60	35	\$25,000	33%	\$1,657	33%	\$1,657	\$247,684
Sample 2: a	35	55	20	\$27,500	16%	\$499	16%	\$499	\$80,561
b	35	60	25	\$27,500	24%	\$751	24%	\$751	\$112,273
Sample 3: a	45	55	10	\$30,000	8%	\$199	8%	\$199	\$32,194
b	45	60	15	\$30,000	13%	\$357	13%	\$357	\$53,292

	Hire Age	Retirement Age	Years of Service	Annual Compensation	New Employee Under the State DC Plan				
					Replacement Ratio @ Ret	Monthly Ben @ Ret	Repl. Ratio @ Ret + 10	Monthly Ben @ Ret + 10	Present Value @ Ret
Straw Employees									
Sample 1: a	25	55	30	\$25,000	33%	\$1,600	33%	\$1,600	\$258,502
b	25	60	35	\$25,000	46%	\$2,272	46%	\$2,272	\$339,567
Sample 2: a	35	55	20	\$27,500	22%	\$691	22%	\$691	\$111,545
b	35	60	25	\$27,500	33%	\$1,038	33%	\$1,038	\$155,123
Sample 3: a	45	55	10	\$30,000	11%	\$278	11%	\$278	\$44,864
b	45	60	15	\$30,000	19%	\$495	19%	\$495	\$74,060

Assumptions:

* Employee contributions are assumed to be the same across both plans. Total contributions are allocated (as applicable) between DB contributions, DC contributions, and personal (pre-tax) savings.

* Account balances from DC and personal savings arrangements are projected to retirement at an assumed investment return of 6.0% and converted to life annuities using two-thirds female mortality and 5.0% interest.

* Monthly benefits shown above are adjusted for inflation (3.5%) between age at hire and retirement age.

* Outlined cells represent ages where the retiring individual is not eligible to begin receiving payments from the DB plan. In these cases, payments would commence five years after retirement (at age 60).

Using a 6% investment return instead of 7%, the replacement ratios from the Hybrid plan remain largely unchanged. This is because most of the benefit provided from this plan is from the DB component. The DC only plans, however, yield results that are between 5-15% lower. Specifically, in the case of the State DC plan, the additional 4% employer contribution is not enough to make this plan more valuable than the Hybrid plan to Sample 1a and Sample 2a using a 6% investment return assumption instead of the 7% assumption.

Sample 2 and Sample 3 represent employees who would be considered “mid-career” hires. Presumably, they would have 10 to 20 years of service working at some other employment with a possible retirement benefit attributable to this portion of their career payable at a future date. While this portion of their retirement income is not specifically considered in this analysis, it is something to bear in mind when studying the results for straw employees 2 and 3. In general, a plan sponsor will typically focus on retirement benefit adequacy in the context of a full career employee, but for other reasons (such as attraction of talent) they still may wish to put some emphasis on mid-career hires as well when analyzing the entire retirement program provided to employees.

In general, retirement benefits provided by the Hybrid plan to a long-service, career employee — when factoring in Social Security — meet or exceed targets for retirement income adequacy. Using an assumption for future investment return of 7% per year, the benefit from the State DC plan approaches the retirement benefit provided by the Hybrid plan and would likely meet the adequacy targets as well. However, the benefits provided from the Hybrid plan package are largely insulated from the assumption for future investment return since the vast majority of the Hybrid benefit is provided by the DB component of that plan. The DC portion of the Hybrid provides members the tool necessary to customize their retirement income based on individual circumstances. Under the DC arrangements, the member assumes all of the investment return risk and therefore the replacement ratio provided by these plans will depend in large part on the actual return achieved by individual participants; an average annual return of 6% yields benefits from the DC only scenarios that are 5-15% lower. In addition, the DB portion of the Hybrid plan benefit is paid to retirees in the form of a life annuity. Under the DC arrangements, in order for the retiree to be assured of not outliving the value of accumulated contributions and investment income (*i.e.*, longevity risk), the account balance would need to be used to purchase a life annuity from an insurance carrier. Conservatism, profit, anti-selection and other factors will generally result in a lower relative annuity value as part of this conversion. The DC only scenarios, however, do allow a member to retire and receive their benefit prior to age 60, unlike the defined benefit component of the Hybrid plan. In addition to this, the DC arrangements allow for portability of the benefit for members that terminate employment mid-career. These are attractive aspects of the DC plans that are generally not available in the DB portion of the Hybrid plan.

6. WORKFORCE MANAGEMENT

Workforce Management

An important issue in employee retirement and benefit plans is the effect that the plans have on employee behavior. Over the last ten years, the state of Michigan has not faced a competitive hiring environment, but this could change as the economy improves. In a growing economy, employers use retirement plans to help attract and retain qualified employees. This is especially important in the public sector, where potential hires often have an expectation of participating in attractive retirement plans to make up for lower compensation than in the private sector. Due to onerous IRS and accounting rules and the high volatility associated with these measurements, private companies have mostly eliminated their DB plans and moved to DC plans. This has made DB plans, and hybrid plans that offer a meaningful DB benefit, an attractive feature for potential hires found predominantly in the public sector.

In some cases, DC plans may be more attractive to new hires. The portability feature of DC plans allows the participant to take the DC account balance when leaving service. This differs from a DB plan, where benefits payable upon withdrawal before retirement are typically smaller. This portability can make a DC plan a more attractive option to younger employees who may not plan to work with the same organization for an extended period.

Mid-career employees who are closer to retirement will often prefer the benefits provided by DB plans. Because their working lifetimes are shorter, these employees may not be as attracted to portable benefits. Instead, they may be more likely to find value in the lifetime benefits that DB plans provide.

In general, moving from a DB or hybrid plan to a DC plan will reduce the employer's ability to attract qualified employees to the extent that potential employees find DB plans valuable. This may have less of an effect for younger employees who value the portability of the DC plan benefits.

Because many hybrid plans have DB and DC features, they can be attractive to both older and younger new hires. Younger hires who plan to withdraw earlier will find the DC portion of the benefit attractive, while older hires who plan to work until retirement age will find the DB portion valuable.

The MPSERS Hybrid plan offers both a DB and DC component. These benefits are expected to attract both younger and older new hires. Moving all new hires to a DC plan may reduce the attractiveness of the benefits to older potential new hires.

The provisions of DB plans may also be used to affect employee behavior after the date of hire. Subsidized benefits like early retirement may encourage employees to retire when certain age or service thresholds are met. For example, a DB plan that offers an unreduced early retirement benefit at age 62 will invariably see a spike in retirements at age 62.

To the extent that the employers whose employees participate in the plan desire that their employees leave active service at the age of 62, this would be an effective tool for workforce management. However, if not carefully considered, early retirement benefits can result in unwanted workforce implications. For example, an unreduced retirement benefit at a set level of service (30 years, for example) may have the effect of encouraging the retirement of participants who are at their most valuable to the organization. Participants who were hired at a young age would reach the service threshold in their early 50s, and would then be encouraged by the plan to retire. These employees may still be productive, and the costs of hiring and training new hires to fill these positions may be prohibitive. In short, this benefit may have the effect of causing the employer's best employees to leave.

DC plans do not provide subsidized early retirement benefits, as the account balance structure of a DC plan benefit does not allow for these types of benefits. The DC plan structure does not allow for a retirement age that is considered "normal". In fact, if DC participants experience poor returns, they may be required to work well into old age.

Another method available in DB plans that can be used in order to influence workforce behavior is through special retirement benefits, or "windows". Windows can be structured to target a group of employees to encourage their retirement during a specific period. This may be desirable for employers who would prefer that a group of employees leave active service. Windows will increase the liabilities of the DB plan as they encourage employees to retire sooner than expected and with an increased benefit.

The DB component of the MPSERS Hybrid plan provides for a "normal" retirement age and may assist with workforce management. If new employees are moved to a DC plan, it will be more difficult to address workforce management issues through the plan.

7. PLAN TRANSITION

Transition

The effect of transition from one plan structure to another must also be considered when contemplating a plan change. Changing benefit structures for participants hired after a certain date will result in new plan “tiers” that will need to be maintained separately from the existing tiers. As a result, there may be an increase in actuarial valuation and administrative costs.

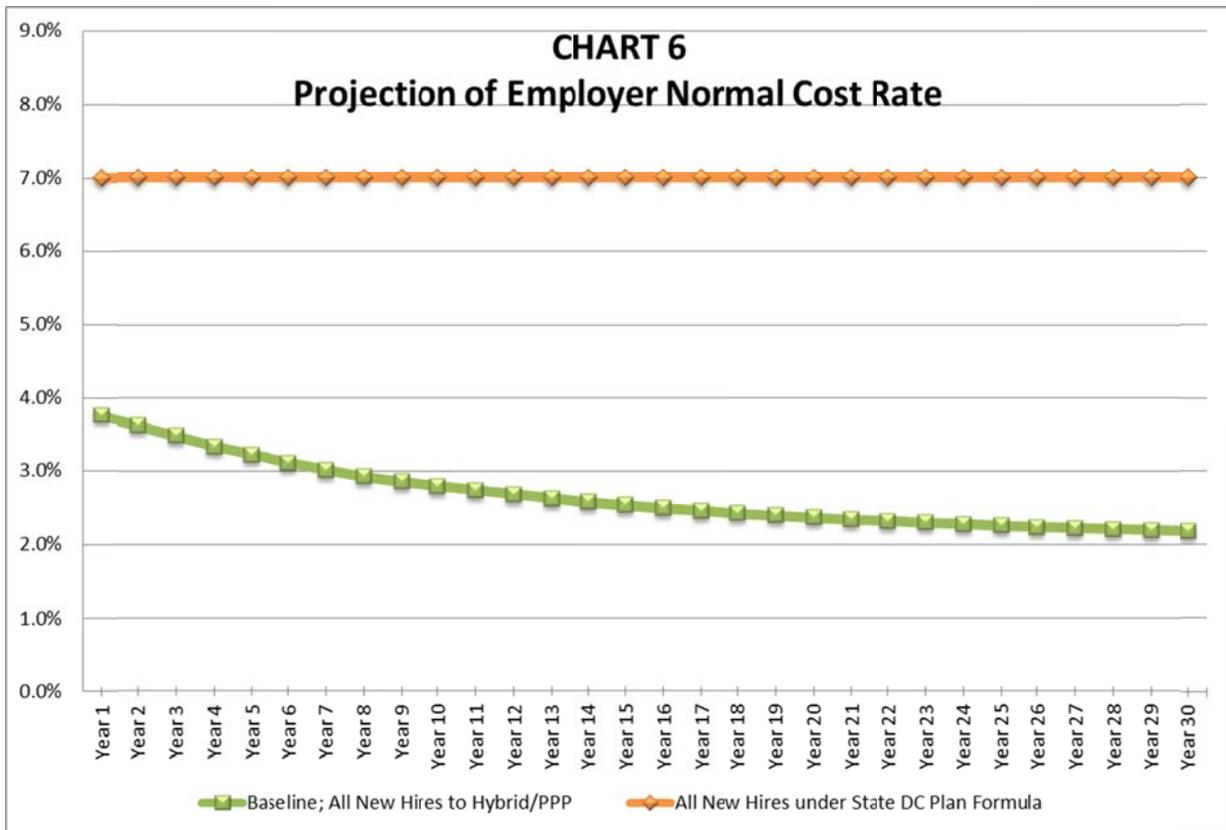
In the case of a transition from a DB plan to a DC plan, the administrative processes would need to be completely overhauled to reflect the different nature of the benefits to be provided. A DC plan requires recordkeeping of the individual account balances and employee access to information. An outside vendor usually provides DC administration, so the vendor would need to be selected and monitored to make sure that the needs of the plan are being met.

In addition, the plan change must be clearly communicated to employees. This is especially true in the event that employees are given a choice between two plans. For MPSERS, which has multiple contributing employers, the communication effort must also be extended to those who will actively deal with employees and answer their questions.

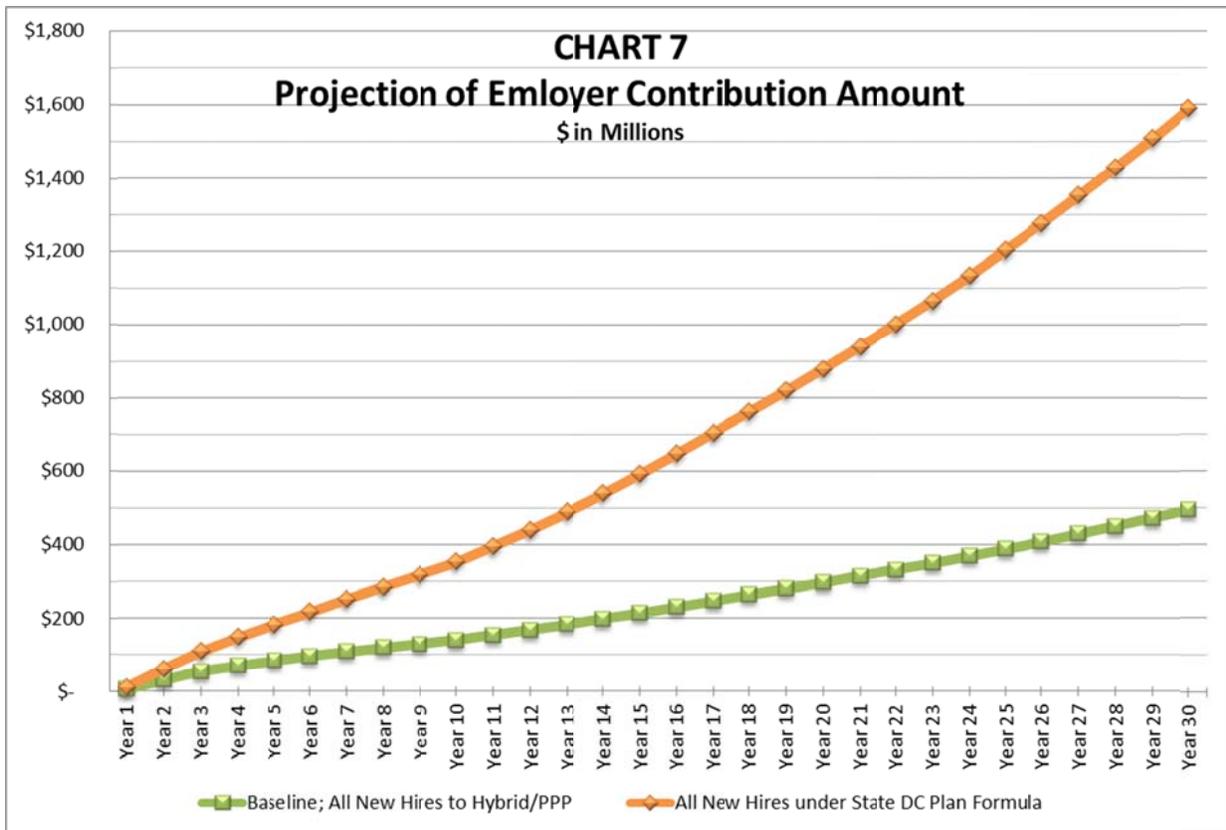
Since the System currently has several tiers of employees and features a DC component, the System’s staff has likely dealt with many of these transition issues in the past. This experience would likely reduce the effect of future transitions.

Projected Costs

The cost of benefits for future hires — without regard to any existing unfunded liability — can be measured as the employer normal cost for a DB structure and the employer contribution rate for a DC structure. A projection of these costs for the existing Hybrid plan compared to a plan identical to the current DC plan for State employees hired after March 31, 1997, both as a percentage of pay and as projected dollars (in millions), is shown below.

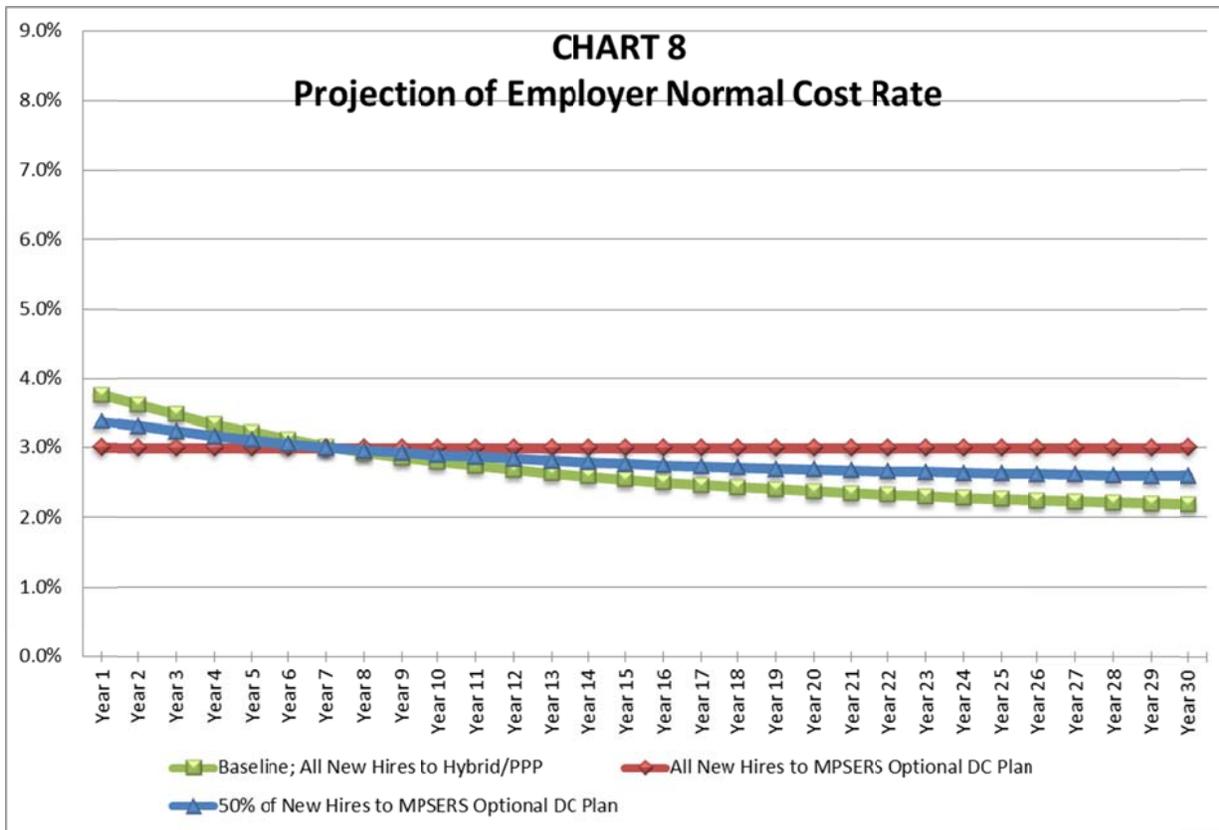


The projection of normal costs for the Hybrid plan includes a 1% DC contribution from the employer. Employer normal cost under the Hybrid plan is projected to decrease since the employee contribution — as a percentage of pay — will increase over time as average pay increases (due to the nature of the existing graded contribution schedule). The projection of contributions for the State DC scenario includes the 4% employer allocation and assumes that employees will defer at least 3% of their pay in order to maximize the matching formula provided under the plan (100% match up to 3% of pay contribution). In the short-term, the difference is expected to be between 3% and 4% of payroll. Over the long-term, the difference is projected to increase to nearly 5% of payroll. The following chart shows the impact on a projected dollar amount basis.



Projected annual normal cost contributions under the current Hybrid plan are expected to increase by \$500 million over 30 years. Under the State DC arrangement, projected contributions would increase by nearly \$1.6 billion over the same period. Without discounting for interest, the additional cost under the State DC plan is approximately \$13.6 billion over 30 years.

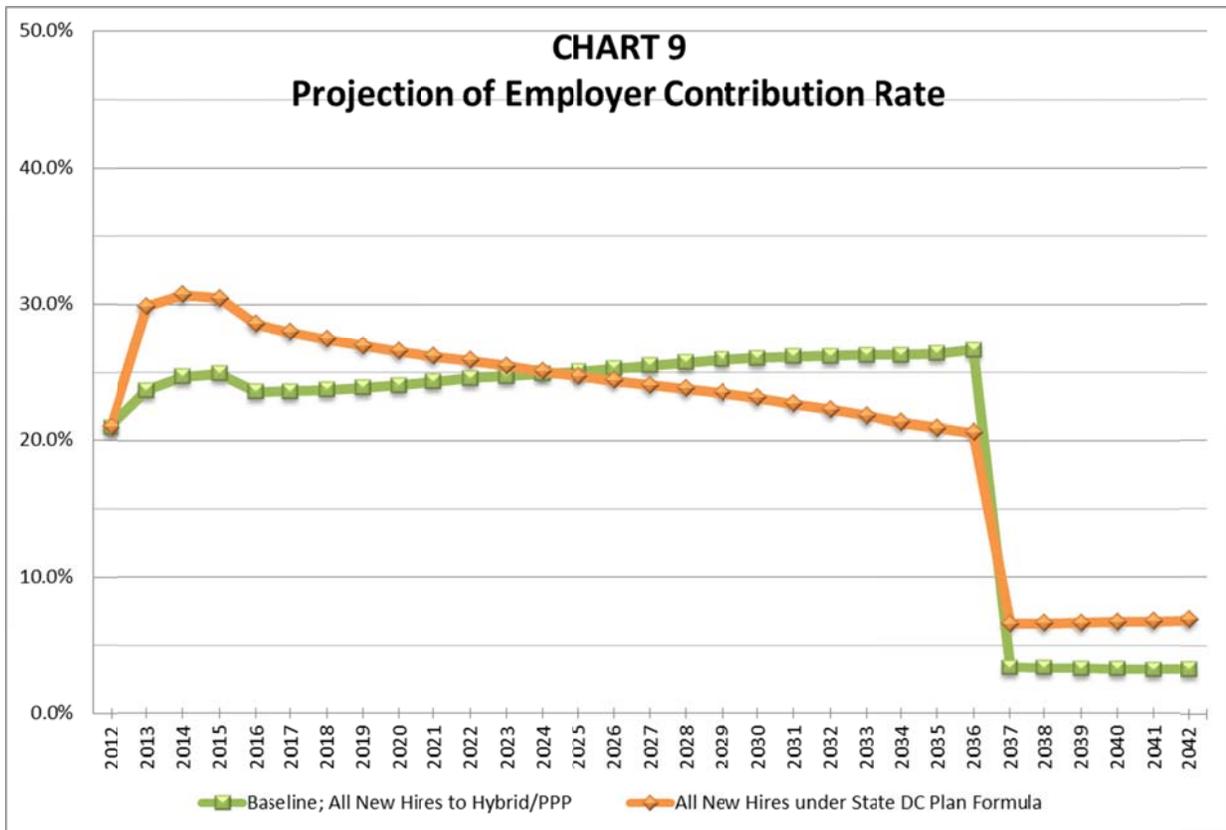
PA 300 includes a DC-only plan option as a choice for new hires. The optional DC plan provides for an employer matching contribution of 50% up to a maximum contribution of 3%. The chart that follows shows the short- and long-term impact on normal costs under two scenarios: 1) all new hires elect to participate in the optional DC plan and 2) half of all new hires elect to participate in the optional DC plan. In both alternatives, members are assumed to defer 6% of pay in order to receive the maximum available employer match of 3%. The baseline projection, assuming all new hires elect the Hybrid plan, is shown for comparison.



In the short-term, any level of participation in the optional DC plan is projected to result in savings. However, over the long-term, the required employer contribution is projected to be the lowest when all members elect the Hybrid plan option.

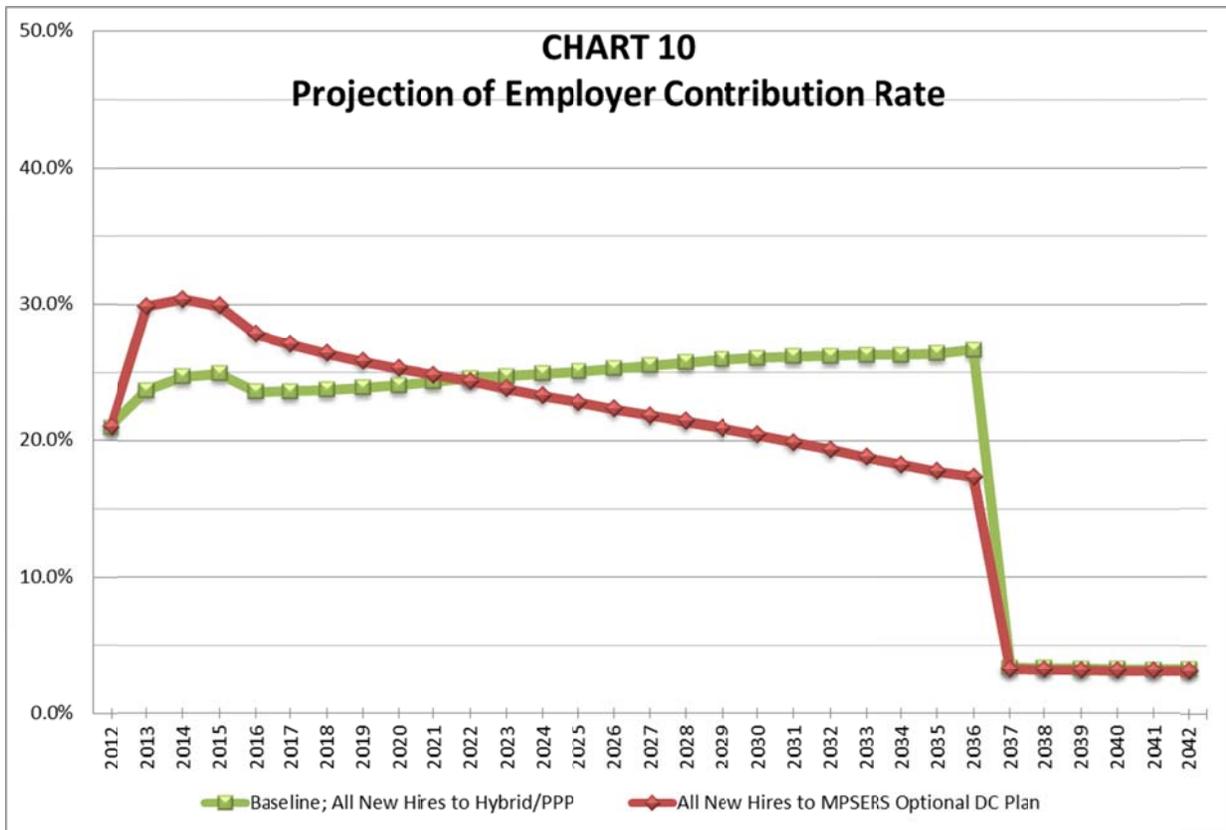
The analysis above illustrates the cost impact on a theoretical basis. In practice, the existing unfunded liability from the legacy MPSERS DB plan must be addressed as well. Currently, the unfunded liability is amortized over a closed period (25 years remaining as of September 30, 2011) as a level percentage of payroll. If the existing plan is closed to new members, with all new hires entering a DC plan, the closed group active payroll would decrease over time and use of a level percentage of payroll amortization approach would no longer be appropriate. One alternative approach would be to maintain the closed amortization period, and switch to a level dollar amortization policy. A projection of required employer contribution (as a percentage of payroll) — including the transition cost related to the existing unfunded liability for the legacy plan — is shown in the following chart.

Currently, the entire unfunded actuarial liability is amortized using an 8% assumed interest rate. For purposes of the projections that follow, unfunded liability from the legacy plan is amortized at 8% and unfunded liability from the Hybrid plan is amortized at the assumed discount rate of 7%.



The short-term transition cost is initially about 6% of payroll due to the “accelerated” recognition of the existing unfunded actuarial liability. Over the first ten years, this additional cost is projected to be approximately \$4.5 billion. In the intermediate term, the cost associated with all new hires entering the Hybrid plan exceeds the cost in the scenario where new hires are covered under a DC arrangement identical to the plan for State employees. However, once the unfunded liability is completely amortized, the long-term cost of the combined legacy DB plan and State DC plan exceeds the cost of the combined legacy DB plan including the Hybrid component.

The analysis around the optional MPSERS DC plan for new hires mirrors that of the State DC plan, except that with the lower promised employer cost under the optional plan, the crossover point occurs earlier and the long-term cost of the combined legacy DB plan and optional DC plan is approximately the same as the combined legacy DB and Hybrid plan. The chart that follows illustrates these points.



The costs associated with one-half of new hires electing the optional MPSERS DC arrangement would fall in between the lines in the table above.

8. FUNDING METHODS

Background

The MPSERS member and employer contributions are collected as a percentage of covered active member payroll. The actuarially computed employer contribution rate is equal to the normal cost plus an amortization of the unfunded actuarial accrued liability (UAAL). The amortization of the majority of the UAAL is based on a closed period (25 years remaining as of September 30, 2011) assuming a stable active member population and covered member payroll projected to increase by 3.5% each year.

The MPSERS active member population has declined significantly during the past eight years, from 327,000 members as of September 30, 2003 to 237,000 members as of September 30, 2011, a decrease of 28%. During this same period, the active member payroll declined from \$10.02 billion for the fiscal year ending September 30, 2003 to \$9.56 billion for the fiscal year ending September 30, 2011. Had payroll grown by 3.5% from 2003, the 2011 payroll would have been \$13.66 billion. Instead, it was \$9.56 billion, which is 30% lower than projected in 2003 based upon a stable active member population. The September 30, 2011 actuarial valuation determines the employer contribution rate for FY 2014. The FY 2014 employer contribution rate is 20.90%. Had payroll grown by 3.5% annually over the past eight years, the FY 2014 employer contribution rate as a percentage of payroll would be lower.

The decline in active member population has not been uniform across all school employers. Some employers have reduced the number of employees who are eligible to participate in MPSERS while other employers have not done so. As a result, employers whose active member populations have remained stable or declined at a slower pace than others are bearing a higher portion of the amortization of the UAAL component of the contribution. As of September 30, 2011, the total UAAL was \$22.4 billion. The accrued liability totaled \$63.4 billion of which \$41.9 billion (or 66%) is attributable to retirees and beneficiaries. Since contributions are collected as a percentage of payroll, employers whose active member populations have declined more rapidly may not be paying a reasonable share of the UAAL component, a major portion of which is attributable to retirees. This portion is also called the “stranded cost” of the plan.

Amortization Methods

The goal of an appropriate funding policy is to fund the benefits payable from the plan over a reasonable time period. For the purposes of generational equity, the amortization period should also be related to the working lifetime of the group being covered. An appropriate funding policy results in a contribution that funds the Normal Cost (*i.e.*, the cost of benefits accruing in the current year) and includes a payment towards the UAAL, which is the amount for which assets are insufficient to cover the benefits that have been earned in the past. Some commonly used methods of amortization are discussed below.

A “closed” amortization period will reduce the UAAL of the plan over a set timeframe, ending at a specific future date. A closed period has the advantage of effectively amortizing the liability in a predictable manner, but can result in volatile contributions, as the remaining period gets smaller.

An “open” amortization period re-amortizes the UAAL of the plan each year over the same period as the previous year. The contributions under an open amortization period are less volatile than with a closed period, but the UAAL is not amortized as quickly as with a closed period. Depending on the amortization period, the UAAL may increase under an open amortization period. Open amortization periods are commonly used in the public sector, and current Governmental Accounting Standards Board (GASB) allows financial reporting assuming up to a 30-year open amortization period. GASB standards have been revised and beginning with plan years beginning after June 15, 2013, the 30-year amortization standard will be eliminated.

A “level percent of payroll” amortization expresses the amortization payments over the future payroll of the group. An assumption must be made about the increase in payroll that is expected to occur over the amortization period. While the payments are expected to be level as a percent of pay, the amount of the payments is smaller in the earlier years of the amortization period and larger in the later years. This can result in a “negative amortization”, where the UAAL grows during the first years of the amortization period. This amortization method generally results in a stable contribution rate, but can result in underpayments if actual payroll increases are less than expected. In addition, combining the level percent of payroll method with an open amortization period may result in the UAAL increasing every year in the future.

A “level dollar” amortization expresses the amortization payments as a fixed dollar amount over the amortization period. This results in greater payments at the beginning of the period than with the level percent of payroll method. While the payments reduce the UAAL more quickly in the early years of the amortization period, the payments do not remain constant as a percent of payroll.

In some cases, retirement systems use a combination of the methods above in their funding policies. A common example is to use a short, closed period for a one-time benefit adjustment or window, while amortizing the remaining UAAL over a longer, open period.

For a multiple employer plan, another component of the funding policy is how the costs are assigned to individual employers. Some of these possible methods are discussed below.

Option 1: Cost averaging for all groups — Employees’ liabilities are grouped together and an employer contribution rate (as a percent of pay) is calculated for the entire plan. This employer contribution rate includes the Normal Cost and the UAAL payment. Each employer’s contribution is the employer contribution rate multiplied by the employer’s active member payroll. This is the method used by MPSERS.

ADVANTAGES: This method is simple and easy to implement. Since the average is calculated over the entire group, volatility is reduced.

DISADVANTAGES: No assignment of retiree UAAL is made by employer, so employers with higher payroll will pay a larger share of the retiree UAAL, even if these employers have a lower number of retirees. This method creates equity issues between employers. This will especially be true of employers with decreasing payroll. Under this method, employers are encouraged to reduce pensionable payroll to reduce the required contribution.

Option 2: Active cost averaging with inactive cost assignment — the amortization component of the UAAL attributable to active employees is calculated using a method described above. The amortization component of the UAAL attributable to retirees and beneficiaries is calculated on a headcount basis and is assigned to the employer where the inactive employee earned the benefits.

ADVANTAGES: Limits contribution volatility for active employees. Assigns contributions toward the UAAL for inactives to the employer where the liability was earned.

DISADVANTAGES: Employers with large inactive liability and shrinking payroll may receive a large cost assignment relative to their ongoing budgets. Consider whether methods would need to be established to determine how to assign the contribution toward the UAAL for inactive employees that worked for multiple employers.

Option 3: Contributions based on some other financial measure — Costs are calculated based upon a non-payroll measure of the employer's organization. This could be the organizations' operating expenditures, number of employees, number of students, or any other item that can be tracked by the System.

ADVANTAGES: May be more closely tied to the employer's ability to pay than the payroll allocation method.

DISADVANTAGES: Presents the same legacy cost issues as the methods above for employers whose payrolls have declined.

Option 4: Contribution caps — Contribution caps, or limits in the employer's contribution from year to year, are attractive to employers who seek to limit the volatility of their contributions. From a funding standpoint, caps create problems when the true actuarial cost exceeds the amount of the cap. If this were case, the cap would need to be removed in order to fund the plan on an actuarially sound basis.

Impact of Different Funding Methods on the School Aid Fund

Article IX, Section 11 of the Michigan Constitution of 1963 established the State School Aid Fund, to be used for aid to school districts, higher education, and school employee's retirement systems. One way to use the School Aid Fund would be to cap the employer rate for the unfunded accrued liability at a certain level and provide for State School Aid Fund contributions to pay the amount of annual required contribution that exceeds the employer maximum rate.

In this sense, the “cap” would only apply to employers. Since the School Aid Fund is required to pay the remaining required contribution, the total required contribution would be made. This would be advantageous to employers whose costs would be limited to the cap. However, the contribution can only be made to the extent that the School Aid Fund is able to pay. The fund would be at risk from losing these contributions if the School Aid Fund were unable to make the required payments. In addition, if future law were to remove the requirement that the School Aid Fund contribute to the Plan, the employers would see an immediate and likely significant increase in required contributions.

CONCLUSIONS

MPSERS faces many challenges in funding retirement benefits. The costs are shared across many employer groups through pooled contributions. The contributions are equal to the normal cost plus an amortization component that is based upon a closed 25-year period (as of September 30, 2011) as a level percentage of payroll. The cost for the early retirement incentive is amortized over a four-year closed period as a level percentage of payroll. Each employer pays a contribution based upon that employer’s payroll.

The amortization toward the UAAL has been negatively impacted in three ways. First, the recent economic environment has caused many employers’ active workforce to decline rapidly, decreasing the payroll that is the basis for calculating contributions. The amortization toward the UAAL is based upon the assumption that payroll increases by 3.5% each year. Since 2003, member payroll increases have fallen short of the 3.5% assumption and have been flat or declining.

Second, for employers with declining payroll, active liabilities have decreased while inactive liabilities remain and continue to increase. The UAAL attributable to inactive liabilities are amortized over the remaining payroll of the other groups. This creates equity issues as the UAAL attributable to inactives are amortized predominantly by groups other than those where the employees worked.

Third, some employers are able to reduce their covered payroll by privatizing non-educational services, contracting substitute teachers and other employees, and filling positions with retirees as contractors. In addition, charter schools have the option of not enrolling their instructional staff in MPSERS.

The following are recommended amortization methods that MPSERS may consider. In each case, we have estimated the impact on five districts of various sizes. We have used a closed amortization period of 25 years for all unfunded liability calculations.

Funding Alternatives

1. Amortize the UAAL using a level dollar method and allocate the amortization component by employer based on each employer's payroll. The level dollar amortization method, which utilizes the Option 1 approach, addresses the issue of flat payroll that MPSERS is facing.

District	Current Amortization Rate	Proposed Amortization Rate
Detroit	17.03%	22.25%
Ann Arbor	17.03%	22.25%
Big Rapids	17.03%	22.25%
Forest Hills	17.03%	22.25%
Laker Schools	17.03%	22.25%

Since the allocation of the amortization payment is made over payroll, each district pays the same rate as a percent of payroll. Amortizing the UAAL on a level dollar basis will result in higher contributions as a percent of payroll in the early years of the amortization. Since the payment will remain the same, the payments will decrease on a percent of pay basis over time.

2. Amortize the UAAL using a level percent of pay method and allocate the amortization component (using the Option 3 approach) by employer based on each employer's Current Operating Expenditures (COE).

District	Current Amortization Rate	Proposed Amortization Rate
Detroit	17.03%	20.85%
Ann Arbor	17.03%	16.23%
Big Rapids	17.03%	17.92%
Forest Hills	17.03%	15.97%
Laker Schools	17.03%	21.74%

Since the allocation of the unfunded is made over COE, each district pays a different rate as a percent of payroll. Using the COE for this allocation is desirable to the extent that COE reflects the ability of larger Districts to pay more. Amortizing the UAAL on a level percent of pay basis will result in an amortization payment that is the same percent of pay throughout the amortization period.

- Amortize the UAAL assuming payroll growth is 0% for the next 10 years and 3.5% thereafter. Allocate the amortization component by employer based on each employer's payroll.

District	Current Amortization Rate	Proposed Amortization Rate
Detroit	17.03%	20.74%
Ann Arbor	17.03%	20.74%
Big Rapids	17.03%	20.74%
Forest Hills	17.03%	20.74%
Laker Schools	17.03%	20.74%

This method uses the existing methodology, which is an Option 1 approach, but uses a conservative assumption for payroll growth. Since the allocation of the unfunded is made over payroll, each district pays the same rate as a percent of payroll. Amortizing the UAAL assuming payroll growth of 0% for the first 10 years will result in higher contributions as a percent of payroll in the early years of the amortization. Since the payment and payroll will remain the same for the first 10 years, the payments will remain level as a percent of payroll during these years. After that period, the amortization payments are scheduled to begin to increase along with payroll (provided that payroll increases as assumed).

- Allocate the UAAL into two portions using the approach in Option 2 — the portion attributable to retirees and beneficiaries and the portion attributable to active members. Allocate the portion attributable to retirees and beneficiaries to each employer. Each employer is responsible for making an amortization payment toward retiree UAAL over some period (25 years, for example) on a level dollar basis. In addition, each employer is responsible for making an amortization payment toward active UAAL allocated by employer payroll and as a level percent of pay.

District	Current Rate	Proposed Active Rate	Proposed Inactive Rate*	Total Proposed Rate
Detroit	17.03%	4.88%	23.39%	28.27%
Ann Arbor	17.03%	4.88%	11.88%	16.76%
Big Rapids	17.03%	4.88%	17.92%	22.80%
Forest Hills	17.03%	4.88%	10.17%	15.05%
Laker Schools	17.03%	4.88%	28.20%	33.08%

*Includes 2.66% payment for ERI

This method allocates the active UAAL on a percent of pay basis and over payroll, so every district pays the same amount as a percent of pay. For inactives, the allocation is based upon the inactive liability and the rate will vary by district. This can result in rates that are relatively high

for smaller districts with larger inactive legacy costs. Note that since the inactive amortization is calculated on a level dollar basis, the rate will decrease over time as payroll increases.

5. Allocate the UAAL into two portions — the portion attributable to retirees and beneficiaries and the portion attributable to active members. Allocate the portion attributable to retirees and beneficiaries to each employer. Each employer is responsible for making an amortization payment toward retiree UAAL over some period (25 years, for example) on a level dollar basis. Amortize the UAAL using a level dollar method and allocate the amortization component based on each employer’s current operating expenditures (COE). This alternative combines the approaches from Options 2 and 3.

District	Current Rate	Proposed Active Rate	Proposed Inactive Rate*	Total Proposed Rate
Detroit	17.03%	5.97%	23.39%	29.36%
Ann Arbor	17.03%	4.65%	11.88%	16.53%
Big Rapids	17.03%	5.13%	17.92%	23.05%
Forest Hills	17.03%	4.58%	10.17%	14.75%
Laker Schools	17.03%	6.23%	28.20%	34.43%

*Includes 2.66% payment for ERI

This method allocates the active unfunded liability on a percent of pay basis over COE, and each district pays a different amount as a percent of pay. For inactives, the allocation is based upon the inactive UAAL and the rate will vary by district. This can result in rates that are relatively high for smaller districts with larger inactive legacy costs. Note that since the inactive amortization is calculated on a level dollar basis, the rate will decrease over time as payroll increases.

How the UAAL is allocated between actives and inactives is important in the above calculations. We have assumed that actives and inactives share equally in the assets. However, it may be desirable to assign a larger portion of the assets to inactive liabilities than active liabilities, since a large portion of inactive participants are currently receiving payments. To the extent that more assets are devoted to inactive liabilities than active liabilities, the inactive liability rates will decrease, while the active liability rates will increase.

No matter which amortization method is chosen, we recommend that no contribution caps be implemented, as caps will compromise the payment of the UAAL. In addition, we recommend that the amortization method be applied consistently to all employers. Using different amortization methods for different employers will result in administrative issues, as well as lead to the potential for employers to manipulate their contributions by modifying the amortization method.

The table below measures the funding alternatives outlined above against the ability to meet the following criteria:

- Fairness across employers, including assigning costs to the employers that incurred those costs
- Likelihood for manipulation
- Effectiveness in funding the retirement system over time
- Implications for the sustainability of the retirement system
- Stability of employer costs for budgetary planning purposes

Funding Alternative:	1	2	3	4	5
Fairness	Low	Low	Low	High	High
Likelihood for manipulation⁵	High	Low	High	Medium	Low
Funding effectiveness⁶	High	High	High	High	High
Sustainability implications⁷	Medium	High	Medium	Medium	High
Cost stability⁸	Low	Medium	Medium	Medium	Medium

Competition for funding is a common challenge for policymakers. Such a conflict exists in the dual goals of increasing teacher retirement plan funding levels and overall public education financing. Both are laudable objectives. The need to provide quality education to Michigan’s children is an essential service and impacts the future health of the State’s and nation’s economy. Likewise, it is fiscally prudent to adequately fund teacher retirement in a timely and consistent manner. Reconciliation of how to balance these two completing but competing needs is beyond the scope of this study, It is, however, an issue that needs more examination to develop a rational funding allocation to both priorities.

⁵ Alternatives where the required contribution rate is unrelated to payroll provide the lowest likelihood for manipulation.

⁶ All five recommended alternatives are effective in funding the retirement system over time because they all account for a full amortization of the unfunded accrued liability. Level dollar amortization funds the plan at a faster rate than level percentage of payroll amortization. If any employers are unable to pay their allocated share of the required contribution, the effectiveness of that alternative would be threatened.

⁷ Implications for sustainability are measured based on how an alternative adjusts the required contribution rate for an employer’s ability to pay. A method where more employers have the strongest ability to pay their required contribution leads to a high probability of a sustainable system.

⁸ Level dollar amortization results in a required contribution that is not level as a percentage of payroll, and therefore a challenge for budgeting purposes. The stability of all five alternatives is subject to market volatility and this volatility increases as the amortization period decreases.

9. RETIREE HEALTH PLAN ANALYSIS

This section of the study identifies and discusses the pros, cons, and funding implications related to a change in the funding of retiree health benefits provided by MPSERS from a cash disbursement method, which is a pay as you go method, to prefunding benefits. Prefunding retiree health benefits is based on individual projected benefits utilizing an entry age normal cost method of valuation. This section also analyzes the changes made to retiree health benefits under MPSERS by PA 300 of 2012 and the likely impact of those changes on the funded status of retiree health benefits.

Impact of GASB OPEB Rules on Government Employers

In 2004, the Government Accounting Standards Board (GASB) finalized two new accounting standards, GASB 43 and GASB 45, which apply to all governmental entities such as states, counties, cities, and public school districts. These new accounting standards require governments to calculate and report the costs of post-employment benefits other than pensions, or OPEB (other post-employment benefits), as part of the governmental entity's overall financial liability. Under GASB rules, government employers must now report liabilities that accrue in OPEB plans on an actuarial basis over employees' periods of service, rather than based on the current year's cash disbursement requirements. GASB 43 describes financial reporting rules for OPEB *plans*, while GASB 45 covers financial reporting and accounting standards for government *employers* who sponsor OPEB plans. These rules have been fully effective since 2008.

While GASB rules apply to all types of post-employment benefits other than pensions, this study will focus on the impact to retiree health benefits. Before GASB rules were implemented, government employers generally funded OPEB plans on a pay as you go basis as retiree health benefits were actually paid either as premiums or as claims. The new accrual accounting approach under GASB rules provides for significantly higher annual accounting expense than a cash disbursement amount. Therefore, until recently, OPEB liabilities were largely unaccounted for because most governments did not determine the long-term costs of retiree health benefits promised to employees. This means that many governments have addressed the rising costs of health care incrementally within the context of the annual budgeting process. GASB rules now require public employers to produce actuarial valuations for their OPEB, following generally accepted accounting principles, and to report OPEB liabilities in their financial reports. These rules ensure transparency as to the full costs of retiree health benefits and focus attention on the sustainability of those benefits. It is important to note that GASB standards do not require that employers prefund the costs of the OPEB plan. However, there are significant advantages to prefunding these costs, such as utilizing higher discount rates and reporting lower liability and expense, as discussed below.

A government employer's GASB OPEB liability is determined by taking into account a number of key components, including but not limited to the following:

- OPEB plan design (what benefits are provided to retirees)
- Eligibility for benefits
- Current and expected future participant populations
- Contributions made towards benefits, and the timing thereof
- Health care inflation rate
- Investment rate of return
- Demographic assumptions (*e.g.*, rates of termination, retirement and mortality)

Changes made to any of these key components can reduce the OPEB liability required to be reported under GASB rules. For example, eliminating eligibility for retiree health benefits for a specific group of employees gradually reduces OPEB liability because no liabilities accrue for that group. In addition, if contributions toward retiree health benefits made during each year exceed the amount used to pay actual benefits for the year (prefunding), assets can accumulate over time that partially offset the OPEB liability. Furthermore, favorable investment returns on such assets would reduce the OPEB liability amount.

Since GASB OPEB requirements have become effective, most government employers have reported liabilities that are much higher than the pay as you go costs. Large OPEB liabilities, which remain unfunded, can have a potentially negative impact on governmental entities. For example, unfunded OPEB liabilities may result in a lower credit rating for the governmental entity, thereby increasing the cost of borrowing money. A spike in the entity's overall liability can result in negative publicity if the organization is not prepared to provide a clear explanation of the cause of the increased liability, as well as present a well-reasoned solution to the problem. Reporting the costs of OPEB plans puts pressure on governments to seek alternatives for retiree health plan design, funding methods and sources, and reduction of retiree health liabilities.

State governments have focused on a range of approaches to manage OPEB liabilities. The strategy for most states has been to reduce benefit levels and/or incrementally increase contributions from both employers and employees. For example, North Carolina, Rhode Island, and New Mexico have increased the amount of service required to be eligible for retiree health care benefits, as well as increased employer and/or employee contributions toward those benefits. In addition to capping and eliminating certain benefits, Utah has moved to full actuarial required contribution funding. Many states have increased contributions toward unfunded liabilities, including Delaware, Pennsylvania, and Ohio. A number of states have also established trust funds to accumulate assets since GASB went into effect, including Alabama, Connecticut, Delaware, Georgia, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Ohio, Rhode Island,

South Carolina, Utah, Vermont and West Virginia. (Source: U.S. States' OPEB Liabilities and Funding Strategies Vary Widely, Standard & Poor's, June 2009)

Still, states have generally not set aside enough money for their retirees' OPEB liabilities. As of fiscal year 2010, the Pew Center on the States reported that states had put away only five percent of their total bill for OPEB, which is estimated to be \$627 billion. For example, just seven states have funded 25% or more of their retiree health care obligations: Alaska, Arizona, North Dakota, Ohio, Oregon, Virginia, and Wisconsin. Thirty-six states have set aside less than 50% of their retiree health care liabilities. Two states, Nebraska and Oklahoma, do not acknowledge obligations for OPEB liabilities. (Source: *The Widening Gap Update, The Pew Center on the States, June 2012*)

Prefunding OPEB liabilities vs. pay as you go (PAYGo)

One way to reduce OPEB liabilities is to contribute amounts towards the actuarially determined cost of OPEB plans. To fully fund OPEB liabilities, government employers must contribute an amount equal to the annual required contribution (ARC), which represents the costs of OPEB plan accruals in the current year (referred to as the normal cost) plus an amount to amortize the unfunded accrued liability over a period not to exceed 30 years. By including an amortization payment toward the unfunded accrued liability, the ARC will be substantially greater than annual PAYGo payments. In addition, in order for the aggregate annual contributions to be counted towards reducing OPEB liabilities, GASB requires that these contributions be paid directly towards retiree health benefits, such as payment of claims or premiums, or irrevocably transferred to a trust (or equivalent arrangement) in which plan assets are dedicated to providing benefits under the terms of the OPEB plan and are legally protected from the employer's creditors. The contributions cannot be held as general assets of the government employers to be used for another purpose. Prefunding OPEB liabilities can provide significant advantages, as well as some disadvantages, to the employer sponsoring an OPEB plan.

Advantages of Prefunding

In order to determine OPEB liabilities, a government employer must assume an expected investment return on OPEB plan assets (referred to as the discount rate). If the employer does not prefund OPEB costs, but instead pays those costs from general revenues on a PAYGo basis, the discount rate is set equal to the rate that general revenues earn. However, prefunding OPEB liabilities will justify use of a higher discount rate based on the expected investment returns of a reasonable asset allocation. A higher discount rate will produce a lower ARC because the actuarial valuation of OPEB liabilities assumes some of the money for benefits comes from long-term investment returns rather than cash contributions. Furthermore, as the expected investment returns become a reality of growing assets, these assets reduce the amount of unfunded liabilities that represent prior years' accruals so that the dollar amount of the ARC marches downward towards a funding amount equal to the value of the current year's accruals only.

Another potential advantage of prefunding OPEB costs is that reduction of large unfunded liabilities from the governmental entity's balance sheet improves debt ratios, which may improve credit ratings and thereby reduce the cost of borrowing money.

Finally, accurate accounting of and payment toward benefits promised to employees as those benefits are earned demonstrates fiscal responsibility to interested stakeholders that can affect the budgets of government employers, including retirees and employees, taxpayers, legislative bodies and credit rating agencies. Prefunding OPEB liabilities on an actuarial basis allows the employer to take into account future costs implicit in increased longevity, health care cost inflation rate, and a growing number of retirees and eligible beneficiaries, and to spread payment of those costs over a defined period of time.

Overall, prefunding retiree health benefits follows a similar path as funding a pension plan. By contributing amounts while an employee is earning accrued benefits under the plan towards payments that will actually be made in the future, the employer has the ability to adjust contribution rates to reflect actual experience of the plan and to account for fluctuating cost components such as mortality rates, inflation, actual investment returns and shifts in demographics. More importantly, the total contributions that must be made to prefund benefits is significantly lower than under a PAYGo approach because investment returns fund a large portion of the liabilities.

Disadvantages of Prefunding

Prefunding OPEB liability involves significant opportunity costs. That is, the PAYGo approach produces a lower annual cost for retiree health benefits, whereas prefunding the liabilities associated with those benefits involves paying a significantly higher annual contribution amount immediately. In times of severely constrained budgets for government employers, prefunding OPEB liabilities means governments must be able justify reduced funding to or even elimination of other government programs and/or services for this purpose. Still, it is important to note that at some point in the future, as the costs of OPEB plans rise, the relationship between annual PAYGo amounts and the prefunding payments will be reversed, and the PAYGo method will become more expensive than prefunding. Again, this is because over time investment returns pay for a relatively larger portion of OPEB plan costs than cash contributions.

In addition, once general assets have been dedicated to OPEB funding (*e.g.*, transferred to an irrevocable trust for retiree health benefits), that capital is no longer available for other needs today or in the future. These disadvantages of prefunding OPEB liability may explain why relatively few government employers have adopted prefunding mechanisms.

The issue of intergenerational equity in funding the costs of retiree health benefits may also be a factor in weighing the advantages of prefunding versus the PAYGo method. If retiree health benefit costs are considered over the long-term, prefunding OPEB liabilities eventually smoothes out generational inequity so that employees and taxpayers are paying for only the cost of currently accruing benefits (*e.g.*, once the unfunded liabilities from prior years' accruals are paid down and the ARC consists mainly of the normal cost). However, in the short term, prefunding OPEB liabilities, including paying a portion of prior years' accruals, means that current employees and taxpayers are funding the benefits payable to the generation that came before them.

Retiree health benefits under MPSERS

While GASB reporting rules have illuminated the true cost of MPSERS' retiree health benefits, the annual PAYGo amounts of retiree health contributions have increased rapidly for a number of reasons. One reason for this is the decline in MPSERS' active member population over the last decade. Since each school district in MPSERS pays a percentage of their payroll for retiree health benefits, a decline in active members means total payroll is also declining, which causes higher contribution rates, although the total dollar amount needed stays the same. An early retirement incentive program offered to MPSERS members in 2010 increased the annual PAYGo amounts, since over 17,000 members retired under the program that year, which further decreased the active member population while providing a spike in the number of individuals eligible for retiree health benefits.

In addition, health care costs continue to rise at a rate significantly higher than inflation. Aging populations combined with longer life expectancies are major contributing factors to the health care inflation rate.

As retiree health benefit costs have continued to rise, MPSERS has taken many steps to control costs, redesign benefits so that they are sustainable, and retool funding bases and mechanisms. The System has calculated and reported the unfunded accrued liability for retiree health benefits in the Comprehensive Annual Financial Report (CAFR) since 1999 and has reported OPEB liability for retiree health benefits in accordance with GASB requirements since 2006. The reported unfunded retiree health liability for fiscal year 2011 was \$25.9 billion (based on a discount rate for the PAYGo funding method).

Since the early 1990s, the Department of Technology, Management and Budget (DTMB) and the MPSERS Retirement Board have utilized a formal strategic planning process toward the goal of limiting the rate of per capita cost growth for health care to the compound rate of inflation and real economic growth. This strategy has maintained health care cost increases below the health care inflation rate. Because of the strategic planning process, MPSERS has implemented a number of cost savings initiatives, resulting in cumulative savings in excess of \$1 billion. These cost saving measures mainly focus on plan design elements that reduce health care costs, such as adding a Preferred Provider Organization (PPO), increasing deductibles and other cost-sharing amounts and implementing utilization management programs. Because of the cost saving measures, the employer contribution rate for retiree health benefits has increased only three times in the last ten years. Furthermore, the cost savings measures have helped MPSERS maintain retiree health care costs well below the national expenditures for health care on a per capita basis, as illustrated in the table below (provided by MPSERS).

TABLE 9 – Health Care Expenditure per Capita Comparison

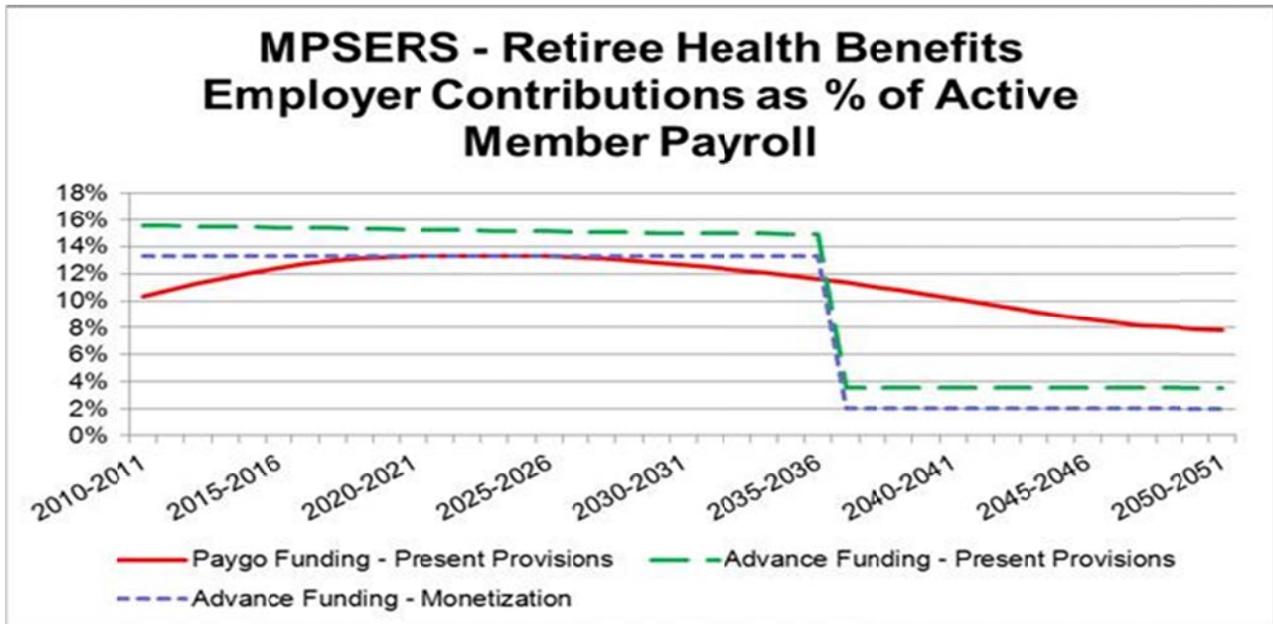
Year	National Per Capita*	Retirement System's Per Capita°
2000	\$4,878	\$2,623
2001	\$5,240	\$2,781
2002	\$5,682	\$3,076
2003	\$6,098	\$3,328
2004	\$6,458	\$3,710
2005	\$6,827	\$3,786
2006	\$7,198	\$3,402
2007	\$7,561	\$2,979
2008	\$7,845	\$3,176
2009	\$8,086	\$3,180

*Center for Medicare and Medicaid Services, National Health Expenditures, www.cms.gov/NationalHealthExpendData.

°Figures are shown net of premiums and other revenue.

As discussed above, one advantage to prefunding OPEB liabilities is that it helps maintain a lower employer contribution rate and avoid drastic fluctuations in this rate over the long-term. The following chart illustrates employer contribution rate for MPSERS retiree health benefits over time, as projected by the System. Note that this chart is pre-Act 300, so the advance funding contribution rate is a higher than the post-Act 300 rate. In addition, the chart does not reflect member contributions. However, the intent of the chart is to show an illustration of the concept.

CHART 11



Even partial prefunding of OPEB plans can provide an incremental improvement in the total amount of liabilities. According to the annual actuarial valuation report as of September 30, 2011 for MPSERS retiree health benefits, if the employer contribution is more than the PAYGo amount, even though it may be less than the full ARC, the System’s OPEB liabilities can be determined based on a blended discount rate. That is, an appropriate discount rate would be more than the 4.0% assumed rate for a PAYGo funding method and less than the 8.0% assumed rate for full prefunding of the ARC. The higher, blended discount rate in turn produces a lower ARC and reduces the total OPEB liabilities amount that is required to be reported under GASB rules. In addition, partial prefunding of any amount greater than the PAYGo contribution amount allows some assets to accumulate in the MPSERS retiree health plan. These can be invested and grow according to the rate of return, which in turn reduces total unfunded OPEB liabilities over time.

PA 300 of 2012 as part of the solution

Currently, MPSERS offers comprehensive group medical, dental and vision coverage for retiree and beneficiaries. Some benefits are self-funded while other benefits are fully insured. Retiree benefits are funded on a cash disbursement basis. The System pays a portion of the premium from employer contributions with the balance paid by the retiree (or other benefit recipient). Prior to the enactment of PA 300, pensioners were generally eligible for 100% employer paid medical benefits and 90% employer paid dental, vision and hearing benefits, while dependents were eligible for 90% employer paid health benefits. However, a number of exceptions apply that reduce the maximum employer paid portion of premiums for members with service between 10 and 30 years. Members hired after July 1, 2008 who are less than age 60 at retirement receive 90% of the maximum employer paid premium with 25 years of service or more. Members hired after July 1, 2008 who are age 60 or older receive between 30% and 90% of the maximum employer paid premium amount for service between 10 and 25 years.

Beginning in July 2010, PA 75 required MPSERS members to contribute 3% of compensation to an irrevocable trust towards prefunding retiree health benefits. While lawsuits challenged the legality of this required member contribution, and the Michigan Court of Appeals ruled that the mandatory contribution is unconstitutional, the case is being appealed to the Michigan Supreme Court. During the appeals process, the 3% member contribution under the Act continues to be collected and is held in escrow.

PA 300 of 2012 makes several important changes to retiree health benefits under MPSERS. First, beginning January 1, 2013, for existing employees and current retirees the maximum employer paid portion of health care premiums will be reduced to 80%, with retirees paying the balance of the premium amount. For retirees who are not eligible for the maximum employer paid portion of premiums, that amount will be further reduced according to current rules for retirees with service between 10 and 30 years. Generally, this represents an increase of at least 10% of the premium amount paid by retirees. However, current retirees receiving health care benefits from MPSERS who are eligible for Medicare as of January 1, 2013 will pay only 10% of the premium, with the employer paid portion remaining at 90%.

Second, this bill eliminates retiree health care coverage for employees who first become members of MPSERS on or after September 4, 2012. Instead, employers will make a matching contribution of up to 2% of the employee's deferral compensation into a defined contribution account for employees who contribute 2% of compensation towards post-retirement savings. Employees will not be permitted to take a loan against the matching contribution amount from their 401(k) plan or 457(b) plan.

In addition, existing members may elect, prior to October 26, 2012, to opt out of the retiree health coverage premiums and instead receive the 2% matching contribution benefit. Existing members who elect the 2% matching contribution benefit will also receive contributions to their 401(k) plan equal to the 3% of compensation that was paid to a retiree health trust fund under PA 75 towards post-retirement savings, as well as a small contribution amount based on service to a health reimbursement individual account upon termination if age and service eligible. For existing members who do not elect the 2% matching contribution, and then do not qualify for the payment of health care premiums at termination, this bill sets forth a method for transferring the 3% of compensation deducted from wages under PA 75 into an individual account 401(k) plan.

The changes made to retiree health benefits under PA 300 will have an immediate and significant impact on OPEB liability amounts for several reasons. The value of OPEB plan accruals in the current year, or the normal cost, will be reduced in two ways:

- (1) Current employees will accrue smaller benefits each year beginning January 1, 2013 because the employer paid premium amount payable at retirement has been reduced; and

- (2) New employees, as well as current employees who opt out of the retiree health coverage premiums, will accrue no benefits that are counted towards OPEB liabilities. That is, the employer is not promising to provide any retiree health benefits that will be payable in the future. The 2% employer matching contribution made on behalf of these groups does not count towards OPEB liability because it is not dedicated to retiree health benefits and because the contribution is funded in the same year in which it is earned. Furthermore, the 2% employer matching contribution, which is only made if the employee contributes at least 2% of compensation towards retirement retiree health care, is a new source of funding for benefits paid after retirement.

Additionally, the unfunded accrued liability may also be reduced under PA 300 because the retiree health benefits already accrued by existing members and current retirees in prior years is less valuable due to the reduced employer paid portion of premiums at retirement.

The nonpartisan Senate Fiscal Agency for the Michigan state legislature estimates that the changes made to MPSERS' retiree health benefits under PA 300 will reduce unfunded OPEB liabilities by \$12.4 billion, including a \$1.6 billion reduction for increasing retiree premiums and a \$10.8 billion reduction from continuing employee contributions and increasing employer contributions.

Conclusions

Any viable solution to managing the rising costs of retiree health benefits while addressing the impact of reported OPEB liabilities should be two-fold. First, government employers must set retiree health benefits at a sustainable level. This means the benefits promised and accrued each year are paid with funds that can reasonably be obtained from employers and employees. MPSERS' strategic planning process for containing the costs of benefits and the changes made by PA 300 move retiree health benefit levels towards sustainability. However, the budgeting of funds necessary to pay benefits must be able to take into account fluctuating elements of retiree health costs such as health care inflation and shifts in demographics.

Second, government employers must pay down unfunded OPEB liabilities over time. In order to accomplish this task, employers must contribute to MPSERS an amount greater than the PAYGO annual payments. Unfunded liabilities can be reduced more dramatically if MPSERS transfers funding amounts to a GASB funding vehicle, (such as the irrevocable trust under Internal Revenue Code section 115 established by PA 77) and invests those amounts according to a reasonable asset allocation. Even partial prefunding retiree health care benefits can have an incremental impact on OPEB liabilities. It appears that the changes made by PA 300 take a step towards addressing unfunded liabilities and future accruals for retiree health benefits.

It is important to note that the changes made by PA 300 do not address the problem of a shrinking employee population. As the ratio of retirees receiving health benefits to active employees' increases, MPSERS will need to revisit the sustainability of retiree health benefit levels and the funding sources for such benefits.

Finally, consider that while eliminating retiree health coverage for new employees has a substantial, positive impact on OPEB liabilities, shifting retiree health cost risks entirely to employees has an overall negative impact on the adequacy of retirement income. Under PA 300, new employees may potentially receive additional contributions to a retirement account in lieu of retiree health coverage and an employer-subsidized premium. Currently, IRS rules do not permit employees to elect to voluntarily contribute toward the cost of retiree health benefits on a tax-free basis. It is unlikely that the retiree health benefits provided under MPSERS for new employees will be adequate for these individual to retire without availability of some other form of health coverage in retirement, such as a Medicare and/or potentially the health insurance exchanges mandated by the Patient Protection and Affordable Care Act (PPACA).

10. INPUT FROM THE RETIREMENT SYSTEM MEMBERSHIP CONSTITUENCY ORGANIZATIONS

As required by PA 300 of 2012, the Office of Retirement Services solicited input from the retirement system membership constituency organizations. As of the date of this report, four responses were received and are included in the Appendix. A summary of the relevant comments are included below.

Comments from the Coalition for Secure Retirement, MI (CSR)

CSR supports retention of the current defined benefit plan structure, which includes the Hybrid plan for members hired on or after July 1, 2010. The reasons that CSR supports retention of the current structure include:

- The retirement benefit structure has changed three times in the past five years leading to active member insecurity about future changes.
- DC plans shift the risks to members. Unlike DB plans, individual employees do not have the tools available to manage DC plan risks.
- The benefits provided under the DC plan may not be adequate for a secure retirement as benefits will be dependent upon the investment returns earned and the longevity of the individual employees.
- The DC plan may be detrimental to attracting and retaining employees and managing the workforce.

CSR also recommends that the UAL costs be shifted from payroll to current operating expenditures in order to assure that the UAL related to previously earned benefits remain with the employer that created the cost.

Comments from the Michigan Association of Retired School Personnel (MARSP)

MARSP supports retention of the current retirement plan structure but recommends the structure be modified to adjust the retirement eligibility age.

- The regular retirement eligibility age, currently age 60, should be indexed to life expectancy.
- An analysis should be undertaken in order to determine a fair way to incorporate the UAL cost into the statewide per pupil foundation grant. In addition, an analysis should be undertaken to assess the impact of early retirement incentives coupled with the hiring of personnel who do not participate in MPSERS.

Comments from the Michigan School Business Officials (MSBO)

MSBO recommends a study to identify a method that fairly allocates the UAL to the school districts responsible for the costs. MSBO believes that all public schools be required to share in the costs including those not mandated to participate in MPSERS.

APPENDIX 1

PA 300 of 2012 Legacy Plan Election – Impact on Benefits

Separate from the choice available to new hires is the choice that existing DB plan members (first hired before July 1, 2010) had to make in connection with PA 300 of 2012. PA 300 required these members to make a choice to increase, maintain, or stop their contributions to MPSERS. Members who elect to increase their contribution would retain the 1.5% multiplier in their pension formula. Members who elect to maintain their current level of contribution (or members who do not make an election) will accrue future benefits (after the transition date) using a 1.25% pension multiplier; the pension formula for years of service prior to the transition date are still based upon the 1.5% multiplier. Finally, a member may elect to cease contributions to the defined benefit plan and switch to a defined contribution plan that provides an employer contribution of 4% of pay to a tax-deferred account. The “frozen” benefit from the DB plan is based on the 1.5% multiplier and service and final average compensation up to the transition date.

In this analysis, we consider straw employees 4-6 who are similar to straw employees 1-3 (outlined in Section 5), except that Sample 4 is age 40 at transition, Sample 5 is age 45 at transition, and Sample 6 is age 50 at transition. Therefore, Sample 4 has 15 years of service accrued under the current DB plan, Sample 5 has 10 years, and Sample 6 has 5 years. For purposes of this illustration, all three are assumed to be currently contributing at the MIP-Graded contribution level (up to 4.3% of pay).

TABLE 10 – Existing Employee Replacement Ratio Analysis, PA 300 Election

	Hire Age	Age at Transition	Retirement Age	Years of Service	Annual Compensation	MIP-Graded Participant Electing to Retain 1.5% Multiplier (Increased Contribution)				
						Replacement Ratio @ Ret	Monthly Ben @ Ret	Repl. Ratio @ Ret + 10	Monthly Ben @ Ret + 10	Present Value @ Ret
Straw Employees										
Sample 4: a	25	40	55	30	\$25,000	43%	\$2,125	56%	\$2,762	\$450,152
b	25	40	60	35	\$25,000	51%	\$2,518	66%	\$3,273	\$482,546
Sample 5: a	35	45	55	20	\$27,500	20%	\$632	26%	\$821	\$133,823
b	35	45	60	25	\$27,500	36%	\$1,146	47%	\$1,489	\$219,570
Sample 6: a	45	50	55	10	\$30,000	0%	\$0	17%	\$437	\$53,488
b	45	50	60	15	\$30,000	22%	\$579	28%	\$753	\$110,979

	Hire Age	Age at Transition	Retirement Age	Years of Service	Annual Compensation	MIP-Graded Participant Electing the 1.25% Multiplier (Existing Contribution Schedule)				
						Replacement Ratio @ Ret	Monthly Ben @ Ret	Repl. Ratio @ Ret + 10	Monthly Ben @ Ret + 10	Present Value @ Ret
Straw Employees										
Sample 4: a	25	40	55	30	\$25,000	43%	\$2,117	55%	\$2,702	\$440,059
b	25	40	60	35	\$25,000	51%	\$2,553	65%	\$3,237	\$477,734
Sample 5: a	35	45	55	20	\$27,500	21%	\$650	26%	\$824	\$134,203
b	35	45	60	25	\$27,500	37%	\$1,160	46%	\$1,469	\$216,896
Sample 6: a	45	50	55	10	\$30,000	1%	\$29	16%	\$430	\$53,767
b	45	50	60	15	\$30,000	22%	\$585	28%	\$739	\$109,112

	Hire Age	Age at Transition	Retirement Age	Years of Service	Annual Compensation	MIP-Graded Participant Electing the DC Plan Option				
						Replacement Ratio @ Ret	Monthly Ben @ Ret	Repl. Ratio @ Ret + 10	Monthly Ben @ Ret + 10	Present Value @ Ret
Straw Employees										
Sample 4: a	25	40	55	30	\$25,000	24%	\$1,161	27%	\$1,310	\$212,497
b	25	40	60	35	\$25,000	30%	\$1,497	33%	\$1,623	\$241,494
Sample 5: a	35	45	55	20	\$27,500	15%	\$467	17%	\$527	\$85,491
b	35	45	60	25	\$27,500	23%	\$727	25%	\$799	\$73,018
Sample 6: a	45	50	55	10	\$30,000	4%	\$106	11%	\$283	\$38,853
b	45	50	60	15	\$30,000	14%	\$375	16%	\$414	\$36,759

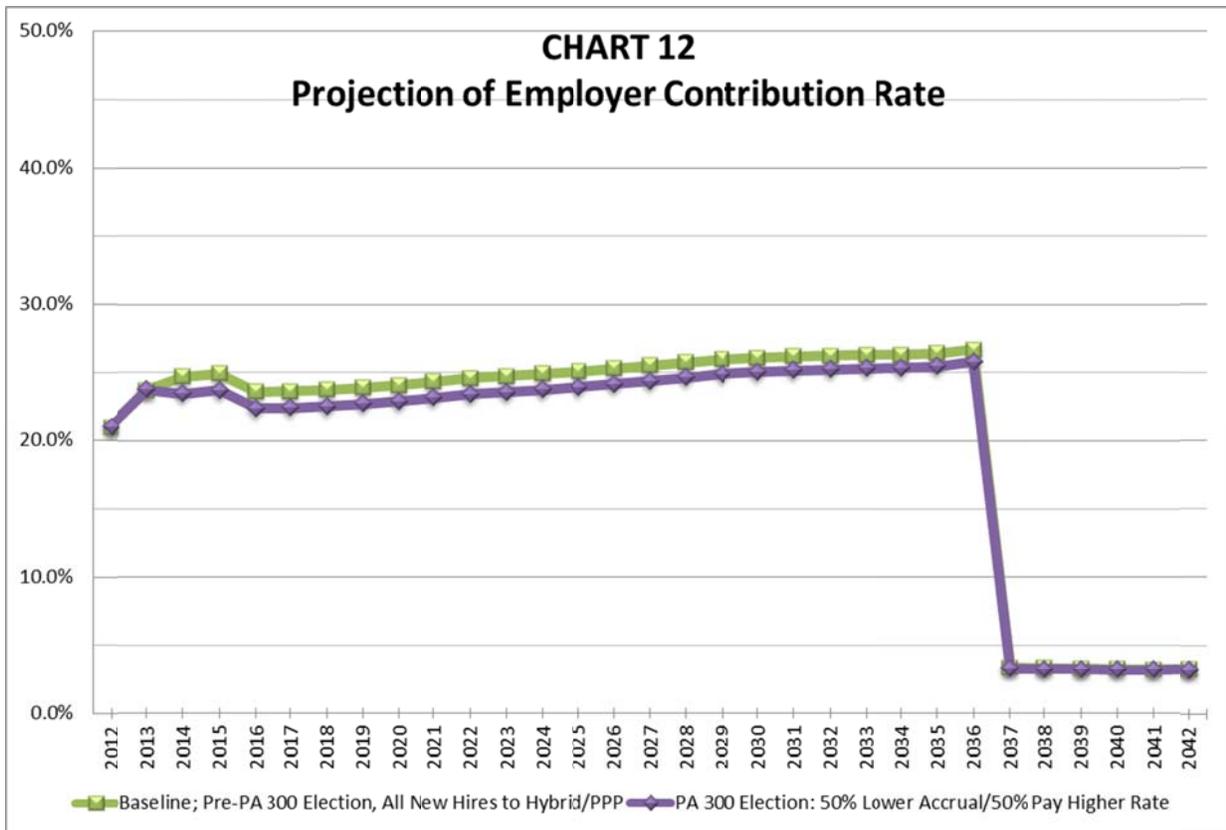
Assumptions:

- * Employee contributions are assumed to be the same across all three plans. Total contributions are allocated (as applicable) between DB contributions, DC contributions, and personal (pre-tax) savings.
- * Account balances from DC and personal savings arrangements are projected to retirement at an assumed investment return of 7.0% and converted to life annuities using two-thirds female mortality and 5.0% interest.
- * Monthly benefits shown above are adjusted for inflation (3.5%) between age at hire and retirement age.
- * Outlined cells represent ages where the retiring individual is not eligible to begin receiving payments from the DB plan. = In these cases, payments would commence five years after retirement (at age 60).

For an existing MIP member, the value of electing the increased contribution to retain the 1.5% multiplier is nearly identical to electing the lower future multiplier so long as the difference between the 7% required contribution and the existing contribution schedule is saved on a pre-tax basis and included as retirement income. If the difference in contribution (approximately 2.75% to 3.00% of pay) is simply used as additional earnings, the value of retirement income provided under the “retain current contribution schedule” option will be lower than shown in the table above. Opting out of the defined benefit plan and receiving the 4% employer DC allocation (as well as deferring 7% of the employee’s own earnings) results in retirement income that is substantially lower than either of the options that involve remaining in the DB plan.

PA 300 of 2012 Legacy Plan Election – Impact on Projected Costs

The legacy component of the defined benefit plan will continue to be a large portion of the entire retirement system over the short and intermediate term. The changes contained in PA 300 for current active employees in the Basic and MIP groups attempts to contain future growth in the unfunded liability by offering these members a choice between a lower future accrual (1.25% for future service rather than 1.5%) with the same contribution structure or maintenance of the current accrual with a higher required member contribution (4% for Basic, 7% for MIP). The following graph illustrates the estimated projected contribution requirement with the assumption that one-half of the affected members elect the lower future accrual rate and one-half elect the higher member contribution rate.



The PA 300 election for current legacy plan members results in a lower employer normal cost for affected members, plus a small decrease in unfunded actuarial accrued liability. Under this election scenario, the initial reduction in the employer required contribution rate is about 1.3% of payroll. Over the remaining unfunded liability amortization period, the projected savings gradually decreases to around 1.0% of payroll.

APPENDIX 2

Actuarial Assumptions and Methods

For purposes of projections of plan costs and benefits contained in this study, the actuarial assumptions are the same as those used in the September 30, 2011 valuation performed by Gabriel Roeder Smith & Company (GRS), except as noted below:

- Beginning September 30, 2012 and thereafter, the projected unfunded actuarial liability allocated to the legacy plan was amortized at 8% interest and the projected unfunded actuarial liability allocated to the Hybrid plan was amortized at 7% interest.

The calculations are based upon the results of the September 30, 2011 valuation prepared by GRS. Segal has reproduced the September 30, 2011 valuation to within a range of reasonableness and determined the financial impact of alternative scenarios contained herein by applying the changes in normal cost, covered payroll, and benefit payments under the Segal valuations and applying those changes to the GRS valuation results.

Projections, by their nature, are not a guarantee of future results. The modeled projections are intended to serve as estimates of future financial outcomes that are based on the information available to us at the time the modeling is undertaken and completed, and the agreed-upon assumptions and methodologies described herein. Emerging results may differ significantly if the actual experience proves to be different from these assumptions or if alternative methodologies are used. Actual experience may differ due to such variables as demographic experience, the economy, stock market performance and the regulatory environment.

APPENDIX 3



COALITION FOR SECURE RETIREMENT - MICHIGAN

September 21, 2012

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Office of Retirement Services
PO Box 30171
Lansing, MI 48909-7671

Dear Mr. Stoddard:

On behalf of the Coalition for Secure Retirement, MI (CSR), thank you for requesting our input into the study stipulated under Sec. 93 of PA 300. Our comments are in the enclosed report, and when the report speaks of differences between defined benefit and defined contribution plans, we intend to highlight our support for retaining the Pension Plus plan, the hybrid plan that includes a defined benefit component, for new hires. I wanted to clarify the context for those comments.

We look forward to continuing to work with ORS on these issues.

Sincerely,

Ellen Hoekstra

Ellen Hoekstra

ORS
SEP 24 2012

110 W. Michigan Ave. Ste. 700 Lansing, MI 48933 517 372 0860

Rec'd 1/25



PA 300 of 2012: Response to MPSERS Study, 9/21/12

Funding Methods

CSR views the current assumed long-run rates of return for MPSERS (8%/7%) as reasonable, given that Michigan is an ARC based state, and would be concerned about shifting to a rate of return that is indexed to external and fluctuating factors. The legislature has recently passed SB 797, which would provide more tools for the Bureau of Investment to diversify asset allocation and meet these targets. At the September 6 Investment Advisory Committee (Dept. of Treasury), RVKuhns and Associates reported on their Asset/Liability study for SERS, a mature, closed system. In their remarks, they commented that it was “good news” that Michigan is an “ARC based state”, making our prospects for meeting our earnings assumptions better than other states that do not adhere to such fiscally prudent standards.

Stranded Costs and Funding

According to the House Fiscal Agency (HFA), the decline in statewide pupil enrollment has been the second biggest factor “in the increase of employer contribution rates for unfunded accrued liabilities.”¹ From 1996-7 to 2003-4, the proportion of active to retired MPSERS members declined from 72.6% to 68.8%, even though during that same period, local district pupil membership increased from 1,634,074 to 1,640,929. Subsequently, pupil membership has declined, with an estimated local district membership of 1,412,500.² We understand that ORS estimates that 5% of the increase in employer pension contributions and 2% of their increase in retiree health care contributions are attributable to stranded costs. Thus, CSR supports shifting UAL costs from payroll to employers’ current operating expenditures (COE) to assure better that UAL related to previously earned benefits remains with the employer that created the cost. Based on the data regarding pupil enrollment and the shifting ratio of active to retired employees, using COE would provide a more stable and growing base, which is also more equitable to employers.

Retiree Healthcare Funding

CSR strongly supports prefunding retiree healthcare because even partial prefunding can substantially reduce future costs, due to the accumulation of investment earnings as well as to differences in earnings assumptions. With pay-as-you-go, both liabilities and the Annual Required Contribution (ARC) are based on short term assumptions. However, if the ARC is fully funded in a qualified trust with a long range investment policy, liability and ARC are calculated based on an 8% (as opposed to 4% for pay-as-you-go) discount rate applied to future liabilities, reducing the size of both. The HFA analysis of shifting prefunding retiree health benefits suggests that the calculated UAL for these benefits will be reduced by approximately \$10.8 billion.³ Rating agencies view prefunding OBEB benefits favorably as well, with Ken Kurtz of Moody’s stating that employers should not “maintain Retiree Health Benefits with no plan and no funding.”⁴ Moreover, prefunding increases employees’ sense of security that health benefits will be available to them upon retirement.

Shifting Newly hired School Employees from Hybrid to Defined Contribution plan

- ***Frequency of changes in retirement benefits.*** Anecdotally, CSR has observed a substantial rise in member anxiety regarding the future security of retirement benefits. PA 300 implemented the third set of significant changes in retirement benefits for school employees in just 5 years, with PA 110-111 of 2007 implementing graded scale premium and increasing employee contributions, and PA 75 of 2010 placing new hires into a hybrid plan and requiring a 3% payment for non-guaranteed health benefits, among other changes. Active members are

understandably concerned that Michigan is on a path to implement changes every few years that reduce benefits but increase employee and retiree costs, leading to **greatly increased insecurity about what impact future changes might have on their retirement.**

- **Negative impact on investment return and other risk, including market volatility of DC Plans** **Market volatility has more adverse impact on members in a defined contribution plan** because the employee does not have the tools of amortization and smoothing that are available to a defined benefit plan. Diversification is more difficult for individual investors than institutional investors because of the smaller size of the individual's assets, and because individuals, of course, lack the professional expertise held by, e.g., the Bureau of Investments. A member in a defined contribution plan is more susceptible to severe declines in investment earnings, solely because of when that particular individual retires, a choice restricted by birth date. In 2000, **Nebraska** created a hybrid plan for state and county workers after finding that its DC plans averaged only 6% return, in contrast to 11% for the state's DB plans.⁵ **West Virginia** began a defined contribution plan for educational employees in 1991 but closed it to new hires in 2005, in large part due to lower average rates of return on that plan than on its defined benefit plan—4.59% over a 7 year period for the DC plan, contrasted to a 7.74% for the DB plan.⁶ Due to higher earnings and the higher employee contributions, the West Virginia Consolidated Retirement Board's actuary indicated that allowing public school employees to transfer to the defined benefit model would save that state \$1.8 billion over 30 years.
- **Benefit Adequacy** Benefit adequacy of DC plans is another concern. When the Pension Plus (hybrid) employees approach retirement age, **they have the security of knowing that no matter how long they may live, they will not outlive the DB component of the plan.** In a system with a **high proportion of female members, concerns about "outliving" their pensions are particularly relevant.** According to the Society of Actuaries RP-2000 mortality tables, 50% of US females who reach 65 will live to age 85, 10% will live to age 96 and 2% will live to 100, percentages that can be expected to go up rather than down in the future.⁷ Members who live into their 80's and beyond clearly benefit from the risk pooling provided by having a defined benefit component to their pension plans. Finally, CSR remains concerned **that lower-income school employees will select options based almost solely on contribution costs** under PA 300 as enacted, given that the income-based scale for employee contributions has been eliminated.
- **Impact of Inadequacy of Benefits.** The National Institute on Retirement Security (NIRS) found that in both the private and public sectors, **DB plans help reduce the risk of poverty among older Americans.** NIRS found that rates of poverty were six times greater for older Americans without DB plans and that in 2006, **DB plans resulted in savings of about \$7.3 billion in public assistance, approximately 8.5% of aggregate public assistance received by US households.**⁸
- **Attraction/retention of employees, including portability and workforce management.** According to its survey, Diversified Investment Advisor's Report on Retirement plans, **84% of US companies offering a defined benefit plan believe their plans positively impact employee retention.**⁹ Organizations representing teachers in West Virginia have told us that their state's shift back to a defined benefit plan has been helpful in retaining teachers. Younger employees, once they met the brief vesting requirements of a defined contribution plan, felt they have little to lose by switching to another field of employment, a particular problem in some critical shortage areas, including special education personnel and teachers of math, science. **North Dakota changed its DC plan to a DB plan in 1977** to assist the state in attracting and retaining quality employees. Although DC plans are more portable, the MPSERS system is already **substantially portable**, with employees able to move among all public school districts and community colleges in the state; additionally, under the Reciprocal Retirement Act, there are mechanisms for employees to move into other public employment while protecting retirement benefits.

Endnotes

¹ HFA Analysis SB 620, 9/18/12

² SFA Pupil Membership History, 9/18/12

³ HFA Projected State Contributions to MPSERS, 8/29/12

⁴ Contra Costa County. "Contra Costa County Employee Benefit Challenge." *Contra Costa County Employee Benefit Challenge*. n.p., 1 Mar. 2007.

⁵ Anderson, Gary W, and Brainard, Keith. *Profitable Prudence: The Case for Public Employer Defined Benefit Plans* Pension Research Council, The Wharton School, University of Pennsylvania. 2004

⁶ Olleman, Mark. "Public Plan DB/DC Choices." *PERiScope*. Milliman, Jan. 2009. Web.

⁷ Society of Actuaries. "SOA - Society of Actuaries - The RP-"2000 Mortality Tables." SOA. Society of Actuaries, July 2000.

⁸ Frank Porell and Beth Almeida, *The Pension Factor: Assessing the Role of Defined Benefit Plans in Reducing Elder Hardships* National Institute on Retirement Security, July 2009), 1.

⁹ Diversified Investment Advisors. *Diversified/AHA Survey Reveals That Cost Cutting Measures and Need for Improved Plan Management Drive Retirement Plan Changes*. Harrison, NY: n.p., 2010. Print.



COALITION FOR SECURE RETIREMENT - MICHIGAN

Coalition for Secure Retirement-Michigan members

Organizations

AFSCME Council 25

AFT Michigan

Association of Dearborn School Administrators

College Employees Benefit Association

Grand Rapids Community College Faculty Association

Lamphere Federation of Teachers

Macomb Community College Faculty Organization

Macomb County School Employees Retirement Association

Michigan Education Association

Michigan Federation of AFSA Local AFL-CIO

Retired-Organization of School Administrators and Supervisors

SEIU State Council

September 21, 2012

110 W. Michigan Ave. Ste. 700 Lansing, MI 48933 517 372 0860



September 20, 2012

Phil Stoddard, Director
Office of Retirement Services
P.O. Box 30171
Lansing, MI 48909-7671

Dear Phil:

We received your letter dated September 12, 2012 which requested comment on the plan design / funding study that is currently in progress.

At Delta Dental, we are concerned with effectively managing the total cost of your dental plan, encompassing both the administrative fee and the cost of claims. Claims costs make up the majority of the cost of a dental plan. Consequently, the fee reductions derived from Delta Dental's two networks of dentists (Delta Dental PPO and Delta Dental Premier), our extensive processing policies, and savings from other procedures such as dental consultant review, are of critical importance. They enable Delta Dental to reduce overall costs more effectively than any other carrier in the business, and over the most recent 12 months alone, they resulted in savings to the Michigan Public School Employees Retirement System (MPERS) of more than \$23.9 million dollars. Clearly, we believe that our plans provide the best value at the lowest total cost in the market today.

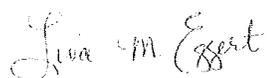
There are a number of ways to reduce claims costs on the dental benefit. As you are aware, we have recently provided a number of scenarios which provide options on lowering certain classes of benefits, adding deductibles and limiting network payment, all of which will provide savings to the plan. One option that was presented was a migration neutral plan which will continue to make payments to PPO, Premier and Non-participating providers in the manner that MPERS' members are accustomed. The new plan when compared to the current plan will lower Premier and Nonparticipating provider benefits so that the payment made for services will be consistent to the amount that is paid to a PPO provider. As you know, the PPO network offers the deepest discount of fees, so this change will provide a cost saving measure for the system. If you are looking to make a change, this change will have an easier transition because it will continue making payment for services in the way that your members are accustomed. If you are looking to provide a new benefit for all future retirees, but keep the current retirees with the benefit they currently have, we can also accommodate that request. We would be happy to discuss these options in greater detail with you in addition to any other benefit changes that you would like us to review and provide information on what savings can be gained from making benefit changes.

Delta Dental considers it a privilege to work together with MPERS, and we do our best every day to demonstrate our commitment to you through the service we provide. Our goal has always been to deliver the best in quality, service, and savings to MPERS, and we hope you will agree that we

Phil Stoddard
September 20, 2012
Page 2

have done so. Thank you for the opportunity to comment on the plan design / funding study. Please do not hesitate to contact me at (517) 347-5709 or leggert@deltadentalmi.com if there is any additional information that I can provide.

Sincerely,

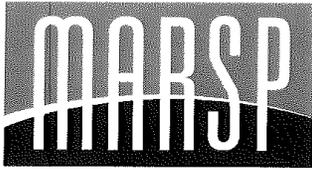


Lisa M. Eggert
Senior Account Manager

LME/bll



LME/bp



Michigan Association of Retired School Personnel
Protecting your future

President, Les Nixon
Executive Director, S. Mark Guastella
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12:00 noon - 4:00 p.m.

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September 27, 2012

Mr. Phillip J. Stoddard, Director
Office of Retirement Services
PO Box 30171
Lansing, MI 48909

Dear Mr. Stoddard:

Thank you for the opportunity to provide input into the study focusing on plan design and funding for the Michigan Public School Employees' Retirement System (MPSERS). The Michigan Association of Retired School Personnel (MARS P) counts more than 47,000 members as of June 30, 2012. Our members have a strong commitment to public education and to MPSERS. We believe the concepts and recommendations noted below will be highly functional and beneficial to the long-term sustainability of the retirement system.

Plan Design:

The existing Pension Plus plan is well designed. It operates efficiently and, while it is not a mature plan, it does have the key components to be successful in the long-term. We believe the program should be continued as is with only one adjustment. We recommend indexing the Regular Retirement Eligibility Age to life expectancy, beginning at the legislation's implementation date, and believe the change will mitigate much of the risk of increasing the long-term unfunded liability. Today the Regular Retirement Eligibility Age of 60 locks the system into paying for additional, unplanned for, years as people live longer. We recommend the concept be analyzed as part of the study.

Funding:

Without question there are funding issues tied primarily to legacy costs. The only appropriate way to address such costs is to consider them a cost of the entire public school funding system. Presently, districts are incited financially to reduce their system membership of active employees through privatizing services, which increases the liability to those districts unable to reduce their membership. The long-term impact of the financial incentive adds to the potential unfunded liability of the system. Additionally, most charter schools do not help pay for the retirement system. A case has been made that they do not participate therefore they should not be obligated to pay into the system. However, they also do not participate in generating revenue for the public school system. As they are exclusively expense centers, they should have some accountability in the funding process. The most appropriate method to fairly apply the legacy costs is to account for them in advance of determining the state-wide per-pupil foundation grant. Such a change would address the revenue vs. expenditure argument in a reasonable and equitable way for all public schools. We recommend an analysis that addresses the impacts to the system's sustainability when paying the retirement costs prior to establishing the per-pupil foundation grant.

ORS

SEP 28 2012

Transition Costs:

Transition costs will be dramatically minimized by retaining the existing Pension Plus plan with only the suggested change to Regular Retirement Eligibility age, noted above. We recommend an analysis that incorporates the concept into the Pension Plus plan.

Unfunded Accrued Liability:

The vast majority of the unfunded accrued liability is a function of two decisions. First, the market losses incurred over the last five years and, second, the decision to encourage districts and charters to hire employees who do not participate and pay into the system.

Market fluctuations are a reality of investing. Historic market analysis shows there will be an offsetting market adjustment to benefit the system. Long-term investing requires a willingness to accept the reality of fluctuations without making short-term changes that will have far reaching long-term negative impacts on the funds. We believe the system has appropriate oversight and as long as oversight is not reduced, the viability of the system is sustainable. We recommend an interest rate shock test be applied in the analysis to evaluate the positive and negative impacts to the unfunded liability of market movements.

As to the unfunded liability created by the decisions to incent or encourage early retirements and hire personnel outside of the system, we believe such practices must stop immediately. They are simply far too expensive and create long-term negative financial impacts to the system. We recommend analyzing the impact to the unfunded liability based on the replacement of retirees with non-participating active employees. It would be appropriate to utilize the actual experiences of the system when previous incentives were offered.

Prefunding Retiree Health Care:

We believe the benefit of prefunding health care costs is obvious. The approach will have a positive impact to the system resulting from short and long-term earnings. While the very short-run may see an increase in immediate costs when compared to pay-as-you-go, the revenues will quickly remediate the costs and solidify the system.

Conclusion:

The Michigan Association of Retired School Personnel recognizes the challenges of funding the existing retirement system. Our recommendations for analysis are intended to create an objective look at all possibilities to improve the existing system within the realities of today's financial marketplace. The cost to close the existing system must obviously be analyzed as part of the study, but an objective analysis of reasonable changes to the existing system must be prepared to create a fair comparison to the beneficiaries of the system as well as the tax-paying populace of Michigan. We firmly believe our recommendations, along with those offered by other individuals and groups, will allow for an objective comparison to be reviewed by the Legislature and the people of Michigan.

Thank you for the opportunity to offer our recommendations.

Respectfully submitted on behalf of the MARSP Board of Directors and members,



S. Mark Guastella
Executive Director MARSP



September 25, 2012

Phillip J. Stoddard, Director
Office of Retirement Services
PO Box 30171
Lansing, MI 48909-7671

Dear Mr. Stoddard, *Phil,*

Thank you for the invitation to respond to the Request for Comment On Plan Design/Funding Study. Unfortunately, even with the extension of one week, the timeframe in which to respond compounded by an extremely busy September, causes us to only be able to respond to the request for input related to the best method for spreading Unfunded Accrued Liability (UAL) costs across school employers. We also feel this is one of the most important issues.

This is an issue of fairness. We suggest that the study seek a method that fairly correlates the UAL to the districts responsible for the costs, employee by employee. This may be too complicated and time consuming for this study or to the extent that there is no direct correlation between responsibility and the cost allocation of the UAL, that all public schools share in the cost, including but not limited to traditional K-12 schools, Intermediate districts, Public School Academies, Charter Schools, the Education Achievement Authority, cyber schools, Community Colleges and Universities. The payment of the UAL "off the top" of the School Aid Fund may be the simplest way to accomplish this.

Because some public schools are not currently mandated to participate in the MPSERS system by state law, the fact that their existence has caused public school employees to be hired by these entities and positions from traditional public education to be eliminated, causing fewer participating public school employees, compels that all public schools should share in the UAL.

Many feel that Current Operating Expenses (COE) as a method of allocating the UAL, does not correlate to the entities that incurred the costs.

We would like to offer our assistance and that of our members in the review of the impact of any potential implementation options. We hope to partner with you so as to limit the negative impact on the districts that will be required to participate in the funding of the UAL.

Thank you for your consideration,

David Martell
Executive Director

ORS
SEP 26 2012