

Ohio's Public Employee Retirement Systems: Funding Requirements and Related Issues

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Are Ohio's five public employee retirement systems adequately funded? Generally yes, this paper concludes. Moreover, the author points out ways to make sure they remain so. Funding and other retirement issues, along with basic information, are presented in a non-technical, understandable manner. The paper reviews an alternative approach to providing retirement benefits, a defined contribution plan, such as the one established by Am. Sub. H.B. 586 of the 121st General Assembly for faculty and certain administrative staff at state universities and colleges. It examines the fiscal implications of adopting such an approach for any group of public employees.

Many public employees and policy observers today are concerned about the adequacy of funding of public retirement systems and the appropriateness of their benefit design, including issues related to health care and alternative retirement plans. This paper examines these issues in regard to Ohio's public retirement systems: the Public Employees Retirement System (PERS), State Teachers Retirement System (STRS), School Employees Retirement System (SERS), Police and Firemen's Disability and Pension Fund (PFDPF), and Highway Patrol Retirement System (HPRS).

Membership, Contributions, and Benefits: An Introduction

The five retirement systems provide pension, disability, survivor, and health care benefits for state and local

Figure 1: Retirement System Members and Beneficiaries

System	Active Members	Inactive Members	Beneficiaries
PERS	365,383	127,491	116,705
STRS	166,623	116,177	83,136
SERS	100,784	58,935	52,413
PFDPF	24,583	1,184	19,522
HPRS	1,455	12	826
Total	658,828	303,799	272,602

government employees. As Figure 1 shows, the systems vary greatly in size.

“Active” members are those who are currently employed in a position covered by a state retirement system. “Inactive” members are defined as those who are no longer employed in a covered position but have not yet retired and have not withdrawn their contributions. “Beneficiaries” are retirants and the recipients of survivor benefits.

The retirement systems obtain their funding initially from member and

employer contributions. These contributions are invested, and the resulting additional revenues are deposited in the retirement funds. Over the past several years, investment income has made up a significant portion of the systems' revenues.

The member and employer contribution rates are expressed as a percentage of payroll; i.e., the member contributes a given percentage of his or her salary, and the employer contributes an amount that is equal to a given percentage of the member's salary. The Ohio Revised Code establishes specific employer and member contribution rates for PFDPF and member rates for HPRS. For all the other retirement system contributions except the PERS law enforcement division (PERS-LE), current law establishes *maximum* rates, with the *actual* rates established by each system's board. In the case of PERS-LE employer and member contribution rates, current law authorizes the PERS Board to set the rates without reference to maximums. The current rates are shown in Figure 2.

The systems' revenues are used to pay "age-and-service," disability, and survivor benefits to eligible individuals according to formulas specified in the Revised Code. "Age-and-service" benefits derive their name from the criteria used to determine the member's eligibility for retirement. For normal age-and-service retirement, the benefit formulas are based on years of service and the average of the member's three highest years of earnings.

Disability retirement benefits are provided to an eligible member whose working career has been ended by a disabling condition. Survivor benefits

Figure 2: Member and Employer Contribution Rates

System	Member Rate	Employer Rate
PERS - state	8.50%	13.31%
PERS - local	8.50%	13.55%
PERS - law enforcement	9.00%	16.70%
STRS	9.30%	14.00%
SERS	9.00%	14.00%
PFDPF - police	10.00%	19.50%
PFDPF - fire	10.00%	24.00%
HPRS	10.00%	24.00%

are paid to qualified beneficiaries after the death of a retirant or eligible member.

Retirement Funding Policy Issues

- 1) Are the Contribution Rates for the State Retirement Systems Adequate?**
- 2) Should They be Increased or Decreased?**
- 3) Will Baby Boomer Retirements Cause a Funding Crisis?**
- 4) Will Benefits be Reduced as a Result?**

Because legislative action would be required to change the level of benefits or to increase contribution rates above the statutory maximums, these changes could not automatically occur as a consequence of any changes in a system's liabilities. However, the funding mechanisms used by Ohio's retirement systems are designed to avoid the type of crisis that would require such changes. As a result, Ohio's retirement systems are (and are likely to remain) adequately funded.

In order to understand how the state retirement systems will deal with a large number of baby boomer retirements, it is necessary to look at how the systems finance their

pensions. Two fundamentally different approaches to pension financing are possible: 1) **pay-as-you-go**, and 2) **pre-funding on an actuarial basis**.

In a **pay-as-you-go** system, such as Social Security, pensions are not funded in advance, and contributions at any given time match or slightly exceed cash benefit payments. Contribution rates in a pay-as-you-go system increase over time, as the number of retirants and number of benefit payments increases. In contrast, pension benefits under the state retirement systems are **pre-funded**. Under this approach, money is set aside for the payment of future benefits. This results in the accumulation of reserve assets that then produce investment income. Based on this approach to funding, an adequately funded system has the funds on deposit to pay benefits. As long as the benefit structure remains constant and the actuarial assumptions used by the system continue to provide a reasonable portrayal of reality, the contribution rate remains approximately constant over time and across generations. However, if a significant increase in the benefit structure would occur (e.g., if the General Assembly enacted a more generous age-and-service retirement formula), additional funding would be necessary, through either increased contributions or a longer *amortization period*, a concept that is discussed further below.

In each system's annual actuarial valuation, its actuary makes determinations regarding the adequacy of the contribution rates in the funding of the system's liabilities. "Actuarial accrued liability" (AAL) is liability for service already performed by former and present members of the system. In other words, AAL is how much money the system owes based on the service completed to date by retirants and current members. In calculating this

liability, the actuary uses demographic data that includes the actual salary, age, and service of each of the system's members, as well as reasonable actuarial assumptions about salary growth, disability rates, retirant mortality rates, investment returns, and expected rates of retirement at various ages. Therefore, a large number of members retiring at about the same time would not be a surprise to the system, because calculations have been made of how much the system owes these members and approximately when the payments are to begin. Any marked increase in the number of retirants that may occur as the baby boomers reach retirement age is already accounted for in the system's annual actuarial valuation. Because the annual actuarial valuation completely recalculates assumed future experience, taking into account all past differences between assumed and actual experience, it continuously permits a system to make adjustments in its financial position.¹ The systems also use five-year actuarial studies to determine appropriate changes in their actuarial assumptions. Long-term actuarial forecasts are used by the Police and Firemen's Disability and Pension Fund (PFDPF) as the primary tool in determining the adequacy of that system's contributions.

In summary, the systems were actually designed to accommodate fluctuations over time in the number of retirants.

What Methods are Used to Determine Retirement System Funding Needs?

A variety of actuarial cost methods are available to determine the contribution rates that are necessary for the pre-funding of pension benefits. Because the state retirement systems do not all use the same method, a brief description of these methods may be helpful in understanding data regarding their funding needs.

The state retirement systems are designed to have contribution rates that remain approximately constant across generations.

¹ *Public Employees Retirement System of Ohio, Annual Actuarial Valuation of Active and Inactive Members December 31, 1995*, by Gabriel, Roeder, Smith & Company Actuaries & Consultants, (Columbus, August 8, 1996), VI-2.

Pension benefits under the state retirement system are pre-funded. Under this approach, money is set aside for the payment of future benefits.



For PERS, STRS, SERS, and HPRS, the **entry age normal cost method** is used, which provides for contributions that are equal to a level percentage of salary over an individual's working years. Under this cost method, the retirement system's costs in any given year consist of two components: the cost of service rendered this year (the normal cost) and the cost of liquidating over a given number of years the unfunded portion of liability for past service (the amortization payment). Unfunded liability is the portion of the actuarial accrued liability that is not covered by a system's assets. A system's amortization period is defined as the length of time necessary for the liquidation of its unfunded liability. The total normal cost of benefits for the current members is funded over their *working lifetimes*, while the unfunded liability is funded over the *amortization period*.

If a system has been actuarially pre-funding pension benefits, why does it have unfunded liabilities? Unfunded liabilities exist mainly for two reasons: 1) the addition of benefit enhancements that apply retroactively to service already rendered, and 2) actual plan experience that is less favorable than assumed. Because it does not represent a bill payable immediately, the mere existence of unfunded liabilities is not necessarily problematic, but it is important that they not be permitted to reach unreasonable levels, and that they be controlled through a sound method of payment over a reasonable period of time.²

PFDPF uses a variation of the **aggregate** (also known as "frozen initial liability") **cost method**. Under the PFDPF method, the total present value of all expected benefits to be paid to members as of the valuation date — reduced by assets and the remaining employer accrued liabilities that were generated when the system was created

— is funded over the working lifetimes of the current members.³ A look at how PFDPF was created may be helpful in understanding why it does not use the same actuarial cost method as the other state retirement systems.

As the newest of the state systems, PFDPF is unique in that it began operating in 1967 with the transfer of \$75 million from 454 separate, severely underfunded local police and firefighters funds. In the legislation that created PFDPF, the unfunded accrued liabilities of all the separate funds that were combined to form the new system were segregated into a separate component, totalling \$415 million, that was to be financed by payments from the local government employers that owed the original liabilities.⁴ These payments were to be independent of the rates established to fund benefits accrued after the creation of the new system. Because the intent of the General Assembly in providing for the separate payment of these past liabilities appeared to be that no further unfunded liabilities were to be created,⁵ PFDPF adopted its version of the aggregate actuarial cost method. Given the specifics of the situation, this method was believed to be appropriate because by definition it treats all costs as current costs which are to be funded over the working lifetimes of current members.⁶ This is in contrast to the entry age normal method, which uses a set amortization period to pay off unfunded liabilities. Because the aggregate method — the one used by PFDPF — generally results in a shorter funding period, actuarial contribution rates set using it tend to be higher than they would be if the entry age normal method were used.

Because PFDPF logically adopted a different actuarial cost method, any comparisons regarding the funding of

² Ibid., VI-8.

³ Dan M. McGill, *Fundamentals of Private Pensions*, 5d ed. (Homewood, Illinois: Richard D. Irwin, 1984), 317.

⁴ Police and Firemen's Disability and Pension Fund of Ohio, *Comprehensive Annual Financial Report for the Year Ended December 31, 1995* (Columbus, June 26, 1996), 9. This separate cost component is still being paid off in installments by these employers. As of December 31, 1995, unfunded accrued liabilities totalling over \$209 million were being paid over a 67-year period that will end in 2035.

⁵ Ohio Retirement Study Commission, *Adequacy of Contribution Rates for the Police and Firemen's Disability and Pension Fund: Review and Recommendations* (Columbus, December 14, 1994), 1.

⁶ McGill, 316-321.

the state retirement systems should be interpreted with a great deal of caution.

Are the Systems Sufficiently Funded?

Unlike private sector pension plans, federal law does not impose funding requirements on state retirement systems, although Ohio's systems do adhere to Governmental Accounting Standards Board accounting and reporting standards. The systems rely on the recommendations of their actuaries in making determinations regarding the sufficiency of their funding.⁷

How successful have the retirement systems been at pre-funding pension benefits? The annual valuation of each of the five state retirement systems contains a statement to the effect that the system's benefits are adequately funded. According to the most recent PERS annual actuarial valuation:

- 1) The employer rates are sufficient to fully fund the cost of benefit commitments being made to members for service currently being rendered. After satisfying current cost requirements, the remainder of the employer rates are sufficient to fund over a reasonable period of future years the unfunded portion of liabilities for service already rendered. ...
- 2) Based on the results of the December 31, 1995 regular annual actuarial valuation, it is our opinion that the Public Employees Retirement System of Ohio continues to be in sound financial condition in accordance with actuarial principles of level percent of payroll financing.⁸

Statements that are similar to one or both of these appear in the most recent annual actuarial valuations of each of

the state retirement systems. Therefore, according to the systems' actuaries, the current funding levels are adequate.

However, a December 1994 report by the Ohio Retirement Study Commission (ORSC)⁹ raised concerns about the adequacy of PFDPF's funding, based upon an analysis of several actuarial reports, including the system's 1993 annual actuarial valuation. The ORSC report did not recommend an increase in statutory contribution rates for PFDPF, but it did recommend 1) a study of the fund's disability program to identify potential administrative or statutory provisions that could be beneficial in reducing disability retirement costs, and 2) the deferral of any consideration of further benefit improvements unless the contributions are increased.

The study of the PFDPF disability program, completed in November 1996, included a number of recommendations¹⁰ based on an analysis of the program and on best industry practices and trends in effective disability management. The study also noted that after reaching a peak in 1988-90, the average annual overall rate of disability retirement for both police and firefighters had declined. This was particularly noticeable in 1994-95, when it reached a level that was well below the 1985-87 rate.¹¹

The ORSC evaluation of the adequacy of PFDPF contribution rates is not expected to be updated until after modifications to the system's disability program have been made based on the recommendations of the November 1996 study.

It is important to note that because the PFDPF contribution rates are fixed under current law, the system's board would be unable to make any necessary rate changes. Until 1986, when the

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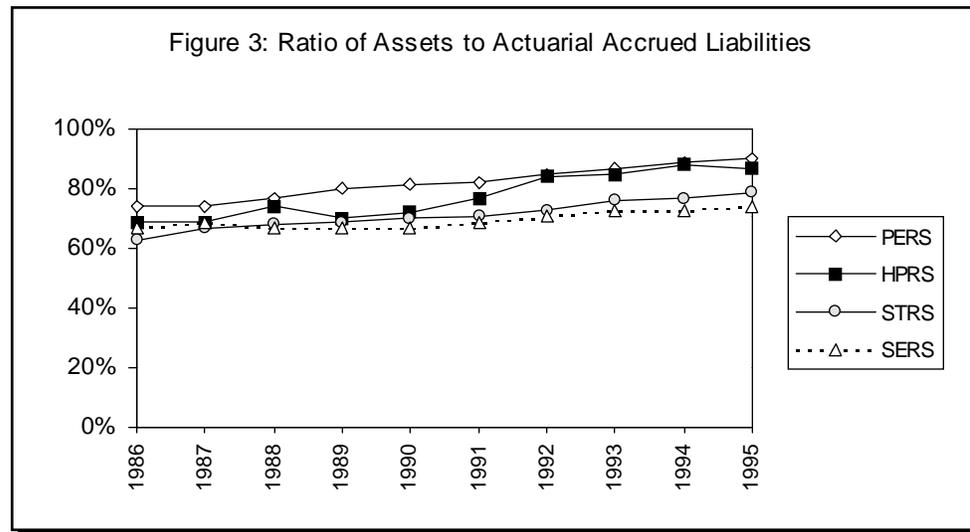
⁷ However, under Sub. S.B. 82 of the 121st General Assembly (passed by the General Assembly November 14, 1996), each of the systems is required to establish and maintain an amortization period of not more than 30 years.

⁸ Public Employees Retirement System of Ohio, *Actuarial Valuation*, 4.

⁹ Ohio Retirement Study Commission. This report was in response to the requirement under ORC 742.311 that ORSC annually a) review the adequacy of the statutory and actuarial PFDPF rates and b) make recommendations which it finds necessary for the proper financing of PFDPF benefits.

¹⁰ Joint Legislative Committee to Study Ohio's Public Retirement Plans, *Analysis of Police and Firemen's Disability and Pension Fund Disability Plan, Procedures, and Experience*, report prepared by William M. Mercer, Inc., 121st G.A., November 8, 1996, 19-35. Most of these were recommendations for the clarification of PFDPF statutes and administrative changes to increase procedural efficiency, although a few more substantive statutory changes were recommended, such as the implementation of a workers' compensation offset. This study did not address the system's actuarial funding status.

¹¹ *Ibid.*, 51-52.



Under the current funding rates, each system has been able to pay current health care expenses, as well as create health care reserves.

PFDPF rates were statutorily fixed at 10.00 percent (employee), 19.50 percent, (police employer), and 24.00 percent (fire employer), each year they were set according to the rates calculated in the system’s annual actuarial valuation. The decision of the General Assembly to fix the rates was the culmination of concerns expressed by employers that it was difficult to budget for retirement costs because the rates were fluctuating annually. Because the rates have now been fixed at the same level for ten years (during which several benefit increases have been enacted), it is likely that they would be insufficient to fund any further major benefit increases. Therefore, careful consideration should be given to the need for any proposed increases of significant size.

How is Retirement System Funding Status Measured?

A number of different measures exist to assess the funding status of retirement systems. One of the most common is the trend over time in the ratio of assets to actuarial accrued liabilities. Figure 3 shows the progress of PERS, HPRS, STRS, and SERS on this funding measure over the years. (Note: These amounts do not include

assets or liabilities for post-employment health care benefits.)

This graph shows that, according to the most recent data available, PERS has sufficient assets to pay 90 percent of its total actuarial accrued liabilities; HPRS has 87 percent; STRS, 79 percent; and SERS, 74 percent. If the present trend continues and this ratio reaches 100 percent for one or more of the systems, that system will no longer have any unfunded liabilities. Complete funding of a system’s liabilities has historically been quite uncommon. It should be noted that any comparisons among systems on this measure must be interpreted with caution due to differences among the systems in the methods used for valuing plan assets and accrued liabilities.

Although this ratio has also increased for PFDPF during this period, for that system the historical data provides a different form of funded status information, because a different actuarial cost method was used. However, in August 1996 the PFDPF actuary prepared a calculation showing a funded status of 81.6 percent using the same actuarial cost method used by the other funds, based on data as of January 1, 1996.

Figure 4: Health Care Expenses and Funding

System	1995 Health Care Expenses	Health Care Reserves	Employer Health Care Rate
PERS	\$353,695,547	\$7,194,872,431	4.29% state 5.11% local 5.89% LE
STRS	\$165,767,000	\$851,228,000	2.00%
SERS	\$88,340,780	\$138,209,994	4.55%
PFDPF	\$70,170,717	\$203,467,204	6.50%
HPRS	\$1,959,225	\$67,722,419	4.13%

What About Post-Retirement Health Care?

Although the primary responsibility of the state retirement systems is to provide pension, disability, and survivor benefits, the Revised Code also permits them to use part of the employer contribution to provide post-retirement health care benefits.

Although PERS and HPRS are the only systems that attempt to any extent to actuarially fund health care, each of the systems has a health care reserve fund. As Figure 4 shows, there is a great deal of variation among the systems in the size of health care expenses and reserves, the ratio of health care reserves to health care expenses, and the portion of the employer contribution that is used to fund health care benefits.¹²

It is difficult for a system to fully pre-fund health care actuarially because 1) it is not possible to accurately determine the amount of health care liabilities that will be paid out many years in the future, and 2) the rates needed to pre-fund at today's costs are prohibitive for employers and participants.¹³ Because the Governmental Accounting Standards Board has not established funding standards or required actuarial methods for post-employment health care benefits, no basis exists to judge whether a system has adequate health care reserves. The systems do possess the flexibility to implement such cost reduction mechanisms as charging retirant premiums, increasing

deductibles and co-payments, increasing the service requirement for retirants to qualify for health care, and decreasing the health benefits provided if these steps become necessary in the future.

However, particularly in SERS, where all retirants with less than 25 years of service pay a portion of the premium, the extent to which it would be practical to increase the portion paid by the retirant is limited. Currently, three of the systems (STRS, SERS, and PFDPF) require many or all of their retirants to pay a health care premium.¹⁴ The retirement systems have also implemented a number of cost containment measures, which include a preferred retail pharmacy network, mail-order drug plan, case management, and a managed care network for retirants and dependents without Medicare.

Because of the demographic profile of its members (low salaries, late job entry age, low average longevity of service, and a large number of active members over age 65), the funding of health care has presented special problems for SERS. This is true because although the revenues received by the system are based on a percentage of the covered employers' payroll, health care costs are unrelated to payroll (i.e., health care for a low-salary member costs as much as for one who is more highly paid), so a significant proportion of the system's total revenue must go toward health care costs. It was in response to this concern and to the fact that employer contributions were already at their statutory maximum that the General Assembly implemented the SERS employer surcharge in 1988. In effect, the surcharge permits the system to receive an amount from employers that currently is equal to an additional 1.42

The Governmental Accounting Standards Board has not established funding standards or required actuarial methods for post-employment health care benefits.

¹² Expense/reserves data reflects CY 1995 for PERS, PFDPF, and HPRS; FY 1995 for STRS and SERS. Employer health care rate for SERS does not include the employer surcharge.

¹³ Public Employees Retirement System of Ohio, "Actuarial Presentation," (presentation before Joint Legislative Committee to Study Ohio's Public Retirement Plans, Columbus, October 25, 1995), 5.

¹⁴ In PERS, the only retirants required to pay a premium are those under age 65 without Medicare Part A who are enrolled in the Aetna Health Plan. Most spouses and dependent children under the state systems are required to pay a premium.

percent of payroll. This surcharge is collected for employees earning less than an actuarially determined minimum salary, pro-rated according to service earned. The surcharge, combined with a variety of cost containment measures, has permitted SERS to increase its revenues enough to adequately cover its health care costs while maintaining a health care reserve equal to 125 percent of annual health care expenses.

Another important factor in health care cost is Medicare. The health care benefits provided by the state retirement systems are secondary to Medicare, which is generally available only to retirants over the age of 65. If a system's retirement age is lowered, as those of PFDPF and HPRS were (to age 48), an increase in its health care expenses can be expected because of the increase in the length of time over which it will provide primary health care benefits for retirants before they become eligible for Medicare.

Retirement Funding Policy Implications

The most recent annual valuations of each of the state retirement systems have shown that their contribution rates are sufficient to fully fund the cost of benefit commitments made to members for service currently being rendered and to fund over a reasonable period of future years the unfunded portion of liabilities for service already rendered. The systems' valuations take into account any marked increase in the number of retirants that may be expected in the future as the baby boomers reach retirement age.

The December 1994 report by ORSC on the adequacy of PFDPF's funding did not recommend any changes to the system's contribution rates, but did recommend the completion of a study to address potential administrative or statutory provisions that could reduce

the system's disability retirement costs. Although this study (completed in November 1996) recommended some statutory and administrative changes to reduce the program's costs, it also observed that PFDPF's disability retirement rate actually declined after 1988-90.

The continuation of the current contribution rates for PERS, STRS, SERS, PFDPF, and HPRS, subject to annual actuarial review, would result in the continuation of the systems' current ability to pay pension benefits and make progress toward paying off their unfunded liabilities. Any decrease in the systems' contribution rates (unless found by an actuary to be appropriate) would threaten their ability to fund benefits for current and future retirants. As long as the current contribution rates are found to be adequate to fund the pension benefits provided under the Revised Code, no increase in contribution rates will be necessary. However, it is important to consider the cost of any statutory benefit increases that are enacted, because they may result in the need for increased rates. This is particularly true for PFDPF, because its rates have been fixed under the Revised Code since 1986.

It is important to note that these conclusions apply to **pension** benefits. For a number of reasons, including unpredictable rates of health care inflation, the lack of any agreed-upon standards for evaluating the adequacy of post-retirement health care funding, and the fact that the retirement systems are permitted to use various cost reduction methods for health benefits, including reduction of the benefits provided, it is not possible to state that one specific contribution rate is the correct one for **health care**. Under the current funding rates, each system has been able to pay current health care expenses, as well as create health care

reserves, although some systems have much larger reserves than others.

Retirement Benefit Design: Policy Issues

Would the Availability of a Defined Contribution Plan (Such as the One to be Established Under Am. Sub. H.B. 586) be Beneficial for the State?

The determination that the retirement systems' contribution rates are adequate is based upon the assumption that they will be applied to the total payroll of the system. Virtually all state and local government employees in Ohio are required to be members of one of the state retirement systems. If part of the membership were to suddenly leave a system, as would occur if employees were permitted to elect participation in an alternative retirement plan, the funding status of the system would be disrupted, and it would be necessary for its revenue requirements to be recalculated. Because Am. Sub. H.B. 586 of the 121st General Assembly (passed by the General Assembly on November 14, 1996) creates such an alternative plan, STRS, PERS, and SERS will face this situation in the near future.

The remainder of this paper, based upon a study by the Legislative Budget Office (LBO),¹⁵ discusses the fiscal issues involved in the introduction of an alternative defined contribution (DC) plan. Although the plan established under Am. Sub. H.B. 586 is to be for faculty and certain administrative staff at the state universities and colleges, the same general concerns would be present with the adoption of a DC plan for any group of public employees.

What is So Different About a DC Plan?

In the private sector, there has been a trend in recent years toward the

establishment of DC plans. Although there has not been an equivalent surge of state retirement systems adopting DC plans, some examination of the differences between DC and defined benefit (DB) plans, including the strengths and weaknesses of each in regard to public employment, has occurred recently.

Most features that distinguish DC plans from DB plans can be seen as either advantages or disadvantages, depending on one's point of view. In a DC plan, contributions are deposited into a separate retirement account for each participant. Retirement benefits are based on the accumulated contributions plus actual investment earnings and the expected length of time that the benefit is to be paid. In contrast, in a DB plan, the employee receives a benefit determined under a specified formula based on years of service and earnings. The two types of plans allocate investment risks oppositely. Under a DC plan, it is the individual participant who bears the burden of disappointing investment results or receives the gains of good results, because the pension payable at retirement fluctuates, and results are not guaranteed. Under a DB plan, the plan bears the investment risk, because the pension payable at retirement is payable at the promised rate, regardless of investment results and fund balances.¹⁶

The decision of whether to make a DC plan available to employees necessarily requires an employer to make decisions about which patterns of employment longevity it wishes to encourage. The five currently existing state retirement systems offer DB plans, as do the vast majority of state retirement systems nationwide. These plans were designed primarily to reward individuals for lifelong public employment, as is evident in the fact that under current law, members who withdraw from a system before becoming eligible for a

Most features that distinguish DC plans from DB plans can be seen as either advantages or disadvantages, depending on one's point of view.

¹⁵ Ohio Legislative Budget Office, *A Study of the Feasibility of Implementing an Alternative Retirement Program for Certain Employees of Ohio's Universities and Colleges: A Report Mandated by Sub. H.B. 715 of the 120th General Assembly* (Columbus, December 27, 1994). Follow-up research on this topic has also been conducted by LBO subsequent to the completion of this study.

¹⁶ State Teachers Retirement System of Ohio, *An Overview of STRS Benefits and Funding* (Columbus, February 1, 1993).

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pension receive only a refund of the employee contribution, without interest,¹⁷ while those who retire receive a pension based on years of service and salary for the three highest-salaried years of service. In a DC plan, vesting of both the employee and employer contribution usually occurs either immediately or after a very short time. In general, those employees who stay with the employer until retirement are likely to receive a greater benefit under a DB plan than they would under a DC plan. Those who stay with the employer for only a few years are likely to receive a greater benefit under a DC plan than they would under a DB plan, especially if this employment is early in life.

In higher education, DC plans are often called alternative, or optional, plans.

Would a DC Plan be Less Costly to the State Than a DB Plan?

It is true that in general, an employer has more control over pension costs under a DC than a DB plan, because no specific level of benefit is promised to the employee. Since no amount of benefit is guaranteed, the employer's funding responsibility is fulfilled as soon as its contributions are made. However, for a public employer the possibility exists that political pressure could develop in the future for the state to step in and increase contribution rates or otherwise supplement benefits for DC plan participants if their investments do not perform well. In the case of a public employer considering a change from a DB to a DC plan (or offering a DC plan as an alternative) the answer to the question of whether a DB or DC plan costs an employer less is contingent

on a number of variables, including: 1) the specific employer contribution rates set for the plan, 2) whether it would be necessary for supplemental contributions to be made to the already existing DB plan to mitigate any increase in its unfunded liabilities that would occur as a result of certain employees going into the DC plan, and 3) whether health care, disability, and survivor coverage would be provided to DC plan participants, as they are to state retirement system members.

How Could the Introduction of a DC Plan Affect Already Existing DB Plans?

How could the introduction of a DC plan lead to an increase in unfunded liabilities for the existing DB plans? Why would this make a supplemental contribution to the already existing DB plan necessary? The answers can be found in the fact that the contribution rates for the state retirement systems are based on the assumption that they will be applied to the total payroll of the system, including future members. These rates have been calculated to be adequate for the funding of benefits plus the amortization of unfunded liabilities. Currently, a member who withdraws from a state system before reaching eligibility for retirement receives only a refund of his or her contributions, and members who leave their contributions on deposit with the systems but terminate their state service shortly after becoming vested eventually receive benefits that are worth less than the accumulated employee and employer contributions that were made upon their behalf. The retirement systems base their funding upon the assumption that the portion that is not needed to fund these members' benefits will be used to pay the benefits of those members who continue state employment for an entire career.

¹⁷ As is discussed below, for STRS this will change with the enactment of Am. Sub. H.B. 586.

A DC retirement plan would be attractive to some of the younger, newer members of the state retirement systems because they may not have definite plans to remain in state employment for an entire career. The forfeited employer contributions made to the state systems on behalf of those employees who elect alternative plan participation would no longer be available to subsidize the benefits of the older, more costly (in the sense that they will actually receive full pensions) members. In the case of an alternative plan for university faculty and administrators, this effect would be intensified by the fact that the members who would be eligible for the alternative plan have higher salaries on average than members of the system as a whole.

The fiscal effect of the introduction of a DC plan for the state universities was estimated in actuarial calculations for the 1994 LBO alternative retirement plan study, as well as independently in a study conducted for STRS.¹⁸ The effect that the creation of the new plan would have on the state retirement systems actually has two components:

- A) As employees elect to participate in the alternative DC plan instead of the state retirement system, the state system would lose any liability it has for the payment of retirement benefits to these employees. This component represents a decrease in future expenditures for the state systems.
- B) The state system would no longer receive the contributions that it currently receives based on the payroll of these employees, including the forfeited employer contributions that it expected to have available as a result of some employees in this group leaving state employment (and withdrawing from the system)

before they are eligible to retire. This component represents a decrease in revenues for the state systems.

Actuarial analyses completed for both the LBO and STRS studies estimated that B (the decrease in revenues for the systems resulting from creation of an alternative plan) would be greater than A (the decrease in expenditures for the systems).

If no provision were made to make up for this shortfall (e.g., under Am. Sub. H.B. 586, the employer is required to make a supplemental contribution to the appropriate state retirement system initially equal to six percent of the salary of each employee electing the alternative retirement program) it would be necessary for the affected systems to increase their contribution rates overall in order to continue the amortization of their unfunded liabilities. The payment of the actuarially determined contributions to the state retirement systems would then prevent the creation of the alternative retirement program from having an effect on the unfunded liabilities of the affected state retirement systems. (In the specific case of a alternative plan for higher education, STRS, PERS, and SERS are the affected systems.)

Statewide Defined Contribution Plans

West Virginia and Nebraska are the only states with statewide pure DC plans. However, legislation to create statewide DC plans has been considered in several states, including Michigan and California.

Although it appears that actions taken by states to implement pure DC plans on a statewide basis have been quite limited, a number of states in recent years have added DC features to existing DB plans. For example, the

¹⁸ State Teachers Retirement System of Ohio, *Study of Alternative Benefit Program*, by Buck Consultants, Inc. (Columbus, November 1994).

South Dakota Retirement System recently adopted an alternative within the state system that permits members who leave the system to take with them all of their own contributions plus interest and a percentage or all of the employer contributions plus interest, based on length of service. A similar plan was adopted in Colorado in 1995. The Oregon Public Employees Retirement System provides its retirants with benefits under the greater of a DC or a DB formula and permits each working member to annually elect to invest a portion of his or her employee contribution in common stocks.

The experience of Nebraska suggests that the use of a DC plan would not eliminate concerns about a state's retirement funding. Studies conducted for that state in recent years found that the lack of cost-of-living increases under the state's defined contribution County and State Employees Retirement Systems was a major weakness in their ability to provide adequate retirement benefits,¹⁹ and contained recommendations that the defined contribution plans be replaced with a combined defined benefit/defined contribution plan that would guarantee employees a specified minimum benefit floor, and therefore provide some protection from the potential volatility of their investment income.²⁰ In response to the concerns raised by these studies, Nebraska's state legislature has considered several proposals to increase the adequacy of benefits under these plans, including one that would increase both member and employer contribution rates and one that would change the plans from pure DC to a DB/DC hybrid.

State University DC Plans

Although DC plans covering public employees statewide are quite rare, this is not the case for public universities, where in many states DC plans have been common for years. In most cases,

alternative plans are provided by carriers such as the Teachers Insurance and Annuity Association and College Retirement Equities Fund (TIAA-CREF), the Variable Annuity Life Insurance Company (VALIC), Fidelity, or Aetna.

For several reasons, the extent to which the actuarial experience of other states with alternative plans for universities and colleges can be generalized to Ohio is limited. Many of the older alternative plans were established decades ago, at a time when their effect on the funding status of state retirement systems was not a widely recognized concern. In many states, university faculty have either never been part of the state retirement system, or for many years have been required to participate in an alternative program, with no option to join a state retirement system. Consequently, the existence of an alternative retirement plan has no effect upon the retirement systems of these states because the alternative program and state system serve two separate, distinct groups of employees with no overlap, and therefore it is misleading to draw too many parallels with the adoption of an alternative plan in Ohio. Of the states that have adopted alternative plans, nine require the universities to make supplemental contributions to the appropriate state systems equal to a percentage of the payroll of current employees who select the alternative plan. The size of these contributions varies from 2.5 percent to 9.33 percent, but again the information from other states is of limited value in determining what the appropriate contribution would be in Ohio, because of great variation among these states in size of the existing unfunded accrued liability, level of contributions to the existing system and to the alternative plan, level of state system benefits, eligibility for alternative plan participation (i.e., mix of faculty and administrators,

¹⁹ Nebraska Legislative Council, *Determination of Benefit Adequacy of Nebraska Retirement Systems*, by Buck Consultants, Inc. (Lincoln, Nebraska, May 7, 1993).

²⁰ Nebraska Legislature, *Review of the Investment Policies, Structure, and Historical Performance of the Nebraska Retirement Systems and Study of Implementation of a Unified Retirement System for the Nebraska Retirement Systems*, report prepared by Buck Consultants, Inc., November 14, 1994.

universities and community or technical colleges), and salaries of alternative plan participants in relation to the system's total membership.

Under Am. Sub. H.B. 586, the contribution to the state retirement systems made by the employer of an alternative retirement program participant is to initially be equal to six percent of salary. This amount is then to be actuarially adjusted after the first year of the program's operation and every three years afterward.

Other Benefit Possibilities for Short-Term Employees

It also is possible to improve benefits for shorter-term public employees without the addition of a new DC plan by adding DC features to the existing DB plans, as the systems in South Dakota, Colorado, and Oregon discussed above have done. Amended Substitute H.B. 586 includes such a change for STRS. This provision permits any individual who withdraws from STRS membership to receive a refund that includes interest based on years of service, and if that individual has five or more years of service, part of the employer contribution would also be refunded. According to the STRS actuary, over the long term the value of the health care forfeited by members receiving refunds under this provision will exceed the cost of paying interest on refunds. If this provision were extended to additional retirement systems, it would be necessary to analyze the fiscal effect upon each one separately.

Defined Contribution Plans in the Public Sector: Policy Implications

Defined contribution retirement plans generally provide greater benefits than DB plans for short-term employees; for those who remain with the employer for an entire career, the converse generally is true. If a state were to decide that it would be desirable to improve benefits for short-term employees through the adoption of a DC plan, it would be necessary for an actuary to evaluate the impact that this would have upon the unfunded liabilities of the affected state retirement systems. If the adoption of a DC plan were found to increase these unfunded liabilities, it would be necessary to increase the revenues of the affected systems, either through supplemental contributions or an increase in contribution rates overall. Under Am. Sub. H.B. 586, Ohio is to deal with this situation through the use of supplemental contributions to be paid to the state retirement systems by the universities and colleges that employ the alternative DC retirement program participants.

If a state retirement system were to adopt another mechanism (as STRS will under Am. Sub. H.B. 586) to improve retirement benefits for short-term employees, such as paying interest on refunded employee contributions, it would also be necessary for the actuarial impact to be evaluated and any necessary adjustments in contribution rates to be made.



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