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Report on Communicating the Financial Health of Public Pension Plans

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Introduction

The pension systems of states and municipalities are much in the news, particularly those with large funding imbalances. It is increasingly common to read reports that the traditional pension plan, which dominates the landscape of state and local governments, will be replaced by some sort of hybrid plan. The more technical but still very important issue of the choice of discount rate is also receiving a great deal of attention. What does not receive much attention, despite the role it may be playing in the current difficulties of public pension plans, is the uncertain state of communication of their financial position and future prospects.

A great deal of information is available on public pension plans; in particular, the comprehensive annual financial reports (CAFRs) and actuarial reports contain a wealth of information. However, that information is typically not presented in a user-friendly way. Summary documents vary in quality and typically do not give a comprehensive picture of a plan's financial operations or its basic structure.

The Society of Actuaries Social Insurance and Public Finance Section (SIPF) commissioned a research project in July 2012 entitled *Communicating the Financial Health of Public Pension Plans*. The project's premise was that communications were not what they should be and needed to be greatly improved. Doing so could materially improve the chances of a successful resolution of current financial problems and reduce the chances of a relapse.

This report presents the results of the work undertaken in response to the SIPF's request. The premise of this work is that there is a need for a concise but still comprehensive and focused report on the financial health and prospects of state and municipal plans to give stakeholders the overview they need to come to informed opinions about the need for changes to the structure of these plans. The report needs to strike a balance between narrative and quantitative indicators of a plan's financial health.

The proposed report can be updated annually, or even more frequently, and can be a part of a plan's actuarial control cycle. Updates to the proposed report can reflect the results of the control cycle. For example, a divergence between demographic and financial projections and outturns could increase the perceived need for structural reforms. Similarly, the what-if exercises undertaken as part of the cycle could shed light on a plan's vulnerability to financial shocks.

THE PLAN REPORTS

This introduction continues with a description of and commentary on prototypical reports on two pension systems: one on a state system whose identity has been disguised by calling it the Adams PERS, and the other on a state system similarly disguised as the Jackson PERS. Each has an accompanying “dashboard,” which presents key quantitative indicators and a summary of the structure of benefits and actuarial assumptions. The two state systems were chosen to illustrate how developments in plans in quite different financial positions can be treated. The reports are described and contrasted further below.

The goal of the plan reports is to give interested readers a clear overview of the state of a plan’s finances and its benefits. They are intended to serve as examples to the plan management staff who would be called upon to prepare reports for their own pension systems. Having been prepared by an outsider, they are limited in some respects. An outsider cannot commission simulations on the impact of changes in actuarial or economic assumptions, for example, although these may have been reported in the CAFR or elsewhere. Without a simulation model of a plan, it is very difficult to gauge the impact of measures taken to improve the plan’s finances. Nonetheless, the proposed report can still serve as an expository model for plan “insiders.” The reader should note that sentences in square brackets represent the researcher’s conjectures, and are intended to stand in for what would be more solidly based analyses by drafters from plan management.

The two sample reports are organized in a similar way, although they have not been written using a template. The fact that they are narratives illustrated by tables and charts rather than simply a compilation of data might lead readers to overlook the substantial similarities in form between them. The organization by section of each report is almost identical; each report begins with an introduction, which is followed by sections on benefit determination, contributions, investments, and funding. Each has a short conclusion. Both reports emphasize the subjects of benefits and plan financing, offer explanations for recent financing trends, and generally avoid going into detail. The tables and boxes that illustrate the reports’ observations are also substantially similar. Finally, the two reports are more or less equal in length.

There are differences between the two sample reports as well. The report on the Adams PERS has a brief discussion of the impact of lower interest rates on funding. That discussion is lacking in the Jackson report because the necessary data were not readily available, which might reflect the possibility that the issue is not seen to be of the same importance for the Jackson PERS as it is for the Adams PERS. The treatments of cost-of-living adjustments (COLAs) and recent changes to the COLA mechanism differ because in the Jackson PERS current retirees were completely unaffected by the changes, which was definitely not the case with the Adams PERS. In addition, the recent changes to the COLA in the Adams PERS are harder to explain because of the way they differ in their impact on differing age groups.

Having emphasized the similarities of the two sample reports, it needs to be clear that there is no intention of using them to force the experience of different plans into a straitjacket. Despite the similar organization of the two sample reports, plan management could simply choose to emphasize some issues more and others less, to write at greater length, or to be even more concise. The hope is that these reports will be short enough not to discourage interested stakeholders from reading them, and that they will have an organization that is sufficiently similar to facilitate comparisons across them.

THE TWO SAMPLE REPORTS COMPARED AND CONTRASTED

A comparison of the two sample reports makes clear that the Jackson PERS is in much better shape financially than the Adams PERS. The discussion of benefits determination points to one possible reason for this: the pensions paid by the Adams PERS start earlier and pay more for the same work history. For example, an Adams PERS plan member with 30 years of service is entitled to a pension of 75 percent of final salary that starts at age 50, although it should be remembered that most Adams PERS members are not covered by Social Security. A member of the Jackson PERS regular class (which contains most Jackson PERS members) with 30 years of service would have a replacement ratio of 49 percent. The impact on plan finances of this difference is offset to a considerable extent, but not completely by the higher combined employer-employee contributions that finance the Adams PERS. The report's analysis of the huge increase in actual over projected Unfunded Actuarial Accrued Liability (UAAL) in the Adams PERS makes clear the major role of a shortfall in income from investments. The Adams report also notes that employer contributions have tended in recent years to fall below the annual required contribution (ARC); in the case of the Jackson PERS the employer's performance has been more consistent.

Both plans have taken measures in recent years to improve their financing. This was particularly important in Adams's case since its funding ratio had dropped to 60 percent by 2011. There appears to have been less urgency in Jackson's case, and the package was designed to have a more gradual effect. The change to the COLA has little effect on members nearing retirement, but the reduction in the effective adjustment for inflation increases with the number of years a member is from retirement. The reform package spares retirees and older workers, which was not the case with the Adams PERS.

Had these sample reports been prepared by plan management, they could have been part of the control cycle and might also have included projections of future performance and more analysis of the reasons for any deviation in actual unfunded liabilities from their actuarial projections. Particularly useful would be a quantitative analysis of the impact of changes to the plan that both states have recently implemented.

THE DASHBOARDS

In contrast with the narrative reports, the dashboard asks for exactly the same information from each plan. Most of the requested information is purely quantitative and is requested for both very recent dates and the more distant past. The dashboard asks for

qualitative information on actuarial assumptions and methods and benefits, since a purely quantitative approach in these areas is not feasible.

The dashboards are composed of 11 panels: demographic indicators, investment policy, investment returns, funding indicators and ratios, plan maturity indicators, plan sensitivity indicators, sponsor indicators and related indicators, and two additional panels for actuarial methods and assumptions and benefits. Almost all of the information they display came from various CAFRs, mostly those for plan years 1997, 2002, 2007, and 2012, since the dashboard was designed to present information at five-year intervals.

Because this is an entirely voluntary exercise, plan management will be free not to supply any information it chooses not to supply, but will also be invited to supply additional information if it wishes. The dashboard's usefulness will not stand or fall on the absence of a few series. The indicators in each section have been chosen to provide a comprehensive picture of the plan's basic demographic and financial structure and financial position. Some of them are more important than others, and a plan's management might wish to provide alternative indicators. The hope is that a detailed request for data like this one will achieve a basic uniformity in the information that different plans will supply. The current version of the dashboard makes a very ambitious data request, and it may well be that experience with it will result in a reduction in the amount of data requested, and perhaps some change in the relative importance of the different panels.

THE TWO DASHBOARDS COMPARED AND CONTRASTED

By comparing the two sets of panels, it is clear that it was easier to find information for some panels than for others. Information on demographic indicators, plan maturity indicators, and the qualitative indicators was relatively easy to come by. Information on funding was less easy to find, apart from such standard indicators as Actuarial Accrued Liability (AAL) and Actuarial Valuation of Assets (AVA), and the funding ratio derived therefrom. The fact that published sources were not enough to fill in every cell in the dashboard's tables is not, of course, a sign that plan management might not be able to provide the missing information.

Each of the dashboards had gaps in data that are not shared by the other. Specifically, there being no publicly available CAFR for the Adams PERS for 1997, most of the time series data lack the observation for 1997. However, the results of a "what-if" scenario, specifically, the impact on UAAL of a 1 percent change in interest rates, was available for the Adams PERS but not for the Jackson PERS.

CONCLUDING OBSERVATIONS

The sample reports on the pension systems of state and local government employees of Adams and Jackson are most definitely not carved in stone. Although the basic goal is the production of a summary report, the two examples here are in a sense merely work in progress. They are intended to stimulate a dialogue that will make them more useful to both plan management and the broader community of stakeholders in public pension plans. It might be that the report and dashboards the plan managements would like to

prepare are quite different from these prototypes. In the judgment of the researcher and the project oversight group recruited to oversee this research effort, however, the project will have been worthwhile to the extent that it leads to a better and broader understanding of the finances of public pension plans.

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A Guide to the Data Requested for the Proposed Dashboard

The dashboards proposed in this report ask for a substantial amount of data. Nearly all of that data is undoubtedly compiled by a plan for its own purposes. Most of the data requested should look familiar. This guide will explain those terms that may not be familiar as well as the rationale for the particular combinations of data included in this prototypical dashboard.

Eleven panels are found in the dashboard, and each (except for “Related Indicators”) is discussed in what follows. To give a sense of the evolution of the indicators of pension finances, data are requested for the most recent year for which they are available, and for 5, 10, and 15 years earlier, or for 1997, 2002, 2007, and 2012, which the dashboards use as the most recent year. It is understood that compiling the data for what may seem like a distant year can be difficult, but the more complete these time series are, the more useful the indicators will be.

DEMOGRAPHIC INDICATORS

The demographic indicators include the basic drivers of pension expenditure: the number of members in payment status, which would be mainly the retired, and the average pension. Also included are the average age and monthly benefit of currently retiring members, because any trend in benefits will eventually be reflected in total pension expenditures. In addition to data on pensions and pensioners, the dashboard asks for the number, average salary, age, and average years of service of active members, because the evolution of these indicators sheds light on the future behavior of pension expenditure.

ASSET ALLOCATION

The breakdown of plan assets is a standard breakdown, but it should be noted that “Global Equities” includes both U.S. as well as non-U.S. equities. The category “Other” is meant to be a catchall, or residual category. It would include cash and any assets that should not be classified as global equities (i.e., U.S. and foreign) fixed interest assets, real estate, and alternative investments.

Frequency of investment policy review: If policy reviews are not regular—for example, every three years—then their frequency should be described as occasional.

INVESTMENT RETURNS

The data on benchmark returns are relevant for plans that gauge their investment performance with reference to a benchmark (such as a weighted average of returns on various asset class indexes).

The 10-year average annual return is calculated by taking the geometric average of the annual returns for the last 10 years.

FUNDING INDICATORS AND RATIOS

In addition to such standard indicators as the actuarial values of assets and liabilities, the dashboard asks for the market value of assets, entry age actuarial accrued liability (EAAL), GASB67 actuarial accrued liability (i.e., the total pension liability as computed under GASB67 based on a blended discount rate), and the market value of accrued benefit obligations (MVABO) or some market-consistent measure of the value of benefits earned to date, discounted using a U.S. Treasury yield curve. The hope is that these additional indicators will provide a more rounded picture of a plan’s funded status. They are used to calculate additional funding ratios, which are reported in the funding ratios panel. All of the ratios are derived from data from the funding indicators panel, except for AVA/Benefits paid.

PLAN MATURITY INDICATORS

As a plan matures, it would normally be the case that the ratio of both liabilities and assets to payroll would increase. The more mature a plan is, the less the financing role played by member contributions and the greater the role played by returns to earnings on assets. The indicators are a gauge of the extent to which a plan is dependent on investment returns to finance its obligations.

PLAN SENSITIVITY INDICATORS

This panel asks for a series of indicators that have a bearing on or indicate how sensitive a plan’s financial position would be to changes in key variables. In particular, the two indicators of the impact of a change in the discount rate are relevant if the discount rates of public sector plans come to be related to the rate at which the plan sponsor can borrow. The recent GASB statements require that those liabilities that are not expected to be fully funded by plan assets and future contributions must be discounted using

yields consistent with those of an index of AA-rated or, preferably, an index of tax-exempt general obligation municipal bonds.

SPONSOR INDICATORS

These indicators are to be used to gauge the burden that plan sponsorship poses for the sponsoring state or municipality's finances. The calculation of the third indicator requires data on the budgetary expenditure of the state or municipality sponsoring the plan. One possible data source is the National Association of State Budget Officers' (NASBO) State Expenditure Report, which was used to fill in the prototypical dashboard. Of course, the state treasury could also supply a figure.

ACTUARIAL METHODS AND ASSUMPTIONS

The requested indicators are those that would typically be included in the actuary's annual report. They are not a complete set.

BENEFITS

It may be difficult to describe both eligibility conditions and the determination of benefits in a compact space. For example, if a plan has a large number of membership "tiers," where membership in a tier depends on the year in which a member's service began, and where age and service requirements become more onerous or accrual rates become progressively less generous as the year of membership increases, a complete tier-by-tier summary will probably not be feasible. What might be done instead is to contrast the way benefits are determined for the most recent and the oldest plan members. A description of the COLA, if any, can pose similar difficulties and might be handled in the same way

A Prototypical Report on Public Employee Retiree System of Adams¹

OVERVIEW

The Public Employees' Retiree System (PERS), which provides pensions and other benefits to state and local government employees of Adams, dates from 1931 and predates Social Security by four years. The historical priority of PERS explains why even today 71 percent of state and local employees are not covered by Social Security.² Depending on their personal circumstances, those plan members who are covered by Social Security may have their Social Security benefit reduced, as explained below.

PERS is divided into five divisions, excluding two health funds, with the state employees division and the schools division accounting for most members (see Table 1).

¹ The main sources for this report are recent Comprehensive Annual Financial Reports (CAFRs) and notably the CAFR for 2012. Other sources are cited in the text or in footnotes.

² Adams is one of eight states with less than 50 percent coverage by Social Security of its state and local government employees (Congressional Research Service [2011], "Mandatory Coverage of New State and Local Government Employees" [July 25]).

Technically PERS is a cost-sharing multiemployer plan. The system’s investments are managed collectively. Although there is some small variation in the way that benefits are determined across divisions, the plans are administered as a unit. Active members numbered close to 200,000 at end-2012.

TABLE 1

Adams PERS: Active Members as of December 31, 2012, by Division

	STATE	SCHOOL	LOCAL GOVERNMENT	JUDICIAL	CAPITAL SCHOOLS	TOTAL
Numbers	54,804	115,294	12,097	329	13,911	196,435
In percent of total	27.9	58.7	6.2	0.2	7.1	

Source: CAFR 2012

In recent years, substantial changes have been made to plan benefits and the rules that determine cost of living increases, particularly for younger plan members or members without many years of service. Changes to PERS’s financing sources have also been made, affecting both plan members and employers. As explained below, these changes were prompted by the large funding shortfall that emerged over the past decade. In 2012 the funding ratio was 63 percent.

PERS members are automatically enrolled in a defined benefit plan, with benefits that are described below. When they retire, rather than take a pension based on their accrued benefit, they can elect to withdraw the sum of their contributions plus a match of 100 percent. A lesser match applies when a member withdraws before reaching retirement eligibility. Since January 1, 2006, new members can elect to join a defined contribution (DC) plan rather than the traditional plan, and all members have had the option of contributing to a complementary 401(k) plan since 1985, or a 457 plan since July 1, 2007. The DC plan had 4,362 accounts as of end-2012.

BENEFIT DETERMINATION

PERS’s plan’s benefits are determined in the following way. For all plan members, an accrual rate of 2.5 percent of each year of service is applied to a measure of the member’s highest average salary as described in Box 1. The cap on increases from one 12-month period to the next imposed to mitigate the problem of spiking at career’s end was lowered from 15 percent to 8 percent as of January 1, 2011, for members who were hired on or after January 1, 2007, or were not eligible to retire as of January 1, 2011 (see Box 1 for further explanation).

BOX 1

Adams PERS: Retirement Eligibility Rules and Benefit Determination

The highest average salary (HAS) is determined as follows. Of a retiring member’s four highest 12-month salaries (“years”), the period with the *lowest* salary is designated as the *base*. The remaining three years are then arranged in chronological order. A cap on salary increases applies on increases from the base year to the earliest of the remaining three years, and from that year to the next, and so on. Provided increases in each year are less than the cap, the HAS is simply equal to the average of a member’s best three years. However, if one or more of the increases exceeds the cap, the cap is applied. As an example, with the current cap of 8 percent, and assuming that increases were actually 10 percent from one year to the next, year 1 salary would be set equal to the base year increased by 8 percent; year 2 salary would be the adjusted year 1 salary raised by 8 percent; and year 3 salary would be the adjusted year 2 salary raised by 8 percent. If the increases in year 1 and year 2 salary were less than 8 percent, and the increase in year 3 was 12 percent, year 3 salary would be reduced to 108 percent of year 2 for the purposes of the calculation. Year 1 and year 2 salaries would not need to be adjusted. Once the salaries for the three 12-month periods have been calculated, a simple average is taken.

Accrual factor: a uniform 2.5 percent on each year of service.

Vesting requirement: 5 years.

Service requirement eligibility: Combinations of age and service as shown.

Members hired before July 1, 2005*

AGE	SERVICE
50	30
55	Rule of 80
60	Rule of 80
65	5

Members hired on or after Jan. 1, 2011

AGE	SERVICE
50	35
58	Rule of 88
60	Rule of 88
65	5

*With five years of service as of Jan. 1, 2011.

The recent reforms also stiffened the requirements for full and early retirement (see Box 1). For example, a member hired before July 1, 2005, could retire at age 50 with 30 years of service, but a member hired on or after January 1, 2011, requires 35 years of service to retire at that age. Similar changes were made to other combinations of service and age.

The reforms to age and service requirements would reduce PERS’s outlays in three ways: employees who wished to take early retirement would have their pensions reduced by more than previously; employees who increased their service to satisfy the new requirements for retirement would draw a pension for fewer years, because of their later start date; and the limits on 12-month salaries used to calculate the highest average salary (HAS) would reduce the pensionable base. (The precise impact of the reforms on PERS’s finances is difficult to determine, depending as it does on the reactions of plan members to the new rules, which would not be easy to predict.)

Even with these changes to the plan's terms, PERS's replacement rate is moderately high as the replacement rates of state pensions go. A state employee with 30 years of service can retire with a pension that is 75 percent (2.5 percent annual accrual \times 30) of his or her final average salary. Depending on the number of years of participation in Social Security, those members it covers are subject to an offset that reduces their benefit; their PERS benefit is not affected, which means that the combined benefit of members can never be less than the benefit PERS pays.³

COST-OF-LIVING ADJUSTMENTS (COLAS)

The recent reforms have also reduced the degree to which pensions are indexed. Up to 2010, pensioners, if they were hired on or before January 1, 2007, could receive a fixed increase of 3.5 percent per annum, an increase that exceeded the average annual increase in the Consumer Price Index (CPI) over the previous decade of 2.4 percent. (Those hired after January 1, 2007, received a COLA equal to the lesser of 3 percent and the increase in the consumer price index for urban workers [CPI-W].)

The reforms introduced by Senate Bill 10-001 reduced the cap on the adjustment to 2.0 percent, but its provisions differentiate according to the date of membership and the date of retirement of members. For members as of January 1, 2007, who retired before January 1, 2011, the COLA is fixed at 2 percent, unless PERS experiences a negative return on its investments, in which case the COLA is the lesser of the increase in the CPI-W and 2 percent for the following three years. Somewhat less generous provisions apply to members retiring on or after January 1, 2011, or joining after January 1, 2007. In the latter case, the member must have been receiving benefits for at least 12 months before becoming entitled to a COLA. In addition, the sum of the annual increases paid to a particular division (state, school, etc.) cannot exceed 10 percent of the division's reserve set aside to pay for these cost of living increases. The cap is also adjusted for changes in the funding ratio.⁴

CONTRIBUTIONS

Plan members currently contribute 8 percent of their pensionable salary, apart from state troopers, who contribute 10 percent. The general rate was raised temporarily to 10.5 percent in 2010. Employers' contributions, beginning in 2004, have been subject to two series of annual increases. One of these, the Amortization Equalization Disbursement (AED), comes to an end in 2017 (2016 for the School and DPS divisions) when the cumulative increase will be 5 percentage points (4.5 percentage points for the School and DPS divisions, and 2.2 percentage points for local government and judiciary). The other, the Supplementary Amortization Equalization Disbursement (SAED), is being raised by up to 5.5 percentage points, with increases ending in 2017–2018. The SEAD is

³ The amount of the reduction in the Social Security benefit depends on how long the member has been contributing, and on whether or not the member is receiving a spousal or widow/widower's benefit. The longer the period of participation in Social Security, the less the reduction. Similar provisions affect retirees in other states.

⁴ When the funding ratio exceeds 103 percent, the cap may be increased by 0.25 percentage points. When the funding ratio falls below 90 percent, the cap may be decreased by the same amount, but may never fall below 2.0 percent.

to be financed by funds reallocated from budgeted salary increases for plan members to the extent permitted by law. Within fairly narrow limits, as is the case with the COLA, these increases will depend on the funding status of the various divisional plans. Notwithstanding these increases, actual employer contributions have recently fallen short of the annual required contribution. In 2012 the state division's contribution amounted to 14.63 percent of payroll, compared to an Actuarially Required Contribution (ARC) of 16.52 percent.

INVESTMENT ISSUES

The allocation of PERS's DB plan assets is in line with the conventional pattern, with the share of stocks over 50 percent, and fixed income securities about 25 percent. Actual asset allocations are expected to conform to a target allocation, or more precisely to fall within a targeted range (see Table 2), and plan-determined limits apply to the shares in total assets of the major classes. The performance of each major asset class is benchmarked against a standard index or composite of indexes.

TABLE 2

Adams PERS: Asset Allocation as of Dec. 31, 2012

ASSET CLASS	TARGET ALLOCATION	ACTUAL ALLOCATION	PERMISSIBLE RANGE
Global equity ¹	56	57	50–62
Fixed income	25	23	22–28
Real estate	7	8	4–10
Alternative investments	7	9	4–10
Opportunity Fund ²	5	3	0–8
Cash	0	1	...

¹ Includes U.S. equity.

² Commodities and timber.

Source: CAFR 2012

The 2012 CAFR, in its summary of the plan's investment policy, stresses that strategic asset allocation has more bearing than any other factor in long-term investment performance and asset volatility; that investment strategy must be long-term, given the long-term nature of plan assets; that asset allocation strategy should be reviewed periodically; that investments must be prudently diversified; and that active management can be expected to increase net returns. The plan employs about 50 investment brokers and advisers. Total commissions amounted to less than 0.1 percent of assets, although this figure does not include fees paid to advisors. Total investment expenses paid to external managers amounted to 0.3 percent of assets at market value in 2012.

The investment performance of PERS plan assets has been more or less in line with its benchmarks in recent years (see Table 3). Its performance has exceeded that of the median public sector plan. Like other public sector plans, PERS suffered large losses in the Great Recession.

TABLE 3

Adams PERS: Investment Results (Average annual rates of return)

	2012	3-YEAR	5-YEAR	10-YEAR
Total PERS portfolio	12.9	9.4	2.6	8.4
Total policy benchmark	13.4	9.5	2.8	...
Median Public Fund Universe	13.0	8.7	2.6	7.2

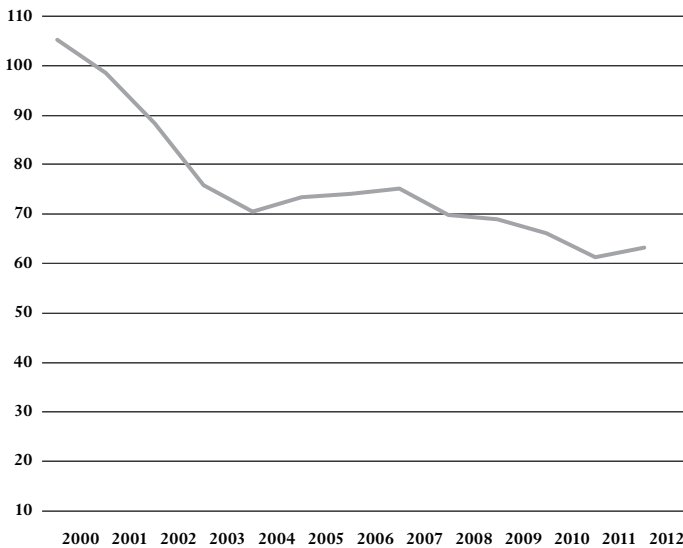
Source: CAFR 2012.

FUNDING

The current low funding ratio, which emerged in the course of the previous decade, is the result of a combination of influences. In 2000 PERS was marginally overfunded. The funding ratio declined quite markedly in the next few years, reaching 70.6 percent in 2004, in large part because of the bursting of the high-tech bubble, which helped cause a substantial investment loss. A disappointing investment performance was not the only influence at work (see Figure 1). Experience losses with early retirements and a reduction in the rate of discount from 8.75 to 8.50 percent also contributed.

FIGURE 1

Adams PERS: Funding Ratio (percent)



In the middle years of the decade, further declines were forestalled by the strong recovery of financial markets. However, investment income in the closing years of the decade was below what was assumed, and in addition a second reduction in the discount rate caused a substantial increase in plan liabilities. Shortfalls in employer contributions

from the actuarially required contribution and the growth in the UAAL projected to occur even if there had been no shortfall also weighed in. Consequently, the UAAL increased substantially despite the positive impact on plan liabilities caused by the changes to the COLA and to the age and service provisions described above (see Table 4). Higher than projected investment earnings helped the funding ratio achieve a marginal gain in 2012. However, the average annual rate of return for the period highlighted by Table 4 was 5.2 percent, below the assumed rate of return.

TABLE 4

Adams PERS: Analysis of Changes in UAAL, 2000–2012

	2000–2004	2005–2007	2008–2012	2000–2012
Changes in UAAL age and service	(13,612)	(229)	(9,668)	(23,509)
Retirements	(1,931)	(150)	(117)	(2,198)
Investment income	(6,812)	1,605	(10,474)	(15,681)
Purchase of noncovered service	(1,457)	(73)	–	(1,530)
Actuarial assumption changes	(1,554)	1534	(4,164)	(4,183)
Contribution deficiency	(720)	(1,419)	(1,442)	(3,580)
Expected change in UAAL	114	(1,221)	(2,862)	(3,970)
Effect of changes in plan provisions	–	–	9,005	9,005
Other influences	(1,252)	(506)	388	(1,370)

Source: CAFRs for 2004, 2007, and 2012.

In addition to analyzing the reasons for the discrepancy between the actuarial projections of the UAAL and the outturn, it can be useful to look directly at the behavior of plan assets and liabilities. In a purely statistical sense, the decline in PERS's funding ratio can be attributed to the weak growth of assets and a rapid increase in liabilities. Between 2002 and 2012, plan assets increased from \$30.6 billion to \$39.1 billion, or by 2.5 percent per annum. Plan liabilities, however, increased from \$34.6 billion to \$61.8 billion, or by 6.0 percent per annum.

It is useful to divide a plan's liabilities into two parts: the liabilities associated with accrued benefits of the current workforce, and the liabilities entailed by the obligation to pay pensions to retirees. For a given rate of return, the basic influences on the first type of liability would be active member numbers and average salaries. The main influences on the latter type would be the number of retirees, the average pension they received, and (over a long period of time) their longevity. In Adams's case, all of these influences have been at play. The number of retirees rose from 60,548 at end-2002 to 98,139 at end-2012, or by 4.9 percent per annum, and the ratio of retirees to active members increased from 35 to 50 percent (see Table 5). The average monthly pension increased from \$1,997 to \$3,020, or by 4.2 percent per annum.

TABLE 5

Adams PERS: Active and Retired Members, 2002 and 2005–2012

	ACTIVE MEMBERS	RETIRED MEMBERS	RATIO OF RETIRED TO ACTIVE (PERCENT)
2002	172,761	60,548	35.0
2005	180,630	69,416	38.4
2006	182,404	72,737	39.9
2007	186,842	75,915	40.6
2008	190,684	78,955	41.4
2009	190,206	81,717	43.0
2010	201,095	91,412	45.5
2011	199,741	94,451	47.3
2012	196,435	98,139	50.0

Source: CAFR, various issues.

Because the longevity of retirees is not likely to have varied much over this 10-year period, and the average age of new retirees did not change, the evolution of benefits paid (average pension × number of retirees) would give a good idea of how plan liabilities related to retirees were behaving.

The rapid growth in average pensions also reflects in part the generous post-retirement COLA that was in place through 2005. The increase over time in the average salaries of government workers would also have boosted pensions by increasing the highest average salary of each successive cohort of retirees. Over the past decade, the growth in the workforce and in average salaries has been moderate.

IMPLICATIONS OF A CHANGE IN THE DISCOUNT RATE

The question of the appropriate discount rate for public sector plans has been much debated. [PERS is of the view that the current discount rate of 8 percent is and remains appropriate for a public plan.] Nonetheless, the possibility that discount rates might become more market-related cannot be dismissed. The recent changes to the calculation of liabilities recommended by GASB would require that those liabilities of a public plan that are not covered by its assets be discounted at the rate at which the state or local government sponsoring the plan can borrow funds. Liabilities matched by assets would continue to be discounted by a rate derived from the expected return on assets.

PERS's actuaries undertook an exercise to determine the impact of lower discount rates on liabilities and the funding ratio (see Table 6). A lower discount rate could increase plan liabilities substantially, requiring in turn a burdensome increase in the ARC. [The actuaries have also calculated the funding ratio using the new procedure proposed by GASB. It lowers the funding ratio by about the same amount as a reduction in a uniform discount rate to 6.5 percent.]

TABLE 6

Adams PERS: Estimated Funding Ratios at Various Discount Rates

Discount rate	6.5	7.5	8.0	8.5
Funding ratio (percent)	53.3	59.8	63.2	66.7

Source: CAFR 2012.

CONCLUDING OBSERVATIONS

In the past few years, PERS has taken substantial steps to put its finances on a sounder footing. Provided that the economic and financial environment unfolds more or less as PERS’s actuaries have projected, the plan’s funding ratio should improve steadily, if gradually. Nonetheless, in light of the inevitable uncertainty of the economic and financial environment, it may be necessary to take additional measures, especially given the long period needed to achieve full funding under current contribution schedules.

Adams

Demographic Indicators

	1997	2002	2007	2012
Number of active members	152,457	172,761	186,842	196,435
Number of former employees vested but not retired	NA	10,921	14,779	20,698
Number of inactive members not vested	NA	89,002	133,425	178,913
Number of members in payment status	NA	60,548	75,915	98,139
Average monthly salary of active members	\$2,302	\$2,788	\$2,928	\$3,087
Average age of active members	NA	NA	NA	NA
Average years of service of active members	NA	NA	NA	NA
Average monthly benefit of inactive members in payment status	\$1,533	\$1,997	\$2,658	\$3,020
Average age of current retiring members in year of retirement	N/A	N/A	N/A	60
Average monthly benefit of current retiring members	\$1,510	\$2,646	\$2,845	\$2,633
Average age of all inactive members in payment status	69.5	68.0	68.9	70.0
Plan year starting month	January			

Investment Policy: Asset Allocation (as of Dec. 31, 2012)

	ACTUAL	TARGET	DIFFERENCE
Global equities	56.5	56.0	0.5
Fixed interest	23.3	25.0	-1.7
Real estate	8.1	7.0	1.1
Alternative investments	8.7	7.0	1.7
Other	3.4	5.0	-1.6
Frequency of investment policy review	NA		

Investment Returns (percent)

	1997	2002	2012
Annual rate of return (percent)	NA	-11.8	12.9
Benchmark rate of return (percent)	NA	NA	13.4
Ten-year annualized return	NA	8.3	8.4

Funding Indicators (in millions except where otherwise noted)

	1997	2002	2007	2012
Actuarial valuation of assets (AVA)	\$19,776	\$30,554	\$39,415	\$39,079
Assets at market valuation (MVA)	NA	\$23,604	\$41,373	\$39,794
Actuarial accrued liabilities (AAL)	\$21,494	\$34,595	\$52,459	\$61,791
Unfunded AAL (UAAL)	\$1,718	\$4,041	\$13,044	\$22,712
Entry age actuarial accrued liability (EAAL)	NA	NA	NA	NA
GASB67 actuarial accrued liability	NA	NA	NA	NA
Market value ABO (MVABO)	NA	NA	NA	NA
Employee contributions paid during the year	\$317	\$433	\$699	\$640
Employer contributions paid during the year	\$421	\$336	\$754	\$1,015
Actuarially required contributions (ARC) for the year	\$423	\$338	\$1,048	\$1,174
ARC deficiency (if actual employer contribution exceeds ARC)	\$2	\$2	\$294	\$159
Market value of benefits earned during the year (Change in MVABO)	N/A	N/A	N/A	N/A

Funding Ratios

	1997	2002	2007	2012
AVA/AAL	0.92	0.88	0.75	0.63
MVA/AAL	NA	0.68	0.79	0.64
MVA/EAAL	NA	NA	NA	NA
MVA/MVABO	NA	NA	NA	NA
AVA/Benefits paid	4.7	5.3	6.0	5.4

Plan Maturity Indicators

	1997	2002	2007	2012
Ratio of plan assets to payroll of active members	4.7	5.3	6.0	5.4
Ratio of plan liabilities to payroll of active members	5.1	6.0	8.0	8.5
Ratio of contributions minus benefits paid to assets (percent)	-0.25	-1.97	-2.36	-4.74

Plan Sensitivity Indicators

	EOY 2012
Duration of total liabilities at funding assumptions	NA
Duration of MVABO liabilities at market assumptions	NA
Percentage increase in AAL from 1½ pc pt decline in funding discount rate	18.7
Increase in UAAL from 1 pc pt decline in funding discount rate (millions)	\$11,554

Sponsor Indicators

	1997	2002	2007	2012
Ratio of employer contributions to the plan to total annual budget expenditures	0.05	0.03	0.03	0.04
Ratio of UAAL to payroll of active members	0.41	0.70	1.99	3.12
Ratio of ARC to total annual budget expenditures	0.05	0.03	0.04	0.04
Ratio of ARC to payroll of active members	0.10	0.06	0.16	0.16

Related Indicators

Coverage of Social Security (percent)	29 percent
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Actuarial Methods and Assumptions

Actuarial cost method	Entry age normal cost
Amortization method	Level percentage; 30-year open
Actuarial asset valuation method	Four-year smoothed, market
Discount rate	8.0 percent
Mortality assumptions	RP 2000 Combined Mortality Table set back one year for males and two years for females
Annual rate of growth of salaries before merit or productivity (also known as general wage increase [GWI], percent)	4.25 percent
Annual rate of growth of salaries, all inclusive (percent)	4.25 percent to 9.92–11.2 percent, depending on division (Judicial division 4.75–5.75 percent)
Annual rate of growth of consumer prices (percent)	3.5 percent

Benefits

Conditions for normal retirement and Conditions for early retirement	For members hired before July 1, 2005, normal retirement may be taken at age 50 with 30 years of service; a rule of 80 applies at age 55 and 60, and a service requirement of 5 years at age 65. Subsequent hires are subject to more stringent rules; after July 1, 2011, hires must work 35 years at age 50, and are subject to a rule of 88 at higher ages. Early retirement requires a minimum age of 60 with 15 years of service.
Calculation of average final salary	A simple average of the three highest paying years, but with a cap of 8 percent on increases from one year to the next.
Replacement rate with 30 years of service:	
At normal retirement age	A uniform accrual rate of 2.5 percent applies; so the replacement rate with 30 years service is 75 percent.
At early retirement age	A 60-year-old with 15 years of service would have a replacement rate of 33.8 percent, instead of 50 percent with 20 years.
Cost-of-living adjustment	A cap of 2 percent applies to all members, which is subject to changes in the funding ratio. For members hired before Jan. 1, 2007, who retired before Jan. 1, 2011, the COLA is 2 percent unless PERS suffers a loss on its investments, in which case the COLA is the lesser of 2 percent and CPI-W for the three following years. Somewhat less generous conditions apply to more recent hires.
Vesting requirement	Five years

A Prototypical Report on the Jackson Public Employees Retirement System⁵

OVERVIEW

The Jackson Public Employees Retirement System (Jackson PERS) is a multiemployer cost-sharing retirement system. It covers virtually all state and local government employees, both full-time and part-time, as well as the staff of universities and community colleges. As a unified system, it dates from 1970. Most of its members are at the nonstate level, where teachers make up a large share of the membership. All Jackson PERS members are required to have coverage under Social Security. The system has nine classes of membership, but only two, the regular class, which covers most state and local employees and the special risk class (mainly police and fire personnel), are significant numerically (see Table 1), and the discussion that follows focuses on them.

TABLE 1

Jackson PERS: Active Members by Class as of June 30, 2012
(Percentage of total in parentheses)

TOTAL	REGULAR	SPECIAL RISK	OTHER
623,011	535,467	70,005	17,539
(100.0)	(85.9)	(11.2)	(2.8)

Source: Jackson PERS Annual Report 2011–2012.

The Jackson PERS consists of a traditional defined benefit pension, known as the Jackson Retirement System Pension Plan (which is hereafter referred to as the “DB plan”), and a defined contribution plan, known as the Jackson Retirement System Investment Plan (hereafter the “DC plan”). The DB plan, which provides pensions for regular retirement, disability, and survivorship long predates the DC plan, which was established in 2000 and implemented in 2002. The DC is open to most members of the Jackson PERS, who may elect to join it rather than the DB plan. In this respect, the DC plan differs from the DC plans that most state plans have established, which are usually complementary to the DB plan or open only to new members. The traditional plan remains the more popular of the two, with 517,756 active members compared to 105,255 active members in the DC plan as of June 30, 2012. In its first five years of operation, membership in the DC plan rose to 81,654. Growth in the last five years has been more measured, averaging 5.2 percent per year. The growth slowdown probably reflects the abatement of the latent demand of DB plan members to belong instead to a DC plan, as well as the demoralizing effect of the financial market crash in 2008–2009. Because of its recent origin, the DC plan has very few retirees. That plan offers its members a broad choice of investments, ranging from money market/bond funds to growth stocks. [There is no default investment; new members choose the fund or funds in which their

⁵ The main sources for this report are recent Comprehensive Annual Financial Reports (CAFRs) and notably the CAFR for 2012. Other sources are cited in the text or in footnotes.

contributions will be invested when they join the plan.] The DC plan also provides disability benefits. The DC plan offers better coverage of the risks of retirement and disability than do many DC plans in the private sector.

The DB plan was more than fully funded for most of the decade leading up to the stock market crash, although like other plans it suffered a large decline in asset values in 2008–2009. Its current funded ratio is 86 percent. The year 2011 saw the first substantial changes to the terms of the DB plan in some time. In the main, these changes affect new members, but current, particularly younger, members are also affected. These changes were made to address the decline in the plan's funded ratio. [Unlike many other public plans, the Jackson PERS is in a position to restore full funding without being obliged to take draconian measures.]

Eligibility for Retirement and Benefit Determination

THE PENSION PLAN

DB plan members become eligible for normal retirement by attaining some combination of age and service. For regular members, normal retirement can be attained at 62 with at least 6 years of service. Six years is the minimum vesting period for members who joined before July 1, 2011, but eligibility may also be attained at higher ages once the vesting requirement is met, or with 30 years of service at any age. For the special risk class, as is common in public plans, the requirements for normal retirement may be satisfied at lower ages and shorter service periods (see Box 1). Members of all classes become eligible for early retirement once vested when they are 20 years or less from their normal retirement eligibility date. However, their pension is reduced by 5 percent for each year their retirement date falls short of their normal retirement date.

BOX 1***Jackson PERS: DB Plan Retirement Eligibility Rules and Benefit Determination***

Requirements for normal retirement (if enrolled before July 1, 2011)

- Regular class
- Age 62 if vested (having six years of service), age 63+ if vesting requirement is met
- Any age with 30 years of service

Special risk class¹

- Age 55 with six years of special risk service
- Age 56+ if vesting requirement is met
- Any age with 25 years of special risk service and 30 years of any service

Benefit determination

For members enrolled before July 1, 2011, AFC is calculated as the average of the five best years. The pension is calculated by multiplying the AFC by the number of years of service and the applicable value earned, which varies by class, as shown below:

REGULAR CLASS	VALUE EARNED (PERCENTAGE)
30 years of service at age 62 or less	1.60
31 years of service or age 63	1.63
32 years of service or age 64	1.65
33 years of service or age 65	1.68

SPECIAL RISK CLASS	VALUE EARNED (PERCENTAGE)
Service after October 1974	3.00

These rules imply that a member of the special risk retiring in 2013 with 25 years of service would have a replacement ratio of 75 percent (3×25). A member of the regular class aged 63 with 30 years of experience would have a replacement ratio of 48.9 percent (1.63×30).

¹ Special rules apply for members with military service.

Source: Jackson PERS Annual Report 2011–2012.

Benefits are determined by applying the percentage the plan stipulates to the number of years worked, and then multiplying that product by average final compensation (AFC), which for current members is an average of the five best years (see Box 1 for the applicable percentages and examples). Taking account of the Social Security retirement benefit, a regular class employee who has worked for 30 years with a final average salary of \$50,000 could have a replacement rate of about 80 percent. Replacement rates for members of the special risk class can be even higher. The combined replacement rate of Social Security and the Jackson PERS pension declines as income increases because Social Security's replacement rate declines noticeably as income increases. The AFC, being an average of five years, is not particularly susceptible to the problem of spiking—amassing unusually high overtime hours in the last year of work to produce an artificial bulge in final compensation.

One additional option is available for plan members who, although eligible for retirement wish to continue working: the Deferred Retirement Option Program (DROP). DROP participants have the benefits that accrue to them while they continue working deposited in a trust fund, where those who joined the program before July 1, 2011, have been earning interest at the rate of 6.5 percent per year and also receiving an annual cost-of-living adjustment (COLA). The interest rate earned by DROP participants joining the program on or after July 1, 2011, was lowered to 1.3 percent, although the COLA continues to apply. Consequently, DROP participants continue to earn a return that is positive in real terms on their foregone pension benefits. As of June 30, 2012, the plan had 40,556 members, or about 80 percent of the number of active members in the DB plan aged 60 or over. The reduction in the real rate of return on foregone pension benefits may, however, make DROP less attractive to potential participants in the program.

Several important changes were made effective July 1, 2011, to the conditions for normal retirement and to the determination of average final compensation; both apply only to new members. Specifically, for members enrolled after July 1, 2011, the vesting period is increased to eight years, and AFC is calculated based on the eight highest, and not the five highest, annual salaries. Normal retirement for the special risk class will begin at age 60 or at any age with 30 years of service, and at age 65 or any age with 33 years of service for all other classes.

THE INVESTMENT PLAN

The DC plan provides its members with several options at the distribution stage in addition to a lump sum withdrawal. Given the nature of the plan, no benefit is guaranteed. Money may be left in the plan until the member reaches the age of 70½, after which distributions are required (because of the IRS minimum required distribution rule). The plan also offers a choice of several types of annuities, or a program of phased withdrawals. This range of options is not often found in private sector plans. In addition, the balance in the plan may be rolled over into another qualified retirement plan.

COST-OF-LIVING ADJUSTMENTS

Since 1987 the Jackson PERS has applied an annual COLA equal to a flat 3 percent. Because inflation has on average fallen short of 3 percent since 1987, the automatic 3 percent annual increase would have increased pensions in real terms, assuming that the CPI was an accurate measure of the increase in the cost of living of retired plan members. The COLA formula was altered significantly in 2011. Although there is no change in the applicable COLA for current retirees, the COLA for future retirees (current active members) will apply only to that part of their benefit earned before 2011 and will be eliminated for new members.

CONTRIBUTIONS

The Jackson PERS was for many years a noncontributory system: no contributions were required of plan members. Employer contribution rates vary substantially across plans, with the contribution rate for the special risk class being the highest at 14.1 percent (see

Table 2). The substantially higher rate is needed to finance that plan's higher accrual rates and earlier retirement ages. Starting in July 1, 2011, however, members of all classes were required to contribute 3 percent of their salary. [There are no plans to rescind this increase.]

TABLE 2

Employer Contribution Rate by Class (Percentage of Salary)

CLASS	RATE
Regular	4.91
Special risk	14.10
Others excluding DROP	6.04–11.69
DROP	4.42

Source: Jackson PERS Annual Report 2011–2012.

INVESTMENT ISSUES

The FRA's investment strategy places great weight, as other public pension plans do, on diversification. It sets a target for the shares of the major asset classes as well as a range around which the actual values of these classes are allowed to vary. The plan's asset allocation is similar to that of other public sector plans. Equities and fixed interest investments currently make up about 85 percent of the total, and real estate, strategic investments, and cash the rest. The current asset allocation is close to its target (see Table 3). The target is changed from time to time following a review of asset allocation in light of changing market and economic conditions. The last such review was conducted in March 2012.⁶ The Jackson PERS employs external managers for all asset classes. The "all-in" cost of the Jackson PERS in 2011–2012 was 0.3 percent of assets under management, or about \$400 million.

TABLE 3

Jackson PERS: Asset Allocation

ASSET CLASS	ALLOCATION	TARGET ALLOCATION	PERMISSIBLE RANGE
Global equity	57	56	50–62
Fixed income	26	26	22–28
Real estate	8	7	4–10
Private equity	5	4	4–10
Strategic investments	4	6	0–8
Cash	1	1	...

Source: Jackson PERS Annual Report 2011–12, and Investment Report 2012.

⁶ For this review, a major benefits consulting firm prepared an analysis of the Jackson PERS pension plan's current and projected liabilities and its asset allocation policies.

Investment performance is monitored in two ways: by comparing the performance of each asset class against a benchmark, and by comparing aggregate returns against the plan's long-term targets. On the whole, the plan's recent performance has been favorable whether gauged against the market or its own target (see Table 4). Like nearly all other private and public sector pension plans, the Jackson PERS plan suffered large losses in 2008–2009, when the value of assets at market prices declined by 22 percent.

TABLE 4

*Jackson PERS Investment Results Compared with Benchmark and Policy Objective
(Average Annual Rates of Return)*

	LATEST YEAR	3-YEAR	5-YEAR	10-YEAR	15-YEAR	20-YEAR	30-YEAR
Jackson PERS	0.3	11.8	1.6	6.4	6.1	8.1	10.3
Benchmark	-0.5	10.5	1.2	6.1	5.7
Long-term objective	7.1	7.0	7.0	7.4

Source: Jackson PERS Investment Report 2012.

FUNDING

The Jackson PERS follows the standard actuarial practices of other state pension plans. Its current discount rate is 7.75 percent, and the cost of additional service is calculated using the entry age normal method. In valuing plan assets, however, it relies on the use of corridors: specifically, actuarially valued assets cannot be less than 80 percent of assets at market value, or more than 120 percent. Within that range, the actuarial value of assets is determined by smoothing market values over five years. As of June 2012, the actuarial value of assets was within 4 percent of their market-determined value.

The Jackson DB plan was in surplus for the 10 years ending in 2008. Nonetheless, a trend to decline was evident during that period, and in 2009 the funding ratio fell to 87.1 percent. It has declined only slightly since then (see Table 5), and it remains above the average of funding ratios of the plans that report to the Public Funding Survey.

Over 2002–2012, plan assets actuarially valued have grown at the annual rate of 2.6 percent, slightly higher than the prevailing rate of inflation, in spite of the collapse of the stock market in 2008–2009. Liabilities, however, have grown by 5.5 percent per year. A number of influences have contributed to this growth, but the main one has been the very rapid growth in the number of annuitants, offset somewhat by the sluggish growth of the active membership—largely the result of members opting out of the DB plan into the DC plan—which would tend to reduce the accrued benefits earned by the current workforce.

TABLE 5

Jackson PERS: Pension Plan Assets, Liabilities and Funding, 2001–2012
(Millions of Dollars Except for Assets at Market Value, Billions)

YEAR	ACTUARIAL VALUE	ASSETS AAL	MARKET VALUE	UNFUNDED AAL	FUNDED RATIO (PERCENT)
2001	95,517	98.2	80,993	(14,524)	117.9
2002	99,405	89.5	86,469	(12,936)	115.0
2003	101,906	90.4	89,251	(12,655)	114.2
2005	106,707	102.4	95,185	(11,522)	112.1
2004	111,539	109.9	103,925	(7,614)	107.3
2006	117,159	118.4	110,977	(6,182)	105.6
2007	125,584	136.3	118,870	(6,714)	105.6
2008	130,720	126.9	124,087	(6,633)	105.3
2009	118,764	99.6	136,375	17,611	87.1
2010	120,929	109.3	139,652	18,723	86.6
2011	126,078	128.5	145,034	18,956	86.9

Source: Jackson PERS Annual Report 2010–2012.

The number of annuitants grew at an average annual rate of 5.2 percent over this period, at a fairly steady pace from year to year, and is not showing any signs of letting up (see Table 6). The growth in annuitant numbers did not reflect any substantial increase in the numbers of members taking early retirement, and there was no trend in the average age at retirement, which over the past 10 years has fluctuated in the range of 59–60 years. One change in the plan terms, the reduction in the vesting requirement to six years in 2001, could have increased the number of members leaving their jobs with a claim on a future benefit. [The main influence, however, has been the bulge in the number of state and local government employees that took place in the 1970s and early 1980s, and its impact on the growth in the number of annuitants 25–30 years later. The pattern of robust growth of active members followed by a tapering off is typical of a maturing plan or a plan where the growth of active membership has slowed after growing rapidly for a time.]

TABLE 6

Jackson PERS: Active Members and Annuitants, 2000–2012

	ACTIVE MEMBERS	ANNUITANTS	RATIO (PERCENT)
2000	598,511	203,264	34.0
2001	612,391	215,265	35.2
2002	611,455	228,386	37.4
2003	620,164	237,062	38.2
2004	633,642	255,088	40.3
2005	648,379	270,022	41.6
2006	664,819	283,748	42.7
2007	680,302	296,325	43.6
2008	683,811	307,505	45.0
2009	668,416	322,523	48.3
2010	655,367	337,914	51.6
2011	643,746	364,781	56.7
2012	623,011	375,238	60.2

Source: Jackson PERS Annual Report; various dates.

The rapid increase in annuitants was not associated with substantial experience losses. [However, the moderate degree of underfunding that has prevailed since 2009 is partly the result of shortfalls in employer contributions to cover the UAAL, in turn the result of competing demands on government budgets entailed by slumping revenues in the wake of the Great Recession and the collapse of the local housing market.]

CONCLUDING OBSERVATIONS

The changes to the DB plan in 2011 will not have an enormous impact on the plan's cash flow year by year. They will, however, substantially reduce the cost of funding additional service of both current and prospective plan members. The average cost of living adjustment will decline over the next 30–35 years as less and less of an active member's future pension will benefit from a cost of living increase. The more stringent rules for eligibility for retirement will also reduce future liabilities. [Barring large experience losses, the plan should be close to fully funded by the end of the current decade.]

Jackson

Demographic Indicators

	1997	2002	2007	2012
Number of active members	589,791	611,455	680,302	623,011
Number of former employees vested but not retired	35,576	56,635	82,324	104,355
Number of inactive members not vested	NA	NA	NA	NA
Number of members in payment status	157,530	228,386	296,325	375,238
Average monthly salary of active members	\$2,321	\$2,734	\$3,293	\$3,455
Average age of active members	44.5	43.7	44.2	45.2
Average years of service of active members	11.0	10.6	10.5	11.4
Average monthly benefit of inactive members in payment status	\$851	\$1,067	\$1,304	\$1,552
Average age of current retiring members in year of retirement	60.6	59.6	59.5	60.6
Average monthly benefit of current retiring members	\$1,030	\$750	\$909	\$984
Average age of all inactive members in payment status	NA	NA	NA	NA
Plan year starting month	July 1			

Investment Policy: Asset Allocation (as of Jan. 31, 2012)

	ACTUAL	TARGET	DIFFERENCE
Global equities	56.5	56.0	0.5
Fixed interest	25.5	26.0	-0.5
Real estate	7.6	7.0	0.6
Alternative investments	9.6	10.0	-0.4
Other	0.8	1.0	-0.2
Frequency of investment policy review	NA		

Investment Returns (percent)

	1997	2002	2007	2012
Annual rate of return (percent)	21.1	-8.1	18.1	0.3
Benchmark rate of return (percent)	NA	NA	NA	-0.5
Ten-year annualized return	NA	9.8	8.5	6.4

Funding Indicators (in millions except where otherwise noted)

	1997	2002	2007	2012
Actuarial valuation of assets (AVA)	\$56,220	\$99,405	\$125,584	\$127,891
Assets at market valuation (MVA)	\$67,082	\$89,529	\$136,280	\$122,700
Actuarial accrued liabilities (AAL)	\$61,610	\$86,469	\$118,870	\$148,049
Unfunded AAL (UAAL)	\$5,390	-\$12,936	-\$6,714	\$20,158
Entry age actuarial accrued liability (EAAL)	NA	NA	NA	NA
GASB67 actuarial accrued liability	NA	NA	NA	NA
Market value ABO (MVABO)	NA	NA	NA	NA
Employee contributions paid during the year	\$25	\$36	\$27	\$806
Employer contributions paid during the year	\$3,036	\$1,776	\$3,036	\$1,502
Actuarially required contributions (ARC) for the year	\$3,037	\$1,825	\$2,455	\$1,963
ARC deficiency (if actual employer contribution exceeds ARC)	\$1	\$49	-\$581	\$461
Market value of benefits earned during the year (Change in MVABO)	NA	NA	NA	NA

Funding Ratios

	1997	2002	2007	2012
AVA/AAL	0.91	1.15	1.06	0.86
MVA/AAL	1.09	1.04	1.15	0.83
MVA/EAAL	NA	NA	NA	NA
MVA/MVABO	NA	NA	NA	NA
AVA/Benefits paid	NA	NA	NA	NA

Plan Maturity Indicators

	1997	2002	2007	2012
Ratio of plan assets to payroll of active members	3.4	4.5	4.8	5.2
Ratio of plan liabilities to payroll of active members	3.8	3.9	4.5	6.0
Ratio of contributions minus benefits paid to assets (percent)	2.6	-0.8	-0.9	-3.1

Plan Sensitivity Indicators

	EOY 2012
Duration of total liabilities at funding assumptions	NA
Duration of MVABO liabilities at market assumptions	NA
Percentage increase in AAL from 1 pc pt decline in funding discount rate	NA
Increase in UAAL from 1 pc pt decline in funding discount rate (millions)	NA

Sponsor Indicators

	1997	2002	2007	2012
Ratio of employer contributions to the plan to total annual budget expenditures	0.08	0.04	0.05	0.02
Ratio of UAAL to payroll of active members	0.33	-0.58	-0.25	0.82
Ratio of ARC to total annual budget expenditures	0.08	0.04	0.04	0.03
Ratio of ARC to payroll of active members	0.18	0.08	0.09	0.08

Related Indicators

Coverage of Social Security (percent)	Most employees of state and local government are covered
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Actuarial Methods and Assumptions

Actuarial cost method	Entry age normal
Amortization method	Level percentage of pay, open over 30 years
Actuarial asset valuation method	Five-year smoothed method
Discount rate	7.75 percent
Mortality assumptions	N/A
Annual rate of growth of salaries before merit or productivity (also known as general wage increase [GWI], percent)	NA
Annual rate of growth of salaries, all inclusive (percent)	5.85 percent
Annual rate of growth of consumer prices (percent)	3.0 percent

Benefits

Conditions for normal retirement	For regular class members: age 62 if vested (six years of service); any age with 30 years of service. For special risk class: age 55 with six years of service; any age with 25 years of special risk service.
Conditions for early retirement	A member must be vested and be within 20 years of his or her normal retirement age.
Calculation of average final salary	Simple average of five highest years if hired before July 1, 2011, and eight years if hired after that.
Replacement rate with 30 years of service:	
At normal retirement age	48 percent at age 62
At early retirement age	A reduction of 5 percent for each year below the normal retirement age applies.
Cost-of-living adjustment	For current retirees, a flat 3 percent. For active members, only that part of the pension earned before July 1, 2011, will enjoy an adjustment, and new members will not have an adjustment.
Vesting requirement	Five years if hired before July 1, 2011; eight years if hired after that.

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