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Recommended Citation

Raman, K.K. and Garrison, Sharon H. () "Underfunded Public Employee Pension Plans: Scope of the Problem in the South and Southwest," *Southern Business Review*. Vol. 11: Iss. 2, Article 5.
Available at: <https://digitalcommons.georgiasouthern.edu/sbr/vol11/iss2/5>

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UNDERFUNDED PUBLIC EMPLOYEE PENSION PLANS: SCOPE OF THE PROBLEM IN THE SOUTH AND SOUTHWEST

K.K. Raman and Sharon H. Garrison

The objective of this article is to shed some light on the problem of underfunded State and local government employee pension plans. In particular, we examine the underfunding status of State-local pension plans in the South and Southwest relative to the rest of the United States.

State and local government pension plans are exempt from the funding and other major provisions of the Employee Retirement Income Security Act of 1974 (ERISA). Perhaps for this reason, many State and local government pension plans are not setting aside sufficient funds to provide for estimated future benefits. In a survey of 72 governmental pension plans, the General Accounting Office (GAO, 1979) found that billions of dollars in unfunded liabilities had been accumulated, and that 53 of these plans were not receiving large enough contributions to satisfy the funding standards of ERISA. The GAO reported that compliance with ERISA would require annual contributions in many plans to more than double. Also, the Advisory Commission on Intergovernmental Relations (ACIR, 1980) reported that the average asset-to-accrued liability ratio for all State-local plans was in the 45 to 50 percent range, and that many individual State and local retirement systems appeared to be facing potentially serious funding problems.

It could be argued that full funding of public pensions is unnecessary, since governments have perpetual life and the power to tax. Yet, as Tilove (1976) points out, governmental units are hedged in by statutory limits on taxation and debt, and in the event of a taxpayer's revolt or a serious dislocation in the economy, may find it impossible to finance their pension plans. Moreover, if it is difficult to appropriate enough money to adequately fund pension plans now, why should it be any easier in the future? Tilove suggests that funding may be necessary for the sake of security and to reassure the beneficiaries. Interestingly, Ehrenberg and Smith (1981) report that public employees perceive unfunded pension promises as being quite risky and demand some degree of compensation in the form of higher wages for the risk that comes from underfunding.

The underfunding of State-local pensions is also an important public policy issue, since underfunding may lead to intergenerational inequities if a future generation of taxpayers have to pay for these liabilities. In a competitive political environment, it may be only too tempting for public officials to increase their reelection chances by promising employees liberal pension benefits without having to raise current taxes. It has also been suggested by Feldstein and Seligman (1981) that underfunded pensions may result in lower national savings and capital accumulation if employees reduce their savings in anticipation of receiving pension benefits.

Accounting for Pension Costs

The State-local pension underfunding problem may have been aggravated by the fact that, unlike corporate accounting, State-local government accounting is not subject to Securities and Exchange Commission (SEC) regulation. Under the U.S. Constitution, the States are the sovereign and superior governmental entities for the geographic areas they encompass. The States thus possess the legal authority to prescribe accounting practices for themselves and for local governments. A recent survey by the Council of State Governments (COGS, 1980) reported many departures from GAAP (generally accepted accounting principles) in State accounting and reporting practices. In particular, it reported that only 28 States determine their pension costs on an actuarial basis, while the remaining 22 States are on a pay-as-you-go basis. Pay-as-you-go basis implies that annual appropriations are sufficient just to meet the pension plan's current benefit payments. Deficiencies in accounting and reporting practices also exist for local governments. In a recent survey, Engstrom (1984) found that only 59 percent of a sample of cities possessing the MFOA Certificate of Conformance reported the amount of unfunded pension obligations. [1] Only a tiny fraction of all the governmental units in the U.S. possess the MFOA Certificate. Detailed estimates of unfunded pension liabilities for most governmental units is generally not available except in two or three states (e.g., Pennsylvania) where local governments are required to report such information by the State government.

Given the unavailability of data on unfunded pension liabilities, we utilized two financial ratios that are considered to be correlates of pension fund underfunding. Information on these ratios are available from the Bureau of Census. Our objective was to examine the underfunding status of State-local pension plans in the South and Southwest relative to the rest of the country.

The Study

In a report on cities in financial distress, the ACIR (1973) indicated that two financial ratios for pension plans may be helpful in evaluating the extent of underfunding. These variables are 1) the ratio of current pension fund assets to current annual pension fund benefit payments (PAPB), and 2) the ratio of current annual pension fund contributions to current annual pension fund benefit payments (PCPB). The ACIR suggested that a substantial deviation in these ratios from the national averages may indicate a serious underfunding problem.

Subsequently, Ehrenberg (1980) developed a theoretical model of a public sector retirement system. This model seeks to measure the degree of pension fund underfunding as a function of a number of "observable correlates" that can be computed for retirement systems. Ehrenberg reports that his model is robust and that in his own and other empirical research on public sector labor markets, these correlates "perform" as satisfactory proxies for pension underfunding. Two of these observable correlates are financial ratios — PAPB and PCPB.

As stated earlier, data on unfunded pension liabilities for most State-local governments are not available. However, data required to calculate the ratios PAPB and PCPB are available from the Bureau of Census' 1982 *Census of Governments*. These data are available for plans administered by local governments and for State administered plans rather than just for State employees. While data for State employees only would have been preferable, they are simply not available. However, there are two advantages to the data for State administered plans. The first is that State administered plans contain about 90 percent of all State and local pension participants (ACIR, 1980, p.7) and thus are more comprehensive than locally administered plans which may include only a small fraction of local employees. The second advantage is that reporting and disclosure requirements for State administered plans are extensive and hence data may be more reliable (ACIR, 1980, p.7). Also, local government officials believe that if the States were to mandate funding and other reforms, the States should also pay for these reforms (GAO, 1979, p.35). Hence, the States may be said to bear ultimate responsibility for the fiscal health of State administered plans.

The Bureau of Census divides the South and Southwest into three geographic regions — West South Central (consisting of Oklahoma, Texas, Louisiana, and Arkansas), East South Central (consisting of Kentucky, Tennessee, Mississippi and Alabama), and South Atlantic (consisting of Delaware, Maryland, West Virginia, Virginia, North Carolina, South Carolina, Georgia and Florida). Table-1 presents the U.S. and regional values for the two pension ratios. Based on the U.S. averages, State administered plans appear to be in better financial shape than plans administered by local governments. (Note that the higher the ratios, the better the funding position.) This is generally to be expected, since States typically have better access to resources than local governments. State administered plans in the three regions appear to be as well funded (or underfunded) as the national average. However, plans administered by local governments in the three regions appear to be in a better position than similar plans elsewhere. This may reflect the less generous pension benefits in the South and Southwest, as well as the greater financial strength (and fiscal conservatism) of these local governments. Nevertheless, it would appear that unfunded pension liabilities are as much a fact of life in the South and Southwest as in other parts of the country.

We also utilized an alternate methodology for estimating the burden of underfunded pensions in the South and Southwest. Recently, Marks and Raman (1984) investigated the following model:

$$F = a_0 \cdot (\text{PAPB})^{a_1} \cdot (\text{PCPB})^{a_2}$$

In the above model, the independent variables PAPB and PCPB have been shown by Ehrenberg (1980) to be theoretical correlates of pension underfunding. The dependent variable F is a direct measure of underfunding. Since the amount of underfunding may be expected to be associated with the size

TABLE 1

pension Ratios: U.S. and Regional AveragesA. Pension Plans Administered
by State Governments

	<u>U.S.</u>	<u>West South Central</u>	<u>East South Central</u>	<u>South Atlantic</u>
*PAPB	14.34	12.02	14.33	13.42
PCPB	2.82	2.70	3.12	2.78

B. Pension Plans Administered
by Local Governments

	<u>U.S.</u>	<u>West South Central</u>	<u>East South Central</u>	<u>South Atlantic</u>
*PAPB	10.83	12.28	12.07	11.72
PCPB	2.30	3.14	2.98	2.49

*PAPB - Ratio of current pension fund assets to current annual pension fund benefit payments

PCPB - Ratio of current annual pension fund contributions to current annual pension fund benefit payments

of the governmental unit, the dependent variable F is the amount of unfunded pension liabilities scaled by population. [2] Marks and Raman (1984) estimated the model using data from the Act 293 Report of the Public Employee Retirement Study Commission of the State of Pennsylvania. This Act requires the commission to collect certain financial data (including unfunded obligations) for all the public employee pension plans in Pennsylvania [3].

Although the model is non-linear, it was estimated by ordinary least-squares (OLS) regression analysis after recasting the equation in the log-linear form (taking the natural logarithm of both sides of the equation). While the R^2 did not exceed 0.33, both variables PAPB and PCPB and the constant (a_0) were statistically significant. Assumptions of OLS regression, i.e., homoscedasticity and normality of residuals were satisfied. In this article we use the estimates of the constant (a_0) and the coefficients of PAPB and PCPB to measure the amount of unfunded pensions liabilities per capita. These estimates are reported in Table-2. The national average is \$9.36 per capita for State administered plans and \$11.74 for locally administered plans. There is considerable variation in the estimated per capita burden among the different States in the South and Southwest. Note that the per capita estimate of unfunded pensions for State administered plans will be borne by all residents of the State, while the per capita estimate for locally administered plans will be borne by residents of only those local governments.

Summary and Conclusions

There is some evidence (GAO, 1979; ACIR, 1980) that public employee pension plans are seriously underfunded. Unfunded pensions raise important public policy issues in terms of intergenerational equities (Tilove, 1976) and the impact on national savings (Feldstein and Seligman, 1981). Moreover, since unfunded obligations represent potential claims on the cash flows of the governmental unit, they may be expected to have an impact on property values (Epple and Schipper, 1980) and creditor decisions (Marks and Raman, 1985).

Since State-local government accounting is not subject to Securities and Exchange Commission (SEC) regulation, detailed estimates of unfunded liabilities for State-local governments is generally not available. We therefore relied on a theoretical model by Ehrenberg (1980) to select two financial ratios that are "correlates" of underfunding. These correlates were used to estimate the burden of underfunding in the South and Southwest. On average, the underfunded pension liability problem seems to be as severe in the South and the Southwest as in the rest of the U.S., though there are considerable variations among the States in the region. However, locally administered plans in the South and Southwest generally appear to be in a stronger position than similar plans elsewhere, reflecting perhaps the greater financial strength (and fiscal conservatism) of these local governments.

TABLE 2

Model Estimates of Unfunded Pension
Liabilities Per Capita

	<u>State Administered Plans</u>	<u>Locally Administered Plans</u>
United States	\$ 9.36	\$11.74
West South Central	10.47	9.81
Oklahoma	10.56	7.28
Texas	9.19	8.50
Louisiana	15.31	16.34
Arkansas	8.70	13.00
East South Central	9.04	10.08
Kentucky	10.32	8.92
Tennessee	8.43	10.27
Mississippi	9.33	18.20
Alabama	8.40	9.26
South Atlantic	9.76	10.93
Delaware	7.47	18.67
Maryland	13.01	9.37
West Virginia	17.21	22.48
Virginia	10.76	9.39
North Carolina	8.90	7.57
South Carolina	7.80	8.86
Georgia	9.03	16.28
Florida	8.59	10.32

FOOTNOTES

- [1.] The Municipal Finance Officers Association (MFOA) has a voluntary program for compliance with generally accepted accounting principles (GAAP). Governmental units meeting most of the GAAP requirements are awarded the Certificate of Conformance.
 - [2.] We believe that this is an appropriate way of calculating the burden of unfunded pensions. The literature on municipal bonds (Lamb and Rapaport, 1980; PSA, 1981), for example, states that bonded debt per capita is an important variable in general obligation credit analysis. While unfunded pension liabilities are not bonded debt, they do represent potential claims on the future cash flows of the governmental unit.
 - [3.] The importance of Pennsylvania's Act 293 data has been demonstrated by Ehrenberg and Smith (1981) and Epple and Schipper (1981) in the context of research in the labor and housing markets, respectively.
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