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## 7. Projecting the Reserves of the Pension Plans of State and Local Governments

Chapter 1 briefly discussed the pension structure—the whole set of arrangements, both public and private, which involve promises (qualified or unequivocal) and financial arrangements, i.e., accumulations of assets to back up those promises.<sup>1</sup> In addition to industrial pension plans, the federal government's Old-Age, Survivors, and Disability Insurance Program, the Railroad Retirement System, the U.S. Civil Service System, and the retirement plans established by state and local governments for their employees were also noted.

These latter two programs seem implicitly defined as public plans, but this is not a correct inference. In this study, a public arrangement means a pension plan sponsored by government but not designed solely or primarily for that government's employees—for example, OASDI, which covers almost the entire civilian labor force. Plans developed by governments for their own employees are quite similar to private industrial pension plans, especially in that they accumulate reserves. The funds amassed by these plans are of significance, since the same questions about savings and capital formation are as relevant to them as to private industrial plans.

Therefore, we have in this study projected the reserves accumulated by the pension plans provided by state and local governments for their employees.<sup>2</sup> In general, these plans are like private industrial

<sup>1</sup> A broader definition of the pension structure would also include programs that offer pension or pensionlike benefits but do not involve reserve fund accumulations, the most important instances being old-age assistance payments and veterans' pensions.

<sup>2</sup> Projections have not been made for the U.S. Civil Service System for two reasons: (1) The system does not seem to follow a formal and well-defined method of funding; its rate of reserve accumulation sometimes appears to be for the "convenience" of the federal government. (2) The fund's investments are limited to federal government bonds, so its operations impinge on the capital markets at one degree removed.

plans: they are for the benefit of employees; the trust fund is set up by the employer, but is segregated from his "business" assets and administered by trustees; the fund is designed to be able to support the pension promises that the plans are making. In addition to this generic similarity, the reserves of state and local government plans are of particular interest because they are large and are growing rapidly. Thus it was seen in Table 9, above, that by the end of fiscal year 1963 such funds aggregated just under \$26 billion, which makes their holdings larger than those of insured funds (\$23 billion), more than half the size of noninsured industrial funds (\$47 billion) and equal to 20 per cent of all pension reserves. Moreover, since 1950 the reserves of state and local government pension plans have grown more rapidly than those for any other group of plans except noninsured private industrial plans (Table 4). Additional evidence of the importance of state and local government plans is the fact that their accumulated assets have been growing recently at the rate of about \$2.9 billion per annum. By way of comparison, private industrial plans have been growing at about \$7.3 billion annually, \$1.9 billion insured, the rest noninsured.<sup>3</sup>

Finally, state and local funds can be expected to grow in relative importance simply because employment by state and local governments will grow relative to total employment.<sup>4</sup>

That there are particular constraints on the investment activity of a number of state and local funds is not surprising. In some cases the constraints are institutional; in others they are due to legal limitations. A summary of state and local pension fund asset holdings as of 1963 appears in Table 9. Historically, there has been a conservative bent to their portfolio management, which shows up in relatively heavy holdings of federal government bonds; also they appear to hold the securities of state and local governments, most frequently their own, to a degree greater than the wisdom of portfolio management alone would indicate. But the general trend has been toward greater freedom in the investment policy of state and local pension funds, and their

<sup>3</sup> These data are for 1963-64 (from the SEC *Statistical Bulletin*, June 1965, p. 33) and are not strictly comparable with those used in the rest of this chapter.

<sup>4</sup> A recent projection by Bernard Yabroff (see "Trends and Outlook for Employment in Government," *Monthly Labor Review*, March 1965, pp. 289-290) is used as the basis for this chapter's estimates. From this projection we obtained an annual rate of growth over the period 1964 through 1975 of about 2 per cent for nongovernment (nonagricultural private wage and salary) employment and of about 4.7 per cent for state and local government employment.

management has become more professional. Over half their assets now consists of nongovernmental securities, mostly corporate bonds but also mortgages and a little common stock, and this portion of their portfolio has been growing fast in the last few years. Between 1962 and 1963, for example, state and local employee retirement funds acquired \$2.0 billion of net holdings of corporate bonds and notes.<sup>5</sup> This is substantial compared with net acquisitions of corporate bonds and notes by noninsured industrial pension funds of \$1.5 billion over the same period.<sup>6</sup>

The increase in assets of state and local plans may well spill over into stock (although some state laws prohibit or severely limit their pension funds' investing in stock) as a reflection of the increased professionalization of the management of these funds, and the heightened awareness by the trustees of their responsibility not simply to minimize risk but to achieve some balance of risk and rate of return. Some funds—Wisconsin's state teachers' fund is an example—have experienced a noteworthy increase in rate of return over a relatively short period.

Starting with aggregate state and local pension funds as of a given date—the end of fiscal 1961—annual inpayments (contributions plus earnings) and outpayments were projected, and the annual addition to fund assets was calculated and added to the starting level of assets to obtain an estimate of the level one year later. Successive iterations provided projected values up through 1982. Specifically: (1) fund earnings are equal to  $i$  (fund at start of year)  $+ (i/2)$  (excess of contributions over outpayments over the year) where  $i$  is a given rate of earnings, in these projections 4 per cent; (2) total contributions are obtained as the product of contributions per covered worker and estimated coverage.

Two estimates of contributions per covered worker were used, both

<sup>5</sup> A recent summary of state and local government retirement system finance says: "The shift of retirement system investments toward nongovernmental securities [almost wholly corporate bonds] continued in 1963, with such holdings going up by more than the net increase in total financial assets. During the 10-year period 1954 through 1963, retirement system holdings of nongovernmental securities have multiplied nearly eightfold, with this development accounting for over three-fourths of all the growth in the systems' financial assets." U.S. Department of Commerce, Bureau of the Census, Governments Division, *Finances of Employee-Retirement Systems of State and Local Governments in 1963*, G-GF63, No. 3, May 1964, p. 2.

<sup>6</sup> "Private Noninsured Pension Funds," Securities and Exchange Commission, *Statistical Bulletin*, June 1964, p. 28.

based on the experience between 1957 and 1962, benchmark dates for which census data are available.<sup>7</sup> The data of prior years are not used because it was felt that, with the opportunity for employees of state and local governments to come under OASDI as well as their own government's plan, a structural change occurred in the middle 1950's that would make the earlier figures not comparable with the later ones. The first projection comes from extending the trend line determined by the 1957 and 1962 values through 1983 (i.e., assuming that the same average annual amount of increase that occurred between 1957 and 1962 would occur over the ensuing twenty years). The second comes from extending the compound interest rate of growth between 1957 and 1962 (i.e., assuming that the same *rate* of increase observed between 1957 and 1962 would persist through 1983). These alternative methods will be referred to simply as absolute amount of growth and rate of growth, respectively.

Coverage (plan membership, not including beneficiaries) is the product of two projections—employment and percentage of state and local government employees who are members of retirement plans. Employment is based on a recent BLS projection<sup>8</sup> whose implied annual rate of growth of 4.7 per cent between 1964 and 1975 was the basis for our estimating employment in each of the years in this period and through 1982, as well. The coverage percentage was obtained by interpolation between 78.3 per cent—its value in 1962—and 80 per cent—the value it is assumed will be reached by 1982.<sup>9</sup>

As with contributions per covered worker, two alternative projections of average benefits per retiree were developed. One was based

<sup>7</sup> U.S. Bureau of the Census, *Census of Governments: 1957*, Vol. IV, No. 1, *Employee-Retirement Systems of State and Local Governments*, Washington, 1959, and *Census of Governments: 1962*, Vol. VI, No. 1, *Employee-Retirement Systems of State and Local Governments*, Washington, 1963. For brevity, in the rest of this chapter these sources are referred to as *Census, 1957* and *Census, 1962*.

<sup>8</sup> Yabroff, "Trends."

<sup>9</sup> An increase in the coverage percentage between 1962 and 1982 seemed reasonable in view of its increase from 71.4 to 78.3 between 1957 and 1962 (computed from *Census, 1962*, p. 1). The same rate of increase in the percentage over the next twenty years as in the last five years would have meant the absurdity of a coverage percentage exceeding 100 in 1982. A modest increase—less than two percentage points—was chosen as likely. Only full-time employees were considered potentially eligible in this paper and they were approximately 83 per cent of all state and local employees in recent years (see Bureau of the Census, *State Distribution of Public Employment in 1964*, G-GE64 No. 1, March 1965 and earlier issues). Thus 80 per cent coverage of all employees implies 96 per cent of the potentially eligible.

on absolute annual changes, and the other on rates of growth as determined by the 1957 and 1962 values.

Beneficiaries of retirement payments were estimated "actuarially" in a manner similar to that used in the industrial pension plan projections. Details of the method are not of concern here, but it is interesting to note that the projections of beneficiaries are taken over intact from an earlier version of this study because they checked out with what happened. Based on the data for 1959, the method projected 584,000 beneficiaries for 1962, while the *Census, 1962* value was 600,000. This close correspondence supports use of the series developed earlier and, in addition, strengthens belief in the general validity of this method of projecting beneficiaries.

Because state and local pension plans permit withdrawals (generally on termination of employment), pay benefits for disability and survivorship as well as retirement, and also provide lump-sum benefits, a proportionality factor was necessary to step up retirement benefit payments to total pension plan outpayments. The factor in these projections was 1.55 computed from the 1962 data.<sup>10</sup>

Since there are two ways of projecting average contributions and average benefit payments—one projection of coverage and one earnings rate assumption—there are two projections of fund levels and annual accumulations in Table 50.

Under either set of assumptions considerable growth can be expected, and, as a matter of fact, both suggest just about the same growth. The projections put the aggregate of such funds by 1982 over five times their holdings in 1962. This is a very large increase, and in relative terms more pronounced than that projected for private industrial pension funds. The important role of state and local pension funds is highlighted even more strongly by the size of net annual accumulations, which, it is estimated, by 1982 will be about \$10 billion, or even larger than annual additions to industrial pension fund holdings. Even though the latter will cover many more workers, this result is not necessarily farfetched, for state and local employment will be growing at a more rapid rate and employees in this sector have traditionally had a higher level of pensions in relation to earnings than characterizes the industrial sector.

<sup>10</sup> *Census, 1962*, pp. 1 and 12. Precisely the same ratio of benefits to retirees on account of age or length of service to total benefits characterized state and local pension plan operations in 1957 (*ibid.*).

TABLE 50

*Fund Levels and Annual Accumulations of State and Local  
Government Employee Pension Funds, 1962-82<sup>a</sup>*  
(billion dollars)

Fiscal Year	Absolute Amount of Growth Projection		Rate of Growth Projection	
	Fund Level	Annual Change	Fund Level	Annual Change
1962 <sup>b</sup>	23.3	2.4	23.3	2.4
1963	25.6	2.3	25.6	2.3
1964	28.3	2.7	28.3	2.7
1965	31.1	2.8	31.1	2.8
1966	34.1	3.0	34.1	3.0
1967	37.3	3.2	37.4	3.3
1968	40.8	3.5	40.9	3.5
1969	44.5	3.7	44.7	3.8
1970	48.6	4.1	48.8	4.1
1971	52.9	4.3	53.2	4.4
1972	57.5	4.6	58.0	4.8
1973	62.6	5.1	63.1	5.1
1974	68.0	5.4	68.6	5.5
1975	73.8	5.8	74.6	6.0
1976	80.0	6.2	81.0	6.4
1977	86.7	6.7	88.0	7.0
1978	94.0	7.3	95.5	7.5
1979	101.8	7.8	103.6	8.1
1980	110.3	8.5	112.5	8.9
1981	119.6	9.3	122.1	9.6
1982	129.6	10.0	132.6	10.5

<sup>a</sup>Projection methods are described in text above; funds are as of end of fiscal year.

<sup>b</sup>Actual value as published in U.S. Bureau of the Census, *Census of Governments: 1962*, Vol. VI, No. 1, *Employee-Retirement Systems of State and Local Governments*, Washington, 1963.

On the other hand, it is appropriate to note at this point that the state and local results for as late as 1982 are to be viewed with caution. Caution about the state and local projections is particularly in order because they are for a specific industry; projections of employment for a single industry are generally of a lower order of accuracy than those for a broader sector such as industrial employment. Thus, at least as far as employment is concerned, the industrial pension projections are probably more accurate than the state and local projections; and for any sector, projected values up to about 1975 are open to less doubt than those after this date.

Finally, the state and local government projections are less certain because of the possibility that the very size of the projected accumulations might tend to undo or deter their achievement. More specifically, in carrying out the projections for state and local government reserves, it is assumed that the same degree of underfunding that characterizes them now will continue into the future. However, the accumulation of large amounts of reserves might be used as a reason for sanctioning a higher degree of underfunding than has been the case in the past. If this were to occur, of course, the projections would be overstatements.

State and local projections for as far into the future as 1982, then, are the most questionable of the estimates in this study. The reader would do well to concentrate on the projections up to 1975 and view estimates for the later years as no more than suggestive of what the values may be. It is interesting to note, however, that while there are in principle two basically different projections of state and local funds, there is, in fact, little real difference in what they portend. Theoretically there is an important difference between projecting rates of growth or absolute annual increments; in practice it turns out that substantially the same values are projected by each method.<sup>11</sup> This result lends credence to the projections, but it does not remove the need for caution noted earlier. When the occasion arises for a particular set of values, those of the absolute increase projection will be used. In the author's judgment they are more congruent with the spirit of the industrial pension fund projections.

<sup>11</sup> The data underlying the projections are quite different under the two assumptions—for 1980, for example, average benefits are \$2,580 and \$3,067 under the absolute increment and rate of growth methods, respectively, and average contributions are \$803 and \$876. But the differences tend to cancel out in the fund projections.

It is quite clear that state and local funds are going to play an important role in the capital markets over the next twenty years, both as holders of financial assets and as sources of funds. The projections indicate that their growth will compare favorably with private industrial pension funds, a sector that has been more widely publicized. If recent asset preferences will carry into the future, their demand will be heavily concentrated in the market for corporate debt, although there is the possibility that they may become more interested in corporate equities and mortgages.

As with private industrial plans, in developing the asset projections for state and local government pension funds it was necessary to project beneficiaries and benefit payments as well. These matters are interesting in their own right; in addition, they round out the picture on private efforts (state and local governments here are like private employers) at providing pension income support in retirement.

State and local governments are substantial employers, and have pension programs of long standing and wide coverage. For example, 94 per cent of their full-time workers (i.e., the potentially eligible) were covered by retirement systems in 1961. These arrangements will be an important source of income support for retired people (Table 51). To the projected beneficiaries of industrial plans furnished in Chapter 2 (see Table 19), those for state and local government employees should be added to provide the more complete story of what private arrangements are likely to accomplish over the next twenty years. The estimated number of beneficiaries is a more accurate projection than average and total benefit payments. It is best to look on the projections of the latter as providing orders of magnitude. For comparison with industrial pension plans, the lower set of average benefit payments, obtained by methods similar to those used for the private industrial pension plan projections, is probably the more appropriate, and will be used in the summary in Chapter 8.

However, here it is sufficient to note that state and local government plans will be an important source of retirement income, both as regards the number of pensioners and the payments they receive. Moreover, a majority of the beneficiaries under these plans will be "double pensioners" who receive income support in retirement both from a public arrangement (social security) and a private plan. Chapter 8 will have more to say on this.

TABLE 51

*Projected Number of Beneficiaries and Average Annual Payments  
Per Beneficiary, State and Local Government Pension Plans, 1961 - 81*

Fiscal Year <sup>a</sup>	Beneficiaries (thousands)	Average Benefit Payments (dollars)	
		Absolute Increases Projected	Rate of Growth Projected
1961	584	1,680	1,680
1962	614	1,730	1,737
1963	646	1,780	1,796
1964	681	1,830	1,857
1965	716	1,880	1,920
1966	751	1,930	1,986
1967	787	1,980	2,053
1968	823	2,030	2,123
1969	860	2,080	2,195
1970	897	2,130	2,270
1971	935	2,180	2,347
1972	973	2,230	2,427
1973	1,011	2,280	2,509
1974	1,057	2,330	2,595
1975	1,101	2,380	2,683
1976	1,142	2,430	2,774
1977	1,180	2,480	2,868
1978	1,215	2,530	2,966
1979	1,247 <sup>b</sup>	2,580	3,067
1980	1,276 <sup>b</sup>	2,630	3,171
1981	1,302 <sup>b</sup>	2,680	3,279

<sup>a</sup>Beneficiaries and benefits are averaged over fiscal years  $t$  and  $t+1$  and, therefore, are substantially the same as of the end of calendar year  $t$ .

<sup>b</sup>Rough estimates.

Finally, Table 52 shows the projections of state and local government employment and pension coverage. Employment in this sector is projected to grow very rapidly, at a considerably sharper pace than civilian nonagricultural employment in general and almost all of the specific industrial sectors that comprise it. The coverage of state and local government pension plans, already high, is projected as becoming slightly more intensive. Anything more pronounced than this modest increase in the coverage percentage does not seem reasonable, for it would mean coverage in excess of those potentially eligible.

TABLE 52

*Projected State and Local Government Pension Coverage  
and Employment, 1961 -81*

(thousands)

Year	Covered Employees	Total Employees	Employees Potentially Eligible for Coverage <sup>a</sup>	Covered Employees as Percentage of	
				Total Employees	Potentially Eligible Employees
1961	5,036	6,432	5,339	78.3	94.3
1962	5,245	6,696	5,558	78.3	94.4
1963	5,487	6,997	5,808	78.4	94.5
1964	5,748	7,321	6,076	78.5	94.6
1965	6,024	7,665	6,362	78.6	94.7
1966	6,314	8,025	6,661	78.7	94.8
1967	6,618	8,402	6,974	78.8	94.9
1968	6,937	8,797	7,302	78.9	95.0
1969	7,271	9,210	7,644	78.9	95.1
1970	7,621	9,644	8,005	79.0	95.2
1971	7,987	10,097	8,381	79.1	95.3
1972	8,372	10,572	8,775	79.2	95.4
1973	8,775	11,068	9,186	79.3	95.5
1974	9,197	11,588	9,618	79.4	95.6
1975	9,639	12,134	10,071	79.4	95.7
1976	10,103	12,703	10,543	79.5	95.8
1977	10,590	13,300	11,039	79.6	95.9
1978	11,099	13,926	11,559	79.7	96.0
1979	11,633	14,580	12,101	79.8	96.1
1980	12,193	15,266	12,671	79.9	96.2
1981	12,780	15,983	13,266	80.0	96.3

Note: Data are averaged over fiscal years  $t$  and  $t+1$  and, therefore, are substantially the same as of the end of calendar year  $t$ .

<sup>a</sup>Equals 83 per cent of employment, on the assumption that the proportion employed full time will continue in the future to be approximately the same as in the years 1958-64.

Finally, returning to a question noted briefly above, the projected values of state and local government pension reserves and annual accumulations in the late 1970's and early 1980's are so large relative to those projected for private industrial pension plans as to raise suspicions of their credibility. It has already been noted that state and local estimates are necessarily subject to a degree of inaccuracy greater than is probable for private industrial plans. But there are good grounds for expecting heavier accumulations in this sector than in private industrial plans for a period of fifteen or so years. In fact, more rapid relative growth in state and local reserves has occurred since the late 1950's. And the additional accelerations in the projected absolute amount of state and local government reserves is attributable to an expected increase in employment so sharp as to raise considerably the ratio of employment in this sector to that in the potentially eligible private sector. Also, the coverage ratio is consistently higher for state and local government employees, and this will cause a relatively more rapid rate of increase in aggregate contributions.

Specifically, between 1961 and 1981 the number of employees covered under private industrial plans is expected to increase (under projection C<sub>3</sub>) by 87 per cent, while an increase of 156 per cent is projected for employment covered under state and local plans. (These data are from Table 53 below.) Pension fund accumulations are proximately a function of the *absolute number* of persons covered and this will show a powerful upward tilt in the years covered by this study's projections. Moreover, state and local government plans characteristically involve employee contributions as well as those made by the employer, in order to meet the cost of earlier retirement provisions and a more liberal level of pensions relative to earnings than is characteristic of industrial plans. With these factors causing contributions per covered worker to be considerably higher under state and local plans, total contributions in this sector would rise even relatively more than total coverage.

For all these reasons, then, a sharper growth in state and local pension reserves is not unreasonable, nor is a larger absolute amount of annual accumulation by these entities for the later years of the projection period. However, it must be added that, as already noted, these projections should be viewed more skeptically than those for private industrial plans.