

**RETIREMENT SYSTEMS FOR
PUBLIC EMPLOYEES**

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Retirement Systems for Public Employees

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Chapter 7

Investments

MAJOR DIFFERENCES between private plans and public employee retirement systems are found in the theories and practices of investing accumulated money. One of these differences is derived from legal strictures upon the investment authority of the public systems. A second difference is the tendency of some public systems, especially in Canada, to hold substantial portions of their funds in public securities, primarily in the municipal bond market.

In a mature retirement system operating on a funded basis, the annual income from interest and dividends may equal or exceed the amount being contributed to the fund by the employer. If the two sources of income should be equal, an increase in the yield rate on the fund from 4 percent to 5 percent, as an example, will increase investment income by 25 percent and decrease the tax burden of the system by 25 percent. Rarely does a shift that dramatic occur swiftly enough to be widely noticed. Nevertheless, the importance of investment return must be emphasized: Every additional dollar received in interest and dividends means a dollar saved, either in taxes if the gain is in the employer portion of the fund, or in the employee's pocket if the extra earnings are on his part of the fund.

This chapter examines the topic of investments in public employee retirement systems. The legal limitations placed upon investing authority will be reviewed, as will the general elements of investment strategy within those limitations.

THE SIGNIFICANCE OF INVESTMENT YIELD

In the previous chapter, the funding of a retirement system's liabilities was discussed. Briefly, in a funded plan the contributions for any employee will be completed during the working lifetime of that employee, creating a fund at retirement from which the retirement benefits will be drawn. Since the contributions will be unused for some period of time, they can be invested. The importance of the role of investments may be more easily grasped by considering the following oversimplified example. Suppose a woman retires at age 60 and lives exactly 20 years thereafter, which is approximately her life expectancy. If she had entered employment at age 40, one might visualize each year's payment of her retirement income as coming from a contribution 20 years earlier. The contribution made while she was 40 could be thought of as paying the benefit when she is 60, that made while she was 41 as paying the benefit when she is 61, and so forth. If there were no interest available on the money deposited for her, the same amount would have to be contributed as is ultimately withdrawn. Thus, if her benefit is \$3,000 a year, \$3,000 must be deposited each year. Actually, of course, the money will be invested and earn interest.

If the rate of interest on the investment should average 3.5 percent, a relatively low level at present-day standards, the money will double during the 20 year period. Where a \$3,000 annual contribution would be necessary to pay her benefits if no interest were earned, only \$1,500 would be required if the money were invested at 3.5 percent.

Higher rates of interest will reduce the required contributions still more, as illustrated in the following table:

<i>Rate of Annual Interest (%)</i>	<i>Approximate Annual Contribution</i>	<i>Ratio of This Contribution to That at 0%</i>
0	\$3,000	100%
3.5	1,500	50
5.5	1,000	33
7	750	25
9.5	500	17

Almost as remarkable as the differences between the numbers in this table is the fact that interest rates covering nearly the entire range of the table have been experienced over the 25 year period ended in 1970. At the low end, the average yields on high-grade municipal bonds in 1946 were only slightly over 1.5 percent, the corresponding figure for U.S. government bonds being 2.19 percent.¹ At the other extreme, yields of 9 percent or greater were obtainable on occasion for top-grade securities in the latter part of the period, when even some short-term U.S. government bonds yielded in excess of 8 percent.

Still greater yields were available for the investor willing to take the risk of periodic declines in values and yields. A study encompassing every stock listed on the New York Stock Exchange, for example, showed that for the longest period studied (1926-1960), an average annual rate of yield of 9 percent was experienced. For a 10 year period commencing in December, 1950, a rate of yield of nearly 15 percent was experienced. This study hypothesized the investment of equal amounts of money in each company having shares listed on the New York Stock Exchange and reinvesting dividends.²

To some extent, of course, the differences in yield are the result of changes in economic conditions and are completely

¹ U.S. Bureau of the Census, *Historical Statistics of the United States, Colonial Times to 1957* (Washington, 1960), Tables X330 and X331.

² Lawrence Fisher and James H. Lorie, "Rates of Return on Investments and Common Stocks," *Journal of Business* (Graduate School of Business, University of Chicago, January 1964).

outside the power of any investor to control. As an indication of the variability at the conservative end of the spectrum, the average yields on long-term U.S. government bonds in a 50 year period dropped from over 5 percent in the early 1920s to a low of 2.05 percent in 1941 and then climbed again to a high of 6.59 percent in 1970.³ In the example given earlier, the required contribution for a \$3,000 per year pension would vary from \$918 to \$1,999 dollars at the extreme years of 1941 and 1970, assuming that the system was fully invested in U.S. government bonds and that the bonds maintained a constant yield at precisely the specified level for 40 years.

TYPES OF INVESTMENT AND YIELDS

Although no system has the power to alter the bond-yield cycle, most systems can pick from a wide array of securities in investing their available funds at any point in time. The importance of the choice has caused greater attention to be devoted recently to this aspect of fund management. The trend has been toward more aggressive investment policies and liberalization of statutes governing the investment powers of public employee retirement systems. These moves to more progressive investment policies have come during a period of booming growth in the assets of the plan, making the shift in investment philosophy all the more significant.

Investments of U.S. Systems. Table 4 summarizes the overall shift in the investments of U.S. systems during the 1960s. Although the assets of the state and local systems nearly tripled during the decade, the holdings of federal bonds decreased by more than 10 percent, causing their share of the total investment to drop from about 1/3 to about 1/10. Even more spectacular was the reduction in the dollar amount of state and local bonds, bringing them from approximately 23 percent of the total investment to about 4

³ *Federal Reserve Bulletins*; Bureau of Census, *Historical Statistics*: Series X330. This series is made up of unweighted averages of the yields of all outstanding U.S. bonds due or callable after a minimum period, that minimum period being 8, 10, 12, or 15 years at various times.

TABLE 4
Assets of State and Local Retirement Systems in the United States (in billions)

	1960	1970		
	<i>All Systems</i>	<i>All Systems</i>	<i>State-Ad- ministered</i>	<i>Locally-Ad- ministered</i>
Federal Bonds	\$ 6.0	\$ 5.2	\$ 3.2	\$ 1.9
State and Local Bonds	4.3	2.2	.6	1.6
Total Government Bonds	\$10.3	\$ 7.3	\$ 3.8	\$ 3.5
Corporate Bonds	6.0	30.1	22.7	7.5
Mortgages	1.2	6.6	5.8	.8
Corporate Stocks4	6.9	5.1	1.8
Other6	4.0	2.5	1.4
Total	\$18.5	\$54.9	\$40.0	\$15.0

Note: Because of rounding, detail may not add to totals.

Source: U.S. Bureau of Census reports (GF Series, No. 2). Bond figures are par values; all others are book values. Data are derived from surveys of individual systems. Each system's data are as of its fiscal year ended in first half of given year or last half of previous year.

percent. The slack was taken up fairly evenly by all other types of investments, corporate bonds increasing from $\frac{1}{3}$ to better than $\frac{1}{2}$ of the total investment, and mortgages nearly doubling their share of the investment portfolios to more than 10 percent of the total. The greatest percentage increase was registered by corporate stocks, whose share increased from 2 percent to 12 percent.

In all cases the shift was from the conservative to the more venturesome investment, offering the prospect of higher yield. What has caused this shift? Among the reasons are the following:

Competition. This has occurred both between the various public employee systems, and between public and private plans. As public systems have grown, their staffs have increasingly shared their experiences and compared results. The phenomenal growth in private retirement plans during the 1950s and 1960s also resulted in aggressive investment policies which were widely reported and analyzed.

Growth in common stock values. The prosperity of most of the 1950s and 1960s brought outstanding growth to the

values of common stocks, making them more attractive as their effective yields outstripped those of fixed income investments.

Inflation. The continuing deterioration in the value of the dollar made increases in benefits necessary; improved investment yields were one method of meeting the additional costs. This factor was in greater evidence as benefits were increased for retired members whose pensions had not keep pace with the cost of living.

Increasing taxes. The ever-present and increasing demands on the taxpayer, particularly at the state and local level, directed attention to more sophisticated means of reducing tax commitments. Of these, a painless one was to cause the investments of the retirement systems to go farther, through a shift to securities with more attractive yields.

As Table 4 shows, locally administered systems held a much higher share of their 1970 investments in government bonds than did state-administered systems. The distinction was most apparent in the investments in state and local bonds. State-administered plans held less than 2 percent of their portfolio in such bonds, while the local plans held 11 percent in this manner. To a large extent, this disparity is attributable to the tendency of the local funds to invest in local issues.

There are significant disadvantages in the practice of public employee retirement systems investing in municipal bonds, particularly those bonds issued locally. One objection is that the yield on municipal bonds in the United States is artificially depressed, due to their tax-free status in the hands of private investors. This tax advantage is of no value to a retirement system, since it pays no taxes. Moreover, where there is some community of decision between the investing authority (the local retirement fund) and the political subdivision issuing the bonds, unwise investments can easily occur. This is particularly true in the case of revenue bonds, which might not be supportable on the open market but which are purchased by the local retirement fund, in effect subsidizing the borrowing authority. Another objection to

investment by a local fund in its own securities is the lack of diversification. If the political entity should come upon hard times, its failure to meet its commitments would be doubly burdensome if the investments of its retirement fund were in its own securities.

The investment techniques of systems administered at the state and local levels also differed in the wider use of mortgages by the state-administered systems. Nearly 15 percent of state-administered funds versus 5 percent of locally administered funds were invested in mortgages in 1970. Legal restrictions on investments of the local funds may contribute to this difference. Another reason for the difference is the difficulty retirement systems, especially small ones, have in administering mortgages. A common practice of the larger retirement funds is to buy substantial blocks of mortgages (\$500 thousand, \$1 million, etc.) which are administered by mortgage bankers. The retirement fund becomes involved in the actual details of any one mortgage only in exceptional circumstances. Small retirement systems do not have sufficient funds to move easily into this type of market.

Because of the differences described above, it would seem reasonable for locally administered systems to have lower investment yields than state systems. There is some evidence to support this thesis, but it is meager and of marginal statistical significance. Obtaining comparative yields with precision is made difficult by wide variations in accounting methods. Based upon a study of all public employee systems in the United States, an average yield relative to the book value of all assets was found to be about 4.47 percent for state-administered plans and 4.35 percent for locally administered plans. These figures were derived from a Bureau of Census study⁴ of the fiscal years ending in the latter half of 1967 and the first half of 1968. The figures are probably understated to the extent that capital gains from the increase in value of common stocks were not included. Had capital gains been

⁴ U.S. Bureau of the Census, *1967 Census of Governments*, Vol. 6, Topical Studies No. 2.

included, the relative standing of the state-administered funds would probably have improved, albeit very slightly.

Investments of Canadian Systems. The distribution of assets in Canadian public employee retirement systems is significantly different from that found in the United States. Table 5 presents Canadian data corresponding approximately to the U.S. data in Table 4. Provincial and local bonds make up over 70 percent of the assets of Canadian systems, as compared with about 4 percent in the corresponding systems in the United States. In all of the other categories of investment shown in the table, including federal bonds, the Canadian percentages are smaller than the corresponding U.S. percentages. The statistics presented in Table 5 were derived from an analysis which includes a further breakdown among municipalities, provincial governments, and educational institutions. These statistics show remarkable homogeneity as to investment percentages in the various categories listed. The only significant exception to this is in government bonds where, not surprisingly, the municipalities are heavily invested in municipal bonds.

Despite the preponderance of government bonds in Canadian portfolios, the average yields were substantially above the U.S. average. For comparable fiscal years in 1968, the

TABLE 5
Assets of Provincial and Local Retirement Systems
in Canada (in millions)

	1960	1970
Federal Bonds	\$ 77	\$ 109
Provincial and Local Bonds	629	2,161
Total Government Bonds	\$706	\$2,270
Corporate Bonds	31	175
Mortgages	6	83
Corporate Stocks	7	151
Other	49	250
Total	\$799	\$2,929

Source: Statistics Canada Reports (74-201). All figures are book values. Data are derived from surveys of individual systems. Each system's data are as of its fiscal year ended in first half of given year or last half of previous year.

approximate Canadian yield was 5.45 percent; the U.S. figure was 4.43 percent. In analyzing this differential one should keep the following points in mind:

1. Yields on Canadian securities in general are significantly higher than those on U.S. securities. For example, in 1968, the average yields on Canadian federal government bonds (of ten year maturity or greater) was 6.75 percent, while the corresponding U.S. figure was 5.5 percent.

2. Yields on Canadian provincial and local bonds, in particular, are substantially higher than those of corresponding securities in the United States. Not only is there greater competition for capital funds in Canada, leading to higher yield rates on all types of investments, but interest on Canadian municipal bonds is fully taxable. On the other hand, interest on U.S. municipal bonds is tax-free in the hands of many investors, improving the marketability of the bonds but reducing their yield. Continuing the previous example, 10 provincial bonds had an average yield of 7.60 percent in 1968 while bonds of 10 Canadian municipalities were yielding 7.80 percent.⁵ In contrast 15 U.S. municipal bonds had an average yield in 1968 of 4.51 percent.⁶

Comparative Yields of Insurance Companies. Lest one with responsibilities for Canadian retirement system funds be overly smug about the comparison of Canadian and U.S. rates, it would be in order to present a brief comparison of investment yields of life insurance companies, which are in similar positions of trust for the protection of the principal of funds given them and which often have similar investment restrictions placed on them by law. In 1968, federally registered Canadian insurance companies showed an average yield of 6.03 percent on their investments, more than one half of 1 percent better than the yields of public employee retirement systems. For comparison the average yields of U.S. insurance companies were 4.95 percent in 1968, likewise being more than one half of 1 percent greater than the average yields of

⁵ Bank of Canada Statistical Summary, November 1971.

⁶ Standard and Poor's Index, *Statistical Abstract of the United States*, 1969, Table 665.

the public employee retirement systems. Some of this difference may be due to the competitive nature of the life insurance business. Some may be due to differences in the laws governing the two types of investments. Whatever the reason, if the differential of one half of 1 percent could have been transformed into additional income to the public employee retirement systems, the taxpayers of the United States and Canada would have saved approximately a quarter of a billion dollars in 1968.

INVESTMENT STRATEGY AND LEGAL RESTRICTIONS

The decision of how much to invest in various categories of available securities can often be reduced to a weighing of the elements of prospective yield and risk. Since the market for capital funds tends to require higher yields for riskier investments, the receipt of greater yield generally involves forfeiture of some of the security of investment. The balancing of these factors is highly subjective and there appears to be no firm and final resolution of the problem of finding the ideal investment strategy for a pension fund.

A complicating question, however, involves the restrictions placed upon investments of public employee retirement funds. While some legislative authorities regularly review the question of investments, the subject in other locales seems to have suffered from neglect. Overly conservative investment practices often exemplify this neglect. An indication of such conservatism, for example, might be holding more than half of the investment portfolio in cash deposits and government securities. This criterion was met in 26 states by either state-administered funds or locally administered funds or both in 1968. Obviously, arguments can be advanced for such investment policy, at least with respect to investment in government securities, but the effect of such a policy upon yield is substantial. The aggregate yield of the systems involved was 4.06 percent in 1968, compared with 4.43 percent in all systems in the United States.

Examples of Investment Policy. Some specific examples illustrate the effect of investment policy upon yield. In one state, the two major systems, with total assets of nearly two thirds of a billion dollars at June 30, 1968, held approximately 60 percent of these assets in federal bonds. The yields of these two systems were 3.91 percent and 4.17 percent respectively, calculated on the same basis as the 4.43 percent yield for all U.S. systems. Another state where over 80 percent of nearly \$200 million in assets was invested in federal bonds, experienced a yield of only 3.67 percent. The system of a large county in the same state had all its investments in government bonds or deposits and showed a yield of 3.75 percent.

An example of what a change in investment policy can do is offered by the Teachers' Retirement System of Louisiana. On June 30, 1968, more than three quarters of its assets were in municipal and U.S. treasury bonds. The yield for the previous year, calculated on the same basis as the yields quoted in the last few paragraphs, was 3.79 percent. As a result of a large disinvestment of government bonds and heavy investment of the proceeds plus new cash in corporate bonds and stocks, the yield for the year ended June 30, 1969 increased to over 5 percent. The investment earnings for the year were more than \$7 million greater than in the previous year, equivalent to approximately 25 percent of the state's contributions.

Legal Restrictions. The investment policies of public employee retirement systems result from the interaction of the investing authority and the legal restrictions on investments imposed by the legislature. Statutory restrictions generally have the purpose of protecting the principal of the money contributed by the employees and by the government. The laws act as a brake on any tendency to overreact to the pressure for increased yields. One argument holds that the attractive yields resulting from the more aggressive investment techniques have been compiled during a period of prosperity; statutory restrictions protect against the losses of capital which accompany poor times.

A further legal consideration exists when common stocks are owned. Instead of being in the position of a lienholder, as is inherent with the ownership of bonds and mortgages, an investor in common stocks owns a portion of the business. This runs counter to constitutional prohibitions in some states, on the theory that the state is lending its financial support to a corporation by buying its stock. Where such restrictions are contained in a constitution, they can be very cumbersome to remove. Nevertheless, popular votes to eliminate constitutional restrictions have been successful in some jurisdictions.⁷

Public employee retirement systems rarely have investment authority as broad as that of private plans. Generally the laws either specifically prescribe the areas in which investments can be made or indicate that the investment policy is governed by the same laws that apply to life insurance companies.

Solvency. Although there are similarities in the investment goals of pension plans and life insurance companies, there are also differences which argue for fewer restrictions on retirement funds. A discussion of the investment goals of life insurance companies in McGill's *Life Insurance* points out that, "The primary concern of life companies is the risk of legal insolvency, that is, a condition in which admitted assets are less than the liabilities required by law."⁸ In turn, this problem is related to the very limited amount of capital and surplus which life insurance companies have as a percentage of their total assets (8.4 percent in 1970). McGill went on to say:

With company surplus limited to such relatively small proportions, it follows that there is little margin for wide independent fluctuations in the values of either assets or liabilities. But, since liabilities are relatively stable and predictable, the primary insolvency risk centers on the potential loss of value of assets.⁹

⁷ The states of California and Washington are examples.

⁸ Dan M. McGill, *Life Insurance*, rev. ed. (Homewood, Ill.: Richard D. Irwin, Inc., 1967), p. 843.

⁹ Ibid.

It is little wonder that life insurance companies and the laws governing them place such a premium on safety of principal.¹⁰ On the other hand, as long as the employer is ultimately responsible for paying benefits and is adequately capitalized, there is no real risk of "legal insolvency" under a pension plan. A pension plan can take greater investment risk than an insurance company without fear of depleting "surplus," since surplus can, in effect, be replenished by the employer over a period of time.

In a somewhat different sense, the hazard for a life insurance company is also technical in nature: It must retain its legal solvency at all points in time, and it cannot rely upon recovery from a temporary slump in asset values or from an adverse swing in mortality experience to bring it out of the hole. The status of a pension plan at any one point in time is far less vital, as pointed out by Frank M. Redington in his address as president of the British Institute of Actuaries:

Pension schemes can . . . be . . . regarded as homing on to a distant and moving target under the guidance of the actuarial radar tracking system. Whether a scheme will be successful or not is only in part a question of where it is now; that is to say, its current degree of solvency. It is also largely a question of the power of its driving force to bring it curving on to track in due course. The main driving force is the ability of the employer to fulfill his obligations and to increase his contributions whenever necessary. Solvency is, therefore, often inextricably bound up with the resources of the employer.¹¹

POLITICAL CONSIDERATIONS

Wherever the balance is struck on legislative control, there is an additional indirect pressure for conservatism in investment, beyond the legal restrictions, because of the public

¹⁰ Life insurance companies can be more venturesome in the investment of assets allocated to pension reserves, particularly if guarantees of principal are not made. If a segregated fund is used, the total investment risk is usually with the employer, rather than with the life insurance company.

¹¹ *Journal of the Institute of Actuaries* (London, 1959), Vol. 135, p. 6.

nature of the retirement systems. While the investing officer of a corporate retirement fund need only justify his decisions to the management or the directors of the corporation, the investor for a public fund not only must satisfy similar interests but also must be prepared to make a defense before the general public, often in the glare of an adverse press. This hazard is aggravated by the ordinary person's lack of sophistication in investment matters and by the ever-present opportunist ready to make political hay of some event involving public figures.

Another politically sensitive aspect of investments involves the pressures for local investment, either in the bonds of the local government or in private investments, such as corporate bonds or mortgages. Arguments against investment in municipal bonds were given earlier in this chapter. Where private investments are involved, retirement systems often invest their funds to benefit the local economy.

For example, some systems invest locally if a yield can be obtained within a certain percentage of that available for comparable nonlocal investments. The resulting loss of income to the system has to be replaced by taxes. The net effect, then, of such a policy is really a subsidy of local borrowers by the taxpayers, although this is rarely recognized explicitly as such. As the funds held by many public employee retirement systems get larger, a small interest differential can grow to be a substantial subsidy. Even if local investments are favored only when the yields are otherwise equal to those obtainable on comparable investments elsewhere, equality is often a matter of judgment easily affected by extraneous considerations where local investments are concerned. Criteria limited to financial considerations minimize the risk of ill-judged local investments.

Proposals have been made on occasion to use the funds of public employee retirement systems to subsidize ecological investments. This question is similar to that involving local investment of retirement funds. If the investments are at competitive yields and risks, they can be purchased without special consideration. However, if retirement funds take

lower yields for this type of investment, the true cost of the ecological investment is masked, as is the true cost of the retirement program.

Political considerations become a factor for other reasons when public employee retirement systems own common stocks. Since stock ownership carries with it the right to vote at stockholder meetings, the retirement system may be called upon to take positions on controversial corporate issues. One theory rather widely accepted in this area is that ownership of stock is inherently a subscription to the practices of management: If management is inferior, the stock should be sold. Therefore, by this theory, the votes of the retirement system stock should be in support of management's position on controversial issues. It should be noted, however, that some retirement systems use their votes to try to influence corporate management on issues that are believed to affect the systems or the political bodies which contribute to the systems.

PROFESSIONAL INVESTMENT MANAGEMENT

Various methods are used to insulate the investing authority from political pressures and to provide professional investment guidance. Having trained investment managers on the system's staff is a step in this direction. A major share of the responsibility for the investment strategy can then be transferred from the politically sensitive retirement system boards to the investment managers and their staffs.

The research and expense advantages of larger staffs can be obtained by the use of unified investment authorities. These exist in various forms in Minnesota, New Jersey, New Mexico, Oregon, and Wisconsin. The Wisconsin Investment Board is a good example. It exercises exclusive control of the investments of the major pension funds in the state of Wisconsin. Seven trustees, who are appointed by the governor and confirmed by the senate, direct a staff of professional investment men. On June 30, 1971, the funds managed by

the Board totaled about \$1.7 billion, including over \$600 million in common stocks.

The Wisconsin Investment Board also uses outside investment counsel to augment the Board's research capabilities in the areas of common and preferred stocks. Retirement systems in many other states also obtain investment counsel, either to make final investment decisions or, more commonly, to provide advice to the systems' staffs. The advice of the investment counsel is often required, sometimes by law, with respect to common stock investments.

Purchasing mutual funds is another way to transfer investment authority to an entity outside the system's control. Once the system makes its choice of funds, it is relieved of further decisions; the control of the regular buying and selling of securities then rests with the management of the mutual funds.

Of a similar nature is the commitment of funds to an insurance company, trust company, or bank trust department for investment. Such investment institutions have many of the features of mutual funds, since the money can be pooled with the funds of other retirement plans. The investment decisions are then made solely by the bank, trust company or insurance company. These organizations also make investment staff available to large retirement systems as investment counsel, either with complete responsibility for the investments or as advisors to the investing authority of the retirement system as to the securities to be purchased and sold.

Most large public employee retirement systems have not delegated broad investment discretion to funding institutions of the sort described in the previous paragraph. In fact, legislatures have generally not granted the right of such delegation to any retirement system. An exception is the Idaho Public Employee Retirement System, where investments are held in trust by two banks, one local and one in New York. The bank trust departments make investments under the broad guidelines imposed upon them by the retirement board of the system. In 1969, incidentally, the Idaho system had the largest percentage (47 percent) of stock investments

of any of the large systems of the United States and Canada.¹²

The importance of professional guidance in the investment area is being increasingly recognized. In fact, some large public employee retirement systems are following the lead of large private pension plans in using multiple investment managers, particularly for their common stock portfolios. An example is the New York City Teachers Retirement System, which uses ten separate investment managers for its variable annuity program—one insurance company, five bank and trust companies, two broker-dealers, and two investment management companies.

Public employee retirement systems are turning to investments of a more sophisticated nature as they shift their funds from governmental securities into mortgages, corporate bonds, stocks, and even such exotic forms of investment as real estate, private placements, and purchase-leasebacks. The funds being shifted and the new money to be invested are staggering. The pattern of growth indicated for public employee retirement system funds in the past few years, as exemplified in Tables 4 and 5, is expected to continue to make available unprecedented sums for investment. Projections indicate new capital funds generated by these systems will exceed ten billion dollars per year in the 1980s.¹³

¹² Investment Bankers Association of America, *State and Local Pension Funds 1970* (Washington, D.C., 1970).

¹³ Daniel M. Holland, *Private Pension Funds: Projected Growth* (New York: National Bureau of Economic Research, 1966).