

This PDF is a selection from an out-of-print volume from the National Bureau of Economic Research

Volume Title: Pensions in the American Economy

Volume Author/Editor: Laurence J. Kotlikoff and Daniel E. Smith

Volume Publisher: University of Chicago Press

Volume ISBN: 0-226-45146-1

Volume URL: <http://www.nber.org/books/kotl83-1>

Publication Date: 1983

Chapter Title: Financial Aspects of Private Pension Plans

Chapter Author: Laurence J. Kotlikoff, Daniel E. Smith

Chapter URL: <http://www.nber.org/chapters/c7265>

Chapter pages in book: (p. 290 - 351)

---

## 5 Financial Aspects of Private Pension Plans

### 5.1 Contributions to Private Pension Funds: Time Series Analysis

According to estimates of the American Council of Life Insurance, contributions to private pension funds rose from \$2.09 billion in 1950 to \$32.17 billion in 1975 (table 5.1.1). In constant 1980 dollars the increase was \$42.08 billion, from \$7.17 billion (1980 dollars) in 1950 to \$49.25 billion (1980 dollars) in 1975. The rate of growth in real (1980 dollars) pension contributions averaged 7.97 percent over the 25-year period.

Pension funds administered by insurance companies (insured pension funds) accounted for roughly 30 percent of total pension fund contributions during these years. Tabulations of noninsured pension fund contributions are not available for the period after 1975; however, if one applies the average 1970 to 1975 ratio of insured to total contributions to the post-1975 value of insured contributions, estimates of total contributions are \$50.33 billion for 1976, \$49.88 billion for 1977, \$55.12 billion for 1978, \$61.32 billion for 1979, and \$73.83 billion for 1980.

Table 5.1.2 reports the ratio of pension fund contributions to the number of covered workers in the private sector. This table is presented to place the aggregate figures of table 5.1.1 in some perspective. In considering these data, it is important to bear in mind that pension fund contributions—in particular, those from defined benefit plans—can be used, in part, to fund benefit payments to existing beneficiaries as well as to fund future benefit payments to currently covered workers. In 1975, the latest year with complete data on total contributions, private pension fund contributions per covered worker totaled \$1,061. The 1979 figure based on estimated values of total 1980 pension fund contributions is \$1,742. The average annual earnings of full-time private sector workers in 1975 and 1979 were \$10,673 and \$14,322, respectively.

Another way to grasp the magnitude of pension fund contributions is to compare the level of these contributions to National Income and Product Account estimates of private sector wages and salary compensation. The ratio of the former magnitude to the latter was .0169 in 1950, .0252 in 1960, .0340 in 1970, .0510 in 1975, and .0551 (estimated) in 1979 (table 5.1.3).

The U.S. Chamber of Commerce is another source of time series data on contributions to private pension funds. Since 1951 the U.S. Chamber of Commerce has conducted eighteen surveys of the compensation practices of American firms.

The Chamber of Commerce collected information on the employee's pension plan trust fund plus the pension plan's direct payments to the firm's beneficiaries. Payments to beneficiaries are included in pension "contribution" payments only when these payments are made by noninsured pension plans (pension plans not administered by insurance companies).

Table 5.1.4 presents U.S. Chamber of Commerce estimates of employer-paid fringe benefits as a percent of payroll. Over the period 1951 through 1980 this percentage doubled

from 18.7 percent to 37.1 percent. Over one-third of this increase reflects increases in the category "pension, insurance, and other agreed-upon payments." The ratio of these fringe benefit payments to total payroll was .054 in 1951; it was .126 in 1980. Pension plan contributions rose from 3.6 to 5.4 percent of payroll in the 30-year period. Despite the differences in definitions of pension fund contributions, wage base, and sample universe, the pension plan contribution figures of table 5.1.4 seem to be in rough accord with those of table 5.1.3.

The absolute dollars fringe benefit payments per employee for the various types of fringe payments are presented in table 5.1.5. For 1980 the Chamber of Commerce reports annual fringe benefit payments of \$6,084, of which pension payments represent \$888. This figure is close to the \$954 figure for contributions per employee made by employers to social security old-age, survivors, disability, and health insurance trust funds.

Table 5.1.6 reproduces Chamber of Commerce cross-tabulations of pension contributions by industry. Over the 1951 to 1980 period, nonmanufacturing firms included in the surveys reported larger contributions as a percent of payroll than manufacturing firms; however, these totals are simple averages of the Chamber of Commerce sample and may differ substantially from employee-weighted numbers, or, indeed, from averages computed in the entire universe of firms in manufacturing as well as nonmanufacturing, many of which are not represented in the Chamber of Commerce sample.

Public utilities, banks, finance and trust companies, and insurance contributions report the largest pension contributions as a percent of payroll. In the manufacturing industries, contribution rates are highest in the petroleum industry; 1980 petroleum industry pension contributions represented 11.4 percent of payroll; in contrast, the textile industry, the industry with the smallest pension contribution rates, reported pension contributions equal to 2.0 percent of payroll in 1980. This table includes data on firms that both do and do not report pension payments. Table 5.1.7 focuses on contribution rates of just those firms making payments. While there has been some growth in the ratio of pension contributions to payroll for this subsample over the last three decades, the growth has been small, from 5.1 percent to 6.2 percent. In manufacturing, the growth was large; sample average contribution rates increased from 3.8 to 5.7 percent.

Table 5.1.1  
Contributions to Private Pension Funds, by Type of Administrator, 1950-1980  
(Annual Data, Millions of Dollars)

	Type of Administrator		All Private Pension Funds
	Insured Private Pension Funds <sup>1</sup>	Noninsured Private Pension Funds	
1950	935	1,160	2,095
1955	1,420	2,460	3,880
1956	1,460	2,820	4,280
1957	1,590	3,200	4,790
1958	1,660	3,260	4,920
1959	1,760	3,700	5,460
1960	1,620	4,000	5,620
1961	1,650	4,100	5,790
1962	1,760	4,480	6,240
1963	1,940	4,710	6,650
1964	2,120	5,340	7,460
1965	2,400	6,670	8,460
1966	2,540	6,670	9,210
1967	2,820	7,310	10,130
1968	3,150	8,590	11,740
1969	3,850	9,500	13,350
1970	3,900	10,740	14,640
1971	4,960	12,240	17,700
1972	5,500	13,940	19,440

Table 5.1.1 Continued  
 Contributions to Private Pension Funds, by Type of Administrator, 1950-1980  
 (Annual Data, Millions of Dollars)

	Type of Administrator		All Private Pension Funds
	Insured Private Pension Funds <sup>1</sup>	Noninsured Private Pension Funds	
1973	6,480	15,640	22,120
1974	7,720	18,430	26,150
1975	10,740	21,430	32,170
1976	14,690	NA	NA
1977	14,560	NA	NA
1978	16,090	NA	NA
1979	17,900	NA	NA
1980	21,550	NA	NA

Source: American Council of Life Insurance  
 NA - Not Available

1. Contributions net of withdrawals. That is, the reported figures are total contributions to insured private pension funds less total equity removed from insured private pension funds by workers withdrawing from plans.

Table 5.1.2  
 Contributions to Private Pension Funds Per Covered Worker, by Type of Administrator, 1950-1979

	Type of Administrator		Contribution Per Covered Worker, All Private Pension Funds <sup>2</sup>
	Contributions Per Covered Worker, Insured Private Pension Funds <sup>1</sup>	Contributions Per Covered Worker, Noninsured Private Pension Funds	
1950	\$ 359.62	\$ 161.11	\$ 213.78
1955	373.68	212.07	273.24
1956	356.10	220.31	276.13
1957	361.36	233.58	286.83
1958	368.89	227.97	286.05
1959	366.67	245.03	300.00
1960	330.61	245.40	497.35
1961	323.53	242.11	459.52
1962	345.10	250.28	465.67
1963	359.26	255.98	468.31
1964	353.33	287.10	481.29
1965	387.10	317.28	506.59
1966	368.12	343.81	535.47
1967	366.23	369.19	556.59
1968	398.73	427.36	627.81
1969	447.67	446.01	695.31
1970	419.35	488.18	743.15
1971	513.46	539.21	847.29
1972	532.43	600.86	930.14
1973	573.45	648.96	757.53
1974	659.83	755.33	877.52
1975	917.95	860.64	1,061.72
1976	1,156.69	NA	NA
1977	997.26	NA	NA
1978	975.15	NA	NA
1979	1,000.00	NA	NA

Source: American Council of Life Insurance  
 NA - Not Available

1. Contributions net of withdrawals. That is, the reported figures are total contributions to insured private pension funds less total equity removed from insured private pension funds by workers withdrawing from plans.

2. Adjusted for double counting. Many workers are covered both by insured and by noninsured private pension plans. This last column counts each such worker only once.

Table 5.1.3  
Private Pension Fund Contributions as a Percentage of Private Wage and Salary Compensation, 1950-1975

	Contributions to Private Pension Funds <sup>1</sup> (Millions of Dollars)	Private Wage and Salary Compensation <sup>2</sup> (Billions of Dollars)	Contributions as a Fraction of Wage and Salary Compensation (Percent)
1950	2,095	124	1.69
1955	3,880	175	2.22
1956	4,280	189	2.26
1957	4,790	198	2.42
1958	4,920	196	2.51
1959	5,460	213	2.56
1960	5,620	223	2.52
1961	5,790	228	2.54
1962	6,240	242	2.58
1963	6,650	253	2.63
1964	7,460	271	2.75
1965	8,460	268	3.18
1966	9,210	320	2.88
1967	10,130	342	3.00
1968	11,740	374	3.10
1969	13,350	410	3.30
1970	14,640	430	3.40
1971	17,200	453	3.80
1972	19,440	497	3.90
1973	22,120	552	4.00
1974	26,150	605	4.30
1975	32,170	631	5.10

Source: American Council of Life Insurance

1. From the American Council of Life Insurance.
2. From the National Income and Product Accounts.

Table 5.1.4  
Pension Contributions and Other Fringe Benefit Payments as Percent of Payroll, 1951-1980

Type of Benefit	1951	1953	1955	1957	1959	1961	1963	1965	1967	1969	1971	1973	1975	1977	1978	1979	1980
TOTAL EMPLOYEE FRINGE BENEFITS:																	
LEGALLY REQUIRED PAYMENTS (employer's share only)	3.5	3.2	3.6	3.9	4.2	5.1	5.6	4.9	5.9	6.4	6.3	7.5	8.0	8.5	9.0	9.0	8.9
Old-Age, Survivors, Dis- ability, and Health Insurance (FICA taxes)	1.4	1.3	1.8	2.1	2.3	2.7	3.0	2.7	3.9	4.6	4.5	5.3	5.7	5.4	5.6	5.8	5.8
Unemployment Compensation Workers' compensation (including estimated cost of self-insured)	1.4	1.1	1.0	1.0	1.1	1.5	1.7	1.4	1.0	0.8	0.7	1.2	1.0	1.5	1.7	1.5	1.4
Railroad Retirement Tax, Railroad Unemployment and Cash Sickness In- surance, state sickness benefits insurance, etc.	0.6	0.7	0.7	0.7	0.7	0.8	0.8	0.7	0.8	0.9	1.0	0.9	1.2	1.5	1.6	1.7	1.6
PENSION, INSURANCE, AND OTHER AGREED-UPON PAYMENTS (employer's share only)	5.4	5.9	6.3	6.8	7.2	7.9	7.8	7.7	8.0	8.3	10.0	10.5	11.6	12.7	12.2	12.1	12.6
Pension plan premiums and pension payments not covered by insurance- type plan (net)	3.6	3.8	3.8	4.1	4.3	4.2	3.9	3.7	4.0	4.2	4.9	5.1	5.5	5.9	5.6	5.4	5.4
Life Insurance Premiums; death benefits; hospital surgical, medical, and major medical insurance premiums, etc. (net)	1.4	1.8	2.0	2.2	2.3	2.7	2.9	3.0	3.2	3.5	4.5	4.6	5.2	5.9	5.6	5.7	5.8

Table 5.1.4 Continued  
 Pension Contributions and Other Fringe Benefit Payments as Percent of Payroll, 1951-1980

Type of Benefit	1951	1953	1955	1957	1959	1961	1963	1965	1967	1969	1971	1973	1975	1977	1978	1979	1980
Salary contribution or long-term disability	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.2	0.2	0.3	0.3	0.3
Dental Insurance Premiums	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.1	0.2	0.2	0.3	0.3
Contributions to privately financed unemployment benefit funds	NA	NA	NA	0.1	0.1	0.1	0.1	0.1	0.1	NA	NA	NA	NA	NA	NA	NA	NA
Separation or termination pay allowances	NA	NA	NA	NA	NA	0.1	0.1	0.1	0.1	0.1	0.1	0.1	NA	NA	NA	NA	NA
Discounts on goods and services purchased from company by employees	0.2	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1
Employee meals furnished by company	0.2	0.2	0.3	0.3	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2
Miscellaneous payments	0.2	0.2	0.3	0.3	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.1
PAID REST PERIODS, LUNCH PERIODS, WASH-UP TIME, TRAVEL TIME, CLOTHES-CHANGE TIME, GET-READY TIME, ETC.	1.9	2.0	2.2	2.3	2.4	2.6	2.7	2.5	2.7	2.9	3.4	3.5	3.6	3.5	3.6	3.5	3.5
PAYMENTS FOR TIME NOT WORKED	6.0	6.2	6.3	6.9	7.2	7.6	7.8	7.7	7.9	8.3	9.2	9.2	10.1	9.8	9.7	9.5	9.9
Paid vacations and payments in lieu of vacation	3.2	3.3	3.5	3.8	4.0	4.2	4.3	4.1	4.2	4.4	4.8	4.7	5.2	5.0	4.9	4.7	4.9
Payments for holidays not worked	2.0	2.1	2.0	2.3	2.3	2.5	2.6	2.6	2.6	2.7	3.0	3.0	3.3	3.2	3.2	3.2	3.4
Paid sick leave	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.8	0.9	1.0	1.1	1.2	1.2	1.2	1.2	1.3
Payments for State or National Guard duty, jury, witness, and voting pay allowances; payments for time lost due to death in family or other personal reasons, etc.	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.3
OTHER ITEMS	1.9	1.9	1.9	1.9	1.8	1.7	1.7	1.9	2.1	2.0	1.9	2.0	2.1	2.2	2.4	2.5	2.2
Profit-sharing payments	0.7	0.6	0.7	0.8	0.9	0.8	0.9	1.1	1.2	1.2	1.0	1.1	1.1	1.1	1.4	1.4	1.2
Contributions to employee thrift plans	NA	NA	NA	NA	NA	NA	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.3	0.3	0.3
Christmas or other special bonuses, service awards, suggestion awards, etc.	1.0	1.0	1.0	0.8	0.7	0.7	0.5	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Employee education expenditures (tuition refunds, etc.)	NA	NA	NA	NA	NA	NA	NA	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
Special wage payments ordered by courts, payments to union stewards, etc.	0.2	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1

Source: Survey Research Center, U.S. Chamber of Commerce  
 NA - Not Available

Table 5.1.5  
 Pension Contributions and Other Fringe Benefit Payments per Employee: 1951-1980  
 (Dollars per Year)

Type of Benefit	1951	1953	1955	1957	1959	1961	1963	1965	1967	1969	1971	1973	1975	1977	1978	1979	1980
TOTAL ANNUAL EMPLOYEE BENEFITS AS DOLLARS PER YEAR PER EMPLOYEE	644	720	819	981	1,132	1,254	1,431	1,502	1,719	2,052	2,544	3,230	3,984	4,692	5,138	5,560	6,084
LEGALLY REQUIRED PAYMENTS (employer's share only)	119	121	145	170	205	256	313	297	383	468	522	746	903	1,087	1,249	1,368	1,446
Old-Age, Survivors, Disability, and Health Insurance (FICA taxes)	47	50	73	91	112	134	168	163	254	335	372	527	636	693	783	877	954
Unemployment Compensation	49	42	41	44	53	76	95	82	65	57	60	117	114	193	232	229	223
Workers' compensation (including estimated cost of self-insured)	21	27	29	32	35	40	45	45	52	67	82	92	141	186	225	255	261
Railroad Retirement Tax, Railroad Unemployment and Cash Sickness Insurance, state sickness benefits insurance, etc.	2	2	2	3	5	6	5	7	12	9	8	10	12	15	9	7	8
PENSION, INSURANCE, AND OTHER AGREED-UPON PAYMENTS (employer's share only)	185	222	254	310	360	398	436	468	513	612	824	1,032	1,302	1,637	1,697	1,844	2,066
Pension plan premiums and pension payments not covered by insurance-type plan (net)	122	141	153	185	214	211	218	226	261	306	402	503	620	759	779	825	888
Life Insurance Premiums; death benefits; hospital surgical, medical, and major medical insurance premiums, etc. (net)	47	67	80	99	114	136	162	184	209	260	369	457	582	760	774	861	950

Table 5.1.5 Continued  
Pension Contributions and Other Fringe Benefit Payments per Employee: 1951-1980  
(Dollars per Year)

Type of Benefit	1951	1953	1955	1957	1959	1961	1963	1965	1967	1969	1971	1973	1975	1977	1978	1979	1980
Salary continuation or long-term disability	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	23	31	41	46	41
Dental insurance premiums	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11	22	30	40	55
Contributions to privately financed unemployment benefit funds	NA	NA	1	5	5	4	5	4	3	3	4	3	NA	NA	NA	NA	NA
Separation or termination pay allowances	2	1	1	2	2	5	6	4	3	5	5	6	NA	NA	NA	NA	NA
Discounts on goods and services purchased from company by employees	6	5	8	5	5	6	11	13	13	9	12	15	18	16	15	14	22
Employee meals furnished by company	NA	NA	NA	NA	NA	20	17	17	12	15	13	22	21	23	24	23	29
Miscellaneous payments	8	8	11	14	20	16	17	20	12	14	19	26	27	26	34	35	23
PAID REST PERIODS, LUNCH PERIODS, WASH-UP TIME, TRAVEL TIME, CLOTHES-CHANGE TIME, GET-READY TIME, ETC.	64	74	89	104	119	131	151	150	179	214	280	341	408	448	504	539	577
PAYMENTS FOR TIME NOT WORKED	211	233	254	311	358	382	435	471	511	609	755	914	1,137	1,245	1,362	1,434	1,627
Paid vacations and payments in lieu of vacation	112	125	141	171	199	211	240	252	271	321	400	466	580	636	684	710	808
Payments for holidays not worked	70	78	81	104	114	126	145	161	169	200	244	295	376	405	452	482	550
Paid sick leave	21	22	24	27	35	35	39	43	52	65	81	110	134	156	174	187	215
Payments for State or National Guard duty, jury, witness, and voting pay allowances; payments for time lost due to death in family or other personal reasons, etc.	8	8	8	9	10	10	11	15	19	23	30	43	47	48	52	55	54
OTHER ITEMS	65	70	77	86	90	87	96	116	133	149	163	197	234	275	326	375	368
Profit-sharing payments	23	23	28	36	45	40	50	67	77	85	86	112	123	141	189	216	202
Contributions to employee thrift plans	NA	NA	NA	NA	NA	NA	5	6	8	12	16	22	31	47	43	43	52
Christmas or other special bonuses, service awards, suggestion awards, etc.	36	38	41	36	35	36	28	27	33	35	35	37	47	50	52	64	58
Employee education expenditures (tuition refunds, etc.)	NA	NA	NA	NA	NA	1	2	6	4	6	8	8	12	15	20	25	33
Special Wage payments ordered by courts, payments to union stewards, etc.	6	9	8	14	10	10	11	10	11	11	18	18	21	22	22	27	23

Source: Survey Research Center, U.S. Chamber of Commerce  
NA - Not Available

Table 5.1.6  
Pension Contributions as Percent of Payroll, by Industry, 1951-1980

Industry Groups	1951	1953	1955	1957	1959	1961	1963	1965	1967	1969	1971	1973	1975	1977	1978	1979	1980
ALL INDUSTRIES	3.6	3.8	3.8	4.1	4.3	4.2	3.9	3.7	4.0	4.2	4.9	5.1	5.5	5.9	5.6	5.4	5.4
MANUFACTURING	2.4	2.6	2.8	3.1	3.3	3.4	3.0	2.8	3.2	3.3	4.1	4.3	4.9	5.3	4.9	4.7	4.8
Food, beverages, and tobacco	1.8	2.4	2.7	3.3	3.1	4.1	4.2	3.5	4.1	4.4	5.1	5.3	5.7	6.1	4.6	5.9	5.1
Textile products and apparel	1.3	1.6	2.0	1.9	2.7	1.7	2.3	1.1	1.6	2.0	2.3	2.8	2.9	2.0	2.1	2.0	2.0
Pulp, paper, lumber, and furniture	1.8	2.1	1.9	2.3	2.6	2.6	2.7	2.3	2.3	2.2	3.0	3.2	3.5	4.1	4.6	4.1	4.6
Printing and publishing	2.5	3.3	4.0	3.5	2.8	2.1	2.0	2.2	3.4	3.3	3.6	3.9	4.1	5.1	4.9	5.0	4.7
Chemicals and allied products	3.3	3.6	4.0	4.0	4.3	4.7	4.4	4.1	4.3	4.0	4.4	5.6	6.5	6.9	6.7	6.4	7.3
Petroleum industry	8.1	8.8	7.4	8.6	8.9	8.2	7.6	4.1	4.7	4.9	7.2	8.0	9.3	9.6	10.3	11.1	11.4
Rubber, leather, and plastic products	1.1	1.6	1.8	3.5	3.8	3.9	3.3	3.1	3.4	3.8	5.3	4.5	6.7	4.9	2.5	3.3	3.7
Stone, clay, and glass products	3.4	3.0	2.9	3.5	3.1	3.2	3.1	2.6	3.7	3.9	4.9	5.5	4.7	5.9	5.2	5.2	5.0
Primary metal industries	3.2	2.9	2.6	2.8	3.5	3.5	3.4	3.5	4.5	4.5	5.3	5.1	7.2	6.7	5.6	5.7	6.2
Fabricated metal products (excluding machinery and transportation equipment)	2.1	2.0	2.7	2.9	3.0	3.6	3.6	2.6	2.9	2.4	3.5	3.9	4.4	4.4	4.6	4.1	4.9
Machinery (excluding electrical)	2.1	2.5	2.9	3.5	3.8	3.7	3.8	3.3	3.5	3.3	3.9	4.1	4.7	5.3	5.3	4.8	4.7
Electrical machinery, equipment, and supplies	1.8	2.2	2.5	2.4	2.9	3.0	2.8	2.6	2.4	3.1	3.6	3.8	3.8	4.9	4.6	3.7	3.8
Transportation equipment	1.8	2.0	2.5	3.3	3.3	3.2	2.8	2.9	3.3	3.5	4.6	4.7	5.3	6.1	5.4	4.9	5.3
Instruments and miscellaneous manufacturing industries	2.8	3.3	2.8	2.8	3.2	3.8	3.5	2.6	2.4	2.6	4.3	3.7	4.4	4.3	4.9	4.5	3.9

Table 5.1.6 Continued

Pension Contributions as Percent of Payroll, by Industry, 1951-1980

Industry Groups	1951	1953	1955	1957	1959	1961	1963	1965	1967	1969	1971	1973	1975	1977	1978	1979	1980
NONMANUFACTURING	5.2	5.8	5.3	5.9	6.1	5.9	5.7	5.5	5.4	5.5	6.0	6.2	6.4	6.9	6.5	6.4	6.1
Public Utilities (electric, gas, water, telephone, etc.)	5.8	6.2	6.7	6.6	7.2	6.7	6.8	6.8	6.8	6.8	7.8	7.6	8.7	9.5	9.6	9.8	9.4
Department stores	NA	NA	NA	NA	NA	NA	NA	1.9	2.0	1.7	1.8	2.5	2.7	2.1	2.7	2.7	2.6
Trade (wholesale and other retail)	1.5	1.9	2.2	2.3	2.3	2.0	2.4	1.7	2.0	1.6	2.3	2.4	2.6	3.2	2.4	2.2	2.2
Banks, finance companies, and trust companies	6.4	7.3	7.8	8.2	7.8	7.7	7.3	6.8	6.1	6.1	6.2	6.1	6.4	7.5	7.0	6.4	6.6
Insurance companies	5.6	5.4	6.9	7.9	8.1	7.4	7.1	6.2	6.7	6.7	6.9	7.0	7.0	7.2	7.2	7.1	6.7
Hospitals	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.5	3.3	2.6	3.5	3.6
Hotels	1.4	2.4	0.4	0.8	0.6	0.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Miscellaneous non- manufacturing industries	1.8	3.6	5.9	2.7	2.5	2.1	2.2	2.4	2.5	3.4	2.9	4.0	4.2	5.1	6.0	4.8	5.3

Source: Survey Research Center, U.S. Chamber of Commerce  
NA - Not Available

Table 5.1.7

Pension Contributions as Percent of Payroll for Companies Reporting Pension Payments, 1955-80

Industry Groups	1955	1957	1959	1961	1963	1965	1967	1969	1971	1973	1975	1977	1978	1979	1980
ALL INDUSTRIES	5.1	5.1	5.0	4.9	4.6	4.4	4.8	4.8	5.5	5.7	6.2	6.5	6.3	6.3	6.2
MANUFACTURING	3.8	3.9	3.9	4.0	3.7	3.4	3.9	4.0	4.6	4.8	5.6	5.8	5.6	5.5	5.7
Food, beverages, and tobacco	4.0	4.1	3.5	4.6	4.7	4.1	4.8	4.8	5.6	5.8	5.9	6.4	5.2	6.4	6.4
Textile products and apparel	3.3	3.1	3.6	2.9	3.8	2.1	2.7	2.9	2.7	3.3	3.6	2.6	2.5	2.9	2.6
Pulp, paper, lumber, and furniture	2.9	2.9	3.3	3.0	3.2	2.8	3.3	2.7	3.6	3.4	4.0	4.6	5.1	5.1	5.7
Printing and publishing	5.3	4.2	3.0	2.5	3.1	2.7	3.8	3.7	3.8	4.4	4.7	5.1	5.3	5.6	5.1
Chemicals and allied products	4.4	4.5	4.8	5.1	4.7	4.7	4.9	4.5	4.9	5.8	6.5	7.2	6.9	6.8	7.5
Petroleum industry	8.3	8.6	8.9	8.8	8.5	4.8	4.7	4.9	7.2	8.0	9.3	9.6	10.3	11.1	12.6
Rubber, leather, and plastic products	3.2	4.0	4.3	5.2	4.9	3.9	3.6	4.2	5.7	4.5	6.7	4.9	3.3	4.0	4.6
Stone, clay, and glass products	3.8	4.4	3.6	3.6	4.2	3.6	4.3	4.5	5.4	5.7	4.9	6.2	5.5	5.2	5.0
Primary metal industries	3.3	3.3	4.1	4.0	4.0	3.9	4.9	4.9	5.6	5.4	7.6	6.7	6.5	6.5	6.8
Fabricated metal products (excluding machinery and transportation equipment)	4.0	3.8	3.7	4.3	4.4	3.1	3.5	3.2	4.2	4.5	5.0	5.2	5.5	4.9	5.5
Machinery (excluding electrical)	3.7	4.4	4.4	4.2	4.4	3.8	4.0	4.0	4.8	4.8	5.5	6.0	6.0	5.7	5.6
Electrical machinery, equipment, and supplies	3.4	3.7	3.6	3.9	3.7	3.3	3.3	3.9	4.6	5.1	4.9	5.6	5.8	5.1	5.1
Transportation equipment	3.4	4.0	3.9	3.4	3.3	3.1	3.9	3.9	4.7	5.2	6.0	6.5	5.8	5.4	5.9
Instruments and miscellaneous manufacturing industries	4.1	3.5	3.8	4.4	4.7	2.8	3.3	3.8	4.7	4.2	5.5	4.8	5.4	5.5	5.3
NONMANUFACTURING	6.9	7.0	6.9	6.7	6.1	6.0	6.0	6.3	6.6	6.7	7.0	7.5	7.2	7.3	6.7
Public Utilities (electric, gas, water, telephone, etc.)	6.8	6.7	7.3	6.8	6.9	6.9	6.9	7.0	7.8	7.6	9.0	9.5	9.8	9.9	9.4
Department stores	NA	NA	NA	NA	NA	2.4	2.3	2.2	2.3	3.0	3.1	3.2	2.9	3.2	3.3
Trade (wholesale and other retail)	2.6	2.6	2.8	2.4	2.7	2.2	2.7	2.3	3.0	3.4	3.1	4.8	3.5	4.0	4.6
Banks, finance companies, and trust companies	8.1	8.5	8.1	7.9	7.7	7.2	6.9	6.8	6.8	6.3	7.1	7.9	7.6	6.6	6.8
Insurance companies	7.1	7.9	8.1	7.7	7.5	6.6	6.9	6.8	7.3	7.3	7.5	7.4	7.6	7.8	7.1
Hospitals	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.6	3.4	2.7	3.7	3.7
Hotels	2.7	3.2	2.9	2.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Miscellaneous non- manufacturing industries	10.7	3.2	3.9	3.4	3.1	3.3	3.7	4.5	3.8	5.2	5.9	6.9	8.0	6.9	6.9

Source: Survey Research Center, U.S. Chamber of Commerce  
NA - Not Available

## 5.2 Contributions to Private Pension Funds: Cross-sectional Analysis

This section uses data from the IRS 5500 File (1977) to examine how contributions to private pension funds differ by pension fund characteristics. These 1977 data are the most recent available on contributions and other financial aspects of pension funds. The numbers reported in tables 5.2.1 to 5.2.4 are population estimates. Weighting procedures for compiling these estimates are discussed in chapter 2.

Table 5.2.1 shows contribution amounts and ratios of contributions to participants by plan type and plan size. In 1977 defined benefit and defined contribution plans reported over \$45 billion in pension fund contributions. Defined benefit plans accounted for \$28.9



billion (63.6 percent) of this total. Large pension plans with 1,000 or more participants contributed \$31.3 billion, 69.3 percent of the total. For defined benefit plans, large plans accounted for 77.2 percent of total contributions while the comparable figure for defined contribution plans was 55.5 percent.

Contributions divided by the number of active participants and the number of active vested participants provide a scaling of the contribution data that facilitates comparisons across pension plan characteristics. In principle, contributions per vested participant to defined benefit plans could equal the present value of the annual accrued claims of vested participants to future benefits. This would be true if plan sponsors always fully funded their vested liabilities and made no contributions to fund potential benefits for nonvested participants. In practice, some defined benefit plans are overfunded with respect to their vested accrued pension liabilities and some are underfunded. Overfunding can occur for two reasons. First, plans may fund benefits for nonvested employees on the basis of the probability that some of these employees will eventually become vested. And second, plans may fund projected rather than accrued benefits for vested employees. Another reason that contributions to the pension fund may be a poor gauge of annual accrued vested benefits is that a portion of current contributions may represent funding of past pension debt. ERISA and its minimum funding requirements allowed plans to amortize their pre-ERISA unfunded liability over 40 years. Hence, for some plans, a portion of current contributions is being used to retire this debt. In addition, amendments to plan provisions may generate actuarial gains or losses that also may be amortized over a lengthy period.

Table 5.2.1 reports 1977 contributions per active participant of \$1,060 for defined benefit plans and \$1,089 for defined contribution plans. Contributions per active vested participant, however, are quite different by plan type. Since almost 80 percent of defined contribution participants are vested but only 43 percent of defined benefit participants are vested, pension contributions per vested defined contribution participant are \$1,242 while they are \$2,360 for vested defined benefit participants. Very small plans, those with fewer than 25 active participants, report over twice the level of contributions per participant than do the largest plans. Plans with 100 to 499 participants report the smallest contributions per participant. The larger contribution ratios for the smallest plans may reflect the use of pension plans as an important tax shelter for small but lucrative partnerships and proprietorships, such as law firms and medical practices.

Pension plans provide participants with three primary tax advantages. First, the income that the participant receives in the form of accrued claims to future pension benefits is not taxable at the time the income is earned. In effect, participants receive a tax deduction from their total gross earnings equal in value to their annual accrued benefit. On the other hand, the principal plus return on this investment is taxed when the worker receives his (her) pension benefit. However, given the progressive nature of the U.S. tax system, the worker is likely to be in a lower marginal tax bracket during his (her) retirement years than during his (her) working years. Contributions to pension funds thus allow participants to engage in lifetime "income averaging" of the federal personal income tax.

The second advantage is that the return on pension fund investments accumulates tax free. This is commonly referred to as the "tax deferral" advantage of pension funds. Income averaging and tax deferral are, of course, most attractive to participants in high marginal tax brackets.

The third tax advantage, the importance of which is independent of the participant's marginal tax bracket, is that compensation in the form of pension contributions escapes federal, and often state, payroll taxation. The principal payroll tax at the federal level is the social security OASDI tax. If the 1980 OASDI payroll tax of 10.16 percent had been levied on 1980 private, state, and local pension contributions, federal tax receipts would have been \$9.93 billion larger than their actual value.

The next table, 5.2.2, shows contributions by industry. The \$19.9 billion contributions of manufacturing plans account for 44.0 percent of total contributions. Transportation, communications, and utilities made the second largest contribution in 1977, about \$7.6 billion. For defined benefit plans, average contributions per participant ranged from \$507 in retail

trade to \$1,704 in transportation, communications, and utilities. For defined contribution plans, services reported average contributions per participant of \$2,323, while transportation, communications, and utilities reported only \$649 per participant. Average contributions in 1977 per vested participant exceeded \$3,000 for defined benefit plans in both mining and transportation, communications, and utilities.

Pension fund contributions by employees represented only 12.7 percent of total contributions in 1977 (table 5.2.3). For defined benefit plans the figure is 2.8 percent; it is 30.0 percent for defined contribution plans. The level of employee contributions in defined contribution plans rises from \$111 per active vested participant in the smallest plans to over \$500 in the largest plans. There is no similar correlation between employee contributions per vested participant and plan size for defined benefit plans.

The extent of employee contributions in defined contribution plans differs markedly across industries. As table 5.2.4 indicates, the employee share of total contributions exceeds 40 percent in manufacturing and transportation, communications, and utilities. In construction the percentage is 3.6, in wholesale trade it is 7.2, and in service it is 8.5.

Table 5.2.1  
Private Pension Fund Contributions Per Active Participant by Plan Type and Plan Size, 1977

	Total Contributions	Active Participants	Contribution Per Active Participant	Vested Active Participants <sup>1</sup>	Contribution Per Vested Active Participant <sup>1</sup>
<u>1-24 Participants</u>					
Defined Benefit	\$1,598,584,557	549,931	\$2,717	382,833	\$3,335
Defined Contribution	3,864,937,160	1,559,439	2,362	1,245,872	2,644
<u>25-49 Participants</u>					
Defined Benefit	446,508,442	440,808	1,012	239,933	1,819
Defined Contribution	808,255,518	688,677	1,173	505,942	1,511
<u>50-99 Participants</u>					
Defined Benefit	549,755,529	664,632	827	323,263	1,661
Defined Contribution	667,440,649	629,800	1,059	493,455	1,240
<u>100-249 Participants</u>					
Defined Benefit	989,683,605	1,353,128	731	597,794	1,603
Defined Contribution	738,954,041	826,374	894	620,304	1,160
<u>250-499 Participants</u>					
Defined Benefit	1,241,716,649	1,628,263	764	698,235	1,737
Defined Contribution	564,676,336	675,825	835	502,492	1,089
<u>500-999 Participants</u>					
Defined Benefit	1,717,917,505	2,159,164	795	919,693	1,830
Defined Contribution	684,152,264	783,352	873	590,696	1,104
<u>1,000-4,999 Participants</u>					
Defined Benefit	\$5,658,495,934	6,085,872	\$929	2,559,764	\$2,139
Defined Contribution	2,266,190,781	2,525,051	897	1,957,600	1,084
<u>5,000-9,999 Participants</u>					
Defined Benefit	3,062,380,122	2,909,613	1,052	1,243,197	2,389
Defined Contribution	1,301,399,460	1,439,697	903	1,180,324	1,018
<u>10,000+ Participants</u>					
Defined Benefit	13,456,846,356	11,203,360	1,201	4,621,382	2,769
Defined Contribution	5,593,038,090	5,845,584	956	4,872,962	1,016
<u>TOTAL Participants</u>					
Defined Benefit	28,724,888,703	26,994,784	1,060	11,586,097	2,360
Defined Contribution	16,489,045,302	14,972,793	1,089	11,969,652	1,242

Source: IRS 5500 File (1977)

1. Includes both fully and partially vested participants. Plans with no vested participants were excluded from calculations.

Table 5.2.2  
Private Pension Fund Contributions Per Active Participant by Plan Type and Industry, 1977

	Total Contributions	Active Participants	Contribution Per Active Participant	Vested Active Participants <sup>1</sup>	Contribution Per Vested Active Participant <sup>1</sup>
<u>Agriculture, Forestry and Fishing</u>					
Defined Benefit	\$92,683,137	95,567	\$924	57,770	\$1,567
Defined Contribution	57,058,173	50,678	1,118	38,661	1,370
<u>Mining</u>					
Defined Benefit	383,358,623	264,911	1,426	107,191	3,375
Defined Contribution	274,709,805	192,958	1,423	143,342	1,816
<u>Construction</u>					
Defined Benefit	1,510,583,652	1,762,537	849	735,129	1,780
Defined Contribution	697,900,847	490,489	1,413	340,628	1,670
<u>Manufacturing</u>					
Defined Benefit	13,390,390,328	11,885,117	1,123	5,479,914	2,377
Defined Contribution	6,498,368,284	5,997,136	1,082	4,613,581	1,243
<u>Transportation, Communications, and Utilities</u>					
Defined Benefit	6,039,109,966	3,533,335	1,704	1,606,702	3,506
Defined Contribution	1,570,123,856	2,417,304	649	2,255,592	675
<u>Wholesale Trade</u>					
Defined Benefit	613,827,012	721,615	842	306,018	1,836
Defined Contribution	699,951,574	575,418	1,205	440,654	1,464
<u>Retail Trade</u>					
Defined Benefit	\$958,323,777	1,885,340	\$507	620,088	\$1,483
Defined Contribution	1,275,373,155	1,501,755	848	1,214,018	1,029
<u>Finance, Insurance, and Real Estate</u>					
Defined Benefit	2,149,642,317	2,005,262	1,068	740,545	2,847
Defined Contribution	1,526,826,183	1,501,247	1,015	1,206,756	1,196
<u>Services</u>					
Defined Benefit	1,670,420,537	1,911,518	870	698,324	2,198
Defined Contribution	2,817,351,095	1,210,032	2,323	922,136	2,760
<u>Tax-Exempt Organizations</u>					
Defined Benefit	1,915,249,806	2,924,065	653	1,233,121	1,459
Defined Contribution	1,056,970,639	1,028,697	878	788,358	1,054
<u>Not Classified</u>					
Defined Benefit	1,299,544	2,512	517	1,290	873
Defined Contribution	14,411,685	7,074	2,037	5,920	2,389
<u>TOTAL</u>					
Defined Benefit	28,724,888,703	26,994,784	1,060	11,586,097	2,360
Defined Contribution	16,489,045,302	14,972,793	1,089	11,969,652	1,242

Source: IRS 5500 File (1977)

1. See note 1, table 5.2.1.

Table 5.2.3  
Employee Pension Fund Contributions by Plan Size and Plan Type, 1977

	Employee Contributions	Total Contributions	Ratio of Employee to Total Contributions	Employee Contribution Per Vested Active Participant <sup>1</sup>
<u>1-24 Participants</u>				
Defined Benefit	\$27,998,532	\$1,598,584,557	.018	\$62
Defined Contribution	292,227,667	3,864,937,160	.076	111
<u>25-49 Participants</u>				
Defined Benefit	10,790,412	446,508,442	.024	44
Defined Contribution	65,359,099	808,255,518	.081	126
<u>50-99 Participants</u>				
Defined Benefit	19,617,950	549,755,529	.036	60
Defined Contribution	55,728,767	667,440,649	.083	99
<u>100-249 Participants</u>				
Defined Benefit	35,715,046	989,683,605	.036	58
Defined Contribution	100,072,543	738,954,041	.135	156
<u>250-499 Participants</u>				
Defined Benefit	40,559,060	1,244,716,649	.033	56
Defined Contribution	114,691,142	564,676,336	.203	215

Table 5.2.3 Continued  
Employee Pension Fund Contributions by Plan Size and Plan Type, 1977

	Employee Contributions	Total Contributions	Ratio of Employee to Total Contributions	Employee Contribution Per Vested Active Participant <sup>1</sup>
<u>500-999 Participants</u>				
Defined Benefit	56,484,160	1,717,917,505	.033	61
Defined Contribution	167,747,875	684,153,264	.245	263
<u>1,000-4,999 Participants</u>				
Defined Benefit	\$172,590,820	\$5,658,495,934	.031	\$65
Defined Contribution	785,218,867	2,266,190,781	.346	365
<u>5,000-9,999 Participants</u>				
Defined Benefit	60,065,926	3,062,380,122	.070	35
Defined Contribution	554,396,007	1,301,399,460	.426	424
<u>10,000+ Participants</u>				
Defined Benefit	375,125,722	13,456,846,356	.279	81
Defined Contribution	2,817,217,347	5,593,038,090	.504	506
<u>TOTAL Participants</u>				
Defined Benefit	798,947,632	28,724,888,703	.028	66
Defined Contribution	4,952,659,317	16,489,045,302	.300	359

Source: IRS 5500 File (1977)

1. See note 1, table 5.2.1.

Table 5.2.4  
Employee Pension Fund Contributions by Industry and Plan Type, 1977

	Employee Contributions	Total Contributions	Ratio of Employee to Total Contributions	Employee Contributions Per Vested Active Participant <sup>1</sup>
<u>Agriculture, Forestry and Fishing</u>				
Defined Benefit	\$7,546,934	\$92,683,137	.081	\$130
Defined Contribution	2,605,373	57,058,173	.046	67
<u>Mining</u>				
Defined Benefit	8,867,663	383,358,623	.023	74
Defined Contribution	94,419,068	274,709,805	.344	605
<u>Construction</u>				
Defined Benefit	9,394,168	1,510,583,652	.006	10
Defined Contribution	25,173,118	697,900,847	.036	54
<u>Manufacturing</u>				
Defined Benefit	440,880,804	13,390,390,328	.033	77
Defined Contribution	2,788,962,675	6,498,368,284	.429	508
<u>Transportation, Communications, and Utilities</u>				
Defined Benefit	91,753,777	6,039,109,966	.015	56
Defined Contribution	686,615,844	1,570,123,856	.437	299
<u>Wholesale Trade</u>				
Defined Benefit	14,718,887	613,827,012	.024	48
Defined Contribution	50,335,624	699,951,574	.072	111
<u>Retail Trade</u>				
Defined Benefit	\$31,982,859	\$958,323,777	.037	\$55
Defined Contribution	370,357,218	1,275,373,155	.290	303
<u>Finance, Insurance, and Real Estate</u>				
Defined Benefit	23,312,059	2,149,642,317	.011	31
Defined Contribution	424,011,570	1,526,826,183	.278	330
<u>Services</u>				
Defined Benefit	61,263,917	1,670,420,537	.037	86
Defined Contribution	238,632,993	2,817,351,095	.085	252
<u>Tax-Exempt Organizations</u>				
Defined Benefit	106,226,562	4,915,249,806	.055	81
Defined Contribution	271,500,981	1,056,970,639	.257	153

Table 5.2.4 Continued  
Employee Pension Fund Contributions by Industry and Plan Type, 1977

	Employee Contributions	Total Contributions	Ratio of Employee to Total Contributions	Employee Contributions Per Vested Active Participant <sup>1</sup>
<u>Not Classified</u>				
Defined Benefit	0	1,299,544	.000	0
Defined Contribution	44,848	14,411,685	.003	7
<b>TOTAL</b>				
Defined Benefit	798,947,632	28,724,888,703	.028	66
Defined Contribution	4,952,659,317	16,489,045,302	.300	359

Source: IRS 5500 File (1977)

1. See note 1, table 5.2.1.

### 5.3 Private Pension Fund Benefit Payments: Time Series Analysis

The American Council of Life Insurance reports pension benefit payments increasing from \$370 million in 1950 to \$14.8 billion in 1975 (table 5.3.1). These payments include lump sum distributions as well as annual annuity payments. Pension benefits in constant (1980) dollars increased at an average annual rate of 11.62 percent over this period.<sup>1</sup> Nineteen seventy-five is the most recent year with complete data for the benefit payments of both insured and noninsured pension funds; in 1975 noninsured funds accounted for 83 percent of private benefit payments.

The post-1975 data indicate that the real value of insured pension fund payments remained roughly constant through 1980. Measured in 1980 dollars, 1975 insured benefit payments of \$2.52 billion equal \$3.86 billion; in 1980 benefit payments of these funds totaled \$4.96 billion.

A time series of payments per retired recipient is presented in table 5.3.2. These figures were computed by simply dividing American Council of Life Insurance estimates of total benefit payments by their estimates of retired pension recipients. The category "retired pension recipients" includes, in this case, auxiliary beneficiaries, such as spouses receiving benefits under a joint survivor annuity.

While growth in total real (constant dollars) pension benefits equaled 1,800 percent between 1950 and 1975, real pension benefits per recipient grew only 250 percent during these years; hence growth in the number of recipients almost matched growth in total real benefit payments. Over the years 1950 to 1975 benefit payments per recipient for noninsured funds exceeded those of insured funds by a factor of 3 to 2.

Table 5.3.3 uses data from the American Council of Life Insurance in conjunction with data from Data Resources, Inc., to determine the share of total income of the elderly represented by pension benefit payments. The third column in table 5.3.3 expresses the ratio of table 5.3.1's total benefit payments, some of which are paid to individuals under age 65, to estimates of total income of all consumer units with household heads age 65 or older. The table indicates that pension benefit payments represented an increasing share of the income of the elderly between the years 1950 and 1975. In 1950 the ratio of pension benefit payments to post-65 household income equaled .023; it rose to .122 by 1975.

Table 5.3.1  
Private Pension Fund Benefit Payments, by Type of Administrator, 1950-1980  
(Millions of Dollars)

	Payments by Insured Private Pension Funds	Payments by Noninsured Private Pension Funds	Payments by All Private Pension Funds
1950	80	290	370
1955	180	670	850
1960	390	1,330	1,720
1965	720	2,800	3,520
1966	NA	3,380	NA
1967	NA	3,880	NA
1968	NA	4,500	NA
1969	NA	5,290	NA
1970	1,330	6,030	7,360
1971	1,520	7,080	8,600
1972	1,715	8,300	10,015
1973	1,925	9,310	11,235
1974	2,230	10,740	12,970
1975	2,520	12,330	14,850
1976	2,735	NA	NA
1977	3,105	NA	NA
1978	4,100	NA	NA
1979	4,350	NA	NA
1980	4,960	NA	NA

Source: American Council of Life Insurance  
NA - Not Available

Table 5.3.2  
Private Pension Fund Benefit Payments Per Recipient by Type of Administrator, 1950-1979  
(Dollars per Recipient)

	Benefit Payments Per Beneficiary for Insured Private Pension Funds <sup>1</sup>	Benefit Payment Per Beneficiary for Noninsured Private Pension Funds <sup>2</sup>	Benefit Payments Per Beneficiary For All Private Pension Funds
1950	533	966	822
1955	620	971	867
1960	911	1,428	1,280
1965	911	1,428	1,280
1966	NA	1,508	NA
1967	NA	1,564	NA
1968	NA	1,630	NA
1969	NA	1,700	NA
1970	1,081	1,722	1,556
1971	1,160	1,863	1,682
1972	1,261	1,976	1,801
1973	1,283	2,023	1,841
1974	1,420	2,219	2,023
1975	1,465	2,283	2,085
1976	1,302	NA	NA
1977	1,492	NA	NA
1978	1,752	NA	NA
1979	1,775	NA	NA

Source: American Council of Life Insurance  
NA - Not Available

- Beneficiaries include retired employees and survivors of employees receiving periodic benefits.
- Beneficiaries include retired employees, survivors of employees receiving periodic benefits. Also included are recipients of lump sum payments provided under deferred profit-sharing plans.

Table 5.3.3  
Private Pension Fund Benefit Payments as a Percentage of the Total Income of the Elderly, 1950-1975  
(Annual Data, Millions of Dollars, Percent)

	Total Private Pension Fund Benefit Payments	Total Income of the Elderly	Benefit as a Percentage of Elderly Income
1950	370	16,180	2.3
1955	850	22,510	3.8
1960	1,720	32,500	5.3
1965	3,520	43,380	8.1
1970	7,360	68,020	10.8
1971	8,600	76,300	11.3
1972	10,020	84,900	11.8
1973	11,240	96,200	11.7
1974	12,970	110,820	11.7
1975	14,850	121,140	12.2

Sources: American Council of Life Insurance, Data Resources, Inc.

#### 5.4 Private Pension Fund Benefit Payments: Cross-sectional Analysis

Data availability restricted our cross-sectional analysis of 1977 pension benefit payments to payments made by noninsured and partially insured private pension plans. The IRS 5500 File (1977) records neither the benefit payments of fully insured plans nor, in general, the number of their beneficiaries. In contrast to fully insured plans, partially insured plans often provide this information on the IRS 5500 form. Partially insured plans provide benefits to their participants partially through the purchase of allocated insurance contracts. In addition, partially insured plans often have contractual relations with insurance companies that provide the option of purchasing annuities at a predetermined rate at a future date, generally the employee's retirement date. Funds held by insurance companies to secure this option are referred to as "unallocated insurance contracts." Aside from the purchase of allocated and unallocated insurance contracts, partially insured plans may also deposit a portion of pension contributions into a pension trust fund. If the plan sponsor decides not to exercise his (her) option to convert unallocated insurance contracts to allocated insurance contracts, these funds are also deposited into the trust. The benefit payments reported on the IRS 5500 form by partially insured plans include only those paid directly from the trust fund. They do not include benefit payments made by insurance companies as part of allocated insurance annuities.

Benefit payments of defined contribution plans are considered separately in the tables because of the nature of some of these payments. Defined contribution plans often make lump sum distributions to their recipients. The dollar amounts of these lump sum payments are included in the data, but the number of recipients receiving lump sum payments is often unrecorded. As a result, the tables in this section do not report defined contribution payments per recipient.

In 1977 noninsured plans reported benefit payments of \$13.0 billion while partially insured plans reported benefit payments of \$5.9 billion (tables 5.4.1-5.4.3). Defined benefit plans accounted for almost 60 percent of total payments for both noninsured and partially insured plans.

Section 3.6 indicates that recipients are highly concentrated among the larger pension plans. Not surprisingly, pension plans with 1,000 or more participants paid 78.79 percent of total 1977 benefits; plans with 10,000 or more participants paid 49.79 percent of the total. Table 5.4.1 also shows that, at least for defined benefit plans, benefit payments per recipient rise with plan size. The largest defined benefit plans in table 5.4.1 paid \$2,639 per recipient, while the smallest plans paid \$1,646.

Across all defined benefit plans, partially insured plans reported \$236 more per recipient than noninsured plans. However, small noninsured plans reported more than their

partially insured counterparts, while the opposite held for large plans (tables 5.4.2 and 5.4.3).

There are sizable differences among industries in defined benefit payments per recipient. Table 5.4.4 shows transportation, communications, and utilities paying \$3,113 per recipient, over twice the \$1,530 payment in retail trade. The industrial rankings of benefit payments per recipient are roughly the same for noninsured and partially insured plans. Tables 5.4.5 and 5.4.6 show that partially insured plans in transportation, communications, and utilities report substantially lower benefits per recipient than noninsured plans. The opposite is true for wholesale trade.

Plan entity is a final characteristic by which these data can be classified. Multiemployer plans made 13.66 percent of total reported benefit payments and 19.89 percent of defined benefit payments in 1977 (table 5.4.7). Benefit payments per recipient are almost 1½ times larger for single employers than for multiemployers. These differentials are smaller for noninsured plans (tables 5.4.8 and 5.4.9), but larger for partially insured plans.

Table 5.4.1  
Private Pension Fund Benefit Payments per Recipient by Plan Type and Plan Size, All Plans, 1977

	Total Pension Fund Benefit Payments <sup>1</sup>	Number of Benefit Recipients <sup>2</sup>	Benefit Payment per Recipient <sup>3</sup>
<u>1-24</u>			
<u>Participants</u>			
Defined Benefit	\$274,429,484	63,051	\$1,646
Defined Contribution	772,490,312	NA	NA
<u>25-49</u>			
<u>Participants</u>			
Defined Benefit	81,340,943	33,383	1,792
Defined Contribution	238,552,216	NA	NA
<u>50-99</u>			
<u>Participants</u>			
Defined Benefit	160,692,557	61,189	1,951
Defined Contribution	257,372,639	NA	NA
<u>100-249</u>			
<u>Participants</u>			
Defined Benefit	297,120,627	145,713	1,920
Defined Contribution	313,797,192	NA	NA
<u>250-499</u>			
<u>Participants</u>			
Defined Benefit	416,029,381	190,056	2,107
Defined Contribution	260,274,608	NA	NA
<u>500-999</u>			
<u>Participants</u>			
Defined Benefit	633,014,919	291,978	2,117
Defined Contribution	317,176,192	NA	NA
<u>1,000-4,999</u>			
<u>Participants</u>			
Defined Benefit	2,308,961,911	940,984	2,391
Defined Contribution	1,070,202,584	NA	NA
<u>5,000-9,999</u>			
<u>Participants</u>			
Defined Benefit	1,398,031,948	521,253	2,664
Defined Contribution	724,799,335	NA	NA
<u>10,000+</u>			
<u>Participants</u>			
Defined Benefit	5,720,013,128	2,111,181	2,639
Defined Contribution	3,724,787,401	NA	NA
<u>TOTAL</u>			
Defined Benefit	11,289,634,902	4,358,792	2,475
Defined Contribution	7,679,452,482	NA	NA

Source: IRS 5500 File (1977)  
NA - Not Available

1. Benefit payments include only direct payments to recipients. Payments to insurers for the provision of insured pension benefit payments are excluded.

2. As discussed in section 3.6, many defined contribution plans did not report the number of benefit recipients in the 1977 IRS 5500 form.

3. Includes only plans reporting number of recipients. Recipients include retired workers and surviving spouses.



Table 5.4.2

Private Pension Fund Benefit Payments per Recipient by Plan Type and Plan Size, Non-Insured Plans, 1977

	Total Pension Fund Benefit Payments <sup>1</sup>	Number of Benefit Recipients <sup>2</sup>	Benefit Payment per Recipient <sup>3</sup>
<u>1-24</u>			
<u>Participants</u>			
Defined Benefit	\$157,867,219	42,323	\$1,766
Defined Contribution	654,544,496	NA	NA
<u>25-49</u>			
<u>Participants</u>			
Defined Benefit	65,221,079	28,663	1,841
Defined Contribution	212,317,719	NA	NA
<u>50-99</u>			
<u>Participants</u>			
Defined Benefit	130,018,215	49,127	1,959
Defined Contribution	225,470,027	NA	NA
<u>100-249</u>			
<u>Participants</u>			
Defined Benefit	228,967,719	115,347	1,920
Defined Contribution	250,110,014	NA	NA
<u>250-499</u>			
<u>Participants</u>			
Defined Benefit	317,454,621	151,212	2,044
Defined Contribution	206,582,535	NA	NA
<u>500-999</u>			
<u>Participants</u>			
Defined Benefit	456,731,935	213,298	2,127
Defined Contribution	233,872,348	NA	NA
<u>1,000-4,999</u>			
<u>Participants</u>			
Defined Benefit	1,634,904,604	688,839	2,345
Defined Contribution	738,136,726	NA	NA
<u>5,000-9,999</u>			
<u>Participants</u>			
Defined Benefit	872,039,654	341,098	2,555
Defined Contribution	529,800,314	NA	NA
<u>10,000+</u>			
<u>Participants</u>			
Defined Benefit	3,727,656,150	1,413,382	2,562
Defined Contribution	2,416,443,164	NA	NA
<u>TOTAL</u>			
Defined Benefit	7,590,861,199	3,043,295	2,404
Defined Contribution	5,467,277,347	NA	NA

Source: IRS 5500 File (1977)

NA - Not Available

1. See note 1, table 5.4.1.
2. See note 2, table 5.4.1.
3. Includes only plans reporting number of recipients.

Table 5.4.3

Private Pension Fund Benefit Payments per Recipient by Plan Type and Plan Size, Partially Insured Plans, 1977

	Total Pension Fund Benefit Payments <sup>1</sup>	Number of Benefit Recipients <sup>2</sup>	Benefit Payment per Recipient <sup>3</sup>
<u>1-24</u>			
<u>Participants</u>			
Defined Benefit	\$116,562,265	20,727	\$1,402
Defined Contribution	117,945,816	NA	NA
<u>25-49</u>			
<u>Participants</u>			
Defined Benefit	16,119,864	4,719	1,498
Defined Contribution	26,234,497	NA	NA
<u>50-99</u>			
<u>Participants</u>			
Defined Benefit	30,674,342	12,061	1,917
Defined Contribution	31,902,612	NA	NA
<u>100-249</u>			
<u>Participants</u>			
Defined Benefit	68,152,908	30,366	1,921
Defined Contribution	63,687,177	NA	NA
<u>250-499</u>			
<u>Participants</u>			
Defined Benefit	98,574,759	38,844	2,348
Defined Contribution	53,692,072	NA	NA

Table 5.4.3 Continued

## Private Pension Fund Benefit Payments per Recipient by Plan Type and Plan Size, Partially Insured Plans, 1977

	Total Pension Fund Benefit Payments <sup>1</sup>	Number of Benefit Recipients <sup>2</sup>	Benefit Payment per Recipient <sup>3</sup>
<u>500-999</u> <u>Participants</u>			
Defined Benefit	\$176,282,984	78,679	\$2,091
Defined Contribution	83,303,844	NA	NA
<u>1,000-4,999</u> <u>Participants</u>			
Defined Benefit	674,057,306	252,145	2,515
Defined Contribution	332,065,857	NA	NA
<u>5,000-9,999</u> <u>Participants</u>			
Defined Benefit	525,992,294	180,154	2,869
Defined Contribution	194,999,020	NA	NA
<u>10,000+</u> <u>Participants</u>			
Defined Benefit	1,992,356,978	697,798	2,793
Defined Contribution	1,308,344,236	NA	NA
<u>TOTAL</u>			
Defined Benefit	3,698,773,703	1,315,497	2,640
Defined Contribution	2,212,175,135	NA	NA

Source: IRS 5500 File (1977)

NA - Not Available

1. See note 1, table 5.4.1.
2. See note 2, table 5.4.1.
3. Includes only plans reporting number of recipients.

Table 5.4.4

## Private Pension Fund Benefit Payments per Recipient by Plan Type and Industry, All Plans, 1977

	Total Pension Fund Benefit Payments <sup>1</sup>	Number of Benefit Recipients <sup>2</sup>	Benefit Payment per Recipient <sup>3</sup>
<u>Agriculture, Forestry and Fishing</u>			
Defined Benefit	\$22,834,601	10,499	\$2,056
Defined Contribution	33,950,208	NA	NA
<u>Mining</u>			
Defined Benefit	170,334,361	60,624	2,749
Defined Contribution	149,016,714	NA	NA
<u>Construction</u>			
Defined Benefit	533,588,821	270,419	1,913
Defined Contribution	299,119,719	NA	NA
<u>Manufacturing</u>			
Defined Benefit	6,120,197,950	2,297,014	2,559
Defined Contribution	3,914,516,174	NA	NA
<u>Transportation, Communications, and Utilities</u>			
Defined Benefit	2,252,699,083	711,390	3,113
Defined Contribution	749,399,386	NA	NA
<u>Wholesale Trade</u>			
Defined Benefit	233,727,434	110,091	1,663
Defined Contribution	265,556,382	NA	NA
<u>Retail Trade</u>			
Defined Benefit	349,633,491	213,447	1,530
Defined Contribution	688,598,939	NA	NA
<u>Finance, Insurance, and Real Estate</u>			
Defined Benefit	614,229,892	174,340	3,253
Defined Contribution	727,184,460	NA	NA
<u>Services</u>			
Defined Benefit	274,370,148	152,597	1,564
Defined Contribution	520,378,049	NA	NA
<u>Tax-Exempt Organizations</u>			
Defined Benefit	717,201,804	358,228	1,895
Defined Contribution	330,966,704	NA	NA

Table 5.4.4 Continued

Private Pension Fund Benefit Payments per Recipient by Plan Type and Industry, All Plans, 1977

	Total Pension Fund Benefit Payments <sup>1</sup>	Number of Benefit Recipients <sup>2</sup>	Benefit Payment per Recipient <sup>3</sup>
<u>Not Classified</u>			
Defined Benefit	817,313	139	1,096
Defined Contribution	765,749	NA	NA
<u>TOTAL</u>			
Defined Benefit	11,289,634,902	4,358,792	2,745
Defined Contribution	7,679,452,482	NA	NA

Source: IRS 5500 File (1977)  
NA - Not Available

1. See note 1, table 5.4.1.
2. See note 2, table 5.4.1.
3. Includes only plans reporting number of recipients.

Table 5.4.5

Private Pension Fund Benefit Payments per Recipient by Plan Type and Industry, Non-insured Plans, 1977

	Total Pension Fund Benefit Payments <sup>1</sup>	Number of Benefit Recipients <sup>2</sup>	Benefit Payment per Recipient <sup>3</sup>
<u>Agriculture, Forestry and Fishing</u>			
Defined Benefit	\$12,432,084	6,251	\$1,877
Defined Contribution	28,814,267	NA	NA
<u>Mining</u>			
Defined Benefit	103,995,135	36,410	2,825
Defined Contribution	115,668,771	NA	NA
<u>Construction</u>			
Defined Benefit	378,179,370	195,503	1,894
Defined Contribution	238,105,260	NA	NA
<u>Manufacturing</u>			
Defined Benefit	3,735,009,458	1,554,016	2,306
Defined Contribution	2,431,988,105	NA	NA
<u>Transportation, Communications, and Utilities</u>			
Defined Benefit	1,781,618,194	510,396	3,478
Defined Contribution	679,454,589	NA	NA
<u>Wholesale Trade</u>			
Defined Benefit	167,604,405	101,007	1,531
Defined Contribution	211,525,553	NA	NA
<u>Retail Trade</u>			
Defined Benefit	267,936,452	147,082	1,780
Defined Contribution	533,135,337	NA	NA
<u>Finance, Insurance, and Real Estate</u>			
Defined Benefit	422,118,775	116,031	3,426
Defined Contribution	578,088,864	NA	NA
<u>Services</u>			
Defined Benefit	180,770,471	105,218	1,514
Defined Contribution	372,748,816	NA	NA
<u>Tax-Exempt Organizations</u>			
Defined Benefit	541,044,263	271,236	1,880
Defined Contribution	277,156,770	NA	NA
<u>Not Classified</u>			
Defined Benefit	152,588	139	1,096
Defined Contribution	591,010	NA	NA
<u>TOTAL</u>			
Defined Benefit	7,590,861,199	3,043,295	2,404
Defined Contribution	5,467,277,347	NA	NA

Source: IRS 5500 File (1977)  
NA - Not Available

1. See note 1, table 5.4.1.
2. See note 2, table 5.4.1.
3. Includes only plans reporting number of recipients.

Table 5.4.6

Private Pension Fund Benefit Payments per Recipient by Plan Type and Industry, Partially Insured Plans, 1977

	Total Pension Fund Benefit Payments <sup>1</sup>	Number of Benefit Recipients <sup>2</sup>	Benefit Payment per Recipient <sup>3</sup>
<u>Agriculture, Forestry and Fishing</u>			
Defined Benefit	\$10,402,517	4,247	\$2,319
Defined Contribution	5,135,941	NA	NA
<u>Mining</u>			
Defined Benefit	66,339,225	24,213	2,635
Defined Contribution	33,347,943	NA	NA
<u>Construction</u>			
Defined Benefit	155,409,450	74,916	1,964
Defined Contribution	61,014,458	NA	NA
<u>Manufacturing</u>			
Defined Benefit	2,385,188,492	742,997	3,099
Defined Contribution	1,482,528,069	NA	NA
<u>Transportation, Communications, and Utilities</u>			
Defined Benefit	471,080,889	200,993	2,185
Defined Contribution	69,944,790	NA	NA
<u>Wholesale Trade</u>			
Defined Benefit	66,123,029	9,084	3,124
Defined Contribution	54,030,829	NA	NA
<u>Retail Trade</u>			
Defined Benefit	81,697,038	66,364	975
Defined Contribution	155,463,601	NA	NA
<u>Finance, Insurance, and Real Estate</u>			
Defined Benefit	192,111,117	58,308	2,907
Defined Contribution	149,095,596	NA	NA
<u>Services</u>			
Defined Benefit	93,599,676	47,379	1,663
Defined Contribution	147,629,232	NA	NA
<u>Tax-Exempt Organizations</u>			
Defined Benefit	176,157,540	86,991	1,941
Defined Contribution	53,809,934	NA	NA
<u>Not Classified</u>			
Defined Benefit	664,725	NA	NA
Defined Contribution	174,738	NA	NA
<u>TOTAL</u>			
Defined Benefit	3,698,773,703	1,315,497	2,640
Defined Contribution	2,212,175,135	NA	NA

Source: IRS 5500 File (1977)

NA - Not Available

1. See note 1, table 5.4.1.
2. See note 2, table 5.4.1.
3. Includes only plans reporting number of recipients.

Table 5.4.7

## Private Pension Fund Benefit Payments per Recipient by Plan Type and Plan Entity, All Plans, 1977

	Total Pension Fund Benefit Payments <sup>1</sup>	Number of Benefit Recipients <sup>2</sup>	Benefit Payment per Recipient <sup>3</sup>
Single Employer			
Defined Benefit	\$9,044,378,269	3,162,551	\$2,711
Defined Contribution	7,332,829,120	NA	NA
Multi Employer			
Defined Benefit	2,245,256,633	1,196,241	1,852
Defined Contribution	345,817,606	NA	NA
Not Classified			
Defined Benefit	0	0	NA
Defined Contribution	805,755	NA	NA
TOTAL			
Defined Benefit	11,289,634,902	4,358,792	2,475
Defined Contribution	7,679,452,482	NA	NA

Source: IRS 5500 File (1977)  
NA - Not Available

1. See note 1, table 5.4.1.
2. See note 2, table 5.4.1.
3. Includes only plans reporting number of recipients.

Table 5.4.8

## Private Pension Fund Benefit Payments per Recipient by Plan Type and Plan Entity, Non-Insured Plans, 1977

	Total Pension Fund Benefit Payments <sup>1</sup>	Number of Benefit Recipients <sup>2</sup>	Benefit Payment per Recipient <sup>3</sup>
Single Employer			
Defined Benefit	\$5,732,195,321	2,137,722	\$2,561
Defined Contribution	5,201,435,780	NA	NA
Multi Employer			
Defined Benefit	1,858,665,877	905,572	2,033
Defined Contribution	265,035,811	NA	NA
Not Classified			
Defined Benefit	0	0	NA
Defined Contribution	805,755	NA	NA
TOTAL			
Defined Benefit	7,590,861,199	3,043,295	2,404
Defined Contribution	5,467,277,347	NA	NA

Source: IRS 5500 File (1977)  
NA - Not Available

1. See note 1, table 5.4.1.
2. See note 2, table 5.4.1.
3. Includes only plans reporting number of recipients.

Table 5.4.9

## Private Pension Fund Benefit Payments per Recipient by Plan Type and Plan Entity, Partially Insured Plans, 1977

	Total Pension Fund Benefit Payments <sup>1</sup>	Number of Benefit Recipients <sup>2</sup>	Benefit Payment per Recipient <sup>3</sup>
Single Employer			
Defined Benefit	\$3,312,182,947	1,024,828	\$3,024
Defined Contribution	2,131,393,340	NA	NA
Multi Employer			
Defined Benefit	386,590,755	290,668	1,286
Defined Contribution	80,781,795	NA	NA
Not Classified			
Defined Benefit	0	0	NA
Defined Contribution	0	NA	NA
TOTAL			
Defined Benefit	3,698,773,703	1,315,497	2,640
Defined Contribution	2,212,175,135	NA	NA

Source: IRS 5500 File (1977)  
NA - Not Available

1. See note 1, table 5.4.1.
2. See note 2, table 5.4.1.
3. Includes only plans reporting number of recipients.

## 5.5 Private Pension Fund Assets: Time Series Analysis

One important measure of the growth of private pensions is their accumulation of financial assets. Between 1955 and 1980 the market value of gross, noninsured private pension fund assets rose from \$18.05 billion to \$297.21 billion. Measured in constant 1980 dollars the increase in the market value of gross assets was \$242 billion. These estimates are based on historical series compiled by the Securities and Exchange Commission (SEC). Unfortunately, the SEC data for years after 1967 do not include assets of pension plans established after 1967. Consequently, these data understate growth in private pension assets. For 1980 the SEC figure is estimated to undercount total private, noninsured pension assets by \$156 billion.

Based on table 3.1.2's estimates of employees covered under noninsured pension plans, SEC enumerated assets per covered worker equaled \$1,556 in 1955 and \$5,848 in 1975 (the year with separate data on noninsured covered workers). In constant 1980 dollars, the increase in assets per covered worker was \$4,165 over the 20-year period.

Table 5.5.1 uses stock and flow data from the SEC to describe the flow of funds into and out from private noninsured pension funds for the years 1959 through 1975. In this table assets are valued at their book value (acquisition cost). Table 5.5.2 compares private pension fund assets to total household net worth.

Assets of private, noninsured pension funds equaled \$133.73 billion at the beginning of 1975 and \$145.17 billion at the end of 1975. The \$11.44 billion rise in gross assets reflects receipts of \$26.58 billion, disbursements of \$12.5 billion, and an increase in gross liabilities (plus statistical discrepancy) of \$2.55 billion. A \$21.43 billion component of the \$26.58 billion in receipts consisted of pension plan contributions, while income from investments (plus other receipts) and realized capital gains equaled \$5.15 billion. In 1975 employee contributions represented 7.47 percent of total employee and employer contributions.

Tables 5.5.3 and 5.5.4 examined the type of assets held by noninsured private pension funds. The former table provides book value information for the years 1950 to 1980. The latter table lists their assets at market value, but covers only the years after 1954. Comparison of tables 5.5.3 and 5.5.4 for the years 1955 to 1980 indicates that the market value of assets exceeded the book value for all years except 1974 and 1978. The ratio of market to book value was greatest in 1972, equaling 1.31.

Table 5.5.5 shows the portfolio composition of these pension funds based on the market value data in table 5.5.4. Common stock and corporate and other bonds represented between 70 and 85 percent of total noninsured pension assets throughout the period 1955 to 1980. Equities as a share of total assets were less than 50 percent prior to 1963. Since 1963 the share has exceeded one-half, with the largest value of 74.65 percent observed in 1972. The share of corporate and other government bonds reached its largest value, 47.22 percent, in 1957 and its lowest value, 16.99 percent, in 1972. The share of funds invested in U.S. government securities fell from 16.27 percent in 1955 to 2.18 percent in 1971. After 1971 this share increased; by 1977 its value was 11.02 percent. It was 8.86 percent in 1980. Mortgages, cash and deposits, and other assets have rarely exceeded 10 percent of total assets.

One of the more interesting features of table 5.5.5 is the information concerning the pension funds' ownership of stock of the employer. In 1955 over 17 percent of the common stock held by these pension funds was stock in the employer's company; the 1960 value was 12.65. It was 9.22 in 1970 and 8.30 in 1974, the last year for which the information is available. In 1974 ERISA placed a 10 percent upper limit on the fraction of total plan assets that could be invested in the stock of the plan sponsor.

Table 5.5.6 compares the portfolio composition of total household net worth with the portfolio composition of noninsured private pension funds. The household net worth data are compiled by the Federal Reserve System. The pension fund reserves listed in the table under "household portfolio" include insured as well as uninsured pension assets. This explains much of the discrepancy between household pension fund reserves and the value of noninsured private pension assets.

In contrast to the portfolios of private pension funds, the aggregate portfolio of households ultimately holding claims to these funds consists of significant holdings of tangible assets. In 1978, 37.48 percent of total household net worth was invested in tangibles. Less than 30 percent of the household portfolio was invested in equities. In contrast, noninsured pension portfolios invested 53.54 percent of their assets in equities, but only 1.27 percent in tangible assets.

Table 5.5.7 considers the size of assets of private pension funds and the reserves of insurance companies held to meet insured pension benefit payments relative to the total outstanding value of these assets in the country. A description of the particular assets held in pension reserve accounts is not reported by the Federal Reserve System's Flow of Funds Accounts. These accounts do, however, list the holdings of particular accounts for combined insurance company reserves. The data in the table for insurance company pension reserves are derived on the assumption that the portfolio distribution of pension reserves is the same as that of other insurance company reserves.

In the case of corporate equities, private pension plans and insurance company pension reserves held over 12 percent of total U.S. corporate equities in 1980. In 1957 the share was less than 3 percent. Private pension plans and insurance company pension reserves increased their holding of U.S. government securities from 11.35 percent in 1957 to 18.54 percent in 1980. Their share of outstanding corporate and foreign bonds also rose from 24.39 percent in 1957 to 27.49 percent in 1980. The ownership of both mortgages and state and local government securities by private pension funds and insurance pension reserve accounts has been and remains quite small relative to the total volume of these securities outstanding.

Table 5.5.1  
Flow of Funds Statement of Private Pension Funds, Not Administered by Insurance Companies, 1959-1975  
(Book Value, in Millions of Dollars)

	1959	1960	1961	1962	1963	1964	1965	1966	1967
GROSS ASSETS BEGINNING OF YEAR <sup>1</sup>	25,280	29,050	33,140	37,510	41,890	46,550	52,410	59,160	66,170
RECEIPTS	4,860	5,420	5,890	6,260	6,730	7,760	9,030	9,870	11,210
Employer Contributions	3,190	3,510	3,640	3,940	4,140	4,740	5,400	5,980	6,560
Employee Contributions	430	490	500	540	570	600	660	690	750
Investment Income	1,060	1,280	1,430	1,580	1,760	1,990	2,350	2,620	2,870
Net Profits on Sales of Assets <sup>2</sup>	150	110	280	150	220	390	570	490	980
Other Receipts	30	30	40	50	40	40	50	90	50
DISBURSEMENTS	1,170	1,380	1,580	1,880	2,090	2,390	2,730	3,240	3,490
Benefits Paid Out	1,130	1,330	1,530	1,820	2,030	2,320	2,650	3,140	3,380
Expenses and Other Disbursements	40	40	50	60	60	70	80	100	110
DECREASE IN LIABILITIES AND STATISTICAL DISCREPANCY <sup>3</sup>	80	50	60	0	20	500	450	380	350
GROSS ASSETS END OF YEAR <sup>1</sup>	29,050	33,140	37,510	41,890	46,550	52,420	59,160	66,170	74,240

Table 5.5.1 Continued  
 Flow of Funds Statement of Private Pension Funds, Not Administered by Insurance Companies, 1959-1975  
 (Book Value, in Millions of Dollars)

	1968	1969	1970	1971	1972	1973	1974	1975
GROSS ASSETS BEGINNING OF YEAR <sup>1</sup>	74,240	83,070	90,580	97,010	106,420	117,530	126,530	133,730
RECEIPTS	13,140	14,150	13,200	17,540	20,060	19,670	21,060	26,580
Employer Contributions	7,700	8,490	9,720	11,320	12,740	14,370	16,970	19,830
Employee Contributions	890	1,010	1,070	1,120	1,200	1,270	1,460	1,600
Investment Income	3,190	3,550	3,870	4,100	4,300	4,840	5,980	6,700
Net Profits on Sales of Assets <sup>2</sup>	1,260	990	-1,590	900	1,720	-920	-3,480	-1,660
Other Receipts	100	110	130	100	100	110	130	110
DISBURSEMENTS	4,620	5,430	6,180	7,260	8,500	9,540	11,030	12,590
Benefits Paid Out	4,500	5,290	6,030	7,080	8,300	9,310	10,740	12,330
Expenses and Other Disbursements	120	140	150	180	200	230	290	260
DECREASE IN LIABILITIES AND STATISTICAL DISCREPANCY <sup>4</sup>	310	-1,210	-590	-870	-450	-1,130	-2,830	-2,550
GROSS ASSETS END OF YEAR <sup>3</sup>	83,070	90,580	97,010	106,420	117,530	126,530	133,730	145,170

Source: Securities and Exchange Commission

1. All yearly flow numbers are taken from the Securities and Exchange Commission *Monthly Bulletin*. From 1959 to 1975 the *Bulletin* published an annual table entitled "Receipts and Disbursements of Private Noninsured Pension Funds."

2. Book value. Gross asset figures are taken from the Securities and Exchange Commission *Monthly Bulletin*, table "Assets of Private Noninsured Pension Funds (Book Value, End of Year)." This table is also published annually.

3. Includes only realized capital gains and losses.

4. Data on net assets are not available. "Increases in liabilities and statistical discrepancy" reconciles the information from the flow series with the change in book value of gross assets provided by the asset series. Unfortunately, the asset and flow series are calculated from data provided by different surveys. Therefore it is not possible to separate true changes in the liability position of pension funds from statistical discrepancies associated with using data from different surveys.

Table 5.5.2  
 Relationship of Private Pension Fund Assets to Household Net Worth, 1950-1980  
 (In Billions)

year	Private and State and Local Government Pension Fund Reserves			Total Household Net Worth	Ratio of Total Pension Fund Reserves to Total Household Net Worth
	Total	Private Pension Fund Reserves <sup>1</sup> Administered by Life Insurance Companies	Not Administered by Life Insurance Companies		
1950	12.7	5.6	7.1	939.0	1.4
1951	14.8	6.6	8.2	1,027.0	1.4
1952	17.5	7.7	9.8	1,079.1	1.6
1953	20.5	8.8	11.7	1,105.4	1.9
1954	23.8	10.0	13.8	1,216.2	2.0
1955	29.6	11.3	18.3	1,324.5	2.2
1956	33.6	12.5	21.1	1,415.5	2.4
1957	37.5	14.1	23.4	1,431.5	2.6
1958	44.8	15.6	29.2	1,601.5	2.8
1959	51.7	17.6	34.1	1,690.6	3.1
1960	57.0	18.9	38.1	1,727.2	3.3
1961	66.4	20.3	46.1	1,886.4	3.5
1962	68.8	21.6	47.2	1,881.5	3.7
1963	78.3	23.3	55.0	2,018.0	3.9
1964	89.6	25.3	64.3	2,160.0	4.1
1965	100.9	27.3	73.6	2,330.9	4.3
1966	105.2	29.4	75.8	2,389.5	4.4
1967	121.5	32.1	89.4	2,668.7	4.6
1968	136.5	35.0	101.5	2,990.6	4.6
1969	140.3	37.9	102.4	3,028.4	4.6
1970	151.6	41.2	110.4	3,175.7	4.8
1971	176.5	46.4	130.1	3,476.0	5.1
1972	208.4	52.3	156.1	3,856.6	5.4
1973	190.4	56.1	134.3	4,033.3	4.7
1974	176.3	60.8	115.5	4,232.0	4.2
1975	219.0	72.2	146.8	4,765.9	4.6
1976	260.9	89.0	171.9	5,345.8	4.9
1977	279.8	101.5	178.3	6,843.4	4.1
1978	317.4	119.1	198.3	7,792.1	4.1
1979	361.2	139.2	222.0	8,795.0	4.1
1980	452.6	165.8	286.8	10,911.2	4.1

Source: Federal Reserve Systems, *Flow of Funds Accounts, Assets & Liabilities Outstanding*, 1949-1978 and 1957-1980

1. Security and Exchange Commission private pension fund data are adjusted for double counting of assets administered by life insurance companies and those not administered by life insurance companies. These figures do not therefore correspond exactly to estimates of the Securities and Exchange Commission presented in table 5.5.3.



Table 5.5.3  
Assets of Private Pension Funds Not Administered by Insurance Companies, 1950-1980<sup>1</sup>  
Book Value, End of Year

		(Millions of Dollars)									
		1950	1951	1952	1953	1954					
Cash and Deposits		264	329	310	366	557					
U.S. Government Securities		1,966	2,445	2,478	2,655	2,682					
Corporate and Other Bonds		2,828	3,483	4,548	5,647	6,907					
Preferred Stock		304	373	433	496	558					
Common Stock		802	985	1,410	1,896	2,596					
Own Company		232	246	297	342	382					
Other Companies		570	739	1,113	1,554	2,214					
Mortgages		102	120	149	192	238					
Other Assets		186	228	286	376	449					
Total Assets		6,452	7,963	9,614	11,628	13,787					
		1955	1956	1957	1958	1959	1960	1961	1962		
Cash and Deposits		415	415	466	496	535	546	660	707		
U.S. Government Securities		2,992	2,799	2,575	2,567	2,811	2,683	2,715	2,925		
Corporate and Other Bonds		7,856	9,475	11,337	12,842	14,085	15,699	16,883	18,101		
Preferred Stock		612	672	718	770	772	776	762	750		
Common Stock		3,354	4,283	5,390	6,824	8,674	10,734	13,342	15,728		
Own Company		434	505	NA	NA	824	886	1,039	1,184		
Other Companies		2,920	3,778	5,390	6,824	7,850	9,848	12,303	14,544		
Mortgages		321	449	583	742	989	1,301	1,560	1,876		
Other Assets		591	841	958	1,041	1,186	1,399	1,590	1,805		
Total Assets		16,141	18,934	22,027	25,282	29,052	33,138	37,511	41,892		
		1963	1964	1965	1966	1967	1968	1969	1970		
Cash and Deposits		773	890	940	900	1,320	1,592	1,619	1,804		
U.S. Government Securities		3,049	3,193	2,994	2,751	2,324	2,756	2,792	3,029		
Corporate and Other Bonds		19,560	21,418	23,129	25,231	26,355	27,000	27,613	29,666		
Preferred Stock		712	650	750	790	980	1,332	1,757	1,736		
Common Stock		18,118	20,953	25,117	29,067	34,946	41,740	47,862	51,744		
Own Company		1,335	1,551	1,827	2,092	2,563	2,836	3,062	3,330		
Other Companies		16,783	19,402	23,290	26,975	32,383	38,904	44,800	48,414		
Mortgages		2,220	2,778	3,385	3,911	4,083	4,067	4,216	4,172		
Other Assets		2,122	2,537	2,870	3,520	4,232	4,585	4,720	4,860		
Total Assets		46,554	52,419	59,185	66,170	74,240	83,072	90,579	97,011		
		1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Cash and Deposits		1,641	1,857	2,336	4,286	2,962	2,199	3,721	8,110	8,609	9,290
U.S. Government Securities		2,732	3,689	4,404	5,533	10,764	14,716	20,138	19,695	22,459	28,312
Corporate and Other Bonds		29,013	28,207	30,334	35,029	37,809	39,070	45,580	53,824	59,537	63,910
Preferred Stock		1,767	1,481	1,258	1,129	1,188	1,250	1,168	1,274	1,350	1,322
Common Stock		62,780	74,585	80,593	79,319	83,654	83,359	96,984	100,424	110,943	128,473
Own Company		3,608	3,868	4,098	4,588	NA	NA	NA	NA	NA	NA
Other Companies		59,172	70,717	76,495	74,731	NA	NA	NA	NA	NA	NA
Mortgages		3,660	2,728	2,377	2,372	2,383	2,369	2,497	2,789	3,091	4,085
Other Assets		4,826	4,983	5,229	6,063	6,406	7,454	11,421	16,121	17,476	21,506
Total Assets		106,419	117,530	126,531	133,731	145,166	160,414	181,509	202,237	223,465	256,898

Source: Securities and Exchange Commission  
NA - Not Available

1. Includes deferred profit-sharing funds and pension funds of corporations, unions, multiemployer groups, and nonprofit organizations.

Table 5.5.4  
Assets of Private Pension Funds Not Administered by Insurance Companies, 1955-1980<sup>1</sup>  
Market Value, End of Year  
(Millions of Dollars)

	1955	1956	1957	1958	1959	1960	1961	1962		
Cash and Deposits	415	415	466	496	535	546	660	707		
U.S. Government Securities	2,938	2,675	2,516	2,441	2,619	2,655	2,664	2,907		
Corporate and Other Bonds	7,702	8,604	10,700	11,883	12,525	14,629	15,910	17,509		
Preferred Stock	624	625	652	720	704	718	730	731		
Common Stock	5,461	6,440	6,837	10,841	13,821	15,827	22,126	21,164		
Own Company	933	864	860	1,303	1,802	2,004	3,009	2,564		
Other Companies	4,528	5,576	5,977	9,538	12,019	13,823	19,117	18,600		
Mortgages	321	448	582	743	987	1,304	1,564	1,889		
Other Assets	592	841	957	1,043	1,183	1,398	1,605	1,823		
Total Assets	18,053	20,048	22,701	28,167	32,374	37,077	45,259	46,730		
	1963	1964	1965	1966	1967	1968	1969	1970		
Cash and Deposits	773	890	940	900	1,320	1,592	1,619	1,804		
U.S. Government Securities	3,002	3,161	2,913	2,709	2,207	2,615	2,568	2,998		
Corporate and Other Bonds	18,772	20,732	21,949	22,480	22,612	22,437	21,262	24,919		
Preferred Stock	707	663	768	751	1,027	1,351	1,598	1,631		
Common Stock	26,963	33,042	39,986	38,717	50,077	60,105	59,827	65,456		
Own Company	3,124	4,028	4,375	3,501	5,000	5,764	5,775	6,038		
Other Companies	23,839	29,014	35,611	35,216	45,077	54,341	54,052	59,418		
Mortgages	2,242	2,805	3,391	3,789	4,001	3,578	3,461	3,504		
Other Assets	2,158	2,613	2,950	3,491	4,206	4,332	4,295	4,422		
Total Assets	54,617	63,909	72,898	72,840	85,452	96,013	94,632	104,737		
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Cash and Deposits	1,641	1,857	2,336	4,286	2,962	2,199	3,721	8,110	8,609	9,290
U.S. Government Securities	2,772	3,700	4,474	5,582	11,097	14,713	20,017	18,767	21,516	26,334
Corporate and Other Bonds	26,111	26,232	27,664	30,825	34,519	37,858	42,754	48,633	51,261	59,987
Preferred Stock	2,014	1,869	985	703	892	1,212	1,009	1,162	1,099	1,367
Common Stock	86,636	113,369	89,538	62,582	87,669	108,483	100,863	106,732	122,703	174,437
Own Company	7,691	8,750	6,947	5,230	NA	NA	NA	NA	NA	NA
Other Companies	78,945	104,619	82,591	57,352	NA	NA	NA	NA	NA	NA
Mortgages	3,184	2,427	2,108	2,063	2,139	2,160	2,362	2,554	2,664	3,814
Other Assets	4,560	4,908	5,140	5,681	6,341	7,073	10,838	15,585	17,336	21,980
Total Assets	126,921	154,363	132,247	111,724	145,622	173,906	181,564	201,545	225,198	297,209

Source: Securities and Exchange Commission

1. Includes deferred profit-sharing funds and pension funds of corporations, unions, multiemployer groups, and nonprofit organizations.

Table 5.5.5  
 Portfolio Composition of Private Pension Funds, Not Administered by Insurance Companies, 1955-1980  
 (Market Value, End of Year) Percentages

	1955	1956	1957	1958	1960	1961	1962	1963	1964
Cash and Deposits	2.30	2.07	2.05	1.76	1.47	1.46	1.51	1.42	1.39
US Government Securities	16.27	13.34	11.08	8.67	7.16	5.89	6.22	5.50	4.95
Corporate and Other Bonds	42.66	42.92	47.12	42.19	39.46	35.15	34.05	34.37	32.44
Preferred Stock	3.46	3.12	2.87	2.56	1.94	1.61	1.56	1.29	1.04
Common Stock	30.25	32.12	30.10	38.49	42.69	48.89	47.35	49.37	51.70
Own Company	5.17	4.31	3.79	4.63	5.40	6.65	6.44	5.72	6.30
Other Companies	25.08	27.81	26.32	33.86	37.28	42.24	40.91	43.62	45.40
Mortgages	1.78	2.23	2.56	2.63	3.52	3.46	3.35	4.10	4.39
Other Assets	3.28	4.19	4.21	3.70	3.77	3.55	3.43	3.95	4.09
Total Assets	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	1965	1966	1967	1968	1969	1970	1971	1972	1973
Cash and Deposits	1.29	1.24	1.54	1.66	1.79	1.72	1.29	1.20	1.77
US Government Securities	4.00	3.72	2.58	2.72	2.71	2.86	2.18	2.40	3.38
Corporate and Other Bonds	30.11	30.86	26.46	23.37	22.47	23.79	20.57	16.99	20.92
Preferred Stock	1.05	1.03	1.20	1.41	1.69	1.56	1.59	1.21	0.74
Common Stock	54.85	53.15	58.60	62.60	63.22	62.50	68.26	73.44	67.71
Own Company	6.00	4.81	5.85	6.00	6.09	5.76	6.06	5.67	5.25
Other Companies	48.85	48.35	52.75	56.60	57.12	56.73	62.20	67.77	62.45
Mortgages	4.65	5.20	4.68	3.73	3.66	3.35	2.51	1.57	1.59
Other Assets	4.05	4.79	4.92	4.51	4.54	4.22	3.59	3.18	3.87
Total Assets	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	1974	1975	1976	1977	1978	1979	1980		
Cash and Deposits	3.84	2.03	1.26	2.05	4.02	3.82	3.13		
US Government Securities	5.00	7.62	10.19	11.02	9.31	9.55	8.86		
Corporate and Other Bonds	27.59	23.70	21.77	23.55	24.13	22.76	20.18		
Preferred Stock	0.63	0.61	0.70	0.56	0.58	0.49	0.46		
Common Stock	56.01	60.20	62.38	55.55	52.96	54.49	58.69		
Own Company	4.68	NA	NA	NA	NA	NA	NA		
Other Companies	51.33	NA	NA	NA	NA	NA	NA		
Mortgages	1.85	1.47	1.24	1.30	1.27	1.18	1.28		
Other Assets	5.08	4.35	4.07	5.97	7.73	7.70	7.40		
Total Assets	100.00	100.00	100.00	100.00	100.00	100.00	100.00		

Source: Securities and Exchange Commission  
 NA - Not Available

Table 5.5.6

Comparison of Aggregate Household Portfolio with Portfolio of Private Pension Funds Not Administered by Insurance Companies, 1955-1978  
(Market Value - End of Year - in Millions of Dollars)

	1955			
	Household Portfolio		Private Noninsured Pension Fund Portfolio <sup>1</sup>	
	Amount	Percentage	Amount	Percentage
Cash & Deposits	66,115	4.54	415	2.30
Government Securities	88,660	6.09	2,938	16.27
Corporate Bonds	5,594	0.38	7,702	42.66
Equities	607,617	41.72	6,085	33.71
Other Net Debt				
Instruments	128,949	8.85	913	5.06
Tangible Assets	439,523	30.18	-	-
Pension Fund Reserves	50,546	3.47	-	-
Life Insurance Reserves	69,254	4.77	-	-
Total	1,456,258	100.00	18,053	100.00
1960				
	Household Portfolio		Private Noninsured Pension Fund Portfolio <sup>1</sup>	
	Amount	Percentage	Amount	Percentage
Cash & Deposits	73,179	3.71	546	1.47
Government Securities	104,840	5.32	2,665	7.19
Corporate Bonds	9,996	.51	14,629	39.45
Equities	789,204	40.06	16,545	44.62
Other Net Debt				
Instruments	199,494	10.13	2,693	7.26
Tangible Assets	617,134	31.33	-	-
Pension Fund Reserves	90,818	4.61	-	-
Life Insurance Reserves	85,184	4.32	-	-
Total	1,969,849	100.00	37,078	100.00
1965				
	Household Portfolio		Private Noninsured Pension Fund Portfolio <sup>1</sup>	
	Amount	Percentage	Amount	Percentage
Cash & Deposits	88,442	3.28	940	1.29
Government Securities	118,413	4.39	2,913	4.00
Corporate Bonds	9,523	0.35	21,949	30.11
Equities	1,103,007	40.88	40,754	55.90
Other Net Debt				
Instruments	336,520	12.47	-	-
Tangible Assets	781,662	28.97	3,391	4.65
Pension Fund Reserves	154,774	5.71	-	-
Life Insurance Reserves	105,876	3.92	-	-
Other Assets	-	-	2,950	4.05
Total	2,698,217	100.00	72,897	100.00
1970				
	Household Portfolio		Private Noninsured Pension Fund Portfolio <sup>1</sup>	
	Amount	Percentage	Amount	Percentage
Cash & Deposits	117,754	3.64	1,804	1.72
Government Securities	153,205	4.73	2,998	2.86
Corporate Bonds	34,265	1.06	24,919	23.79
Equities	1,326,615	40.98	67,087	64.06
Other Net Debt				
Instruments	49,325	1.52	-	-
Tangible Assets	1,185,879	36.64	3,504	3.35
Pension Fund Reserves	239,400	7.40	-	-
Life Insurance Reserves	130,488	4.03	-	-
Other Assets	-	-	4,422	4.22
Total	3,236,931	100.00	104,734	100.00
1975				
	Household Portfolio		Private Noninsured Pension Fund Portfolio <sup>1</sup>	
	Amount	Percentage	Amount	Percentage
Cash & Deposits	166,930	2.41	2,962	2.03
Government Securities	220,877	31.18	11,097	7.62
Corporate Bonds	63,514	.92	34,519	23.70
Equities	1,667,171	24.03	88,561	60.81
Other Net Debt				
Instruments	863,176	12.44	-	-
Tangible Assets	1,972,909	28.44	2,139	1.47
Pension Fund Reserves	365,732	5.27	-	-
Life Insurance Reserves	1,616,622	23.30	-	-
Other Assets	-	-	6,341	4.35
Total	6,936,931	100.00	145,619	100.00

Table 5.5.6 Continued

Comparison of Aggregate Household Portfolio with Portfolio of Private Pension Funds Not Administered by Insurance Companies, 1955-1978  
(Market Value - End of Year - in Millions of Dollars)

	1978			
	Household Portfolio		Private Noninsured Pension Fund Portfolio <sup>1</sup>	
	Amount	Percentage	Amount	Percentage
Cash & Deposits	222,055	2.92	8,110	4.02
Government Securities	278,850	3.67	18,767	9.31
Corporate Bonds	64,825	0.85	48,633	24.13
Equities	2,206,180	29.04	107,894	53.54
Other Net Debt Instruments	1,249,433	16.44	-	-
Tangible Assets	2,847,376	37.48	2,554	1.27
Pension Fund Reserves	530,489	6.98	-	-
Life Insurance Reserves	198,515	2.61	-	-
Other Assets	-	-	15,585	7.73
Total	7,597,723	100.00	201,543	100.00

Sources: Pension Data: Securities and Exchange Commission  
Federal Reserve System - Balance Sheets for US Economy - October 1979 Household Balance Sheet with Tangible Assets at Current Costs.

1. Mortgages held by pension funds are enumerated as tangible assets.

Table 5.5.7

Shares of Selected Total U.S. Financial Assets Held by Private Pension Funds and Insurance Company Pension Reserves,<sup>1</sup> 1957-1980  
(Billions of Dollars)

Year	Corporate Equities					U.S. Government Securities				
	U.S. Total Amount	Private Pension Funds Amount	Percent of Total	Insurance Company Pension Reserves Amount	Percent of Total	U.S. Total Amount	Private Pension Funds Amount	Percent of Total	Insurance Company Pension Reserves Amount	Percent of Total
1957	299.0	7.5	2.51	.5	.17	32.6	2.6	7.98	1.1	3.37
1958	418.0	11.6	2.78	.7	.17	33.3	2.6	7.81	1.2	3.60
1959	454.0	14.5	3.19	.8	.18	34.4	2.8	8.14	1.2	3.49
1960	451.0	16.5	3.66	.9	.20	34.4	2.7	7.85	1.2	3.49
1961	574.0	22.9	3.99	1.2	.21	35.2	2.7	7.67	1.1	3.13
1962	505.7	21.9	4.33	1.2	.24	37.3	2.9	7.77	1.2	3.22
1963	597.0	27.7	4.64	1.3	.22	37.2	3.0	8.06	1.1	2.96
1964	662.1	33.7	5.09	1.5	.23	39.1	3.2	8.18	1.1	2.81
1965	749.0	40.8	5.45	1.8	.24	38.7	3.0	7.75	1.1	2.84
1966	682.7	39.5	5.79	1.8	.26	40.0	2.8	7.00	1.1	2.75
1967	868.2	51.1	5.89	2.3	.26	37.9	2.3	6.07	1.0	2.64
1968	1,032.6	61.5	5.96	2.9	.28	40.0	2.8	7.00	1.0	2.60
1969	913.9	61.4	6.72	3.1	.34	38.2	2.8	7.33	1.0	2.52
1970	906.2	67.1	7.40	3.7	.41	41.2	3.0	7.28	1.1	2.67
1971	1,059.2	88.7	8.37	5.2	.49	41.4	2.7	6.52	1.2	2.90
1972	1,197.1	115.2	9.62	7.1	.59	46.7	3.7	7.92	1.2	2.57
1973	948.1	90.5	9.55	7.0	.74	47.9	4.4	9.19	1.2	2.51
1974	676.9	63.3	9.35	6.3	.93	50.7	5.5	10.85	1.3	2.56
1975	892.5	88.6	9.93	8.7	.97	72.2	10.8	14.96	1.9	2.63
1976	1,052.0	109.7	10.43	11.7	1.11	97.2	14.7	15.12	2.6	2.67
1977	991.3	101.9	10.28	11.7	1.18	119.8	20.1	16.78	3.3	2.75
1978	1,034.2	107.9	10.43	13.4	1.30	138.0	22.2	16.09	4.3	3.12
1979	1,229.0	123.7	10.07	16.1	1.31	159.2	25.0	15.70	5.7	3.58
1980	1,636.0	175.8	10.75	23.8	1.45	207.7	30.9	14.88	7.6	3.66

  

Year	Corporate and Foreign Bonds				Mortgages					
	U.S. Total Amount	Private Pension Funds Amount	Percent of Total	Insurance Company Pension Reserves Amount	Percent of Total	U.S. Total Amount	Private Pension Funds Amount	Percent of Total	Insurance Company Pension Reserves Amount	Percent of Total
1957	73.4	11.3	15.40	6.6	8.99	156.8	.6	.38	5.5	3.51
1958	80.2	12.8	15.96	7.1	8.85	172.5	.7	.41	5.9	3.42
1959	84.8	14.1	16.63	8.1	9.55	191.9	1.0	.52	6.9	3.60
1960	90.2	15.7	17.41	8.7	9.65	208.9	1.3	.62	7.5	3.59
1961	95.4	16.9	17.71	9.2	9.64	229.6	1.6	.70	8.1	3.53
1962	100.9	18.1	17.94	9.8	9.71	253.4	1.9	.75	8.7	3.43
1963	107.2	19.6	18.28	10.6	9.89	280.5	2.2	.78	9.5	3.39
1964	113.9	21.2	18.61	11.3	9.92	307.0	2.8	.91	10.7	3.49
1965	122.0	22.7	18.61	12.0	9.84	335.3	3.4	1.01	11.8	3.52
1966	133.2	25.2	18.92	12.8	9.61	358.4	3.9	1.09	13.1	3.66
1967	149.7	26.4	17.64	14.0	9.35	382.9	4.1	1.07	14.1	3.68
1968	164.1	27.0	16.45	15.9	9.32	412.5	4.1	.99	15.1	3.66
1969	178.0	27.6	15.51	16.6	9.33	443.2	4.2	.95	16.4	3.70
1970	202.4	29.1	14.53	17.8	8.79	473.1	4.2	.89	17.8	3.76
1971	227.0	28.6	12.60	20.1	8.85	525.7	3.7	.70	19.1	3.63
1972	247.3	27.6	11.16	22.8	9.22	602.4	2.7	.45	20.3	3.37
1973	261.9	29.5	11.26	25.0	9.55	682.3	2.4	.35	22.0	3.22
1974	286.7	34.0	11.86	27.6	9.63	742.5	2.4	.32	24.7	3.33
1975	323.4	35.8	11.07	32.6	10.08	801.5	2.4	.30	27.6	3.44
1976	364.6	35.5	9.74	41.6	11.41	888.8	2.4	.27	31.2	3.51
1977	400.7	42.4	10.51	50.1	12.50	1,021.1	2.5	.24	34.3	3.36
1978	432.5	48.0	11.10	59.3	13.71	1,169.4	2.8	.24	39.7	3.39
1979	465.4	53.7	11.54	67.6	14.53	1,326.8	3.1	.23	47.2	3.56
1980	503.8	58.1	11.53	80.4	15.96	1,447.4	3.7	.26	59.0	4.08

Table 5.5.7 Continued

Shares of Selected Total U.S. Financial Assets Held by Private Pension Funds and Insurance Company Pension Reserves,<sup>1</sup> 1957-1980  
(Billions of Dollars)

Year	State and Local Government Securities					
	U.S. Total Amount	Private Pension Funds		Insurance Company Pension Reserves		
		Amount	Percent of Total	Amount	Percent of Total	
1957	53.7	0	0.00	0.4	.74	
1958	59.2	0	0.00	0.4	.68	
1959	65.5	0	0.00	0.6	.92	
1960	70.8	0	0.00	0.6	.85	
1961	75.9	0	0.00	0.7	.92	
1962	81.2	0	0.00	0.7	.86	
1963	86.9	0	0.00	0.7	.81	
1964	92.9	0	0.00	0.7	.75	
1965	100.3	0	0.00	0.7	.70	
1966	105.9	0	0.00	0.7	.66	
1967	113.7	0	0.00	0.6	.53	
1968	123.2	0	0.00	0.7	.57	
1969	133.1	0	0.00	0.7	.53	
1970	144.4	0	0.00	0.8	.55	
1971	161.8	0	0.00	0.9	.56	
1972	176.5	0	0.00	0.9	.51	
1973	191.2	0	0.00	0.9	.47	
1974	207.7	0	0.00	1.1	.53	
1975	223.8	0	0.00	1.4	.63	
1976	239.5	0	0.00	1.9	.79	
1977	261.4	0	0.00	2.2	.84	
1978	287.5	0	0.00	2.4	.83	
1979	309.3	0	0.00	2.5	.81	
1980	336.1	0	0.00	3.0	.89	

Source: Federal Reserve System, Flow of Funds Accounts, Assets and Liabilities Outstanding, 1957-1980

1. Estimated assuming portfolio distribution of pension reserves is the same as portfolio distribution of total reserves held by life insurance companies.

## 5.6 Private Pension Fund Assets: Cross-sectional Analysis

There are two principal depositories of contributions to pay for future pension benefits. One is the traditional pension trust fund; the other is reserve accounts of insurance companies. Many pension plans self-administer their pension assets making payments directly to beneficiaries. These plans are typically referred to as "noninsured" pension plans. Other plans use contributions to immediately purchase annuity contracts from insurance companies. In the case of a "fully insured" pension plan, the pension fund is merely a conduit for these transactions. While these insured pension funds report receipt of contributions and payments to insurance companies, they understandably do not report as their own pension fund assets the value of assets held as a reserve by insurance companies to meet contracted benefit payments. They do, however, report as their own assets the value of unallocated insurance contracts—funds deposited with insurance companies for the future purchase of annuities. Partially insured plans are a third type of plan usually included in the category "noninsured plans." These plans provide either some or all of the benefits through the purchase of insurance contracts. Like fully insured plans, partially insured plans also report as their own assets the value of monies placed on deposit with insurance companies for the future purchase of annuities—so called unallocated insurance contracts; but again, insurance company reserves for allocated annuities are excluded from their pension fund estimates.

While the plans themselves do not report the value of assets held as a reserve by insurance companies to fund the contracted benefit payments of allocated annuities, the Federal Reserve Board does provide an estimate of these assets in its quarterly balance sheet data. For 1980 their estimate of insurance company reserves held to meet pension contracts is \$165.9 billion.

A flow of funds statement based on Internal Revenue Service data for the entire universe of pension funds, including fully insured, partially insured, and noninsured pension funds, is presented in table 5.6.1. The table excludes all assets corresponding to allocated insurance contracts. It also excludes receipts and expenditures of fully insured plans, completely funded through allocated insurance contracts. For other plans, some of the receipts and expenditures arising from the purchase of allocated insurance contracts may be included in reported total values of these income flows. The estimated end-of-year total market value of

pension assets including unallocated insurance contracts is \$289.45 billion for 1976 and \$314.87 billion for 1977. These numbers can be compared with the Security and Exchange Commission's respective estimates for noninsured pension plans of \$173.91 billion and \$181.56 billion reported in table 5.5.4. There are three explanations for the large discrepancies between the SEC and IRS estimates. First, the SEC estimates exclude the value of unallocated insurance contracts. The market value of these contracts totaled \$41.4 billion at the end of 1977. Second, the SEC series has not been benchmarked since 1967. This failure to benchmark means that the SEC estimates exclude the assets of plans created since 1967—a period of tremendous growth in the number of private pension plans. According to the IRS 5500 File, plans created since 1967 held assets of \$57.80 billion at the end of 1977. Finally, the size of the SEC survey has dwindled in recent years from 1,500 plans in the 1950s to a little more than 400 plans in 1977. The problems associated with this small sample are compounded by the fact that the SEC survey is often sent to banks and money funds rather than plan sponsors. This procedure substantially increases the magnitude of reporting errors. Hence, if one subtracts out the value of unallocated insurance contracts and the assets of newly created plans, the SEC reporting error is still quite substantial—on the order of 15 to 20 percent.

The Federal Reserve System also provides estimates of private pension trust fund assets. Unfortunately, these estimates are also based on the SEC survey and are subject to the same reporting error. The Federal Reserve System estimate of the 1980 value of these assets is \$286.8 billion. Again, this figure excludes the value of unallocated insurance contracts.

According to the IRS Form 5500 series data, pension fund receipts equaled \$48.31 billion in 1977, reflecting \$46.00 billion in contributions, \$16.21 billion in interest, rents, and royalties, and \$13.90 billion in capital losses. Disbursements totaled \$23.64 billion; 81.33 percent of this amount was spent on benefit payments, 11.53 percent was paid to purchase insurance contracts, and the remaining 7.14 percent was spent on administrative and other expenses. The purchase of insurance contracts represents a 11.20 percent claim on pension fund contributions for plans with fewer than 25 participants. For the largest plans, those with over 10,000 active participants, payments to insurance companies total less than 4 percent of contributions.

As a fraction of initial 1977 assets, the \$2.31 billion of capital income of private pension funds represented a .80 percent rate of return. The rate of return for plans with 1,000 or more active participants was  $-.63$  percent in 1977. In contrast, plans with fewer than 1,000 participants earned a combined return of 6.44 percent.

Almost three-quarters of pension trust assets are held by plans with 1,000 or more active participants. Table 3.3.1, however, indicates that these large plans account for almost 70 percent of all active participants. On the basis of the data in tables 5.6.1 and 3.3.1, the ratio of total 1977 (beginning of year) assets to total active pension participants is \$7,029. For plans with 1,000 or more active participants the ratio is \$7,604; it is \$5,804 for plans with fewer than 1,000 active participants. The smallest plans with fewer than 25 active participants, however, have a ratio of \$10,235.

Table 5.6.2 further examines the concentration of assets among pension plans. In 1977, 3,135 pension plans, less than 1 percent of an estimated total 425,332 plans, held 70.82 percent of total pension assets. The 59 pension plans with the largest reported assets held \$1.14 billion on average. Two-thirds of pension plans reported assets of \$10,000 to \$250,000. Another 9.52 percent of plans reported essentially zero assets. These consist mostly of plans that were established immediately prior to the survey and plans that were terminated during the previous year; table 4.1.2 indicates that 35,416 new plans were established in 1977, representing 7.97 percent of total 1977 plans.

The 1977 portfolio allocations of private pension plans with 100 or more participants (data for smaller plans are not available) are summarized in tables 5.6.3 and 5.6.4. The former table tabulates asset holdings by the size of the pension fund. The latter table indicates the distribution of pension funds with respect to the fraction of their assets invested in equities. These data are also classified by pension fund size.

Corporate stock represented 42.55 percent of total 1977 trust fund assets. Investments in corporate and government securities constituted close to one-quarter of total assets. Investments in pooled funds accounted for 13.74 percent of the aggregate 1977 private pension portfolio. These are monies placed with a bank or other financial institution and invested jointly with the contributions of other pension funds. The investment instruments of these pooled funds are typically equities and fixed income securities.

The Securities and Exchange Commission estimates of total equity and bond portfolio shares for 1977 are 55.55 percent and 34.57 percent, respectively (table 5.5.5). Reconciling these estimates of portfolio shares with those from the IRS 5500 File requires a classification of table 5.6.3's pooled fund and other asset investments as equity or fixed income securities. Unfortunately, this information is not available on the IRS file.

For large plans with over half a billion dollars in assets, pooled funds are only 6.07 percent of total assets, while equity is 54.19 percent. Medium size funds with \$250,000 to \$500,000 in assets, on the other hand, place 31.21 percent of their assets with pooled funds, directly investing only 16.39 percent of their assets in corporate stock. Small funds with less than \$50,000 in assets place less than 13 percent of their assets with pooled funds and less than 9 percent of their assets directly in corporate stock.

The figures in table 5.6.3 mask a considerable amount of portfolio dispersion even within an asset size category. For example, in the asset size group \$100 to \$250 million, 43.36 percent of total pension assets are invested in corporate stock. Table 5.6.4 indicates, however, that only about one-third of pension plans in this size category report an equity portfolio share between 25 and 50 percent. Close to one-third report a 50 to 75 percent equity share; 9.14 percent report an equity share in excess of 75 percent. An additional 13.24 percent of plans in this category have equity portfolio shares below 10 percent. Many of these plans may, however, own equities indirectly in the form of claims to pooled funds.

Table 5.6.1  
Private Pension Funds' Flow of Funds Statement, by Plan Size, 1977  
(Market Value in Millions of Dollars)

Number of Active Participants	Gross Assets at Beginning of Year <sup>1</sup>	Total Contributions	Interest, Dividends, Rents, Royalties <sup>2</sup>	Net Realized Appreciation of Assets <sup>3</sup>	Net Unrealized Appreciation of Assets	Total Direct Benefit Payments	Premium Payments to Insurance Companies	Administrative and Other Expenses <sup>4</sup>	Decrease in Liabilities and Statistical Discrepancy	Gross Assets at End of Year <sup>1</sup>
1-24	22,995	5,793	1,553	101	-152	1,151	649	369	169	28,290
25-49	6,689	1,303	423	16	-92	333	106	44	44	7,900
50-99	7,334	1,297	485	0	-50	476	194	69	13	8,340
100-249	11,204	1,743	681	1	-25	615	181	116	32	12,499
250-499	11,766	1,826	687	6	-21	679	143	110	20	13,157
500-999	16,352	2,424	968	-6	-52	956	151	113	26	18,029
1,000-4,999	55,797	7,975	3,146	-78	-2,128	3,404	410	343	114	60,669
5,000-9,999	29,469	4,399	1,610	31	-1,416	2,133	163	146	24	31,675
10,000+	127,846	19,246	6,657	-182	-8,975	9,479	730	375	300	134,308
TOTAL	289,453	46,005	16,210	-111	-13,793	19,227	2,727	1,684	740	314,866

Source: IRS 5500 File (1977)

1. Includes unallocated insurance contracts but excludes allocated contracts. The value of these contracts was \$41.4 billion at the end of 1977. Three plans with assets of \$1,454,513,431 were excluded from table due to the absence of income statement data.

2. Includes "other income," item 14(f), on IRS Form 5500.

3. Includes "other changes," item 14(n), on IRS Form 5500.

4. Many small plans fail to charge administrative expenses to the plan. In the IRS sample, 19,153 plans out of a possible 39,189 reported no administrative expenses. On a weighted basis, this corresponds to 320,269 plans out of a possible 474,238. For a more detailed discussion of this expensing phenomenon, see "Evaluating a National Pension Plan Data Base," by Emily A. Andrews and Olivia S. Mitchell, forthcoming in *Proceedings of the American Statistical Association Meetings, Summer 1981*.



Table 5.6.2  
Distribution of Total Non-insured Private Pension Fund Assets  
by Size of Pension Fund, All Plans, 1977

Size of Pension Fund in Dollars	Amount of Assets <sup>1</sup>	Percent of Total Assets	Number of Total Plans	Percent of Plans	Average Amount of Assets Per Plan
over \$500m	\$63,063,926,970	22.97	59	.01	\$1,142,462,445
\$250m-\$500m	22,214,207,301	8.09	70	.02	342,811,841
\$100m-\$250m	37,796,774,125	13.77	271	.06	150,704,841
\$50m-\$100m	24,452,500,378	8.91	371	.09	71,248,544
\$25m-\$50m	22,643,185,020	8.25	694	.16	35,335,807
\$10m-\$25m	24,248,307,013	8.83	1,670	.39	15,725,232
\$5m-\$10m	14,696,375,466	5.35	2,281	.54	6,978,336
\$2.5m-\$5m	11,848,003,263	4.32	3,669	.86	3,493,749
\$1m-\$2.5m	13,745,936,691	5.01	9,473	2.23	1,559,133
\$500,000-\$1m	9,793,798,334	3.57	15,290	3.59	682,000
\$250,000-\$500,000	9,724,239,333	3.54	30,060	7.07	342,644
\$100,000-\$250,000	11,676,450,002	4.25	79,339	18.65	155,544
\$50,000-\$100,000	5,087,529,609	1.85	75,062	17.65	71,596
\$25,000-\$50,000	2,396,256,018	.87	68,809	16.18	36,783
\$10,000-\$25,000	958,120,841	.35	60,187	14.15	16,813
\$5,000-\$10,000	163,483,179	.06	23,129	5.44	7,465
\$1,000-\$5,000	42,161,224	.02	14,410	3.39	3,090
under \$1,000	1,411,040	.00	40,488	9.52	37
TOTAL	\$274,552,665,807	100.00	425,332	100.00	\$645,502

Source: IRS 5500 File (1977)

1. Table excludes fully insured plans. For partially insured plans, assets exclude the value of unallocated insurance contracts.

Table 5.6.3  
Portfolio Composition of Private Pension Plans by Size of Pension Fund, 1977<sup>1</sup>  
(Market Value in Millions of Dollars)

	Cash and Deposits	Receivables <sup>1</sup>	Government Securities		Corporate Bonds	Corporate Stocks		Real Estate	Mortgages	Other Loans	Pooled Funds	Buildings	Other Assets <sup>2</sup>
			Federal	State and Local		Common	Preferred						
Over \$500m													
Amount	652	1,357	5,725	2.16	8,347	34,089	83.6	852	1,809	151	3,828	51.3	6,115
Row Percent	1.03	2.15	9.08	.00	13.24	54.06	.13	1.35	2.87	.24	6.07	.08	9.70
\$250m-\$500m													
Amount	704	743	2,104	18.6	3,524	10,036	52.2	111	379	38.5	2,811	2.39	1,689
Row Percent	3.17	3.34	9.47	.08	15.86	45.18	.24	.50	1.71	.17	12.65	.01	7.60
\$100m-\$250m													
Amount	629	1,421	3,500	32.1	5,558	16,032	357	467	411	96.6	5,964	11.7	3,318
Row Percent	1.66	3.76	9.26	.08	14.70	42.42	.94	1.24	1.09	.26	15.78	.03	8.78
\$50m-\$100m													
Amount	381	1,114	2,176	21.0	3,723	10,533	110	118	229	37.0	3,579	47.9	2,382
Row Percent	1.56	4.56	8.90	.09	15.23	43.08	.45	.48	.94	.15	14.64	.20	9.74
\$25m-\$50m													
Amount	369	1,096	2,210	7.21	3,671	8,775	93.8	115	338	37.1	3,433	17.3	2,480
Row Percent	1.63	4.84	9.76	.03	16.21	38.75	.41	.51	1.49	.16	15.16	.08	10.95
\$10m-\$25m													
Amount	687	1,159	2,351	47.3	4,163	8,600	251	149	295	62.9	3,753	15.2	2,713
Row Percent	2.83	4.78	9.70	.20	17.17	35.47	1.04	.61	1.22	.26	15.48	.06	11.19
\$5m-\$10m													
Amount	525	852	1,346	21.6	2,438	4,418	119	99.1	141	60.5	2,849	8.79	1,818
Row Percent	3.57	5.80	9.16	.15	16.59	30.06	.81	.67	.96	.41	19.39	.06	12.37
\$2.5m-\$5m													
Amount	587	770	1,033	5.91	1,817	3,142	107	108	107	49.5	2,345	14.1	1,284
Row Percent	5.16	6.77	9.09	.05	15.98	27.64	.94	.95	.94	.44	20.63	.12	11.29
\$1m-\$2.5m													
Amount	683	700	883	9.26	1,365	2,229	103	79.1	117	40.4	2,362	18.2	1,110
Row Percent	7.04	7.22	9.10	.10	14.07	22.98	1.06	.82	1.21	.42	24.35	.19	11.44

Table 5.6.3 Continued  
 Portfolio Composition of Private Pension Plans by Size of Pension Fund, 1977<sup>1</sup>  
 (Market Value in Millions of Dollars)

	Cash and Deposits	Receivables <sup>2</sup>	Government Securities		Corporate Bonds	Corporate Stocks		Real Estate	Mortgages	Other Loans	Pooled Funds	Buildings	Other Assets <sup>3</sup>
			Federal	State and Local		Common	Preferred						
<b>\$500,000-\$1m</b>													
Amount	288	302	254	4.24	408	666	34.4	23.1	24.6	13.0	910	4.15	400
Row Percent	8.64	9.07	7.62	.13	12.25	19.99	1.03	.69	.74	.39	27.32	.12	12.01
<b>\$250,000-\$500,000</b>													
Amount	125	136	78.5	1.67	113	200	13.2	4.39	9.64	5.43	381	.79	152
Row Percent	10.24	11.14	6.43	.14	9.26	16.39	1.08	.36	.79	.44	31.21	.06	12.45
<b>\$100,000-\$250,000</b>													
Amount	48.7	79.4	19.1	.28	34.2	55.2	3.52	.76	2.07	1.38	132	.079	52.1
Row Percent	11.36	18.52	4.45	.07	7.98	12.87	.82	.18	.48	.32	30.78	.02	12.15
<b>\$50,000-\$100,000</b>													
Amount	10.7	19.8	3.03	.051	3.60	6.95	.65	.19	.17	.28	14.9	.096	6.64
Row Percent	15.96	29.53	4.52	.08	5.37	10.36	.97	.28	.25	.42	22.22	.14	9.90
<b>\$25,000-\$50,000</b>													
Amount	4.55	6.73	.64	.0060	1.37	1.51	.19	.0016	.030	.027	2.52	.077	2.08
Row Percent	23.06	34.11	3.24	.03	6.94	7.65	.96	.01	.15	.14	12.77	.39	10.54
<b>\$10,000-\$25,000</b>													
Amount	1.69	2.05	.17	0	.34	.37	.026	.0062	.037	.021	.61	.0046	.36
Row Percent	29.73	36.06	2.99	.00	5.98	6.51	.46	.11	.65	.37	10.73	.08	6.33
<b>\$5,000-\$10,000</b>													
Amount	.43	.39	.0049	0	.032	.053	.0062	.0003	.0075	.0001	.096	.0003	.077
Row Percent	39.19	35.54	.45	.00	2.92	4.83	.57	.03	.68	.01	8.75	.03	7.02
<b>\$1,000-\$5,000</b>													
Amount	.14	.080	.016	0	.0018	.0056	0	0	.0001	.0016	.021	.0004	.035
Row Percent	46.43	26.53	5.31	.00	.60	1.86	.00	.00	.03	.53	6.97	.13	11.61
<b>Under \$1,000</b>													
Amount	.023	.0012	.0010	0	.0001	.0006	0	0	0	0	.0001	.0006	.0021
Row Percent	80.14	4.18	3.48	.00	.35	2.09	.00	.00	.00	.00	.35	2.09	7.32
<b>TOTAL</b>													
Amount	5,700	9,762	21,684	171	35,166	98,784	1,328	2,128	3,862	594	32,329	192	23,533
Row Percent	2.42	4.15	9.22	.07	14.95	41.99	.56	.90	1.64	.25	13.74	.08	10.00

Source: IRS 5500 File (1977)

1. Includes only plans with 100 or more active participants. Excludes plans with benefits funded exclusively by insurance annuities. For partially insured plans, assets exclude the value of unallocated insurance contracts.
2. Figure reported is net; i.e. it includes a reserve for doubtful accounts.
3. Includes shares of a registered investment company.

Table 5.6.4  
 Distribution of Private Pension Plans by Fraction of Assets Invested in Equities and by Size of Pension Fund, 1977<sup>1</sup>

Size of Pension Fund in Dollars	Fraction of Assets Invested in Equities <sup>2</sup>				
	0-10%	10-25%	25-50%	50-75%	75-100%
<b>Over \$500m</b>					
Number of Plans	4	3	16	31	7
Row Percent	6.56	4.92	26.23	50.82	11.48
<b>\$250m-\$500m</b>					
Number of Plans	7	7	25	26	7
Row Percent	9.72	9.72	34.72	36.11	9.72
<b>\$100m-\$250m</b>					
Number of Plans	36	30	94	87	25
Row Percent	13.24	11.03	34.56	31.99	9.19
<b>\$50m-\$100m</b>					
Number of Plans	59	30	124	121	39
Row Percent	15.82	8.04	33.24	32.44	10.46
<b>\$25m-\$50m</b>					
Number of Plans	148	73	224	189	61
Row Percent	21.29	10.50	32.23	27.19	8.78
<b>\$10m-\$25m</b>					
Number of Plans	393	181	599	368	130
Row Percent	23.52	10.83	35.85	22.02	7.78

Table 5.6.4 Continued

Distribution of Private Pension Plans by Fraction of Assets Invested in Equities and by Size of Pension Fund, 1977<sup>1</sup>

Size of Pension Fund in Dollars	Fraction of Assets Invested in Equities <sup>2</sup>				
	0-10%	10-25%	25-50%	50-75%	75-100%
<b>\$5m-\$10m</b>					
Number of Plans	742	256	729	404	150
Row Percent	32.53	11.22	31.96	17.71	6.58
<b>\$2.5m-\$5m</b>					
Number of Plans	1,277	430	1,052	546	207
Row Percent	36.36	12.24	29.95	15.55	5.89
<b>\$1m-\$2.5m</b>					
Number of Plans	3,011	689	1,550	904	311
Row Percent	46.57	10.66	23.98	13.98	4.81
<b>\$500,000-\$1m</b>					
Number of Plans	2,724	456	987	581	246
Row Percent	54.55	9.13	19.76	11.63	4.93
<b>\$250,000-\$500,000</b>					
Number of Plans	2,334	217	546	322	187
Row Percent	64.73	6.02	15.14	8.93	5.19
<b>\$100,000-\$250,000</b>					
Number of Plans	1,944	124	307	185	116
Row Percent	72.65	4.63	11.47	6.91	4.33
<b>\$50,000-\$100,000</b>					
Number of Plans	763	30	74	61	43
Row Percent	78.58	3.09	7.62	6.28	4.43
<b>\$25,000-\$50,000</b>					
Number of Plans	474	20	44	26	14
Row Percent	82.01	3.46	7.61	4.50	2.42
<b>\$10,000-\$25,000</b>					
Number of Plans	308	5	13	17	9
Row Percent	87.50	1.42	3.69	4.83	2.56
<b>\$5,000-\$10,000</b>					
Number of Plans	144	1	8	7	1
Row Percent	89.44	.62	4.97	4.35	.62
<b>\$1,000-\$5,000</b>					
Number of Plans	108	3	3	1	0
Row Percent	93.91	2.61	2.61	.87	.00
<b>Under \$1,000<sup>3</sup></b>					
Number of Plans	85	0	0	1	1
Row Percent	97.70	.00	.00	1.15	1.15
<b>TOTAL</b>					
Number of Plans	14,563	2,553	6,395	3,877	1,552
Row Percent	50.32	8.82	22.10	13.40	5.36

Source: IRS 5500 File (1977)

1. Includes only plans with 100 or more participants. Excludes plans with benefits funded exclusively by insurance annuities. For partially insured plans, assets corresponding to unallocated insurance contracts are excluded.

2. Equities include both common and preferred stocks.

3. Plans reporting no assets were excluded from this category.

## 5.7 Funding Status of Large Corporate Pension Funds

Evaluating the financial solvency of a pension plan is a complicated affair. While valuation of a pension plan's assets is relatively straightforward, valuation of pension liabilities is highly sensitive to the concept of liability considered and to mortality, separation, wage growth, and interest rate assumptions. There are two basic liability concepts, accrued liabilities and projected liabilities. Accrued liabilities are essentially a "shutdown" concept and refer to the pension benefits promised by the plan to active and retired participants on the basis of their past service with the firm. Projected liabilities correspond to the benefits the plan can expect to pay its current active and retired participants assuming the firm remains in business for the indefinite future. Both accrued and projected liabilities are typically expressed in present values; future benefit payments based on past and/or projected future service are discounted to the present using an assumed interest rate.

In addition to these two liability concepts, liabilities can be further classified with respect to the vested status of participants. Thus, accrued vested liabilities and projected vested liabilities refer to potential benefit payments to vested participants. Total accrued liabilities and total projected liabilities include all participants in the actuarial calculation.

While each of these definitions of liabilities is of interest to students of pension finances, vested accrued liabilities and the total accrued liabilities correspond most closely to the pension plan's legal obligations. In the case of plan termination, the Employee Retirement Income Security Act of 1974 requires that pension fund assets first be used to pay accrued vested liabilities. If pension fund assets at the time of plan termination exceed accrued vested liabilities, residual assets must be used to meet accrued liabilities to not vested participants. In the case that pension assets are insufficient to cover accrued vested liabilities, the difference between these liabilities and pension fund assets is insured by the Pension Benefit Guarantee Corporation (PBGC). Under ERISA the PBGC is, however, authorized to attach up to 30 percent of the market value of the firm's equity to cover the unfunded portion of the accrued vested liability.

The fact that accrued liabilities are potentially legal obligations may have influenced the Financial Accounting Standards Board (FASB) recommendation in March of 1980 that corporations report estimates of these liabilities. FASB also urged disclosure of the pension plan's net assets and the interest rate assumed in the liability calculation. Virtually all major corporations appear to be following the FASB recommendations. It should be noted, however, that a corporation's statement of its accrued liabilities may not correspond to the PBGC's estimate of these liabilities. In the case of pension plan termination, it is the PBGC's estimate that is decisive.

Table 5.7.1 displays 1980 total and vested accrued liabilities for 497 of the top Fortune 1,000 firms. The table also presents pension fund assets, unfunded accrued liabilities, and the interest rate assumption used by the corporation's pension fund actuary in estimating liabilities.

General Motors, second in the Fortune ranking, reported total accrued liabilities of \$19.62 billion and vested accrued liabilities of \$17.44 billion in 1980. GM's accrued liabilities exceed by a wide margin those of any other U.S. corporation. Its \$13.35 billion pension fund assets represent the largest pension fund, and its \$6.32 billion total unfunded accrued liability is over 3 times that of Chrysler, which reports the second largest total unfunded accrued liability.

Table 5.7.1 indicates that for over half of the corporations listed, pension fund assets exceed vested accrued liabilities. Fifteen corporations reported assets that were twice the value of their vested accrued liabilities. Table 5.7.2 ranks corporations by the fraction of their vested accrued liability that is unfunded. Several of the firms reported zero pension assets because their pension plan was only recently created. Only seven corporations were less than 50 percent funded based on the vested accrued liability concept. While GM reported the largest absolute unfunded liability, it ranked 74th out of 497 in the fraction of its reported vested accrued liability that was unfunded. Chrysler ranked 13th. General Electric, the company with the second largest pension fund (\$6.58 billion), ranked 286th. Chrysler's pension assets of \$1.75 billion represented only 58 percent of its vested liabilities in 1980. GE's assets equaled 109 percent of its unfunded vested liabilities.

Table 5.7.3 examines the interest rate assumed by actuaries of these Fortune 1,000 pension plans. Almost two-thirds of the corporate liability estimates are based on interest rates between 6 and 8 percent. A rate between 8 and 10 percent was used by 26.21 percent of the corporate actuaries, while 1.82 percent of the corporations assumed a 10 to 12 percent interest rate. Another fifty-one corporate plans, representing 10.30 percent of the sample, reported an interest rate between 5 and 6 percent.

The percentage of total pension assets accounted for by plans using specific interest rates is also presented in the table. While slightly more than half the corporations used interest rates in excess of 7 percent, these corporations accounted for 71.80 percent of total pension fund assets. There is, however, no tendency for larger corporations to use larger interest rates in their actuarial calculations. The data in table 5.7.4 indicate the opposite

relationship. Of corporations in the bottom half of the Fortune ranking 60.47 percent used a 7 percent or greater interest rate. For corporations in the top half of the ranking, the fraction with a 7 percent or greater interest rate is only .399.

Corporations in the Fortune 1,000 are roughly equally well funded regardless of their Fortune ranking (table 5.7.4). The average ratio of assets to vested accrued liabilities exceeds unity for each of table 5.7.4's ten subdivisions of the Fortune 1,000. This table also indicates a positive relationship between this funding ratio and the interest rate used in the liability calculation. The 48 corporations using a 5 to 6 percent interest rate report, on average, a funded ratio of .98. The 105 corporations using an 8 to 10 percent interest rate report funded ratios that average 1.26. Other things equal, one would expect to observe exactly this positive relationship between the interest rate and the funded ratio. Higher interest rates reduce the calculated present value of benefit liabilities and thus produce a higher assets to liabilities ratio.

While the average funded ratio is basically an increasing function of the interest rate (excluding the single plan using a 4 to 5 percent interest rate), the mean value of unfunded vested accrued liabilities per employee does not uniformly decline with the interest rate. Over all plans, the average unfunded liability per employee is \$47. The largest unfunded liability per employee reported in the table is \$1,895.

Table 5.7.1  
Liabilities of Private Pension Funds, 1980, Fortune 1000 Sample<sup>1</sup>  
(Amounts in Thousands of Dollars)

Company	Fortune Rank 1979	Total Accrued Liability	Vested Accrued Liability	Assets <sup>2</sup>	Total Unfunded Accrued Liability	Unfunded Vested Accrued Liability	Interest Rate Assump- tion	Valu- ation Year
EXXON	1	2,538,000	2,420,000	3,449,000	-911,000	-1,029,000	7.7	1980
GENERAL MOTORS	2	19,672,600	17,438,500	13,353,800	6,318,800	4,084,700	8.3	1980
MOBIL	3	2,624,000	2,561,000	2,488,000	136,000	73,000	6.0	1980
FORD MOTOR	4	7,680,000	6,085,000	6,200,000	1,480,000	-115,000	7.0	1980
TEXACO	5	874,000	802,000	1,045,000	-171,000	-243,000	8.0	1979
STANDARD OIL OF CALIFORNIA	6	872,029	872,000	941,000	-68,971	-69,000	7.0	1979
GULF OIL	7	1,125,000	1,060,000	1,453,000	-328,000	-393,000	8.9	1980
INTERNATIONAL BUSINESS MACHINES	8	5,334,000	5,166,000	5,712,000	-378,000	-546,000	4.8	1980
GENERAL ELECTRIC	9	6,442,000	6,027,000	6,580,000	-138,000	-553,000	6.0	1980
STANDARD OIL (IND.)	10	1,314,000	1,293,000	1,345,000	-31,000	-52,000	8.0	1980
INTERNATIONAL TELEPHONE & TELEGRAPH	11	1,851,000	1,630,000	1,574,000	277,000	56,000	7.9	1979
U. S. STEEL	14	5,800,000	5,500,000	6,100,000	-300,000	-600,000	10.0	1980
CONOCO	15	291,307	267,886	449,604	-158,297	-181,718	8.0	1979
DU PONT (E. I.) DE NEMOURS	16	3,949,000	3,878,000	5,537,000	-1,588,000	-1,659,000	8.6	1980
CHRYSLER	17	3,626,000	3,022,500	1,747,200	1,878,800	1,275,300	8.3	1979
TENNECO	18	659,000	589,000	517,000	142,000	72,000	6.3	1979
WESTERN ELECTRIC	19	3,803,900	3,224,100	4,891,000	-1,087,100	-1,666,900	8.0	1979
SUN	20	656,000	626,000	803,000	-147,000	-177,000	7.5	1979
OCCIDENTAL PETROLEUM	21	204,476	180,312	229,635	-25,159	-49,323	7.0	1979
PHILLIPS PETROLEUM	22	543,577	493,985	720,013	-176,436	-226,028	8.0	1979
DOW CHEMICAL	24	1,078,000	894,000	1,044,000	34,000	-150,000	6.5	1980
UNION CARBIDE	25	1,354,000	1,233,000	1,385,000	-31,000	-152,000	8.0	1979
GOODYEAR TIRE & RUBBER	28	1,408,550	1,268,500	1,325,258	83,292	-56,758	NA	1979
BOEING	29	1,569,600	1,361,700	1,753,200	-183,600	-391,500	8.5	1980
EASTMAN KODAK	30	1,962,866	1,842,187	2,007,921	-45,055	-165,734	6.3	1980
LTV	31	1,629,155	1,453,162	1,391,384	237,771	61,778	10.0	1979
STANDARD OIL (OHIO)	32	233,705	223,252	224,424	9,281	-11,172	7.0	1979
CATERPILLAR TRACTOR	33	1,960,700	1,812,800	1,428,400	532,300	384,400	7.5	1980
UNION OIL OF CALIFORNIA	34	519,300	477,000	572,500	-53,200	-95,500	7.0	1980
RCA	36	1,330,000	1,270,000	1,220,000	110,000	50,000	7.0	1979
WESTINGHOUSE ELECTRIC	37	2,821,000	2,478,000	2,020,500	800,500	457,500	7.0	1980
BETHLEHEM STEEL	38	2,455,200	2,373,000	1,952,800	502,400	420,200	10.0	1979
REYNOLDS (R. J.) INDUSTRIES	39	526,100	431,500	567,700	-41,600	-136,200	8.0	1979
XEROX	40	49,300	39,300	52,200	-2,900	-12,300	7.0	1979
MARATHON OIL	43	270,301	252,791	319,840	-49,539	-67,049	7.0	1979
CITIES SERVICE	47	398,300	363,500	517,800	-119,500	-154,300	8.0	1979
MONSANTO	48	890,200	775,500	1,260,300	-370,100	-484,800	7.5	1980
PHILLIP MORRIS	49	334,500	304,000	338,900	-4,400	-34,900	6.5	1979
MINNESOTA MINING & MANUFACTURING	51	481,000	359,000	497,000	-16,000	-138,000	8.0	1979
MCDONNELL DOUGLAS	54	1,323,500	1,170,300	1,448,600	-125,100	-278,300	8.0	1979
GRACE (W. R.)	55	197,800	182,300	282,400	-84,600	-100,100	6.4	1980
GEORGIA-PACIFIC	56	187,000	165,000	168,000	19,000	-3,000	6.0	1980
PEPSICO	57	182,651	160,170	198,345	-15,694	-38,175	7.0	1979
COCA-COLA	59	165,773	152,772	165,448	325	-12,676	8.0	1980
COLGATE-PALMOLIVE	61	351,115	320,443	370,424	-19,309	-49,981	6.7	1979
GETTY OIL	62	340,164	318,169	370,669	-30,505	-52,500	7.0	1979
ALUMINUM CO. OF AMERICA	63	1,081,900	1,013,400	995,400	86,500	18,000	10.0	1980
GREYHOUND	65	902,974	863,514	818,657	84,317	44,857	9.0	1979
INTERNATIONAL PAPER	66	677,000	656,000	991,000	-314,000	-335,000	8.8	1980
TRW	68	777,981	684,562	950,831	-172,850	-266,269	8.5	1980
ALLIED CHEMICAL	69	770,000	716,000	595,000	175,000	121,000	8.0	1979
AMERICAN CAN	70	978,800	922,400	783,300	195,500	139,100	8.0	1979
WEYERHAEUSER	71	340,831	323,586	386,830	-45,999	-63,244	9.5	1979
CONTINENTAL GROUP	72	797,000	720,000	755,000	42,000	-35,000	8.5	1979
BORDEN	73	283,587	270,164	196,508	87,079	73,656	6.0	1979
CHARTER	74	41,717	38,992	37,198	4,519	1,794	7.8	1979
SIGNAL COMPANIES	75	643,900	536,200	449,500	194,400	86,700	6.0	1979
NATIONAL STEEL	76	900,109	888,021	743,938	156,171	144,083	10.0	1980











Table 5.7.1 Continued  
Liabilities of Private Pension Funds, 1980, Fortune 1000 Sample<sup>1</sup>  
(Amounts in Thousands of Dollars)

Company	Fortune Rank 1979	Total Accrued Liability	Vested Accrued Liability	Assets <sup>2</sup>	Total Unfunded Accrued Liability	Unfunded Vested Accrued Liability	Interest Rate Assump- tion	Valu- ation Year
CONRAC	899	10,055	8,883	10,156	-101	-1,273	6.3	1979
POLYCHROME	900	4,206	3,508	2,506	1,700	1,002	6.0	1979
STA-RITE INDUSTRIES	902	18,175	16,326	12,860	5,315	3,466	6.0	1979
CONWOOD	903	8,514	8,103	10,504	-1,990	-2,401	7.0	1979
WARNER ELECTRIC BRAKE AND CLUTCH	905	7,539	6,196	7,753	-214	-1,557	8.5	1979
KYSOR INDUSTRIAL	907	15,987	14,891	11,701	4,286	3,190	5.5	1979
AEGIS	911	3,110	2,689	3,359	-249	-670	6.0	1979
IROQUOIS BRANDS	912	2,968	237	652	2,316	-415	8.0	1979
COLECO INDUSTRIES	913	1,079	752	1,132	-53	-380	8.0	1979
SWANK	918	15,537	13,588	13,362	2,175	226	5.0	1979
PUBLICKER INDUSTRIES	920	12,335	12,086	3,165	9,170	8,921	7.0	1980
AUGAT	921	1,438	960	1,883	-445	-923	7.0	1979
MULTIMEDIA	923	8,778	8,213	8,985	-207	-772	8.0	1979
ROBLIN INDUSTRIES	926	13,750	13,148	7,481	6,269	5,667	5.8	1979
VALMONT INDUSTRIES	928	2,975	2,800	6,900	-3,925	-4,100	7.0	1980
KRUEGER (W.A.)	930	6,588	5,366	7,511	-923	-2,145	6.5	1979
COMPUTERVISION <sup>1</sup>	931	1,637	219	0	1,637	219	7.0	1979
MUNSWINGWEAR	936	15,434	14,656	11,561	3,873	3,095	6.5	1979
RONSON	939	20,590	20,024	30,813	-10,223	-10,789	6.5	1980
HASBRO INDUSTRIES	941	5,580	4,894	3,752	1,828	1,142	6.0	1979
DYNAMICS CORP. OF AMERICA	942	7,882	6,823	8,030	-148	-1,207	6.3	1979
UNION SPECIAL	943	27,888	27,160	25,913	1,975	1,247	8.0	1979
TONKA	946	7,815	6,804	6,294	1,521	510	6.0	1979
GENERAL BINDING	957	541	519	470	71	49	6.5	1979
DURIRON	961	22,881	19,498	18,372	4,509	1,126	7.5	1979
CADENCE INDUSTRIES	963	1,941	1,825	2,292	-351	-467	6.5	1979
MEDALIST INDUSTRIES	968	4,008	3,013	4,167	-159	-1,154	6.6	1979
ACTON	970	2,214	2,023	1,804	410	219	7.0	1979
OHIO FERRO ALLOYS	972	16,389	14,949	15,170	1,219	-221	6.0	1980
AUTOMATIC SWITCH	973	17,691	16,553	19,339	-1,648	-2,786	6.0	1980
EVEREST & JENNINGS INTERNATIONAL	975	5,908	5,636	3,814	2,094	1,822	6.0	1980
READING INDUSTRIES	978	6,015	5,053	3,555	2,460	1,498	8.0	1979
TERADYNE <sup>1</sup>	980	2,262	1,236	0	2,262	1,236	6.0	1979
WEST	982	16,765	13,865	12,797	3,968	1,068	6.3	1979
MACANDREWS & FORBES	983	10,384	9,435	7,408	2,976	2,027	6.9	1980
BELDING HEMINWAY	989	14,503	14,195	9,842	4,661	4,353	7.0	1979
GMI	996	1,666	861	3,494	-1,828	-2,633	8.0	1979
SIMMONDS PRECISION PRODUCTS	997	11,141	9,757	8,020	3,121	1,737	6.0	1979
PAPERCRAFT	998	6,669	6,286	6,651	18	-365	6.5	1979
NORTEK	1000	4,435	4,320	2,786	1,649	1,534	5.8	1979

Sources: NBER Fortune 1,000 Annual Reports File (1980)

1. Excludes firms with fiscal years ending other than 31 December 1980.
2. Assets are valued at market value as of actuarial valuation date.
3. Plan was recently created, and funding status may be misleading.

Table 5.7.2  
Private Pension Fund Liabilities, Fraction Funded, 1980:  
Fortune 1000 Sample<sup>1</sup>  
Ranked by Fraction of Vested Accrued Liability Unfunded

Company	Rank	Vested Accrued Liability Fraction Funded <sup>2</sup>	Total Accrued Liability Fraction Funded <sup>2</sup>	Interest Rate Assumption
COMPUTERVISION <sup>1</sup>	1	0.00	0.00	7.0
TERADYNE <sup>1</sup>	2	0.00	0.00	6.0
PUBLICKER INDUSTRIES	3	0.26	0.26	7.0
PHOENIX STEEL	5	0.45	0.41	7.0
AMERICAN BILTRITE	6	0.48	0.45	7.0
ALLIS-CHALMERS	7	0.48	0.44	7.0
SCOVILL	8	0.51	0.48	5.5
KERR GLASS MANUFACTURING	9	0.52	0.49	7.0
BALLY MANUFACTURING	10	0.55	0.41	6.0
CROWN CORK & SEAL	11	0.57	0.53	8.0
ROBLIN INDUSTRIES	12	0.57	0.54	5.8
CHRYSLER	13	0.58	0.48	8.3
AFFILIATED PUBLICATIONS	14	0.58	0.58	7.5
STANADYNE	15	0.58	0.55	5.5
ANCHOR HOCKING	16	0.60	0.53	7.0
LACLEDE STEEL	17	0.60	0.56	7.0
CHAMPION SPARK PLUG	18	0.61	0.49	7.0
COMMONWEALTH OIL REFINING	19	0.61	0.55	5.5
ROBERTSON (H. H.)	20	0.61	0.59	6.5
GF BUSINESS EQUIPMENT	21	0.62	0.55	5.5
TRIANGLE PACIFIC	22	0.63	0.54	7.0
AMERICAN STANDARD	23	0.63	0.59	7.5
TOWLE MANUFACTURING	24	0.63	0.56	5.0
CYCLOPS	25	0.64	0.61	9.5
WHEELING-PITTSBURGH STEEL	26	0.64	0.62	10.0
NORTEK	27	0.64	0.63	5.8
HAMMERMILL PAPER	28	0.65	0.61	6.0
ACF INDUSTRIES	29	0.65	0.63	7.0
PANTASOTE	30	0.66	0.61	6.0
CPC INTERNATIONAL	31	0.66	0.64	8.0
FRANKLIN ELECTRIC	32	0.66	0.62	7.5
BROCKWAY GLASS	33	0.66	0.61	6.0
BETZ LABORATORIES	34	0.66	0.17	6.5
PABST BREWING	35	0.67	0.50	6.0
KAISER CEMENT	36	0.67	0.62	7.0
GOODRICH (B.F.)	37	0.67	0.62	7.0
EVEREST & JENNINGS INTERNATIONAL	38	0.68	0.65	6.0
AMPCO-PITTSBURGH	39	0.68	0.61	6.0

Table 5.7.2 Continued

Private Pension Fund Liabilities, Fraction Funded, 1980:

Fortune 1000 Sample

Ranked by Fraction of Vested Accrued Liability Unfunded

Company	Rank	Vested Accrued Liability Fraction Funded	Total Accrued Liability Fraction Funded	Interest Rate Assumption
LAMSON & SESSIONS	40	0.68	0.62	6.5
OLYMPIA BREWING	41	0.69	0.61	6.3
BELDING HEMINWAY	42	0.69	0.68	7.0
DORSEY	43	0.70	0.59	6.0
STANLEY WORKS	44	0.70	0.68	6.0
READING INDUSTRIES	45	0.70	0.59	8.0
INGERSOLL-RAND	46	0.71	0.67	8.0
BEMIS	47	0.71	0.67	6.0
GROLIER	48	0.71	0.70	7.0
POLYCHROME	49	0.71	0.60	6.0
BAUSCH & LOMB	50	0.72	0.69	5.0
VULCAN	51	0.72	0.67	6.0
SOUTHGOWN	52	0.72	0.45	5.5
SMITH (A. O.)	53	0.72	0.65	7.0
PENTAIR	54	0.72	0.68	6.0
GULF RESOURCES & CHEMICAL	55	0.73	0.65	6.5
BORDEN	56	0.73	0.69	6.0
OWENS-ILLINOIS	57	0.73	0.71	6.5
CURTISS-WRIGHT	58	0.73	0.70	6.5
BORG-WARNER	59	0.73	0.69	7.0
KELLOGG	60	0.73	0.60	6.8
RICHARDSON	61	0.73	0.63	6.3
GENERAL REFRACTORIES	62	0.74	0.69	7.5
KATSER STEEL	63	0.74	0.63	8.0
ALABAMA BY-PRODUCTS	64	0.75	0.70	6.0
WEAN UNITED	65	0.75	0.69	6.0
DIEBOLD	66	0.75	0.69	6.0
HERSHEY FOODS	67	0.75	0.72	8.0
KENNECOTT COPPER	68	0.75	0.71	7.0
CONSOLIDATED PAPERS	69	0.75	0.73	5.0
WHITE CONSOLIDATED INDUSTRIES	70	0.75	0.68	7.5
TAMPAX	71	0.76	0.71	6.0
HANNA MINING	72	0.76	0.74	6.0
COPPERWELD	73	0.76	0.62	6.5
GENERAL MOTORS	74	0.77	0.68	8.3
HASBRO INDUSTRIES	75	0.77	0.67	6.0
MCLOUTH STEEL	76	0.77	0.69	8.0
BRUSH WELLMAN	77	0.77	0.70	5.5
TECUMSEH PRODUCTS	78	0.77	0.71	5.0
MCNEIL	79	0.77	0.68	5.2
EATON	80	0.77	0.69	7.0
NABISCO	81	0.78	0.76	8.5
SNAP-ON TOOLS	82	0.78	0.62	6.0
MACANDREWS & FORBES	83	0.79	0.71	6.9
BIRD & SON	84	0.79	0.73	5.0
KYSOR INDUSTRIAL	85	0.79	0.73	5.5
INSILCO	86	0.79	0.74	7.5
STA-RITE INDUSTRIES	87	0.79	0.71	6.0
CATERPILLAR TRACTOR	88	0.79	0.73	7.5
GAF	89	0.79	0.75	6.0
MUNSINGWEAR	90	0.79	0.75	6.5
PARK-OHIO INDUSTRIES	91	0.79	0.71	5.5
BANTA (GEORGE)	92	0.79	0.76	6.0
GLEASON WORKS	93	0.79	0.77	7.5
REPUBLIC STEEL	94	0.80	0.76	9.0
WYMAN-GORDON	95	0.80	0.78	6.3
BUCYRUS-ERIE	96	0.80	0.77	6.0
ALTON BOX BOARD	97	0.80	0.79	7.0
SUNDSTRAND	98	0.81	0.78	8.5
AMERICAN BRANDS	99	0.81	0.74	8.0
GOULD	100	0.81	0.73	7.0
CHICAGO PNEUMATIC TOOL	101	0.81	0.73	7.5
EVANS PRODUCTS	102	0.82	0.67	6.7
WESTINGHOUSE ELECTRIC	103	0.82	0.72	7.0
CLARK OIL & REFINING	104	0.82	0.79	6.0
WESTERN GEAR	105	0.82	0.72	8.0
IDEAL BASIC INDUSTRIES	106	0.82	0.79	8.0
AMERICAN MAIZE-PRODUCTS	107	0.82	0.80	6.0
CLARK EQUIPMENT	108	0.82	0.72	6.3
KAISER ALUMINUM & CHEMICAL	109	0.82	0.74	9.0
KIMBERLY-CLARK	110	0.82	0.72	6.0
SIMMONDS PRECISION PRODUCTS	111	0.82	0.72	6.0
TWENTIETH CENTURY-FOX FILM	112	0.82	0.76	6.5
BETHLEHEM STEEL	113	0.82	0.80	10.0
GREAT NORTHERN NEKOOSA	114	0.82	0.72	5.0
THOMAS INDUSTRIES	115	0.82	0.76	7.0
IMPERIAL SUGAR	116	0.83	0.82	5.0
LILLY (ELI)	117	0.83	0.74	7.0
NATIONAL CAN	118	0.83	0.72	6.0
ALLIED CHEMICAL	119	0.83	0.77	8.0
REVERE COPPER & BRASS	120	0.83	0.77	8.0
SONOCO PRODUCTS	121	0.84	0.76	6.0
BLISS & LAUGHLIN INDUSTRIES	122	0.84	0.79	6.0
NATIONAL STEEL	123	0.84	0.83	10.0
SIGNAL COMPANIES	124	0.84	0.70	6.0
SOUTHWEST FOREST INDUSTRIES	125	0.84	0.77	6.3
MAYTAG	126	0.84	0.80	5.5
WESTMORELAND COAL	127	0.84	0.77	5.5
RAYBESTOS-MANHATTAN	128	0.85	0.77	8.4
CRANE	129	0.85	0.83	7.0
MARK CONTROLS	130	0.85	0.74	6.2
AMERICAN CAN	131	0.85	0.80	8.0
TEXTRON	132	0.85	0.79	NA
SPRINGS MILLS	133	0.86	0.80	6.0
CULBRO	134	0.86	0.85	6.1
CROWN CENTRAL PETROLEUM	135	0.86	0.79	5.0
HONEYWELL	136	0.86	0.74	7.0
KEENE	137	0.86	0.80	7.5

Table 5.7.2 Continued

## Private Pension Fund Liabilities, Fraction Funded, 1980:

## Fortune 1000 Sample

## Ranked by Fraction of Vested Accrued Liability Unfunded

Company	Rank	Vested Accrued Liability Fraction Funded	Total Accrued Liability Fraction Funded	Interest Rate Assumption
REYNOLDS METALS	138	0.86	0.80	7.5
SQUIBB	139	0.86	0.82	7.0
RUSSELL	140	0.87	0.81	7.0
ROBERTSHAW CONTROLS	141	0.87	0.82	6.5
ELECTRONIC MEMORIES & MAGNETICS	142	0.87	0.85	6.3
PENNZOIL	143	0.87	0.81	6.5
SOUNDESIGN	144	0.88	0.68	6.0
CHAMPION INTERNATIONAL	145	0.88	0.77	8.0
TENNECO	146	0.88	0.78	6.3
FAIRCHILD INDUSTRIES	147	0.88	0.82	5.1
POTLATCH	148	0.88	0.79	6.5
REICHHOLD CHEMICALS	149	0.88	0.78	7.0
HARVEY HUBBELL	150	0.88	0.79	6.3
TIMKEN	151	0.88	0.80	5.5
OGLEBAY NORTON	152	0.89	0.77	6.0
BOISE CASCADE	153	0.89	0.84	6.0
IC INDUSTRIES	154	0.89	0.82	7.0
CECO	155	0.89	0.86	6.0
COOPER INDUSTRIES	156	0.89	0.80	6.0
ACTON	157	0.89	0.81	7.0
UNION CAMP	158	0.89	0.87	8.5
AMETEK	159	0.89	0.79	7.5
MOORE MCCORMACK RESOURCES	160	0.90	0.85	6.6
FRUEHAUF	161	0.90	0.85	8.0
NL INDUSTRIES	162	0.90	0.87	7.0
BARNES GROUP	163	0.90	0.86	6.5
COLT INDUSTRIES	164	0.90	0.86	10.4
GENERAL BINDING	165	0.91	0.87	6.5
SQUARE D	166	0.91	0.79	7.0
SPS TECHNOLOGIES	167	0.91	0.82	7.1
SAXON INDUSTRIES	168	0.91	0.87	7.0
LOUISIANA LAND & EXPLORATION	169	0.92	0.88	8.0
JOSLYN MFG. & SUPPLY	170	0.92	0.82	6.0
STANDARD BRANDS	171	0.92	0.84	7.0
DOVER	172	0.92	0.87	5.6
WEST	173	0.92	0.76	6.3
TONKA	174	0.93	0.81	6.0
STEWART-WARNER	175	0.93	0.87	5.0
CORNING GLASS WORKS	176	0.93	0.84	9.0
INLAND STEEL	177	0.93	0.79	7.5
TRIANGLE INDUSTRIES	178	0.93	0.86	7.5
HEILEMAN (G.) BREWING	179	0.93	0.86	5.5
WOLVERINE WORLD WIDE	180	0.93	0.89	5.3
LUKENS STEEL	181	0.93	0.91	11.3
ST. JOE MINERALS	182	0.93	0.83	8.0
ST. REGIS PAPER	183	0.94	0.85	8.0
NATIONAL GYPSUM	184	0.94	0.88	7.0
RSR	185	0.94	0.75	6.0
MCGRAW-EDISON	186	0.94	0.87	7.0
WARNER-LAMBERT	187	0.94	0.85	7.5
ARVIN INDUSTRIES	188	0.94	0.86	6.0
DURIRON	189	0.94	0.80	7.5
MALLINCKRODT	190	0.94	0.88	8.0
LOUISIANA-PACIFIC	191	0.95	0.86	7.6
UNITED INDUSTRIAL	192	0.95	0.89	6.3
LIBBEY-OWENS-FORD	193	0.95	0.82	9.0
GREYHOUND	194	0.95	0.91	9.0
AMALGAMATED SUGAR	195	0.95	0.92	5.0
AMERICAN STERILIZER	196	0.95	0.88	5.5
CHARTER	197	0.95	0.89	7.8
UNION SPECIAL	198	0.95	0.93	8.0
HARSCO	199	0.96	0.90	6.0
LTV	200	0.96	0.85	10.0
GRUMMAN	201	0.96	0.87	7.5
MINE SAFETY APPLIANCES	202	0.96	0.90	7.0
ARMSTRONG CORK	203	0.96	0.93	6.0
GIDDINGS & LEWIS	204	0.96	0.91	8.0
WHEELABRATOR-FRYE	205	0.96	0.86	6.5
RCA	206	0.96	0.92	7.0
U.S. TOBACCO	207	0.96	0.90	7.5
NORTON	208	0.96	0.86	7.6
EMHART	209	0.96	0.90	9.0
GENERAL SIGNAL	210	0.96	0.90	7.0
NORTHWEST INDUSTRIES	211	0.97	0.85	6.7
INTERNATIONAL TELEPHONE & TELEGRAPH	212	0.97	0.85	7.9
SEALED POWER	213	0.97	0.86	8.0
MASLAND (C. H.) & SONS	214	0.97	0.87	7.0
BROWN & SHARPE MANUFACTURING	215	0.97	0.93	9.0
LANE	216	0.97	0.87	7.0
PHELPS DODGE	217	0.97	0.91	7.5
TIME INC	218	0.97	0.88	6.0
MOBIL	219	0.97	0.95	6.0
HOMESTAKE MINING	220	0.97	0.94	7.3
MURPHY DIL	221	0.98	0.87	6.3
CERTAIN-TEED	222	0.98	0.87	7.2
COLEMAN	223	0.98	0.88	5.5
KATY INDUSTRIES	224	0.98	0.60	6.3
FEDERAL PAPER BOARD	225	0.98	0.94	8.1
ALUMINUM CO. OF AMERICA	226	0.98	0.92	10.0
SWANK	227	0.98	0.86	5.0
ALLIED PRODUCTS	228	0.99	0.79	6.8
PACIFIC LUMBER	229	0.99	0.89	5.0
ALBANY INTERNATIONAL	230	0.99	0.92	7.0
PITNEY-BOWES	231	0.99	0.88	6.5
NCR	232	1.00	0.95	7.5
SMITH INTERNATIONAL	233	1.00	0.86	7.0
METROMEDIA	234	1.00	0.91	6.5

Table 5.7.2 Continued

Private Pension Fund Liabilities, Fraction Funded, 1980:

Fortune 1000 Sample

Ranked by Fraction of Vested Accrued Liability Unfunded

Company	Rank	Vested Accrued Liability Fraction Funded	Total Accrued Liability Fraction Funded	Interest Rate Assumption
SINGER	235	1.00	0.98	8.2
FANSTEEL	236	1.00	0.93	7.0
STANDARD OIL (OHIO)	237	1.01	0.96	7.0
PORTER (H.K.)	238	1.01	0.94	7.0
ILLINOIS TOOL WORKS	239	1.01	0.91	5.5
GLATFELTER (P.H.)	240	1.01	0.94	5.0
UPJOHN	241	1.01	0.91	6.5
PACCAR	242	1.01	0.88	6.5
BLUE CHIP STAMPS	243	1.01	0.98	6.8
OHIO FERRO ALLOYS	244	1.01	0.93	6.0
WHIRLPOOL	245	1.02	0.90	7.5
GEORGIA-PACIFIC	246	1.02	0.90	6.0
FORD MOTOR	247	1.02	0.81	7.0
PITTSBURGH-DES MOINES STEEL	248	1.02	0.94	6.0
FERRO	249	1.02	0.95	7.0
WITCO CHEMICAL	250	1.02	0.98	6.0
COMBUSTION ENGINEERING	251	1.02	0.94	7.0
CROUSE-HINDS	252	1.02	0.94	7.5
DIAMOND SHAMROCK	253	1.03	1.00	8.0
NEWMONT MINING	254	1.03	0.91	7.5
GK TECHNOLOGIES	255	1.03	0.97	6.1
COCA-COLA BOTTLING CO OF NY	256	1.03	0.93	7.5
CAPITAL CITIES COMMUNICATIONS	257	1.03	1.00	6.5
UMC INDUSTRIES	258	1.04	0.98	6.0
STANDARD OIL (IND.)	259	1.04	1.02	8.0
STERNDENT	260	1.04	0.98	6.5
GOODYEAR TIRE & RUBBER	261	1.04	0.94	NA
CONTINENTAL GROUP	262	1.05	0.95	8.5
NORLIN INDUSTRIES	263	1.05	0.92	6.0
WESTERN PACIFIC INDUSTRIES	264	1.05	1.02	6.0
PAPERCRAFT	265	1.06	1.00	6.5
TRANE	266	1.06	1.01	6.0
NORTH AMERICAN COAL	267	1.07	0.80	5.0
WORK WEAR	268	1.07	0.86	6.0
CROMPTON & KNOWLES	269	1.07	0.87	6.0
CLEVELAND-CLIFFS IRON	270	1.07	1.00	7.0
BUNKER RAMO	271	1.08	0.95	7.0
GENERAL DYNAMICS	272	1.08	1.03	6.0
STANDARD OIL OF CALIFORNIA	273	1.08	1.08	7.0
U.S. GYPSUM	274	1.08	1.02	7.0
COCA-COLA	275	1.08	1.00	8.0
BIC PEN	276	1.08	0.92	6.5
SHERWIN-WILLIAMS	277	1.08	1.03	8.0
ASSOCIATED COCA-COLA BOTTLING	278	1.08	1.01	6.0
RORER GROUP	279	1.09	0.92	6.0
PORTEC	280	1.09	0.93	5.5
VERMONT AMERICAN	281	1.09	0.83	6.4
AMERICAN PETROFINA	282	1.09	1.06	6.0
DONNELLY (R.R.) & SONS	283	1.09	1.08	6.5
FABERGE	284	1.09	1.02	7.2
EASTMAN KODAK	285	1.09	1.02	6.3
GENERAL ELECTRIC	286	1.09	1.02	6.0
MULTIMEDIA	287	1.09	1.02	8.0
U.S. FILTER	288	1.10	0.91	6.0
NATIONAL DISTILLERS & CHEMICAL	289	1.10	1.02	10.0
CARTER (WILLIAM)	290	1.10	0.97	6.0
OWENS-CORNING FIBERGLAS	291	1.10	0.88	8.0
TYLER	292	1.10	0.88	7.0
LOWENSTEIN M	293	1.10	1.03	6.0
PENNWALT	294	1.10	0.97	6.3
NASHUA	295	1.11	0.99	7.5
INTERNATIONAL BUSINESS MACHINES	296	1.11	1.07	4.8
PPG INDUSTRIES	297	1.11	1.02	9.0
U.S. STEEL	298	1.11	1.05	10.0
KIDDE (WALTER)	299	1.11	1.01	8.0
BARD (C.R.)	300	1.11	0.97	6.0
FMC	301	1.11	1.04	8.0
KNUDSEN	302	1.11	1.00	7.0
PHILLIP MORRIS	303	1.11	1.01	6.5
COORS (ADOLPH)	304	1.12	0.98	6.5
CRONUS INDUSTRIES	305	1.12	0.87	6.5
SMITHKLINE	306	1.12	1.01	6.0
GIFFORD-HILL	307	1.12	0.89	7.3
INTERPACE	308	1.12	1.08	7.0
UNION CARBIDE	309	1.12	1.02	8.0
UNITED REFINING	310	1.13	1.01	5.8
ROHM AND HAAS	311	1.13	1.12	7.8
MURRAY OHIO MANUFACTURING	312	1.13	0.98	5.5
STERLING DRUG	313	1.13	1.10	6.7
KANE-MILLER	314	1.13	0.96	6.0
HUGHES TOOL	315	1.14	1.05	6.5
TOSCO	316	1.14	1.08	6.5
DR. PEPPER	317	1.14	0.99	6.5
OLIN	318	1.14	1.07	7.0
VF	319	1.14	1.00	7.0
CONRAC	320	1.14	1.01	6.3
CDX BROADCASTING	321	1.15	0.99	5.5
A-T-O	322	1.15	1.04	6.0
VAN DORN	323	1.15	0.97	6.0
REXHAM	324	1.15	0.97	5.5
WRIGLEY (WM. JR.)	325	1.15	1.09	6.0
DEXTE	326	1.15	1.00	5.8
AMERICAN BAKERIES	327	1.15	1.09	8.0
ALLEGHENY LUDIUM INDUSTRIES	328	1.15	1.03	10.0
ANHEUSER-BUSCH	329	1.16	1.07	8.5
COLGATE-PALMOLIVE	330	1.16	1.05	6.7
GOULDS PUMPS	331	1.16	1.00	6.0

Table 5.7.2 Continued

## Private Pension Fund Liabilities, Fraction Funded, 1980:

Fortune 1000 Sample

Ranked by Fraction of Vested Accrued Liability Unfunded

Company	Rank	Vested Accrued Liability Fraction Funded	Total Accrued Liability Fraction Funded	Interest Rate Assumption
MIDLAND COOPERATIVES	332	1.16	1.06	6.0
GETTY OIL	333	1.17	1.09	7.0
QUAKER STATE OIL REFINING	334	1.17	1.06	6.5
DOW CHEMICAL	335	1.17	0.97	6.5
DIAMOND INTERNATIONAL	336	1.17	1.05	8.0
ROCHESTER & PITTSBURGH COAL	337	1.17	1.03	6.0
AUTOMATIC SWITCH	338	1.17	1.09	6.0
SYBRON	339	1.17	1.00	6.0
DOW JONES	340	1.17	1.07	6.5
ETHYL	341	1.17	1.12	6.0
ROBINS (A. H.)	342	1.17	1.04	6.5
CLUETT, PEABODY	343	1.17	1.11	7.5
SEARLE (G. D.)	344	1.17	1.02	7.0
CHESEBROUGH-POND'S	345	1.18	1.00	7.0
DYNAMICS CORP. OF AMERICA	346	1.18	1.02	6.3
BURNDY	347	1.18	1.05	6.0
MCGRAW-HILL	348	1.18	1.14	6.5
SUN CHEMICAL	349	1.19	1.15	7.0
JOHNS-MANVILLE	350	1.19	1.12	8.0
CONE MILLS	351	1.19	1.09	6.0
CUMMINS ENGINE	352	1.19	1.06	6.0
CINCINNATI MILACRON	353	1.20	1.15	8.5
WEYERHAEUSER	354	1.20	1.13	9.5
NORRIS INDUSTRIES	355	1.20	1.04	5.0
UNION OIL OF CALIFORNIA	356	1.20	1.10	7.0
LOCKHEED	357	1.20	1.17	6.6
GENERAL PORTLAND	358	1.20	1.05	9.0
TELEDYNE	359	1.20	1.08	6.0
ROHR INDUSTRIES	360	1.21	1.17	6.0
OGDEN	361	1.21	1.09	6.5
WILLIAMS COMPANIES	362	1.21	1.13	6.5
DENNISON MANUFACTURING	363	1.21	1.06	7.0
BALL	364	1.21	1.08	7.0
MACMILLAN	365	1.23	1.15	7.5
SCOTT PAPER	366	1.23	1.14	8.0
OAK INDUSTRIES	367	1.24	1.14	7.5
HOUGHTON MIFFLIN	368	1.24	1.19	8.0
JOHNSON & JOHNSON	369	1.24	1.13	6.5
MCDONNELL DOUGLAS	370	1.24	1.09	8.0
PEPSICO	371	1.24	1.09	7.0
NORTHROP	372	1.24	1.05	6.0
JONATHAN LOGAN	373	1.24	1.16	7.5
EASCO	374	1.24	1.13	9.0
AEGIS	375	1.25	1.08	6.0
WARNER ELECTRIC BRAKE AND CLUTCH	376	1.25	1.03	8.5
LUDLOW	377	1.25	1.18	8.0
CONTROL DATA	378	1.25	1.21	8.0
CADENCE INDUSTRIES	379	1.26	1.18	6.5
HERCULES	380	1.26	1.20	8.0
KOPPERS	381	1.26	1.10	8.0
AKZONA	382	1.26	1.22	9.0
MEAD	383	1.26	1.20	7.0
MARATHON OIL	384	1.27	1.18	7.0
ABBDIT LABORATORIES	385	1.27	1.23	7.2
OCCIDENTAL PETROLEUM	386	1.27	1.12	7.0
AMERACE	387	1.28	1.16	8.0
SUN	388	1.28	1.22	7.5
BOEING	389	1.29	1.12	8.5
CONWOOD	390	1.30	1.23	7.0
TEXACO	391	1.30	1.20	8.0
FEDERAL-MOGUL	392	1.30	1.20	9.0
KOLLMORGEN	393	1.31	1.11	6.0
REYNOLDS (R.J.) INDUSTRIES	394	1.32	1.08	8.0
DAN RIVER	395	1.32	1.24	7.0
ALASKA INTERSTATE	396	1.32	1.05	8.0
WOMETCO ENTERPRISES	397	1.32	1.06	7.0
AMERICAN BROADCASTING	398	1.32	1.21	6.9
BRISTOL-MYERS	399	1.33	1.17	7.5
XEROX	400	1.33	1.06	7.0
ROYAL CROWN COMPANIES	401	1.34	1.08	7.6
WILLAMETTE INDUSTRIES	402	1.34	1.09	6.0
STAUFFER CHEMICAL	403	1.34	1.16	6.3
MCQUAY-PERFEX	404	1.34	1.19	7.5
SAVANNAH FOODS & INDUSTRIES	405	1.35	1.17	5.8
STORER BROADCASTING	406	1.35	1.19	7.0
JUSTIN INDUSTRIES	407	1.36	1.25	6.5
AVON PRODUCTS	408	1.37	1.05	7.5
GULF OIL	409	1.37	1.29	8.9
THOMAS & BETTS	410	1.37	1.25	7.7
SCHERING-PLOUGH	411	1.38	1.24	6.0
MEDIA GENERAL	412	1.38	1.17	6.0
MEDALIST INDUSTRIES	413	1.38	1.04	6.6
MINNESOTA MINING & MANUFACTURING	414	1.38	1.03	8.0
LENOX	415	1.39	1.18	7.0
TRW	416	1.39	1.22	8.5
BELCO PETROLEUM	417	1.39	1.19	6.0
QUESTOR	418	1.39	1.25	8.0
KRUEGER (W.A.)	419	1.40	1.14	6.5
KERR-MCGEE	420	1.40	1.38	6.0
CARLISLE	421	1.41	1.34	7.0
DEAN FOODS	422	1.41	1.25	9.0
BELL & HOWELL	423	1.42	0.57	5.9
MOHAWK RUBBER	424	1.42	1.22	6.5
CITIES SERVICE	425	1.42	1.30	8.0
EXXON	426	1.43	1.36	7.7
DU PONT (E.I.) DE NEMOURS	427	1.43	1.40	8.6
CTS	428	1.44	1.30	6.5
PHILLIPS PETROLEUM	429	1.46	1.32	8.0

Table 5.7.2 Continued

Private Pension Fund Liabilities, Fraction Funded, 1980:  
Fortune 1000 Sample  
Ranked by Fraction of Vested Accrued Liability Unfunded

Company	Rank	Vested Accrued Liability Fraction Funded	Total Accrued Liability Fraction Funded	Interest Rate Assumption
NORTH AMERICAN PHILLIPS	430	1.47	1.29	6.3
MASCO	431	1.48	1.26	6.0
NALCO CHEMICAL	432	1.48	1.34	7.0
BUTLER MANUFACTURING	433	1.49	1.36	9.0
TIMES MIRROR	434	1.49	1.39	6.3
HOOVER	435	1.49	1.42	7.8
FOXBORO	436	1.49	1.40	8.0
GANNETT	437	1.50	1.41	8.0
COLECO INDUSTRIES	438	1.51	1.05	8.0
BRUNSWICK	439	1.51	1.34	7.5
MARTIN MARIETTA	440	1.51	1.39	6.4
INTERNATIONAL PAPER	441	1.51	1.46	8.8
AMP	442	1.51	1.36	7.3
WESTERN ELECTRIC	443	1.52	1.29	8.0
MEDFORD	444	1.54	0.94	6.5
RONSON	445	1.54	1.50	6.5
GRACE (W. R.)	446	1.55	1.43	6.4
INTERNATIONAL FLAVORS & FRAGRANCES	447	1.55	1.31	6.5
PITTSWAY	448	1.56	1.39	6.0
MERCK	449	1.56	1.40	8.0
DENTSPLY INTERNATIONAL	450	1.58	1.54	9.0
MILTON BRADLEY	451	1.59	1.32	7.0
MIRRO	452	1.59	1.56	6.0
LEGGETT & PLATT	453	1.59	1.48	7.0
ZENITH RADIO	454	1.60	1.39	8.0
FISCHER & PORTER	455	1.61	1.46	7.5
TEXASGULF	456	1.62	1.35	6.0
MOHASCO	457	1.62	1.48	7.8
MONSANTO	458	1.63	1.42	7.5
MAPCO	459	1.64	0.69	6.3
VULCAN MATERIALS	460	1.64	1.49	7.0
DESOTO	461	1.64	1.22	6.5
AMF	462	1.65	1.44	8.0
POPE & TALBOT	463	1.65	1.50	6.5
HANDY & HARMAN	464	1.68	1.51	8.0
CONOCO	465	1.68	1.54	8.0
LUBRIZOL	466	1.69	1.65	6.0
STANDARD REGISTER	467	1.69	1.65	8.0
TEXAS INSTRUMENTS	468	1.69	1.66	6.0
CRYSTAL OIL	469	1.69	1.33	7.5
WYNN'S INTERNATIONAL	470	1.75	0.92	7.3
BANDAG	471	1.76	1.16	5.0
CF INDUSTRIES	472	1.78	1.55	5.5
CBS	473	1.82	1.65	8.1
SCHLITZ (JOS.) BREWING	474	1.82	1.54	8.0
GRANITEVILLE	475	1.83	1.59	5.0
LIPTON (THOMAS J.)	476	1.86	1.72	8.0
HARCOURT BRACE JOVANOVICH	477	1.92	1.70	6.0
INTERLAKE	478	1.93	1.88	12.4
WARNER COMMUNICATIONS	479	1.93	1.70	8.0
BEKER INDUSTRIES	480	1.93	1.57	6.0
AUGAT	481	1.96	1.31	7.0
CAMPBELL TAGGART	482	1.99	1.90	7.0
MOTOROLA	483	2.03	1.80	6.0
CHESAPEAKE CORP. OF VIRGINIA	484	2.06	1.79	5.8
RTE	485	2.14	1.96	8.5
POLAROID	486	2.15	1.41	7.0
STEPAN CHEMICAL	487	2.27	1.94	8.0
STONE CONTAINER	488	2.27	1.57	7.5
EG&G	489	2.40	2.01	8.3
WASHINGTON POST	490	2.43	1.93	8.0
VALMONT INDUSTRIES	491	2.46	2.32	7.0
TERRA CHEMICALS INTERNATIONAL	492	2.53	2.15	7.5
IRQUOIS BRANDS	493	2.75	0.22	8.0
PDGO PRODUCING	494	2.77	1.75	7.5
DIXIE YARNS	495	3.18	2.57	6.0
CMI	496	4.06	2.10	8.0
MEMOREX	497	4.35	1.84	8.0

Source: NBER Fortune 1,000 Annual Reports File (1980)

1. Excludes firms with fiscal years ending other than 31 December 1980.
2. For these calculations, assets were valued at market value as of actuarial valuation date.
3. Plan was recently created.

Table 5.7.3

Distribution of Pension Plans and Pension Fund Assets by Interest Rate Assumption, Fortune 1000 Sample, 1980

	Interest Rate Assumption						
	Total	4-4.9%	5-5.9%	6-6.9%	7-7.9%	8-9.9%	10-11.9%
<u>Pension Plans</u>							
Number	496	1	51	190	139	105	9
Row Percent	100.00	.20	10.30	38.38	28.08	21.21	1.82
<u>Pension Fund Assets</u>							
Amount	124,587,661	4,268,000	1,977,997	28,895,906	44,697,433	39,463,976	5,284,349
Row Percent	100.00	3.43	1.59	23.19	35.88	31.68	4.24

Source: NBER Fortune 1,000 Annual Reports File (1980)

Table 5.7.4

Vested Accrued Liabilities, Fraction Funded and Mean Liability per Employee, Means by Fortune Rank and Interest Rate Assumption, Fortune 1000 Sample, 1980

Fortune Rank	Interest Rate Assumption						
	Total	4-4.9%	5-5.9%	6-6.9%	7-7.9%	8-9.9%	10-11.9%
<u>001-100</u>							
Number of Plans	69	1	0	15	20	28	5
Mean Fraction Funded	1.11	1.11	NA	1.06	1.10	1.17	.94
Mean Unfunded Liability per Employee	-1137	-1619	NA	-420	-1249	-1834	1162
<u>101-200</u>							
Number of Plans	65	0	0	20	23	20	2
Mean Fraction Funded	1.06	NA	NA	1.18	.92	1.09	1.00
Mean Unfunded Liability per Employee	98	NA	NA	-729	1143	-250	-138
<u>201-300</u>							
Number of Plans	62	0	6	23	16	14	3
Mean Fraction Funded	1.08	NA	.91	1.03	1.19	1.07	1.24
Mean Unfunded Liability per Employee	123	NA	1334	-239	-212	272	1592
<u>301-400</u>							
Number of Plans	54	0	4	24	15	11	0
Mean Fraction Funded	1.17	NA	.94	1.13	1.06	1.47	NA
Mean Unfunded Liability per Employee	-87	NA	958	-625	392	49	NA
<u>401-500</u>							
Number of Plans	51	0	8	18	16	9	0
Mean Fraction Funded	1.09	NA	.94	.94	1.11	1.51	NA
Mean Unfunded Liability per Employee	306	NA	1441	1161	-448	-1152	NA
<u>500-600</u>							
Number of Plans	42	0	8	17	13	3	1
Mean Fraction Funded	1.04	NA	1.01	.93	1.17	1.16	.93
Mean Unfunded Liability per Employee	619	NA	449	1168	151	-5825	1777
<u>601-700</u>							
Number of Plans	39	0	8	12	11	8	0
Mean Fraction Funded	1.12	NA	1.33	1.04	1.01	1.17	NA
Mean Unfunded Liability per Employee	202	NA	-601	257	1462	-809	NA
<u>701-800</u>							
Number of Plans	40	0	5	20	12	3	0
Mean Fraction Funded	1.14	NA	.88	1.19	1.08	1.45	NA
Mean Unfunded Liability per Employee	413	NA	1275	142	755	-581	NA
<u>801-900</u>							
Number of Plans	34	0	5	18	9	2	0
Mean Fraction Funded	1.12	NA	.80	1.05	1.27	1.75	NA
Mean Unfunded Liability per Employee	466	NA	1895	263	1051	-3912	NA



Table 5.7.4 Continued  
 Vested Accrued Liabilities, Fraction Funded and Mean Liability per Employee, Means by Fortune Rank  
 and Interest Rate Assumption, Fortune 1000 Sample, 1980

Fortune Rank	Interest Rate Assumption						
	Total	4-4.9%	5-5.9%	6-6.9%	7-7.9%	8-9.9%	10-11.9%
<b>901-1000</b>							
Number of Plans	38	0	4	19	8	7	0
Mean Fraction Funded	1.12	NA	.75	.98	1.06	1.76	NA
Mean Unfunded Liability per Employee	289	NA	1322	48	715	-131	NA
<b>TOTAL</b>							
Number of Plans	494	1	48	186	143	105	11
Mean Fraction Funded	1.10	1.11	.98	1.06	1.09	1.26	1.03
Mean Unfunded Liability per Employee	47	-1619	910	58	277	-770	1099

Source: NBER Fortune 1,000 Annual Reports File (1980)

1. This figure is based on fifteen rather than sixteen corporations, because one corporation did not report its employment.

## 5.8 Return Performance of Private Pension Funds

Five of the nation's leading surveys of private pension fund performance generously provided the data for this section. The surveys are of two types: surveys of the return performance of individual pension portfolios and surveys of the performance of "comingled" pension fund accounts. A. G. Becker, Inc., and Hewitt Associates report the distribution of rates of return of individual pension fund portfolios. The Becker and Hewitt surveys contain portfolios of different pension funds as well as portfolios from the same pension fund; many large pension funds divide their assets into several portfolios each of which is typically invested in either equities or fixed income securities. The A. G. Becker and Hewitt surveys are not mutually exclusive. They may include many of the same portfolios for years in which both surveys were conducted.

In 1980 there were 3,500 portfolios included in the A. G. Becker, Inc., survey with a total market value of \$148.6 million. According to SEC data the total market value of noninsured pension assets was \$277.2 billion. The Hewitt Associates survey, while smaller than the A. G. Becker, Inc., survey, appears representative of the same sample universe; the distributions of returns for the two surveys reported in tables 5.8.1 through 5.8.6 are quite similar.

The Pensions and Investments Performance Evaluation Report (PIPER) published by Crain Communications, Inc., the A. S. Hansen, Inc., survey, and the Frank Russell Company survey record the return performance of pension assets held in "comingled" accounts of banks and insurance companies. "Comingled" refers to the joint investment by these banks and insurance companies of assets from numerous pension funds. The total return to the bank or insurance account is divided in proportion to each fund's share in the account's total assets; this obviously insures a uniform rate of return to all pension funds represented in the comingled accounts.

The 1970 the PIPER survey included 172 equity and 124 fixed income comingled accounts. These samples grew to 248 and 224, respectively, by 1980. The equity accounts in the A. S. Hansen, Inc., survey had a \$60 million market value in 1961. The value of equity accounts in the 1980 Hansen survey was \$20 billion. For the Hansen fixed income account survey, the 1961 market value of surveyed assets equaled \$40 million; in the 1980 study the Hansen fixed income sample reported assets of \$10 billion. The Frank Russell Company survey is similar in size to the PIPER and A. S. Hansen, Inc., surveys. The 1980 Frank Russell Company survey contained 150 equity and 130 fixed income accounts with total market values of \$19.84 billion and \$10.81 billion, respectively.

Table 5.8.1 reports median annual rates of return to the equity portfolios and equity comingled accounts of the five surveys. The table also provides two performance reference indices, the Dow Jones and the Standard and Poor's. The A. G. Becker and Hewitt median annual rates of return are extremely close to one another; the correlation coefficient is .9737. The A. S. Hansen, Inc., and Frank Russell Company surveys of comingled funds are also in

close accord with one another for the years of overlapping data. There is also a very high correlation between the median pension portfolio returns and the median comingled account returns.

There is considerable year to year volatility in the median reported rates of return. A. G. Becker, for example, reported a  $-31.60$  percent median return in 1974, followed by a  $33.10$  percent median return in 1975. The smallest annual median rate of return in the Hansen survey is  $-25.00$  percent for 1974; it was  $28.10$  percent for 1975.

The median rates of return in the surveys are quite similar to the rate of return computed from the Dow Jones and Standard and Poor's indices. In table 5.8.1 the sign of the reported median returns agrees with the sign of the Dow Jones and Standard and Poor's rates of return for all years between 1961 and 1980 except 1970. In 1970 the return on the Dow Jones and Standard and Poor's were  $9.30$  percent and  $3.85$  percent, respectively. The Becker median in 1970 was  $-3.75$  percent; the Hewitt median was  $-6.47$  percent; and the Hansen median was  $-1.80$  percent. Since 1977 the Dow Jones and Standard and Poor's returns have differed considerably. The median pension survey returns are much closer to the Standard and Poor's return than to the Dow Jones return over this period.

There is somewhat less concordance across the various surveys with respect to annual median rates of return on fixed income investments (table 5.8.2). The A. G. Becker, A. S. Hansen, and Frank Russell median returns are quite similar in the 1970s, but differ markedly in particular years from the Hewitt medians. In 1974, for example, Hewitt's median fixed income return is  $5.15$  percent, while it is  $-1.60$ ,  $-2.30$ , and  $-1.55$  percent for the A. G. Becker, A. S. Hansen, and Frank Russell surveys, respectively. The variation in annual median rates of return across different years is much smaller than that for equity investments. The A. S. Hansen survey reports the lowest return,  $-6.30$  percent, in 1969, and the largest return,  $15.60$  percent, in 1976.

In recent years pension fund fixed income investments have reported higher median rates of return than is associated with the return on either the Kuhn Loeb Bond Index or the Salomon Brothers Bond Index.

Table 5.8.3 presents annual distributions of returns from the different surveys starting in 1961 and proceeding to 1980. Separate distributions are presented for equity and fixed income portfolios. In addition, the A. G. Becker and Hewitt surveys provided return distributions for all portfolios in their survey, regardless of their type of investment. Rates of return at the highest fifth, twenty-fifth, fiftieth, seventh-fifth, and ninety-fifth percentile in the distributions are presented.

In particular years the differences in rates of return on equity investments between that of the lowest ninety-fifth and highest fifth percentiles have been quite substantial. For example, the return at the ninety-fifth percentile in the 1968 A. G. Becker survey is  $2.63$  percent; it is  $23.04$  percent at the fifth percentile. The range of equity returns on comingled accounts in 1968 is even larger; according to the A. S. Hansen survey the equity returns at the ninety-fifth and fifth percentiles are  $2.40$  and  $24.20$  percent, respectively.

While the spread is much smaller for the fixed income return distribution, there is also sizable variation between the highest and lowest value. For 1980 the fifth percentile rate of return in the A. G. Becker fixed income survey is  $8.10$ ; the ninety-fifth percentile return is  $-4.50$ . A. S. Hansen reports fifth and ninety-fifth percentile returns of  $8.50$  and  $-3.20$  percent, respectively. The corresponding Frank Russell Company rates of return are  $7.40$  and  $-4.04$  percent.

Distributions of annualized cumulative rates of return over years through 1980 are reported in tables 5.8.4 through 5.8.6 starting with 1961. The data used by the various surveys in compiling these statistics do not necessarily correspond to those data described in the preceding tables on annual rates of return. A prerequisite for a portfolio's or account's inclusion in the cumulative return tables is that the portfolio or account be included in the survey in each of the years between the initial year specified and 1980. Hence a portfolio that was surveyed by Hewitt Associates only during the period 1970 to 1972 would not be included in this calculation of annualized cumulative rates of return. While portfolios and accounts must have continuous survey coverage starting with their initial year in the survey

for inclusion in these distributions, the coverage need not extend further than 1 year into the past. Since the number of portfolios and accounts included in the five surveys has risen over time, the distributions of annualized cumulative rates of return starting from recent years are based on more observations than those cumulative rates of return starting in the 1960s and early 1970s. Despite changes in survey sample sizes over time as well as changes in the surveys' sample composition, the surveys reported quite similar median annualized cumulative rates of return on equity investments for periods when data are commonly available (table 5.8.4).

The longest median annualized cumulative return on equity portfolios is the 1961 to 1980 7.28 percent return reported by A. G. Becker, Inc.; this 20-year cumulative rate of return is 1.05 percentage points below the 8.33 annualized cumulative rate of return on the Standard and Poor's over this period. Since 1978 annualized cumulative rates of return on equity have been substantially higher than those reported based on earlier initial starting years. This accords with the quite large annual median rates of return on equity observed during 1975, 1976, 1979, and 1980 (see table 5.8.1).

In contrast to equity investments, median annualized cumulative rates of return on fixed income investments are considerably lower since 1975 according to the A. G. Becker, PIPER, and Frank Russell surveys (table 5.8.5); the Hewitt survey, on the other hand, shows quite large median cumulative returns since 1977. The A. G. Becker 1977 to 1980 median fixed return is 1.80 percent; the Hewitt median return for this period is 6.04 percent.

Throughout the 1970s the median cumulative return performance of fixed income pension investments exceeds cumulative returns based on either the Kuhn Loeb or Salomon Brothers bond indices.

Table 5.8.6 shows the distributions of these cumulative returns for each of the four surveys providing this information. The A. G. Becker data indicate that certain pension equity portfolios consistently outperformed other equity portfolios over a period of almost two decades. The 1961 to 1980 annualized cumulative rate of return at the highest fifth percentile was 10.01 according to A. G. Becker; the return at the lowest ninety-fifth percentile was only 5.02 percent. Across all portfolios, equity and fixed income, the difference in returns between fifth and ninety-fifth percentiles for the 1961 to 1980 period is 5.44 percentage points according to A. G. Becker, Inc.

As in the case of distributions of annualized returns, the distributions of cumulative returns for the surveys of individual pensions portfolios are very similar to the distributions of pension comingled accounts. The percentage point spread between highest fifth and highest ninety-fifth percentile cumulative returns is considerably larger for equity than for fixed income funds. Between 1971 and 1980 the spread for equity funds reported by the Frank Russell Company was 8.35 percentage points; the corresponding Frank Russell Company fixed income spread was 3.59 points.

Table 5.8.1  
Annual Median Rates of Return of Equity Investments of Private Pension Funds, 1961-1980

	A. G. Becker Survey	Hewitt Survey	P. I. P. E. R. Survey	A. S. Hansen Survey	Frank Russell Survey	Dow Jones Index	S&P Index
1961	-24.78	24.09	NA	24.50	NA	NA	26.95
1962	-11.28	-9.72	NA	-10.30	NA	-7.02	-7.71
1963	19.50	18.27	NA	18.60	NA	20.89	22.83
1964	14.71	14.22	NA	14.60	NA	18.94	16.50
1965	12.78	10.77	NA	12.00	NA	14.41	12.47
1966	-7.78	-8.21	NA	-7.90	NA	-15.87	-10.09
1967	21.49	23.19	NA	20.20	NA	19.25	23.94
1968	11.11	11.99	NA	12.50	NA	7.95	11.20
1969	-6.93	-7.29	NA	-6.50	NA	-11.85	-8.45
1970	-3.75	-6.47	NA	-1.80	NA	9.30	3.95
1971	20.10	18.58	NA	17.10	18.00	9.30	14.34
1972	18.20	16.52	NA	14.70	15.44	18.54	19.02
1973	-22.20	-22.66	NA	-20.00	-19.17	-13.32	-14.71
1974	-31.60	-30.39	NA	-25.00	-25.67	-23.77	-26.51
1975	33.10	29.68	NA	28.10	27.79	44.99	37.31
1976	19.10	18.30	NA	18.20	18.01	22.97	23.99
1977	-7.80	-6.73	NA	-6.60	-5.87	-12.89	-7.19
1978	7.10	8.07	NA	6.60	6.79	2.80	6.39
1979	21.20	21.64	NA	18.30	18.54	10.71	18.65
1980	32.70	32.94	NA	29.70	30.39	22.18	32.39

Sources: A. G. Becker, Inc., Frank Russell Co., A. S. Hansen, Inc., Hewitt Associates, *Pensions & Investments Performance Report*  
NA - Not Available

Table 5.8.2

Annual Median Rates of Return of Fixed Income Investments of Private Pension Funds, 1961-1980

	A. G. Becker Survey	Hewitt Survey	P. I. P. E. R. Survey	A. S. Hansen Survey	Frank Russell Survey	Kuhn Loeb Bond Index	Salomon Brothers Bond Index
1961	4.56	NA	NA	5.80	NA	NA	NA
1962	6.32	NA	NA	6.50	NA	NA	NA
1963	3.15	2.99	NA	3.20	NA	NA	NA
1964	4.37	4.75	NA	4.70	NA	NA	NA
1965	1.62	1.91	NA	1.50	NA	NA	NA
1966	1.44	-1.65	NA	-2.10	NA	NA	NA
1967	-1.00	.08	NA	-2.80	NA	NA	NA
1968	4.09	4.68	NA	3.90	NA	NA	NA
1969	-2.85	-.81	NA	-6.30	NA	NA	NA
1970	13.90	9.64	NA	12.10	NA	NA	18.38
1971	13.40	10.29	NA	12.70	12.92	NA	11.03
1972	8.50	6.62	NA	7.60	7.72	NA	7.26
1973	2.90	4.45	NA	1.90	2.08	1.50	1.14
1974	-1.60	5.15	NA	-2.30	-1.55	5.85	-3.04
1975	11.60	9.61	NA	12.60	12.63	16.72	14.63
1976	15.60	11.88	NA	15.60	15.92	19.35	18.65
1977	2.80	4.62	NA	4.00	3.91	3.14	1.70
1978	1.40	4.69	NA	2.10	2.20	.33	-.09
1979	1.40	6.71	NA	2.30	1.91	-2.13	-4.18
1980	1.10	8.35	NA	2.20	1.65	-.29	-2.61

Sources: A. G. Becker, Inc.; Frank Russell Co.; A. S. Hansen, Inc.; Hewitt Associates, Pensions & Investments Performance Report  
 NA - Not Available

Table 5.8.3

Distribution of Annual Rates of Return of Private Pension Funds, 1961-1980

	1961			1962		
	Equit. Funds	Fixed Income Funds	All Funds	Equity Funds	Fixed Income Funds	All Funds
<u>A. G. Becker Survey</u>						
5th Percentile	32.36	6.16	25.67	-4.43	7.80	3.01
25th Percentile	28.40	5.34	16.86	-9.00	6.94	-.78
Median	24.78	4.96	14.07	-11.28	6.32	-3.34
75th Percentile	22.09	4.06	11.84	-14.16	5.55	-6.76
95th Percentile	17.58	1.80	7.74	-16.59	2.69	-14.22
<u>Hewitt Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	26.26	NA	18.30	-8.10	NA	-.33
Median	24.09	NA	15.82	-9.72	NA	-3.19
75th Percentile	21.91	NA	13.33	-11.34	NA	-6.04
95th Percentile	NA	NA	NA	NA	NA	NA
<u>P. I. P. E. R. Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	NA	NA	NA
Median	NA	NA	NA	NA	NA	NA
75th Percentile	NA	NA	NA	NA	NA	NA
95th Percentile	NA	NA	NA	NA	NA	NA
<u>A. S. Hansen Survey</u>						
5th Percentile	31.00	9.70	NA	-4.00	7.20	NA
25th Percentile	28.20	6.30	NA	-8.10	6.80	NA
Median	24.50	5.80	NA	-10.30	6.50	NA
75th Percentile	22.40	5.30	NA	-10.70	6.10	NA
95th Percentile	18.20	5.00	NA	-14.00	5.46	NA
<u>Frank Russell Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	NA	NA	NA
Median	NA	NA	NA	NA	NA	NA
75th Percentile	NA	NA	NA	NA	NA	NA
95th Percentile	NA	NA	NA	NA	NA	NA

Table 5.8.3 Continued

Distribution of Annual Rates of Return of Private Pension Funds, 1961-1980

	1963			1964		
	Equity Funds	Fixed Income Funds	All Funds	Equity Funds	Fixed Income Funds	All Funds
<u>A.G. Becker Survey</u>						
5th Percentile	26.30	5.62	19.84	19.68	5.57	15.14
25th Percentile	21.38	3.76	14.16	16.34	4.78	11.17
Median	19.50	3.15	11.12	14.71	4.39	9.68
75th Percentile	17.35	2.64	9.06	12.78	4.03	8.48
95th Percentile	14.41	1.70	5.82	10.27	2.94	6.31
<u>Hewitt Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	19.63	3.57	15.72	16.63	5.08	11.78
Median	18.27	2.99	12.43	14.22	4.75	10.25
75th Percentile	16.90	2.40	9.13	11.80	4.41	8.71
95th Percentile	NA	NA	NA	NA	NA	NA
<u>P.I.P.E.R. Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	NA	NA	NA
Median	NA	NA	NA	NA	NA	NA
75th Percentile	NA	NA	NA	NA	NA	NA
95th Percentile	NA	NA	NA	NA	NA	NA
<u>A.S. Hansen Survey</u>						
5th Percentile	22.20	5.00	NA	22.50	6.10	NA
25th Percentile	19.50	4.10	NA	17.60	5.30	NA
Median	18.60	3.20	NA	14.60	4.70	NA
75th Percentile	16.40	2.20	NA	13.30	4.40	NA
95th Percentile	14.00	2.10	NA	11.00	3.90	NA
<u>Frank Russell Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	NA	NA	NA
Median	NA	NA	NA	NA	NA	NA
75th Percentile	NA	NA	NA	NA	NA	NA
95th Percentile	NA	NA	NA	NA	NA	NA
	1965			1966		
	Equity Funds	Fixed Income Funds	All Funds	Equity Funds	Fixed Income Funds	All Funds
<u>A.G. Becker Survey</u>						
5th Percentile	21.50	4.88	17.12	-1.42	6.03	-1.65
25th Percentile	15.88	2.74	10.56	-5.93	1.73	-3.57
Median	12.78	1.62	7.96	-7.78	1.44	-5.00
75th Percentile	9.92	.87	5.94	-9.66	-3.09	-6.69
95th Percentile	6.41	.22	3.43	-13.10	-4.98	-10.27
<u>Hewitt Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	12.78	3.04	10.85	-6.61	-.59	-2.03
Median	10.77	1.91	8.17	-8.21	-1.65	-4.77
75th Percentile	8.75	.77	5.48	-9.80	-2.70	-7.50
95th Percentile	NA	NA	NA	NA	NA	NA
<u>P.I.P.E.R. Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	NA	NA	NA
Median	NA	NA	NA	NA	NA	NA
75th Percentile	NA	NA	NA	NA	NA	NA
95th Percentile	NA	NA	NA	NA	NA	NA
<u>A.S. Hansen Survey</u>						
5th Percentile	20.80	5.20	NA	-1.90	1.20	NA
25th Percentile	14.50	2.40	NA	-6.10	-.20	NA
Median	12.00	1.50	NA	-7.90	-2.10	NA
75th Percentile	9.30	.70	NA	-9.70	-3.40	NA
95th Percentile	6.00	.20	NA	-11.60	-4.30	NA
<u>Frank Russell Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	NA	NA	NA
Median	NA	NA	NA	NA	NA	NA
75th Percentile	NA	NA	NA	NA	NA	NA
95th Percentile	NA	NA	NA	NA	NA	NA

Table 5.8.3 Continued

Distribution of Annual Rates of Return of Private Pension Funds, 1961-1980

	1967			1968		
	Equity Funds	Fixed Income Funds	All Funds	Equity Funds	Fixed Income Funds	All Funds
<u>A.G. Becker Survey</u>						
5th Percentile	34.96	6.84	28.66	23.64	7.56	17.94
25th Percentile	26.33	1.99	17.62	15.50	5.41	11.91
Median	21.49	-1.00	12.79	11.11	4.09	8.71
75th Percentile	17.74	-2.73	8.85	6.50	2.97	5.61
95th Percentile	13.05	-5.26	3.52	2.63	.83	2.72
<u>Hewitt Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	30.45	2.13	21.45	15.33	6.50	12.89
Median	23.19	.08	15.17	11.99	4.68	10.30
75th Percentile	15.92	-1.97	8.88	8.64	2.85	7.70
95th Percentile	NA	NA	NA	NA	NA	NA
<u>P.I.P.E.R. Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	NA	NA	NA
Median	NA	NA	NA	NA	NA	NA
75th Percentile	NA	NA	NA	NA	NA	NA
95th Percentile	NA	NA	NA	NA	NA	NA
<u>A.S. Hansen Survey</u>						
5th Percentile	33.60	2.80	NA	24.20	11.20	NA
25th Percentile	23.30	-1.10	NA	16.50	5.60	NA
Median	20.20	-2.80	NA	12.50	3.90	NA
75th Percentile	15.80	-4.00	NA	7.90	2.70	NA
95th Percentile	11.60	-5.40	NA	2.40	-.60	NA
<u>Frank Russell Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	NA	NA	NA
Median	NA	NA	NA	NA	NA	NA
75th Percentile	NA	NA	NA	NA	NA	NA
95th Percentile	NA	NA	NA	NA	NA	NA
	1969			1970		
	Equity Funds	Fixed Income Funds	All Funds	Equity Funds	Fixed Income Funds	All Funds
<u>A.G. Becker Survey</u>						
5th Percentile	3.50	9.03	1.94	7.34	19.41	10.66
25th Percentile	-2.01	2.52	-2.59	.15	16.43	3.81
Median	-6.93	-2.85	-5.86	-3.75	13.90	.00
75th Percentile	-11.35	-5.20	-9.16	-8.14	11.24	-4.37
95th Percentile	-18.18	-8.40	-14.42	-17.25	6.82	-11.89
<u>Hewitt Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	-3.50	3.83	-3.05	-2.78	12.25	1.57
Median	-7.29	-.81	-5.89	-6.47	9.64	-2.12
75th Percentile	-11.08	-5.45	-8.73	-10.16	7.03	-5.81
95th Percentile	NA	NA	NA	NA	NA	NA
<u>P.I.P.E.R. Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	NA	NA	NA
Median	NA	NA	NA	NA	NA	NA
75th Percentile	NA	NA	NA	NA	NA	NA
95th Percentile	NA	NA	NA	NA	NA	NA
<u>A.S. Hansen Survey</u>						
5th Percentile	3.40	3.00	NA	9.40	17.60	NA
25th Percentile	-2.80	-4.30	NA	2.90	14.90	NA
Median	-6.50	-6.30	NA	-1.80	12.10	NA
75th Percentile	-10.70	-8.20	NA	-6.00	8.40	NA
95th Percentile	-16.90	-11.40	NA	-14.00	2.80	NA
<u>Frank Russell Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	NA	NA	NA
Median	NA	NA	NA	NA	NA	NA
75th Percentile	NA	NA	NA	NA	NA	NA
95th Percentile	NA	NA	NA	NA	NA	NA

Table 5.8.3 Continued

Distribution of Annual Rates of Return of Private Pension Funds, 1961-1980

	1971			1972		
	Equity Funds	Fixed Income Funds	All Funds	Equity Funds	Fixed Income Funds	All Funds
<u>A.G. Becker Survey</u>						
5th Percentile	32.30	19.30	27.30	29.00	13.20	24.90
25th Percentile	24.30	15.60	21.10	22.80	10.20	19.20
Median	20.10	13.40	17.40	18.20	8.50	15.10
75th Percentile	16.00	11.20	14.10	13.10	7.10	11.00
95th Percentile	8.90	8.30	8.90	5.50	4.80	5.00
<u>Hewitt Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	22.00	13.53	19.65	21.38	9.24	18.40
Median	18.58	10.29	16.70	16.52	6.62	14.23
75th Percentile	15.16	7.05	13.75	11.66	4.00	10.06
95th Percentile	NA	NA	NA	NA	NA	NA
<u>P.I.P.E.R. Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	NA	NA	NA
Median	NA	NA	NA	NA	NA	NA
75th Percentile	NA	NA	NA	NA	NA	NA
95th Percentile	NA	NA	NA	NA	NA	NA
<u>A.S. Hansen Survey</u>						
5th Percentile	29.70	18.70	NA	26.10	11.60	NA
25th Percentile	22.00	14.40	NA	18.90	9.10	NA
Median	17.10	12.70	NA	14.70	7.60	NA
75th Percentile	13.30	10.90	NA	10.70	6.90	NA
95th Percentile	7.80	8.30	NA	3.90	4.60	NA
<u>Frank Russell Survey</u>						
5th Percentile	28.86	18.67	NA	26.36	11.40	NA
25th Percentile	22.69	14.22	NA	19.98	9.34	NA
Median	18.00	12.92	NA	15.44	7.72	NA
75th Percentile	14.65	11.07	NA	11.07	6.95	NA
95th Percentile	10.01	8.63	NA	3.37	5.20	NA
	1973			1974		
	Equity Funds	Fixed Income Funds	All Funds	Equity Funds	Fixed Income Funds	All Funds
<u>A.G. Becker Survey</u>						
5th Percentile	-10.80	7.40	-4.70	-22.40	7.00	-7.00
25th Percentile	-17.90	4.30	-12.40	-27.90	1.20	-16.80
Median	-22.20	2.90	-16.80	-31.60	-1.60	-21.80
75th Percentile	-26.10	1.70	-20.90	-34.60	-4.80	-26.10
95th Percentile	-34.20	-1.30	-28.80	-38.90	-11.00	-32.10
<u>Hewitt Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	-18.54	7.89	-12.60	-26.20	8.82	-13.56
Median	-22.66	4.45	-16.45	-30.39	5.15	-18.72
75th Percentile	-26.78	1.01	-20.84	-34.58	1.48	-23.88
95th Percentile	NA	NA	NA	NA	NA	NA
<u>P.I.P.E.R. Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	NA	NA	NA
Median	NA	NA	NA	NA	NA	NA
75th Percentile	NA	NA	NA	NA	NA	NA
95th Percentile	NA	NA	NA	NA	NA	NA
<u>A.S. Hansen Survey</u>						
5th Percentile	-10.10	6.10	NA	-12.10	5.90	NA
25th Percentile	-15.50	3.00	NA	-20.50	.60	NA
Median	-20.00	1.90	NA	-25.40	-2.30	NA
75th Percentile	-24.60	.10	NA	-28.40	-5.80	NA
95th Percentile	-31.80	-4.90	NA	-33.90	-10.60	NA
<u>Frank Russell Survey</u>						
5th Percentile	-9.11	4.93	NA	-11.74	5.54	NA
25th Percentile	-14.77	3.38	NA	-20.34	.22	NA
Median	-19.17	2.08	NA	-25.67	-1.55	NA
75th Percentile	-23.93	.57	NA	-28.27	-4.32	NA
95th Percentile	-29.49	-6.71	NA	-33.89	-9.00	NA

Table 5.8.3 Continued

	Distribution of Annual Rates of Return of Private Pension Funds, 1961-1980					
	1975			1976		
	Equity Funds	Fixed Income Funds	All Funds	Equity Funds	Fixed Income Funds	All Funds
<u>A.G. Becker Survey</u>						
5th Percentile	46.90	16.50	36.10	33.90	21.00	26.00
25th Percentile	37.40	13.30	28.00	23.50	17.20	19.60
Median	33.10	11.60	22.90	19.10	15.60	16.60
75th Percentile	28.10	9.60	18.30	15.40	13.80	13.90
95th Percentile	19.90	5.90	10.50	10.00	9.80	9.60
<u>Hewitt Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	35.12	11.73	26.91	22.55	14.83	19.38
Median	29.68	9.61	21.31	18.30	11.88	15.95
75th Percentile	24.24	7.49	14.71	14.05	8.93	12.52
95th Percentile	NA	NA	NA	NA	NA	NA
<u>P.I.P.E.R. Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	NA	NA	NA
Median	NA	NA	NA	NA	NA	NA
75th Percentile	NA	NA	NA	NA	NA	NA
95th Percentile	NA	NA	NA	NA	NA	NA
<u>A.S. Hansen Survey</u>						
5th Percentile	46.30	18.40	NA	31.60	19.90	NA
25th Percentile	34.10	14.40	NA	22.50	17.00	NA
Median	28.10	12.60	NA	18.20	15.60	NA
75th Percentile	23.00	11.30	NA	14.70	13.90	NA
95th Percentile	12.20	7.50	NA	9.20	10.90	NA
<u>Frank Russell Survey</u>						
5th Percentile	42.96	16.04	NA	28.69	19.99	NA
25th Percentile	32.93	13.83	NA	22.79	17.02	NA
Median	27.79	12.63	NA	18.01	15.92	NA
75th Percentile	21.87	11.36	NA	14.79	14.40	NA
95th Percentile	12.84	10.04	NA	8.31	12.76	NA
	1977			1978		
	Equity Funds	Fixed Income Funds	All Funds	Equity Funds	Fixed Income Funds	All Funds
<u>A.G. Becker Survey</u>						
5th Percentile	1.40	7.30	4.90	17.20	6.30	12.10
25th Percentile	-4.50	4.90	.30	10.20	2.80	7.50
Median	-7.80	3.80	-2.80	7.10	1.40	5.40
75th Percentile	-9.70	2.90	-5.40	4.50	.20	3.40
95th Percentile	-12.70	.90	-9.20	-.20	-1.70	.90
<u>Hewitt Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	3.68	6.18	.62	12.14	6.53	9.13
Median	-6.73	4.62	-2.41	8.07	4.69	6.24
75th Percentile	-9.78	3.06	-5.44	4.00	2.85	3.35
95th Percentile	NA	NA	NA	NA	NA	NA
<u>P.I.P.E.R. Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	NA	NA	NA
Median	NA	NA	NA	NA	NA	NA
75th Percentile	NA	NA	NA	NA	NA	NA
95th Percentile	NA	NA	NA	NA	NA	NA
<u>A.S. Hansen Survey</u>						
5th Percentile	3.70	6.00	NA	13.40	6.00	NA
25th Percentile	-3.80	4.60	NA	9.10	3.20	NA
Median	-6.60	4.00	NA	6.60	2.10	NA
75th Percentile	-9.10	3.10	NA	4.30	1.20	NA
95th Percentile	-11.20	2.20	NA	1.20	.00	NA
<u>Frank Russell Survey</u>						
5th Percentile	3.02	5.50	NA	12.71	5.79	NA
25th Percentile	-3.48	4.50	NA	9.27	3.43	NA
Median	-5.87	3.91	NA	6.79	2.20	NA
75th Percentile	-8.44	3.21	NA	4.51	1.15	NA
95th Percentile	-11.08	2.12	NA	1.74	-.20	NA



Table 5.8.3 Continued

Distribution of Annual Rates of Return of Private Pension Funds, 1961-1980

	1979			1980		
	Equity Funds	Fixed Income Funds	All Funds	Equity Funds	Fixed Income Funds	All Funds
<u>A. G. Becker Survey</u>						
5th Percentile	35.00	7.60	26.10	51.80	8.10	40.20
25th Percentile	26.60	3.30	18.00	39.50	3.80	27.80
Median	21.20	1.40	13.10	32.70	1.10	20.00
75th Percentile	16.50	-4.40	9.00	26.60	-1.00	12.60
95th Percentile	10.40	-3.50	1.50	16.90	-4.50	.20
<u>Hewitt Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	27.80	9.44	19.02	41.38	12.04	28.59
Median	21.64	6.71	13.27	32.94	8.35	20.18
75th Percentile	15.48	3.98	7.52	24.50	4.66	11.77
95th Percentile	NA	NA	NA	NA	NA	NA
<u>P. I. P. E. R. Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	NA	NA	NA
Median	NA	NA	NA	NA	NA	NA
75th Percentile	NA	NA	NA	NA	NA	NA
95th Percentile	NA	NA	NA	NA	NA	NA
<u>A. S. Hansen Survey</u>						
5th Percentile	30.70	8.60	NA	41.90	8.50	NA
25th Percentile	22.00	4.20	NA	33.80	4.80	NA
Median	18.30	2.30	NA	29.70	2.20	NA
75th Percentile	14.10	.80	NA	23.70	.10	NA
95th Percentile	9.40	-2.10	NA	15.50	-3.20	NA
<u>Frank Russell Survey</u>						
5th Percentile	30.38	8.54	NA	43.29	7.40	NA
25th Percentile	21.97	3.84	NA	34.74	3.85	NA
Median	18.54	1.91	NA	30.39	1.65	NA
75th Percentile	14.47	.57	NA	24.08	.02	NA
95th Percentile	10.02	-1.98	NA	14.84	-4.04	NA

Source: A. G. Becker, Inc., Frank Russell Co., A. S. Hansen, Inc., Hewitt Associates, Pensions & Investments Performance Report

NA - Not Available

Table 5.8.4

Median Annualized Cumulative Rates of Return of Equity Investments of Private Pension Funds, 1961-1980

	A. G. Becker Survey	Hewitt Survey	P. I. P. E. R. Survey	A. S. Hansen Survey	Frank Russell Survey	Dow Jones Index	S&P Index
1961-1980	7.28	NA	NA	NA	NA	NA	8.33
1962-1980	6.53	NA	NA	NA	NA	5.89	7.43
1963-1980	7.63	NA	NA	NA	NA	6.66	8.41
1964-1980	6.69	NA	NA	NA	NA	5.88	7.61
1965-1980	6.46	NA	NA	NA	NA	5.11	7.08
1966-1980	5.45	3.77	NA	NA	NA	4.52	6.73
1967-1980	6.54	5.30	NA	NA	NA	6.15	8.04
1968-1980	5.23	3.87	NA	NA	NA	5.20	6.91
1969-1980	5.04	2.82	NA	NA	NA	4.98	6.56
1970-1980	6.16	4.13	6.00	NA	NA	6.66	8.04
1971-1980	7.00	5.61	6.90	NA	6.85	6.40	8.46
1972-1980	5.70	4.96	5.90	NA	5.96	6.02	7.82
1973-1980	4.20	3.62	5.00	NA	4.63	4.55	6.50
1974-1980	8.30	8.65	8.70	NA	8.38	7.38	9.93
1975-1980	16.70	16.19	15.30	NA	14.93	13.69	17.57
1976-1980	13.60	13.99	12.80	NA	12.89	8.30	13.97
1977-1980	12.40	13.20	11.20	NA	11.18	4.91	11.60
1978-1980	19.90	20.73	17.50	NA	17.73	11.62	18.67
1979-1980	26.90	27.83	23.90	NA	24.22	16.30	25.33
1980	32.90	32.94	29.70	NA	30.39	22.18	32.39

Source: A. G. Becker, Inc., Frank Russell Co., A. S. Hansen, Inc., Hewitt Associates, Pensions & Investments Performance Report

NA - Not Available

Table 5.8.5

Median Annualized Cumulative Rates of Return of Fixed Income Investments of Private Pension Funds, 1961-1980

	A. G. Becker Survey	Hewitt Survey	P. I. P. E. R. Survey	A. S. Hansen Survey	Frank Russell Survey	Kuhn Loeb Bond Index	Salomon Brothers Bond Index
1961-1980	4.66	NA	NA	NA	NA	NA	NA
1962-1980	4.63	NA	NA	NA	NA	NA	NA
1963-1980	4.52	NA	NA	NA	NA	NA	NA
1964-1980	4.45	NA	NA	NA	NA	NA	NA
1965-1980	4.49	NA	NA	NA	NA	NA	NA
1966-1980	4.73	5.55	NA	NA	NA	NA	NA
1967-1980	4.97	6.15	NA	NA	NA	NA	NA
1968-1980	5.44	6.36	NA	NA	NA	NA	NA
1969-1980	5.60	6.33	NA	NA	NA	NA	NA
1970-1980	6.45	7.16	6.80	NA	NA	NA	NA
1971-1980	5.70	6.82	5.60	NA	5.59	NA	4.18
1972-1980	5.00	6.56	5.00	NA	4.97	NA	3.44
1973-1980	4.50	6.42	4.70	NA	4.62	3.77	2.98
1974-1980	4.70	7.32	5.10	NA	5.02	4.09	3.24
1975-1980	5.90	7.50	6.40	NA	6.18	5.85	4.33
1976-1980	4.60	7.21	5.20	NA	4.96	3.80	2.38
1977-1980	1.80	6.04	2.70	NA	2.34	.24	-1.32
1978-1980	1.30	6.21	2.10	NA	1.88	-.70	-2.31
1979-1980	1.20	7.42	2.20	NA	1.62	-1.22	-3.40
1980	1.10	8.35	2.20	NA	1.65	-.29	-2.61

Source: A. G. Becker, Inc., Frank Russell Co., A. S. Hansen, Inc., Hewitt Associates, Pensions & Investments Performance Report  
 NA - Not Available

Table 5.8.6

Distribution of Annualized Cumulative Rates of Return of Private Pension Funds, 1961-1980

	1961-1980			1962-1980		
	Equity Funds	Fixed Income Funds	All Funds	Equity Funds	Fixed Income Funds	All Funds
<u>A. G. Becker Survey</u>						
5th Percentile	10.01	5.62	9.41	9.01	5.51	8.57
25th Percentile	8.23	4.96	6.72	7.53	4.99	6.41
Median	7.28	4.66	6.10	6.53	4.63	5.90
75th Percentile	6.02	3.97	5.16	5.42	4.07	5.18
95th Percentile	5.02	3.52	3.97	3.90	3.62	3.68
<u>Hewitt Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	NA	NA	NA
Median	NA	NA	NA	NA	NA	NA
75th Percentile	NA	NA	NA	NA	NA	NA
95th Percentile	NA	NA	NA	NA	NA	NA
<u>P. I. P. E. R. Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	NA	NA	NA
Median	NA	NA	NA	NA	NA	NA
75th Percentile	NA	NA	NA	NA	NA	NA
95th Percentile	NA	NA	NA	NA	NA	NA
<u>A. S. Hansen Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	NA	NA	NA
Median	NA	NA	NA	NA	NA	NA
75th Percentile	NA	NA	NA	NA	NA	NA
95th Percentile	NA	NA	NA	NA	NA	NA
<u>Frank Russell Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	NA	NA	NA
Median	NA	NA	NA	NA	NA	NA
75th Percentile	NA	NA	NA	NA	NA	NA
95th Percentile	NA	NA	NA	NA	NA	NA

Table 5.8.6 Continued  
 Distribution of Annualized Cumulative Rates of Return  
 of Private Pension Funds, 1961-1980

	1963-1980			1964-1980		
	Equity Funds	Fixed Income Funds	All Funds	Equity Funds	Fixed Income Funds	All Funds
<u>A.G. Becker Survey</u>						
5th Percentile	10.44	5.40	9.87	9.86	5.95	8.98
25th Percentile	9.19	4.96	6.86	8.07	5.01	6.51
Median	7.63	4.52	6.61	6.69	4.45	5.91
75th Percentile	6.38	4.12	5.48	5.55	4.09	4.82
95th Percentile	4.84	3.50	3.95	3.91	3.47	3.50
<u>Hewitt Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	NA	NA	NA
Median	NA	NA	NA	NA	NA	NA
75th Percentile	NA	NA	NA	NA	NA	NA
95th Percentile	NA	NA	NA	NA	NA	NA
<u>P.I.P.E.R. Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	NA	NA	NA
Median	NA	NA	NA	NA	NA	NA
75th Percentile	NA	NA	NA	NA	NA	NA
95th Percentile	NA	NA	NA	NA	NA	NA
<u>A.S. Hansen Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	NA	NA	NA
Median	NA	NA	NA	NA	NA	NA
75th Percentile	NA	NA	NA	NA	NA	NA
95th Percentile	NA	NA	NA	NA	NA	NA
<u>Frank Russell Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	NA	NA	NA
Median	NA	NA	NA	NA	NA	NA
75th Percentile	NA	NA	NA	NA	NA	NA
95th Percentile	NA	NA	NA	NA	NA	NA

  

	1965-1980			1966-1980		
	Equity Funds	Fixed Income Funds	All Funds	Equity Funds	Fixed Income Funds	All Funds
<u>A.G. Becker Survey</u>						
5th Percentile	9.40	5.88	9.13	8.91	5.94	8.29
25th Percentile	7.52	5.09	6.42	6.42	5.29	6.11
Median	6.46	4.49	5.72	5.45	4.73	5.06
75th Percentile	5.19	4.01	4.32	4.33	4.18	3.94
95th Percentile	3.50	3.36	3.27	2.80	3.53	2.84
<u>Hewitt Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	5.08	5.85	NA
Median	NA	NA	NA	3.77	5.55	4.54
75th Percentile	NA	NA	NA	2.46	5.25	3.25
95th Percentile	NA	NA	NA	NA	NA	NA
<u>P.I.P.E.R. Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	NA	NA	NA
Median	NA	NA	NA	NA	NA	NA
75th Percentile	NA	NA	NA	NA	NA	NA
95th Percentile	NA	NA	NA	NA	NA	NA
<u>A.S. Hansen Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	NA	NA	NA
Median	NA	NA	NA	NA	NA	NA
75th Percentile	NA	NA	NA	NA	NA	NA
95th Percentile	NA	NA	NA	NA	NA	NA
<u>Frank Russell Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	NA	NA	NA
Median	NA	NA	NA	NA	NA	NA
75th Percentile	NA	NA	NA	NA	NA	NA
95th Percentile	NA	NA	NA	NA	NA	NA

Table 5.8.6 Continued  
 Distribution of Annualized Cumulative Rates of Return  
 of Private Pension Funds, 1961-1980

	1967-1980			1968-1980		
	Equity Funds	Fixed Income Funds	All Funds	Equity Funds	Fixed Income Funds	All Funds
<u>A.G. Becker Survey</u>						
5th Percentile	9.74	6.37	8.97	8.88	6.59	7.88
25th Percentile	7.80	5.71	7.01	6.43	5.96	6.10
Median	6.54	4.97	5.76	5.23	5.44	5.07
75th Percentile	5.30	4.53	4.48	4.04	5.10	3.97
95th Percentile	3.79	3.86	2.99	2.70	4.45	2.39
<u>Hewitt Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	6.68	6.75	6.42	5.11	6.93	5.71
Median	5.30	6.15	5.19	3.87	6.36	4.46
75th Percentile	3.92	5.55	3.96	2.63	5.79	3.21
95th Percentile	NA	NA	NA	NA	NA	NA
<u>P.I.P.E.R. Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	NA	NA	NA
Median	NA	NA	NA	NA	NA	NA
75th Percentile	NA	NA	NA	NA	NA	NA
95th Percentile	NA	NA	NA	NA	NA	NA
<u>A.S. Hansen Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	NA	NA	NA
Median	NA	NA	NA	NA	NA	NA
75th Percentile	NA	NA	NA	NA	NA	NA
95th Percentile	NA	NA	NA	NA	NA	NA
<u>Frank Russell Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	NA	NA	NA
Median	NA	NA	NA	NA	NA	NA
75th Percentile	NA	NA	NA	NA	NA	NA
95th Percentile	NA	NA	NA	NA	NA	NA
	1969-1980			1970-1980		
	Equity Funds	Fixed Income Funds	All Funds	Equity Funds	Fixed Income Funds	All Funds
<u>A.G. Becker Survey</u>						
5th Percentile	8.20	7.25	7.97	9.57	8.14	9.30
25th Percentile	6.20	6.37	5.81	7.37	7.16	7.21
Median	5.04	5.60	5.13	6.16	5.45	5.92
75th Percentile	3.54	5.22	3.82	4.66	5.98	4.98
95th Percentile	1.94	4.51	1.94	3.08	5.17	3.02
<u>Hewitt Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	4.11	6.91	5.37	5.40	7.85	6.49
Median	2.82	6.33	4.08	4.13	7.16	5.14
75th Percentile	1.53	5.75	2.79	2.86	6.47	3.79
95th Percentile	NA	NA	NA	NA	NA	NA
<u>P.I.P.E.R. Survey</u>						
5th Percentile	NA	NA	NA	10.30	7.90	NA
25th Percentile	NA	NA	NA	7.60	6.80	NA
Median	NA	NA	NA	6.00	6.80	NA
75th Percentile	NA	NA	NA	4.80	5.70	NA
95th Percentile	NA	NA	NA	2.80	4.90	NA
<u>A.S. Hansen Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	NA	NA	NA
Median	NA	NA	NA	NA	NA	NA
75th Percentile	NA	NA	NA	NA	NA	NA
95th Percentile	NA	NA	NA	NA	NA	NA
<u>Frank Russell Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	NA	NA	NA
Median	NA	NA	NA	NA	NA	NA
75th Percentile	NA	NA	NA	NA	NA	NA
95th Percentile	NA	NA	NA	NA	NA	NA

Table 5.8.6 Continued  
 Distribution of Annualized Cumulative Rates of Return  
 of Private Pension Funds, 1961-1980

	1971-1980			1972-1980		
	Equity Funds	Fixed Income Funds	All Funds	Equity Funds	Fixed Income Funds	All Funds
<u>A.G. Becker Survey</u>						
5th Percentile	11.40	7.50	11.20	10.90	6.90	10.20
25th Percentile	8.60	6.40	7.60	7.10	5.60	6.90
Median	7.00	5.70	6.30	5.70	5.00	5.10
75th Percentile	5.80	5.20	5.50	4.30	4.50	4.20
95th Percentile	3.60	4.20	3.40	2.20	3.40	2.20
<u>Hewitt Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	7.28	7.53	7.63	6.66	7.42	6.78
Median	5.61	6.82	6.06	4.96	6.56	5.16
75th Percentile	3.94	6.11	4.49	3.26	5.70	3.54
95th Percentile	NA	NA	NA	NA	NA	NA
<u>P.I.P.E.R. Survey</u>						
5th Percentile	11.50	7.50	NA	11.20	6.90	NA
25th Percentile	8.50	6.80	NA	7.30	5.50	NA
Median	6.90	5.60	NA	5.90	5.00	NA
75th Percentile	5.70	5.10	NA	4.20	4.40	NA
95th Percentile	3.30	4.20	NA	2.40	3.40	NA
<u>A.S. Hansen Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	NA	NA	NA
Median	NA	NA	NA	NA	NA	NA
75th Percentile	NA	NA	NA	NA	NA	NA
95th Percentile	NA	NA	NA	NA	NA	NA
<u>Frank Russell Survey</u>						
5th Percentile	11.22	7.86	NA	9.99	7.30	NA
25th Percentile	8.35	6.32	NA	7.21	5.50	NA
Median	6.85	5.59	NA	5.96	4.97	NA
75th Percentile	5.61	5.17	NA	3.98	4.40	NA
95th Percentile	2.87	4.27	NA	1.75	3.34	NA
	1973-1980			1974-1980		
	Equity Funds	Fixed Income Funds	All Funds	Equity Funds	Fixed Income Funds	All Funds
<u>A.G. Becker Survey</u>						
5th Percentile	9.70	6.10	8.50	13.90	6.50	12.50
25th Percentile	5.90	5.20	5.80	10.60	5.50	8.70
Median	4.20	4.50	3.90	8.30	4.70	7.20
75th Percentile	2.50	3.90	2.90	6.60	4.00	5.60
95th Percentile	.50	2.50	.90	4.10	2.60	3.80
<u>Hewitt Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	5.16	7.36	5.58	10.49	8.08	9.12
Median	3.62	6.42	4.05	8.65	7.32	7.36
75th Percentile	2.08	5.48	2.52	6.81	6.56	5.60
95th Percentile	NA	NA	NA	NA	NA	NA
<u>P.I.P.E.R. Survey</u>						
5th Percentile	10.80	6.70	NA	4.70	7.70	NA
25th Percentile	6.50	5.30	NA	7.10	5.90	NA
Median	5.00	4.70	NA	8.70	5.10	NA
75th Percentile	2.90	4.10	NA	10.70	4.50	NA
95th Percentile	1.00	2.80	NA	15.70	3.70	NA
<u>A.S. Hansen Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	NA	NA	NA
Median	NA	NA	NA	NA	NA	NA
75th Percentile	NA	NA	NA	NA	NA	NA
95th Percentile	NA	NA	NA	NA	NA	NA
<u>Frank Russell Survey</u>						
5th Percentile	9.37	6.85	NA	14.13	7.47	NA
25th Percentile	6.19	5.22	NA	10.10	5.57	NA
Median	4.63	4.62	NA	8.38	5.02	NA
75th Percentile	2.55	4.03	NA	6.57	4.29	NA
95th Percentile	.62	2.39	NA	4.53	3.70	NA

Table 5.8.6 Continued  
 Distribution of Annualized Cumulative Rates of Return  
 of Private Pension Funds, 1961-1980

	1975-1980			1976-1980		
	Equity Funds	Fixed Income Funds	All Funds	Equity Funds	Fixed Income Funds	All Funds
<u>A. G. Becker Survey</u>						
5th Percentile	23.50	7.80	19.50	21.00	7.20	17.20
25th Percentile	19.50	6.50	14.90	17.00	5.40	12.90
Median	16.70	5.90	12.60	13.60	4.60	10.30
75th Percentile	14.90	5.20	10.00	11.60	3.80	8.00
95th Percentile	12.40	3.90	6.30	9.10	2.50	4.70
<u>Hewitt Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	18.14	8.53	14.83	16.45	8.42	13.71
Median	16.19	7.50	12.38	13.99	7.21	11.05
75th Percentile	14.24	6.47	9.93	11.53	6.00	8.39
95th Percentile	NA	NA	NA	NA	NA	NA
<u>P. I. P. E. R. Survey</u>						
5th Percentile	21.80	8.70	NA	20.60	7.60	NA
25th Percentile	17.40	7.20	NA	15.40	6.00	NA
Median	15.30	6.40	NA	12.80	5.20	NA
75th Percentile	13.40	5.80	NA	10.70	4.40	NA
95th Percentile	10.40	4.60	NA	8.10	3.40	NA
<u>A. S. Hansen Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	NA	NA	NA
Median	NA	NA	NA	NA	NA	NA
75th Percentile	NA	NA	NA	NA	NA	NA
95th Percentile	NA	NA	NA	NA	NA	NA
<u>Frank Russell Survey</u>						
5th Percentile	21.37	8.52	NA	17.01	7.66	NA
25th Percentile	14.54	6.86	NA	13.72	5.60	NA
Median	12.89	6.18	NA	11.18	4.96	NA
75th Percentile	10.87	5.65	NA	9.72	4.35	NA
95th Percentile	7.94	4.70	NA	6.29	3.23	NA
	1977-1980			1978-1980		
	Equity Funds	Fixed Income Funds	All Funds	Equity Funds	Fixed Income Funds	All Funds
<u>A. G. Becker Survey</u>						
5th Percentile	21.10	5.00	17.00	31.20	5.10	23.90
25th Percentile	15.70	3.00	11.60	23.90	2.50	17.20
Median	12.40	1.80	8.80	19.90	1.30	13.20
75th Percentile	10.10	1.00	6.20	17.00	.10	8.80
95th Percentile	7.10	-.60	2.20	12.80	-2.10	1.90
<u>Hewitt Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	16.13	7.85	12.62	24.84	8.42	17.98
Median	13.20	6.04	9.55	20.73	6.21	13.35
75th Percentile	10.27	4.23	6.48	16.62	4.00	8.72
95th Percentile	NA	NA	NA	NA	NA	NA
<u>P. I. P. E. R. Survey</u>						
5th Percentile	19.30	5.50	NA	26.90	5.80	NA
25th Percentile	13.80	3.90	NA	20.70	3.80	NA
Median	11.20	2.70	NA	17.50	2.10	NA
75th Percentile	9.30	1.70	NA	15.30	1.10	NA
95th Percentile	6.30	.40	NA	11.20	-.80	NA
<u>A. S. Hansen Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	NA	NA	NA
Median	NA	NA	NA	NA	NA	NA
75th Percentile	NA	NA	NA	NA	NA	NA
95th Percentile	NA	NA	NA	NA	NA	NA
<u>Frank Russell Survey</u>						
5th Percentile	25.08	5.77	NA	33.69	6.06	NA
25th Percentile	20.65	3.34	NA	27.71	3.35	NA
Median	17.73	2.34	NA	24.22	1.88	NA
75th Percentile	15.36	1.62	NA	19.91	1.05	NA
95th Percentile	11.07	.30	NA	13.47	-.91	NA

Table 5.8.6 Continued  
 Distribution of Annualized Cumulative Rates of Return  
 of Private Pension Funds, 1961-1980

	1979-1980			1980		
	Equity Funds	Fixed Income Funds	All Funds	Equity Funds	Fixed Income Funds	All Funds
<u>A.G. Becker Survey</u>						
5th Percentile	41.50	7.10	32.00	51.80	8.10	40.20
25th Percentile	32.00	3.50	23.30	39.50	3.80	27.80
Median	26.90	1.20	17.00	32.70	1.10	20.00
75th Percentile	21.60	-.70	11.20	26.60	-1.00	12.60
95th Percentile	15.90	-2.90	1.10	16.90	-4.50	.20
<u>Hewitt Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	33.87	10.28	23.68	41.38	12.04	28.59
Median	27.83	7.42	17.06	32.94	8.35	20.18
75th Percentile	21.79	4.56	10.44	24.50	4.66	11.77
95th Percentile	NA	NA	NA	NA	NA	NA
<u>P.I.P.E.R. Survey</u>						
5th Percentile	36.6	7.10	NA	44.7	7.80	NA
25th Percentile	27.5	4.50	NA	34.4	4.70	NA
Median	23.9	2.20	NA	29.7	2.20	NA
75th Percentile	19.8	.80	NA	23.8	.40	NA
95th Percentile	14.2	-2.30	NA	17.0	-3.80	NA
<u>A.S. Hansen Survey</u>						
5th Percentile	NA	NA	NA	NA	NA	NA
25th Percentile	NA	NA	NA	NA	NA	NA
Median	NA	NA	NA	NA	NA	NA
75th Percentile	NA	NA	NA	NA	NA	NA
95th Percentile	NA	NA	NA	NA	NA	NA
<u>Frank Russell Survey</u>						
5th Percentile	33.69	7.31	NA	43.29	7.40	NA
25th Percentile	27.71	3.73	NA	34.74	3.85	NA
Median	24.22	1.62	NA	30.39	1.65	NA
75th Percentile	19.91	-.67	NA	24.08	.02	NA
95th Percentile	13.47	-2.33	NA	14.84	-4.04	NA

Source: A.G. Becker, Inc., Frank Russell Co., A.S. Hansen, Inc.,

Hewitt Associates, Pensions & Investments Performance Report

NA - Not Available