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## Selected References

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### **Trade-off between Wages and Pensions**

- Ehrenberg, Ronald G. "Retirement System Characteristics and Compensating Wage Differentials in the Public Sector." *Industrial Labor Relations Review* 33, 1980, pp. 470-483.
- Ehrenberg, Ronald G.; and Robert Smith. *Modern Labor Economics*. Glenview, IL: Scott Foresman, 1985.
- Schiller, Bradley R.; and Randall D. Weiss. "Pensions and Wages: A Test for Equalizing Differences." *Review of Economics and Statistics* 63, 1980, pp. 529-538.
- Smith, Robert S. "Compensating Differentials for Pensions and Underfunding in the Public Sector." *Review of Economics and Statistics* 63, 1981, pp. 463-468.

### **Rate of Pension Savings over Tenure**

- Clark, Robert; and Ann A. McDermed. "Life Cycle Patterns of Earnings, Pension Wealth and Total Compensation." *Quarterly Journal of Economics* 101, 1986, pp. 341-362.
- . "Earnings Response to Pension Coverage and Eligibility." Paper presented at the American Economic Association Meetings, New York, 1985.
- Ippolito, Richard A. "The Labor Contract and True Economic Pension Liabilities." *American Economic Review* 75, December 1985, pp. 1031-1043.
- Mitchell, Olivia; and S. Pozzenbon. "Wages, Pensions, and the Wage-Pension Trade-off." Paper presented at the American Economic Association Meetings, New Orleans, 1986.

### **Pensions and Job Mobility**

- Allen, Steven; Robert Clark; and Daniel Sumner. "Job Mobility, Older Workers and the Role of Pensions." Final Report submitted to the U.S. Department of Labor, 1986.

- Bartel, Ann P.; and George J. Borjas. "Middle-Age Job Mobility: Its Determinants and Consequences." In *Men in Their Pre-Retirement Years*. Philadelphia: Temple University School of Business Administration, 1977.
- Ippolito, Richard A. "Why Federal Workers Don't Quit." *Journal of Human Resources* 22, Spring 1987, pp. 281-299.
- Mitchell, Olivia S. "Fringe Benefits and Labor Mobility." *Journal of Human Resources* 17, Spring 1982, pp. 286-298.
- Schiller, Bradley R.; and Randall D. Weiss. "The Impact of Private Pensions on Firm Attachments." *Review of Economics and Statistics* 62, 1980, pp. 369-380.

### Pensions and Retirement Age

- Burkhauser, Richard B. "The Pension Acceptance Decision of Older Workers." *Journal of Human Resources* 14, Winter 1979, pp. 63-75.
- Fields, Gary; and Olivia Mitchell. *Retirement, Pensions, and Social Security*. Cambridge, Mass.: MIT Press, 1984.
- Gustman, Alan L.; and Thomas L. Steinmeier. "A Structural Model of Retirement." *Econometrica* 54, May 1986, pp. 555-584.
- Ippolito, Richard A. "Income Tax Policy and Lifetime Labor Supply." *Journal of Public Economics* 26, April 1985, pp. 327-347.
- . "Towards Explaining Earlier Retirement After 1970." *Industrial Labor Relations Review* 43, 1990, Forthcoming.

### Pension Coverage and Benefits

- Andrews, Emily. *The Changing Profile of Business in America*. Washington, D.C.: Employee Benefit Research Institute, 1985.
- Beller, Daniel. "Coverage Patterns of Full-Time Employees under Private Retirement Plans." *Social Security Bulletin* 44, July 1981, pp. 3-11.
- Clark, Robert; Steven Allen; and Daniel Sumner. "Postretirement Adjustments of Pensions." *Journal of Human Resources* 21, 1986, pp. 118-137.
- Dorsey, Stuart. "A Model and Empirical Estimates of Worker Pension Coverage in the U.S." *Southern Economic Journal* 49, October 1982, pp. 506-520.
- McCarthy, David. *Findings from the Survey of Private Pension Benefit Amounts*. U.S. Department of Labor, Washington, D.C., G.P.O., 1985.

### Pensions and National Savings

- Diamond, Peter A.; and Jerry A. Hausman. "Individual Retirement and Savings Behavior." *Journal of Public Economics* 23, February 1984, pp. 81-114.
- Dicks-Mireaux, Louis; and Mervyn King. "Pension Wealth and Household Savings: Tests of Robustness." *Journal of Public Economics* 23, February 1984, pp. 115-140.
- Feldstein, Martin. "Do Private Pensions Increase National Saving?" *Journal of Public Economics* 10, December 1978, pp. 277-293.

Munnell, Alicia. "Private Pensions and Saving: New Evidence." *Journal of Political Economy* 84, October 1976, pp. 1013-1031.

### **Pensions and Regulation**

Clark, Robert; and Ann McDermed. *The Regulatory Impact on Defined Benefit Pension Plans*. Washington, D.C.: American Enterprise Institute, 1989, forthcoming.

Cornwell, Christopher; Stuart Dorsey; and Nasser Mehrzad. "Opportunistic Behavior by Firms in Implicit Pension Contracts." West Virginia University, Mimeograph, 1988.

Ippolito, Richard A. "A Study of the Regulatory Effect of the Employee Retirement Income Security Act." *Journal of Law and Economics* 31, April 1988, pp. 85-125.

———, *The Economics of Pension Insurance*. Homewood, IL: Richard D. Irwin (for the Pension Research Council), 1989.

Logue, Dennis. *Legislative Influence on Corporate Pension Plans*. Washington, D.C.: American Enterprise Institute, 1979.

Treynor, Jack; W. Priest; and P. Regan. *The Financial Reality of Pension Funding under ERISA*. Homewood, IL: Dow Jones-Irwin, 1976.

### **Pension Portfolios and Taxes**

Black, Fisher. "The Tax Consequences of Long-Run Pension Policy." *Financial Analysts Journal* 36, July-August 1980, pp. 3-10.

Ippolito, Richard A. "The Role of Risk in a Tax Arbitrage Pension Portfolio." *Financial Analysts Journal* 46, Jan./Feb. 1990, Forthcoming.

Scholes, Myron; and Mark Wolfson. *Taxes and Business Strategy: A Global Planning Approach*. Prentice-Hall, 1989.

Sharpe, William. "Corporate Pension Policy." *Journal of Financial Economics* 3, June 1976, pp. 183-193.

Tepper, Irwin. "Taxation and Corporate Pension Policy." *Journal of Finance* 36, March 1981, pp. 1-14.

Treynor, Jack L. "The Principles of Corporate Pension Finance." *Journal of Finance* 32, May 1977, pp. 627-638.

### **Social Security System**

Blinder, Alan; Roger Gordon; and Donald Wise. "Reconsidering the Work Disincentives of Social Security." *National Tax Journal* 33, December 1980, pp. 431-442.

Boskin, Michael; and Douglas Puffert. "The Financial Impact of Social Security by Cohort under Alternative Financing Assumptions." National Bureau of Economic Research, Working Paper No. 2225, April 1987.

Burtless, Gary. "Social Security, Unanticipated Benefit Increases and the Timing of Retirement." *Review of Economic Studies* 53, October 1986, pp. 781-805.

Burkhauser, Richard V. "The Early Acceptance of Social Security: An Asset Maximization Approach." *Industrial Labor Relations Review* 33, 1980, pp. 484-492.

——— and John Turner. "Can 25 Million Americans Be Wrong? A Response to Blinder, Gordon, and Wise." *National Tax Journal* 34, December 1981, pp. 467-472.

Feldstein, Martin. "Social Security, Induced Retirement, and Aggregate Capital Accumulation." *Journal of Political Economy* 82, September 1974, pp. 905-926.

Moffitt, Robert. "Trends in Social Security Wealth by Cohort." In *Economic Transfers in the United States*, edited by M. Moon. Chicago: University of Chicago Press, 1977.

Munnell, Alicia. *The Future of Social Security*. Washington, D.C.: Brookings Institution, 1977.

Social Security Administration. *Social Security Bulletin—Annual Statistical Supplement*, 1987.

### Consumption Tax

Aaron, Henry J.; Harvey Galper; and Joseph A. Pechman, eds. *Uneasy Compromise: Problems of a Hybrid Income-Consumption Tax*. Washington, D.C.: Brookings Institution, 1988.

Auerbach, Alan; and Martin Feldstein. *Handbook of Public Finance*. Amsterdam: North Holland, 1985.

Bradford, David F. *Blueprints for Basic Tax Reform*. Washington, D.C.: U.S. Department of the Treasury, 1977.

Fullerton, Don; John B. Shoven; and John Walley. "Replacing the U.S. Income Tax with a Progressive Consumption Tax." *Journal of Public Economics* 20, 1983, pp. 3-23.

Kaldor, Nicholas. *An Expenditure Tax*. London: Allen and Unwin, 1955.

Hall, Robert; and Alvin Rabushka. *The Flat Tax*. Stanford: Hoover Institution Press, 1985.

Makin, John. *Real Tax Reform: Replacing the Income Tax*. Washington, D.C.: American Enterprise Institute, 1985.

Pechman, Joseph A. *Federal Tax Policy*. 5th ed., Washington, D.C.: Brookings Institution, 1987.

Walker, Charles; and Mark Bloomfield. *The Consumption Tax: A Better Alternative*. Cambridge: Ballinger, 1987.

### Other References

Allen, E.; J. Melone; J. Rosenbloom; and J. VanDerhei. *Pension Planning*. Homewood, IL: Richard D. Irwin, 1988.

Beller, Daniel; and John Turner, eds. *Trends in Pensions*. U.S. Department of Labor (G.P.O.), 1989.

Congressional Budget Office. *Tax Policy for Pensions and Other Retirement Savings*. April 1987.

- Davis, Kingsley. "Retirement as a Dubious Paradise—Another Point of View." In *Issues in Contemporary Retirement* edited by E. Lazear and R. Ricardo Campbell. Stanford, CA: Hoover Institution, 1988.
- Ippolito, Richard A. *Pensions, Economics, and Public Policy*. Homewood, IL: Dow Jones-Irwin (for the Pension Research Council), 1986.
- and Walter Kolodrubetz. *The Handbook of Pension Statistics*. Chicago: Commerce Clearing House, 1986.
- Latimar, Murray. *Industrial Pension Systems*. New York: Industrial Relations Counselors, 1932.
- McGill, Dan M.; and Donald S. Grubbs. *Fundamentals of Private Pensions*, 6th ed., Homewood, IL: Richard D. Irwin, 1989.
- Wyatt & Co., *Survey of Actuarial Assumptions and Funding*. Washington, D.C.: Wyatt & Co., 1988.



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## Appendix Tables

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**TABLE A-1** Pension Assets, 1950-1987

<i>Year</i>	<i>Total</i>	<i>Private</i>	<i>State and Local Gov't</i>
1950	\$ 70	\$ 49	\$ 21
1955	147	105	42
1960	255	186	69
1965	427	315	112
1970	547	386	161
1975	738	536	202
1980	1,033	783	250
1985	1,523	1,133	390
1987	1,836*	1,358	478

\*\$2,008 in billions of 1987 dollars.

NOTE: Numbers in the table are in billions of constant 1984 dollars.

SOURCES: R. Ippolito and W. Kolodrubetz, eds. *The Handbook of Pension Statistics*; and D. Beller and J. Turner, eds., *Trends in Pensions*.

**TABLE A-2** Pension Share of Financial Assets

<i>Year</i>	<i>Total Financial Assets</i>	<i>Corporate Equity</i>
1950	3.0	0.9
1955	4.4	2.2
1960	6.3	4.1
1965	7.5	6.3
1970	8.9	9.6
1975	12.2	17.8
1980	15.0	19.3
1985	16.8	21.6
1987	17.8	23.8

NOTE: Numbers in table are percents.

SOURCE: see Table A-1.



**TABLE A-3** Defined Contribution Plan Assets

<i>Year</i>	<i>Percent*</i>
1950	11.6
1955	14.7
1960	18.0
1965	20.8
1970	23.4
1975	25.7
1980	27.8
1987	37.5

\*Share of total private pension plan assets.

SOURCE: Richard A. Ippolito, *Pensions, Economics and Public Policy*, p. 114, and unpublished data (for 1987 only) from the U.S. Department of Labor.

**TABLE A-4** Distribution of Termination Funding Ratios, 1978-1986

<i>Funding Ratio</i>	<i>Percent Participants</i>								
	1978	1979	1980	1981	1982	1983	1984	1985	1986
0-24%	.8	.8	2.4	.3	.3	.3	.3	.3	2.0
25-49	8.8	9.7	3.8	2.6	2.5	2.0	1.6	1.8	1.4
50-74	14.2	16.0	11.5	8.3	8.0	7.6	2.8	3.7	4.5
75-99	24.6	26.5	17.1	10.4	9.3	6.7	9.0	9.5	7.0
100-124	25.5	25.8	22.9	14.1	14.2	13.4	10.1	11.7	13.3
125-149	14.9	11.7	22.1	20.1	19.5	18.2	12.2	16.5	19.2
150 +	11.1	9.2	22.0	44.1	46.1	51.7	63.8	56.4	52.6
Average	92.9%	88.5	107.2	128.8	130.9	139.2	153.9	145.6	140.2
Underfunding (\$1986)*	\$116.7	126.0	73.0	42.1	39.5	35.8	25.9	31.8	30.8
Interest Rate†	7.25	7.50	8.75	10.25	10.75	9.25	10.0	9.75	7.75

SOURCE: Form 5500 Annual Pension Plan Reports.

\*Underfunding is adjusted to 1986 dollars and size of pension universe. Funding ratios are calculated for each year using a constant 2 percent discount rate. Assets in year *t* are then set equal to assets in 1986, times the real funding ratio in year *t*, divided by the same ratio in 1986. Liabilities in year *t* are set equal to those in 1986 but adjusted to the PBGC immediate annuity rates shown in the table.

†Average PBGC immediate annuity rate during year.

**TABLE A-5** Distribution of Ongoing Funding Ratios, 1978-1986

<i>Funding Ratio</i>	<i>Percent Participants</i>								
	1978	1979	1980	1981	1982	1983	1984	1985	1986
0-24%	2.8	3.3	2.4	2.0	2.0	.9	.8	.9	2.5
25-49	16.5	22.2	15.3	13.1	13.2	10.4	10.0	10.1	4.6
50-74	36.4	39.5	34.9	27.5	27.6	18.6	16.9	17.1	13.3
75-99	30.2	25.6	31.1	32.1	33.2	29.3	27.3	28.1	26.8
100-124	9.1	6.1	10.6	16.4	16.4	24.4	25.6	25.1	24.3
125-149	2.6	2.0	3.0	5.2	5.1	9.8	11.2	11.0	15.4
150 +	2.4	1.3	2.7	3.8	3.6	6.5	8.0	7.6	13.1
Average	65.3	60.3	67.3	74.4	74.1	84.3	87.5	86.5	94.9
Underfunding (\$1986)*	\$343.0	387.5	325.8	268.5	272.4	203.5	187.6	191.3	184.9

SOURCE: Form 5500 Annual Pension Plan Reports.

\*Underfunding is adjusted to 1986 dollars and size of pension universe, as described in notes to Table A-4, except liabilities in all years are fixed at 1986 levels.

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