

REFERENCES CITED

- American Academy of Actuaries Committee on Pension Actuarial Principles and Practices, 1985, *Pension Cost Method Analysis* (American Academy of Actuaries).
- Beaver, W., C. Eger, S. Ryan, and M. Wolfson, 1989, Financial reporting, supplemental disclosures, and bank share prices, *Journal of Accounting Research* 27, 157-78.
- Bernard, V., 1987, Cross-sectional dependence and problems in inference in market-based accounting research, *Journal of Accounting Research* 25, 1-48.
- Biddle, G.C. and G.S. Seow, 1991, The estimation and determinants of associations between returns and earnings: Evidence from cross industry comparisons, *Journal of Accounting, Auditing, and Finance*, forthcoming.
- Bureau of Labor Statistics, 1989, *Employee Benefits in Medium and Large Firms, 1988* Bulletin 2336, (Washington, D.C.: Department of Labor).
- Coopers and Lybrand, 1989, *Retiree Health Benefits: Field Test of the FASB Proposal* (Morristown: Financial Executives Research Institute).
- Christie, A., 1987, On cross-sectional analysis in accounting research, *Journal of Accounting and Economics*, 9, 229-258.
- Doran, P., K. MacBain, and W. Reimert, 1987, *Measuring and Funding Corporate Liabilities for Retiree Health Benefits* (Washington, D.C.: Employee Benefit Research Institute).
- Employee Benefit Research Institute, 1988, Issue Brief No. 84, Issues and trends in retiree health insurance benefits (Washington, D.C.: Employee Benefit Research Institute).
- Feldstein, M., and R. Morck, 1983, Pension funding decisions, interest rate assumptions, and share prices, in Z. Bodie and J. Shoven (eds.) *Financial Aspects of the United States Pension System* (University of Chicago Press), 177-207.
- Feldstein, M., and S. Seligman, 1981, Pension funding, share prices, and national saving, *The Journal of Finance* 36, 801-824.

- Financial Accounting Standards Board, 1980, *Statement of Financial Accounting Standards No. 36: Disclosure of Pension Information* (Stamford, Conn: Financial Accounting Foundation).
- Financial Accounting Standards Board, 1984, *Statement of Financial Accounting Standards No. 81: Disclosure of Postretirement Health Care and Life Insurance Benefits* (Stamford, Conn.: Financial Accounting Foundation).
- Financial Accounting Standards Board, 1985, *Statement of Financial Accounting Standards No. 87: Employers' Accounting for Pensions* (Stamford, Conn: Financial Accounting Foundation).
- Financial Accounting Standards Board, 1990, *Statement of Financial Accounting Standards No. 106: Employers' Accounting for Postretirement Benefits Other Than Pensions* (Norwalk, Conn.: Financial Accounting Foundation).
- Freudenheim, M., 1989, Costly accounting change planned, *The New York Times* (September 15), D1, D6.
- Froot, K., 1989, Consistent covariance matrix estimation with cross-sectional dependence and heteroskedasticity in financial data, *Journal of Financial and Quantitative Analysis* 24, 333-355.
- Garfinkel, S., G. Riley, and V. Iannacchione, 1988, High-cost users of medical care, *Health Care Financing Review*, 41-52.
- Grant, J., 1990, Liabilities for non-pension retirement benefits - impact on firm valuation," unpublished working paper, The Ohio State University.
- Harris, T., and J. Ohlson, 1987, Accounting disclosures and the market's valuation of oil and gas properties, *The Accounting Review* 62, 651-670.
- Henriques, D., 1989, Double whammy - FASB readies a blow to corporate earnings and balance sheets, *Barrons* (April 17), 8-9, 28-29.
- Hirschey, M. and J. Weygandt, 1985, Amortization policy for advertising and research and development expenditures. *Journal of Accounting Research* 23, 326-35.
- Hutchings, P., and R. Ullman, 1983, Prepaid hospital care age/sex and hospital continuation study, *Transactions of the Society of Actuaries*, 623-56.

- Landsman, W., 1986, An empirical investigation of pension fund property rights, *The Accounting Review* 61, 662-691.
- Martens, S., and K. Stevens, 1990, Business reacts to FASB's proposal for nonpension retirement benefits, *Journal of Accountancy* 169 (June), 21-23.
- Miller, M., 1977, Debt and taxes, *Journal of Finance* 32, 261-275.
- Standard and Poor's Corporation, 1989, *Credit Week*, September 11.
- Tobin, J., and W. Brainard, 1977, Asset markets and the cost of capital, in R. Nelson and B. Balassa, Eds., *Economic Progress, Private Values and Public Policy: Essays in Honor of William Fellner* (Elsevier-North Holland), 235-262.
- U.S. General Accounting Office, 1988, Future security of retirees' health benefits in question, September 15, GAO/T-HRD-88-30.
- Waldo, D., S. Sonnefeld, D. McKusick, and R. Arnett, 1989, Health expenditures by age group, 1977 and 1987,* *Health Care Financing Review*, 111-120.
- Warshawsky, M., 1991, *The Uncertain Promise of Retiree Health Benefits: An Evaluation of Corporate Obligations* (Washington, D.C.: American Enterprise Institute for Public Policy Research).
- Warshawsky, M., 1989, The adequacy of funding of private defined benefit pension plans, in J. Turner and D. Beller (eds.), *Trends in Pensions* (Washington, D.C.: Department of Labor).
- White, H., 1980, A Heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroskedasticity, *Econometrica* 48, 817-838.

NOTES

1. Retiree health plans are not subject to the stringent vesting and funding requirements imposed by ERISA on pension plans. Hence, the federal courts have determined that whether an employer may legally cancel or modify retiree health benefits generally depends on the language of the relevant plan documents. When the language of the documents, however, is ambiguous or the documents do not exist, current legal doctrine in some circuits of the federal court system holds that reference should be made to the intent of the parties as expressed in extrinsic evidence, such as statements made at exit interviews, and to the reasonable inference that retirement benefits are intended to last for the length of retirees' lives. In other circuits, however, no such inference is made, and greater latitude to employer decisions is given. In all circuits, however, if the language of plan documents unambiguously reserves the right to the employer to cancel or amend retiree benefits, courts will allow such actions. Moreover, all courts would probably allow unilateral changes in future retiree health benefits promised to active workers, even those near retirement age (see Warshawsky 1991, Ch. 4).
2. Reports filed by employers for welfare benefit plans (including health insurance) with the federal government and available to the public under the requirements of ERISA contain some dated information about general health plan provisions and expenses. These reports, however, do not reveal much about costs for retiree health benefits specifically.
3. The new standard applies to all types of postretirement benefits, including life insurance, housing assistance, and so on. In dollar terms, however, only retiree health benefits are significant.
4. The use of the medical inflation rate in the estimate of accrued liability actually may cause something of an underestimate because no consideration is given to anticipated increases in the utilization or sophistication of medical care services, such as have occurred in the past decades. Many analysts, however, assume the health care trend rate to be in the range of 8 percent for the purposes of their calculations.
5. In order to obtain better information about the active/retired demographic mix of retiree health plans,

an attempt was made to match Department of Labor Form 5500 information on the demographics of participants in welfare benefit plans with information about plan provisions contained in the Employee Benefit Survey for 1988. However, the attempt was unsuccessful, primarily due to the lack of congruence in the definitions of the plan, the plan sponsor, and the relevant participant groups in the Form 5500 and the Employee Benefit Survey.

6. Supplemental price-level-adjusted asset disclosures in financial statements were discontinued after 1985 because of concerns regarding the reliability and usefulness of the data.

7. The accumulated benefit obligation is the actuarial present value of benefits based on employee service and compensation to date. The projected benefit obligation is based on the accumulated benefit obligation with the additional consideration for increases in future compensation levels. Although it may be the more relevant variable, the projected obligation is not used for the reported results because it was not *required* disclosure until 1987. When the projected benefit obligation is used for the 1987 and 1988 sample firms, and the 1986 sample firms that early-adopted Statement No. 87, the results are qualitatively similar to those reported in subsequent tables.

8. The prepaid/accrued pension cost was not required disclosure until 1987. However, prior to the adoption of Statement No. 87, the prepaid/accrued pension cost normally would have been zero or near zero because expense and funding were equal for most firms. Therefore, for 1986 firms still reporting under Statement No. 36, the prepaid/accrued pension cost is assumed to equal zero.

9. Approximately 20% of the sample firms sponsoring retiree health plans (see next section) indicated that pay-as-you-go costs were immaterial and therefore did not report an amount. The results reported in this study set reported retiree health cost to tangible asset ratio for these firms equal to the ratio for the lowest decile of firms reporting the pay-as-you-go cost in a given year. The ratios are .000803, .000795, and .000797 for 1986, 1987, and 1988, respectively. Results are similar when firms indicating immaterial retiree health costs are omitted or have retiree health costs set equal to zero.

10. The number of firms varies somewhat for each year of the sample.
11. Firms that already have an accrual on their balance sheets for retiree health benefits related to active workers are eliminated as the primary purpose of this study is to ascertain the market's assessment of retiree health benefits that do not appear on the balance sheet.
12. Standard procedures are used to identify extreme observations for potential errors. Values are checked by examining actual financial statements or stock price data and are corrected when errors are found. For the results reported in this paper, extreme values that appear to be measured correctly are neither deleted nor changed to the value of the nearest observation not viewed as extreme. However, when such procedures are used results are similar.
13. We are unaware of a statistical package that generates Froot t-statistics. Therefore, the statistics were obtained by using the SAS matrix procedures contained in PROC IML. The Froot estimator reduces to the White (1980) estimator if there is only one firm per industry. To validate our IML program, we assumed that there was only one firm per industry and compared the resulting covariance matrix to the White (1980) consistent covariance obtained from the COVB option of the PROC REG procedure in the SAS.

Table I
 Summary of Equations Used to Compute Pay-As-You-Go-Cost,
 Retiree Health Liability, and Liability-to-Cost Ratio

This table summarizes the calculations performed to obtain a retiree health cost liability to pay-as-you-go cost index for each of the five groups of plan participants described in AAAC (1985). Symbols are defined as follows: R_x = number of retirees age x , H_x = annual health benefit cost to an employer for a retiree age x , S = proportion of retirees whose spouses are also covered by the retiree health benefit plan, FE_x = number of fully-eligible active workers age x , ATG_n = number of potentially-eligible active workers in age tenure profile n , E_n = proportion of retiree health benefit earned to date by group n , m = rate of health inflation (assumed to be 8% in 1988), i = the discount rate (assumed to be 9% in 1988), $ps_{a|x}$ = probability of survival to age a , given that retiree is currently age x , $pr_{y|x}$ = probability of a worker retiring early (before age 66) at age y , given that the worker is currently age x , pe_n = probability of potentially eligible workers in age-tenure group n remaining with the firm until full eligibility, z_n = earliest possible retirement age for age-tenure group n (in most cases age 55), and x_n = average age of employees in age-tenure group n .

1. Pay-as-you-go-cost:

$$\sum_{x=55}^{105} R_x H_x (1+S)$$

2. Present value of benefits owed to current retirees:

$$\sum_{x=55}^{105} R_x \sum_{a=x}^{105} H_a (1+S) \frac{(1+m)^{a-x}}{(1+i)^{a-x}} ps_{a|x}$$

3. Present value of benefits owed to a fully eligible active employees:

$$\sum_{x=55}^{65} FE_x \sum_{y=x}^{65} pr_{y|x} \frac{(1+m)^{y-x}}{(1+i)^{y-x}} \sum_{a=y}^{105} H_a (1+S) \frac{(1+m)^{a-y}}{(1+i)^{a-y}} ps_{a|y}$$

4. Present value of benefits owed to a potentially eligible active employees:

$$\sum_{n=1}^{89} ATG_n E_n pe_n \frac{(1+m)^{z_n-x_n}}{(1+i)^{z_n-x_n}} \sum_{y=z_n}^{65} pr_{y|z_n} \frac{(1+m)^{y-z_n}}{(1+i)^{y-z_n}} \sum_{a=y}^{105} H_a (1+S) \frac{(1+m)^{a-y}}{(1+i)^{a-y}} ps_{a|y}$$

5. Retiree health liability:

$$2 + 3 + 4$$

6. Liability-to-cost ratio:

$$5 / 1$$

Table II
Characteristics of Five Demographic Groups

The first four columns of data provide characteristics of five groups of participants developed in AAAC (1985). All quantities are based on authors' calculations. The retiree health liability/pay-as-you-go cost index is computed using the algorithm summarized in Table I. The index is used to estimate retiree health liability for the sample firms described in Section IV. Firms are matched to one of the five AAAC groups and assigned an index on the basis of the change in the number of sample firm employees over the four year period 1986 to 1989.

Demographic Group	Percent of Participants Retired	Average Age of Active Participants	Probability of Worker Age 35 Remaining to Retirement	Expected Retirement Age	Retiree Health Liability/ Pay-as-you-go Cost Index	Basis for Group Assignment - Δ in Employees
1. Normal Group	14	36.1	.28	62.6	29.34	$\Delta > 10\%$
2. Older Group with Long Service	10	40.2	.32	61.7	52.77	$2\% < \Delta \leq 10\%$
3. Stable Mature Group	21	42.6	.83	63.2	38.28	$-2\% < \Delta \leq 2\%$
4. Cyclical Bimodal	41	40.9	.52	63.7	19.91	$-10\% < \Delta \leq -2\%$
5. Old Long Service Group	47	45.7	.36	63.2	20.39	$\Delta \leq -10\%$

Table III
Sample by Industry^{DL}

Industry	2 and/or 3 Digit SIC	Health Plan Sample			Combined Sample		
		1986	1987	1988	1986	1987	1988
Mining	10-12,14	6	6	6	9	11	13
Oil & Gas Explor.	13	4	4	3	24	28	31
Construction	09,15,16,24	4	4	4	23	22	23
Food and Tobacco	20,21	10	10	11	17	17	18
Textiles and Apparel	22,23	2	2	2	15	16	15
Paper	26	11	11	12	19	19	21
Publishing	27	4	4	5	16	18	18
Chemicals	280-282	15	15	14	17	17	16
Pharmaceuticals	283	8	9	9	13	16	19
Specialty Chemicals	284-289	9	9	9	18	18	18
Petroleum Refining	29	17	17	17	20	20	20
Rubber, plastic, leather	30-31	3	3	3	19	20	20
Glass, cement, ceramic	32	10	10	12	10	10	12
Steel	331	6	6	6	7	7	7
Metalworks	333-335	10	10	10	13	13	13
Metal parts	339,34	13	13	13	31	32	33
Industrial Equipment	351-354	12	12	12	20	20	20
Small Indust. Mach.	355,356, 358,359	8	8	8	21	22	22
Electrical Machinery	360-364,369	9	9	9	24	24	25
Telecomm. Equip.	365-366	2	2	2	13	13	14
Electronic Compon.	367	3	3	3	12	12	12
Computers	357,368	6	6	6	10	11	12
Automobiles	371	11	12	12	17	19	21
Aircraft	372,376	12	12	12	18	18	18
Misc. Manufacturing	38,39	<u>8</u>	<u>10</u>	<u>10</u>	<u>34</u>	<u>38</u>	<u>43</u>
Total		203	207	210	440	461	484

^DDescriptive legend (to be placed under title):

This table provides an analysis of sample firms by industry. The health plan sample contains only firms that sponsor retiree health plans. The combined sample contains firms that sponsor and firms that do not sponsor retiree health plans.

Table IV
Descriptive Statistics for Health Plan and Combined Samples^{DL}

Variable		Health Plan Sample			Combined Sample		
		1986	1987	1988	1986	1987	1988
Market Value of Equity (in billions)	Mean	4.10	3.82	4.02	2.24	2.03	2.10
	Std. Dev	9.36	7.81	7.88	6.71	5.61	5.67
Book Value of Total Assets (in billions)	Mean	4.55	5.23	6.82	2.55	2.85	3.69
	Std. Dev	8.94	11.10	18.81	7.29	8.80	14.8
Employees (in thousands)	Mean	33.4	33.3	32.7	18.3	17.8	17.1
	Std. Dev	55.5	52.6	52.5	41.3	39.1	38.6
Retiree Health Cost (in millions)	Mean	13.2	19.6	22.2	6.09	8.80	9.62
	Std. Dev	32.9	76.7	88.5	23.3	52.2	59.3
Retiree Health Liability (in millions)	Mean	376.2	522.6	585.7	173.6	234.7	254.1
	Std. Dev	959	1749	2008	677	1199	1353
Market Value of Equity/Tangible Assets	Mean	1.004	0.876	0.871	1.076	0.900	0.901
	Std. Dev.	0.767	0.602	0.622	0.878	0.690	0.707
Research & Development/Sales	Mean	0.021	0.022	0.021	0.019	0.021	0.021
	Std. Dev.	0.026	0.027	0.027	0.029	0.035	0.033
Advertising/Sales	Mean	0.012	0.013	0.013	0.013	0.013	0.013
	Std. Dev.	0.029	0.030	0.030	0.027	0.028	0.029
Growth	Mean	0.026	0.057	0.077	0.044	0.073	0.088
	Std. Dev.	0.126	0.131	0.117	0.146	0.169	0.169
Risk	Mean	0.313	0.347	0.365	0.328	0.314	0.321
	Std. Dev.	0.451	0.471	0.509	0.386	0.378	0.408
Book Liabilities/ Tangible Assets	Mean	0.597	0.605	0.632	0.568	0.582	0.607
	Std. Dev.	0.191	0.190	0.222	0.214	0.246	0.289
Net Pension Assets/Tangible Assets	Mean	0.059	0.058	0.052	0.040	0.040	0.034
	Std. Dev.	0.072	0.068	0.060	0.060	0.057	0.049
Retiree Health Cost/Tangible Assets	Mean	0.003	0.003	0.004	0.001	0.002	0.002
	Std. Dev.	0.004	0.004	0.004	0.003	0.003	0.003
Accrued Retiree Health Liability/Tangible Assets	Mean	0.086	0.096	0.099	0.040	0.043	0.043
	Std. Dev.	0.099	0.107	0.116	0.080	0.086	0.091
Number of Observations		203	207	210	440	461	484

^{DL}Descriptive legend (to be placed under title):

This table provides means and standard deviations of selected attributes for the sample firms. The health plan sample contains only firms that sponsor retiree health plans. The combined sample contains firms that sponsor and firms that do not sponsor retiree health plans. Values are obtained from Compustat, CRSP, and

Corporate Text. Variables are defined as follows. Market value of equity = price of common stock three and one-half months after the fiscal year end \times number of common shares outstanding. Book value of total assets = total assets reported on the balance sheet. Employees = number of company workers as reported to shareholders. Retiree health cost = pay-as-you-go retiree health cost reported in financial statement footnotes. Retiree health liability = retiree health cost \times model derived index. Research & development/Sales = 5-year sum of research and development expense / 5-year sum of sales. Advertising/Sales = 5-year sum of advertising expense / 5-year sum of sales. Growth = (current year sales / sales for the year 5 years prior)¹⁵ - 1. Risk = the mean annual change in earnings per share for five years / the standard deviation of annual change in earning per share for five years. Tangible assets = tangible assets reported on the balance sheet. Book liabilities = total liabilities reported on the balance sheet. Net pension assets = pension assets reported in footnotes - accumulated benefit obligation reported in footnotes - prepaid pension asset on the balance sheet.

Table V
Regression Model For Firms with Health Plans

Using the sample of firms that sponsor retiree health plans, ordinary least squares is used to estimate the following regression equation:

$$\frac{MVE_i}{BVT_i} = \gamma_0 + \gamma_1 \frac{RD_i}{BVT_i} + \gamma_2 \frac{ADV_i}{BVT_i} + \gamma_3 \frac{GROW_i}{BVT_i} + \gamma_4 \frac{RISK_i}{BVT_i} + \gamma_5 \frac{BVBL_i}{BVT_i} + \gamma_6 \frac{NPA_i}{BVT_i} + \gamma_7 \frac{RHL_i}{BVT_i} + \sum_{n=1}^{24} \delta_n D_n + e_i \text{ where}$$

MVE/BVT = market value of common stock measured three and one-half months after the fiscal year end, BVT = tangible assets reported on the balance sheet, RD = 5-year sum of research and development expense / 5-year sum of sales, ADV = 5-year sum of advertising expense / 5-year sum of sales, GROW = (current year sales / sales for the year 5 years prior)²⁵ - 1, RISK = the mean annual change in earnings per share for five years / the standard deviation of annual change in earning per share for five years, BVBL = total liabilities reported on the balance sheet, NPA = off-balance sheet net pension assets, RHL = 1) pay-as-you-go retiree health cost reported in financial statement footnotes (used in the regressions on the left-hand side of the table) or 2) retiree health liability estimated by multiplying the pay-as-you-go cost by the appropriate pay-as-you-go cost/retiree health liability index (used in the regressions on the right hand side of the table), and D_n = unity if the firm is in industry n and zero otherwise (to account for industry specific omitted variables).^a Reported t-statistics are computed using the method developed in Froot (1989).

Variable		RHL = Reported Cost			RHL = Health Liability		
		1986	1987	1988	1986	1987	1988
Intercept	Coefficient	1.28	0.76	0.65	1.27	0.74	0.62
	Froot t	4.44	3.68	3.58	4.36	3.62	3.34
RD	Coefficient	4.94	4.46	4.16	4.84	4.29	4.05
	Froot t	1.49	2.05	2.14	1.47	2.04	2.16
ADV	Coefficient	4.73	4.95	5.00	4.80	4.96	5.03
	Froot t	3.46	3.58	3.56	3.48	3.64	3.58
GROW	Coefficient	1.29	0.84	0.64	1.32	0.86	0.65
	Froot t	3.24	3.18	3.09	3.24	3.16	3.09
RISK	Coefficient	-0.02	0.07	0.14	-0.01	0.07	0.14
	Froot t	-0.35	1.01	2.83	-0.09	1.09	2.87
BVBL/BVT	Coefficient	-1.25	-0.74	-0.55	-1.27	-0.73	-0.55
	Froot t	-3.58	-3.56	-2.79	-3.52	-3.50	-2.79
NPA/BVT	Coefficient	1.16	0.92	0.65	1.18	0.98	0.76
	Froot t	1.89	2.28	1.11	1.94	2.50	1.29
RHL/BVT	Coefficient	-20.72	-20.06	-16.93	-0.62	-0.51	-0.46
	Froot t	-1.96	-2.39	-2.96	-1.93	-2.68	-3.53
Observations		203	207	210	203	207	210
Adjusted R ²		.56	.53	.56	.56	.53	.55

*A test of the null hypothesis that $\delta_1 = \delta_2 = \dots = \delta_{24} = 0$ is rejected at an alpha level of less than .001. The industry dummy coefficients, δ_n 's, are not reported since their purpose is to control for omitted variables.

Table VI
Regression Model for the Combined Sample

Using the combined sample of firms that sponsor and firms that do not sponsor retiree health plans, ordinary least squares is used to estimate the following regression equation:

$$\frac{MVE_i}{BVT_i} = \gamma_0 + \gamma_1 RD_i + \gamma_2 ADV_i + \gamma_3 GROW_i + \gamma_4 RISK_i + \gamma_5 \frac{BVBL_i}{BVT_i} + \gamma_6 \frac{NPA_i}{BVT_i} + \gamma_7 \frac{RHL_i}{BVT_i} + \sum_{n=1}^{24} \delta_n D_n + e_i \text{ where}$$

MVE/BVT = market value of common stock measured three and one-half months after the fiscal year end, BVT = tangible assets reported on the balance sheet, RD = 5-year sum of research and development expense / 5-year sum of sales, ADV = 5-year sum of advertising expense / 5-year sum of sales, GROW = (current year sales / sales for the year 5 years prior)¹⁵ - 1, RISK = the mean annual change in earnings per share for five years / the standard deviation of annual change in earning per share for five years, BVBL = total liabilities reported on the balance sheet, NPA = off-balance sheet net pension assets, RHL = 1) pay-as-you-go retiree health cost reported in financial statement footnotes (used in the regressions on the left-hand side of the table) or 2) retiree health liability estimated by multiplying the pay-as-you-go cost by the appropriate pay-as-you-go cost/retiree health liability index (used in the regressions on the right hand side of the table), and D_n = unity if the firm is in industry n and zero otherwise (to account for industry specific omitted variables).^a Reported t-statistics are computed using the method developed in Froot (1989).

Variable		Reported Cost			Health Liability		
		1986	1987	1988	1986	1987	1988
Intercept	Coefficient	1.58	1.09	1.19	1.58	1.09	1.18
	Froot t	11.76	11.54	9.36	11.78	11.51	9.35
RD	Coefficient	3.82	4.46	1.34	3.78	4.42	1.30
	Froot t	1.70	4.07	1.25	1.69	4.05	1.23
ADV	Coefficient	3.60	3.63	3.40	3.63	3.64	3.42
	Froot t	1.80	2.19	2.08	1.81	2.21	2.11
GROW	Coefficient	1.28	0.89	0.33	1.29	0.90	0.34
	Froot t	3.77	5.00	2.12	3.78	5.03	2.16
RISK	Coefficient	0.04	0.01	0.08	0.05	0.01	0.08
	Froot t	0.46	0.19	2.37	0.63	0.18	2.37
BVBL/BVT	Coefficient	-1.58	-1.08	-0.84	-1.59	-1.08	-0.84
	Froot t	-8.60	-11.19	-6.99	-8.56	-11.14	-6.99
NPA/BVT	Coefficient	1.13	0.71	0.58	1.13	0.71	0.61
	Froot t	1.86	1.91	1.34	1.90	1.93	1.40
RHL/BVT	Coefficient	-22.80	-13.90	-14.32	-0.76	-0.39	-0.46
	Froot t	-3.66	-3.16	-4.32	-3.53	-3.18	-4.31
Observations		440	461	484	440	461	484
Adjusted R ²		.45	.48	.41	.45	.48	.41

*A test of the null hypothesis that $\delta_1 = \delta_2 = \dots = \delta_{24} = 0$ is rejected at an alpha level of less than .001. The industry dummy coefficients, δ_n 's, are not reported since their purpose is to control for omitted variables.

Table VII
Student t Statistics for Comparisons of Balance Sheet Liability
and Retiree Health Liability Coefficients to Theoretical Values

This table reports the t-statistics and two-tailed p-values (in parentheses) for tests comparing balance sheet debt and retiree health liability coefficients to the theoretical value of negative one. The tests are based on the following regression equation:

$$\frac{MVE_t}{BVT_t} = \gamma_0 + \gamma_1 RD_t + \gamma_2 ADV_t + \gamma_3 GROW_t + \gamma_4 RISK_t + \gamma_5 \frac{BVBL_t}{BVT_t} + \gamma_6 \frac{NPA_t}{BVT_t} + \gamma_7 \frac{RHL_t}{BVT_t} + \sum_{n=1}^{24} \delta_n D_n + e_t \text{ where}$$

MVE/BVT = market value of common stock measured three and one-half months after the fiscal year end, BVT = tangible assets reported on the balance sheet, RD = 5-year sum of research and development expense / 5-year sum of sales, ADV = 5-year sum of advertising expense / 5-year sum of sales, GROW = (current year sales / sales for the year 5 years prior)¹⁵ - 1, RISK = the mean annual change in earnings per share for five years / the standard deviation of annual change in earning per share for five years, BVBL = total liabilities reported on the balance sheet, NPA = off-balance sheet net pension assets, RHL = 1) pay-as-you-go retiree health cost reported in financial statement footnotes (used in the regressions on the left-hand side of the table) or 2) retiree health liability estimated by multiplying the pay-as-you-go cost by the appropriate pay-as-you-go cost/retiree health liability index (used in the regressions on the right hand side of the table), and D_n = unity if the firm is in industry n and zero otherwise (to account for industry specific omitted variables).

Null Hypothesis	Health Plan Sample			Combined Sample		
	1986	1987	1988	1986	1987	1988
$\gamma_5 = -1$	-0.75 ^a (.45)	1.27 (.20)	2.25 (.03)	-3.19 (.00)	-0.87 (.39)	1.35 (.18)
$\gamma_7 = -1$	1.21 ^b (.23)	2.63 (.01)	4.18 (.00)	1.12 (.26)	4.88 (.00)	4.99 (.00)
$\gamma_5 = \gamma_7$	-1.84 ^c (.07)	-0.95 (.34)	-0.51 (.61)	-3.74 (.00)	-4.11 (.00)	-3.01 (.00)

^aCalculated as $(\gamma_5 - (-1)) / s_{\gamma_5}$, where s_{γ_5} is the Froot (1989) standard error for γ_5 .

^bCalculated as $(\gamma_7 - (-1)) / s_{\gamma_7}$, where s_{γ_7} is the Froot (1989) standard error for γ_7 .

^cCalculated as $(\gamma_5 - \gamma_7) / [s_{\gamma_5} + s_{\gamma_7} - 2 \text{cov}(\gamma_5, \gamma_7)]^{1/2}$, using the Froot (1989) covariance matrix.