



Wilshire Research

2005 Wilshire Report on Corporate Pension Funding Levels (FASB 87)

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Summary of Findings

- The financial health of corporate pension plans continued to improve in 2004. Defined benefit pension assets for S&P 500 companies grew \$84 billion, from \$1,031 billion to \$1,115 billion, while liabilities increased \$60 billion, from \$1,154 billion to \$1,214 billion. As a result, the funding ratio (assets divided by liabilities) for all plans combined rose from 89% to 92% and a \$123 billion deficit at the beginning of the year was reduced to \$99 billion. (Exhibit 1)
- Eighty-one percent of corporate pension plans are underfunded, which is unchanged from the previous year. The median (50th percentile) corporate funded ratio is 85%, up from 82% a year ago. (Exhibit 3)
- The improving stock market caused pension assets to rise. The median 2004 investment return was +10.8%, down from the +17.1% a year ago but significantly higher than the -9.0% two years ago.
- Falling interest rates forced companies to increase the value of their pension liabilities. The median discount rate used to value pension liabilities fell from 6.25% to 5.90%, while total liabilities increased 5% for the year. (Exhibit 7)
- Combined pension expense for S&P 500 companies was \$28 billion for 2004, up from \$24 billion a year ago. Regular annual pension expense accruals from employee service and interest expense on existing liabilities totaled \$96 billion in 2004, slightly higher than the \$94 billion a year ago. (Exhibit 8)
- Contributions by S&P 500 companies into their defined benefit plans decreased from \$65.0 billion in 2003 to \$48.3 billion in 2004. However, excluding General Motors, which contributed \$18.6 billion in 2003 compared to \$0.1 billion in 2004, contributions increased slightly, from \$46.4 billion in 2003 to \$48.2 billion in 2004.
- Aggregate benefit outflows from corporate pension plans remained flat during the past year. Benefit payments totaled \$77 billion in 2004, which is unchanged from the \$77 billion during the previous year.

Financial Overview

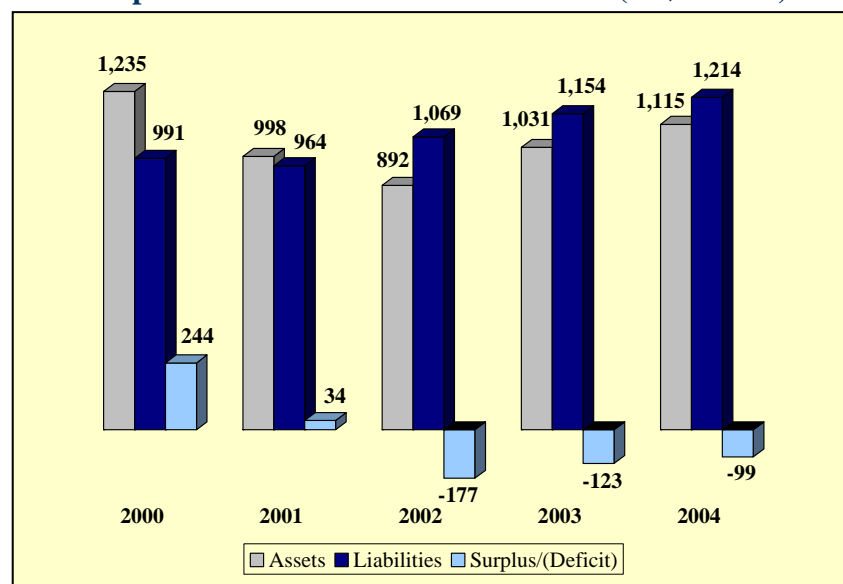
The Data

This is Wilshire’s fifth study covering defined benefit plans sponsored by S&P 500 companies. Wilshire’s practice is to collect data on pensions from 10-K filings for companies in the S&P 500 at fiscal year-end.

Assets, Liabilities, and Funding Ratios

The financial health of corporate pension plans continued to improve in 2004, according to our latest survey of 332¹ companies in the S&P 500 Index that maintain defined benefit plans. Exhibit 1 shows the change in combined assets, liabilities, and surplus (assets minus liabilities) for the surveyed companies from 2000 to the most recent 2004 fiscal reporting year.

Exhibit 1
Corporate Pension Assets & Liabilities (in \$billions)

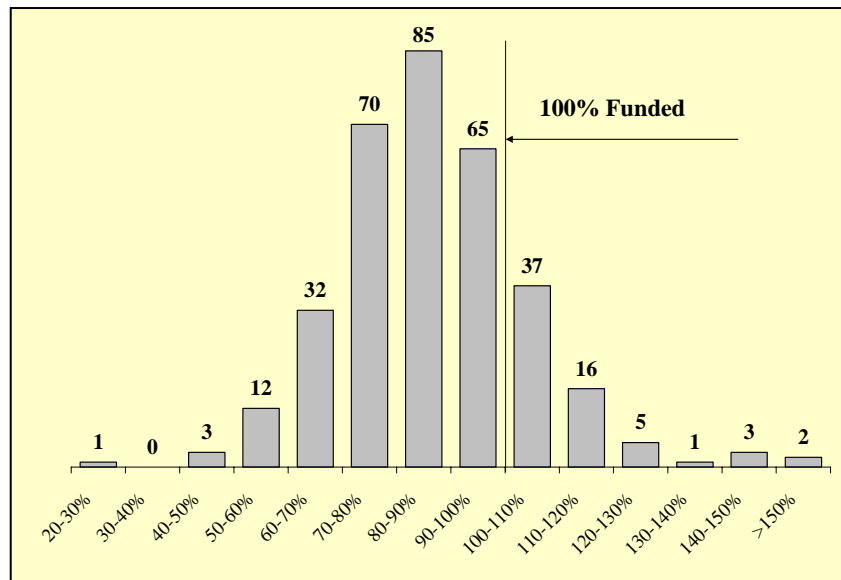


Pension “surplus”, the difference between the market value of assets and liabilities, increased \$24 billion, from a deficit equal to \$123 billion at the end of 2003 to a deficit equal to \$99 billion at the end of 2004. At the same time the combined “funding ratio”, equal to assets divided by liabilities, increased from 89% to 92%.

¹ American International Group, Delphi Corporation, and Interpublic Group were included in Wilshire’s 2004 report but were unable to timely file their Form 10-K. The 2004 results for these three plans were included in the aggregate 2005 data.

The aggregate figures in Exhibit 1 mask considerable differences among individual corporate plans. Exhibit 2 shows a histogram of funding ratios for the 332 corporate pension plans in our study.

Exhibit 2
Distribution of 332 Corporate DB Pension Plans by Funding Ratio



Only 64 of the 332 corporations, or 19%, have pension assets that equal or exceed liabilities. This statistic is flat from year 2003 when 62 of 331 corporations, or 19%, had pension assets at or above liabilities. However, this statistic is down significantly from years 2001 and 2000 when 36% and 71%, respectively, of corporations had funding ratios greater than 100%.

Exhibit 3 displays graphically how the distribution of corporate pension funding ratios has changed over the past six years. Five lines are charted, each corresponding to a percentile rank. The 50th percentile, or median, corporate funding ratio has declined steadily from 120% at the end of 1999 – and just before the start of the bear market – to 78% at the end of 2002, and has improved slightly to 85% at the end of 2004.

In 1999, a 120% funding ratio translated into a \$295 billion surplus. That means the bear market coupled with falling interest rates over the following three years worsened the financial condition of corporate pension plans by \$472 billion (\$295 billion surplus in 1999 to \$177 billion deficit in 2002). The improving stock market over the subsequent two years improved the financial condition of corporate pension plans by \$78 billion (\$177 billion deficit in 2002 to \$99 billion deficit in 2004), despite the continued decline in interest rates.

The Moody’s Aa corporate bond yield, a proxy for pension liability settlement rates, has fallen from 6.1% at end-of-year 2003 to 5.7% at end-of-year 2004. Falling interest rates forced companies to lower their discount rates, thereby increasing total pension liabilities.

Exhibit 3
Corporate Funding Ratios by Percentile

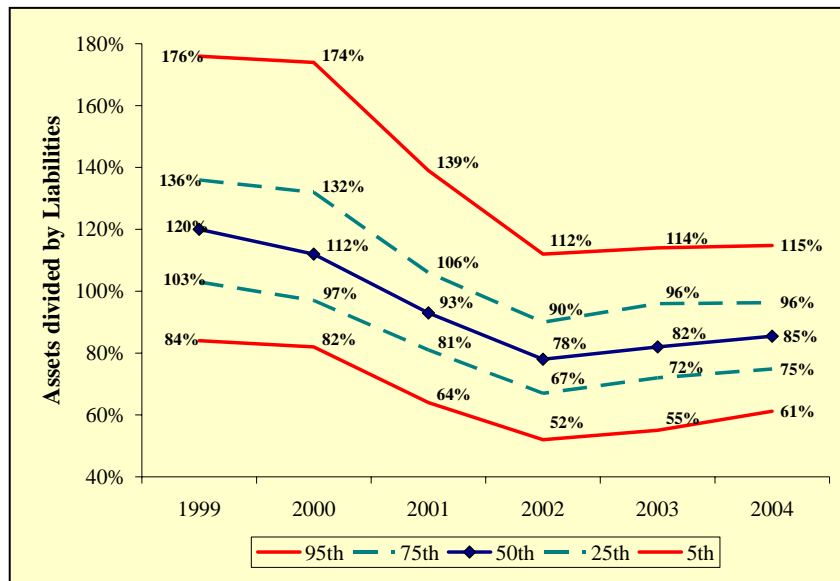
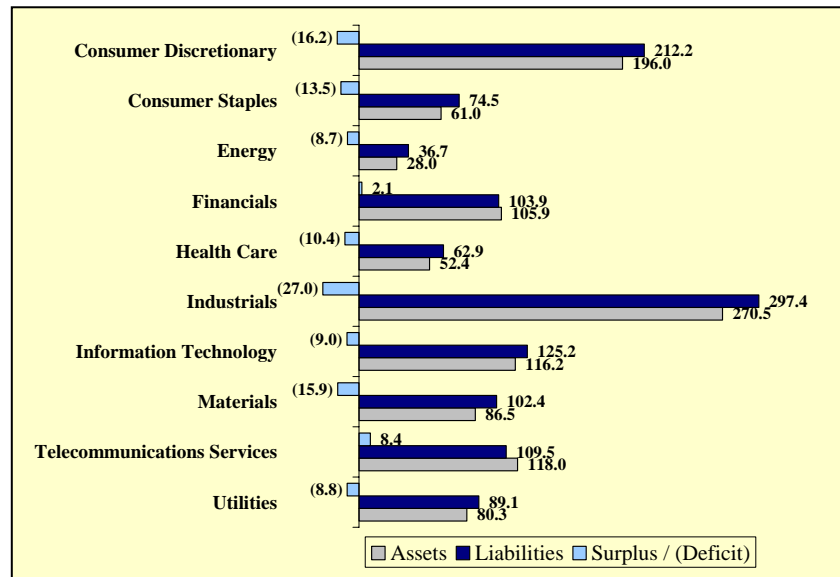


Exhibit 4 shows the change in combined assets, liabilities, and surplus for the surveyed companies, broken down into their Global Industry Classification Standards (GICS) sectors for the 2004 fiscal reporting year.

Exhibit 4
Corporate Pension Assets & Liabilities (in \$billions) by GICS Sector

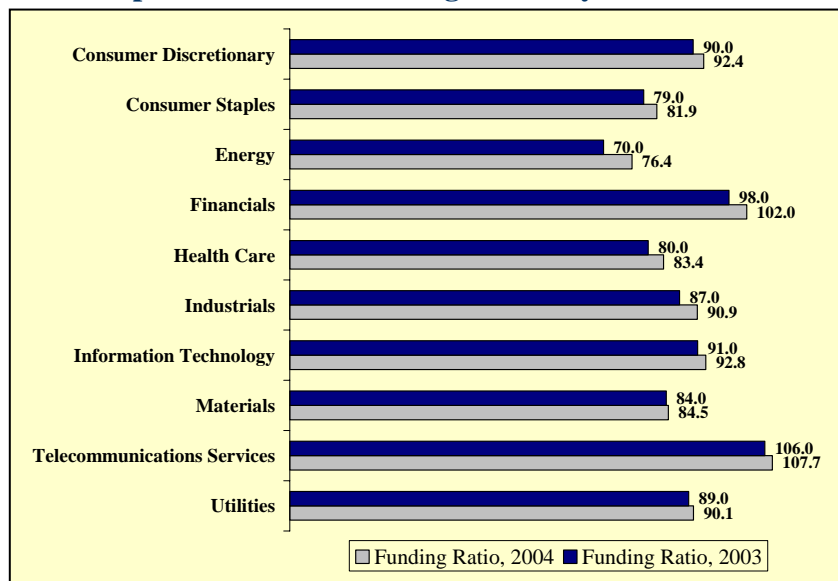


The financials and telecommunications services sectors were the only sectors with a pension surplus at the end of 2004. BellSouth, which comprises only 11% of total liabilities and 13% of total assets within the telecommunications services sector, contributed 47% (\$3.9 billion) of the \$8.4 billion surplus. JPMorgan Chase & Company and Prudential Financial had similar influences within the financials sector, despite representing only 15% and 18% of total liabilities and assets, respectively. Excluding their combined \$3.7 billion pension surplus, the financial services sector would be underfunded by \$1.6 billion.

The industrials sector accounts for the largest proportion of assets (24.3%) and liabilities (24.5%) of the surveyed companies and also had the largest deficit, at \$27.0 billion. The airline and aerospace companies, including Boeing Company, Delta Air Lines, Lockheed Martin Corporation, Northrop Grumman Corporation, Raytheon Company, and United Technologies, accounted for 83% (\$22.4 billion) of the deficit in the industrials sector.

Exhibit 5 shows a histogram of funding ratios for the surveyed companies in 2004 and 2003, broken down by their GICS sectors.

Exhibit 5
Corporate Pension Funding Ratios by GICS Sector



The telecommunications services sector had the highest funding ratio, at 107.7%, while the energy sector had the lowest funding ratio, at 76.4%. However, the energy sector accounted for the smallest proportion of assets and liabilities in the surveyed companies, approximately 2.5% and 3.0%, respectively. All sectors experienced improvements in their funding ratios over the past year.

Exhibit 6 provides a combined accounting for the S&P corporate pension plans for the 2004 fiscal year.

Exhibit 6
Change in Assets & Liabilities for 2004

	<u>In Billions</u>	<u>% of BOY</u>
Liabilities - Beginning of Year (BOY)	\$ 1,154	
plus service costs	28	2%
plus interest costs	68	6%
minus benefit payments	(77)	-7%
plus actuarial losses (gains)	53	5%
other	(12)	-1%
Liabilities - End of Year (EOY)	\$ 1,214	5%
Assets - Beginning of Year (BOY)	\$ 1,031	
plus contributions	48	5%
plus actual return on assets	126	12%
minus benefit payments	(77)	-7%
other	(13)	-1%
Assets - End of Year (EOY)	\$ 1,115	8%

Note: 12% actual return on assets is based on beginning of year asset value.

Pension Plan Liabilities

There are three recurring items that annually affect the growth in liabilities. The first item is service cost. This cost arises from employees earning additional benefits from another year of service. Service cost, which changes little from year to year, added \$28 billion or 2% to aggregate pension liabilities in 2004. The second item is interest cost. Liabilities are determined by discounting expected future benefit payments. As each year passes, liabilities increase by the annualized interest cost because there is one less year to discount future benefits. This cost item should also remain predictable from year to year. Thirdly, liabilities are reduced by benefits paid during the year since they represent a payment against the company's pension liability.

If these recurring items were the only changes, then corporate pension liabilities would have grown \$19 billion, or 2%. Instead, liabilities increased \$60 billion, or 5%, in 2004. A large portion of the difference lies primarily within the "actuarial losses" category. Actuarial losses refer to changes in liabilities, either negative or positive, which arise when actual experience differs from actuarial assumptions. Over the past four years companies have had to report large actuarial losses because the discount rate applied to benefits in valuing liabilities has fallen. A lower discount rate increases the liability. Exhibit 7 illustrates the drop in discount rates in recent years.

**Exhibit 7
FAS 87 Discount Rate by Percentile**

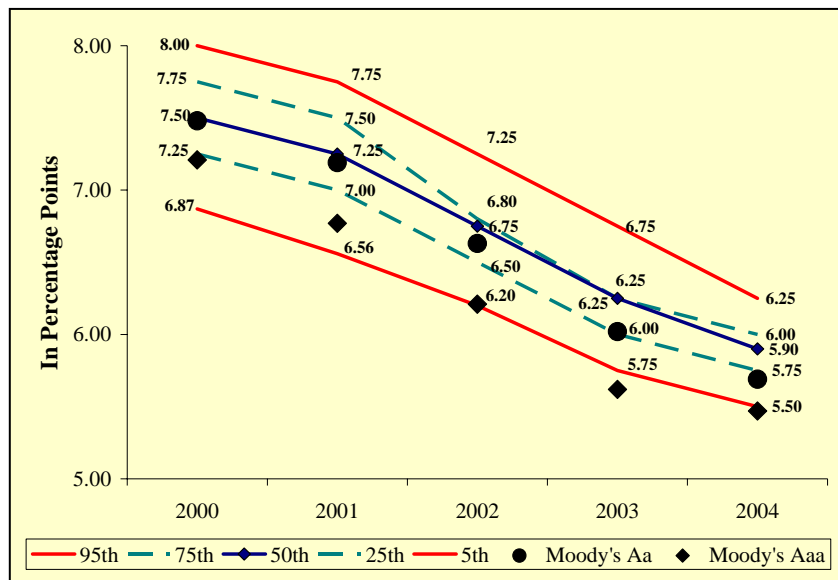


Exhibit 7 shows the distribution of discount rates used by S&P 500 companies from 2000 to 2004. The median, or 50th percentile, discount rate has fallen from 7.5% in 2000 to 5.90% in 2004. Declining discount rates produced actuarial losses totaling \$53 billion, or 5% of liabilities, in 2004 (see Exhibit 6). In 2003, the steeper decline in discount rates from the previous year produced actuarial losses totaling \$76 billion, or 7% of liabilities. As a generalization, a 1% decline (increase) in the discount rate causes a 10% increase (decrease) in pension liabilities. In other words, pension plans have an average duration of 10 years.

Each year companies select a FAS 87 discount rate that approximates a settlement rate for their pension liabilities, taking into consideration the current rates of return on high-quality fixed income investments. The Moody’s Aa and Aaa corporate bond yields are generally thought to be fair estimates for pension liability settlement rates. Exhibit 7 includes these corporate bond yields with the historical distribution of discount rates.

The final item that affects liabilities in Exhibit 6 is “other.” In 2004, this item caused a \$12 billion, or 1%, decrease in liabilities. Large dollar figures in the “other” category are often caused by companies acquiring other pension plans, as would occur if the company purchased another company that also had a pension plan. When that happens, there is a corresponding entry in the “other” category under assets. The primary contributor to this net amount during 2004 is Verizon Communications, which reduced its benefit obligation and plan assets by over \$6 billion in connection with severance activities during the year.

Pension Plan Assets

There are three recurring items that annually cause changes in plan assets. The first is corporate contributions to the pension plan, which totaled \$48 billion or 5% of assets during 2004. In an ideal world where the contribution and financial reporting actuarial methods and assumptions were identical and all assumptions were perfectly accurate, contributions would be at a level equal to service costs, as companies pay for new benefits earned during the year. This would occur when assets equal liabilities and when assets earn a return equal to the discount rate used to value liabilities. If assets are below liabilities or asset returns fall below the discount rate, then corporate contributions will climb to levels that could substantially exceed service costs. In 2004, the \$48 billion in company contributions exceeded the \$28 billion in aggregate service costs because many companies with assets less than liabilities either chose, or were required, to make contributions well above their service costs. For example, ChevronTexaco Corporation contributed \$1.3 billion although its service cost was only \$170 million. Similarly, Deere & Company contributed \$1.5 billion although its service cost was only \$130 million.

The second item is the actual return on plan assets, which equaled a gain of \$126 billion. The average percentage return on assets has been +12.0%, +17.5%, -8.9%, and -7.8% for the four prior years 2004, 2003, 2002, and 2001, respectively. During the past year, the asset return substantially exceeded the discount rate used to value liabilities, leading to a modest increase in the aggregate funding ratio.

The third recurring item is benefit payments, which totaled \$77 billion in 2004 and reduced assets and liabilities by the same amount. The final item is “other” and largely represents assets of pension plans from companies that were acquired. As mentioned previously, this net decrease in assets is primarily attributable to Verizon Communication’s severance activities during the year.

The Impact of Pension Expense (Income) on Corporate Earnings

Much has been written about the impact of pension expense (income) on corporate earnings. Exhibit 8 provides an aggregate accounting of pension expense (income) for the 332 S&P 500 companies in our study.

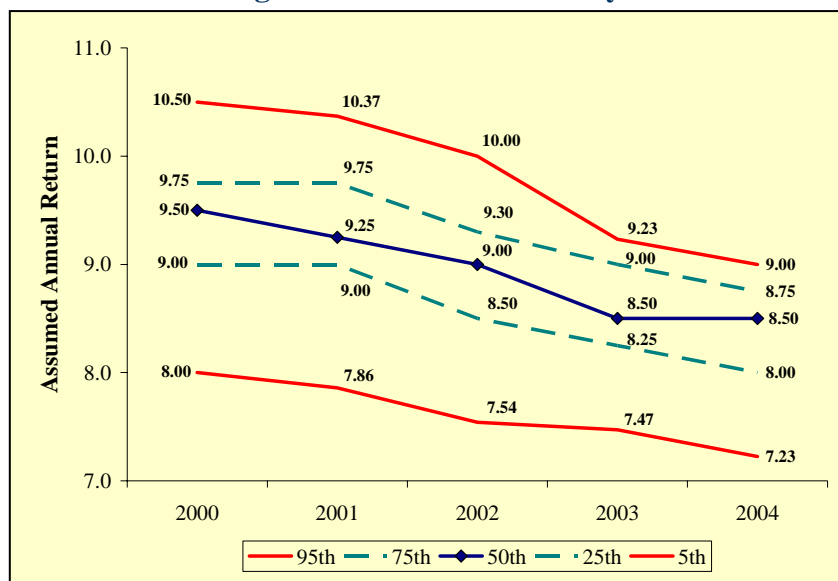
Exhibit 8 Calculation of 2004 Pension Expense (Income)

	<u>In Billions</u>
Service Costs	\$ 28
plus Interest Costs	68
minus Expected Return on Plan Assets	(89)
plus (minus) Losses (Gains)	21
equals Pension Expense (Income)	\$ 28

There are four items that make up pension expense (income). The first two are service costs and interest costs, which were described in Exhibit 6. There is some controversy surrounding the third item, the “expected return on plan assets.” Market value accounting might suggest that service costs and interest costs be offset by the actual return on assets – a \$126 billion gain – in calculating pension expense (income). If this were so, pension income would equal \$30 billion in 2004. Instead, pension expense was \$28 billion in 2004 because asset returns are smoothed. In other words, to reduce the short-term volatility of asset returns on corporate net income, only a portion of the \$126 billion asset gain during 2004 will be recognized during the current year, similar to the amortization of the \$166 billion asset gain during the previous year.

The expected rate of return for pension assets has been coming down in recent years (see Exhibit 9). The median expected return was 9.50% at the end of 2000 and 8.50% at the end of 2004. The expected return assumption is multiplied by the level of assets to arrive at a dollar value of expected investment earnings that is credited against service and interest costs. In 2004, companies collectively expected their assets to earn \$89 billion, and it was this number that was used in the calculation of pension expense and corporate net income, even though pension plans incurred actual gains of \$126 billion. That is a \$37 billion (\$89 billion expected gain versus \$126 billion actual gain) shortfall. However, differences between accounting earnings and market-based earnings cannot continue unabated. Once these differences exceed 10% of assets, they must be amortized over time and appear in the expense calculation as “Losses”, the fourth item in Exhibit 8.

Exhibit 9
FAS 87 Long-Run Return on Assets by Percentile



Although the median “expected return on plan assets” assumption has fallen over the past four years, from 9.50% in 2000 to 8.50% in 2004, many pension accounting critics believe that this assumption is still too high. Wilshire’s long-term forecast for the return on corporate pension assets is approximately 7.25%, based on the typical asset allocation, though individual pension plan expected returns could vary considerably depending upon their own asset allocation. Also, Wilshire’s asset class return forecast is for the next ten years while the horizon for the assumed return in corporate financial statements is an unspecified long term period. Finally, Wilshire’s assumed returns are for the asset classes with no consideration of potential value added from successful active management.

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