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The Scratch Report:
Strategies For Beating The S&P 500 Benchmark

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General Motors and Ford Viewed From the Perspective of Their Pension Funds

Company	**Ford Motor Company**	**General Motors**
Ticker	NYSE: F	NYSE: GM
Price as of 5/23/03:	$9.56	$33.26
52 wk range:	$6.58 - $18.23	$29.75 - $68.17
Shares outstanding (mm):	1,819	561
Market Cap (mm):	$17,390	$18,659
Dividend Yield:	4.2%	6.0%
Recommendation:	**SELL**	**SELL**

Investment Thesis

The prolonged decline in the equity markets reveals a co-dependency between the share price performance of Ford and GM and that of the broader S&P. Due to a significant decline in the market value of these selective pension funds and a fundamentally weak US auto industry, Ford and GM must now rely on a stock market recovery to increase pension fund assets. These companies are at high risk of experiencing a decline in earnings as the burden of their pension funds augmented by poor industry conditions will likely keep valuations

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low. This report recommends the sale of **Ford** and **GM** as these two companies are likely to significantly underperform the S&P in 2003.

This report puts forward the proposition that GM and Ford's pension funds are likely heavily invested in larger cap stocks contained in the S&P 500. As the equity markets have declined, the market value of these pension funds has decreased accordingly. Additionally, a lower discount rate used to predict future benefit obligations and service costs associated with actuarial assumptions has significantly increased future benefit obligations. Consequently, the difference between actual pension fund assets and estimated pension liabilities has created substantially under funded pensions for GM and Ford.

In 2002, GM's pension was under funded by approximately $25 billion and Ford was under funded by $16 billion. These large discrepancies required both companies to reduce book equity and make sizeable contributions in cash. Due to increased competition from foreign automakers and extensive promotional offers, the future growth of these companies is now highly questionable.

It is our opinion that Ford and GM's future earnings are now ultimately dependent upon the performance of their pension funds. As their pension fund performance has fallen in tandem with the S&P's decline over the last three years, it is likely that these funds are overweight in widely-held S&P companies. So if future earnings performance is dictated by advances or declines in the S&P, investors that purchase these shares are trying to outperform the S&P with the S&P itself. This appears to be a losing proposition.

Investors might purchase these shares under the assumption that a stock market recovery is near which might reduce pension concerns. However, even if the stock market recovers, weak auto industry fundamentals will limit any meaningful growth for these companies. Due to the prolonged use of incentives such as 0% financing and factory rebates, the industry now faces concerns of overcapacity and decreased demand. US auto sales are declining after a peak in 2000 of 17.4 million units in addition to aggressive production initiatives by foreign competitors such as Toyota and Honda. Although auto revenues may be declining, unit sales are still at near record levels. So investors betting on a recovery in the auto industry must ask the question, a recovery from what? Therefore, an advance in the S&P is not sufficient for a comparable increase in GM and Ford's share price.

Further, the low cost of capital has afforded GM and Ford the ability to offer lower financing rates in a low interest rate environment. If interest rates begin to rise, the borrowing spread will decrease and the financing divisions of these companies will not provide previous levels of profitability. This will significantly impact overall earnings growth as the credit operations have been the only profitable unit for both companies. So regardless of pension concerns, Ford and GM will face several challenges to increase both sales and earnings in this environment and valuations will likely remain depressed.

Irrespective of the auto industry cycle, Ford and GM's pension funds are such a great burden that earnings might well remain depressed for several years. Given the increased reliance upon pension fund performance, if the markets decline substantially in 2003, this would likely be fatal for both companies. As book equity has already been greatly reduced and net cash is at insufficient levels to counter significant losses to their pension funds, it is unlikely that either company would be able to recover.

Due to the potentially damaging co-dependence relationship between future earnings growth and the performance of the S&P, investors would be prudent to sell these shares as the likelihood of outperforming the S&P is increased by ridding these companies from a portfolio. The downside risk indicative of both companies far outweighs any potential gains. Accordingly, the sale of GM and Ford is recommended.

The Growing Concern Over Pension Fund Obligations

While the investment community has begun to recognize the tremendous pension shortfalls exhibited by several S&P companies of late, this report takes the under funded pension dilemma one step further. It will be shown that certain companies such as Ford and General Motors are overly reliant upon the performance of their pension funds. Essentially, investors that purchase General Motors and Ford are betting on the capabilities of each company's respective pension fund manager to enhance earnings performance. In order to fully understand the validity of this argument, investors must first be presented with recent pension fund developments that have led to this conclusion.

A distinction should be drawn between the two types of pension plans: defined benefit and defined contribution. In a defined contribution (or profit-sharing) plan, the employer does not guarantee future performance – such as a 401k plan. The employer makes fixed contractual payments but the employee takes responsibility for future performance. This type of plan is commonly used in technology and related industries.

In a defined benefit plan, employers must make specific cash flow payments related to several factors including future salary levels, mortality, retirement dates and turnover. The employer takes the responsibility for meeting these estimated benefit obligations and must determine necessary future contributions. Defined benefit plans are offered in most industrial related industries such as autos, steel and paper. Due to the complexity - and often criticized - pension accounting methods coupled with a prolonged decline in the equity markets, a large disparity now exists between the actual value of pension fund assets and projected future obligations.

After a three-year decline in the US equity markets, several pension funds of the largest US corporations are now substantially under funded. As the value of pension fund assets has largely declined in tandem with the broader market, the liabilities, or future pension obligations have increased. While this gap can be attributed primarily to the decline in US stocks, the discount rate used to value future obligations has decreased as well. If a lower discount rate is used, future benefit liabilities will increase (the inverse relationship between discount rates and benefit obligations will be discussed later in the report).

Discount rates have a significant impact on pension liabilities and subsequent funding status. The liabilities of any pension fund are discounted to present value using a rate that is currently benchmarked against the US 30 – year Treasury. Benefits typically extend for several years after employment so a lump sum payment is usually not required. However, companies must estimate all future benefit obligations as if the total amount were required today. So future benefit obligations are discounted with this rate to derive the present value of these future liabilities.

Thus, the difference between the present value of all benefit liabilities and the actual value of pension assets reveals a company's funded status.

An analysis was performed using GM and Ford's current 6.75% discount rate to determine the effect average stock market returns might have on their respective pension fund obligations. An average equity return of 10.7% was assumed based on the S&P's 100 year average return in addition to an assumed 3.5% return on fixed income investments[1]. Also, a 7.1% return was used to calculate "other" investment returns which was based on the average between equity and fixed income returns (other investments include private equity, real estate and company stock). Although Ford's pension fund allocation is not publicly available, this analysis used GM's comparable portfolio diversification purely for illustrative purposes.

Table 1: Average Stock Market Return Analysis, 2002-2011E

($ in millions)

GM	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Pension Obigations	92,243	98,469	105,116	112,211	119,786	127,871	136,503	145,716	155,552	166,052
Actual Value of Assets	66,803	71,390	77,328	83,824	90,936	98,725	107,259	116,614	126,872	138,126
Equity Allocation (56%)	37,410	41,413	45,844	50,749	56,179	62,190	68,845	76,211	84,366	93,393
Fixed Income Allocation (25%)	16,701	17,285	17,890	18,516	19,164	19,835	20,529	21,248	21,992	22,761
Other Investments (19%)	12,693	13,594	14,559	15,593	16,700	17,885	19,155	20,515	21,972	23,532
Funded Status	(25,440)	(27,079)	(27,788)	(28,387)	(28,850)	(29,146)	(29,243)	(29,102)	(28,680)	(27,926)

Ford	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Pension Obligations	57,851	61,756	65,924	70,374	75,125	80,196	85,609	91,387	97,556	104,141
Actual Value of Assets	42,240	45,710	49,505	53,656	58,200	63,174	68,624	74,596	81,143	88,324
Equity Allocation (56%)	23,654	26,185	28,987	32,089	35,522	39,323	43,531	48,189	53,345	59,053
Fixed Income Allocation (25%)	10,560	10,930	11,312	11,708	12,118	12,542	12,981	13,435	13,906	14,392
Other Investments (19%)	8,026	8,595	9,206	9,859	10,559	11,309	12,112	12,972	13,893	14,879
Funded Status	(15,611)	(16,046)	(16,419)	(16,718)	(16,925)	(17,021)	(16,985)	(16,791)	(16,413)	(15,817)

Source: Company Information and Palladian Research, 2003

As shown in Table 1, it is a virtual certainty that the gap between pension obligations and actual fund assets will exist for several years to come. This is because any gain realized in fund assets is likely to be depleted by increasing liabilities. The increase in liabilities is largely due to the discount rate, which, at 6.75% in 2003, would add an additional $6 billion to GM's future liabilities. This is larger than the $4.6 billion increase that could be realized through portfolio returns.

This puts forth the issue of pension fund interest costs. Interest costs are the application of the discount rate to benefit obligations. The higher the discount rate, the higher the interest costs and vice versa. So if a lower discount rate were applied, interest costs would decrease but obligations would increase as shown in Exhibit 4. Likewise, if companies were allowed to use a higher

[1] Source: Ibbottson Study, 2003

discount rate, liabilities would decline, but higher interest costs would still accumulate. Therefore, it seems very likely that the pension fund difficulties experienced by Ford and GM will continue to worsen notwithstanding stock market fluctuations.

Benefits consulting firm Milliman USA recently conducted a study that examined recent developments that have exacerbated the increasing pension difficulties experienced by several large companies. Among these, growing pension contributions and overly optimistic return assumptions could continue to negatively impact future earnings growth of companies with large under funded pensions.

Milliman Study The Milliman study concluded that the 100 largest US corporate pension plans have fallen into a deficit of $157 billion in 2002 from a surplus of $183 billion in 2000[2]. Additionally, 87 of the 100 companies studied now face under funded pensions, which is up from 20 in 2000 as shown in Table 2 below. The average discount rate has declined from 7.5% to 6.7%.

Table 2: 100 Largest Corporate Pension Funds Table, 2000-2002

	2000	2001	2002
Projected Benefit Obligation	$747,086	$801,784	$889,636
Market Value of Plan Assets	$930,139	$816,912	$732,699
Funded Status	$183,053	$15,128	($156,937)
Funded Ratio	124.5%	101.9%	82.4%
Plans in Deficit	20	60	87
Employer Contributions	n/a	$9,211	$33,551
Increase in Contributions	n/a	$9,211	$24,341
Charge to Equity	n/a	$17,426	$80,957
Discount Rate	7.49%	7.21%	6.70%

Source: Milliman USA and Palladian Research, 2003

Substantial Employer Contributions Due to accounting rules under FASB statement 87, companies that have obligations that exceed the market value of the current pension assets must either contribute to the fund or take a charge to equity. While several companies had sufficient cash flow to compensate for the shortfall, large pensions such as GM, Ford and IBM had to reduce shareholders' equity as the under funded amount was so large that it was not justifiable to use cash flow[3].

In aggregate, $81 billion of equity was depleted in 2002 of the 100 companies studied. As several loans carry covenants that require minimum equity ratios, companies are reluctant to deduct from equity. The alternative to is to utilize cash flow which, over a sustained period of time, could begin to limit future CAPEX. For example, GM was under funded $25.4 billion in 2002. As a result, the company contributed $5.2 billion and took a $22.7 billion charge to its

[2] See Exhibit 1 for complete funded status of these companies
[3] See Exhibit 2 for complete equity charge analysis

equity. Similarly, Ford contributed $181 million and reduced its equity by $5.8 billion in lieu of a $15.6 billion under funded status (companies do not have to contribute the total amount of the deficit in the current year).

Overly Optimistic Asset Return Assumptions There also exists a large disparity between expected return on pension assets and the actual return that has been realized. The average expected return in 2002 was 8.9%. Several companies such as GM assumed a return of 10% and above, which was overly optimistic given recent market conditions[4].

GM expected a return of $7.7 billion in 2002 while the company actually realized a loss of $5.3 billion, or a difference of $13 billion. Similarly, Ford assumed an 8.75% rate of return of $4.9 billion, while the company lost $5 billion, or a difference of $10 billion. The expected rates of return are important to a company's income statement as gains can be added to income. As accounting rules allow pension gains to be amortized over future years, the real effect of pension losses on earnings may not yet be realized due to the high returns of the late 1990s. Interestingly, companies such as Berkshire Hathaway use a more realistic 6.5% expected rate of return to limit the impact of wide fluctuations in pension income.

This data suggests that if the equity markets do not greatly improve in 2003, several companies including GM and Ford will experience pension difficulties that will significantly reduce both earnings and shareholders' equity. The impairment to their respective income statement and balance sheet could be sufficient for the market to further price these factors into their shares.

However, it is reasonable to assume that investors who purchase shares of Ford and GM are expecting that these companies could potentially outperform the S&P. One could argue that, aside from pension difficulties, these two companies will outperform the broader market because industry fundamentals are improving or each is capturing valuable market share and will continue to do so when the equity markets recover.

It is our opinion that neither of these companies will experience anything positive on a fundamental basis in 2003 due to an automotive industry that is struggling with overcapacity. Even if the market performs well and pension assets are restored to adequate levels, GM and Ford will continue to face several factors that will limit meaningful growth. A brief overview of these trends is discussed below.

Refuting the Rationale for an Investment in Ford and GM Based on Industry Fundamentals

Similar to the housing market, consumers have been enticed to purchase automobiles over the last few years due to incentives such as reduced financing rates and rebates. While these efforts have increased unit volume sales, profitability has declined substantially. The attempt to drive sales at all costs has created an environment in which supply will soon exceed demand. There are a couple of possibilities behind the reasoning for such selling practices. Most importantly, foreign

[4] See Exhibit 3 for complete asset return analysis

competitors such as Japanese makers Honda and Toyota have sustained a competitive advantage by virtue of lower production costs to that of the US Big 3 (GM, Ford, and Chrysler). This has caused the large US automakers to experience a deterioration in market share. Consequently, Ford and GM have significantly increased promotional efforts to counter declining share.

Although less publicized, it is our opinion that the Big 3 could be driving volume in an attempt to compensate for increasing pension fund liabilities. However, despite the numerous incentives offered to consumers, this has not alleviated GM and Ford's pension fund difficulties. Ultimately, investors are betting on the performance of these pension fund managers for individual stock price appreciation. Thus, it is possible that the cloud created by pension concerns may be more vital to overall profitability than widely believed. Some credit rating agencies have even brought forth insolvency issues related to increasing pension contributions. So if our assumption is correct that the auto industry will experience a decline in sales over the next couple of years, profits should decrease accordingly. Even if the equity markets do not fall any lower than current levels, pension contributions will be very difficult to manage in the absence of profitability.

While the following key factors currently confronting the auto industry are certainly not exhaustive, these will likely be the driving forces that could potentially limit auto sales in coming years.

1. Overcapacity in the auto industry will reduce prices

2. The US Big 3's deterioration of market share will reduce pricing power

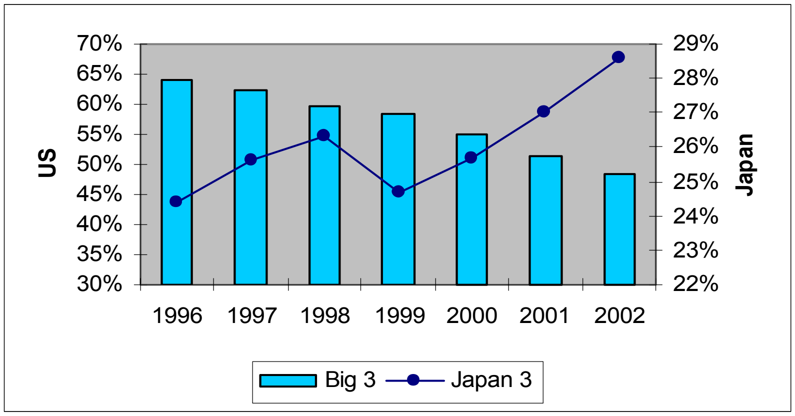
3. Rising interest rate environment will pressure credit division profitability

Overcapacity in the auto industry As alluded to earlier, overcapacity and lowered demand for new car purchases should begin to limit GM and Ford's rate of sales growth. Due to the promotional activities that resulted in record sales over the last three years, car sales are expected to decline to 15.7 million by 2005 from 16.8 million in 2002, or 7%. Contributing to the likelihood of overcapacity is the fact that Asian automakers plan to incrementally add 1.3 million units into the US market between 2003 and 2006. Given the consistent gains in market share made by the Japanese automakers recently, it could be assumed that a number close to 1.3 million will enter the market in coming years.

The issue of overcapacity becomes a logical question of how many new cars can consumers purchase given the incentives and favorable financing already presented. US light vehicle sales peaked in 2000 at 17.4 million units, and have slowly declined thereafter despite aggressive promotional attempts. If sales do in fact begin to decline, it should follow that GM and Ford would experience a decrease in earnings given the low profitability rates per vehicle.

Deterioration of Market Share Since 1996, Japan's Big 3 (Toyota, Honda and Nissan) have steadily grown their market share at the expense of both Ford and GM as shown in Table 3 below.

Table 3: US Big 3 and Japan Big 3 Market Share, 1996-2002



Source: Ward's AutoInfoBank and Palladian Research, 2003

The reduction in market share of 16% has been quite substantial for the US Big 3. Due to cost advantages possessed by the Japanese manufacturers, market share deterioration appears to be a trend that will pressure GM and Ford for several years to come. Currently, it is estimated that the US Big 3 generate a $350 profit on an average $23,000 car. Conversely, the Japanese makers realize a $1,940 profit on a $24,000 automobile. (The difference in average selling price is the result of a premium price afforded to the Japanese Big 3). There are several reasons for Japan's superior profitability, which include:

- Premium selling price charged by Japanese Big 3
- Lower labor costs
- Lower incentives offered by the Japanese
- Lower interest expense as Japanese makers have less debt to service

Given these cost structure disadvantages, it appears that GM and Ford are in a downward spiral. If their market share continues to decline, it will be difficult to offer more incentives given low profitability rates. One could then imagine a sharp decline in both sales and earnings. Alternatively, if the Japanese makers stop gaining share today, cost disadvantages still exist and the foreign makers would then have the ability to offer promotions similar to GM and Ford. So regardless of market share or overcapacity issues, GM and Ford will long be inhibited by low profitability rates.

Limitations to Future Credit/Financing Earnings Due to a low interest rate environment, the credit/financing divisions of Ford and GM have contributed a large percentage of overall profitability. For example, Ford's financial services segment offered a pre-tax profit of $2.1 billion in 2002. This is in sharp contrast to the auto division which delivered a loss of $1.2 billion. Similarly, GM's financing operations produced pre-tax income of $3 billion while its auto operations posted a loss of $891 million. Essentially, the credit operations kept GM profitable and greatly reduced the loss at Ford as shown in Table 4 below.

Table 4: GM and Ford Income from Financing Units, 2002

GM	2002
Automotive, Communications and other operations	$ 159,737
Total costs and expenses	$ 159,543
Net Income before taxes	$ (891)
Financing and Insurance operations	$ 27,026
Total costs and expenses	$ 24,351
Net Income before taxes	$ 2,971
Total Company Net Income	$ 1,689

Ford	2002
Automotive	$ 134,425
Total costs and expenses	$ 134,956
Net Income before taxes	$ (1,156)
Financial Services	$ 28,161
Total costs and expenses	$ 26,052
Net Income before taxes	$ 2,109
Total Company Net Income*	$ (980)

*includes effects of accounting change

Source: Company Information and Palladian Research, 2003

However, the sustainability of this performance is highly questionable. While Ford and GM's borrowing costs have been favorable due to historically low interest rates, net interest income will likely decline as interest rates rise and the borrowing spread narrows. Further, the popular 0% financing offers cannot possibly continue for a significant period of time before this unprofitable promotion begins to erode margins.

If Ford and GM are lending out at 0% and borrowing at a rate that is above 0%, investors might wonder why the financing divisions have been so highly profitable in this losing proposition. It is likely that profits are still being generated due to the maturity of their loan portfolios. Before low financing rates were being offered, Ford and GM were lending out auto loans at much higher rates of around 5% - 6%. A loan portfolio takes time to mature and the unprofitable rates currently offered are being averaged out by older, more profitable loans. So the average weighted interest rate of each respective loan portfolio has created a spread that is still favorable to these companies. One could assume that the borrowing spread is likely at a peak and the low loan rate environment will soon narrow this spread and subsequently, reduce profitability in the credit divisions.

Further, it is possible that less stringent lending policies could have been used by Ford and GM to gain share through these financing offers. This could produce tremendous default rates and subsequent unrecoverable loan losses. Although this has not yet captured the full attention of investors, it is a distinct possibility and should be considered when evaluating the short and long-term attractiveness of these companies.

Given the non-pension related difficulties confronting Ford and GM, it is very difficult to make a case for an investment in either company. The auto industry will face overcapacity concerns through the next couple of years with foreign manufacturers expected to add a significant amount of new vehicles into the market. Both are losing valuable market share which should only worsen given the unsustainability of future promotional efforts. Further, Ford Credit and GMAC profits should deteriorate in a rising interest rate environment which could deplete most - if not all – profitability from total company operations. Therefore, it is unlikely that industry fundamentals will provide growth for these companies in coming years. Given this assumption, an improvement in pension fund performance is the precondition needed for GM and Ford to increase future earnings.

Limitations to the Pension Fund Cloud Being Lifted From Ford and GM

For one to even consider an investment in Ford and GM, it must be assumed that pension fund difficulties will subside and these companies will no longer be required to make large annual contributions. However, regardless of market conditions, there are two primary reasons why this might not occur in 2003:

1. Interest and service costs
2. Discount rate debate

Increase in Interest and Service Costs This item is a logical deduction. Pension obligations are based on actuarial assumptions pertaining to factors such as mortality rates, future salary levels and estimated retirement dates. The US population is living longer and employees should continue to receive incremental pay raises which will increase service costs on pension funds. Additionally, interest costs are a function of discount rates. So even if discount rates remain at current levels, interest costs will still accumulate as the discount rate is applied to future obligations annually.

Discount Rates Lately, there has been much debate over what should be the appropriate discount rate used to calculate future benefit obligations. Currently, the average discount rate for the 100 largest corporate pension funds is 6.70%. This has fallen from 7.49% in 2000. The current debate hinges upon whether or not the 30- year Treasury is still the appropriate index against which to benchmark these discount rates. Corporations argue that since the Treasury stopped issuing the government's 30– year bonds in 2001, demand has increased which led to artificially lower yields and subsequently lower discount rates.

The designated discount rate has widespread implications for pension obligations. Inversely, the lower the discount rate, the higher the pension obligations become. Considering the size of Ford and GM's pension funds, the difference can be quite large. For illustrative purposes, we performed an analysis to highlight the effect lower discount rates can have on benefit obligations. As shown in Exhibit 4, if GM were to use a 6.50% discount rate as opposed to its current 6.75%, pension liabilities could rise $5.6 billion. Further, a one percentage point decrease to 5.75% would increase liabilities by $24 billion. This represents approximately 342% of GM's 2002 book equity. Similarly, if Ford were to use a 5.75% rate instead of its current 6.75%, obligations would increase by $15 billion, or approximately 250% of its equity. Our analysis extends to a 5.00% rate scenario which, admittedly, is unlikely to occur. However, it does reveal the tremendous shortfall that would be created by just a minor change in rates.

If the 30-year Treasury yield continues to decline and corporations are forced to apply lower discount rates, the gap between the market value of pension fund assets and future obligations will increasingly expand. This will make annual contributions very difficult to maintain. Which bond index is used to benchmark pension fund discount rates is largely decided by the US government and is uncontrollable by corporations. But even if a lower rate is not used, the possibility still exists and investors should consider this when valuing Ford and GM.

The Co-Dependency Relationship Between the Performance of the S&P and Ford/GM

As it is our opinion that both Ford and GM will not be able to increase future earnings through industry fundamentals, these companies will rely heavily on the performance of their pension funds for earnings growth. However, if pension fund performance is to recover, it must follow that the equity markets will produce higher results than realized over the last three years. If one accepts the premise that most large corporate pension funds are heavily invested in larger cap or widely-held stocks, then pension fund returns are highly contingent upon relative S&P performance. Thus, the co-dependent relationship between the S&P and the rate of earnings growth realized by Ford and GM is revealed. Essentially, investors who purchase GM and Ford are trying to outperform the S&P with the S&P itself! In our view, this is a losing proposition.

It is rare that such a self-contradictory proposition exists in two widely-held securities. Investors purchasing these shares must believe that a superior performance to that of the S&P will be achieved by an investment in Ford and GM. However, it is virtually impossible to beat the S&P by purchasing these companies as earnings growth is intertwined with that of the S&P's advances or declines. Investors would be better served to purchase an S&P index fund by which the S&P's performance would at least be closely reflected.

It is recommended that investors sell shares of both GM and Ford as it is likely that these companies will significantly underperform the S&P this year.

If GM and Ford's performance in 2003 is largely dependent upon the broader market, three likely scenarios might occur. These include the following:

1. **The market indices improve and GM and Ford's pension concerns are lifted.**

2. **The market indices further decline and GM and Ford's pension-related difficulties progressively worsen.**

3. **The broader market neither advances nor declines and these companies are forced to increase earnings based on fundamentals.**

Of course one could imagine a scenario in which S&P equities significantly advance in 2003. Consumers could also purchase a large quantity of vehicles from Ford and GM. And auto buyers could limit their foreign auto purchases so that Japanese automakers stop gaining US market share. This would alleviate pension concerns and increase earnings via higher sales volume. However, investors should not be hopeful that such a development will materialize given this is the most unlikely of scenarios.

Scenario 1: The S&P Advances in 2003 If Ford and GM's pension obligation concerns are lifted, it will be the result of a substantial advance in the S&P. Under this scenario, their pension fund performance could improve, which would greatly reduce pension contributions.

However, if the S&P advances, it does not necessarily follow that GM and Ford will advance by a similar factor. Most importantly, both companies will continue to face a weakening US auto industry and a likely decline in the financing/credit divisions, which is the only profitable unit of each company.

Additionally, the asymmetrical characteristics of GM's pension fund holdings may provide further evidence of underperforming the S&P. According to the publication *Pensions & Investments*, GM's asset mix is only 36% invested in domestic equities and 22% in domestic fixed income[5]. Further, 20% of holdings are concentrated in foreign equities. So while the fund may be diversified, a sharp advance in the S&P might not translate into similar results in the fund's performance. This is compounded by the assumption that if equities experience a significant increase, bond prices will likely decline. This would further limit performance as 25% of assets are in fixed income investments. Although Ford's asset allocation is not publicly available, it is reasonable to assume that a similar asset breakdown would be revealed.

To illustrate the type of equity returns that would be required to bring GM and Ford's pension funds to a funded status in 2003, an analysis was performed on different equity return scenarios as presented in Table 5 below.

[5] See Exhibit 5 for complete asset allocation analysis

Table 5: Estimated Equity Return Analysis

GM

Return on Equities Assumption		10%	20%	30%	40%	50%	60%	70%	80%	90%
	2002A	2003E								
Pension Obigations	92,243	98,469	98,469	98,469	98,469	98,469	98,469	98,470	98,469	**98,469**
Actual Value of Assets	66,803	72,030	75,771	79,512	83,253	86,994	90,734	94,475	98,216	**101,957**
Equity Allocation (56%)	37,410	41,151	44,892	48,633	52,374	56,115	59,855	63,596	67,337	**71,078**
Fixed Income Allocation (25%)	16,701	17,285	17,285	17,285	17,285	17,285	17,285	17,285	17,285	**17,285**
Other Investments (19%)	12,693	13,594	13,594	13,594	13,594	13,594	13,594	13,594	13,594	**13,594**
Funded Status	(25,440)	(26,440)	(22,698)	(18,957)	(15,216)	(11,475)	(7,735)	(3,995)	(253)	**3,488**

Ford

Return on Equities Assumption		10%	20%	30%	40%	50%	60%	70%	80%
	2002A	2003E							
Pension Obligations	57,851	61,756	61,756	61,756	61,756	61,756	61,756	61,756	**61,756**
Actual Value of Assets	42,240	45,545	47,910	50,276	52,641	55,007	57,372	59,737	**62,103**
Equity Allocation (56%)	23,654	26,020	28,385	30,751	33,116	35,482	37,847	40,212	**42,578**
Fixed Income Allocation (25%)	10,560	10,930	10,930	10,930	10,930	10,930	10,930	10,930	**10,930**
Other Investments (19%)	8,026	8,595	8,595	8,595	8,595	8,595	8,595	8,595	**8,595**
Funded Status	(15,611)	(16,211)	(13,846)	(11,480)	(9,115)	(6,749)	(4,384)	(2,019)	**347**

($ in millions)

Source: Company Information and Palladian Research, 2003

As shown above, for GM's pension fund to become fully funded based on current asset allocations, its equity portfolio would have to increase 90% in 2003. Similarly, Ford would need to realize an 80% gain in equities to reach funded status. Returns for fixed income and "other" investments were calculated using 3.5% and 7.1%, respectively. As with the previous analysis in Table 1, this assumes that interest and service costs are held constant. Although these costs are difficult to estimate, if included, required equity returns would likely be higher. So if these pension funds are heavily weighted in S&P companies, the S&P would have to advance by these same percentages to yield such results. It seems impossible for the S&P to achieve 80% - 90% returns, but it is not impossible for people to believe it will occur.

In sum, if the broader markets recover this year, the danger of insolvency might be lifted for these companies, but earnings and resultant valuations might well remain depressed. Consequently, it is likely that investors would not realize any increase in share price in 2003.

Scenario 2: The S&P Declines Further in 2003 The downside risk inherent to an investment in Ford and GM is far greater than that of the broader S&P. In the event that the S&P experiences a hypothetical decline of 25%, investors of an S&P index fund would realize a loss of 25%. However, under the same scenario, investors of Ford and GM are exposed to far more risk. The decline in widely-held securities would further depress the value of their pension fund assets and consequently, Ford and GM would be required to either contribute a large amount to their funds or reduce equity. This would likely be catastrophic for both companies.

GM's equity was reduced to $9.4 billion in 1Q03 while its auto division has approximately $1 billion in net cash. In 2002 alone, GM took a $23 billion charge to equity and contributed $5 billion. In the event that the markets moved substantially lower, the required contributions would be much larger than the $28 billion impairment in 2002. It is likely that GM would not take large additional charges to equity to maintain credit worthiness given its debt/equity ratio of 2.1x. This would require the Company to contribute in cash. However, the current $1 billion in net cash would not be sufficient.

One could assume that GM would access the debt markets to raise additional funding; however, it is unlikely that investors would purchase GM's debt given its unfavorable future operating environment. Additionally, if one accounts for a possible decline in GMAC's profits, GM could post an operating loss in 2003. This would further require a reduction to equity.

Similarly, Ford would likely be a casualty in this scenario. As of 1Q03, Ford's auto unit has $10.4 billion in net cash with book equity of $6.7 billion. Again, it is unlikely that Ford would further reduce equity in lieu of credit quality concerns with a debt/equity ratio of 2.1x. In 2002, Ford took a $6 billion charge to equity and contributed $181 million. Although net cash of $10.4 billion would be sufficient to cover another $6 billion impairment, a 25% decline in the S&P would greatly increase the required contribution. Further, it is unlikely that the Company would exhaust its cash position at the near-top of a cyclical peak for auto sales, as revenues are likely to decline in the near future. This is all in addition to the possibility of an operating loss in 2003 or 2004 that would augment a decline in equity.

As shown, a sharp decline in the markets would likely lead to a bankruptcy filing for one, if not both of these companies. Therefore, it would not be prudent to purchase shares of Ford and GM given the tremendous risk created by their pension fund liabilities.

Scenario 3: The Markets Remain Unchanged in 2003 If the S&P remains range-bound or even advances or declines slightly in 2003, Ford and GM's pension assets might remain at current levels. However, future benefit obligations will continue to increase due to actuarial assumptions and the prospective decline in discount rates. As stated earlier, a small change in the discount rate could significantly increase pension liabilities which would require these companies to make sizeable contributions for the impairment.

In a best case scenario, discount rates remain unchanged and the respective pension fund mangers at Ford and GM can maintain the value of their pension asset portfolio. This would require investors to believe that each these pension fund managers would not underperform the S&P this year. Regardless of pension fund performance, investors still need to consider that the fundamentally weak US auto industry will continue to limit any meaningful growth at the expense of Ford and GM. If our assumption is correct that additional incentives and the performance of their financing units' performance are unsustainable, then it is quite possible that both companies will struggle to turn a profit in 2003. This might well lead investors to further question the future profitability of Ford and GM and would result in share price deterioration.

Valuation Analysis

It is important to mention in the context of under funded pensions that the valuations of Ford and GM do not reflect the tremendous risk identified in this report. While valuations might be depressed due to an anticipated decline in automobile sales, the risk of insolvency is certainly not reflected. As shown in Table 6 below, Ford and GM trade at a discount compared to other companies with a funded status of between 70% - 80%[6].

Table 6: Companies Funded 70- 80% Valuation Comparison

		Category IV 70% - 80%			
Company	**Funded %**	**Mkt Cap/Sales**	**P/BV**	**2003E P/E**	**Div Yield**
Caterpillar	79.8%	0.9x	3.2x	22.9x	2.7%
Minnesota Mining & Mfg.	79.1%	2.9x	7.6x	21.6x	2.1%
Dow Chemical	79.0%	1.0x	3.7x	33.4x	4.3%
Duke Energy	79.0%	0.4x	1.0x	13.1x	6.6%
TXU	79.0%	0.3x	1.2x	10.0x	2.6%
International Paper	78.5%	0.7x	2.3x	32.1x	2.8%
American Electric Power	78.0%	0.3x	1.2x	11.9x	9.5%
Johnson & Johnson	77.8%	4.5x	7.4x	21.5x	1.5%
Kimberly-Clark	77.6%	1.8x	4.5x	14.9x	2.8%
DuPont de Nemours (E.I.)	77.3%	1.7x	4.6x	23.9x	3.4%
Altria	77.1%	0.8x	3.3x	6.7x	8.3%
Archer Daniels Midland	76.6%	0.2x	1.0x	16.2x	2.2%
Raytheon	76.3%	0.7x	1.4x	17.3x	2.7%
Georgia-Pacific	76.3%	0.2x	0.8x	20.2x	3.3%
Viacom	76.2%	0.2x	0.1x	30.4x	0.0%
Xerox	75.2%	0.4x	4.0x	20.7x	0.0%
FirstEnergy	74.7%	0.8x	1.4x	10.8x	4.5%
Morgan Stanley	74.7%	2.5x	2.0x	14.4x	2.0%
Aetna	74.6%	0.4x	1.0x	11.1x	0.0%
Anheuser-Busch	74.5%	2.9x	15.5x	20.2x	1.6%
American Express	73.3%	2.0x	3.4x	16.9x	0.9%
Ford Motor	73.0%	0.1x	3.3x	15.0x	4.0%
Electronic Data Systems	72.5%	0.4x	1.1x	11.2x	3.6%
General Motors	72.4%	0.1x	2.9x	7.9x	5.6%
United Technologies	72.0%	1.0x	3.3x	13.4x	1.8%
Merck	70.4%	2.4x	7.0x	17.1x	2.5%
Average		**1.1x**	**3.4x**	**17.5x**	**3.1%**

Source: Company Information and Palladian Research, 2003

However, the possibility of reduced earnings growth or even insolvency does not warrant Ford's P/E of 15x vs. 2003 estimates or a price/book of 3.3x. Even GM's depressed P/E of 7.9x and price/book of 2.9x does not fully reflect the risk associated with it's under funded pension in our opinion. Investors who purchase these shares are not receiving a cheap stock just because comparable valuations may be lower. If the pension-related risk was fully reflected in these stock prices, valuations could very well be significantly lower.

Interestingly, as shown in Exhibit 6, the valuations of the companies most severely under funded are actually equal to or higher than the fully funded companies based on all four of our valuation

[6] See Exhibit 6 for complete valuation analysis

metrics. This leads one to believe that the market has not adequately recognized the magnitude of this situation. Should the equity markets decline further, investors should be aware of the risk associated with an investment in many of these companies.

Summarily, an investment in Ford and GM provides substantially more downside risk than share appreciation. The performance of these companies will ultimately be linked to any advance or decline in the S&P over the next couple of years. Even if pension concerns are removed, earnings are not likely to meaningfully increase due to troublesome industry characteristics. Investors seeking to outperform the S&P would be better served to sell these shares as Ford and GM are essentially an investment the S&P itself.

Investment Summary

An investment in Ford and GM likely requires the assumption that these two companies will outperform the S&P. However, this report identified a co-dependency that exists between their earnings growth and the S&P's performance. It is our opinion that Ford and GM's pension funds are heavily invested in S&P companies. As growth is unlikely to come through a weak US auto industry, the performance of each respective pension fund will likely dictate future earnings. So if these pension funds are overweighted in the S&P, then it follows that the performance of the S&P will likely determine Ford and GM's stock performance. Essentially, an investment in either of these companies is an investment in the broader S&P index. Therefore, it is very unlikely that Ford or GM will outperform the S&P in 2003.

Although one could argue that if a market recovery occurs, pension fund difficulties will be lifted and these companies could experience meaningful earnings growth. However, the US auto industry will struggle with overcapacity and market share deterioration in coming years. So it is likely that an advance in the S&P is not sufficient for a similar performance exhibited by GM and Ford. Further, a significant decline in the broader markets in 2003 would compound pension difficulties from the previous three years and would likely prove fatal for both companies. Either way, it is likely that Ford and GM will significantly underperform the S&P this year. Accordingly, the sale of these shares is recommended.

Companies Mentioned in this Report (Prices as of 5/23/03)

Ford Motor Company (NYSE: F $9.56)
General Motors (NYSE: GM $33.26)
Toyota (NYSE: TM $46.00)
Honda (NYSE: HMC $17.35)
Nissan (NASDAQ: NSANY $15.30)
DaimlerChrysler (NYSE: DCX $30.27)
IBM (NYSE: IBM $85.26)

Exhibit 1: Funded Status of 100 Largest Corporate Pension Funds

Total for Study Group	$889,636	$801,784	$747,086	$732,699	$816,912	$930,139	(156,937)	$15,128	$183,053			
Average per Company	$8,896	$8,018	$7,471	$7,327	$8,169	$9,301	($1,569)	$151	$1,831	82.4%	101.9%	124.5%

		Projected Benefit Obligation			**Market Value of Plan Assets**			**Funded Status**			**Funded Ratio**		
	(Dollar amounts are in millions)	eoy 2002	eoy 2001	eoy 2000	eoy 2002	eoy 2001	eoy 2000	eoy 2002	eoy 2001	eoy 2000	eoy 2002	eoy 2001	eoy 2000
1	General Motors	92,243	86,333	86,042	66,803	73,662	85,263	(25,440)	(12,671)	(779)	72.40%	85.30%	99.10%
2	Intl. Business Machines	64,056	59,563	57,770	57,621	61,096	69,427	(6,435)	1,533	11,657	90.00%	102.60%	120.20%
3	Ford Motor	57,851	51,214	50,200	42,240	48,754	54,544	(15,611)	(2,460)	4,344	73.00%	95.20%	108.70%
4	Verizon Communications	37,908	36,391	33,136	38,676	48,558	55,225	768	12,167	22,089	102.00%	133.40%	166.70%
5	General Electric	33,266	30,423	28,535	37,811	45,006	49,757	4,545	14,583	21,222	113.70%	147.90%	174.40%
6	Boeing	35,971	32,693	29,102	28,834	33,810	42,856	(7,137)	1,117	13,754	80.20%	103.40%	147.30%
7	Lucent Technologies	30,312	30,515	26,677	28,598	36,010	45,719	(1,714)	5,495	19,042	94.30%	118.00%	171.40%
8	SBC Communications	26,148	25,060	25,577	24,999	32,715	40,814	(1,149)	7,655	15,237	95.60%	130.50%	159.60%
9	Northrop Grumman	21,524	12,404	9,121	18,532	13,889	11,763	(2,992)	1,485	2,642	86.10%	112.00%	129.00%
10	Lockheed Martin	21,918	19,713	18,524	17,661	20,300	22,738	(4,257)	587	4,214	80.60%	103.00%	122.70%
11	AT&T	14,985	13,878	12,898	15,603	18,449	21,055	618	4,571	8,157	104.10%	132.90%	163.20%
12	DuPont de Nemours (E.I.)	19,555	18,769	17,763	15,110	17,923	20,314	(4,445)	(846)	2,551	77.30%	95.50%	114.40%
13	BellSouth	11,386	11,928	12,264	13,338	16,617	19,406	1,952	4,689	7,142	117.10%	139.30%	158.20%
14	Exxon Mobil	22,682	19,419	18,714	11,351	12,170	14,575	(11,331)	(7,249)	(4,139)	50.00%	62.70%	77.90%
15	Honeywell Intl.	11,660	10,952	10,132	10,178	11,051	12,264	(1,482)	99	2,132	87.30%	100.90%	121.00%
16	Citigroup	10,514	9,841	8,612	10,094	10,323	9,867	(420)	482	1,255	96.00%	104.90%	114.60%
17	Altria	13,076	12,222	10,785	10,083	11,720	13,018	(2,993)	(502)	2,233	77.10%	95.90%	120.70%
18	United Technologies	13,925	12,354	12,232	10,025	10,025	13,119	(3,900)	(2,329)	887	72.00%	81.10%	107.30%
19	Dow Chemical	12,097	11,341	9,985	9,561	11,424	12,435	(2,536)	83	2,450	79.00%	100.70%	124.50%
20	Raytheon	11,979	11,422	10,707	9,135	10,409	14,108	(2,844)	(1,013)	3,401	76.30%	91.10%	131.80%
21	Minnesota Mining & Mfg.	10,093	8,998	8,273	7,983	8,007	8,965	(2,110)	(991)	692	79.10%	89.00%	108.40%
22	Prudential Financial	7,570	6,607	5,461	7,914	8,629	10,356	344	2,022	4,895	104.50%	130.60%	189.60%
23	Eastman Kodak	8,807	8,038	7,924	7,595	8,103	9,356	(1,212)	65	1,432	86.20%	100.80%	118.10%
24	Alcoa	9,360	8,488	8,270	7,531	8,434	9,790	(1,829)	(54)	1,520	80.50%	99.40%	118.40%
25	Bank of America Corp.	8,279	8,135	8,545	7,518	8,264	8,652	(761)	129	107	90.80%	101.60%	101.30%
26	Caterpillar	9,361	8,611	8,089	7,467	8,481	9,490	(1,894)	(130)	1,401	79.80%	98.50%	117.30%
27	Delta Air Lines	11,682	10,657	9,263	6,775	8,304	10,398	(4,907)	(2,353)	1,135	58.00%	77.90%	112.30%
28	United Parcel Service	6,670	5,347	4,547	6,494	6,496	7,661	(176)	1,149	3,114	97.40%	121.50%	168.50%
29	PG&E Corp.	6,781	6,087	5,405	6,189	7,175	7,808	(592)	1,088	2,403	91.30%	117.90%	144.50%
30	Xerox	7,931	7,606	8,255	5,963	7,040	8,626	(1,968)	(566)	371	75.20%	92.60%	104.50%
31	Consolidated Edison	6,434	5,904	5,630	5,760	6,634	7,348	(674)	729	1,717	89.50%	112.40%	130.50%
32	Delphi	9,712	8,444	7,042	5,628	6,077	6,740	(4,084)	(2,367)	(302)	57.90%	72.00%	95.70%
33	International Paper	7,111	6,419	6,319	5,584	6,502	7,253	(1,527)	83	934	78.50%	101.30%	114.80%
34	Pfizer	8,012	6,935	6,309	5,457	5,648	6,119	(2,555)	(1,287)	(190)	68.10%	81.40%	97.00%
35	J.P. Morgan Chase	5,570	5,107	5,033	5,395	5,106	5,369	(175)	(1)	336	96.90%	100.00%	106.70%
36	General Dynamics	5,599	5,162	4,579	5,329	6,107	6,165	(270)	945	1,586	95.20%	118.30%	134.60%
37	Hewlett-Packard	7,785	3,255	2,822	5,125	2,409	2,762	(2,660)	(846)	(60)	65.80%	74.00%	97.90%
38	Marsh & McLennan	5,969	5,304	4,807	4,963	5,046	5,608	(1,006)	(258)	801	83.10%	95.10%	116.70%
39	ChevronTexaco	7,471	7,028	6,713	4,835	5,947	6,855	(2,636)	(1,081)	142	64.70%	84.60%	102.10%
40	Johnson & Johnson	6,051	5,026	4,555	4,705	4,355	4,847	(1,346)	(671)	292	77.80%	86.60%	106.40%
41	Southern	4,094	3,760	3,397	4,600	5,109	6,157	506	1,349	2,760	112.40%	135.90%	181.20%
42	Unisys	5,442	4,816	4,316	4,549	5,215	5,799	(893)	399	1,483	83.60%	108.30%	134.40%
43	Viacom	5,577	5,100	4,984	4,249	4,566	4,891	(1,328)	(534)	(93)	76.20%	89.50%	98.10%
44	MetLife	4,785	4,426	4,145	4,053	4,161	4,619	(732)	(265)	474	84.70%	94.00%	111.40%
45	Textron	4,342	3,908	3,941	4,008	4,480	5,170	(334)	572	1,229	92.30%	114.60%	131.20%
46	Electronic Data Systems	5,154	3,943	3,538	3,739	3,585	3,849	(1,415)	(358)	311	72.50%	90.90%	108.80%
47	NWA	7,638	6,674	5,491	3,690	4,399	5,005	(3,948)	(2,275)	(486)	48.30%	65.90%	91.10%
48	PepsiCo	4,324	3,556	3,170	3,537	3,129	3,251	(787)	(427)	81	81.80%	88.00%	102.60%
49	Wachovia Corp.	4,007	3,583	2,165	3,480	3,221	2,834	(527)	(362)	669	86.80%	89.90%	130.90%
50	Kimberly-Clark	4,393	4,015	3,847	3,407	3,722	4,087	(986)	(293)	239	77.60%	92.70%	106.20%

Source: Milliman USA and Palladian Research, 2003

Exhibit 1 Cont.

#	(Dollar amounts are in millions)	Projected Benefit Obligation eoy 2002	eoy 2001	eoy 2000	Market Value of Plan Assets eoy 2002	eoy 2001	eoy 2000	Funded Status eoy 2002	eoy 2001	eoy 2000	Funded Ratio eoy 2002	eoy 2001	eoy 2000
	Total for Study Group	$889,636	$801,784	$747,086	$732,699	$816,912	$930,139	(156,937)	$15,128	$183,053			
	Average per Company	$8,896	$8,018	$7,471	$7,327	$8,169	$9,301	($1,569)	$151	$1,831	82.4%	101.9%	124.5%
51	Bristol-Myers Squibb	4,062	3,914	3,294	3,267	3,508	3,523	(795)	(406)	229	80.40%	89.60%	107.00%
52	Eli Lilly	3,941	3,599	3,380	3,161	3,182	3,732	(780)	(417)	352	80.20%	88.40%	110.40%
53	Georgia-Pacific	4,117	3,866	3,704	3,143	3,711	4,508	(974)	(155)	804	76.30%	96.00%	121.70%
54	Merck	4,410	3,612	3,167	3,105	2,865	3,121	(1,305)	(747)	(46)	70.40%	79.30%	98.60%
55	Wells Fargo	3,243	2,934	2,656	3,090	2,761	3,270	(153)	(173)	614	95.30%	94.10%	123.10%
56	Dominion Resources	2,801	2,594	2,370	3,074	3,352	3,557	273	758	1,187	109.70%	129.20%	150.10%
57	Aetna	3,946	3,581	3,519	2,943	3,302	4,164	(1,003)	(279)	645	74.60%	92.20%	118.30%
58	FirstEnergy	3,866	3,548	1,506	2,889	3,484	1,706	(977)	(64)	200	74.70%	98.20%	113.30%
59	Loews	3,118	2,886	2,668	2,839	2,724	2,481	(278)	(162)	(187)	91.10%	94.40%	93.00%
60	American Electric Power	3,583	3,292	3,161	2,795	3,438	3,911	(788)	146	750	78.00%	104.40%	123.70%
61	Merrill Lynch	2,425	2,014	1,870	2,741	2,500	2,379	316	486	509	113.00%	124.10%	127.20%
62	ITT Industries	4,059	3,617	3,442	2,735	3,234	3,652	(1,324)	(384)	210	67.40%	89.40%	106.10%
63	MeadWestvaco	2,441	1,400	1,204	2,732	2,292	2,753	291	892	1,549	111.90%	163.70%	228.70%
64	Xcel Energy	2,506	2,409	2,254	2,640	3,268	3,689	134	858	1,435	105.40%	135.60%	163.70%
65	Berkshire Hathaway	2,866	2,376	1,337	2,545	2,215	1,434	(321)	(161)	97	88.80%	93.20%	107.30%
66	Bank One Corp.	2,419	2,297	2,248	2,481	2,747	3,134	62	450	886	102.60%	119.60%	139.40%
67	Sprint	3,536	3,005	2,634	2,448	2,996	3,376	(1,088)	(9)	742	69.20%	99.70%	128.20%
68	Motorola	3,957	3,579	3,444	2,438	3,131	3,657	(1,519)	(448)	213	61.60%	87.50%	106.20%
69	Duke Energy	3,005	2,852	2,586	2,375	2,761	3,038	(630)	(91)	452	79.00%	96.80%	117.50%
70	Abbott Laboratories	3,748	3,241	2,572	2,373	2,644	2,829	(1,375)	(597)	257	63.30%	81.60%	110.00%
71	ConocoPhillips	4,580	1,849	1,377	2,260	1,113	1,097	(2,320)	(736)	(280)	49.30%	60.20%	79.70%
72	American Intl. Group	3,217	2,787	1,877	2,176	2,385	2,191	(1,041)	(402)	314	67.60%	85.60%	116.70%
73	Sears Roebuck	3,142	3,091	2,817	2,100	2,349	2,789	(1,042)	(742)	(28)	66.80%	76.00%	99.00%
74	El Paso	2,088	1,966	1,680	2,072	2,479	3,190	(16)	513	1,510	99.20%	126.10%	189.90%
75	Cigna	3,427	2,932	2,756	2,032	2,500	2,890	(1,395)	(432)	134	59.30%	85.30%	104.90%
76	FleetBoston	2,217	2,152	1,991	1,932	2,304	2,576	(285)	152	585	87.10%	107.10%	129.40%
77	Anheuser-Busch	2,324	2,051	1,880	1,732	1,834	2,277	(592)	(217)	397	74.50%	89.40%	121.10%
78	TXU	2,019	1,771	1,589	1,595	1,800	1,889	(424)	29	300	79.00%	101.60%	118.90%
79	Safeway	1,519	1,287	1,182	1,572	1,783	1,957	53	496	775	103.50%	138.50%	165.60%
80	ConAgra	1,709	1,576	1,489	1,535	1,644	1,652	(174)	68	163	89.80%	104.30%	110.90%
81	Hartford Fin. Services	2,588	2,108	1,880	1,487	1,711	1,839	(1,101)	(397)	(41)	57.50%	81.20%	97.80%
82	Coca-Cola	2,182	1,906	1,819	1,452	1,492	1,555	(730)	(414)	(264)	66.50%	78.30%	85.50%
83	American Express	1,845	1,541	1,403	1,352	1,190	1,480	(493)	(351)	77	73.30%	77.20%	105.50%
84	Procter & Gamble	2,970	2,567	2,627	1,332	1,432	1,691	(1,638)	(1,135)	(936)	44.80%	55.80%	64.40%
85	Morgan Stanley	1,721	1,457	1,234	1,286	1,057	1,268	(435)	(400)	34	74.70%	72.50%	102.80%
86	Kroger	1,357	1,169	1,128	1,275	1,444	1,393	(82)	275	265	94.00%	123.50%	123.50%
87	AOL Time Warner	2,014	1,725	1,577	1,244	1,463	1,573	(770)	(262)	(4)	61.80%	84.80%	99.70%
88	Washington Mutual	1,104	798	711	1,062	754	719	(42)	(44)	8	96.20%	94.50%	101.10%
89	Coca-Cola Enterprises	1,680	1,478	1,279	1,051	1,117	1,227	(629)	(361)	(52)	62.60%	75.60%	95.90%
90	Target	1,067	917	862	1,033	1,020	982	(34)	103	120	96.80%	111.20%	113.90%
91	Visteon	1,717	1,344	1,138	1,013	1,017	1,188	(704)	(327)	50	59.00%	75.70%	104.40%
92	Marathon Oil	1,286	1,157	938	769	942	1,079	(517)	(215)	141	59.80%	81.40%	115.00%
93	Archer Daniels Midland	913	784	712	699	619	657	(213)	(165)	(55)	76.60%	78.90%	92.20%
94	Lehman Brothers Hldgs.	644	555	486	629	653	750	(15)	98	264	97.70%	117.70%	154.30%
95	Albertson's	567	495	423	466	537	582	(101)	42	159	82.20%	108.50%	137.60%
96	Sysco	709	577	433	456	416	392	(253)	(160)	(42)	64.40%	72.20%	90.40%
97	Supervalu	467	413	379	396	410	392	(71)	(3)	13	84.80%	99.30%	103.50%
98	Valero Energy	717	690	188	381	396	182	(337)	(294)	(6)	53.10%	57.40%	96.80%
99	Goldman Sachs Group	407	324	283	373	302	276	(34)	(22)	(7)	91.60%	93.20%	97.50%
100	McKesson	332	330	318	347	376	395	15	46	78	104.50%	114.00%	124.40%

Source: Milliman USA and Palladian Research, 2003

Exhibit 2: Charge to Equity Analysis

	Dollar amounts are in millions	Net Periodic Pension Income (Cost)			Employer Contributions			Charge to Equity			Discount Rate		
		fy 2002	fy 2001	fy 2000	fy 2002	fy 2001	fy 2000	fy 2002	fy 2001	fy 2000	fy 2002	fy 2001	fy 2000
	Total for Study Group	$3,317	$12,319	$10,734	$33,551	$9,211		$80,957	$17,426				
	Average per Company	$33	$123	$107	$336	$92		$810	$174		6.70%	7.21%	7.49%
1	General Motors	(1,541)	(385)	(346)	5,164	323	n/a	22,709	10,790	n/a	6.75%	7.30%	7.30%
2	Intl. Business Machines	1,271	1,499	1,316	4,188	417	n/a	3,227	462	n/a	6.75%	7.00%	7.25%
3	Ford Motor	(13)	368	(72)	181	167	n/a	5,776	445	n/a	6.75%	7.25%	7.50%
4	Verizon Communications	2,497	2,690	2,328	157	81	n/a	872	21	n/a	6.75%	7.25%	7.75%
5	General Electric	1,556	2,095	1,744	95	75	n/a	0	0	n/a	6.75%	7.25%	7.50%
6	Boeing	472	920	428	340	19	n/a	4,011	348	n/a	6.50%	7.00%	7.75%
7	Lucent Technologies	1,210	1,380	951	98	57	n/a	2,941	14	n/a	6.50%	7.00%	7.50%
8	SBC Communications	1,137	1,450	1,145	0	0	n/a	1,473	0	n/a	6.75%	7.50%	7.75%
9	Northrop Grumman	96	337	560	115	152	n/a	994	27	n/a	6.50%	7.00%	7.50%
10	Lockheed Martin	160	354	313	69	8	n/a	1,570	33	n/a	6.75%	7.25%	7.50%
11	AT&T	219	582	904	70	59	n/a	179	0	n/a	6.50%	7.25%	7.50%
12	DuPont de Nemours (E.I.)	219	409	469	172	171	n/a	2,724	192	n/a	6.75%	7.00%	7.75%
13	BellSouth	693	797	693	0	0	n/a	70	79	n/a	7.75%	7.25%	7.75%
14	Exxon Mobil	(928)	(410)	(174)	969	299	n/a	2,960	535	n/a	6.75%	7.25%	7.50%
15	Honeywell Intl.	161	256	330	885	46	n/a	653	47	n/a	6.75%	7.25%	7.75%
16	Citigroup	(110)	(42)	2	1,236	488	n/a	0	0	n/a	6.75%	7.25%	7.50%
17	Altria	7	126	179	1,104	350	n/a	883	123	n/a	6.50%	7.00%	7.75%
18	United Technologies	(68)	(32)	(42)	1,060	51	n/a	2,151	563	n/a	6.60%	7.40%	7.40%
19	Dow Chemical	138	208	148	112	30	n/a	1,379	72	n/a	6.75%	7.00%	7.33%
20	Raytheon	89	295	150	49	51	n/a	2,122	120	n/a	7.00%	7.25%	7.75%
21	Minnesota Mining & Mfg.	(92)	(48)	(56)	1,086	157	n/a	1,100	44	n/a	6.75%	7.25%	7.50%
22	Prudential Financial	396	461	368	95	81	n/a	88	46	n/a	6.50%	7.25%	7.75%
23	Eastman Kodak	186	137	110	128	60	n/a	432	38	n/a	6.50%	7.25%	7.50%
24	Alcoa	(35)	33	(17)	59	37	n/a	912	61	n/a	6.75%	7.25%	7.75%
25	Bank of America Corp.	(140)	(18)	38	739	598	n/a	0	0	n/a	6.75%	7.25%	7.25%
26	Caterpillar	73	163	180	179	16	n/a	771	161	n/a	7.00%	7.30%	7.80%
27	Delta Air Lines	(147)	73	4	77	50	n/a	1,587	0	n/a	6.75%	7.75%	8.25%
28	United Parcel Service	(18)	30	(71)	105	22	n/a	0	0	n/a	6.75%	7.50%	7.75%
29	PG&E Corp.	(36)	125	302	10	5	n/a	0	0	n/a	6.75%	7.25%	7.50%
30	Xerox	(113)	(73)	(90)	138	42	n/a	346	67	n/a	6.20%	6.80%	7.00%
31	Consolidated Edison	311	314	240	4	4	n/a	4	2	n/a	6.75%	7.50%	7.75%
32	Delphi	(293)	(233)	(164)	400	0	n/a	2,098	830	n/a	6.75%	7.25%	7.75%
33	International Paper	75	141	94	0	0	n/a	1,572	29	n/a	6.50%	7.25%	7.50%
34	Pfizer	(352)	(164)	(157)	907	567	n/a	507	328	n/a	6.90%	7.30%	7.80%
35	J.P. Morgan Chase	(106)	(145)	(99)	1,153	514	n/a	0	0	n/a	6.50%	7.25%	7.63%
36	General Dynamics	(12)	33	10	15	1	n/a	2	2	n/a	7.00%	7.25%	7.50%
37	Hewlett-Packard	(351)	(233)	(166)	702	140	n/a	379	0	n/a	6.80%	7.00%	7.50%
38	Marsh & McLennan	22	49	37	460	78	n/a	257	(2)	n/a	6.75%	7.25%	7.50%
39	ChevronTexaco	(310)	(87)	(4)	131	28	n/a	876	91	n/a	6.80%	7.30%	7.50%
40	Johnson & Johnson	(123)	(75)	(52)	1,074	56	n/a	21	10	n/a	6.75%	7.50%	7.50%
41	Southern	117	124	111	0	0	n/a	0	0	n/a	6.50%	7.50%	7.50%
42	Unisys	145	173	140	42	33	n/a	1,490	0	n/a	6.75%	7.50%	8.00%
43	Viacom	(49)	(26)	1	44	42	n/a	503	12	n/a	6.47%	7.21%	7.71%
44	MetLife	(90)	(8)	50	428	23	n/a	46	46	n/a	6.75%	5.70%	7.33%
45	Textron	95	90	84	23	22	n/a	95	0	n/a	6.75%	7.25%	7.50%
46	Electronic Data Systems	(195)	(142)	(135)	207	176	n/a	446	23	n/a	6.40%	6.70%	7.20%
47	NWA	(309)	(231)	(134)	192	73	n/a	1,332	306	n/a	6.75%	7.50%	7.85%
48	PepsiCo	(102)	(56)	(56)	820	446	n/a	43	14	n/a	6.70%	7.40%	7.70%
49	Wachovia Corp.	(42)	(2)	(20)	726	218	n/a	0	0	n/a	6.75%	7.25%	7.75%
50	Kimberly-Clark	(30)	27	86	126	13	n/a	672	116	n/a	6.62%	6.98%	7.20%

Source: Milliman USA and Palladian Research, 2003

Exhibit 2 Cont.

		Net Periodic Pension Income (Cost)			Employer Contributions			Charge to Equity			Discount Rate		
	Dollar amounts are in millions	fy 2002	fy 2001	fy 2000	fy 2002	fy 2001	fy 2000	fy 2002	fy 2001	fy 2000	fy 2002	fy 2001	fy 2000
	Total for Study Group	$3,317	$12,319	$10,734	$33,551	$9,211		$80,957	$17,426				
	Average per Company	$33	$123	$107	$336	$92		$810	$174		6.70%	7.21%	7.49%
51	Bristol-Myers Squibb	(48)	(52)	(65)	547	300	n/a	128	0	n/a	6.75%	7.25%	7.75%
52	Eli Lilly	(65)	(45)	(32)	403	63	n/a	138	135	n/a	6.80%	7.20%	7.40%
53	Georgia-Pacific	(125)	(9)	5	42	13	n/a	580	43	n/a	6.50%	7.00%	7.50%
54	Merck	(198)	(148)	(116)	761	250	n/a	163	39	n/a	6.50%	7.25%	7.50%
55	Wells Fargo	(112)	81	(15)	656	14	n/a	0	42	n/a	7.00%	7.50%	7.50%
56	Dominion Resources	96	86	67	111	39	n/a	2	(4)	n/a	6.75%	7.25%	7.50%
57	Aetna	(50)	37	1	118	18	n/a	755	0	n/a	6.75%	7.50%	7.75%
58	FirstEnergy	29	30	60	0	0	n/a	450	0	n/a	6.75%	7.25%	7.75%
59	Loews	(57)	(63)	(76)	38	215	n/a	18	24	n/a	6.80%	7.30%	7.50%
60	American Electric Power	44	69	68	6	0	n/a	585	0	n/a	6.75%	7.25%	7.50%
61	Merrill Lynch	(39)	(6)	(8)	51	69	n/a	125	10	n/a	6.20%	6.70%	7.10%
62	ITT Industries	10	9	0	56	13	n/a	785	19	n/a	6.44%	7.14%	7.39%
63	MeadWestvaco	(124)	(158)	(108)	24	3	n/a	7	3	n/a	6.50%	6.50%	6.75%
64	Xcel Energy	156	154	110	1	0	n/a	108	0	n/a	6.75%	7.25%	7.75%
65	Berkshire Hathaway	(115)	(76)	(42)	56	36	n/a	0	0	n/a	6.30%	6.60%	7.40%
66	Bank One Corp.	(19)	14	11	280	53	n/a	0	0	n/a	6.50%	7.00%	7.50%
67	Sprint	12	88	115	0	0	n/a	713	0	n/a	7.50%	8.00%	8.25%
68	Motorola	(167)	(188)	(177)	38	38	n/a	525	44	n/a	6.75%	7.25%	7.50%
69	Duke Energy	24	9	(3)	9	0	n/a	484	0	n/a	6.75%	7.25%	7.50%
70	Abbott Laboratories	(119)	(82)	(54)	163	45	n/a	203	0	n/a	6.75%	7.25%	7.50%
71	ConocoPhillips	(228)	(79)	(31)	1,194	166	n/a	93	143	n/a	6.75%	7.25%	0.00%
72	American Intl. Group	(121)	(55)	(28)	139	171	n/a	58	0	n/a	5.52%	7.40%	7.75%
73	Sears Roebuck	(74)	(72)	(121)	188	116	n/a	246	333	n/a	7.00%	7.25%	8.25%
74	El Paso	101	191	157	14	7	n/a	0	0	n/a	6.75%	7.25%	7.75%
75	Cigna	(91)	(69)	(48)	0	0	n/a	714	76	n/a	6.75%	7.25%	7.50%
76	FleetBoston	12	15	8	40	35	n/a	36	0	n/a	6.50%	7.00%	7.50%
77	Anheuser-Busch	(45)	(12)	(7)	227	23	n/a	297	132	n/a	6.75%	7.25%	7.50%
78	TXU	(8)	11	15	28	38	n/a	94	9	n/a	6.75%	7.50%	8.00%
79	Safeway	(30)	27	77	32	6	n/a	0	0	n/a	6.50%	7.50%	7.80%
80	ConAgra	(36)	(37)	(49)	14	21	n/a	15	0	n/a	7.50%	7.50%	6.75%
81	Hartford Fin. Services	(67)	(57)	(48)	0	90	n/a	372	8	n/a	6.50%	7.50%	7.75%
82	Coca-Cola	(72)	(62)	(38)	151	130	n/a	195	17	n/a	6.25%	6.50%	7.00%
83	American Express	(87)	(74)	(86)	306	47	n/a	49	103	n/a	6.20%	7.00%	7.40%
84	Procter & Gamble	(150)	(154)	(158)	116	81	n/a	69	39	n/a	5.60%	5.90%	6.10%
85	Morgan Stanley	(116)	(68)	(72)	458	73	n/a	19	0	n/a	6.75%	7.55%	8.00%
86	Kroger	(29)	1	(13)	3	4	n/a	0	0	n/a	7.25%	7.50%	8.00%
87	AOL Time Warner	(94)	(64)	0	104	273	n/a	319	0	n/a	6.75%	7.50%	7.75%
88	Washington Mutual	(46)	(24)	(12)	281	87	n/a	0	0	n/a	6.50%	7.25%	7.75%
89	Coca-Cola Enterprises	(48)	(38)	(38)	76	98	n/a	105	78	n/a	6.80%	6.90%	7.50%
90	Target	(32)	(38)	(35)	163	1	n/a	0	0	n/a	7.25%	7.75%	7.50%
91	Visteon	(66)	(34)	(53)	87	63	n/a	54	0	n/a	6.75%	7.50%	7.75%
92	Marathon Oil	(48)	(17)	7	0	0	n/a	47	14	n/a	6.50%	7.00%	7.50%
93	Archer Daniels Midland	(37)	(26)	(30)	46	27	n/a	25	14	n/a	6.70%	7.00%	7.10%
94	Lehman Brothers Hldgs.	(12)	36	38	80	0	n/a	0	0	n/a	6.75%	7.00%	7.75%
95	Albertson's	9	8	(31)	1	1	n/a	23	0	n/a	6.75%	7.15%	7.50%
96	Sysco	(51)	(30)	(30)	83	43	n/a	65	6	n/a	7.25%	7.50%	8.00%
97	Supervalu	(7)	(6)	(8)	18	13	n/a	0	0	n/a	7.25%	7.75%	7.75%
98	Valero Energy	(53)	(16)	(8)	102	19	n/a	14	0	n/a	6.50%	7.00%	7.50%
99	Goldman Sachs Group	(40)	(32)	(27)	101	61	n/a	0	0	n/a	6.75%	7.00%	7.50%
100	McKesson	9	15	0	6	5	n/a	6	7	n/a	7.25%	7.50%	7.75%

Source: Milliman USA and Palladian Research, 2003

Exhibit 3: Pension Fund Rate of Return Analysis

	(Dollar amounts are in millions)	Assumed Rate of Return			Expected Return on Assets			Actual Return on Assets			Difference Between Expected Return and Actual Return		
		fy 2002	fy 2001	fy 2000	fy 2002	fy 2001	fy 2000	fy 2002	fy 2001	fy 2000	fy 2002	fy 2001	fy 2000
1	Intl. Business Machines	9.50%	10.00%	10.00%	6,253	6,264	5,944	(6,936)	(3,964)	n/a	(13,189)	(10,228)	n/a
2	General Motors	10.00%	10.00%	10.00%	7,713	8,126	8,244	(5,262)	(4,835)	n/a	(12,975)	(12,961)	n/a
3	Ford Motor	8.75%	9.50%	9.50%	4,911	4,881	4,443	(5,027)	(2,489)	n/a	(9,938)	(7,370)	n/a
4	Verizon Communications	9.25%	9.25%	9.25%	4,883	4,811	4,686	(4,678)	(3,063)	n/a	(9,561)	(7,874)	n/a
5	General Electric	8.50%	9.50%	9.50%	4,084	4,327	3,754	(5,251)	(2,876)	n/a	(9,335)	(7,203)	n/a
6	SBC Communications	9.50%	9.50%	8.50%	3,429	3,515	3,149	(3,442)	(2,798)	n/a	(6,871)	(6,313)	n/a
7	Boeing	9.00%	9.25%	9.25%	3,558	3,452	3,117	(3,273)	(7,150)	n/a	(6,831)	(10,602)	n/a
8	Lucent Technologies	9.00%	9.00%	9.00%	3,384	3,401	3,256	(2,473)	(6,848)	n/a	(5,857)	(10,249)	n/a
9	DuPont de Nemours (E.I.)	9.50%	9.50%	9.50%	1,729	1,874	1,902	(1,921)	(615)	n/a	(3,650)	(2,489)	n/a
10	Lockheed Martin	9.50%	9.50%	9.50%	2,162	2,177	2,130	(1,397)	(1,238)	n/a	(3,559)	(3,415)	n/a
11	AT&T	9.00%	9.50%	9.50%	1,526	1,647	1,812	(1,663)	(1,576)	n/a	(3,189)	(3,223)	n/a
12	BellSouth	9.00%	9.00%	9.00%	1,598	1,655	1,537	(1,279)	(1,193)	n/a	(2,877)	(2,848)	n/a
13	Altria	9.00%	9.00%	9.00%	1,152	1,166	974	(1,571)	(957)	n/a	(2,723)	(2,123)	n/a
14	Northrop Grumman	9.00%	9.50%	9.50%	1,289	1,273	1,236	(1,355)	(537)	n/a	(2,644)	(1,810)	n/a
15	Exxon Mobil	9.50%	9.50%	9.50%	1,062	1,252	1,367	(1,397)	(1,071)	n/a	(2,459)	(2,323)	n/a
16	Dow Chemical	9.25%	9.18%	9.22%	1,105	1,072	986	(1,230)	(611)	n/a	(2,335)	(1,683)	n/a
17	Honeywell Intl.	10.00%	10.00%	10.00%	1,164	1,201	1,151	(912)	(383)	n/a	(2,076)	(1,584)	n/a
18	Delta Air Lines	9.00%	10.00%	10.00%	984	1,040	924	(718)	(1,521)	n/a	(1,702)	(2,561)	n/a
19	Raytheon	9.50%	9.50%	9.50%	1,193	1,247	1,164	(488)	(2,876)	n/a	(1,681)	(4,123)	n/a
20	Citigroup	8.00%	9.50%	9.25%	971	980	863	(648)	95	n/a	(1,619)	(885)	n/a
21	Caterpillar	9.80%	10.00%	10.00%	877	896	854	(599)	(447)	477	(1,476)	(1,343)	(377)
22	Bank of America Corp.	8.50%	10.00%	10.00%	746	876	813	(722)	(154)	n/a	(1,468)	(1,030)	n/a
23	Minnesota Mining & Mfg.	9.00%	9.00%	9.00%	760	757	682	(707)	(825)	n/a	(1,467)	(1,582)	n/a
24	Hewlett-Packard	8.50%	9.00%	9.00%	331	241	207	(1,091)	(422)	n/a	(1,422)	(663)	n/a
25	United Technologies	9.20%	9.60%	9.70%	1,116	1,135	1,060	(295)	(2,338)	n/a	(1,411)	(3,473)	n/a
26	PG&E Corp.	8.10%	8.50%	8.50%	596	645	679	(690)	(364)	n/a	(1,286)	(1,009)	n/a
27	Delphi	10.00%	10.00%	10.00%	692	707	626	(580)	(445)	n/a	(1,272)	(1,152)	n/a
28	Consolidated Edison	9.20%	9.20%	8.50%	686	657	566	(553)	(407)	(85)	(1,239)	(1,064)	(650)
29	Pfizer	10.00%	10.00%	10.00%	516	543	526	(698)	(573)	n/a	(1,214)	(1,116)	n/a
30	Prudential Financial	9.50%	9.50%	9.50%	913	880	799	(299)	(1,114)	n/a	(1,212)	(1,994)	n/a
31	Alcoa	9.50%	9.50%	9.00%	776	781	666	(376)	65	n/a	(1,152)	(716)	n/a
32	International Paper	9.25%	10.00%	10.00%	663	727	615	(486)	(229)	n/a	(1,149)	(956)	n/a
33	PepsiCo	9.10%	9.80%	9.90%	913	301	277	(221)	(382)	n/a	(1,134)	(683)	n/a
34	Unisys	9.50%	10.00%	10.00%	551	556	508	(540)	(428)	n/a	(1,091)	(983)	n/a
35	NWA	10.50%	10.50%	10.50%	538	514	468	(548)	(370)	n/a	(1,086)	(884)	n/a
36	Xerox	8.80%	8.90%	8.90%	314	319	294	(768)	(843)	n/a	(1,082)	(1,162)	n/a
37	Johnson & Johnson	9.00%	9.00%	9.00%	447	413	377	(611)	(276)	n/a	(1,058)	(689)	n/a
38	General Dynamics	8.34%	8.16%	8.31%	520	486	445	(486)	80	n/a	(1,006)	(406)	n/a
39	Marsh & McLennan	8.75%	9.63%	10.00%	519	492	460	(487)	(375)	n/a	(1,006)	(867)	n/a
40	J.P. Morgan Chase	8.00%	9.25%	9.25%	434	457	431	(556)	(323)	n/a	(990)	(780)	n/a
41	Eastman Kodak	9.50%	9.50%	9.50%	842	758	733	(31)	(522)	n/a	(873)	(1,280)	n/a
42	ChevronTexaco	7.80%	8.80%	10.00%	426	613	670	(423)	(311)	n/a	(849)	(924)	n/a
43	Bristol-Myers Squibb	9.00%	10.00%	10.00%	400	361	332	(430)	(188)	25	(830)	(549)	(307)
44	Southern	8.50%	8.50%	8.50%	449	423	384	(343)	(889)	n/a	(792)	(1,312)	n/a
45	Xcel Energy	9.50%	9.50%	9.25%	340	326	293	(405)	(236)	n/a	(745)	(562)	n/a
46	Electronic Data Systems	9.60%	9.70%	9.90%	355	382	320	(381)	(421)	n/a	(736)	(803)	n/a
47	Textron	8.90%	9.25%	9.25%	454	454	423	(275)	(218)	n/a	(729)	(672)	n/a
48	Motorola	8.50%	9.00%	9.00%	308	307	288	(415)	(248)	n/a	(723)	(555)	n/a
49	Sprint	9.50%	10.00%	10.00%	331	353	336	(387)	(236)	n/a	(718)	(589)	n/a
50	American Electric Power	9.00%	9.00%	9.00%	337	338	321	(371)	(182)	n/a	(708)	(520)	n/a

Source: Milliman USA and Palladian Research, 2003

Exhibit 3 Cont.

	(Dollar amounts are in millions)	Assumed Rate of Return			Expected Return on Assets			Actual Return on Assets			Difference Between Expected Return and Actual Return		
		fy 2002	fy 2001	fy 2000	fy 2002	fy 2001	fy 2000	fy 2002	fy 2001	fy 2000	fy 2002	fy 2001	fy 2000
51	FirstEnergy	9.00%	10.25%	10.25%	346	205	181	(349)	8	n/a	(695)	(197)	n/a
52	ITT Industries	8.86%	9.61%	9.73%	335	325	303	(339)	(190)	n/a	(674)	(515)	n/a
53	Georgia-Pacific	8.50%	9.50%	9.50%	348	414	262	(306)	(546)	n/a	(654)	(960)	n/a
54	Eli Lilly	9.26%	10.50%	10.50%	398	382	341	(225)	(382)	n/a	(623)	(765)	n/a
55	MeadWestvaco	8.50%	8.75%	8.75%	315	257	188	(287)	(399)	n/a	(602)	(656)	n/a
56	Abbott Laboratories	8.75%	9.50%	9.50%	283	262	233	(310)	(199)	(155)	(593)	(460)	(388)
57	Dominion Resources	9.50%	9.50%	9.50%	349	331	298	(241)	(91)	n/a	(590)	(422)	n/a
58	Kimberly-Clark	8.42%	9.19%	9.30%	336	368	398	(251)	(130)	n/a	(586)	(498)	n/a
59	United Parcel Service	9.42%	9.50%	9.50%	654	616	471	77	(1,218)	n/a	(577)	(1,834)	n/a
60	Merck	10.00%	10.00%	10.00%	320	288	267	(245)	(258)	n/a	(565)	(546)	n/a
61	Aetna	9.00%	9.25%	9.25%	296	375	351	(246)	(662)	n/a	(542)	(1,038)	n/a
62	Cigna	7.50%	9.00%	9.00%	258	232	224	(284)	(208)	n/a	(542)	(440)	n/a
63	MetLife	7.00%	6.50%	8.50%	356	402	420	(179)	(201)	n/a	(535)	(603)	n/a
64	Wachovia Corp.	10.00%	10.00%	10.00%	371	289	249	(164)	(506)	n/a	(535)	(795)	n/a
65	El Paso	8.80%	10.00%	10.00%	260	311	277	(246)	(581)	n/a	(506)	(892)	n/a
66	Bank One Corp.	8.50%	9.50%	9.50%	272	287	300	(219)	(114)	n/a	(491)	(401)	n/a
67	FleetBoston	9.25%	10.00%	10.00%	241	248	232	(246)	(107)	n/a	(487)	(355)	n/a
68	Duke Energy	9.25%	9.25%	9.25%	286	264	244	(199)	(394)	n/a	(485)	(658)	n/a
69	American Intl. Group	7.96%	9.40%	9.70%	195	220	184	(256)	(259)	n/a	(451)	(479)	n/a
70	Sears Roebuck	9.00%	9.00%	9.50%	236	221	216	(147)	(271)	n/a	(383)	(492)	n/a
71	Anheuser-Busch	9.25%	10.00%	10.00%	195	202	185	(175)	(340)	n/a	(369)	(542)	n/a
72	Wells Fargo	9.00%	9.00%	9.00%	244	287	249	(117)	(331)	n/a	(361)	(618)	n/a
73	AOL Time Warner	9.00%	9.00%	9.00%	127	139	0	(214)	(137)	n/a	(341)	(276)	n/a
74	TXU	8.50%	9.00%	9.00%	162	159	148	(154)	(45)	n/a	(316)	(204)	n/a
75	Safeway	8.50%	9.00%	9.00%	144	159	182	(159)	(56)	n/a	(302)	(215)	n/a
76	Hartford Fin. Services	9.75%	9.75%	9.75%	183	168	159	(111)	(119)	n/a	(294)	(287)	n/a
77	Procter & Gamble	8.60%	8.30%	8.10%	133	127	122	(150)	(88)	n/a	(283)	(215)	n/a
78	ConocoPhillips	7.05%	8.70%	9.05%	122	104	109	(159)	(110)	n/a	(281)	(214)	n/a
79	Coca-Cola	8.25%	8.50%	8.50%	137	125	132	(121)	(96)	n/a	(258)	(221)	n/a
80	Kroger	9.50%	9.50%	9.50%	131	120	109	(102)	111	n/a	(233)	(9)	n/a
81	Coca-Cola Enterprises	9.20%	9.40%	9.40%	124	116	106	(107)	(167)	n/a	(231)	(283)	n/a
82	Viacom	7.30%	8.30%	8.30%	355	389	302	143	190	n/a	(212)	(198)	n/a
83	American Express	9.30%	9.50%	9.50%	127	122	102	(78)	(239)	n/a	(205)	(361)	n/a
84	Visteon	9.50%	9.50%	9.00%	112	113	164	(88)	(187)	n/a	(200)	(300)	n/a
85	Marathon Oil	9.00%	9.50%	9.50%	100	107	117	(91)	(35)	n/a	(191)	(142)	n/a
86	Target	9.00%	9.00%	9.00%	89	81	72	(100)	91	n/a	(189)	10	n/a
87	Morgan Stanley	8.50%	9.00%	9.00%	106	110	100	(75)	(198)	n/a	(181)	(308)	n/a
88	ConAgra	9.25%	9.25%	9.25%	136	126	115	(19)	50	n/a	(155)	(77)	n/a
89	Washington Mutual	8.00%	8.00%	8.00%	71	55	61	(73)	(5)	n/a	(144)	(60)	n/a
90	Lehman Brothers Hldgs.	9.00%	11.25%	11.25%	57	83	83	(82)	(77)	n/a	(139)	(160)	n/a
91	Albertson's	9.00%	9.50%	9.50%	48	55	49	(57)	(32)	n/a	(105)	(87)	n/a
92	Sysco	9.50%	10.50%	10.50%	42	41	34	(27)	(2)	n/a	(69)	(43)	n/a
93	Valero Energy	8.50%	8.75%	9.25%	37	17	16	(29)	(14)	n/a	(66)	(31)	n/a
94	Goldman Sachs Group	8.50%	8.50%	8.50%	24	21	18	(35)	(26)	n/a	(59)	(47)	n/a
95	Supervalu	10.00%	10.00%	10.00%	41	38	32	(12)	28	n/a	(53)	(10)	n/a
96	Archer Daniels Midland	8.30%	8.30%	8.30%	56	55	51	13	(9)	n/a	(43)	(63)	n/a
97	McKesson	9.75%	9.75%	9.75%	36	37	29	(5)	13	110	(40)	(24)	81
98	Berkshire Hathaway	6.50%	6.70%	8.30%	147	137	73	196	139	n/a	49	2	n/a
99	Loews	7.75%	8.25%	7.90%	206	195	172	266	214	n/a	60	19	n/a
100	Merrill Lynch	6.00%	6.60%	7.70%	152	157	150	273	188	n/a	121	31	n/a

Source: Milliman USA and Palladian Research, 2003

Exhibit 4: Discount Rate Analysis

Company	2002 Projected Benefit Obligation	Current Discount Rate	5.00%	5.25%	5.50%	5.75%	6.00%	6.25%	6.50%	6.75%	7.00%
General Motors	92,243	6.75%	139,443	131,395	123,828	116,714	110,023	103,731	97,812	92,243	87,003
Intl. Business Machines	64,056	6.75%	96,833	91,244	85,989	81,049	76,403	72,033	67,923	64,056	60,417
Ford Motor	57,851	6.75%	87,453	82,405	77,660	73,198	69,002	65,056	61,343	57,851	54,565
Verizon Communications	37,908	6.75%	57,305	53,998	50,888	47,964	45,215	42,629	40,196	37,908	35,755
General Electric	33,266	6.75%	50,288	47,385	44,657	42,091	39,678	37,409	35,274	33,266	31,376
Boeing	35,971	6.50%	51,281	48,321	45,539	42,922	40,462	38,148	35,971	33,923	31,996
Lucent Technologies	30,312	6.50%	43,214	40,719	38,375	36,170	34,096	32,146	30,312	28,586	26,963
SBC Communications	26,148	6.75%	39,528	37,246	35,101	33,085	31,188	29,404	27,727	26,148	24,663
Northrop Grumman	21,524	6.50%	30,685	28,914	27,249	25,683	24,211	22,827	21,524	20,299	19,146
Lockheed Martin	21,918	6.75%	33,133	31,221	29,423	27,732	26,143	24,648	23,241	21,918	20,673
AT&T	14,985	6.50%	21,363	20,130	18,971	17,881	16,856	15,892	14,985	14,132	13,329
DuPont de Nemours (E.I.)	19,555	6.75%	29,561	27,855	26,251	24,743	23,324	21,990	20,736	19,555	18,444
BellSouth	11,386	7.75%	21,731	20,476	19,297	18,188	17,146	16,165	15,243	14,375	13,558
Exxon Mobil	22,682	6.75%	34,288	32,309	30,449	28,699	27,054	25,507	24,051	22,682	21,394
Honeywell Intl.	11,660	6.75%	17,626	16,609	15,653	14,753	13,907	13,112	12,364	11,660	10,998
Citigroup	10,514	6.75%	15,894	14,977	14,114	13,303	12,541	11,823	11,149	10,514	9,917
Altria	13,076	6.50%	18,642	17,566	16,554	15,603	14,709	13,867	13,076	12,332	11,631
United Technologies	13,925	6.60%	20,323	19,150	18,047	17,010	16,035	15,118	14,256	13,444	12,680
Dow Chemical	12,097	6.75%	18,287	17,231	16,239	15,306	14,429	13,604	12,827	12,097	11,410
Raytheon	11,979	7.00%	19,199	18,091	17,049	16,070	15,148	14,282	13,467	12,700	11,979
Minnesota Mining & Mfg.	10,093	6.75%	15,258	14,377	13,549	12,771	12,038	11,350	10,702	10,093	9,520
Prudential Financial	7,570	6.50%	10,792	10,169	9,584	9,033	8,515	8,028	7,570	7,139	6,734
Eastman Kodak	8,807	6.50%	12,556	11,831	11,150	10,509	9,907	9,340	8,807	8,306	7,834
Alcoa	9,360	6.75%	14,149	13,333	12,565	11,843	11,164	10,526	9,925	9,360	8,828
Bank of America Corp.	8,279	6.75%	12,515	11,793	11,114	10,475	9,875	9,310	8,779	8,279	7,809
Caterpillar	9,361	7.00%	15,003	14,137	13,323	12,558	11,838	11,161	10,524	9,925	9,361
Delta Air Lines	11,682	6.75%	17,660	16,640	15,682	14,781	13,934	13,137	12,387	11,682	11,018
United Parcel Service	6,670	6.75%	10,083	9,501	8,954	8,439	7,956	7,501	7,073	6,670	6,291
PG&E Corp.	6,781	6.75%	10,251	9,659	9,103	8,580	8,088	7,625	7,190	6,781	6,396
Xerox	7,931	6.20%	10,537	9,929	9,357	8,819	8,314	7,838	7,391	6,970	6,574
Consolidated Edison	6,434	6.75%	9,726	9,165	8,637	8,141	7,674	7,235	6,822	6,434	6,069
Delphi	9,712	6.75%	14,682	13,834	13,037	12,288	11,584	10,922	10,298	9,712	9,160
International Paper	7,111	6.50%	10,138	9,553	9,002	8,485	7,999	7,541	7,111	6,706	6,325
Pfizer	8,012	6.90%	12,544	11,820	11,140	10,500	9,898	9,332	8,799	8,298	7,827
J.P. Morgan Chase	5,570	6.50%	7,941	7,482	7,052	6,646	6,265	5,907	5,570	5,253	4,955
General Dynamics	5,599	7.00%	8,974	8,456	7,969	7,511	7,080	6,675	6,295	5,936	5,599
Hewlett-Packard	7,785	6.80%	11,907	11,220	10,574	9,966	9,395	8,858	8,352	7,877	7,429
Marsh & McLennan	5,969	6.75%	9,023	8,502	8,013	7,552	7,120	6,712	6,329	5,969	5,630
ChevronTexaco	7,471	6.80%	11,427	10,767	10,147	9,564	9,016	8,500	8,015	7,559	7,130
Johnson & Johnson	6,051	6.75%	9,147	8,619	8,123	7,656	7,217	6,805	6,416	6,051	5,707
Southern	4,094	6.50%	5,837	5,500	5,183	4,885	4,605	4,342	4,094	3,861	3,642
Unisys	5,442	6.75%	8,227	7,752	7,305	6,886	6,491	6,120	5,771	5,442	5,133
Viacom	5,577	6.47%	7,895	7,439	7,011	6,608	6,229	5,873	5,538	5,223	4,926
MetLife	4,785	6.75%	7,233	6,816	6,423	6,054	5,707	5,381	5,074	4,785	4,513
Textron	4,342	6.75%	6,564	6,185	5,829	5,494	5,179	4,883	4,604	4,342	4,095
Electronic Data Systems	5,154	6.40%	7,177	6,763	6,373	6,007	5,663	5,339	5,034	4,748	4,478
NWA	7,638	6.75%	11,546	10,880	10,253	9,664	9,110	8,589	8,099	7,638	7,204
PepsiCo	4,324	6.70%	6,460	6,088	5,737	5,407	5,097	4,806	4,532	4,274	4,031
Wachovia Corp.	4,007	6.75%	6,057	5,708	5,379	5,070	4,779	4,506	4,249	4,007	3,779
Kimberly-Clark	4,393	6.62%	6,442	6,070	5,720	5,392	5,083	4,792	4,518	4,261	4,019
Bristol-Myers Squibb	4,062	6.75%	6,141	5,786	5,453	5,140	4,845	4,568	4,307	4,062	3,831

Source: Palladian Research, 2003

Exhibit 4 Cont.

Company	2002 Projected Benefit Obligation	Current Discount Rate	5.00%	5.25%	5.50%	5.75%	6.00%	6.25%	6.50%	6.75%	7.00%
Eli Lilly	3,941	6.80%	6,028	5,680	5,353	5,045	4,756	4,484	4,228	3,987	3,761
Georgia-Pacific	4,117	6.50%	5,869	5,531	5,212	4,913	4,631	4,366	4,117	3,883	3,662
Merck	4,410	6.50%	6,287	5,924	5,583	5,262	4,961	4,677	4,410	4,159	3,923
Wells Fargo	3,243	7.00%	5,198	4,898	4,616	4,350	4,101	3,866	3,646	3,438	3,243
Dominion Resources	2,801	6.75%	4,234	3,990	3,760	3,544	3,341	3,150	2,970	2,801	2,642
Aetna	3,946	6.75%	5,965	5,621	5,297	4,993	4,707	4,437	4,184	3,946	3,722
FirstEnergy	3,866	6.75%	5,844	5,507	5,190	4,892	4,611	4,347	4,099	3,866	3,646
Loews	3,118	6.80%	4,769	4,494	4,235	3,992	3,763	3,548	3,345	3,155	2,976
American Electric Power	3,583	6.75%	5,416	5,104	4,810	4,534	4,274	4,029	3,799	3,583	3,379
Merrill Lynch	2,425	6.20%	3,222	3,036	2,861	2,697	2,542	2,397	2,260	2,131	2,010
ITT Industries	4,059	6.44%	5,706	5,376	5,067	4,776	4,502	4,244	4,002	3,774	3,560
MeadWestvaco	2,441	6.50%	3,480	3,279	3,090	2,913	2,746	2,589	2,441	2,302	2,171
Xcel Energy	2,506	6.75%	3,788	3,570	3,364	3,171	2,989	2,818	2,657	2,506	2,364
Berkshire Hathaway	2,866	6.30%	3,898	3,673	3,462	3,263	3,076	2,900	2,734	2,579	2,432
Bank One Corp.	2,419	6.50%	3,449	3,250	3,062	2,886	2,721	2,565	2,419	2,281	2,152
Sprint	3,536	7.50%	6,368	6,000	5,655	5,330	5,024	4,737	4,467	4,212	3,973
Motorola	3,957	6.75%	5,982	5,637	5,312	5,007	4,720	4,450	4,196	3,957	3,732
Duke Energy	3,005	6.75%	4,543	4,280	4,034	3,802	3,584	3,379	3,186	3,005	2,834
Abbott Laboratories	3,748	6.75%	5,666	5,339	5,031	4,742	4,470	4,215	3,974	3,748	3,535
ConocoPhillips	4,580	6.75%	6,924	6,524	6,148	5,795	5,463	5,150	4,856	4,580	4,320
American Intl. Group	3,217	5.52%	3,640	3,430	3,232	3,047	2,872	2,708	2,553	2,408	2,271
Sears Roebuck	3,142	7.00%	5,036	4,745	4,472	4,215	3,973	3,746	3,532	3,331	3,142
El Paso	2,088	6.75%	3,156	2,974	2,803	2,642	2,490	2,348	2,214	2,088	1,969
Cigna	3,427	6.75%	5,181	4,882	4,600	4,336	4,088	3,854	3,634	3,427	3,232
FleetBoston	2,217	6.50%	3,161	2,978	2,807	2,645	2,494	2,351	2,217	2,091	1,972
Anheuser-Busch	2,324	6.75%	3,513	3,310	3,120	2,941	2,772	2,613	2,464	2,324	2,192
TXU	2,019	6.75%	3,052	2,876	2,710	2,555	2,408	2,270	2,141	2,019	1,904
Safeway	1,519	6.50%	2,166	2,041	1,923	1,813	1,709	1,611	1,519	1,433	1,351
ConAgra	1,709	7.50%	3,078	2,900	2,733	2,576	2,428	2,289	2,159	2,036	1,920
Hartford Fin. Services	2,588	6.50%	3,690	3,477	3,276	3,088	2,911	2,745	2,588	2,441	2,302
Coca-Cola	2,182	6.25%	2,933	2,764	2,605	2,455	2,314	2,182	2,057	1,940	1,830
American Express	1,845	6.20%	2,451	2,310	2,177	2,052	1,934	1,823	1,719	1,621	1,529
Procter & Gamble	2,970	5.60%	3,425	3,227	3,041	2,866	2,702	2,548	2,402	2,265	2,137
Morgan Stanley	1,721	6.75%	2,602	2,451	2,310	2,178	2,053	1,935	1,825	1,721	1,623
Kroger	1,357	7.25%	2,306	2,172	2,047	1,930	1,819	1,715	1,617	1,525	1,439
AOL Time Warner	2,014	6.75%	3,045	2,869	2,704	2,548	2,402	2,265	2,136	2,014	1,900
Washington Mutual	1,104	6.50%	1,574	1,483	1,398	1,317	1,242	1,171	1,104	1,041	982
Coca-Cola Enterprises	1,680	6.80%	2,570	2,421	2,282	2,151	2,027	1,911	1,802	1,700	1,603
Target	1,067	7.25%	1,813	1,708	1,610	1,517	1,430	1,349	1,272	1,199	1,131
Visteon	1,717	6.75%	2,596	2,446	2,305	2,172	2,048	1,931	1,821	1,717	1,619
Marathon Oil	1,286	6.50%	1,833	1,728	1,628	1,535	1,447	1,364	1,286	1,213	1,144
Archer Daniels Midland	913	6.70%	1,364	1,285	1,211	1,142	1,076	1,015	957	902	851
Lehman Brothers Hldgs.	644	6.75%	974	917	865	815	768	724	683	644	607
Albertson's	567	6.75%	857	808	761	717	676	638	601	567	535
Sysco	709	7.25%	1,205	1,135	1,070	1,008	950	896	845	797	752
Supervalu	467	7.25%	793	748	705	664	626	590	557	525	495
Valero Energy	717	6.50%	1,022	963	908	856	807	760	717	676	638
Goldman Sachs Group	407	6.75%	615	580	546	515	485	458	432	407	384
McKesson	332	7.25%	564	532	501	472	445	420	396	373	352

Source: Palladian Research, 2003

Exhibit 5: Asset Mix of 100 Largest Pension Funds

Company	Domestic Stocks	Domestic Fixed Income	Foreign Stocks	Foreign Fixed Income	Private Equity	Real Estate	Other*	2002 Assumed Rate of Return
General Motors	36.0%	22.0%	20.0%	3.0%	4.0%	7.0%	8.0%	10.00%
Ford Motor	n/a	n/a	n/a	n/a	n/a	n/a	n/a	8.75%
Exxon Mobil	43.0%	26.0%	23.0%	n/a	8.0%	n/a	n/a	9.50%
Boeing	n/a	n/a	n/a	n/a	n/a	n/a	n/a	9.00%
Intl. Business Machines	33.6%	30.0%	19.6%	4.0%	8.3%	4.5%	n/a	9.50%
Delta Air Lines	35.0%	24.5%	16.0%	0.5%	12.0%	8.0%	4.0%	9.00%
DuPont de Nemours (E.I.)	37.0%	20.0%	22.0%	4.0%	9.0%	5.0%	3.0%	9.50%
Lockheed Martin	42.0%	29.0%	14.0%	2.0%	3.0%	n/a	10.0%	9.50%
Delphi	n/a	n/a	n/a	n/a	n/a	n/a	n/a	10.00%
Northwest Airlines	42.0%	18.0%	21.0%	2.0%	13.0%	1.0%	4.0%	10.50%
United Technologies	38.0%	28.0%	21.0%	2.0%	6.0%	4.0%	1.0%	9.20%
Altria	64.0%	24.0%	n/a	n/a	3.0%	n/a	9.0%	9.00%
Northrop Grumman	n/a	n/a	n/a	n/a	n/a	n/a	n/a	9.00%
Raytheon	58.0%	26.0%	8.0%	n/a	1.0%	2.0%	5.0%	9.50%
Hewlett-Packard	57.0%	14.0%	9.0%	6.0%	12.0%	1.0%	1.0%	8.50%
ChevronTexaco	28.0%	33.0%	16.0%	n/a	2.0%	16.0%	5.0%	7.80%
Pfizer	42.0%	23.0%	12.0%	n/a	14.0%	1.0%	9.0%	10.00%
Dow Chemical	44.0%	34.0%	10.0%	2.0%	3.0%	1.0%	5.0%	9.25%
ConocoPhillips	n/a	n/a	n/a	n/a	n/a	n/a	n/a	7.05%
Minnesota Mining & Mfg.	40.0%	30.0%	13.0%	n/a	12.0%	3.0%	2.0%	9.00%
Xerox	n/a	n/a	n/a	n/a	n/a	n/a	n/a	8.80%
Caterpillar	38.0%	26.0%	18.0%	n/a	n/a	1.0%	17.0%	9.80%
Alcoa	40.0%	45.0%	3.0%	n/a	4.0%	5.0%	3.0%	9.50%
Lucent Technologies	n/a	n/a	n/a	n/a	n/a	n/a	n/a	9.00%
Procter & Gamble	50.0%	34.0%	15.0%	n/a	n/a	n/a	1.0%	8.60%
International Paper	53.0%	33.0%	n/a	n/a	n/a	n/a	14.0%	9.25%
Motorola	58.0%	25.0%	15.0%	n/a	n/a	n/a	2.0%	8.50%
Honeywell Intl.	n/a	n/a	n/a	n/a	n/a	n/a	n/a	10.00%
Electronic Data Systems	49.0%	12.0%	25.0%	n/a	13.0%	1.0%	0.2%	9.60%
Cigna	47.0%	23.0%	15.0%	n/a	0.1%	13.0%	2.0%	7.50%
Abbott Laboratories	51.0%	40.0%	9.0%	n/a	n/a	n/a	n/a	8.75%
Johnson & Johnson	39.0%	27.0%	17.0%	n/a	2.0%	0.0%	15.0%	9.00%
Viacom	13.0%	73.0%	5.0%	n/a	n/a	n/a	9.0%	7.30%
ITT Industries	52.0%	26.0%	16.0%	n/a	6.0%	n/a	n/a	8.86%
Merck	57.0%	16.0%	22.0%	n/a	n/a	4.0%	1.0%	10.00%
Eastman Kodak	28.0%	23.0%	19.0%	3.0%	11.0%	6.0%	10.0%	9.50%
SBC Communications	47.0%	33.0%	13.0%	n/a	5.0%	1.0%	1.0%	9.50%
Hartford Fin. Services	n/a	n/a	n/a	n/a	n/a	n/a	n/a	9.75%
Sprint	52.0%	27.0%	17.0%	n/a	n/a	4.0%	n/a	9.50%
Sears Roebuck	n/a	n/a	n/a	n/a	n/a	n/a	n/a	9.00%
American Intl. Group	n/a	n/a	n/a	n/a	n/a	n/a	n/a	7.96%
Marsh & McLennan	n/a	n/a	n/a	n/a	n/a	n/a	n/a	8.75%
Aetna	53.0%	25.0%	13.0%	n/a	n/a	8.0%	1.0%	9.00%
Kimberly-Clark	60.0%	20.0%	9.0%	n/a	n/a	n/a	11.0%	8.42%
FirstEnergy	n/a	n/a	n/a	n/a	n/a	n/a	n/a	9.00%

Source: Pensions and Investments and Palladian Research, 2003

Exhibit 5 Cont.

Company	Domestic Stocks	Domestic Fixed Income	Foreign Stocks	Foreign Fixed Income	Private Equity	Real Estate	Other*	2002 Assumed Rate of Return
Georgia-Pacific	56.0%	23.0%	20.0%	n/a	n/a	n/a	1.0%	8.50%
Unisys	38.0%	23.0%	22.0%	7.0%	7.0%	3.0%	1.0%	9.50%
Bristol-Myers Squibb	n/a	n/a	n/a	n/a	n/a	n/a	n/a	9.00%
American Electric Power	57.0%	27.0%	12.0%	n/a	2.0%	1.0%	1.0%	9.00%
PepsiCo	n/a	n/a	n/a	n/a	n/a	n/a	n/a	9.10%
Eli Lilly	32.0%	10.0%	33.0%	n/a	15.0%	n/a	10.0%	9.26%
AOL Time Warner	55.0%	21.0%	11.0%	n/a	n/a	n/a	13.0%	9.00%
Bank of America Corp.	48.0%	28.0%	10.0%	n/a	2.0%	2.0%	10.0%	8.50%
MetLife	35.0%	43.0%	4.0%	4.0%	2.0%	12.0%	n/a	7.00%
Coca-Cola	n/a	n/a	n/a	n/a	n/a	n/a	n/a	8.25%
Visteon	n/a	n/a	n/a	n/a	n/a	n/a	n/a	9.50%
Consolidated Edison	42.0%	39.0%	13.0%	2.0%	n/a	4.0%	n/a	9.20%
Duke Energy	44.0%	36.0%	19.0%	n/a	n/a	n/a	1.0%	9.25%
Coca-Cola Enterprises	n/a	n/a	n/a	n/a	n/a	n/a	n/a	9.20%
PG&E Corp.	38.0%	42.0%	20.0%	n/a	n/a	n/a	n/a	8.10%
Anheuser-Busch	n/a	n/a	n/a	n/a	n/a	n/a	n/a	9.25%
Wachovia Corp.	n/a	n/a	n/a	n/a	n/a	n/a	n/a	10.00%
Marathon Oil	n/a	n/a	n/a	n/a	n/a	n/a	n/a	9.00%
American Express	n/a	n/a	n/a	n/a	n/a	n/a	n/a	9.30%
Morgan Stanley	n/a	n/a	n/a	n/a	n/a	n/a	n/a	8.50%
TXU	n/a	n/a	n/a	n/a	n/a	n/a	n/a	8.50%
Citigroup	41.0%	30.0%	8.0%	3.0%	2.0%	6.0%	11.0%	8.00%
Valero Energy	n/a	n/a	n/a	n/a	n/a	n/a	n/a	8.50%
Textron	36.0%	33.0%	10.0%	n/a	7.0%	9.0%	4.0%	8.90%
Berkshire Hathaway	n/a	n/a	n/a	n/a	n/a	n/a	n/a	6.50%
FleetBoston	n/a	n/a	n/a	n/a	n/a	n/a	n/a	9.25%
Loews	n/a	n/a	n/a	n/a	n/a	n/a	n/a	7.75%
General Dynamics	27.0%	73.0%	n/a	n/a	n/a	n/a	n/a	8.34%
Sysco	n/a	n/a	n/a	n/a	n/a	n/a	n/a	9.50%
Archer Daniels Midland	n/a	n/a	n/a	n/a	n/a	n/a	n/a	8.30%
United Parcel Service	34.0%	17.0%	19.0%	n/a	4.0%	4.0%	22.0%	9.42%
J.P. Morgan Chase	n/a	n/a	n/a	n/a	n/a	n/a	n/a	8.00%
ConAgra	n/a	n/a	n/a	n/a	n/a	n/a	n/a	9.25%
Wells Fargo	40.0%	39.0%	13.0%	1.0%	2.0%	3.0%	2.0%	9.00%
Albertson's	51.0%	22.0%	16.0%	n/a	n/a	1.0%	10.0%	9.00%
Kroger	n/a	n/a	n/a	n/a	n/a	n/a	n/a	9.50%
Supervalu	n/a	n/a	n/a	n/a	n/a	n/a	n/a	10.00%
Washington Mutual	n/a	n/a	n/a	n/a	n/a	n/a	n/a	8.00%
Target	n/a	n/a	n/a	n/a	n/a	n/a	n/a	9.00%
Goldman Sachs Group	n/a	n/a	n/a	n/a	n/a	n/a	n/a	8.50%
El Paso	n/a	n/a	n/a	n/a	n/a	n/a	n/a	8.80%
Lehman Brothers Hldgs.	n/a	n/a	n/a	n/a	n/a	n/a	n/a	9.00%
McKesson	n/a	n/a	n/a	n/a	n/a	n/a	n/a	9.75%
Safeway	n/a	n/a	n/a	n/a	n/a	n/a	n/a	8.50%
Bank One Corp.	42.0%	41.0%	8.0%	n/a	6.0%	n/a	3.0%	8.50%
Xcel Energy	n/a	n/a	n/a	n/a	n/a	n/a	n/a	9.50%
Dominion Resources	45.0%	29.0%	6.0%	n/a	1.0%	7.0%	12.0%	9.50%
MeadWestvaco	n/a	n/a	n/a	n/a	n/a	n/a	n/a	8.50%
Merrill Lynch	n/a	n/a	n/a	n/a	n/a	n/a	n/a	6.00%
Prudential Financial	n/a	n/a	n/a	n/a	n/a	n/a	n/a	9.50%
Southern	31.0%	12.0%	16.0%	17.0%	10.0%	9.0%	5.0%	8.50%
AT&T	36.0%	22.0%	19.0%	n/a	12.0%	10.0%	1.0%	9.00%

Source: Pensions and Investments and Palladian Research, 2003

Exhibit 6: 100 Largest Corporate Pension Funds Valuation Analysis

Category I >100%

Company	Funded %	Mkt Cap/Sales	P/BV	2003E P/E	Div Yield
BellSouth	117.1%	1.8x	2.4x	13.1x	3.6%
General Electric	113.7%	2.2x	4.5x	18.2x	2.6%
Merrill Lynch	113.0%	2.0x	1.6x	14.7x	1.6%
Southern	112.4%	1.9x	2.3x	15.8x	4.8%
MeadWestvaco	111.9%	0.6x	1.0x	65.9x	3.9%
Dominion Resources	109.7%	1.6x	1.8x	12.3x	4.4%
Xcel Energy	105.4%	0.5x	1.2x	10.9x	5.6%
Prudential Financial	104.5%	0.9x	0.8x	13.8x	0.0%
McKesson	104.5%	0.1x	1.6x	14.2x	1.0%
AT&T	104.1%	0.3x	1.0x	8.7x	4.6%
Safeway	103.5%	0.2x	2.0x	7.5x	0.0%
Bank One Corp.	102.6%	2.4x	1.8x	12.1x	2.4%
Verizon Communications	102.0%	1.5x	2.8x	13.8x	4.3%
Average		**1.2x**	**1.9x**	**12.9x**	**3.0%**

p/e average excludes meadwestvaco

Category II 90% - 100%

Company	Funded %	Mkt Cap /Sales	P/BV	2003E P/E	Div Yield
El Paso	99.2%	0.2x	0.5x	8.6x	2.2%
Lehman Brothers Hldgs.	97.7%	0.9x	1.8x	15.0x	0.8%
United Parcel Service	97.4%	2.1x	5.4x	26.1x	1.4%
J.P. Morgan Chase	96.9%	1.7x	1.4x	12.5x	4.9%
Target	96.8%	0.7x	3.1x	16.6x	0.7%
Washington Mutual	96.2%	1.9x	1.8x	9.0x	3.1%
Citigroup	96.0%	2.3x	2.3x	12.1x	2.1%
SBC Communications	95.6%	1.7x	2.2x	15.0x	5.1%
Wells Fargo	95.3%	2.8x	2.6x	13.2x	2.5%
General Dynamics	95.2%	1.0x	2.4x	12.8x	2.1%
Lucent Technologies	94.3%	0.7x	nm	nm	0.0%
Kroger	94.0%	0.2x	2.8x	8.7x	0.0%
Textron	92.3%	0.4x	1.2x	12.3x	4.5%
Goldman Sachs Group	91.6%	1.5x	1.8x	16.3x	0.6%
PG&E Corp.	91.3%	0.3x	1.7x	8.1x	0.0%
Loews	91.1%	0.4x	0.7x	6.8x	1.5%
Bank of America Corp.	90.8%	2.4x	2.2x	11.8x	3.5%
Intl. Business Machines	90.0%	1.7x	5.9x	19.8x	0.7%
Average		**1.3x**	**2.3x**	**13.2x**	**2.0%**

Source: Company Information and Palladian Research, 2003

Exhibit 6 Cont.

Category III 80% - 90%					
Company	**Funded %**	**Mkt Cap/Sales**	**P/BV**	**2003E P/E**	**Div Yield**
ConAgra	89.8%	0.5x	2.4x	13.2x	4.7%
Consolidated Edison	89.5%	0.9x	1.4x	13.0x	5.8%
Berkshire Hathaway	88.8%	2.5x	1.7x	25.1x	0.0%
Honeywell Intl.	87.3%	0.9x	2.1x	15.3x	3.3%
FleetBoston	87.1%	2.2x	1.7x	11.2x	5.3%
Wachovia Corp.	86.8%	2.1x	1.6x	12.3x	2.8%
Eastman Kodak	86.2%	0.7x	2.9x	12.5x	6.1%
Northrop Grumman	86.1%	1.2x	1.1x	22.2x	1.9%
Supervalu	84.8%	0.1x	1.1x	8.7x	3.5%
MetLife	84.7%	0.6x	1.1x	10.2x	0.0%
Unisys	83.6%	0.6x	3.6x	13.4x	0.0%
Marsh & McLennan	83.1%	2.3x	4.9x	17.2x	2.4%
Albertson's	82.2%	0.2x	1.4x	9.8x	3.9%
PepsiCo	81.8%	2.9x	7.7x	19.6x	1.4%
Lockheed Martin	80.6%	0.8x	3.8x	21.7x	1.0%
Alcoa	80.5%	0.9x	1.8x	20.7x	2.7%
Bristol-Myers Squibb	80.4%	2.6x	5.2x	16.0x	4.7%
Boeing	80.2%	0.5x	3.0x	15.3x	2.5%
Eli Lilly	80.2%	6.2x	8.1x	25.0x	2.1%
Average		**1.5x**	**3.0x**	**15.9x**	**2.8%**

Category IV 70% - 80%					
Company	**Funded %**	**Mkt Cap/Sales**	**P/BV**	**2003E P/E**	**Div Yield**
Caterpillar	79.8%	0.9x	3.2x	22.9x	2.7%
Minnesota Mining & Mfg.	79.1%	2.9x	7.6x	21.6x	2.1%
Dow Chemical	79.0%	1.0x	3.7x	33.4x	4.3%
Duke Energy	79.0%	0.4x	1.0x	13.1x	6.6%
TXU	79.0%	0.3x	1.2x	10.0x	2.6%
International Paper	78.5%	0.7x	2.3x	32.1x	2.8%
American Electric Power	78.0%	0.3x	1.2x	11.9x	9.5%
Johnson & Johnson	77.8%	4.5x	7.4x	21.5x	1.5%
Kimberly-Clark	77.6%	1.8x	4.5x	14.9x	2.8%
DuPont de Nemours (E.I.)	77.3%	1.7x	4.6x	23.9x	3.4%
Altria	77.1%	0.8x	3.3x	6.7x	8.3%
Archer Daniels Midland	76.6%	0.2x	1.0x	16.2x	2.2%
Raytheon	76.3%	0.7x	1.4x	17.3x	2.7%
Georgia-Pacific	76.3%	0.2x	0.8x	20.2x	3.3%
Viacom	76.2%	0.2x	0.1x	30.4x	0.0%
Xerox	75.2%	0.4x	4.0x	20.7x	0.0%
FirstEnergy	74.7%	0.8x	1.4x	10.8x	4.5%
Morgan Stanley	74.7%	2.5x	2.0x	14.4x	2.0%
Aetna	74.6%	0.4x	1.0x	11.1x	0.0%
Anheuser-Busch	74.5%	2.9x	15.5x	20.2x	1.6%
American Express	73.3%	2.0x	3.4x	16.9x	0.9%
Ford Motor	73.0%	0.1x	3.3x	15.0x	4.0%
Electronic Data Systems	72.5%	0.4x	1.1x	11.2x	3.6%
General Motors	72.4%	0.1x	2.9x	7.9x	5.6%
United Technologies	72.0%	1.0x	3.3x	13.4x	1.8%
Merck	70.4%	2.4x	7.0x	17.1x	2.5%
Average		**1.1x**	**3.4x**	**17.5x**	**3.1%**

Source: Company Information and Palladian Research, 2003

Exhibit 6 Cont.

Category V <70%					
Company	**Funded %**	**Mkt Cap/Sales**	**P/BV**	**2003E P/E**	**Div Yield**
Sprint	69.2%	n/a	n/a	n/a	n/a
Pfizer	68.1%	5.4x	9.4x	17.4x	2.0%
American Intl. Group	67.6%	2.1x	2.4x	15.2x	0.3%
ITT Industries	67.4%	1.0x	4.2x	15.1x	1.1%
Sears Roebuck	66.8%	0.2x	1.2x	6.1x	3.4%
Coca-Cola	66.5%	4.9x	8.0x	22.1x	2.2%
Hewlett-Packard	65.8%	0.8x	1.3x	14.2x	2.0%
ChevronTexaco	64.7%	0.7x	2.1x	11.1x	4.4%
Sysco	64.4%	0.7x	8.4x	24.8x	1.6%
Abbott Laboratories	63.3%	3.4x	5.8x	18.3x	2.5%
Coca-Cola Enterprises	62.6%	0.5x	2.5x	15.9x	0.8%
AOL Time Warner	61.8%	1.4x	1.1x	28.4x	0.0%
Motorola	61.6%	0.7x	1.6x	25.3x	2.0%
Marathon Oil	59.8%	0.2x	1.4x	7.4x	4.1%
Cigna	59.3%	0.3x	1.5x	10.5x	2.7%
Visteon	59.0%	0.04x	0.3x	nm	3.5%
Delta Air Lines	58.0%	0.1x	1.7x	nm	0.8%
Delphi	57.9%	0.2x	3.2x	9.8x	3.4%
Hartford Fin. Services	57.5%	0.6x	0.9x	9.1x	2.7%
Valero Energy	53.1%	0.1x	0.9x	6.8x	1.1%
Exxon Mobil	50.0%	1.3x	3.1x	15.9x	2.6%
ConocoPhillips	49.3%	0.6x	1.2x	9.0x	3.2%
NWA	48.3%	0.1x	nm	nm	0.0%
Procter & Gamble	44.8%	2.8x	7.8x	22.1x	1.8%
Average		**1.2x**	**3.2x**	**15.2x**	**2.1%**

Source: Company Information and Palladian Research, 2003

Exhibit 7: Ford Financials

Ford Motor Company

Annual Income Statement

($ in millions)	2000	2001	2002
Sales	140,777	130,827	134,425
Revenues and other interest income	29,802	30,692	28,995
Total Sales and revenues	170,579	161,519	163,420
Cost of sales	125,651	128,417	125,137
Selling, administrative and other expenses	23,721	25,195	25,150
Interest expense	10,860	10,817	8,824
Provision for credit losses	1,957	3,661	3,276
Total costs and expenses	162,189	168,090	162,387
Equity in net income/(loss) of affiliated companies	(91)	(851)	(80)
Income/(loss) before income taxes	8,299	(7,422)	953
Provision for/(benefit from) income taxes	2,720	(2,097)	302
Income/(loss) before minority interests	5,579	(5,325)	651
Minority interests in net income/(loss) of subsidiaries	123	24	367
Income/(loss) from continuing operations	5,456	(5,349)	284
Income/(loss) from discontinued /held-for-sale operations	263	(104)	(63)
Loss on disposal of discontinued /held-for-sale operations	(2,252)	-	199
Cumulative effect of change in accounting principle	-	-	(1,002)
Net Income/(loss)	3,467	5,453	(980)
Average number of shares of Common and Class B stock	1,483	1,820	1,819
Amounts per share of Common and Class B stock			
Income/(loss) from continuing operations	$ 3.69	$ (2.96)	$ 0.15
Income/(loss) from discontinued/held-for-sale operations	$ 0.18	$ (0.06)	$ (0.04)
Loss on disposal of discontinued/held-for-sale operations	$ (1.53)	$ -	$ (0.11)
Cumulative effect of change in accounting principle	$ -	$ -	$ (0.55)
Net income/(loss)	$ 2.34	$ (3.02)	$ (0.55)
Diluted income/(loss)			
Income/(loss) from continuing operations	$ 3.62	$ (2.96)	$ 0.15
Income/(loss) from discontinued/held-for-sale operations	$ 0.17	$ (0.06)	$ (0.03)
Loss on disposal of discontinued/held-for-sale operations	$ (1.49)	$ -	$ (0.11)
Cumulative effect of change in accounting principle	$ -	$ -	$ (0.55)
Net income/(loss)	$ 2.30	$ (3.02)	$ (0.54)
Cash dividends	$ 1.80	$ 1.05	$ 0.40

Source: Company Information and Palladian Research, 2003

Exhibit 7 Cont.

Ford Motor Company			
Consolidated Balance Sheet			
($ in millions)	2000	2001	2002
ASSETS			
Automotive			
Cash and cash equivalents	3,374	4,064	5,180
Marketable securities	13,116	10,949	17,464
Total cash and marketable securities	16,490	15,013	22,644
Receivables	4,685	2,181	2,065
Inventories	7,514	6,127	6,980
Other current assets	5,318	6,153	4,551
Current receivable from Financial Services	1,587	938	1,062
Total current assets	37,833	33,007	40,764
Equity in net assets of affiliated companies	2,949	2,450	2,470
Net property	37,508	33,022	36,364
Goodwill	-	5,213	4,805
Assets of discontinued and held-for-sale operations	-	368	98
Other assets	13,711	7,153	10,783
Total Automotive assets	95,343	88,319	107,790
Financial Services			
Cash and cash equivalents	1,477	3,133	7,070
Investments in securities	817	628	807
Finance receivables, net	125,164	110,190	97,030
Net investment in operating leases	46,593	45,388	40,055
Goodwill	-	1,042	752
Other assets	12,390	9,182	16,643
Receivable from Automotive	2,637	3,712	4,803
Total Financial Services assets	189,078	188,224	187,432
Total Assets	284,421	276,543	295,222
LIABILITIES AND STOCKHOLDERS' EQUITY			
Automotive			
Trade payables	15,075	15,620	14,606
Other payables	4,011	4,224	2,485
Accrued liabilities	23,515	24,295	27,644
Debt payable within one year	277	302	557
Total current liabilities	43,327	44,441	45,292
Long-term debt	11,769	13,467	13,607
Other liabilities	30,495	30,873	46,886
Payable to Financial Services	2,637	3,712	4,803
Total Automotive liabilities	88,581	92,980	111,029
Financial Services			
Payables	5,297	1,484	1,890
Debt	153,510	153,034	148,058
Deferred income taxes	8,677	9,686	11,644
Other liabilities and deferred income	7,486	9,165	9,448
Payable to Automotive	1,587	938	1,062
Total Financial Services liabilities	176,557	175,105	172,933
Stockholders' equity			
Capital stock			
Capital in excess of par value of stock	6,174	6,001	5,420
Accumulated other comprehensive loss	(3,432)	(5,913)	(6,531)
Treasury stock	-	(2,823)	(1,977)
Earnings retained for use in business	17,884	10,502	8,659
Total stockholders' equity	18,610	7,786	5,590
Total liabilities and stockholders' equity	284,421	276,543	295,222

Source: Company Information and Palladian Research, 2003

Exhibit 8: General Motors Financials

General Motors Corporation and Subsidiaries						
Annual Income Statement						
($ in millions)		**2000**		**2001**		**2002**
Total net sales and revenues		184,632		177,260		186,763
Cost of sales and other expenses		145,664		144,093		153,344
Selling, general, and administrative expenses		22,252		23,302		23,624
Interest expense		9,552		8,347		7,715
Total costs and expenses		177,468		175,742		184,683
Income before income taxes and minority interests		7,164		1,518		2,080
Income tax expense		2,393		768		533
Equity income (loss) and minority interests		(319)		(149)		189
Net income		4,452		601		1,736
Dividends on preference stocks		(110)		(99)		(47)
Earnings attributable to common stocks		4,342		502		1,689
Basic earnings (losses) per share attributable to common stocks						
Earnings per share attributable to $1-2/3 par value	$	6.80	$	1.78	$	3.37
Earnings per share attributable to Class H	$	0.56	$	(0.55)	$	(0.21)
Earnings (losses) per share attributable to common stocks assuming dilution						
Earnings per share attributable to $1-2/3 par value	$	6.68	$	1.77	$	3.35
Earnings per share attributable to Class H	$	0.55	$	(0.55)	$	(0.21)

Source: Company Information and Palladian Research, 2003

Exhibit 8 Cont.

General Motors Corporation and Subsidiaries			
Consolidated Balance Sheet			
($ in millions)	2000	2001	2002
ASSETS			
Automotive, Communications Services, and Other Operations			
Cash and cash equivalents	9,119	8,432	13,291
Marketable securities	1,161	790	2,174
Total cash and marketable securities	10,280	9,222	15,465
Accounts and notes receivable (less allowances)	5,835	5,406	5,861
Inventories (less allowances)	10,945	10,034	9,967
Equipment on operating leases (less accumulated depreciation)	5,699	4,524	5,305
Deferred income taxes and other current assets	8,388	7,877	11,273
Total current assets	41,147	37,063	47,871
Property - net	33,977	34,908	36,152
Other assets	32,243	17,274	7,323
Total Automotive, Communications Services, and Other Operations assets	133,345	130,210	143,760
Financing and Insurance Operations			
Cash and cash equivalents	1,165	10,123	8,158
Investments in securities	9,595	11,279	14,651
Finance receivables - net	92,415	109,211	134,647
Investment in leases and other receivables	36,752	33,382	35,517
Other assets	27,846	28,207	34,049
Total Financing and Insurance Operations assets	169,744	193,759	228,111
Total assets	303,100	323,969	371,871
LIABILITIES AND STOCKHOLDERS' EQUITY			
Automotive, Communications Services, and Other Operations			
Accounts payable (principally trade)	18,309	18,297	20,169
Loans payable	2,208	2,402	1,516
Accrued expenses	33,252	34,090	40,976
Net payable to Financing and Insurance Operations	1,971	1,557	1,089
Total current liabilities	55,740	56,346	63,750
Long-term debt	7,410	10,726	16,651
Postretirement benefits other than pensions	34,306	34,515	34,275
Pensions	3,480	10,790	22,709
Other liabilities and deferred income taxes	15,768	13,794	16,789
Total Automotive, Communications Services, and Other Operations liabilities	116,704	126,171	154,174
Financing and Insurance Operations			
Accounts payable	7,416	7,900	7,283
Debt	135,037	153,186	183,773
Other liabilities and deferred income taxes	12,922	16,259	18,993
Total Financing and Insurance Operations liabilities	155,375	177,345	210,049
Total liabilities	272,079	303,516	364,223
Class H common stock	88	88	96
(outstanding: 875,286,559; 958,284,272; and 877,386,595 shares)			
Capital surplus (principally additional paid-in capital)	21,020	21,519	21,583
Retained earnings	10,119	9,463	10,031
Subtotal	32,141	32,002	32,646
Accumulated foreign currency translation adjustments	(2,502)	(2,919)	(2,784)
Net unrealized losses on derivatives	-	(307)	(205)
Minimum pension liability adjustment	(45)	(9,581)	(23,215)
Accumulated other comprehensive loss	(1,966)	(12,295)	(25,832)
Total shareholders' equity	30,175	19,707	6,814
Total liabilities and stockholders' equity	303,100	323,969	371,871

Source: Company Information and Palladian Research, 2003