Center for American Progress

Testimony on the President's Proposal for Single-Employer Pension Funding Reform
before the U.S. House of Representatives' Committee on Ways and Means'
Subcommittee on Select Revenue Measures, March 08, 2005

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Securing Retirement Income Security Through Sensible Funding Rules

Thank you very much, Chairman Camp and ranking member McNulty, for inviting me here today to testify on proposed rule changes regarding single-employer defined benefit plans.

Retirement income security occupies much of the public policy debate these days. While most of the attention is focused on attempts to privatize Social Security, the security of defined benefit pension plans is also in the balance. Pensions have received a lot of attention recently since falling interest rates and stock prices left DB plans with fewer funds than they need to cover all promised benefits. In extreme cases, pension plans were terminated, leaving workers with substantially fewer benefits than they had expected and resulting in shortfalls at the Pension Benefit Guaranty Corporation (PBGC).

Public policy can address the problems plaguing defined benefit pension plans through sensible reforms. In considering these reforms it is important to keep the following goals in mind:

1. Maintain the security of pension benefits;
2. Promote and sustain sponsorship of defined benefit plans; and
3. Maintain the ability of the PBGC to support DB plans.

The administration recently proposed a set of rule changes for single employer DB plans. Characteristic of the crucial aspects of this proposal is a greater tendency to link pension fund assets and liabilities to the market. Such a move would fail the goals for public policy reform. By increasing the volatility of pension funding, employers would have very strong incentives to terminate their existing pension plans, further lowering retirement income security for workers.

A closer look at pension funding and proposed rule changes shows the following:

- Current funding rules are counter-cyclical. Employers are required to contribute more to pension plans during bad economic times than during good times.

- The administration proposal would exacerbate the counter-cyclicality of pension funding and increase the uncertainty associated with pension plans. Employers would likely terminate their plans instead of absorbing the additional costs associated with attempts to reduce funding volatility by investing solely in bonds.

- Alternative funding rules could provide for greater leeway in averaging fluctuations in pension funding over the course of a business cycle and improve the outlook for pensions. This process is called “smoothing.”

- As a result of smoothing, the burden on the PBGC would be reduced through better-funded pension plans. Employers would benefit as pension funding would become less counter-cyclical, lowering the burden during bad economic times and increasing it during good economic times, when employers are best able to contribute to their pension plans.

Plan Sponsorship Linked to Counter-Cyclical Funding Volatility

Changes in the way pensions are regulated will inevitably affect employer behavior. Employers are mainly concerned with unpredictable demands for outlays for their pension plans (Hewitt, 2003) This is typically more important than other issues, such as simplifications to the rules. Changes in funding contributions arise, when the funding status of a plan changes. For instance, a deterioration of a plan's funding status would increase the financial demands on employers in two ways. For one, they would have to make additional contributions to their plans, as is discussed below, and second, they may have to pay higher insurance premiums to the PBGC. Typically, the size of additional contributions can easily dwarf the size of additional insurance premiums. The primary focus should thus be on the determinants of funding contributions. If changes in funding rules lead to more volatility in the funding status of pension plans and thus to increased uncertainty about employers' future obligations to their plans, employers would become more likely to terminate their plans than is currently the case.

In a defined benefit (DB) pension plan, the employee is guaranteed a fixed benefit upon retirement, usually based on years of service, age and either final earnings or a benefit multiplier. Accrued benefits for private sector DB plans are insured, up to certain limits, by the Pension Benefit Guaranty Corporation (PBGC), which is funded by insurance premiums from employers with DB pensions as well as investment income and assets from terminated pension plans.

Although DB pension coverage has declined for some time, millions of employees and their families still depend on this benefit. The share of private sector workers with a DB plan has declined from 39 percent in 1975 to 21 percent in 2004 (PWBA, 1998; BLS, 2004). By 2002, the last year for which data are available, more than 34 million beneficiaries could still expect to receive some benefits from DB pensions (PBGC, 2003).

The funding of a DB plan's liabilities (promised benefits) is usually the employer's responsibility. Up until 2000, many employers could not contribute more to their plans, as their pensions were well funded due to the strong stock market performance and rising interest rates. However, after 2000, pension funds faced large shortfalls and employers sponsoring them had to contribute large amounts to their pension plans. Many large firms with pension plans have faced persistent shortfalls. PBGC (2004) estimated that the combined shortfall of all single-employer DB plans as of September 2004 was $450 billion. Consequently, firms had to contribute new money to their plans. For instance, 90 percent of DB plans offered by companies included in the S&P 500 index showed a loss. When contributions rose, corporate earnings were often adversely affected, although some firms passed the additional costs on to consumers in the form of higher prices (Kristof, 2003). In extreme cases, the demand on employers' resources from the weak economy and pension plan underfunding contributed to corporate bankruptcies and plan terminations. The PBGC took over plans from Bethlehem Steel, LTV Steel, National Steel, TWA, U.S. Airways and Polaroid, among

others. All of these terminations were among the ten largest since 1974, totaling $8.5 billion in claims and covering 263,861 participants (PBGC, 2003).

Even though the PBGC insures benefits, it does so only within limits. By statute, PBGC's insurance is capped, currently at $45,600 per year for a retiree at age 65 under the agency's single-employer pension insurance program. This maximum, though, is reduced for early retirement benefits. Other reductions are taken for survivorship and disability benefits and recent benefit improvements. Beneficiaries can also not accrue further benefits after the plan has been terminated. Hence, a plan termination leaves workers with less retirement security than expected.

To discuss the magnitude of recent pension plan shortfalls, it is important to understand the mechanics of pension plan funding. A plan's funding status depends on how assets compare to current liabilities. Current liabilities are the sum of payments to current retirees and of benefits that workers have already earned. In earnings-based plans, future benefits are forecast given reasonable assumptions about life expectancy, inflation and other relevant demographic and economic variables. Based on these forecasts, pension plans determine how much in assets they need to fund benefits payable in the future. Thus, they assume how much interest they expect to earn on their assets. The higher this interest rate is, the fewer assets are needed today. It is in a plan sponsor's interest to assume a high interest rate since this would lower the amount of assets required to be set aside to pay benefits. To avoid abuse, regulators set a range of interest rates that pension plans can choose from in calculating current liability. Pension plans must choose an interest rate that is between 90 percent and 105 percent of the four-year weighted average of the 30-year Treasury bond yield.[1]

A pension plan's funding status is then determined by looking at the ratio of the plan's assets to its liabilities. Plans can choose a number of options to value their assets, although many large plans use fair market valuation. Assets are evaluated at prices for which the assets could be sold on the valuation date.

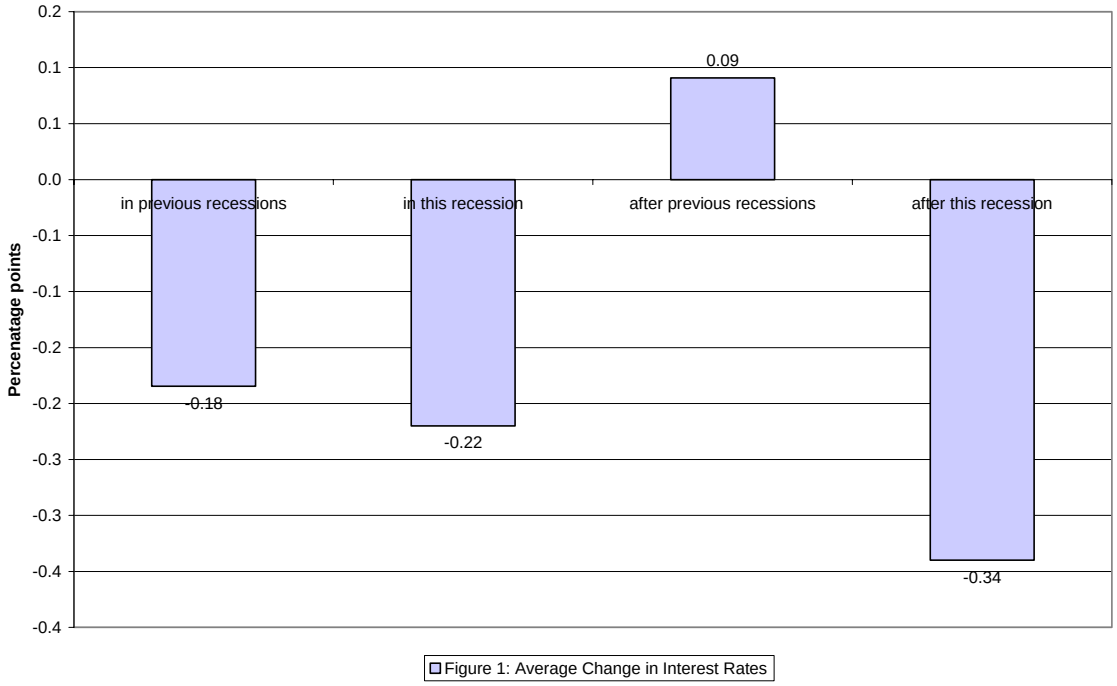
By the nature of funding rules, pension plan funding is tied to changes in interest rates and stock prices. The main problem is that both of these tend to decline around the time of a recession, when corporate earnings are also declining.[2] From 1927 to 2001, there were a total of 12 recessions. Only in one recession, from 1973 to 1975, did interest rates not decline. The stock market is a forward looking indicator. Typically, the stock market peaks about a year before a recession starts and continues to decline in a recession. On average, stock prices are about 7 percent lower in the year after a business cycle peaks than before. That is, pension plans are losing with their assets before and during a recession, which brings additional pressures due to lower corporate earnings and lower interest rates that translate into a higher valuation of a plan's liabilities.

[1] The Pension Funding Equity Act of 2004 required that plan sponsors use a discount rate between 90 percent and 100 percent of a 4-year weighted average of a blend of investment-grade corporate bond yields for plan years beginning after December 31, 2003, and before January 1, 2006. .

[2] Interest rates refer to the long-term treasury bond rate and total rates of return refer to the year-on-year change in the stock market plus the dividend yield. Stock market data are for the S&P500.

The recent recession posed a particular challenge since stock prices fell sharply and interest rates stayed lower, and lower longer, than in prior recessions (Weller and Baker, 2005). From the start of the recession in March 2001 to the end of 2002, the stock market fell by 25 percent. From its peak in August of 2000 to its low point in February 2003, the stock market lost 44 percent of its value. At the same time that the stock market sustained severe losses, interest rates declined more and stayed low for a longer period than on average in previous recessions (figure 1). In this recession, the treasury rate declined by 0.22 percentage points, slightly above the average of 0.19 percentage points for prior recessions. However, in the first year of a recovery, interest rates generally rise by 0.10 percentage points, whereas they fell by another 0.34 percentage points in this recovery. Thus, in this recovery employers did not see the usual help in funding their pensions that would come from rising interest rates.

Figure 1: Average Change in Interest Rates



The problem of falling asset prices and declining interest rates in the recent recession was further exacerbated by the fact that companies had not built up more reserves during the prior expansion. This can be traced back to two aspects of the current regulatory system. First, if a pension plan reaches a certain funding threshold, the employer either no longer has to contribute or has to contribute only minimal amounts. Second, there are regulatory disincentives to contribute more to a pension plan when it is already fully funded. If pension plans are fully funded, employers face excise taxes on their contributions to the tune of 50 percent. On top of that, they can no longer deduct their pension contributions from their tax liabilities. The contribution limit beyond which further contributions are discouraged by the tax code is 100 percent of current liabilities. Thus, largely due to beneficial financial market trends – rising interest rates and higher

stock prices – the average funding ratio of PBGC insured pension plans jumped from 116 percent in 1999 to 145 percent in 2000 (PBGC, 2003). However, for many plans, this reserve was insufficient to weather the crisis that followed as the stock market bubble burst and the liability discount rate sunk to and remained at historically low levels. In 2002, 74,138 new beneficiaries started receiving payments from PBGC, compared to 40,473 new beneficiaries in 2001 and only 11,091 in 2000 (PBGC, 2003).

Administration Proposal Will Exacerbate Funding Problems

The administration recently released its own proposal to reform funding rules, among other changes to the pension system (DOL, 2005). Funding burdens are already counter-cyclical, requiring employers who sponsor DB plans to contribute more during bad times than during good times. The administration's proposal could exacerbate this volatility in addition to the overall costs of some plans. First, the current rules require the use of a 4-year weighted average of the 30-year Treasury bond rate to determine current liabilities. The administration is proposing to eliminate the 4-year weighted average and to replace the single treasury rate with a range of bond rates, the so-called yield curve. This would mean that liabilities – future benefits – that come due at different future dates are discounted by different interest rates. For example, a benefit that is due in 10 years will be discounted by the interest rate on corporate bonds with 10-year maturity; a benefit that is due in five years will be discounted by the 5-year rate, a benefit in 15 years by the 15-year rate and so on. The applicable rates would be averaged over 90 days, instead of 4 years. Second, the administration proposes that all assets be valued at fair market value, thus eliminating the current option to average stock price fluctuations over short periods of time. If these changes are enacted, plan sponsors worried about the predictability of their future contributions would have strong incentives to abandon their plans.

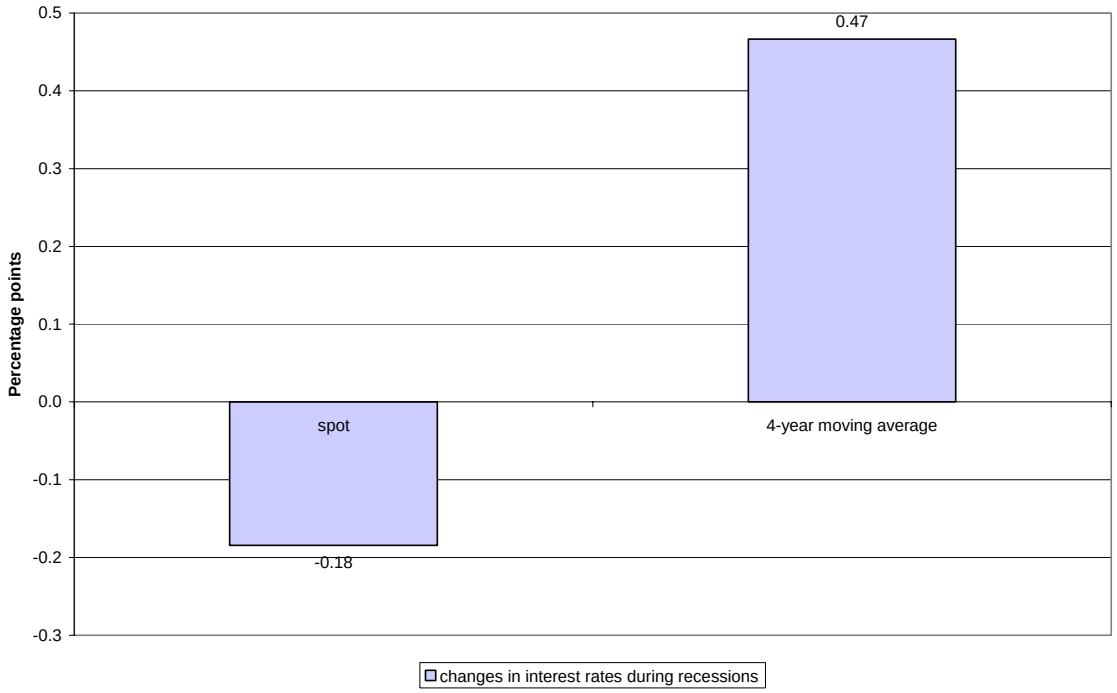
The administration's proposal would raise the costs of mature plans immediately. Employers who have a disproportionate number of older workers, e.g. in well established industries, will face rising costs from the administration's yield curve proposal. This is because older workers are likely to retire sooner than younger workers and their benefits will have to be paid out sooner than those for younger workers. The discount rate is tied to corporate bonds with shorter maturities. Those interest rates are lower than those for corporate bonds with longer maturities. A lower discount rate translates into a higher liability and higher cost for the employer. According to estimates by the Employment Policy Foundation (2005), the liabilities for workers 55 and older could increase by 3.5 percent and the liabilities for workers between 50 and 54 could rise by 2.0 percent. This would particularly hurt the struggling manufacturing sector. That is, the administration's proposal would fall short of the first goal to secure existing benefits.

In addition to raising the costs for some plans, the administration's proposal on changes to the interest rate would exacerbate cyclical fluctuations, just like the use of fair market value for assets does, as already discussed.[3] Employers would become more likely

[3] Employers could theoretically insulate themselves from these fluctuations by matching assets to liabilities. However, such a "bonds only" strategy would substantially raise the costs for employers to provide this benefit and thus give another strong disincentive to abandon their plans.

to see larger contributions during bad economic times, mainly because the smoothing of interest rates over even the minimal period of time of four years is eliminated. From the 1930s to the present, the spot interest rate for long-term Treasury bonds would have declined by an average of 0.18 percentage points during recessions. In comparison, though, the 4-year weighted average of the long-term Treasury bond rate would have risen by 0.47 percentage points. The fact that the discount rate is on average 0.65 percentage points higher with smoothing than without means that employers face fewer demands on their cash flow when they can least afford them. However, it also means that they face higher funding obligations during good years, when they can actually afford them.

Figure 2: Changes in Interest Rates During Recessions, With and Without Averaging

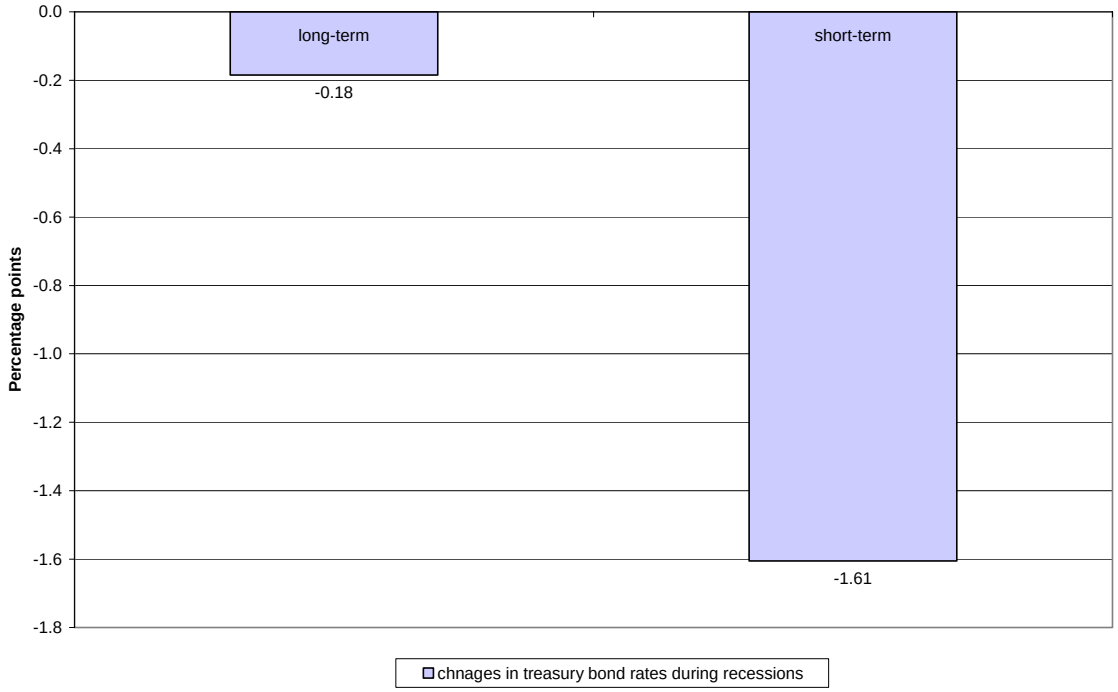


The use of a yield curve, using a variety of interest rates with different maturities for separate liabilities, would also exacerbate the funding burden during economic downturns, especially for pension plans with a more mature workforce. Specifically, the spread between short-term and long-term interest rates tends to rise during recessions, largely because short-term interest rates tend to fall faster than long-term interest rates. Short-term Treasury interest rates, in this case for 3-month bills and bonds, have typically declined by 1.6 percent during recessions (figure 3). This is an increase that is almost eight times as large as the average decline of long-term Treasury bond rates during recessions. During a recession, employers with an older labor force will see their costs rise much more rapidly than employers with a younger workforce.

The use of a yield curve would increase the volatility of pension contributions for employers, thus providing an incentive to terminate DB plans. That is, the

administration's proposal falls short of the second goal to maintain and strengthen future benefit security.

Figure 3: Changes in Long-Term vs. Short-Term Treasury Bond Rates During Recessions



Immunization Not a Viable Alternative

Fluctuations in liabilities and assets can lead to changes in the funding status of pension plans. When interest rates and asset prices fall, plans can become underfunded. The administration's proposal would increase the volatility of the future funding status of a DB plan. Employers could theoretically respond to this surge in volatility by matching assets and liabilities by investing in bonds that reflect the maturity of a pension plan's liabilities. This process is also referred to as immunization.

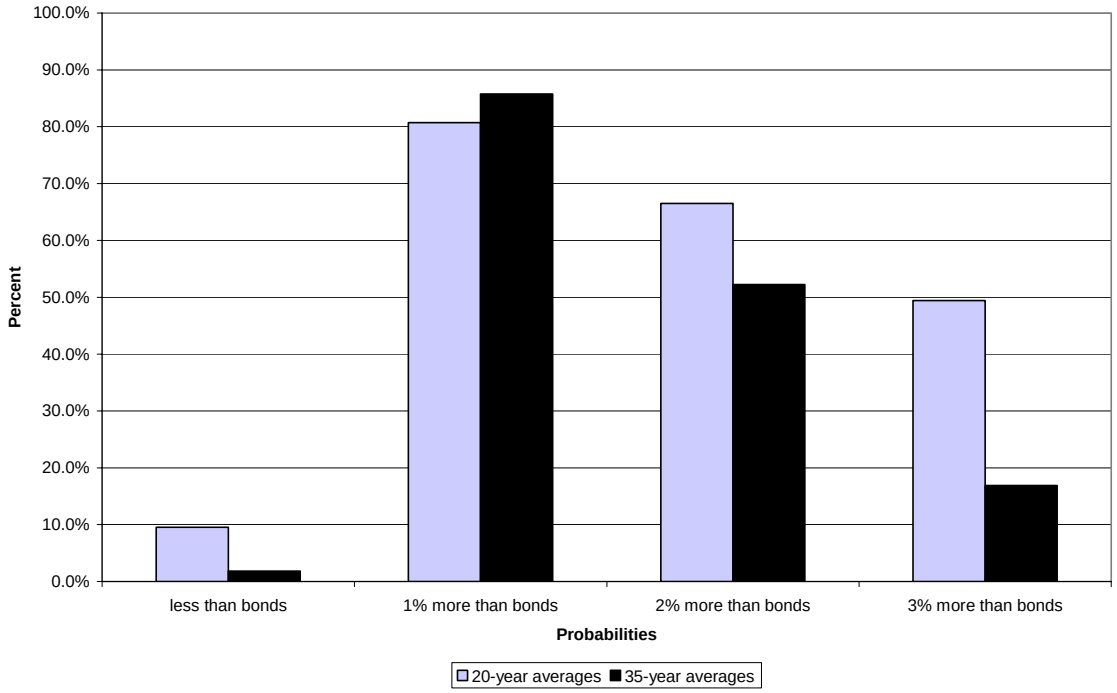
To understand how immunization works, consider the way a pension plan's liabilities would be calculated under the administration's proposal. Future benefit payments would be discounted by the interest rates that would apply for treasury bonds with the same maturity as the benefit obligation. To finance new obligations, pension plans have to purchase additional assets. To avoid fluctuations in funding status under the administration's proposal, pension plans could purchase a corporate bond with the same maturity and thus the same interest rate as the maturity of the benefit obligations (Bodie, 2005). As a result, assets would theoretically be matched to the liabilities and the two could not move apart over time. Underfunding would thus be reduced.[4]

Although the logic of immunization is appealing, it has one major drawback, aside from the potential complexity of implementation, that would ultimately hurt

[4] Perfect matching would likely not be possible since the administration's proposal allows for discount rates to be smoothed over 90 days.

pension beneficiaries substantially. Immunization would significantly raise the costs of pension plans for plan sponsors. Typically plans diversify their assets between different types of securities, largely bonds and stocks. By doing so, plans can expect to earn a higher rate of return over the long-run than they could by merely investing in bonds, while reducing the risks. Through immunization, plans would eliminate the added earnings from investing in stocks. This loss can be severe. Over 20-year or even 35-year periods, the chance of a typical mixed portfolio of a pension plan – 60 percent stocks and 40 percent bonds – is unlikely to perform worse than bonds. The chance that a mixed portfolio will on average see a rate of return that is a least one percentage point higher than a pure corporate bond allocation is more than 80 percent (figure 4). The chance of seeing a rate of return that is at least three percentage points greater is 50 percent over 20-year periods and 17 percent over 35-year periods. These are the potential earnings that pension plans would give up through immunization. This loss of earnings would require an offset from higher employer contributions to their pension plans.[5] As costs of pension plans would rise, employers would have again a strong incentive to abandon their plans.

Figure 4: Performance of Mixed Portfolios over 20 and 35 Year Periods



Notes: Data are based on S&P 500 and corporate bonds (AAA) from 1919 to 2004. Sources are TradeTools.com, Shiller (2000), and BOG (2005).

However, if pension plans do not immunize, they can face market fluctuations from investing in stocks. Uncharacteristically large fluctuations in the stock market substantially contributed to the decline in pension funding after 2000. This leads to two questions. First, who should bear this risk, and second, is there another way to handle the risk exposure of pension plans, which does not increase the volatility of pension plan

[5] Mixed portfolios will not always do better than pure bond portfolios. There is a chance that stock market fluctuations are large and it takes long periods of time for stocks to recover those losses (Weller, 2005).

funding for employers and thus does not raise the specter of plan terminations? The answer to the first question is that pension plans are better equipped than individuals to handle market risks. The answer to the second question is detailed in the next section.

Pension plans are better equipped than individuals to handle the risks associated with investing for retirement. However, if funding rule changes provide employers with strong incentives to terminate their DB plans, individuals would have to increase their efforts to save for retirement through private accounts, such as 401(k)s or IRAs, to maintain the same level of retirement income. Even if individuals invest prudently, they still face large market fluctuations. Some workers would thus retire with substantially less retirement income than they were counting on, while others would do better than expected, depending on how well the market did during their lifetime (Weller, 2005). The problem is that individuals can often not wait for the market to improve again since many of the reasons for retirement, such as deteriorating health, will likely get worse with age. In contrast, pension plans are going concerns that can expect additional income as they pay out benefits for the foreseeable future. Because pension plans generally do not have to liquidate their assets on a given date, they can, at least to some degree, wait for markets to improve. After all, this is the logic behind using an average interest rate to calculate pension plan liabilities. Thus, pension plans are much better equipped than individuals to withstand the risks associated with investing in stocks.

As a result of the administration's proposal, pension plans would be faced with an unappealing choice. They would either face increased volatility in their pension contributions or the costs of funding their pension plans would rise substantially. In either case, employers would have strong incentives to reduce their commitments to their employees through their DB pension plans and shift the risks of saving for retirement onto their employees. While pension plans are better equipped than individuals to handle long-term fluctuations in the stock market, the question still remains whether there are alternative funding rules that could help to reduce the volatility of pension contributions for employers and lower the incentives to terminate pension plans, without jeopardizing the security of pension benefits now and in the future. The answer is yes and the details are provided in the next section.

More Smoothing Improves Benefit Security

The problem as described above is that, under current funding rules, employers are more likely to have to make contributions to their pension plans when times are bad. When times are bad, more employers are unable to make payments to their pension plans. Therefore, pension terminations spike and the burden on the PBGC grows. The rules proposed by the administration would exacerbate this problem, while also raising the costs for employers with an older workforce. However, it is possible to change the funding rules, so that benefits are protected, employers have more certainty associated with the funding of their pension plans, and the PBGC will end up with fewer terminations.

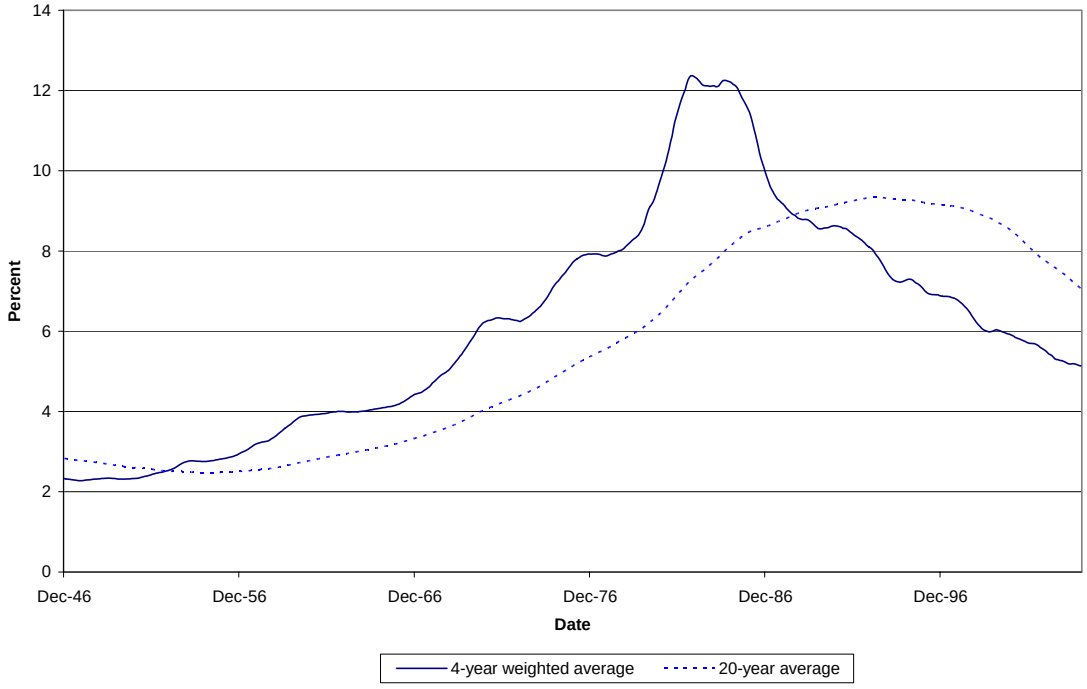
The basic premise underlying these funding rules is that they should be more pro-cyclical, allowing employers to contribute more during good times and contribute less during bad times, when they can least afford it.

Such an approach is also more consistent with the nature of a pension plan than the administration's approach. The proposals laid out here give a clearer summary view of how well a pension plan is prepared for mastering the challenges of the medium-term future, when it is expected to pay benefits. By comparison, the administration's proposal to move towards a process of "marking to market" provides only a snapshot of the pension plan at the time of valuation. This is a consistent and accurate view only if it is assumed that the pension plan will terminate shortly after valuation. Under all other circumstances, the assumptions are too volatile to provide an accurate glimpse of the plan's future.

Three funding rule changes seem especially relevant. First, one way to reduce the cyclicality of pension funding is to use a long-term average of the benchmark interest rate, e.g. a 20-year average. This would substantially reduce the volatility of calculating pension fund liabilities and it would de-couple funding requirements from the fluctuations of the business cycle, since the period over which the interest rate is averaged is longer than any business cycle. A 20-year period is also a much closer match to the average duration of pension plan liabilities. Moreover, because interest rates have recently been so low, the longer-term average would be higher than even the 4-year weighted average. Thus, switching to a longer-term average could give plan sponsors some funding relief in the immediate future, while also improving funding certainty over the long term.[6]

[6] One of the reasons for changing pension funding rules is that the 30-year treasury bond rate is no longer an appropriate bench mark because the treasury has stopped issuing these bonds. It appears reasonable to use the 10-year Treasury bond rate instead. The benchmark rate is supposed to be risk free and reflect the long-term nature of pension liabilities. Both the 10-year and the 30-year treasury bond reflect the most secure assets. The 10-year treasury bond yield reflects the long-term nature of pension liabilities. The federal government will have outstanding debt that is likely to grow. Its financing instrument with the longest maturity is the 10-year Treasury bond. Thus, its yield reflects the long-term nature of the federal debt. Further, data on the 10-year Treasury bond rates are available since 1953 – longer than for the 30-year treasury, which was introduced in 1977.

Figure 5: Interest Rate Averages



Second, to mirror the rule change for liabilities, one can also use a 20-year smoothing for stock prices (Weller and Baker, 2005).[7] This process essentially assumes that stocks will adjust towards a long-run average over a long enough period of time. If stock prices are above long-term averages with respect to corporate earnings, they are discounted with the assumption that the adjustment process will take 20 years. The same holds when stocks are too low.

Lastly, one of the problems associated with the recent funding crisis was that pension plans had not built up enough reserves to weather the storm that ensued after 2000. The administration has recognized this problem and has proposed that employers would be permitted to contribute to their plans even after they meet the full funding target. However, many employers already could have contributed more to their pension plans if they had wanted to during the 1990s (Ghilarducci and Sun, 2005). Hence, the lack of a cushion was to some degree the unwillingness of employers to increase the funding status of their plans, even when times were good. Therefore, a proposal to require companies to fund up to 120 percent of liabilities over a period of 30 years seems reasonable.[8]

The effects of these rule changes on a hypothetical plan can be simulated.[9] To evaluate their effect, though, two questions should be asked. First, does the contribution pattern become less cyclical? Second, does the funding status of a plan weaken because

[7] At the same time that more smoothing is allowed, the current practice of credit balances is eliminated.
[8] The baseline assumes normal cost contributions up to 100 percent.
[9] The technical details of the simulation from Weller and Baker (2005) can be found in the appendix.

of the rule changes? The changes in the funding status are evaluated using the ratio of assets at fair market value to current liabilities at the 4-year weighted average of the long-term Treasury rate. In addition, the probability of falling below a funding status of 75 percent is calculated.

The alternative rules would have maintained or reduced the burden on plan sponsors compared to the baseline (table 1). That is, on average, employers would have had to contribute less, especially during bad economic times. Using a smoother discount rate would have resulted in contribution holidays from 1998 to 2002 (model (2)); the alternative asset valuation method would have resulted in a contribution holiday after 1999 until 2002 (model (3)); and the requirement of contributions up to 120 percent of current liabilities would have meant no contribution holiday during this five-year period, but contributions would have been equal or less compared to the baseline model (model (4)). When all three changes are in place, the fund would have enjoyed contribution holidays for all five years (model (5)), reflecting the build-up of sufficient reserves during the preceding good years.[10]

To see this, the long-term performance of the alternative funding rules is tested, using the past fifty years as an example (table 2). From 1952 to 2002, average contributions would have been approximately the same under all scenarios, or sometimes a little bit less than under the baseline.

However, plans would have built up more reserves due to the funding rule changes. In each case, the CL funding ratio would have been higher than under the baseline scenario. That is, evaluated at current rules, the security of pensions would have improved. Also, in almost all cases, the chance of the funding ratio falling below 75 percent is reduced compared to the baseline (table 2). This again highlights the improved security of pension benefits under the new set of benefits.

To test whether the proposed rules would make pension funding less counter-cyclical, contributions during recessions and non-recessions are considered. From 1952 to 2002, only the alternative asset assumptions would have lowered the contributions during the recessions compared to the baseline model. But for the period from 1980 to 2002, all models would have lowered contributions during recessions. Thus, during the past two decades, employers would have enjoyed more predictability in the funding of their pension plans.

[10] The easing of the funding burden during the five years from 1998 to 2002 was a result of substantial build-ups in reserves and thus did not reduce the funding adequacy and the security of benefits. The current liability (CL) funding ratio would have been higher in each case than under the baseline (table 1).

Table 1
Funding Status of Model Pension Plan with Different Funding Rules

	Baseline model		Model (2)		Model (3)		Model (4)		Model (5)	
Discount rate for liabilities	4-year weighted average of long-term Treasury bond yield		20-year average of long-term Treasury bond yield		4-year weighted average of long-term Treasury bond yield		4-year weighted average of long-term Treasury bond yield		20-year average of long-term Treasury bond yield	
Asset assumptions	Fair market value		Fair market value		Adjustments for level and ROR on stocks, and long-term average interest rate for bonds		Fair market value		Adjustments for level and ROR on stocks, and long-term average interest rate for bonds	
Contribution limit	100 percent		100 percent		100 percent		120 percent		120 percent	
	Contribution as share of salary	CL funding ratio	Contribution as share of salary	CL funding ratio	Contribution as share of salary	CL funding ratio	Contribution as share of salary	CL funding ratio	Contribution as share of salary	CL funding ratio
1998	0.0	100.7	0.0	119.7	8.3	137.1	3.3	97.7	0.0	243.1
1999	4.8	98.2	0.0	117.6	6.7	142.2	3.1	97.8	0.0	253.5
2000	0.0	101.9	0.0	118.7	0.0	149.7	2.2	100.1	0.0	255.2
2001	3.6	87.6	0.0	102.7	0.0	131.0	3.6	87.5	0.0	220.6
2002	6.0	76.4	0.0	87.6	0.0	113.2	6.0	76.3	0.0	188.3

Notes: All figures are in percent. Source is Weller and Baker (2005).

Table 2
Summary Measures for Different Funding Rules, 1952 to 2002

	Baseline model			Model (2)			Model (3)			Model (4)			Model (5)		
Discount rate for liabilities	4-year weighted average of long-term treasury bond yield			20-year average of long-term treasury bond yield			4-year weighted average of long-term treasury bond yield			4-year weighted average of long-term treasury bond yield			20-year average of long-term treasury bond yield		
Asset assumptions	Fair market value			Fair market value			Adjustments for level and ROR on stocks, and long-term average interest rate for bonds			Fair market value			Adjustments for level and ROR on stocks, and long-term average interest rate for bonds		
Contribution limit	100 percent			100 percent			100 percent			120 percent			120 percent		
	Avg. cont. to salary	Avg. fund. Ratio	Prob. of less than 75%	Avg. cont. to salary	Avg. fund. ratio	Prob. of less than 75%	Avg. cont. to salary	Avg. fund. ratio	Prob. of less than 75%	Avg. cont. to salary	Avg. fund. ratio	Prob. of less than 75%	Avg. cont. to salary	Avg. fund. ratio	Prob. of less than 75%
1952-2002	2.6	98.6	4.1	2.0	116.6	3.4	2.7	101.1	0.7	2.4	109.1	3.0	2.5	137.2	7.7
	(2.7)	(13.6)		(2.7)	(28.1)		(3.0)	(13.9)		(1.5)	(18.1)		(3.4)	(38.7)	
1980-2002	3.0	100.3	9.5	0.0	144.4	1.6	2.8	102.6	0.1	1.7	115.4	4.6	0.0	176.2	0.0
	(3.5)	(19.3)		(0.0)	(16.9)		(3.4)	(18.7)		(1.6)	(23.9)		(0.0)	(14.5)	

Notes: All figures are in percent. Figures in parentheses are standard deviations.

Table 3
Contributions during Recessions and Non-Recessions

	Baseline model		Model (2)		Model (3)		Model (4)		Model (5)	
	Recession	Non-recession	Recession	Non-recession	Recession	Non-recession	Recession	Non-recession	Recession	Non-recession
1952-2002	2.2	2.8	2.5	1.8	1.7	3.2	2.6	2.2	3.4	1.8
1980-2002	2.0	3.4	0.0	0.0	0.7	3.8	1.8	1.6	0.0	0.0

Note: All figures are in percent.

There are clear benefits from implementing more smoothing in pension funding rules. Employers would gain predictability in the funding of their pension plans, while the funding status of pension plans would generally improve. Thus, employees would enjoy greater security of their benefits and the PBGC would ultimately see a reduction in the probability of plan terminations.

This proposal would also introduce funding rules that are more consistent with the going concern nature of pension plans. Using long-term averages assumes that pension funds will buy and sell securities, and that these transactions will occur at different interest rates. The time frames over which the smoothing occurs are generally consistent with the typical duration of pension liabilities. The proposals laid out here give a clearer summary view of how well a pension plan is prepared for mastering the challenges of the medium-term future, when it is expected to pay benefits.

Numerous proposals, including the administration's, have recognized the benefits and the consistency of smoothing in funding rules for the future well-being of pension plans. However, such proposals allow for more smoothing on the plan contribution side, rather than on the asset and liability valuation side (DOL, 2005; Towers Perrin, 2005). This still leaves the problem that "marking to market" does not provide an accurate view of how well the plan is prepared for the future. Furthermore, even those who propose more smoothing of contributions don't necessarily believe that it will actually work. When introducing the administration's plan, Secretary of Labor Elaine Chao was quoted as saying in the New York Times on January 30, 2005, that workers will "pressure their employer to more adequately fund the underfunded pension plans." Secretary Chao's comments indicate that the administration is counting on the large volatility of pension funding that would result from its new funding rules to scare workers into demanding more pension contributions from their employers. That is, regardless of the funding rules, employers may be forced to increase pension contributions to stave off employee dissatisfaction. However, this may only be a short-term phenomenon. Because the funding status of a pension plan would become more volatile, the contribution demands from employees at one point in time may become quickly obsolete as asset prices and interest rates change. The result would be frustration on the part of employees and large short-term pressures on employers, with the likely result that more and more employers would abandon their pension plans. Instead, the proposal laid out here would provide employees with a more accurate picture of the long-term health of their pension plans and stabilize the contribution stream of employers to their pension plans.

Conclusion

After 2000, defined benefit pension plans experienced severe underfunding. While the magnitude of the problem was unprecedented, the combination of the underlying factors was not. Employers should expect a regular recurrence of declining interest rates and asset prices during a recession. Current funding rules reflect this regularity and the administration's proposal to change these funding rules will not make the problem better, but exacerbate the counter-cyclical volatility of pension funding. Thus, the administration's proposal falls short of the standards laid out in the

introduction. It would reduce the chance that future benefits will be maintained and it could jeopardize the pension security in well established pension plans through higher costs.

Instead of increasing the volatility of pension funding, which would drive more employers to terminate their pension plans, there are rule changes that would allow for more smoothing of pension liabilities and assets and thus stabilize pension funding. Empirical results show that this would result in more stable employer contributions to pension plans and to higher average funding ratios. Employers would benefit from greater certainty about the future of their pension plans, while employees and the PBGC would benefit from greater security of pension benefits. Thus, these alternatives would meet all three goals of sensible funding rule changes. They would secure existing benefits, help to maintain benefit security in the future, without unduly burdening the PBGC.

Thank you very much for this opportunity to present my views on pension funding rules. I am looking forward to your questions.

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Appendix: Technical Details of Pension Model

The basic simulation model referenced here is developed in Weller and Baker (2005).

Asset valuation method

First, the difference between market price and trend price is calculated for the current period:

$$(\frac{P_t}{\overline{P}_t}) = \frac{P_t}{\overline{E}_t\overline{(P/E)}} = \frac{P_t}{\overline{E}_{t-1}(1+\widehat{E})\overline{(P/E)}} \quad (1)$$

where P is the current market price as measured by the S&P 500 index and $\overline{P}$ is the trend price. The trend price is equal to the trend earnings, $\overline{E}$, times the long-term average price to earnings ratio, ($\overline{P/E}$), since 1927 of 15.3. Further, the trend earnings in period t are equal to the trend earnings in the previous period after having grown at the long-term average earnings growth rate, $\widehat{E}$, of 5.0 percent.

Next, it is assumed that the difference between market price and trend price disappears over a period of 20 years, which generates an adjustment factor, AF, to the market price of stocks of:

$$AF_t = (\frac{1}{1-r_t}) \quad (2)$$

where the adjustment rate, r, is defined as:

$$r_t = \ln(\frac{\overline{P}_t}{P_t})/20*100 \quad (2')$$

such that the adjusted price, P*, is described by:

$$P*_t = P_tAF_t \quad (2'')$$

Since the expected rate of return to stocks is the sum of the rate of capital appreciation and the dividend yield – dividends relative to market price – the adjustment made to the price also affects the expected dividend yield, such that the adjusted dividend yield is equal to the ratio of dividends, D, to the adjusted market price, P*.

We also assume that the difference between the actuarial value and fair market value disappears after 20 years, and that assets other than stocks earn the same long-term interest rate as for liabilities plus 50 basis points.

Basic pension plan design

The number of workers is assumed to have been 10,000 in 1952, equally distributed from age 20 to 65, with 80 percent of workers blue collar and 20 percent white collar, labor force growth equal to 1 percent annually, and annual wage growth equal to 3 percent. Assumed attrition is 5 percent, equally distributed, and the number of vested workers is proportional to that of job leavers. We use the age earnings profile for blue- and white-collar workers from Engen et al. (1999).

Retirement benefits are based on average final pay, with retirement benefits equaling 1 percent of the average of the last five years of earnings for each year of service, with five years of vesting, and no ancillary benefits. Current liabilities are then calculated using the unit credit method. Assets are held in stocks and bonds. From 1952 to 2002, the pension plan's asset allocation into equities is equal to the share of directly held corporate equities out of assets for all pension plans (BoG, 2003). The rate of return earned on stocks is set equal to the increase in the S&P 500 plus the dividend yield, and the rate of return on bonds is equal to the treasury rate plus 50 basis points.