



1-1-2005

## A Regulatory Framework for Strengthening Defined Benefit Pensions

Mark J. Warshawsky  
*US Treasury Department*

Neal McCall  
*US Treasury Department*

John D. Worth  
*US Treasury Department*

Follow this and additional works at: [https://repository.upenn.edu/prc\\_papers](https://repository.upenn.edu/prc_papers)



Part of the [Economics Commons](#)

---

Warshawsky, Mark J.; McCall, Neal; and Worth, John D., "A Regulatory Framework for Strengthening Defined Benefit Pensions" (2005). *Wharton Pension Research Council Working Papers*. 385.  
[https://repository.upenn.edu/prc\\_papers/385](https://repository.upenn.edu/prc_papers/385)

The published version of this Working Paper may be found in the 2006 publication: *Restructuring Retirement Risks*.

This paper is posted at ScholarlyCommons. [https://repository.upenn.edu/prc\\_papers/385](https://repository.upenn.edu/prc_papers/385)  
For more information, please contact [repository@pobox.upenn.edu](mailto:repository@pobox.upenn.edu).

---

## A Regulatory Framework for Strengthening Defined Benefit Pensions

### Abstract

Recent financial market and plan termination experiences have exposed the shortcomings of existing funding, disclosure, and premium rules governing private single-employer defined benefit pension plans in the United States. These rules were designed to provide predictability for plan sponsors and administrators, by insulating pension plans from the realities of economic and financial market fluctuations. Unfortunately current practice often overlooks key financial principles that arguably should inform a responsible set of pension rules and the insurance system backing the plans. We outline the key characteristics of pension plans needed to beneficially guide rule-making and offer examples drawn from proposed funding and premium rules

### Disciplines

Economics

### Comments

The published version of this Working Paper may be found in the 2006 publication: *Restructuring Retirement Risks*.



## **Part II**

### **Pooling Pension Risks and Rewards**



## Chapter 5

# **A Regulatory Framework for Strengthening Defined Benefit Pensions**

---

*Mark J. Warshawsky, Neal McCall, and John D. Worth*

In the USA, recent financial market and pension events have exposed serious structural flaws in the regulatory system governing single employer defined benefit (DB) plans. Evidence of such problems includes substantial unfunded liabilities in the pension system, estimated at approximately \$450 billion, and very large insurance claims for unfunded pension liabilities as the result of the restructuring or liquidation of major companies. At US fiscal year-end 2004 (September 30), the Pension Benefit Guaranty Corporation (PBGC)—government corporation that insures pension benefits—had only \$39 billion in assets to meet \$62 billion in liabilities (the present value of future benefit payments owed to participants of failed pension plans). The PBGC's net position fell from a surplus of \$7.7 billion in 2001 to a deficit of \$23.3 billion in 2004. In addition, billions of dollars in benefits earned by thousands of workers, retirees, and their beneficiaries were lost as a result of the termination of underfunded plans. In response to these problems, the Administration of President Bush proposed a plan to strengthen funding for single-employer DB pensions (hereafter, the Administration Proposal), and Congress has moved to consider a comprehensive regulatory reform for these plans.

This chapter discusses four principles that must be recognized in order to design effective regulations for the DB pension system. After outlining these principles, we provide examples of how they can be implemented, by drawing on the recent Administration proposal that is designed to correct the structural deficiencies in the DB regulatory system. If DB pensions are to remain a viable, self-financing, retirement option for employers and employees, the entire system must be placed on a sound financial footing.

In what follows, we briefly describe the regulatory background and then discuss the motivation for government pension regulation. Then, we highlight some salient characteristics of the 'traditional actuarial view' as reflected in the current pension funding regime. Next, we outline principles for a well-designed pension funding and guaranty regulatory regime and provide examples of implementation. The last section concludes.

## **The Regulatory Background**

Although DB pensions have existed in the USA since the late nineteenth century, comprehensive pension regulatory oversight did not exist prior to the passage of the Employee Retirement Income Security Act of 1974 (ERISA). Before this law, regulation was piecemeal: plans funded through insurance companies were subject to state regulation of insurance company solvency and regulation, while plans managed by banks were subject to general trust law. The Internal Revenue Code (IRC) was first modified to make explicit reference to pension plans in 1921, when contributions to employer-based stock bonus profit sharing plans were exempted from the corporate income tax. But it was not until 1942 that the legal code was modified to provide some general guidelines on plan design and operation. Disclosure problems were first addressed in the Federal Welfare and Pensions Disclosure Act of 1958 and 1962 amendments. The objectives of these laws, however, were limited: they were designed only to provide participants with enough information to detect malfeasance on the part of the plan administrator or other interested parties to enable participants to bring actions against the plan under existing law. Many deemed the regulatory environment largely ineffective (McGill et al. 1996).

Regulatory shortcomings became evident to the general public with the closing of the Studebaker plant in South Bend Indiana and the termination of its employee pension plan in 1963. Although retirees and active workers over the plan's retirement age of 60 received full benefits in the form of annuities, other participants were far less fortunate. Participants between 40 and 59 with 10 years of service under the plan received lump sum payments equal to about 15 percent of earned benefits while other vested employees received nothing. Many cite this termination as the event that set in motion the reform process that led to the passage of ERISA in 1974 (Jefferson 1993).

Today, ERISA and the IRC provide a general framework for private sector pension regulation. Current rules set minimum plan funding standards, standardize the computation of a plan's financial status, require certain financial disclosures to participants, and govern the pension insurance system. Pension regulation is motivated by a number of considerations including information asymmetries between the pension plan sponsor and the plan participants, the noncompetitive nature of employer-sponsored pension plans, and the tax-favored treatment of pension contributions and investments as will be discussed later. Though ERISA and the Tax Code have been revised to strengthen plan funding standards and improve the insurance system on several occasions, most notably in 1987 and 1994, the DB regulatory system continues to suffer from a number of structural flaws.

## Motivations for Pension Regulation

It is sometimes argued that pension plan sponsors have inherent informational advantages over plan participants as the sponsors invest assets, monitor returns, and compare assets to future payment obligations. Absent reporting requirements, many plan sponsors would lack the incentive to disclose adequately the financial position of the pension fund to participants. Because of these informational asymmetries, some firms might mislead participants by under- or not funding the DB plan while acting as if the plan was well protected. The concern is that this could result in retirees not receiving the retirement income they anticipated, at a time in their lives when it would be impossible to remedy the breach. Accordingly, DB plan regulation seeks to minimize this type of outcome.

One might argue that concern over loss of reputation would temper such plan sponsor behavior and discourage pension defaults. In practice, however, defaults on pension plans are typically associated with the reorganization or liquidation of the sponsoring firm. Because a sponsor that defaults on its pension obligations has also defaulted on other financial obligations and because its pension customers are limited to its own employees, reputational effects can fail to constrain sponsor behavior. Also, from the employee's viewpoint, the pension contract is a one-shot commitment not subject to renegotiation. That is, employees have one career and sometimes one or two employers over which to prepare for retirement; as such, they lack an effective recourse if their pension promises are defaulted on. The possibility that a sponsoring firm will default on the contract at some future date, therefore, is believed to provide a strong basis for DB plan funding regulation. Minimum funding rules are designed to ensure that a threshold level of financial backing exists for accrued pension benefits at all times.

Defined benefit pension plans are noncompetitive: that is, employee participation—which includes deferral of income—is mandatory with employment at a firm providing a DB plan, and employees do not have a choice of retirement assets, outside the pension trust managed by the plan sponsor. The plan sponsor and plan participants may also have different assessments of the appropriate priority for plan funding, relative to other uses of working capital. This is another reason for the establishment of laws and regulation governing minimum funding requirements: the appropriate segregation of assets and prudent and diversified investments.

The existence of a government guarantee for DB plan benefits, as in the US pension insurance system, introduces an additional concern for government, namely, that of moral hazard.<sup>1</sup> When participants are guaranteed to receive pension payments, in whole or in part, irrespective of their pension plan's performance and its sponsor, they will have less incentive to be vigilant in monitoring the plan. Further, benefit guarantees in

employer-sponsored plans provide a greater incentive for workers to exchange future promises of pension payments for current wages.

### **The Traditional Actuarial View**

One assumption appears to have motivated the traditional actuarial approach to pension regulation: namely, that pension sponsors and pension plans should be thought of as ‘living’ over a very long, indeed, indefinite time horizon. ERISA rules reflecting this view tend to focus on funding and measurement of the ultimate pension commitment—pension obligations that participants will be entitled to at retirement. The accrued benefit commitment, which measures pension obligations earned to date using current market values, is thought to be relevant only when a sponsor intends to terminate a plan.

A good example of how the concept of long-lived plans motivates current pension regulation and actuarial practice is seen in the area of asset and liability measurement. Current law views pension liabilities as long-run in nature and unlikely to be settled in the short-run because (it is implicitly assumed) pension sponsors are unlikely to be compelled to terminate their plans. Therefore, ERISA rules allow plan actuaries to choose plan discount rates that reflect an estimate of the pension funds long-run investment returns. McGill et al. (1996) argues that the actuarial present value of future benefits is defined as today’s value of future benefits, taking into account future investment earnings. This implies that the value of the pension liability is not determined using the *current* market value of a reference security with the same characteristics as those of accrued benefits, but rather by the asset allocation choices and the actuary’s estimate of expected returns. This approach is clearly focused on long-run results, since only ‘by coincidence’ will actual results conform to expected ones (McGill et al. 1996). Basing measures of pension liabilities using returns on risky assets clearly implies that the plan sponsor will be both willing and able to make good on any unanticipated investment shortfalls when pension obligations come due in the future. Using smoothed values of assets comports with this same long-run view.

Another good example has to do with ERISA plan funding rules. Plan funding rules are designed to satisfy the ultimate pension commitment over the long run, rather than to ensure that a plan will have sufficient assets at any given point in time to meet accrued liabilities (where both are measured on a current market basis). The ERISA funding rules reflect this view, for example, by allowing long-amortization periods for new benefits, even though they are immediately accrued, for investment losses, and for changes in actuarial assumptions. These long-amortization periods are motivated by the belief that the plan actuary’s assumptions will be realized in the long run.

As these examples suggest, the traditional actuarial approach to pension regulation as codified in the law treats DB plan sponsors as ongoing and long-lived entities. This view has influenced how pension regulation has been structured. Next, we discuss the shortcomings of this view and introduce some important principles for a new approach to pension regulation.

### **Principles for a Pension Funding and Regulatory Regime**

A well-designed pension regulatory system should take into account four principles, each of which we take up in turn.

**Principle 1: Pension Plans Are Financial Intermediaries.** Sponsoring firms take deferred compensation from employees and contribute it on their behalf to pension plans. This money, in turn, is made available to the capital markets when the plan invests in stocks, bonds, and other financial instruments. In exchange, the pension plan promises participants a stream of future annuity payments or, in some cases, the lump-sum equivalent of such payments, in accordance with the plan's design. Although the DB plan is an independent entity under the law, its financial well-being is wholly dependent on contribution and investment decisions made by the sponsoring firm.

As financial intermediaries, it seems sensible to hold pension plans to the standards of reporting transparency and market value discipline that apply in other financial markets. For example, most financial regulators require that assets be valued at current and not past prices. Yet ERISA allows pension assets values to not be marked-to-market, but rather to reflect 'smoothed' values based on past prices. Following Bader and Gold (2003), we identify three standards of financial practice that are the basis for the reporting transparency and market value discipline that regulators enforce for most financial intermediaries and can be applied to pension funds. These are (a) employee exchanges of current for future compensation and valuations of pension assets and liabilities must be conducted at market prices or values; (b) because pension liabilities are not traded in a market there are generally no observable prices; accordingly, pension liabilities should be valued using prices for similar liabilities trading in liquid markets; and (c) all involved parties have a right to timely and complete information about the current market-based values of assets and liabilities.

Voluntary financial trades do not generally take place at nonmarket values or in the absence of current information on prices. When employers and employee bargain (formally or informally) over compensation, one dimension of the negotiation is the form that compensation will take—cash wages or salaries, or deferred postretirement pension benefits. In the case of formal negotiations under collective bargaining agreements, the

trade is often explicit, though in other cases the exchange is implicit. If the assets backing the promise of deferred compensation or the pension liabilities (the discounted value of the future pension benefit payments) are not accurately valued because of smoothing, the transaction itself does not use market prices.

For example, assume that an employee has computed the expected value of receiving promised future benefits based on the degree to which those benefits are backed by assets, i.e. are funded. Based on this expected value and his preferences, he will decide on an optimal rate of substitution between current wages and future benefit payments in determining the composition of compensation package. If available information on plan funding is based on smoothed asset values and liabilities, however, the employee's choice will be distorted. His optimal mix of current and deferred compensation would change if his decision were based on market prices for assets and liabilities. Similarly, smoothed asset and liability measures do not provide shareholders, potential investors, and others with a true picture of a pension plan's financial status. Under ERISA, the actuarial value of DB plan assets may differ from the fair market value of plan assets because it may be determined under a formula that smoothes fluctuations in market value by averaging the value over a period of up to five years (US Treasury 2005). In a similar manner, pension liabilities are computed using a discount rate that is either a long-run assumed rate of return on investments or a four-year smoothed Treasury bond rate.

Another concern applies to the appropriate method for valuing pension liabilities. Pension benefit payments are similar to debt and therefore, it can be argued, should be discounted at rates applicable to that debt. In this case, liabilities would be discounted using interest rates that are matched to the timing of the future benefit payment cash flows. Such matching can be accomplished through the use of a yield curve of zero coupon bonds. Generally, higher interest rates would be used to discount benefit payments expected to be made further in the future, with lower interest rates applying for benefit payments made in the near term. Discount rates used for establishing funding requirements would then be based on current returns on bonds with the same credit quality that pension obligations are assumed or are deemed to have and that mature on the same dates as the future benefit payment obligations come due.

An economically coherent approach, and one that provides the most meaningful measure of liabilities, recognizes that once pension promises are made and backed by assets there is a high probability that they will be kept. Accordingly a consistent approach to pension liability discounting would adopt high-quality corporate bonds as the appropriate source of rates. This contrasts with current law, where two discount rates are used—one selected by the actuary as part of the actuarial valuation and calculation of the original minimum funding requirement, and another set by law and

used in the computation of the plan's current liability. The latter is a measure that is defined as part of a set of backstop minimum funding rules put in place in 1987 to require poorly funded plans to improve their funding. Regardless of the minimum funding requirement computed by the actuary, if a plan's funding as measured by current liability falls below certain thresholds, then supplemental deficit reduction contributions (DRCs) are required.

The discount rate used in current actuarial pension plan valuations is based on the actuary's best estimate of anticipated investment experience in the plan—the best estimate of the long-run future earnings on plan assets (US Treasury 2005). This approach is at odds with standard financial practice. The present value of a debt is unrelated to expected earnings on the assets that are used to secure the debt. As Bader and Gold (2003) note, corporate debt is not discounted using a firm's projected return on corporate assets, therefore, it is inappropriate to discount pension liabilities at that rate. Moreover, the discount rate used as part of the actuarial valuation is typically a single rate rather than a yield curve as would be necessary for accurate valuation of the liabilities.

The discount rate used in computing current liability is not based on actuarial judgment, but is a standardized assumption set in law. In the past, the discount rate has been based on a four-year weighted average of the rate of interest on the thirty-year Treasury bond. The Pension Funding Equity Act of 2004 specified that the interest rate used to determine current liability be based on the weighted average of interest rates on long-term corporate bonds. These standardized assumptions are inaccurate both because they do not use current market rates and because they do not reflect the timing of future cash flows.

These flaws in liability measurement along with permitted smoothing of assets cause traditional measures of assets and liabilities to be inaccurate and misleading. Two recent real-world examples provide evidence of just how misleading these values can be. In its last filing prior to termination, Bethlehem Steel Corporation reported that its pension plan was 84 percent funded on a current liability basis. At termination, however, the plan proved to be only 45 percent funded on a termination basis, with underfunding totaling \$4.3 billion. Similarly, in its last filing prior to termination, the US Airways Pilots plan was reported to be 94 percent funded on a current liability basis; at termination, it proved to be only 33 percent funded (Kandarian 2003*a*).

The regulatory changes embedded in the Administration proposal take the position that market values of assets, along with correctly and accurately measured pension liabilities, are sensible. Further, the proposal requires that all pension plan liabilities be measured on an accrual basis using consistent rules and standards, and it requires the use of current market values of assets. The plan also requires that the discounted value of pension

liabilities be determined using a series of interest rates drawn from a yield curve for high-quality zero-coupon corporate bonds. Finally, it also stipulates that pension plan participants, regulators, and investors should receive timely and accurate information about pension plan assets and liabilities.

**Principle 2: Plan Sponsors and Pension Plans Are Not Always Long-Lived.** A pension plan termination may be coincident with the dissolution or reorganization of a financially distressed sponsor, or it may be terminated at the sponsor's option at an earlier date. This fact has important implications for the design of pension regulations because failing firms will default on any existing unfunded obligations at the time of their failure. In particular, it suggests that, even abstracting from fairness issues, private pensions are ineffective intermediaries for intergenerational transfers. Pay-as-you-go (PAYGO) private pension systems guarantee future defaults. To the extent that pension funding rules allow for accrued liabilities to be unfunded, pension plans operate on a partial PAYGO basis.

Table 5-1 shows the average cumulative default rates of corporate bond issuers as computed by Moody's Investor Service (2005). This table indicates that, over time, even some of the highest-rated companies experience significant financial difficulties and ultimately some of them default on obligations. For example, 2 percent of firms with the highest credit ratings at the beginning of the sample (1970) defaulted over a twenty-year period. Looking at companies with a Moody's rating of Ba, the table indicates that 10.72 percent default within 5 years and 37 percent within 20 years. For firms in the Caa-C rating, nearly four-fifths, 78.53 percent, default within 20 years.

Defaults on US pension sponsor commitments result in claims on the government-chartered guarantor, the PBGC. During the economic

TABLE 5-1 Average Cumulative Default Rate by Credit Rating, 1970–2004

Years	Moody's credit rating						
	Aaa	Aa	A	Baa	Ba	B	Caa-C
1	0.00	0.00	0.02	0.19	1.22	5.81	22.43
3	0.00	0.03	0.22	0.98	5.79	19.51	46.71
5	0.12	0.20	0.50	2.08	10.72	30.48	59.72
7	0.30	0.37	0.85	3.12	14.81	39.45	68.06
10	0.63	0.61	1.48	4.89	20.11	48.64	76.77
15	1.22	1.38	2.74	8.73	29.67	57.72	78.53
20	1.54	2.44	4.87	12.05	37.07	59.11	78.53

Source: Moody's Investor Services (2005).

## 5 / Regulatory Framework for Strengthening DB Pensions 79

downturn in the early 1990s, the pension insurance program absorbed large claims—\$600 million for the Eastern Airlines plans and \$800 million for the Pan American Airlines plans. More recently, the PBGC has taken in steel and airline plans with extremely large unfunded liabilities. Steel plan claims—resulting from plan sponsor defaults on obligations—have included \$1.3 billion for National Steel, \$1.9 billion for LTV Steel, and \$3.9 billion for Bethlehem Steel. Airline claims have included a \$600 million claim for the US Airways pilots’ plans in February 2003 and a \$2.3 billion claim for the terminated US Airways plans covering flight attendants, machinists, and other ground employees in January 2005. The largest claim against the single-employer insurance fund to date occurred in April 2005 when PBGC agreed to the termination of United Airline’s four major pension plans. The total claim of these four plans against the insurance fund is expected to be \$6.6 billion. Participants are expected to lose \$3.2 billion in unfunded nonguaranteed benefits. Figure 5-1 shows the time series of dollar claims on the PBGC, clear evidence that plan sponsors can and do default on pension obligations due to failing financial health, bankruptcy, and liquidation. The figure indicates that (in nominal terms) claims in 2002, 2003, or 2004 were, by far, the largest claims in PBGC’s history.

Firms generally have a below investment grade (BIG) credit rating for several years prior to defaulting on pension obligations triggering a PBGC claim. After studying twenty-seven large claims, the PBGC found that most

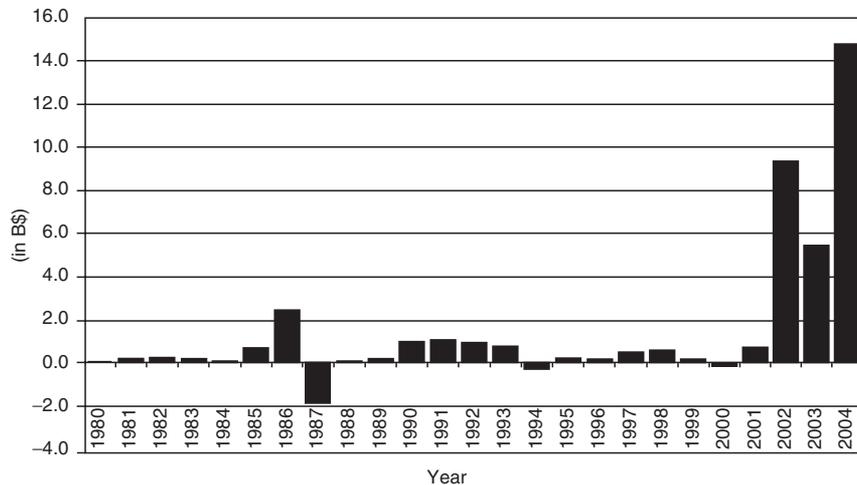


Figure 5-1. PBGC losses from terminations 1980 to 2004 (billions of dollars).

*Source:* Authors’ calculations based on data from PBGC Annual Reports (PBGC, various years).

of the plan sponsors had been BIG for several years prior to termination; none of the plans had been BIG for less than three years prior to termination (Kandarian 2003*b*). This suggests that, while defaults are certainly not easily predictable far in the future (many other plans with BIG credit ratings did not default), a low credit rating for a plan sponsor is a clear warning sign that any responsible set of laws and regulations should take into account.

The list of companies whose financial difficulties have resulted in defaults on pension obligations and, in claims against the PBGC, is enlightening. It includes many companies, who, in their day, were industry leaders and undoubtedly considered excellent credit risks with strong futures. Sponsoring firms that have defaulted on their pension obligations includes former retailers such as Bradlees, Caldor, Grand Union, and Payless Cashways; steelmakers including Bethlehem, LTV, National, Acme, Empire, Geneva, and RTI; other manufacturers, such as Singer, Polaroid, Harvard Industries, and Durango; and airlines, such as United Airlines, TWA, Pan American, Eastern, and US Airways. This list underscores the fact that the future is uncertain, and almost any company, regardless of how secure it appears today, can face significant financial hardships in the future that might result in plan termination and pension obligation default due to either individual and secular circumstances.

Most discussion on losses from plan terminations centers on claims against the government pension guarantor; however, these are best thought of as a proxy for the total losses arising from the default on unfunded pension liabilities. Even though plan participant benefits are backed by a limited guarantee, underfunded pension plan terminations can lead to significant worker benefit reductions. In many cases, these benefit reductions have been significant. When pension benefits are insured by a government entity, defaults raise the risk that taxpayers will be asked to pay for broken promises. Under the current government guarantee system, the pension insurer is required to be self-financing; it does not have full faith and credit backing of the USA. Despite this mandate, however, the insurer has no authority to set premium rates or to reject coverage for plans that pose a very high risk of filing a claim. It is not surprising that under these circumstances the insurer has run a substantial deficit for most of its existence. Because the insurer is a government corporation with a limited line of credit to the Treasury, the insurer's deficit is not viewed as a major problem by plan sponsors who, along with participants, seem to count on the existence of an implicit guarantee of private pension obligations. A financially unsound government insurance system clearly puts the taxpayer at risk.

Recognition of the finite lives of pension plans and their sponsors implies that a sensible set of pension funding rules would do well to:

## **5 / Regulatory Framework for Strengthening DB Pensions 81**

- (1) Set a plan funding goal for plans to maintain assets sufficient to meet an accurate measure of accrued liabilities. Funding ratios should be computed using assets and liabilities that are measured accurately and meaningfully as described earlier. When assets fall short of plan liabilities, sponsors should be required to remedy that shortfall by funding up in a timely manner;
- (2) Set a higher funding target for plans with sponsors in financial difficulty or that reflects both accrued liabilities and other costs incurred when a plan is terminated; and
- (3) Prohibit plans from incurring additional liabilities when they are significantly underfunded, particularly plans that are sponsored by financially troubled firms. Restrictions on the addition of new benefits limit liability growth as a plan becomes progressively underfunded relative to its funding target.

Each of these elements is applied in a meaningful manner in the Administration's proposed reforms. In addition to the requirements to mark assets to market and use an accurate and meaningful method for discounting plan liabilities, the proposal sets accrual-based funding targets based on these measures. The funding target for any plan reflects the financial health of the plan sponsor.

Current pension funding rules focus on prescribing annual contributions that move plans gradually toward a long-term funding target. This approach has resulted in plans being significantly underfunded for long periods. A regulatory regime that allows significant long-term underfunding does not, in our opinion, reflect the principle of that pension plan sponsors and, therefore, pension plans are not always very long lived. One need only look at recent examples from the steel and airline industries to recognize the basic unfairness and human cost resulting from not recognizing and incorporating this principle into pension regulation. The Administration proposal requires sponsors that fall below minimum funding targets to fund up toward their target in a timely manner and imposes benefit restrictions on significantly underfunded plans, especially those sponsored by companies in poor financial health. Allowing permanent underfunding virtually guarantees that participant and pensions insurer losses stemming from sponsor default at from the time of reorganization or liquidation will be larger than necessary.

Thus far we have discussed the termination of pension plans coincident with the reorganization or dissolution of the sponsoring firm—typically when the plan sponsor defaults on obligations. However, the termination of a pension plan at the sponsor's discretion can also occur if sponsors freeze a plan and pay benefit obligations fully as they come due; or, when a sponsor ends a plan through a standard termination and meets all its obligations immediately. Sponsors have the right, except when constrained

by collective bargaining agreements, to either freeze a plan or take it through a standard termination at any time. Of course in the case of a standard termination, the plan must have sufficient assets to satisfy all benefits through an annuity insurance contract. Historically most plans have ended by way of a freeze or a standard termination.

This means that employers are obligated to provide participants benefits only for past service. However, participants may believe that there is an implicit contract to continue such plans in order to enable them to earn future benefits until they reach retirement. Continuation of service until retirement is especially valuable to participants in back-loaded final pay plans. This characteristic of DB plans has two important implications for pension funding policy. First, minimum funding targets cannot obligate sponsors to maintain funding above that level needed to satisfy close out costs for accrued benefits. As discussed later, prefunding of anticipated benefit increases, through either amendments in flat dollar plans or salary increases in final pay plans, could be permitted and even encouraged but not required. Funding targets in the Administration proposal are directly related to accrued benefits.

Further, setting minimum funding targets below the level of accrued benefits is problematic. Some have argued that rules allowing perennial underfunding are beneficial to participants, because plan sponsors will need to make large payments in order to exit the system, thus encouraging them to stay. Clearly, this is not a responsible regulatory approach, as it implicitly assumes that pension plan sponsors are very long-lived. It seems more appropriate to design funding rules so they do not 'trap' sponsors into underfunding. When plans exit the system responsibly by way of standard terminations, satisfying all their pension obligations immediately, or by way of plan freezes, satisfying all outstanding obligations as they come due, participants receive all benefits they are owed and there are no claims against the guaranty program.

**Principle 3: Plan Sponsors and Participants Are Economic Agents and Therefore Respond to Incentives in Predictable Ways.** An effective pension regulatory regime is one where plan sponsors and participants are seen as economic agents that respond to incentives in predictable ways. In the context of a pension regulatory regime, this takes the form of providing incentives for plans to make contributions sufficient to maintain adequate funding levels.

Four components of current practice would provide plan sponsors with adequate incentives to fund pension obligations. These four mechanisms are: (a) funding rules that require plans to make up funding shortfalls (relative to a meaningful funding target) in a timely manner, (b) benefit restrictions that limit liability growth as a plan becomes progressively underfunded relative to its funding target, (c) a meaningful system of

## 5 / Regulatory Framework for Strengthening DB Pensions 83

insurance premiums that reflects the risk that a plan imposes on the guaranty system (in systems that include a pension benefit guarantor or guaranty mechanism), and (d) tax incentives that encourage plans sponsors to contribute more than the minimum required contribution. These mechanisms would induce firms to fund up quickly, reduce the rate at which new obligations accrue, and compensate the insurance fund for risk; also they would provide incentives for rational, forward-looking managers to ensure that plan assets are closely matched with plan obligations on an ongoing basis.

The current pension regulation regime has failed to ensure adequate plan funding, in part because current rules give sponsors inadequate incentives to fund accrued liabilities adequately. The interaction of inadequate plan funding rules with a pension guaranty system in which premiums do not reflect the risk of loss from such underfunding creates incentives for financially weak plan sponsors to make generous pension promises rather than increase wages. Employees have an incentive to agree to this arrangement because the PBGC provides a guaranty of many of these pension benefits. Figure 5-2 shows the result of a system with such weak and perverse funding incentives.

Plans are generally not required to make up funding shortfalls in a timely manner under current law. Under the ERISA rules, amortization periods vary depending on the source of the unfunded accrued liability: if an unfunded accrued liability is attributable to an actuarial loss, the amortization

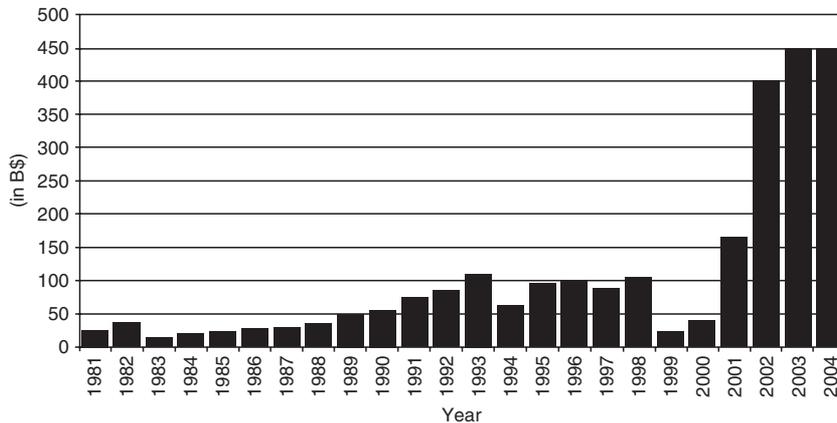


Figure 5-2. Underfunding of underfunded single-employer pension plans (billions of dollars).

Source: Belt (2005).

Note: 2004 data are estimated.

period is five years, but if it is due to a plan amendment, the amortization period is thirty years. If the plan is subject to DRC rules, the minimum required contribution for the year is based on a complex formula that includes a contribution related to current underfunding that generally amortizes that shortfall over a period of four to seven years. The DRC, however, has been ineffective in ensuring adequate plan funding because it is based on a liability measure that is inaccurate and plans do not become subject to the DRC sufficiently quickly when they become underfunded. The DRC applies only when the actuarial value of the plan's assets is less than 90 percent of current liability. In addition, the DRC rules do not apply if the actuarial value of the plan's assets is between 80 and 90 percent of current liability, provided that the plan's assets were at least 90 percent of current liability in 2 consecutive years out of the last 3 years. The lack of a consistent requirement to make-up funding shortfalls in a timely manner reduces the incentive to keep plans well funded.

Benefit restrictions are critical because they limit liability growth as a plan becomes progressively underfunded relative to its funding target. It is important to arrest the growth of liabilities when plans become dangerously underfunded in order to ensure that plan participants collect benefits that they accrue. Under current law, sponsors of underfunded plans can continue to provide for additional accruals and, in many situations even make benefit improvements. For this reason, companies have an incentive to provide generous pension benefits rather than increase current wages, and employees may go along because of the PBGC guaranty. If a company's plan is poorly funded, the company should be precluded from adopting further benefit increases unless it fully funds them, especially if it is in a weak financial position. Accordingly, the Administration proposal included a set of benefit limitations reflecting both the plan sponsors financial health and degree of underfunding relative to their funding target.

Finally, when a pension regulatory system includes a pension benefit guarantor or guaranty mechanism, it is critical to have premiums reflect the risk that each plan imposes on the insurance system; failure to do so encourages irresponsible behavior by both plan sponsors and plan participants. The absence of proper risk-based pricing creates a system subject to moral hazard because the guarantor bears the risks associated with negotiated agreements between employers and employees. In this situation, both the employer/plan sponsor and plan participants have an incentive to increase levels of unfunded accrued benefits up to the guaranty limit of the guarantor.

The current PBGC premium structure relies heavily on flat-rate, rather than risk-based, premiums and does not reflect the risk of plan termination. Accordingly, existing 'variable' premiums embody only part of the PBGC's exposure to each pension plan, as the current exposure measure is

a poor measure of the plan's underfunding. The system's weakness is exacerbated by rules that exempt underfunded plans from paying variable premiums in many situations. For instance, variable premiums are charged at a fixed rate per dollar of unfunded vested liability as defined in statute. As a result, plans can be substantially underfunded and still pay no variable premiums. Despite substantial underfunding, only about 10 percent of participants were in plans that paid *any* risk-based premium in 2003.

The Administration has sought to make premiums better reflect the risks that underfunded plans pose to the system. Risk-based premiums would be set as a fixed charge per dollar of plan underfunding, as previously, but unlike current law, underfunding is to be measured against each plan's funding target. The idea is that plans sponsored by financially weak firms have higher funding targets than those sponsored by healthy firms. Consequently underfunding charges will reflect the higher risk of plan termination posed by a weak company on the system.

**Principle 4: Governments Cannot Provide a Financial Guaranty to Protect One Group from Risk Without Exposing Itself and Taxpayers to Risk.** Financial economics shows that risks do not disappear, simply by shifting them among parties. Earlier we have argued that current pension rules permit, indeed encourage, sponsors to underfund their plans over long periods. At the same time, premium revenues are artificially restricted at levels well below those needed to meet contingent liabilities and are structured in a way that is largely unrelated to the insured risk. These practices transfer the risks associated with terminations of poorly funded plans to other plan sponsors, participants, and perhaps ultimately the taxpayer. Tighter funding rules which require plans to maintain assets equal in value to accrued liabilities can significantly reduce the risk that underfunded plans pose to the system. To ensure that residual idiosyncratic risks are borne by the insurance system rather than by participants and taxpayers, PBGC premiums must be adjusted regularly to reflect such risk. A pension regulatory system that allows plan sponsors to shift risk does not reduce the amount of risk; rather, it simply exposes other parties to that risk. Figure 5-3 shows the net position of the PBGC's single-employer insurance fund. It has posted record deficits recently, in 2004, reporting a deficit of more than \$23 billion. This large negative net position reflects PBGC's assumption (and likely future assumptions) of obligations of pension plans whose sponsors defaulted on their liabilities.

## **Conclusions**

Defined benefit pensions can be a valuable means for providing retirement income, but without reform, the US system is not likely to survive. Existing rules fail to take into account principles of sound pension regulation; this,

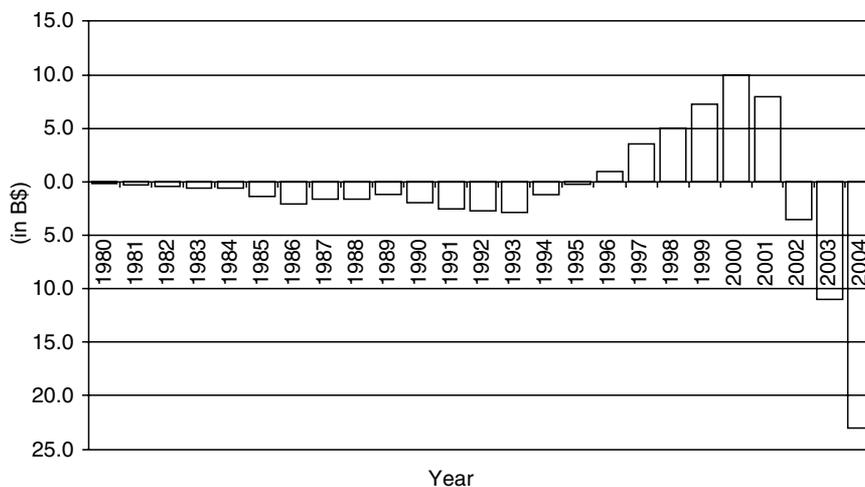


Figure 5-3. Net position, US Pension Benefit Guaranty Corporation (billions of dollars).

Source: PBGC Annual Reports (various years).

in turn, led to widespread pension plan underfunding and a large and growing deficit in the pension guaranty fund. Although well-designed pension funding rules can do little to avert sponsor bankruptcies and accompanying plan terminations, this chapter argues that they can limit losses to participants and remaining sponsors.

The DB pension system can continue to be a source of retirement income for participants far into the future, if the fundamental principles of financial economics are integrated into pension regulation. The Administration's proposed reform of the single-employer DB system can lead to better funded plans, with fewer claims from termination than under current law (PBGC 2005). Ignoring these issues can ultimately lead to larger losses for participants, large premium increases for remaining plan sponsors, the possible insolvency of the government guarantor, and conceivably political pressure for bailout.

### Endnote

1. This is also an issue in other countries; see McCarthy and Neuberger (this volume) on the recently adopted UK pension insurance scheme.

## References

- Bader, Lawrence N. and Jeremy Gold (2003). 'Reinventing Pension Actuarial Science', *The Pension Section of the Society of Actuaries*, 14(2): 1–13.
- Belt, Bradley D. (2005). *Testimony before the Committee on Finance, United States Senate*, July 7, 2005. <http://www.pbgc.gov/media/news-archive/ExecutiveTestimony/tm13061.html>
- Jefferson, Regina T. (1993). 'Defined Benefit Plan Funding: How Much is Too Much?' *Case Western Reserve Law Review*, 44(1): 1–74.
- Kandarian, Steven A. (2003a). *Testimony before Governmental Affairs Committee, Subcommittee on Financial Management, the Budget and International Security, United States Senate*, September 15, 2003, <http://www.pbgc.gov/media/news-archive/ExecutiveTestimony/tm1168.html>
- (2003b). *Testimony before Special Committee on Aging, United States Senate*, October 14, 2003, <http://www.pbgc.gov/media/news-archive/ExecutiveTestimony/tm1167.html>
- McCarthy, David and Anthony Neuberger (2006). 'The UK Approach to Insuring Defined Benefit Pension Plans', this volume.
- McGill, Dan M., Kyle N. Brown, John J. Haley, and Sylvester J. Scheiber (1996). *Fundamentals of Private Pensions*, 7th edn. Oxford: Oxford University Press.
- Moody's Investor Services (2005). *Default and Recovery Rates of Corporate Bond Issuers, 1920–2004*. Global Credit Research. New York: Moody's, January.
- Pension Benefit Guaranty Corporation (various years). *Annual Report*. Washington, DC: PBGC, <http://www.pbgc.gov/workers-retirees/about-pbgc/content/page13176.html>
- Pension Benefit Guaranty Corporation (2005). *Impact of the Administration's Pension Reform Proposal*. Washington, DC: PBGC, [http://www.pbgc.gov/publications/white\\_papers/wp\\_040605.pdf](http://www.pbgc.gov/publications/white_papers/wp_040605.pdf)
- US Department of Treasury (US Treasury) (2005). *General Explanations of the Administration's Fiscal Year 2006 Revenue Proposals*. Treasury Blue Book. Washington, DC: USGPO, <http://www.ustreas.gov/offices/tax-policy/library/bluebk05.pdf>