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GUARANTEED TROUBLE:
THE ECONOMIC EFFECTS OF THE PENSION BENEFIT GUARANTY CORPORATION

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Guaranteed Trouble: The Economic Effects of the Pension Benefit Guaranty Corporation
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ABSTRACT

This paper examines the economic rationale for, historical experience of, and current pressures facing the Pension Benefit Guaranty Corporation (PBGC). The PBGC is the government entity which partially insures participants in private-sector defined benefit pension plans against the loss of pension benefits in the event that the plan sponsor experiences financial distress and has an under-funded pension plan. The paper discusses three major flaws of the PBGC, namely, that the PBGC has: 1) failed to properly price insurance and thus encouraged excessive risk-taking by plan sponsors; 2) failed to promote adequate funding of pension obligations; and 3) failed to promote sufficient information disclosure to market participants. The paper then discusses potential ways to reform the PBGC so that it operates more in concert with basic economic principles.

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1. Introduction

On December 9, 1963, the Studebaker-Packard Corporation announced that it was closing its manufacturing plant in South Bend, Indiana. At the time of the plant closing, the pension plan for hourly workers lacked sufficient assets to meet promised pension obligations (Wooten, 2001). As a result, about two-thirds of the nearly 11,000 retirees and active workers at the plant lost 85 to 100 percent of their accrued pension benefits (Sutkowski and Rhoads, 2006). The Studebaker experience was a pivotal political event that eventually led, a decade later, to the passage of the Employee Retirement Income Security Act (ERISA) of 1974. As the name of the Act makes clear, Congress' intention was to make defined benefit retirement plans more secure. Along with creating a complex regulatory framework to be implemented by the Departments of Treasury and Labor, ERISA also created the Pension Benefit Guarantee Corporation (PBGC) to insure participants in defined benefit pension plans, at least partially, against losing their pension benefits due to a combination of their employer's financial distress and their employer's failure to fully pre-fund the pension promises.

Thus, when the Bethlehem Steel Corporation declared bankruptcy in October 2001 (Isadore, 2001), the workers and retirees were in quite a different situation than their earlier counterparts at Studebaker. Bethlehem's pension plan lacked sufficient assets to meet promised pension obligations; assets were sufficient to fund only 45 percent of the pension benefits that Bethlehem's 95,000 workers and retirees had accrued. However, in 2002 the Pension Benefit Guaranty Corporation announced that it would cover over 92 percent of the total $7.8 billion pension liability, roughly double what Bethlehem's pension assets could have paid for on their

own. The workers and retirees of Bethlehem Steel were exposed to a loss of only 8 percent of the total liability -- although this still represented an aggregate loss of $600 million.

The $3.7 billion of liabilities in excess of plan assets that the Pension Benefit Guaranty Corporation acquired upon the termination of Bethlehem Steel's pension plan in 2002 represented the largest unfunded liability in the PBGC's history. Unfortunately, this record did not hold for long: in 2005, the pension plans of United Airlines were terminated, dumping more than $7.1 billion in unfunded liabilities onto the PBGC. In addition to these record-breaking cases, since 2000 the PBGC has also become responsible for paying the pension benefits for several other steel companies (including LTV Steel, National Steel, Weirton Steel), airlines (like US Airways, Trans World Airlines and most recently, the Delta pilots' plan), and firms from other industries (including Polaroid and Kemper Insurance) which added billions more in unfunded liabilities. When combined with numerous smaller plans during this period, more than 80 percent of all PBGC claims have occurred since 2000 (PBGC, 2005).

The Pension Benefit Guaranty Corporation was, by statute, supposed to be self-financing. It receives no tax revenue and is not officially backed by the full faith and credit of the U.S. government. Rather, the PBGC relies on premiums paid by sponsors of defined benefit pension plans, assets acquired from terminated plans, investment returns, and bankruptcy recoveries. Because Congress, and not the PBGC, has the sole authority to set premiums, the PBGC itself had little ability to prevent the significant deterioration of its net financial position as the record claims have accumulated since the start of this decade. The PBGC had a peak surplus--assets in excess of liabilities--of $9.7 billion at the end of fiscal year 2000. Since then, the net financial position of the PBGC turned to an $18.9 billion deficit as of the end of fiscal year 2006, with assets of $61.1 billion and liabilities of $80.0 billion (PBGC, 2006a).

The net financial position of the Pension Benefit Guaranty Corporation seems likely to deteriorate further in the coming decades. Many analysts and policy makers have been wondering aloud whether the PBGC might eventually need an infusion of taxpayer dollars, a worry that has invited uncomfortable comparisons to the large taxpayer bailout in the late 1980s of the federal government program that insured deposits in the U.S. savings and loan industry, and which, like the Pension Benefit Guaranty Corporation, was originally intended to be self-financing.

In response to such concerns, President Bush signed into law the Pension Protection Act of 2006, which made substantial changes to the PBGC insurance system.[1] By the time of the signing, the PBGC had gone from being a relatively obscure federal government organization to an entity followed closely in the press by elected officials, corporate executives, labor unions, and many of the 44 million American workers and retirees participating in the more than 30,000 defined benefit pension plans insured by the PBGC (PBGC, 2006). Participants in underfunded plans had learned from much-publicized stories that just because their benefits were insured by the PBGC, they still had much to fear.[2] Indeed, between worries over the long-term solvency of Social Security, the substantial underfunding of public state and local pension plans (which are not covered by the PBGC), high profile losses in 401(k) plans at firms like Enron, and the fact that defined benefit pension plans were underfunded by $350 billion as of September, 2006, public confidence in the nation's retirement system was low.

[1] The Pension Protection Act of 2006 also made significant changes to the rules governing defined contribution plans, including numerous provisions to encourage automatic enrollment. While these other features of the act may, in the long-run, turn out to be far more important to overall worker retirement security, a discussion of these changes is beyond the scope of this paper.

[2] One particularly poignant story was about Ellen Saracini who "lost her husband, United Airlines Captain Victor Saracini, when his Flight 175 crashed into the World Trade Center on September 11, 2001." Due to United Airlines' subsequent bankruptcy and failure to adequately fund its pensions, combined with PBGC benefit limitations, Mrs. Saracini estimated that she would lose 50 to 70 percent of her widow's pension (Russakoff, 2005).

How did a government corporation created to insure the pensions of workers and retirees in bankrupt firms end up facing its own financial distress? How did an organization designed to strengthen retirement security come to be seen as contributing to retirement insecurity?

The superficial answer is that the current funding problem is the result of the decline in stock market prices in 2000, which reduced pension assets, and the fall in interest rates at about the same time that boosted the present value of pension liabilities. But the deeper answer requires an understanding of why pension plan sponsors exposed themselves to these financial market fluctuations in the first place. Much of the blame for the poor financial state of the PBGC, as well as the defined benefit system more generally, lies in the some major design flaws of the PBGC pension insurance program.[3] Specifically, the PBGC has: 1) failed to properly price insurance and thus encouraged excessive risk-taking by plan sponsors; 2) failed to promote adequate funding of pension obligations; and 3) failed to promote sufficient information disclosure to market participants.[4] Together, these three flaws produced a system in which many firms fail to adequately fund their pension obligations, knowing that in financial distress, they can dump their pension liabilities onto the PBGC.

Though the Pension Protection Act of 2006 made some progress in improving the PBGC program, it failed to fully correct these three major problems. Consequently, absent further reform, substantial problems will continue to plague the private defined benefit pension system in decades to come. This paper discusses to advantages and disadvantages of Congress

[3] Another factor contributing to defined benefit funding problems is the set of flawed accounting standards that have largely hidden the true economic costs of firms' pension funding and investment decisions. The Financial Accounting Standards Board (FASB) issued new standards in September 2006 to change the method of accounting for pensions on corporate balance sheets. A full analysis of the role of accounting is beyond the scope of the current paper; readers interested in more detail may consult Belt (2006a), Coronado and Sharpe (2003), Gold (2000), and references therein.

[4] These shortcomings have been well-documented elsewhere, e.g., Belt (2005), CBO (2005a), and Wilcox (2006).

transferring much of the responsibility for defined benefit pension insurance to compulsory private markets in order to prevent further deterioration.

2. The U.S. Corporate Pension Landscape

Since the introduction of the first corporate pension plans in the United States in the late 1800s, most participants in private pension plans were covered by defined benefit plans, which promise an employee a specified monthly benefit at retirement. This promised benefit is usually calculated with formula based on years of service and earnings. For example, a plan might offer a benefit that is equal to 1.5 percent of average salary for the last three years of employment times the number of years of service with the employer. Thus, an employee with 30 years of service who retires at the plan's normal retirement age would receive a benefit that is 45 percent of that employee's final three-year average salary. There are a myriad of formula variations, but plans must meet specific legal requirements in order to be "qualified" for favorable tax treatment. Benefits from traditional defined benefit plans were typically paid as life annuities, meaning that they paid benefits for as long as the participant lives.

2.1 The Shift Away from Defined Benefit Pension Plans

Figure 1 shows the steady shift over the last three decades away from defined plans and towards defined contribution plans. In a defined contribution plan, the employer specifies contributions, rather than benefits. In 401(k) plans, the most common type of defined contribution plan, employee participation is voluntary, employees make their own portfolio allocation decisions, and account balances are rarely turned into annuities at retirement. A defined contribution pension plan only promises to pay out whatever was contributed, plus the

return on the investment, and therefore such plans are not insured by the Pension Benefit Guaranty Corporation.

Munnell and Sunden (2004) provide an overview of the many reasons behind the shift from defined benefit to defined contribution plans. For example, many employers like knowing exactly what their pension contributions need to be in any given year, rather than needing to increase or decrease contributions each year to a defined benefit plan depending on external changes in equity markets and interest rates. Many employees prefer the portability of defined contribution pensions. But in addition to these and other reasons, the structure of the PBGC itself may have contributed to the shift from defined benefit to defined contribution pension plans because a firm can avoid paying PBGC premiums by terminating its defined benefit plan or never offering one in the first place. Many employers have stopped offering defined benefit plans, and most younger firms establish 401(k) or other defined contribution plans (or no plan at all). As a result, most of the approximately 30,000 private defined benefit plans remaining in the PBGC system are primarily concentrated in "old economy" industries that face an aging work force and lower growth opportunities.

2.2 Should Economists Care about the Decline of the Defined Benefit Plan?

Should economists care whether defined benefit pension plans are diminishing? Many of the benefits of a defined benefit pension plan can be achieved with a defined contribution scheme. For example, workers may prefer for tax reasons to receive a pension contribution that won't be taxed until after retirement, and either defined benefit or defined contribution plans can accomplish that goal. Workers may be attracted to defined benefit pensions as a self-control device if they might otherwise have difficulty making ongoing contributions for retirement.

However, appropriately designed defined contribution plans can also help workers address self-control problems, so this advantage of defined benefit plans may not be as substantial as it may at first seem.

Defined benefit pension plans can arguably claim two more specific advantages over defined contribution plans. First, defined benefit plans can provide many individuals with access to more favorable group, rather than individual, annuity prices. This is a potentially important benefit because insurance against the risk of outliving one's assets is generally welfare-enhancing in standard economic models (for example, Davidoff, Brown, and Diamond, 2005). However, given the strong trend toward allowing lump-sum withdrawals from traditional defined benefit plans, this advantage is diminishing. Further, if encouraging greater annuitization of retirement wealth is deemed desirable, there are a number of ways that the government and/or employers could do so through the defined contribution system.

Second, defined benefit plans may provide a device to encourage workers to make a long-term commitment to an employer, in which case the employer will be more willing to invest in the human capital of that employee, whereas more portable defined contribution pension plans do not provide such an incentive. A rich theoretical literature has provided several models of such an interaction (for example, Lazear, 1979; Harris and Holmstrom, 1982; Bulow and Scholes, 1983). For example, in the Lazear model, a worker agrees to accept current pay that is less than his marginal product in the early years if that worker is paid more than his marginal product (via deferred compensation) in later years. Workers agree to this pay profile in return for the firm's investment in human capital. Firms benefit because deferred compensation reduces a worker's incentive to change jobs. As noted by Bulow and Scholes (1983), a shortcoming of implicit contract models is firms will wish to renege on their implicit liabilities at

some point. This is especially relevant in the case of unfunded pension liabilities because these are considered unsecured debt in bankruptcy proceedings, meaning that bondholders get paid before pension plan participants. One way that a firm can make a defined benefit pension promise secure for workers is to set aside assets in a separate legal entity—a pension fund—that operates in the sole interest of the pension plan beneficiaries. When contributions plus accumulated investment returns equal the present value of the accrued pension liabilities, then workers' accrued pension benefits are "safe," even if the corporation fell into bankruptcy. To be risk-free, of course, one must do more than compare the market value of pension assets and liabilities at a single point in time; one must also hedge against changes in those liabilities, such as those arising from changes in long-term interest rates.[5]

However, there are reasons for practical concern over whether defined benefits pension plans are an efficient institution for creating a long-term connection between workers and firms. These pension contracts are very long-term: for a 20 year-old worker, the payments from a defined benefit pension plan will not even begin for approximately four decades, and once begun, may continue for several more decades. Many workers within companies offering a defined benefit pension plan will not stay with the firm long enough to receive a substantial pension, or even any pension at all. Clearly, it is a challenge for the average worker to forecast their own career, together with the financial health of a pension plan for decades into the future. Even sophisticated financial market participants have some difficulty properly valuing firms' pension liabilities (Coronado and Sharpe, 2003), which emphasizes that the task would be quite difficult for the typical worker.

[5] Many authors have argued that an all-bond portfolio, with durations that match the duration of the pension liabilities, is the appropriate hedging portfolio for defined benefit pensions (for example, Bulow, 1982; Bulow and Scholes, 1983; Bodie, 1990, 2006; Gold and Hudson, 2003; Wilcox, 2006). Others, like Lucas and Zeldes (2006) have noted that if workers' earnings growth and stock returns are positively correlated over long horizons, then stocks can serve as a hedge against future pension benefits linked to earnings.

Overall, it is possible to make a case that many workers would prefer some element of defined benefit in their retirement plans so that they need not manage all retirement income risk through a personal account. However, there are also important advantages to defined contribution plans, including portability and the certainty of costs for employers. The immediate question for this paper is whether the Pension Benefit Guaranty Corporation is an appropriate policy response in this setting. Thus, we now turn to a description of the PBGC program.

3. How Does the Pension Benefit Guaranty Corporation Operate?

3.1 The Insurance Programs

The Pension Benefit Guaranty Corporation is headed by a Director who reports to a Board consisting of the Secretaries of the U.S. Commerce, Labor, and Treasury Departments, with the Secretary of Labor serving as Chairman (PBGC, 2007). The PBGC runs two insurance programs for private sector defined benefit pension plans. The "single-employer program" insures the pensions of more than 34 million workers and retirees in approximately 28,800 pension plans (PBGC, 2006a). The "multiemployer program" insures the benefits of approximately 9.9 million workers in about 1,540 multiemployer plans. A "multiemployer plan" is a collectively bargained pension plan that covers workers from multiple employers, often in a common industry such as construction. The multiemployer program is funded separately from the single-employer program and operates under different rules. For example, unlike in the single-employer program, the PBGC makes loans to insolvent multi-employer plans. At the end of fiscal year 2006, the multi-employer program had assets of $1.17 billion and liabilities of $1.91 billion. This paper focuses on the single employer program, which is the much larger of the two programs and has been the subject of most of the policy focus.

Firms that offer defined benefit pension plans are required to participate in the Pension Benefit Guaranty Corporation single-employer pension insurance program. For a claim to be made against the PBGC, the plan sponsor must be in severe financial distress and the pension plan must be underfunded – that is, the assets held by the plan must be insufficient to cover the liabilities of the pension plan. The firm "must prove severe financial distress, for instance the likelihood that continuing the plan would force the company to shut down" (PBGC, 2006b). In such a case, the PBGC will pay guaranteed pension benefits and attempt to subsequently recover the funds from the employer if the firm continues to operate. The PBGC may also choose to terminate a plan without the consent of the employer if it believes that doing so will better protect the interests of the workers, the plan, or PBGC's insurance fund.

When an underfunded pension plan terminates, the Pension Benefit Guaranty Corporation takes responsibility for paying monthly benefits to retirees. In fiscal year 2006, the PBGC paid $4.1 billion in benefits to nearly 612,000 retirees in 3,683 terminated pension plans (PBGC, 2006a). Another 660,000 people expect benefits from the PBGC in the future, or are in multiemployer plans receiving financial assistance from the PBGC. The PBGC guarantee is limited: for plans terminating in 2007, the maximum benefit paid to participants retiring at age 65 is $49,500—although the amount is higher for those retiring later and lower for those retiring earlier. The maximum insurance benefit is set by law.[6] While more than 90 percent of participants in plans taken over by the PBGC fall below this benefit limit (PBGC, 2006a), in

[6] Two additional legal limits on PBGC insurance coverage can also affect participants' benefits. First, the PBGC is prohibited from guaranteeing benefits that exceed the amount payable at the plan's normal retirement age. Second, a limit is imposed on PBGC's guarantee of benefit increases made within the five years prior to plan termination. Under the PBGC's single-employer insurance program, retirees sometimes can receive more than the maximum guaranteed benefit. In general, three conditions must apply: 1) the participant earned a benefit in excess of the maximum guaranteed amount; 2) the participant retired or was eligible to retire three years prior to plan termination; and 3) the plan had sufficient assets to pay benefits above the guaranteed amount. For details, see <http://www.pbgc.gov/media/news-archive/news-releases/2006/pr07-07.html>.

some prominent cases, including those of some airline pilots, workers lose a substantial fraction of their promised retirement income.

3.2 Sources of Revenue

The operations of the Pension Benefit Guaranty Corporation are financed from four sources: insurance premiums paid by sponsors of defined benefit plans; assets from defined benefit plans under PBGC trusteeship; asset recovery from bankrupt companies; and investment income on PBGC assets. Notably absent from this list is any funding from general tax revenue, as there is no provision in current law for any taxpayer backing of the Pension Benefit Guaranty Corporation. However, many analysts believe that there is an implicit political guarantee, in that Congress might very well choose to use taxpayer dollars to bailout the PBGC if pensioners' benefits were at immediate risk.

Congress sets the employer's pension insurance premium. The single-employer premium was initially set in 1974 at $1 per pension participant; it has been increased by Congress on an irregular basis, reaching $30 per participant for plan years beginning on or after January 1, 2006. Starting in 2007, this basic premium amount will be indexed to wage inflation. In addition to this flat-rate premium, underfunded pension plans pay an additional premium of 0.9 percent of the unfunded vested benefits and must also make additional contributions according to a specified schedule. During 2006, premium income totaled $1.5 billion (PBGC, 2006a).

Strikingly, aside from the extra premium paid for being underfunded, PBGC premiums contain no risk adjustment. A financially distressed firm with its pension plan assets invested in a portfolio of risky assets that is mismatched with the plan's liabilities pays the same annual

premium as an AAA-rated firm that has fully immunized its pension liabilities from financial market fluctuations. The implications of this pricing model will be discussed in detail below.

3.3 Historical and Projected Financial Status

The official measure of the PBGC's financial status is a comparison of the market value of its assets and liabilities. The liabilities are calculated using group annuity prices, an approach that is meant to assure "parity between the valuation of liabilities in plans taken over by PBGC and the cost of providing annuities when a company voluntarily terminates a plan, and by law, provides annuities through the purchase of annuities in the marketplace" (PBGC, 2006b). In addition to including losses from plans that have already terminated, the PBGC's official liability measure also includes "probable" terminations. This means that a plan is included if the PBGC determines that the plan is likely to terminate because the plan sponsor is in liquidation, has filed for bankruptcy, or is likely to be involuntarily terminated by the PBGC. When liabilities exceed assets, the PBGC is said to have a deficit.

As indicated in Figure 2, the PBGC's single employer program has been in deficit most of its existence. From 1980 through 1995, the PBGC had continual but small deficits each year – less than $5 billion. From 1996 to 2001, with the help of a booming stock market, the program moved into surplus. Then as a result of the wave of large bankruptcies from 2001-2005, detailed in Table 1, the PBGC's net financial position deteriorated to a nearly $23 billion deficit at the end of fiscal year 2005, before recovering slightly – to an $18.9 billion deficit – by the end of 2006. The improvement from 2005 to 2006 owes more to accounting changes than to any change in the underlying economics. A review of the PBGC's financial disclosures suggests that

certain provisions in the Pension Protection Act of 2006 resulted in some large airline plan liabilities being taken off the books without any change in the real health of the plans.

While the PBGC's methods for calculating its liabilities have been subject of some criticism, the general finding that the program is in poor fiscal health has been reinforced by independent analyses. For example, the Congressional Budget Office (2005a) estimated that the present value of the PBGC's future shortfalls (including already sunk costs as well as the present value of prospective costs minus future premiums paid) totaled $91 billion, using a 20-year time horizon. Despite Congress' intent that the PBGC be self-financing, the large projected shortfalls have led many analysts to note that there may be an implicit political guarantee should Congress choose to bailout the PBGC if its financial situation continues to deteriorate.

That the PBGC ended up in financial distress is not a surprise. Numerous pension experts have raised warning flags: for example, a Secretary of the Department of Labor (and thus former Chairman of the PBGC Board) made a direct comparison of the PBGC's risks with the savings and loan bailout of the 1980s, stating in the PBGC's 1992 annual report: "One would have to be an ostrich with its head buried in the sand to ignore the warnings and not learn from the analogy of the savings and loan crisis." In a prescient article, Zvi Bodie (1996) explored "the uncomfortable parallel" of the PBGC to the savings and loan bailout, explaining that:

> "The possible 'doomsday' scenario for the defined-benefit pension system would be an event such as a sharp and prolonged drop in stock prices that causes a sharp decline in the market value of pension asset portfolios. Underfunding becomes more prevalent. Several major defaults of underfunded pension plans lead the PBGC to significantly raise premiums on the remaining plans in the system. Expectations of even higher premiums in the future lead sponsors of the well-funded plans to terminate their defined-benefit plans to avoid to the PBGC 'tax.' They buy annuities to settle all benefits accrued under the terminated plans and replace them with generous defined-contribution plans, thus avoiding criticism from their employees or from the public. Ultimately, the United States could be left only with bankrupt defined benefit plans with benefits financed directly by taxpayers."

In the early 2000s, much of Bodie's (1996) scenario came to pass. The U.S. stock market did indeed experience a sharp drop in stock prices that caused a decline in the market value of pension assets. A decline in interest rates increased the present value of future pension liabilities. These events caused underfunding to become widespread. Several major defaults of underfunded pension plans, primarily in the steel and airline industries, led Congress to raise premiums from $19 per plan participant to $30 per plan participant on the remaining plans in the system. Numerous companies have terminated their defined benefit plans. While it is still too early to know if Bodie's full "doomsday" scenario will unfold in its complete glory, the trends are not comforting.

4. Flaws in the Pension Insurance System

As noted in the introduction, at least three major flaws of the structure of the PBGC insurance program have contributed to the program's financial problems. This section discusses these flaws in more detail.

4.1 The Failure to Price Pension Insurance Properly

The PBGC levies a simple premium equal to $30 per participant in a defined benefit pension plan. It also imposes additional premium of $9 per every $1000 of underfunding, although prior to the Pension Protection Act of 2006, as much as 90 percent of the true amount of underfunding escaped this premium due to various exemptions written into the law (Center on Federal Financial Institutions, 2005a). This premium schedule fails to adjust for the probability that the firm will experience financial distress, or for the full extent of underfunding, or for any mismatch in risk characteristics between plan assets and plan liabilities. In fact, the PBGC is

prohibited by Congress from charging risk-adjusted premiums. Indeed, the PBGC's mission statement is at odds with engaging in appropriate risk-based pricing; it states that part of its mission is to "keep pension insurance premiums at a minimum." Congress has implemented this mission by keeping average premiums well below their implicit market price.

To understand why premiums are too low on average, note that the extent to which pension plans are well-funded typically declines during periods of equity market downturns, because the value of the assets of the pension plan diminish. These periods tend to correspond to periods in which there is an above-average incidence of financial distress by firms. Thus, much of the risk being borne by the PBGC is what financial economists alternatively refer to as systematic, market, or non-diversifiable risk. A private market insurer would charge plan sponsors a risk premium to bear these non-diversifiable risks. As such, the appropriate market price for bearing this risk will be such that the provider of the insurance will report expected premium revenue in excess of expected losses. Therefore, as noted by Pennacchi (2006) in the context of federal deposit insurance, charging a risk-based premium would result in accounting profits for the government on average. The PBGC has certainly not run persistent accounting profits in its history, providing suggestive evidence that its premiums are too low.

A number of academic studies have attempted to make direct calculations of the market would charge to provide PBGC-like insurance. Boyce and Ippolito (2002) calculate that the private sector would charge twice as much as the PBGC to provide the same type of insurance, while the Congressional Budget Office (2005b), Lewis and Pennacchi (1999) and VanDerHei (1990) find that the appropriate market-based premium would be even higher, at four to six times current levels. Of course, these much higher premium levels are those that would be necessary to reflect the risk of the current PBGC system, not an efficiently designed system (Wilcox, 2006;

Boyce and Ippolito, 2002). If sponsors were faced with risk-adjusted premiums and were simultaneously subject to tighter funding rules and portfolio investment restrictions, the premiums could be lower, on average, than those currently charged (Boyce and Ippolito, 2002).

The PBGC premium schedule also fails to differentiate between high- and low-risk pension plan sponsors – that is, its insurance premiums are not linked to firm creditworthiness. Even if Congress were to grant such powers to the PBGC, which seems unlikely, there are reasons to be concerned about how well it would be executed, especially in a political environment; for example, Stiglitz (1993) discusses the government's disadvantage in assessing risks and charging premiums based on risk differences. While the Pension Protection Act of 2006 made significant changes in the rules that govern the regulation of pensions, no authority was granted to the PBGC to improve its risk adjustment of premiums. Thus, the problems that have arisen from the PBGC program's naïve approach to insurance pricing will continue for the foreseeable future.

4.2 Funding Requirements are Inadequate

Prior to passage of the Pension Protection Act of 2006, the Executive Director of the PGBC stated in testimony before the U.S. Senate Budget Committee that "the current defined benefit pension funding rules … are in need of a complete overhaul. Current rules are needlessly complex, don't reflect economic reality, and don't ensure that plans become well funded" (Belt, 2005). To make such calculations even more complex, many of the assumptions and methods used in the funding calculations for the PBGC differ from those used for tax purposes, which in turn differ from those used in financial statements.

There are too many examples of flaws in the PBGC funding rules to provide a complete list here, but here are a few examples of the flaws that existed prior to the Pension Protection Act of 2006. First, in practice, firms were only required to fund 90 percent of their liabilities. Second, the rules for calculating liabilities were subject to considerable discretion, which allowed firms to game the system. Third, pension plans were permitted to "smooth" interest rates over four years, which allowed firms to report smaller liabilities than they should have in periods of declining interest rates (Government Accountability Office, 2005). Fourth, plans were allowed to use the smoothed "actuarial" value, rather than the market value, of plan assets, with up to a 20 percent deviation from actual market values permitted (Government Accountability Office, 2005). Fifth, firms were allowed to avoid making cash contributions to their pension plan by making use of various accounting credits, even if the plan was under-funded. For example, if a firm contributes more than the minimum required in a given year, this created a "credit balance" that, once created, increased each year with an interest credit chosen by the plan to reflect expected long-run returns on plan assets. Firms were allowed to use these credits in lieu of cash contributions even when the value of plan assets had declined. Sixth, changes in plan liabilities due to amendments to the pension plan benefit structure were allowed to be amortized over a 30-year period, even though the PBGC's insurance coverage of the new benefits was effective immediately (Belt, 2005). Finally, sponsors of badly underfunded plans were often permitted to increase benefits.

As a result of these and other flaws in the funding rules, Bethlehem Steel was able to report a funding status of 84 percent, despite having a market value of assets that, upon termination, equaled only 45 percent of the market value of the plan's liabilities. The passage of the Pension Protection Act of 2006 addressed some of the most egregious shortcomings. For

example, minimum contribution rules will, after a phase-in period, be based on 100 percent, rather than 90 percent, of a plan's liabilities. The time period for smoothing assets and liabilities was reduced to two years. Several new restrictions were imposed on the use of "credit balances," although the 2006 law stopped short of eliminating their use. Plans deemed by the PBGC to be "at risk" of future default will now be required to use more conservative methods of calculating future liabilities, such as assuming that all employees who are eligible to retire within the next 10 years do so on the earliest possible dates and that they will elect to receive benefits in whatever form would create the highest liability (Warshawsky, 2007). Further, the 2006 law added restrictions against increasing benefits when a plan is underfunded.

Despite these improvements, the PBGC insurance program will continue to operate with significant flaws. For example, assets and liabilities still do not reflect market values. A coalition of powerful industry groups fought extremely hard against the elimination of smoothing techniques, arguing that their elimination would increase "the volatility and unpredictability of the funding rules" (Eickelberg, 2005). Furthermore, although Congress limited the use of various accounting credits that are used by firms to avoid paying premiums, these credits were not eliminated.

While most of the provisions of the Pension Protection Act of 2006 were steps in the right direction, at least one set of provisions constituted a giant leap backwards – the special rules for airlines. Airlines that agree to freeze the accruals in their pension plans are allowed 17 years to fund their initial pension deficits and are permitted to use a discount rate for valuing their liabilities that is 2-3 percentage points higher than what other firms will use (Center on Federal Financial Institutions, 2006). Given the poor financial health of many of the nation's airlines, including Northwest and Delta (whose pilot plan was subsequently terminated in

January 2007), which pushed hard for these and other special provisions, these provisions may well increase the future liability of the PBGC. In addition, these provisions set a troubling precedent for industries that become financially distressed in the future to seek similar treatment.

4.3 Plan Funding Status is Not Transparent to Market Participants

In efficient financial and labor markets, firms would be appropriately rewarded for good behavior or penalized for bad behavior with respect to pension plan funding. For example, financial markets would place a lower value on firms with poorly funded pensions, knowing that these pension obligations will eat into future cash flows. Unfortunately, most of the information needed to make informed decisions about a plan's funding status is not readily available to workers, investors, or other market participants. While pension plan sponsors are required annually to file a Form 5500, which provides detailed information on pension plan assets and liabilities, this public information is often quite stale by the time it is available for public consumption. This point was succinctly and clearly made by the PBGC Executive Director in 2005 testimony before the Senate Budget Committee (Belt, 2005):

> "Because ERISA provides for a significant lapse of time between the end of a plan year and the time when the Form 5500 must be filed, when PBGC receives the complete documents the information is typically two-and-a-half years old. It is exceedingly difficult to make informed business and policy decisions based on such dated information, given the dynamic and volatile nature of markets."

While the PBGC does receive more detailed and timely information for a limited number of plans which face the greatest risk of insolvency, the statute governing this disclosure prevents the information from being made publicly available. The Pension Protection Act of 2006 did increase requirements for disclosure of pension plan information, including certain actuarial and financial reports, upon request of any plan participant or beneficiary. However, it did not

substantially alter the amount or timeliness of information that will be made available to the PBGC itself, nor did it allow the more detailed information on under-funded plans to become public. Indeed, one can argue that the Pension Protection Act reduced the information available to the PBGC because fewer companies will now be required to file a supplemental form through which firms disclose a plan's termination liability to the PBGC.

4.4 A Case Study: Bethlehem Steel

To see just how poorly the PBGC rules can operate in practice, it is instructive to consider the case of Bethlehem Steel in more detail. This company's experience from 1996 through 2002 is summarized in Table 2.

For calculating a plan's liabilities, the PBGC requires that firms use a concept called "current liability." By this measure, in 1996, Bethlehem Steel was only 78 percent funded, and was therefore required to make deficit reduction contributions as well as pay a variable rate premium on the amount of underfunding. Further, because of its poor funding status, the company was required to send out a written notice to plan participants informing them of the pension's funding status. However, as a result of rising equity markets and the $354 million contribution made during 1996, by 1997 Bethlehem Steel's official funding status had risen to 91 percent, enough to be considered "fully funded." As such, Bethlehem Steel was no longer required to make deficit reduction contributions, to pay variable rate premiums, or to send out participant notices.

But reality was less rosy than these figures suggested. Bethlehem Steel's funding ratio had risen during the late 1990s in large part because of rising equity prices – and thus the plan's funding status was at risk of declining just as quickly when equity markets declined. Moreover,

during this period Bethlehem Steel's overall financial health was deteriorating. However, the PBGC continued (as required by law) to charge the same $19 per participant premium that it charged to every other firm. As a result of being deemed fully funded and its use of accounting credits, in the three years from 1997 to 1999, the cumulative payments made by Bethlehem Steel to the PBGC totaled less than $75 million. By 2001, Bethlehem Steel's funding ratio has slipped to 84 percent and its debt rating to D. Even so, thanks to the firm's reliance on accounting credits from prior contributions, the firm made no additional premium payments to the PBGC in 2000 or 2001.

When the pension plan terminated in 2002, it turned out that the assets held by the Bethlehem Steel pension plan were equal to only 45 percent of the termination liabilities of the plan. As a result, the present value of unfunded benefit liabilities totaled $4.3 billion.

The Bethlehem Steel case illustrates all three structural flaws of the PBGC. First, Bethlehem Steel did not have to pay higher premiums despite the risk it posed. Indeed, the cumulative premiums paid by Bethlehem Steel in the five years prior to bankruptcy totaled less than 2 percent of the amount of ultimate underfunding, despite the increasingly obviously likelihood that the firm was sliding towards bankruptcy. Second, the plan was inadequately funded, as evidenced by the $4.3 billion funding shortfall, and yet Bethlehem Steel was not required to make additional contributions in the years prior to bankruptcy. Third, Bethlehem Steel was not even required to notify plan participants of its financial status in the years immediately prior to bankruptcy.

Nor was Bethlehem Steel an isolated case. The US Airways' pension plan for its pilots was 94 percent funded according to the PBGC formula, but when the plan was terminated, it actually was only 33 percent funded, resulting in a $2.5 billion shortfall. Nor was US Airways

subject to a deficit reduction contribution for six years leading up to the year of termination. In these and numerous other cases, the design flaws of the PBGC have become apparent.

5. The Way Forward

There are at least three reasons that policymakers may wish to fix the PBGC. First, as of September 2006, the PBGC estimated that there was still over $350 billion of underfunding in PBGC-insured plans. It may be too late to change the fate of plans of firms that are already financially distressed and have underfunded plans, but thousands of other pension plans are at firms not currently in financial distress, and policymakers should be concerned abut the growth of future PBGC liabilities. Second, many firms are turning to various "hybrid" plans, combinations of defined benefit and defined contribution, to provide retirement benefits to employees. Most hybrid plans are legally considered defined benefit plans and thus insured by the PBGC, so it would be premature to argue that the PBGC will become obsolete once traditional defined benefit plans have disappeared. Third, employers and employees will be able to make economically appropriate decisions about compensation only if firms are forced to face the full economic consequences of their defined benefit pension plan funding decisions.

In examining options for reforming the PBGC, some costs will not be recovered no matter how the program is reformed. As succinctly noted by a former director of the Congressional Budget Office: "[T]hose sunk costs cannot be avoided, and policy decisions can determine only who will bear them" (Congressional Budget Office, 2005a). Useful reforms of the PBGC can broadly be divided into two categories: those that seek to insert some additional market incentives into PBGC, and those that would eliminate the PBGC in favor of (perhaps mandatory) private insurance for pension plans.

5.1 Adding Market Incentives to Government Pension Insurance

One approach would be to have a round of reforms that further tighten funding rules and implement risk-based pricing. For example, Wilcox (2006) has proposed many additional reforms to safeguard pensions, including restricting pension portfolios to ensure better asset-liability matching. These proposals as a group would make the pension promise risk-free, compensate taxpayers at market rates for insuring the plans, and stop cross-subsidization of low-risk by high-risk sponsors.

Other options might try to bring some outside market discipline to bear on PBGC. For example, the PBGC could be permitted to use private reinsurance markets to lay off some of its exposure or to securitize its assets or revenue streams, either of which would bring market pricing to bear on the insurance program (Belt, 2006b).

Another approach would begin by having the government mandate that pension plan sponsors fully disclose relevant information about liabilities and assets to employees and financial markets on a regular and timely basis. Then, the government could give pension promises seniority over other liabilities in bankruptcy proceedings. Bondholders, including sophisticated institutional investors, would then have a greater incentive to require that pension promises are fully funded, so as to avoid having greater risk imposed on them. Such an approach might help to reduce the moral hazard that exists when financially distressed firms reduce cash contributions to their defined benefit plans.[7] By itself, such an approach would still not make the promise of a benefit plan promise risk-free; from 1981 to 2000, the average default recovery rate

[7] Coronado and Liang (2006) find that riskier firms make lower cash contributions to their defined benefit plans and have lower funding ratios, even after controlling for excess cash flow. Consistent with the findings of Rauh (2006), however, they do not find that firms closer to bankruptcy invest more in equities to maximize the value of what is effectively a put option on the PBGC.

from senior secured bonds of all ratings was only just over 50 percent (Hamilton, Gupton, and Berhault, 2001). Also, the experience of Republic Steel, as described in a study by Bodie and Merton (1993), suggests that elevating the PBGC's status in bankruptcy proceedings might not be sufficient, given the cleverness of plan sponsors in devising ways of stripping assets from the pension fund. Nonetheless, such an approach could bring greater market discipline to bear.

5.2 Eliminating the Pension Benefit Guaranty Corporation

Private markets could provide pension insurance. As noted by Bodie (1996), "[E]conomic reasoning establishes a rationale for insuring defined-benefit pensions against the risk that the plan sponsor will default on its promise to provide benefits. It does *not* establish a rationale for the *government* to provide such insurance. The federal government is probably not in the best position to carry out such a task." Indeed, the U.S. government's poor record of properly pricing a wide variety of insurance programs—including terrorism risk insurance, flood insurance, and deposit insurance--illustrates just how difficult it is for the government to be an efficient insurance provider.

Instead of providing insurance, the government could mandate that firms insure their defined benefit plans in the private market. Private insurers would risk-adjust the premiums that they charge to defined benefit plans. Such an idea is hardly new. While serving as the chief economist for the PBGC, Ippolito (1987) wrote that one approach to solving the PBGC's problems would be "to simply eliminate the PBGC." He expounded on this idea further in book form, noting that the government might develop an assigned risk pool to cover the highest risk companies (Ippolito, 1989). Other authors supportive of this approach include Sharpe (1976), Pesando (1982), Smalhout (1993), and Weaver (1997).

Replacing the PBGC with mandatory private insurance would be criticized by those who believe that the PBGC should be viewed as a social insurance program with intentional subsidies to the defined benefit system, rather than as a standard insurance contract (for example, Salisbury 1996). Even if one were to accept the view that defined benefit subsidies are desirable, however, implementing such a policy with non-risk-adjusted premiums and questionable accounting rules would make little economic sense. A second potential criticism is that it is more difficult for private sector insurers to insure systematic risk than non-systematic risks, thus potentially exposing the insurers themselves to financial distress if many underfunded defined benefit plans terminate during an economic downturn. This claim ignores that fact that insurers have access to a wide range of financial instruments for hedging market risk. Further, unlike some sources of systematic risk that are beyond the control of the insurers, such as terrorism or natural catastrophes, the risk of pension underfunding can be substantially mitigated if private insurers impose tight funding and portfolio restrictions. A third criticism is that the transition to a private insurance system would be difficult for firms that are already substantially underfunded. Indeed, the cost of paying market premiums for some firms might be enough to trigger bankruptcy (for further discussion of these transition issues, see Center on Federal Financial Institutions, 2005b). Of course, if a company depends on a large government subsidy in the form of under-priced pension insurance to prevent bankruptcy, it is unlikely that the efficient long-run solution is to continue the subsidy. Nonetheless, in light of the transition difficulties, Wilcox (2006) argues that it would be desirable to first reform the PBGC further, including imposing portfolio restrictions on plan sponsors.

6. Conclusion

While the Pension Benefit Guaranty Corporation has protected thousands of workers and retirees who might have otherwise experienced devastating losses to their pensions after their employer declared bankruptcy, it has also created perverse economic incentives due to the program's failure to price the insurance according to economic principles, its failure to provide adequate funding incentives, and its failure to disclose important information to market participants. Recent legislation has improved the program rules, but the reforms did not eliminate the structural problems facing the PBGC. This paper outlines the reasons why policymakers may deem further reform of the PBGC necessary and desirable, and discusses the potential pros and cons of forcing defined benefit plans into a competitive insurance market.

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Table 1: Top 10 Firms Presenting PBGC Claims (1975 – 2005)

Top 10 Firms	**Number of Plans**	**Fiscal Year of Plan Termination**	**Claims *($ millions)***	**Vested Participants *(thousands)***	**Average Claim per Vested Participant**	**Percent of total Claims**
1. United Airlines	4	2005	$7,094	123	$57,889	22.7
2. Bethlehem Steel	1	2003	3,654	97	37,668	11.5
3. US Airways	4	2003, 2005	2,862	59	48,653	9
4. LTV Steel	6	2002, 2003, 2004	1,960	81	24,205	6.2
5. National Steel	7	2003	1,161	35	32,793	3.7
6. Pan American Air	3	1991, 1992	841	37	22,438	2.7
7. Weirton Steel	1	2004	690	9	75,052	2.2
8. Trans World Airlines	2	2001	668	34	19,511	2.1
9. Kemper Insurance	2	2005	566	12	46,324	1.8
10. Kaiser Aluminum	3	2004	565	18	32,165	1.8
Top 10 Total	33		$20,062	505	39,689	63.3
All Other Total	3,553		11,646	1179	9,880	36.7
TOTAL	3,585		$31,708	1684	$18,826	100

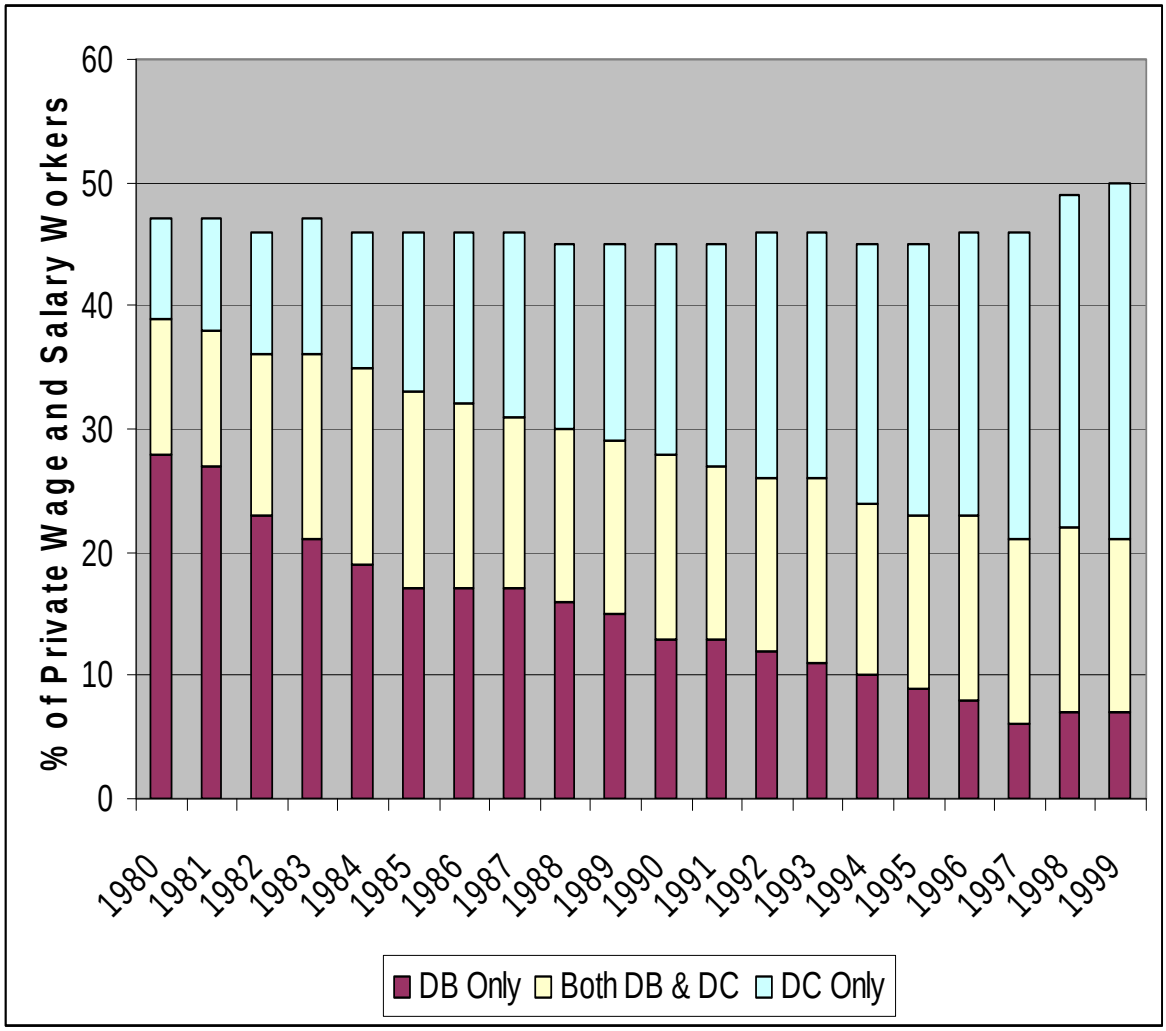
Source: PBGC Pension Insurance Data Book 2005 Table S-5

Table 2: Bethlehem Steel Pension Funding 1996 – 2002

	1996	1997	1998	1999	2000	2001	2002
Current Liability Funding Ratio ("official" ratio of plan assets to liabilities)	78%	91%	99%	96%	86%	84%	NR
Was Company Required to Make Deficit Reduction Contribution?	Y	N	N	N	N	NR	NR
Was company obligated to send out a participant notice?	Y	Y	N	N	N	N	N
Did the company pay a Variable Rate Premium for being underfunded?	$15 mil.	$17 mil.	N	N	N	N	N
Actual contributions to PBGC	$354 mil.	$32 mil.	$31 mil.	$8 mil.	$0	$0	$0
Debt Rating	B+	B+	BB-	BB-	B+	D	Withdrawn

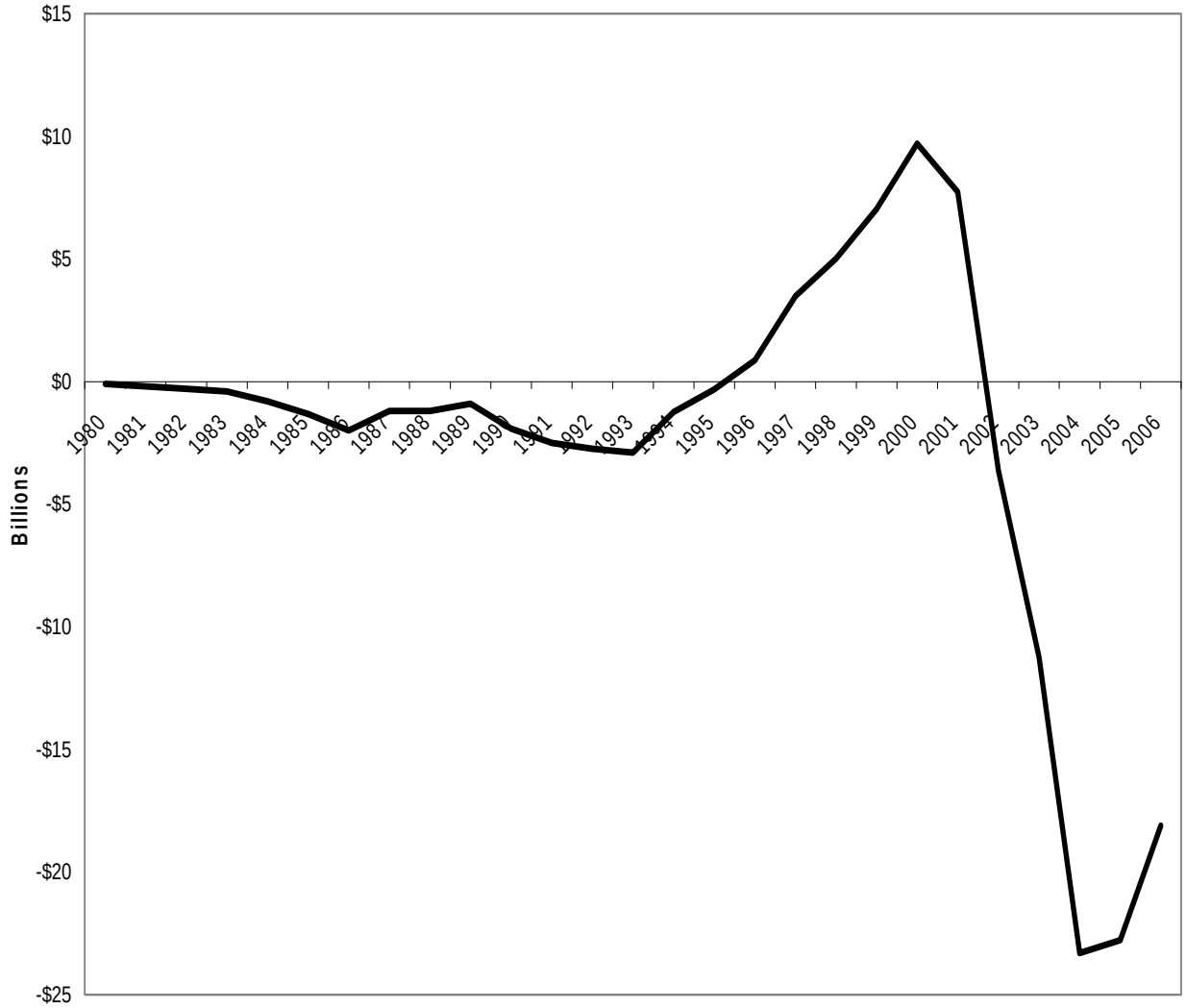
Source: Testimony of Bradley D. Belt, PBGC Executive Director, Before the U.S. Senate Committee on the Budget, June 15, 2005

Figure 1: Pension Participation Rates by Plan Type, 1980-1999



Source: U.S. Department of Labor Employee Benefits Security Administration Private Pension Plan Bulletin, Abstract of 1999 Form 5500 Annual Reports, Number 12, Summer 2004 (Table E4)

Figure 2: Net Financial Position of the PBGC's Single-Employer Program, 1980-2006



Source: PBGC Pension Insurance Data Book 2005 supplemented with FY 2006 Results