Initiative on
Business and Public Policy
at BROOKINGS

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A Guide to the Pension Benefit Guaranty Corporation

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The current financial crisis has damaged the finances of many retirees and of employees who were hoping to retire soon, but who now face the need to work for years longer or to accept a pinched life in retirement. Often, they have been relying on the value of investments accumulated in their 401(k) accounts, plus the equity built up in their homes. Unfortunately, house prices have declined by about a quarter and these losses have been multiplied by the leveraging effect of mortgage debt, which helps when house prices are rising, but adds to the harm of falling prices. At the same time stocks and bonds, which make up the great bulk of investments within 401(k) accounts, have plummeted in value.

There is a fortunate group, about a quarter of all employees and a higher percentage of retirees, that is protected by traditional, "defined benefit," pensions. These are the pensions that normally pay a fixed amount each month for as long as a retiree lives and, in many cases, for the remaining life of a spouse as well. Such pensions can provide a secure retirement, in combination with Social Security —a government-sponsored defined benefit plan. The money to pay these pension promises is built up over time by employer contributions to a pension fund plus investment income on those contributions. Any investment losses are borne by the employer and not the employee or retiree. In return, the employer benefits from any investment gains through the ability to reduce future contributions. However, defined benefit plans do bring one risk that 401(k)'s and other "defined contribution" plans do not: the pension fund can run out of money if its investments go bad and the employer becomes bankrupt and stops making new contributions. The bankruptcies of the automakers Packard and Studebaker in the 1960's brought home this risk by leaving a large number of employees with very substantially reduced pensions when they retired.

The current massive problems in the auto industry naturally make the public wonder how safe the pensions are for autoworkers this time around. There is good news and bad news on that score. On the positive side, the government created the Pension Benefit Guaranty Corporation (PBGC) in 1974 to ensure that workers would not suffer this way again. On the negative side, there are limits to the PBGC's pension guarantees that do put the autoworkers at some risk of losing a portion of their benefits. Given the importance of this industry, the situation in the auto industry is discussed in more detail later.

How does the PBGC work? It guarantees pension promises made by businesses, stepping in when a firm goes bankrupt and the pension fund has too little money to meet its future obligations. The PBGC primarily funds itself by collecting premiums from employers that offer defined benefit pension plans and by taking over whatever investments remain in the pension funds of failed companies. In order to keep premiums low, and to discourage employers from offering unreasonably large pensions, there are limits on how large a pension will be insured by the PBGC. These limits are high enough that only certain groups have had their pensions reduced, principally more senior airline pilots and the higher-paid portion of steelworkers. Members of these groups were paid relatively well and stayed with their same employer for many years, which produces large pensions. Those who retire at relatively young ages, particularly if they were relatively well-compensated, are also vulnerable to a reduction in benefits. This is the primary issue in the auto industry, where many workers retire quite young.

Unfortunately, the PBGC itself has major financial problems. It currently owes $11 billion more than it has and there are reasonable scenarios under which that deficit could balloon to $100 billion. (A GM bankruptcy alone could add over $20 billion to the deficit, if past relationships hold between what a

company's accounting books say beforehand and the loss eventually experienced by the PBGC.) This is far larger than can reasonably be paid from future premiums or excess investment returns, making an eventual taxpayer-financed rescue likely. Close observers of the PBGC situation recognize that Congress is extremely unlikely to sit back and let the PBGC default on its guarantees, although it technically could. Retirees and employees have been counting on these promises for years and it could be politically suicidal to disappoint them. However, any rescue is likely to be years away, since, like Social Security, the problem is huge, but distant in time. The pension payments are spread out over decades, meaning it would be well more than a decade before the PBGC ran out of cash, even in the worst case.

This guide is intended to help employees and retirees who have been promised defined benefit pensions to understand the protection provided by the PBGC. It is also intended to help all citizens to understand the potential effect on them as taxpayers if the problems at the PBGC do worsen. The guide is divided into the following sections:

- Background on retirement plans
- Pension funding rules
- Guarantees provided by the PBGC
- How the PBGC works
- The situation in the auto industry
- The PBGC's financial crisis
- Options to fix the crisis
- Glossary of terms

The Center On Federal Financial Institutions (COFFI) is a nonprofit, non-partisan, non-ideological public policy institute which analyzes federal insurance and lending activities. Much more information about the PBGC can be found on our website, www.coffi.org, particularly the following papers:

- PBGC: A primer
- PBGC: Fundamental Questions
- PBGC: Policy Options
- PBGC: When will the cash run out?
- Pension Reform: Summary of Final 2006 Bill
- PBGC Legislation May Not Restore Solvency

There is also a great deal of useful information available on the PBGC's own website at www.pbgc.gov.

We would like to extend our deep appreciation to the Ford Foundation for suggesting this guide and for generously providing all of the funding that supported us in researching and writing it.

Background on Retirement Plans

Only about half of current employees are offered a retirement plan of any kind, a level that has been relatively stable in recent decades. Of those employees with a plan, the large majority have a "defined contribution" plan, usually in the form of a 401(k) plan. About 17% of workers at businesses are offered a defined benefit plan, which is what the PBGC protects. Companies that offer defined benefit pensions usually also offer a 401(k) plan.

Defined contribution plans

401(k)'s and other defined contribution plans are somewhat like a savings account. Contributions go into the account and investment income is earned on the balance in it. The accumulated value is available for withdrawal during retirement, or, in certain cases, beforehand. The amount received by the employee is based solely on the account balance. If the investments do well, the employee will have a better retirement. If they do badly, the employee will have a more pinched existence. This is a key point — the investment risk belongs to the employee, not the company, as does the risk of outliving his or her savings.

There is usually a mix of employer and employee contributions. Employee contributions are generally voluntary and reduce his or her taxes in the year in which contributions are made. Employer contributions are often on a matching basis to encourage maximum participation, with the company putting in a dollar or fifty cents for each dollar contributed by the worker.

Defined contribution benefits are not insured, but the accounts must be kept in trust and are not allowed to be used by the sponsoring company for any other purpose. This means that unless there is fraud, there is no need to provide insurance for the employees, since whatever is in the account is exactly what the employee is entitled to. There have been instances of fraud in the past, but not often enough to be a major concern.

Defined benefit plans

Defined benefit pensions are what we think of traditionally as pensions. The benefits are generally defined based on years of service and the employees' wage levels in their final working years, without regard to investment performance. Traditionally, the retiree would receive a monthly check at a fixed level for as long as he or she lived and a surviving spouse might receive a check at the same or reduced level until he or she passed on. More recently, there has been a trend towards allowing "lump sum" distributions. In those cases, the employee receives the value in today's dollars of what their lifetime payments would have been, based on expectations of how long they would be expected to live on average and using an interest rate defined by law. About half of all plans offer lump sum distributions and more than four out of five employees choose to take that lump sum when they can.

The use of formulas based on the pay levels in an employee's final working years ("final average pay") creates an interesting effect, since inflation generally produces substantially higher pay over time. Each year of additional work tends to increase pension benefits more than the year before, because the worker receives both the credit for the new year of work and an increase in the credit for all past years, assuming there has been a wage increase. An extreme example of this effect occurs with airline pilots, since their seniority rules place them in larger planes as they progress in their careers and the salary level of a pilot is generally tied to the type of plane they fly. Therefore, staying an additional few years to move up to the highest salary level can produce a major bump in their pension credit for prior years of service.

Defining the benefits by years of service, salary, and expected life-spans opens up the possibility that there will not be enough money to pay the retiree what they are entitled to. The first defined benefit pensions were simply promises from the company and the employee bore the entire risk that the company might be unable or unwilling to meet its commitments. Over time, it became customary to set up a separate pension trust that would hold at least some of the funds needed to make the pension payments. Eventually, this became a legal requirement.

In 1974, in part because of the Packard and Studebaker failures, the Employee Retirement Income Security Act (ERISA) was passed. This required that companies offering defined benefit pensions set funds aside in a pension trust to pay the pensions. Rules were put in place to try to ensure that companies contributed enough over time to fund all of the pension payments. However, it was recognized from the beginning that variations in investment performance might leave the promises temporarily underfunded. In addition, companies could use their flexibility to choose certain technical assumptions and methodologies to effectively defer some contributions when their financial situation made it difficult to meet the schedule, creating a second way in which underfunding could occur. In addition, explicit funding deferrals were allowed in certain cases for companies in financial trouble that appeared to be temporary.

The PBGC was established to protect employees against the possibility that a company would go bankrupt at a time when its pension fund did not have enough money to make all its future payments. Companies in bankruptcy are allowed to reduce the amount that they pay on all their promises, whether to banks that lent them money, suppliers that provided services, or employees and retirees who have been promised pensions. The pension fund and other claimants would likely receive some partial payment at the end of the bankruptcy process, but not the total amount they were owed. Sometimes the actual payments are far below the original promise.

Without the PBGC, an underfunded pension fund would not be in the position to pay everyone their full pensions. In those situations, the PBGC steps in and takes over the investments of the pension fund and takes on all of its promises, except pension payments in excess of a certain level or which violate certain conditions, as will be explained in detail later. (This applies to single-employer pension plans. The rescue methodology is different for multi-employer plans, as explained later.)

Hybrid plans

The popularity of 401(k) plans has led to a movement towards "hybrid" plans that are legally structured as defined benefit plans, but whose pension promises mimic those of a defined contribution plan. That is, an employee's pension promise grows each year as if they had their own savings account which takes in contributions from the employer and whose balance grows at a specified interest rate. In most cases, all employees receive the same interest rate, although some plans give an employee the ability to choose among a limited set of investment options. Hybrid plans virtually always offer a lump sum option, which retiring employees are highly prone to take. (This does not necessarily mean that they spend the accumulated balance. If the balance is large, there is a strong tendency to roll it over into an IRA or a 401(k) account in order to continue building value on a tax-deferred basis.)

Almost a third of all participants in defined benefit plans insured by the PBGC are now in hybrid plans, usually designed as so-called "cash balance" plans. Since these plans are legally in the form of defined benefit plans, the PBGC insures them and the sponsoring companies must obey the same funding rules as for other defined benefit plans. However, hybrid plans do have subtle effects on the PBGC's risk level that are beyond the scope of this paper. As one example, employees in hybrid plans usually build value in their pensions more evenly than in traditional plans. There is frequently a higher crediting rate for later years, but the effect is more muted. This difference in the nature of the promise

changes the risk taken on by the PBGC, although it is not always obvious whether this increases or decreases that risk.

Comparison of defined benefit and defined contribution plans

There is no clear, objective answer as to whether a defined benefit plan is better than a defined contribution plan. It depends on what one's priorities are. "PBGC: Fundamental Questions," provides an analysis of the pros and cons of defined benefit and defined contribution plans. As part of this analysis, a table was constructed ranking the different plan types on 21 different characteristics. The overall conclusions based on that table were:

Plan designs form a spectrum, with 401(k)'s at one end and traditional defined benefit plans at the other. The order of ranking is quite consistent, with the two defined contribution plan types most similar to each other and the two traditional defined benefit plan types clumping together. The hybrid plan design generally falls in the middle, consistent with its attempt to mimic defined contribution plans within a defined benefit format.

Traditional defined benefit plans protect participants better from risks related to uncertainties about savings rates, investment performance, lifespan, and other factors than 401(k)'s do.

401(k) plans provide far more participant control and flexibility to make choices than do traditional defined benefit plans, including the flexibility to change jobs without a major loss of benefits and the chance to select the level of exposure to the rewards and risks of the stock market.

Businesses find 401(k)'s more attractive than traditional defined benefit plans. There appears to be a slightly narrower range of differences here, but companies clearly are voting with their feet to move away from traditional pension plans and towards 401(k) plans.

Traditional defined benefit plans are somewhat better at meeting other public policy objectives than are 401(k) plans. However, this category is the most subjective, in terms both of which sub-objectives were chosen and the weighting placed on a wide range of criteria.

Who has defined benefit pensions?

Defined benefit plans insured by the PBGC, which covers virtually all plans offered by private businesses except for the very smallest, provide pension promises to a population that is quite different from the general population of private sector employees and retirees. Almost half are union members, compared to about one-tenth of the general population. Similarly, around half of the participants are in manufacturing industries versus approximately one-seventh of the general population. Because of the decline in manufacturing and unions, participants are also disproportionately older, including a higher percentage of retirees than in the population at large.

Although statistics are not readily available, it is almost certain that employees participating in these plans have incomes significantly above those of the overall working population. It is worth remembering that roughly half the working population has neither a defined benefit nor a defined contribution plan. Those who do have them tend to be paid more as well.

Pension Funding Rules

The role of the PBGC is to protect employees and retirees from losing pension payments due to underfunded pension plans, so it is worth explaining the funding rules in some detail. ERISA and the tax laws (the "tax code") require companies to prefund future pension payments, according to very complex rules. Essentially, the company that has made the pension promise (the plan "sponsor") is putting up collateral to ensure that the promise is kept. Originally this was voluntary and then it became a requirement, but one with a great deal of flexibility. Another change is that the collateral has become very difficult for the employer to take back through a "pension reversion," if it turns out to be more than necessary for the current level of pension promises. Finally, in recent years, the intention has become to shoot for full collateralization, so that the PBGC and participants would not be at any risk, although this is so complex to achieve that it remains a target and not a constant reality.

The core concept is that there should be funds in the pension plan equal to the value of the future pension payments, in today's dollars. This value is measured by "discounting" the payments back to a "net present value." This is done using a "discount rate," the interest rate likely to be earned by an appropriate set of investments. In intuitive terms, dollars are set aside now and assumed to grow like a savings account by earning interest. The account is drawn down each year to pay pensions. The amount needed today is the value which will cause the balance to be zero when the last pension payment is made, taking into account investment earnings and pension payments over time.

The discount rate applied to these future pension payments is controversial. Most experts agree that it depends principally on the riskiness of the investments that are considered appropriate. The funding rules for pensions now use an index of corporate bond rates to set the discount rate. However, many financial economists differ with this view. They believe that the correct rate for measurement is the "risk-free" rate. The Treasury rate, currently near 4%, is a reasonable approximation for that rate.

The discount rate choice is crucial; a one percentage point change in discount rates usually changes the net present value, the amount of funds needed now, by 10-15%. A high discount rate allows companies to put in less money and therefore create fewer of the trust assets that act as collateral to protect the PBGC. Low rates can protect the PBGC more, but do so by creating more of a burden for firms.

The legal funding rules are highly intricate. Simplifying greatly, firms must fund benefits earned during the year plus interest on the starting balance of future obligations, which are now one year closer to payment. Funding is also adjusted for the effects of changes in estimates for life expectancy and other actuarial assumptions, discount rates, and the market value of assets. These changes are recognized over a number of years rather than being applied completely in the first year. This smoothing is to give companies a chance to catch up over time, rather than facing a potentially huge cash burden in a single year if, for example, the stock market falls sharply as it has done recently. This smoothing increases the potential for significant underfunding to develop, which creates problems if a firm goes broke while the plan is still underfunded.

Required contributions can be delayed ("waived") when they would represent a temporary and substantial business "hardship," based on legal specifics and the Treasury Department's judgment, but they must be made up with interest and the Internal Revenue Service can require collateral.

Another potential cause of underfunding is that a number of plan sponsors have substantial "credit balances" created by making contributions in one

or more previous years that exceeded the minimum requirements. In order not to discourage such additional contributions, rules were established to allow future year's contributions to be reduced by the remaining balance of past excess contributions. Unfortunately, until the Pension Protection Act of 2006, there was no linkage between the credit balances and the value of the assets in which the excess contributions had been invested. In some cases, very large credit balances exist, despite significant underfunding. This means that the sponsor of an underfunded plan may be able to skip making any contributions for a few years, likely aggravating the underfunding problem. This is of particular relevance to the auto industry, as discussed later.

It is important to note that accounting rules have no direct effect on legal funding requirements, and vice versa, although they are based on some similar concepts. There can be a large difference at times between what the accounting statements of a company say the pension liability is and the funding level that is required by law.

Guarantees provided by the PBGC

The pension benefits guaranteed by the PBGC vary depending on whether an employee or retiree, known as a "participant," is in a "Single-employer plan" or a "multiemployer" plan. About three-quarters of participants are in single-employer plans, meaning that there is generally only one company providing the benefits. The other quarter of participants are in industries where it is so common to move from employer to employer that the industry, working with labor, has set up pension plans that cover multiple employers. For example, it is common in the trucking industry to change employers frequently, so a multiemployer plan has been set up that allows a worker to earn pension credits for working at any of the companies participating in the plan. All of the participating companies are jointly responsible for ensuring that retirees receive their promised pensions. For completeness, it is worth noting that there are several hundred plans that are considered single-employer plans because no union is involved, but which actually include more than one employer.

Earning the benefits

Traditionally, plans for salaried workers have been set up differently than plans for unionized, hourly workers. Salaried employees generally earn pension benefits based on the number of years that they work at the firm multiplied by a fixed percentage, (often 1%), multiplied by their final salary level, usually based on the average of their last few years of work. So, if a salaried employee earned $50,000 a year in his or her final years and had 10 years of service, the pension might be $5,000 a year ($50,000 times 10 years times 1%.) Non-union hourly workers often receive pension credit in a similar manner, although some adjustment might be made for differing levels of hours worked in different years.

Unionized workers often earn a fixed monthly benefit amount for each period of service, regardless of their wage level, as negotiated between the unions and the company. For example, an employee might receive $100 per month for each year of service, so that an employee serving 30 years would receive $36,000 a year (30 years times 12 months times $100). Traditionally these benefit levels were increased for both future and past service as part of contract negotiations every three years.

Pension plans generally also have a "vesting" schedule. Workers who leave in their early years of employment with a company may lose all or part of their promised pension. ERISA limits the toughness of these vesting requirements, so that most companies have a five-year requirement for an employee to vest in their entire pension benefit. (As a separate rule, "cash balance" plans have vesting periods of three years or shorter.) The PBGC guarantee only applies to vested benefits.

Single-employer plans also generally provide an incentive for early retirement. Employees are usually allowed to retire before the standard age and years of service requirements have been fulfilled, but at a reduced pension level. One reason for the reduced benefit is that someone who retires earlier will collect benefits for more years than if they retired closer to the end of their lives. So, if the benefit were kept constant, it would unfairly pay more to early retirees over time. The early retirement incentive is that most companies reduce the benefit by less than the life expectancy table would suggest. Historically, this has often been a way for companies to encourage early retirement in order to replace expensive older workers with cheaper younger workers or to reduce their work force without firing employees.

PBGC guarantees for single-employer plans

This section describes limitations to the benefits that the PBGC guarantees. Most retirees are not

affected by these limits. A PBGC study showed that only 16% of participants in plans taken over between 1990 and 2005 suffered any reduction. Those that did lost an average of 28% of their promised benefits. Airline pilots and steelworkers were the most likely to be affected by the caps, as described earlier. (Most of the PBGC's claims have been from failed steel companies and airlines, so these groups are a significant percentage of the participants aided by the PBGC.)

The principal limitation on the PBGC guarantee is a cap on annual benefit payments. This is set by law at $54,000 per year for a retiree at age 65 in plans that the PBGC eventually takes over whose sponsors go bankrupt in 2009. The cap rises annually for new plan terminations based on the annual inflation adjustment in the Social Security program. Once a plan is taken over, the guarantee level is set in stone and does not increase with inflation. (Plans taken over by the PBGC in the past were subject to lower caps, since this inflation adjustment has been in place for many years.) It may be that the participants are fortunate enough that the funds in the pension trust are enough to pay benefits over and above those guaranteed by the PBGC, in which case there is a complicated formula to determine who gets the benefit of the extra funds.

By law, the PBGC makes two adjustments to the cap on annual benefit payments. Just as most pension plans do, it adjusts the maximum guarantee down for retirements commencing before age 65 and up for later retirements, to reflect the number of years the participant is likely to receive benefits. However, there is no incentive built in to encourage early retirement, so the amounts drop off significantly faster for early retirement than is usual for a pension plan. The amount is also lowered if the employee has elected to have survivor benefits paid to their spouse if the employee dies before the spouse does. This, too, is similar to how a standard pension plan works, since paying out as long as even one of the two is alive will almost always produce more pension checks than simply paying while one lives.

Improvements made to pension benefit formulas within the five years preceding the date of the sponsor's bankruptcy are phased in. This is to prevent a company near bankruptcy from promising benefits that it is unlikely to be able to afford, knowing that the PBGC will end up honoring the obligation. (There is a history of companies exhibiting this type of behavior, since unions are often willing to accept the pension benefit increase instead of demanding some cash benefit such as a hike in wages. The PBGC guarantee makes such pension promises valuable even if the employer is weak.) The Pension Protection Act of 2006 extended this benefit limitation to increases in pension benefits that were triggered as a result of plant shutdowns. Such protections have been negotiated in a few industries in the past.

Such benefits are phased in at the greater of: (a) 20% of the improvement per full year since the amendment or (b) a monthly benefit of $20 for each year since the amendment. That is, if a change was introduced slightly over three years ago, only 60% of the increase will be guaranteed, or $60 per month, if this is higher. The cutback does not apply to an automatic increase in benefits during the five year exclusion period made according to a preexisting formula, such as increases in "final average pay" calculations based on raises. In practice, this creates a disparity between plans for salaried employees and the typical union plan. The union plan is subject to the cutback rules because benefit increases are a result of new labor contracts which create pension plan amendments, whereas salaried employees are not subject to cutback because their increases are automatic and do not result from a plan amendment.

Finally, there is a benefit limitation sometimes referred to as "accrued at normal." This only applies to supplemental benefits that some plans provide to early retirees, often as part of a package of incentives to encourage early retirement when a company has to reduce its workforce. This limitation says that the guaranteed portion of the pension in any given year can be no larger than the amount the

retiree would have received as a pension if he or she retired at the normal retirement age.

In some cases, the investments taken over by the PBGC may be enough to pay all of the guaranteed benefits with money left over. In that case, the funds are used to pay benefits in a specific order, set by law. The first category is entirely funded before anything is allocated to the second category and so on down the priority list.

The priorities are:

1. Voluntary employee contributions. (These are relatively rare.)
2. Mandatory employee contributions. (These are also relatively rare.)
3. Payments to participants who have been retired for three years or more or who became eligible for retirement at least three years before the plan sponsor went bankrupt
4. Benefits guaranteed by the PBGC.
5. Vested, non-guaranteed benefits.
6. All other benefits.

The amounts recovered by the PBGC in bankruptcy proceedings are split among the participants in a similar manner. The complexity of this process is a principal reason that "final determination" of PBGC benefits can take several years to calculate. Estimated benefits are paid until the final determination is made. If the final determination is higher than the estimate, the PBGC will pay interest, but participants are never charged interest if they were overpaid.

PBGC guarantees for multiemployer plans

Multiemployer plans are under quite different, less generous, guarantee limits. By law, the PBGC guarantees only 75% of the annual benefit over $132 per year of service and the PBGC payment is capped at $429 for each year of service. For a participant with 30 years of service, the 75% limit applies at a pension of $3,960 per year and the total cap is $12,870 in annual benefits. These levels do not automatically increase for new plan terminations as single-employer limits do and were changed only once since 1980, in 2000.

Unlike single-employer plans, multiemployer plans receiving financial assistance from the PBGC are required to suspend benefit payments that would exceed the guarantee level. This includes a requirement to reduce benefits to meet the 75% limitation described above. Thus, there are also no payments of non-guaranteed benefits, as there can be in single-employer plans, unless the plan is somehow restored to health and repays its loan from the PBGC. (Please see later for an explanation of the mechanics of a PBGC rescue of a multiemployer plan, which differs markedly from how a single-employer plan is handled.)

For multiemployer plans, there is no phase-in of improvements made to pension benefit formulas within the five years preceding the date of plan termination. Instead, participants lose all such increases.

PBGC guarantees for multiemployer plans are therefore substantially less generous than for single-employer plans. On the positive side, participants in multiemployer plans are protected by the obligation of every company in the plan to ensure that all promised pensions are paid, whereas a single-employer plan is dependent on the fate of one company alone. The net result is that fewer multiemployer plans fail to pay their full benefits, but those that do need assistance from the PBGC cut back their pension benefits much more sharply than a single-employer plan would.

How the PBGC works

The PBGC is a federal government corporation created in 1974 when ERISA was passed. It has no outside owners besides the government. The PBGC collects insurance premiums and receives no general tax revenue, although it has a legal right to borrow up to $100 million from the Treasury Department as needed. (This figure is very small in relation to the size to which the PBGC has grown over time.)

It insures approximately 44 million participants in more than 31,000 pension plans offered by businesses. (Government plans are not insured.) The PBGC insures pensions with an estimated value of approximately $2.5 trillion as of 2008. To date, it has assumed pension obligations for approximately 1.3 million workers and retirees in about 3,900 plans. The management team is headed by a Director, formerly called an "Executive Director," appointed by the President with Senate confirmation. A three-member Board of Directors is chaired by the Secretary of Labor and includes the Secretaries of Treasury and Commerce. In practice, they generally delegate Board attendance to an Assistant Secretary of their cabinet department. A presidentially-appointed advisory committee of employer, employee, and public representatives makes suggestions on certain matters.

Taking over underfunded single-employer pension plans

The PBGC's role is to protect participants in the event that plan sponsors are unable or unwilling to fulfill their pension obligations. The mechanism differs between single-employer plans, explained in this section, and multiemployer plans, explained next.

The PBGC takes over the investments and obligations of underfunded single-employer pension plans which are terminated. Such a plan termination can be initiated by the company sponsoring the pension plan under certain conditions ("distress termination"), usually while the company is in bankruptcy. Or, under specific circumstances, the PBGC can force a plan termination ("involuntary termination") if it believes that waiting will create greater harm.

A plan sponsor will be granted a distress termination only in three circumstances:

- The sponsor is being liquidated in bankruptcy proceedings.
- The sponsor is reorganizing under Chapter 11 of the bankruptcy law and the bankruptcy judge determines that the firm cannot successfully survive post-bankruptcy without a plan termination.
- The termination is "required to enable payment of debts [by the sponsor] while staying in business or to avoid unreasonably burdensome pension costs caused by declining workforce."

The PBGC may initiate involuntary terminations only in the following situations:

- A plan has not met the minimum funding requirements
- A plan "will be unable to pay benefits when due."
- The "possible long run loss [to the PBGC] with respect to the plan may reasonably be expected to increase unreasonably if the plan is not terminated."
- Under certain conditions, if there is a pension payment to a major owner of the company sponsoring the pension plan and that payment causes the plan to become underfunded. This would only ever apply to a relatively small plan.

Many employers have been "freezing" pension plans. It is important to understand that this is not a termination and does not affect the PBGC or its insurance,

except in the sense that the promises it is backing will stop growing or will grow more slowly. A plan sponsor may choose to "freeze" a plan by ceasing to credit new pension benefits to its employees for additional service. A freeze is only allowed if proper procedures are followed and there are no separate contractual commitments blocking the change.

A sponsor could implement any of three types of freezes. A "soft freeze" still allows benefits to rise in "final average pay" plans to the extent that salaries increase. A "hard freeze" cuts this off as well. Finally, some view a "closed plan" as a form of freeze. This involves ceasing to allow new employees into an existing plan.

Again, a freeze is not a termination; the plan continues under the normal funding and other rules. However, employees earn fewer or no additional pension benefits.

Providing financial assistance to distressed multi-employer plans

Distressed multiemployer plans are not taken over by the PBGC, instead the PBGC provides emergency loans as necessary to ensure pension payments are made. If the plan is restored to health, which is not a frequent occurrence, the PBGC will be repaid over time. As noted above, distressed plans are required to cut back pension payments to the level actually guaranteed by the PBGC, which can be much lower than the original promises.

PBGC finances

Like any insurer dealing with a claim against it, whenever the PBGC takes over a pension plan, it expects to take a loss, since the obligations of the plan are greater than the value of the plan's investments. Therefore, the PBGC needs an additional source of funds to cover the claims and its operating expenses. This is supposed to be provided by premiums charged to the companies sponsoring pension plans that are insured by the PBGC. Premiums for single-employer plans are charged at the rate of $34 per participant, which will automatically rise with the inflation rate used for Social Security calculations. In addition, underfunded plans are required to pay another $9 per thousand dollars of underfunding of vested benefits. Finally, companies who passed pension obligations on to the PBGC in bankruptcy and then successfully reorganized under Chapter 11 of the bankruptcy code are required to pay the PBGC $1,250 a year for three years for each participant who was in the plan.

In 2008, the PBGC collected about $1.5 billion of premiums from single-employer plans, of which $1.2 billion was from the fixed premium, $241 million from the variable premium on underfunding, and $57 million from the retroactive premium on bankrupt companies.

The PBGC's multiemployer insurance premiums are simple; there is a charge of $9 per participant per year, which brought in $90 million in 2008.

The PBGC also inherits the claims of terminated single-employer pension funds against the bankrupt company that sponsored the fund. Although there are exceptional circumstances in which the PBGC has a higher recovery priority, it generally acts as an unsecured creditor; at the bottom of the bankruptcy priority list for creditors. (It would still be ahead of common and preferred stockholders, but there is often very little left for those claimants.) As a result, it generally recovers only a small portion of the underfunding through the bankruptcy process.

Another source of funds for the PBGC is investment income. This is earned on the investments that it takes over from the terminated pension plans as well as funds from premiums and recoveries from bankrupt companies. The PBGC had about $48 billion of investments as of September 2008, generally managed by major investment management firms which have been hired for this purpose.

There is also an operational aspect to the PBGC. It is responsible for making the pension payments to all of the retirees for plans which it has taken over. Much of this work is accomplished by contract employees.

The Situation in the Auto Industry

The U.S. auto industry is undergoing very hard times which have put the existence of a number of the automakers and their suppliers in peril. Chrysler is already in bankruptcy and there is a serious possibility that General Motors (GM) will follow. Ford appears likely to survive without bankruptcy, but this happier result is by no means certain. In addition, major suppliers such as Delphi are already in bankruptcy.

Unfortunately, the gravity of the situation is made worse by substantial pension underfunding at most of these firms. Business Week reports that the PBGC recently estimated that the auto industry, including suppliers, was underfunded by about $60 billion, according to the PBGC's method of calculation. GM alone had a shortfall of about $20 billion, while Chrysler had a gap of about $9 billion. Sadly, the history of the PBGC has shown that these kind of deficits can grow substantially by the time the PBGC actually takes over a pension plan, so even these figures are hardly worst case numbers. As discussed later, most of the current pension deficit would actually fall on participants in the Chrysler and GM plans because these plans are significantly more generous than the legal guarantee limits covered by the PBGC.

On the positive side, it appears that even though Chrysler is in bankruptcy, it does not intend to terminate its pension plans. "Credit balances" from previous contributions exceeding the required minimums will apparently allow it to skip cash contributions for about two more years, buying the company time to try to repair its own finances and to hope that strong investment returns narrow the pension deficit. If the gap does not narrow, it will apparently have to begin making cash contributions to the pension plans of about $1 billion a year, starting in a couple of years. However, if the company successfully reorganizes and emerges from bankruptcy without terminating the plans, as seems very likely, the participants would not have to fear a loss of their benefits unless Chrysler went back into bankruptcy again in the future. (It is possible that a distress termination would be permitted outside of bankruptcy, but this would be highly unusual.)

A potential GM bankruptcy would likely play out the same way. GM also has large funding credits for past contributions that would allow it to avoid putting more cash into the pension plan for the next few years. Given the major roles being played by both the UAW and the government, who would like to avoid terminating the pension plans, it seems unlikely that a pension plan which is not a major cash drain in the near-term would be terminated.

If plans at either company were terminated, there would be a substantial loss of benefits for many of the participants. Participants would reportedly bear $16 billion of the $20 billion pension deficit at GM and $7 billion of the $9 billion Chrysler deficit, if these plans terminated and recent estimates proved to be correct. The main reason for the huge hit is that the automakers provide their employees with the ability to retire relatively young and they have been providing substantial pension supplements to encourage early retirement. The PBGC's treatment of early retirement, mandated by law, essentially strips away all of the subsidies and supplements that encourage early retirement, leaving a significant amount unguaranteed.

Earlier in the paper, it was speculated that the PBGC could conceivably absorb a $20 billion loss if GM were to eventually terminate its pension plans. This figure is a very rough estimate based on two key facts. First, PBGC's losses from Bethlehem Steel and many other past PBGC problems were often substantially larger than the last reported figures would have suggested. Second, GM's pension plan has about $100 billion in obligations. If the pension deficit widened out by just 20% of this amount, it would add $20 billion to the pension deficit, the great bulk of which would fall on the PBGC rather than the participants.

The PBGC's financial crisis

The PBGC owes $11 billion more than the value of its assets, as of September of 2008, the end of its last fiscal year. Further, there is the real possibility of much higher deficits in the next few years if some of our industrial giants were to go into bankruptcy. Analyses by COFFI in 2004 showed that the deficits could easily exceed $100 billion if trends continued as they had been. Although we do not have updated numbers, the situation since 2004 has worsened in many significant ways due to the severe economic and financial crisis we are undergoing. This is at best only partially offset by changes that were put into place as a result of the Pension Protection Act of 2006.

The root causes

The PBGC is in an unusual situation for an insurer, even a government one. It controls virtually none of the key variables that determine its finances, since these are carved into law. The PBGC has no ability to decide who to offer insurance to, since all pension plans at businesses with certain characteristics qualify and indeed are required to buy the insurance, with some minor exceptions. Nor can it directly influence the behavior of pension plans, since it has no regulatory authority, including no ability, for example, to question or influence the investment strategy of a pension plan. The PBGC's premium schedule is set by Congress, with no discretion. Funding decisions by the firms sponsoring pension plans are at the firms' discretion, as long as the contributions fall within the funding rules set by Congress. Even exceptions to the funding rules, such as funding waivers, are not directly ruled upon by the PBGC, although the IRS will solicit the PBGC's opinion.

Congress has attempted over the last 35 years to keep the PBGC's premium rates low and the funding rules relatively flexible, in order to encourage companies to continue offering traditional pension plans. As a result, the premiums have been consistently too low for the level of risk borne by the PBGC as the result of funding and investment decisions taken by companies and their pension plans. An analysis by COFFI in 2006 showed that premium rates would have had to have been roughly double their actual levels over the life of the PBGC to have avoided the deficit that the PBGC then faced. Further, it concluded that rates would have to be as much as six times their 2006 level in order to clear up the existing deficit and avoid creating a new one going forward, assuming no other actions were taken.

One reason that it has not been obvious that rates were too low or funding rules too weak is that the PBGC, like other credit insurers, is heavily affected by the business cycle. A for-profit credit insurer will often make high earnings for many years in a row, but lose enough in the next year to bring the accumulated profits down to reasonable levels. This is because it takes a high level of bankruptcies to create significant losses, levels that are reached infrequently, but which do occur from time to time. When they do, the losses can be heavy.

The PBGC's situation is even more exaggerated because two things happen in severe recessions that work together to create large losses. There are many more corporate bankruptcies in recessions than in good times — a strong economy covers most mistakes, while a deep recession exposes every weakness. This is critical, since the PBGC only takes over underfunded pension plans from bankrupt companies or those very near bankruptcy.

Further, weak economies are usually accompanied by falling stock markets (which decrease the value of plan assets) and falling interest rates (which decrease the discount rate, raising the cost in today's dollars of future payments). The combined effect is to sharply increase pension underfunding. This

would not occur if pension funds were entirely invested in high-quality bonds with maturities matching the future payments, since the market value of the bonds would rise to offset the change in interest rates. However, the average corporate pension plan generally keeps about three-fifths of its assets invested in stocks. Stock prices can easily move down at the same time as interest rates do, resulting in negative effects on both sides of the balance sheet. In addition, even a pension plan's investments in bonds may only be loosely tied to the timing of expected pension payments, creating another mismatch with the potential to create or worsen pension underfunding.

The current situation

As noted, the PBGC was $11 billion in the hole as of September 2008. This is calculated according to Generally Accepted Accounting Principles (GAAP) which includes establishing a liability for "probable losses," which was $3 billion in 2008. These are claims for plans that it believes will be terminated in the future, based on information available as of the end of the PBGC's fiscal year. It bases this on applications for distress and involuntary terminations and on insolvencies where no solvent plan sponsor remains to take the pension underfunding. The PBGC also determines whether a plan is "high risk" based on a considerably larger list of risk factors, including the existence of funding waivers, junk bond ratings, and loan defaults. Each high risk plan is evaluated to see if in the PBGC's judgment it is likely to terminate, in which case it also generates a "probable loss."

Not all probable losses will materialize. Investment gains can change the funding status, a troubled firm may avoid insolvency, a buyer can materialize that is willing to take over the pension obligations, or an insolvent sponsor may choose not to terminate a plan after all. For example, 11% of probable loss amounts set up from 1987-2007 had not resulted in claims by the end of 2008, after adjusting for five airline plans which were effectively rescued by special provisions in the Pension Protection Act of 2006. Only 3% of the amounts have been deleted as unlikely to create a loss for the PBGC, the rest may yet produce a loss.

The PBGC also reports an estimate of potential losses from "reasonably possible" future claims. Firms are placed in this category if they meet any of a number of criteria, most of which revolve around a less than investment grade credit rating or equivalent shaky creditworthiness. This figure does not go into the financial statements except as a footnote, but is used by PBGC as a measure of its potential risk. Reasonably possible losses as of December 2007 were judged to be $47 billion. This figure would likely be sharply higher now, given the depth of the current recession and the continued damage to the stock market, neither of which are yet in the possible loss figure given the substantial delay in compiling the data.

How did the PBGC lose $11 billion?

Much of the damage to the PBGC's finances occurred in 2002 and 2003. Bankruptcies of PBGC-insured firms rose significantly at the same time as pension funds were becoming more underfunded, in part as a result of the bursting of the "dot com" bubble. The combination produced a record level of $15 billion of underfunding in plans taken over by the PBGC in 2002 and 2003. Bethlehem Steel alone accounted for $4 billion.

Defined benefit underfunding sharply expanded from approximately $160 billion at the end of 2001 to over $350 billion at the end of 2003, according to the PBGC, as a result of swings in the financial markets. The S&P 500 stock index fell by 1%, rather than earning the cumulative 15-20% that companies expected. Even more important, the discount rate used by the PBGC to calculate its present value cost of future benefit payments (by far its biggest liability) fell from 6.70% to 4.40% as interest rates fell in general. Declining discount rates mean a higher level of investments is needed now to pay the future obligation.

Further, the PBGC's investments were exposed to the same trend of falling stock prices and falling interest rates that affected corporate pension plans, since it held 30% of its assets in stocks at the end of fiscal year 2001. Investment income of $4 billion over the two years did not fully offset an increase in the present value of the liabilities of at least $6 billion due to lower discount rates.

2004 continued the downward spiral in the PBGC's finances, affected in large part by the United Airlines bankruptcy. The actual claim on the PBGC, the largest ever at $8 billion, came in 2005, but it was already in the "probable loss" category by 2004, which meant it fed through the numbers as if it were already a claim. The PBGC's deficit under GAAP accounting bottomed out at in 2004 at $23 billion. Since then, a stronger economy and better financial markets (until recently) led to a halving of the deficit. This fortunate movement is extremely unlikely to continue over the next several years, given the awful state of the economy and the financial markets. As discussed later, a GM bankruptcy alone could add $20 billion to the PBGC deficit.

The effects of the PBGC on the federal budget

Profits or losses at the PBGC affect the federal budget, but in a skewed way, very different from Generally Accepted Accounting Principles. The federal budget credits the PBGC with the full insurance premiums being raised to build funds to pay its massive liabilities, but only reflects a small portion of the increased liabilities themselves in the annual budget calculations. (Please see "PBGC: A Primer" for the very complicated details.) As a result, the PBGC aided the federal budget by $12 billion from when it went "on budget" in 1982 until 2003, despite losing almost that same amount in economic and GAAP accounting terms.

Future losses at the PBGC

The current deficit at the PBGC is only a taste of what we are likely to experience in the future, according to extensive analyses run by COFFI. COFFI was the first organization to publish detailed estimates of future cash inflows and outflows for the PBGC. It is still the only non-governmental body to make these estimates, since only the Congressional Budget Office (CBO) has produced any similar detailed analysis. The results of both COFFI's work and that of the CBO have been broadly consistent with the PBGC's own estimates, but the PBGC chooses not to publish the underlying details of its analyses, making it impossible to fully compare the workings of the models. Please see "PBGC: When will the cash run out?" and "PBGC Legislation May Not Restore Solvency" for an explanation of COFFI's projections in greater detail.

Although the calculations in COFFI's model are complex, the concept is simple. We estimate how much the PBGC will take in from premiums, investment income, and bankruptcy recoveries. There is some variation in these figures, but the numbers are still reasonably predictable on average. That is, investment income can move up or down quite considerably, but the average over time is much more stable, allowing us to be reasonably comfortable within a range of average returns. Part of the PBGC's cash outflows are also fairly predictable, since they consist of pension payments for people whose plans have already been taken over by the PBGC. Actuarial analyses were available from the PBGC which showed the likely pension payments going out many years. (The PBGC has stopped providing these estimates, unfortunately, making future modeling more difficult.) PBGC expenses levels are also reasonably predictable, once one has estimated the size of the pension promises at plans that have been taken over.

The hardest part of the modeling is the projection of future losses for the PBGC from taking over additional underfunded plans. At the time of COFFI's initial modeling, the biggest risk was from the likely bankruptcies of several major airlines, as did indeed occur. In addition to specific modeling of these bankruptcies, the analysis also looked at a base case scenario for non-airline losses and more optimistic

and pessimistic cases, in order to evaluate the range of reasonable possibilities. Estimating the losses is fairly complex – interested readers should look to the reports cited above for the details.

COFFI's modeling underlines three problems. First, 35 years of charging premiums that were too low has baked in losses that have only partially become evident through past bankruptcies. There are likely to be a number of bankruptcies in the next few years that will produce major losses for the PBGC, given the depth of the current recession. For example, it appears quite possible that General Motors will undergo bankruptcy. If this were to be accompanied by a plan termination, the PBGC could face a major loss on GM's pension underfunding. Please see the earlier discussion on the auto industry.

Second, the premiums collected by the PBGC appear insufficient to cover the level of risk it faces on new pension promises. This risk is imposed on it by Congressional mandates and the choices made by the businesses sponsoring pension plans. The PBGC's own estimates are that the average level of claims in today's dollars over the next ten years would be $3.6 billion a year, well above the $1.5 billion in premiums collected in 2008. (That disparity is likely to be considerably larger when the next annual report comes out, given the claims that are almost certain to result from the current severe financial crisis.) This means that the hole keeps getting dug deeper. This would not be evident every year, however, since the losses are highly concentrated in years of severe recession or weak financial markets. The PBGC's finances could improve for years in a row, as they have done for the last few, even though the structure of premiums and risks is storing up future trouble.

Third, the actual cash outflows will build for a number of years even if there are no new bankruptcies, simply because older employees will be retiring and starting to collect benefits. This will be offset to some extent by the deaths of existing retirees and their spouses, which will end their particular pension payments, but the new retirements will far outweigh the mortality effects for a number of years. As these larger payments are made, the investments of the PBGC will begin to fall, resulting in less investment income as well, compounding its problems.

COFFI's base case analysis found that the PBGC would run out of cash in 2020 unless it were rescued. Ironically, the evil day will be pushed out further if the PBGC has additional large claims, as is likely to be the case. The mechanism for this unintentionally works similarly to a Ponzi scheme. A major bankruptcy brings in substantial pension assets that help to fund payments from prior bankruptcies, even though the size of the total problem gets bigger due to the underfunding taken on from the new claim.

Apparently, the PBGC's model shows the cash running out well beyond COFFI's earlier 2020 estimate. Regardless of the actual year, the real problem is that the cashflows turn strongly negative once the cash runs out. These payments may be many years out, but the amount of money that would need to be invested now to cover those future payments is quite large.

What are the options to fix the PBGC's finances?

For 35 years there has been a significant imbalance between the risks imposed on the PBGC and the level of premiums charged. Both the risks and premiums are determined by Congress and that body has passed several pieces of legislation intended to remedy this imbalance. Despite these reforms, no academic study found that the premiums were more than half what they would need to be to cover the risks and some concluded that the level was as little as one-sixth of that needed for self-sufficiency.

The imbalance between premiums and risk results from the inter-relationship of three factors: (1) premium levels; (2) the inherent risk in offering defined benefit pensions; and (3) structural features that encourage risky behavior. Financially weak companies have incentives to minimize pension contributions, increase their investment risk, and provide richer pension promises in place of other compensation that would require immediate cash.

The previous section of this paper explained the results of COFFI's analysis of the PBGC's future financial situation. Action is needed now, despite the absence of a liquidity problem; regulators would already have seized control of any private sector insurer in a situation similar to the PBGC. The longer we wait, the closer we get to the cliff edge where a massive taxpayer rescue would be necessary to avoid having PBGC payments of retiree pensions fall to pennies on the dollar. (Serious analysts of the PBGC do not believe Congress would let retirees lose their pensions. The real risk is that the taxpayers would have to pony up.)

Appendix I outlines 14 options to solve the PBGC's financial problems with its single-employer insurance program. (The size of the problem in the multiemployer program is far smaller and the potential solutions are more complex, so the appendix only focuses on the single-employer plans.) Any legislative solution is likely to combine a number of these alternatives, especially since every proposal inflicts pain on some party. We have dug a deep hole for the PBGC and there is no easy, painless way to climb out. The choices fall into several broad categories:

Raise premiums. All else equal, high enough premiums will provide the cash to pay future claims even under the present structure. However, an excessively large premium increase could chase out of the defined benefit system some of the strong companies whose premiums support the PBGC.

Add more risk-based premiums. One way of increasing premiums is to add extra charges for firms that pose the most risk to the PBGC, either due to their generally weak creditworthiness or to a high proportion of stock investments in their pension funds. This should encourage less risk-taking by companies and lower claims on the PBGC, but there are negatives that vary with the specific proposal.

Change funding rules. Various proposals look to encourage higher funding levels at pension plans or to make the contribution requirements less volatile. The pros and cons vary with the proposals.

Improve the PBGC's position in bankruptcy. The PBGC's net losses would be lower if it recovered more than pennies on the dollar in bankruptcy court. However, higher recoveries would come out of the hide of other creditors and could cause them to take actions in anticipation of possible bankruptcy that would be costly to companies sponsoring pension plans and to the PBGC.

Limit the PBGC's guarantee. Reducing the amount covered by the PBGC in certain circumstances would directly reduce its losses, at the expense of present and future retirees. Such proposals are generally aimed at perceived abuses, where pen-

sion increases are allegedly given in the knowledge that they are unaffordable but that the PBGC will pick up part or all of the bill.

Increase the PBGC's stockholdings. The PBGC could increase the proportion of stock that it holds in its own investment portfolio. This would increase the expected long-run return, reducing the PBGC's deficits over time, but it would expose the PBGC to the risk of even larger deficits if the stock market underperforms expectations. The PBGC started to do this in 2007, in a modest way, and had the bad luck to immediately lose a substantial amount of the money it switched into stocks.

Privatize the PBGC. Some argue that the PBGC's financial problems are inevitable with a government attempt to provide insurance of this type and therefore the task should be switched to private insurers. A privatized PBGC would require a large cash infusion up-front of tens of billions of dollars, but has at least the possibility of eliminating a future taxpayer rescue. There are many technical issues discussed in Appendix I.

Infuse taxpayer funds. There is no question as to the effectiveness of such a plan in improving the PBGC's financial condition. The arguments center around whether this is good public policy.

The Pension Protection Act of 2006

By 2006, it was clear to almost everyone that the PBGC was in deep financial trouble. Several major airline bankruptcies, and the threat of more, massively increased the PBGC's deficit and brought home the riskiness of its situation. That year, the Administration proposed a series of reform measures intended to fix the PBGC's finances. Congress then made a number of modifications to the proposal, mostly at the request of the managements and unions of companies offering defined benefit plans or their trade groups. The resulting legislation became the Pension Protection Act of 2006, which was signed into law in August of that year.

COFFI's modeling at the time suggested that the legislation would reduce an anticipated need for a $92 billion rescue to about $60 billion instead. We have done no new modeling since then, but would expect that the result would look no better now and possibly significantly worse, as a result of the current financial crisis. In addition to the onset of the financial crisis, it is not clear that the changes introduced by the law are having the intended major positive effect on the PBGC's situation.

A fuller explanation of the bill and its likely effects is contained in "Pension Reform: Summary of Final 2006 Bill." An edited version of the core of that summary is shown in the rest of this section.

- **Stricter funding requirements.** Prior to this law, a company could shoot for a level of investments equal to 90% of the value of the pension promises, rather than trying to be 100% funded. Once the provisions of the new law are fully phased-in, companies will always need to strive for 100% funding. (They will have seven years to fund any shortfalls that develop, but the target remains 100% funding.) All else equal, this would represent roughly a $200 billion increase in system-wide funding. Plans that are considered to be "at risk" of termination, because of the depth of their underfunding, will be required to fund up to a higher level that takes into account potential employee retirement choices that could increase costs, especially retiring at the earliest allowable age. "At risk" plans will also have to increase their funding to reflect likely PBGC expenses of terminating the pension plans. Moving in the other direction, "airline relief" provisions will allow airlines to fund much more slowly, if they agree to freeze their plans and accept a limitation on future PBGC guaranty levels, as many indeed chose to do.

- **Benefit restrictions.** Heavily underfunded plans will be restricted from increasing benefits. The most underfunded will be required to freeze their plans altogether until they are better funded.

- **Higher PBGC premiums.** The bill eliminates an exception that allowed most underfunded plans to avoid paying a variable premium based on the amount of their underfunding. Over time, this should lead to either or both of higher PBGC premiums or reduced underfunding in the system.

Appendix I: 15 Options to Fix the PBGC's Financial Situation

Raise the PBGC's fixed premium rate for single-employer plans

The PBGC currently charges $34 per year for each participant in a single-employer pension plan. Participants include current employees, former employees who retain a right to future benefits, and retirees. The rate rises each year at the inflation rate used for Social Security calculations. The fixed premium contributed $1.2 billion of PBGC's total premiums in 2008.

When the PBGC was established in 1974 under the Employee Retirement Income Security Act (ERISA), Congress set this fixed charge at $1 per participant. It has raised the level periodically, with the last increase occurring in 1991. The Pension Protection Act of 2006 raised the annual rate from $19 per participant to $30 each and put in place the automatic inflation adjustment. Legislation would be required to raise the level further, as the PBGC has not been given authority to set its own premium rates. Such legislation could either set a new fixed rate or could provide an automatic indexation for additional factors beyond inflation, such as PBGC deficit levels.

Pros

Higher premium revenues would directly improve the PBGC's financial position. This would be particularly useful in offsetting the existing deficit, since other options are very limited.

Arguably, insufficient premium levels were a major contributor to current PBGC deficits. As noted, there has been a large mismatch between premium levels and the risks imposed on the PBGC. Some of this mismatch presumably derived from the premium rate, although allocating responsibility between premiums and other factors is subjective.

Cons

Higher premiums would be a modest disincentive to offering defined benefit pensions. PBGC premiums currently represent about 2% of the annual cost of providing a defined benefit pension plan. A significant rate increase might theoretically cause companies that are on the fence to choose to exit their defined benefit plans. However, plan sponsors would only escape the premium increase if they terminated their plans by paying an insurer to take over the legal obligation. There are strong reasons for big companies not to do this, since most pension plans have become underfunded as a result of the current financial crisis. Many firms would need to borrow large sums to fully fund their pension plans in order to pay the insurers to take over the obligations. The credit crunch makes this difficult and expensive.

In addition, companies may be reluctant to give up the 8-9% returns they expect on their large pension investments and essentially lock in a bond-like return from the insurers, currently less than 7%. The gap between companies' return expectations and insurer pricing is currently quite narrow, as a result of the present financial crisis, which is forcing insurers to offer higher rates for all types of business in order to counteract concerns about their credit strength. The gap is likely to widen again as the crisis passes.

Large firms that do exit the defined benefit system are much more likely to do so over time by "freezing" their plans, (ceasing to provide any benefits for additional years of service or wage increases). However, freezes have little immediate effect on the PBGC's fixed rate premiums, since they are based on the number of participants, including retirees. This figure would decline slowly over time as deaths were no longer offset by the addition of new participants to the plan.

Higher premiums could slightly increase bankruptcies and distress terminations. Firms which are on the edge of viability may not be able to afford to pay increased premiums. However, few firms are so vulnerable that an increase in an item that may represent only 2% of their pension payments is likely to push them over the line.

Arguably, an increase in the fixed rate is unfair to low-risk plans. Companies have considerable control over their riskiness to the PBGC and the vast majority of plan sponsors will never produce a claim on the PBGC. Management decisions on debt levels and operational risks have major influence on their ability to avoid a future bankruptcy. Decisions on pension contributions and the riskiness of pension investments similarly influence the risk of underfunding. Some argue that companies that minimize the PBGC's risk provide a level of subsidy to riskier firms that is at best fair and may be excessive already.

Premium increases remain a political "hot button," perhaps because of the perceived fairness issue. The strong employer reaction against premium increases cannot be adequately accounted for by the relative size of these premiums compared to other economic factors related to pensions. This may represent a negotiating tactic, it may represent a profound dislike of paying premiums to support weak companies that may be viewed as irresponsible, or there may be other factors.

Charge a one-time premium

Some have suggested that Congress charge a one-time levy on plan sponsors as a way of filling the PBGC's deficit on past insurance provision without overpricing for future insurance. This would probably need to apply to all plans in existence as of a date prior to passage of the legislation, in order to avoid encouraging a rush of plan sponsors exiting the defined benefit system.

Pros

Reduces or eliminates the PBGC's deficit.

Holds down future premium levels. Plan sponsors would not need to be overcharged for the risk of future claims in order to make up for past losses, if the level is set to eliminate the existing deficit. Even a lower one-time premium than the full amount required would still reduce the need for overcharging for future risk.

Reduces the federal budget deficit. Such a levy could potentially be of a size that would be more than a rounding error on the federal deficit. PBGC premiums are reflected as revenues in the Unified Federal Budget.

Cons

Arguably, it is unfair to plan sponsors that have stayed in the defined benefit system. If premiums were too low in the past, many of the beneficiaries were sponsors that have since exited the defined benefit system.

There are also fairness issues among remaining plan sponsors. Would a levy be based on the number of participants, size of pension obligations, underfunding levels, credit risk, or some other factor(s)? Any choice benefits some firms at the expense of others.

Some firms might exit the defined benefit system out of fear of future extraordinary premiums. The precedent could frighten many plan sponsors.

The charge might be enough to push some companies into bankruptcy. If the charge fell particularly heavily on troubled firms, it might be enough to push some over the edge.

Raise the level of variable premiums

The PBGC also collects an annual premium equal to 0.9% of the vested underfunding. However, the

technical calculations mean that only a fraction of the estimated underfunding among all insured plans is treated as underfunding for this purpose. In 2007, less than 20% of the PBGC's estimate of system wide underfunding was considered underfunding for the purposes of calculating the variable premium.

Premiums could be increased by raising the 0.9% rate or by applying the rate to total underfunding.

Pros

Higher premium revenues would directly improve the PBGC's financial position.

Variable premiums encourage full funding. Companies with good access to capital at reasonable rates have an incentive to borrow and contribute to their pension funds, in order to avoid the cost of the variable premium. However, this logic fails at current rate levels for many companies, particularly those with weaker creditworthiness, which are generally the firms the PBGC must worry about. For those firms, an annual charge of 0.9% is a small price to avoid borrowing at high rates to fund the plan. For both strong and weak companies, the potential ability to avoid being in the 10-20% that actually would be required to pay such a premium also weakens the incentive to fully fund.

Arguably, variable premiums are fairer. Companies whose decisions have led to greater underfunding are required to pay more for the risk they represent to the PBGC. However, this fairness argument would not be valid to the extent that external factors created the difficulties.

Cons

Higher variable premiums could lead to more bankruptcies and job losses. One cause of underfunding is economic distress at the plan sponsor. In such cases, higher variable premiums would impose an additional financial burden on an already stressed company. To put this in perspective, had United Airlines paid the 0.9% variable premium on their entire $8.3 billion of underfunding as calculated by the PBGC, it would have cost approximately $75 million a year or 0.4% of its operating costs.

Higher variable premiums would encourage weak companies to freeze their pensions. Weaker firms would be more inclined to stop accruing additional pension benefits, since they would have less economic flexibility to underfund their plans in bad times. This would hasten the shrinking of the defined benefit system, although it would likely help the PBGC by lowering the size of future claims from those weak firms that collapse eventually. Note that we do not suggest that plan terminations outside of bankruptcy would rise appreciably, since weaker firms are in the worst position to pay an insurer to take over the obligation.

Base the variable premium partly on credit risk

The variable premium currently charges firms for underfunding, but not for other aspects of the risk they present to the PBGC. Some propose relating the premium to the creditworthiness of the plan sponsor. For practical purposes, firms must enter bankruptcy before they can pass their pension obligations to the PBGC. Statistics clearly show that a firm with high creditworthiness today is much less likely to enter bankruptcy in subsequent decades than is a firm that is already weaker. (There are always exceptions, of course. Railroad bonds were once viewed as the safest corporate bonds in the world, but virtually all railroads eventually went bankrupt.)

Credit ratings from Standard & Poor's, Moody's, and other rating agencies would likely be used to measure creditworthiness, although quantitative tests, such as ratios of debt to equity, could theoretically be used. Unfortunately, it is very difficult to devise ratios that fit all circumstances, which is why investors pay attention to the more nuanced

analyses of rating agencies.

This proposal could be combined with the current underfunding test and/or with a test based on the composition of a pension fund's investments, discussed below.

Pros

Arguably, this approach is fairer than current law. Firms make many choices about how aggressively to borrow, and about their business plans, that substantially affect their credit. For example, aggressive borrowing can significantly raise returns to shareholders while shifting risk to creditors such as the PBGC. Most creditors, such as banks, are able to charge more for this increased risk, but the PBGC is not.

Stronger companies would be encouraged to retain their pension plans. This approach helps cover the PBGC's deficit without inflicting significant cost on stronger companies that offer pension plans.

Cons

There could be more bankruptcies and layoffs. Troubled companies would be hit the hardest and might find themselves paying higher and higher rates as their problems mounted. The extent of this effect would depend on how sharply premium rates change with credit ratings and what absolute levels were chosen.

Arguably, this approach is less fair than current law. Sometimes firms are hit by external events beyond their control, such as an oil price shock, Raising premiums in those cases is like raising auto premiums for someone who has been hit by a drunk driver.

Government involvement in evaluating corporate credit risk will make some uncomfortable. There are likely to be at least some situations where government administrators might have to make judgment calls about corporate creditworthiness. Some will view this as "industrial policy" that should be avoided.

Some technical problems exist. Rating agencies are fallible, as has become particularly obvious lately. It is true that their record is considerably better with corporate credit risk than with the complicated mortgage-backed products that have tainted their reputations recently. Nonetheless, they sometimes take too long to recognize the seriousness of an industry problem and then can over-react once they do. Also, some plan sponsors that do not have public debt would not have a pre-existing rating from one of the agencies.

Base the variable premium partly on investment allocation

As financial economists have shown, a substantial portion of the risk to the PBGC results from volatility in the investment returns of pension funds. In particular, stocks may have a higher average return, but they can experience major declines, such as after the bursting of the "dot com" bubble or the recent collapse in the market.

Some propose that incentives be put into place to encourage bond investments, which are well-matched to the underlying pension liabilities. (A promise to pay money monthly for the life of the retiree can be matched with bonds that promise an equivalent income stream from principal and interest payments. Even the uncertainty of life expectancies does not destroy this matching, since large groups have relatively predictable mortality rates.)

These proposals are more likely to be viewed as creating *disincentives* for investing in stocks, given the strong bias of most corporations to invest their pension funds heavily in stocks. One disincentive would be a higher variable premium for plans owning a high proportion of stock.

Pros

Claims on the PBGC should go down. Some firms would be likely to lower their holdings of stocks, reducing the volatility of their investment returns and the likelihood of future substantial underfunding. Additional firms might freeze or terminate their pension plans (see Cons below), which would also reduce claims on the PBGC.

Variable premium revenue might go up. Other firms would be willing to pay the penalty in order to retain the potential upside of stock investments. They would be subject to a higher premium rate. This increase would likely more than offset any loss of revenue from firms freezing their plans (which produces little immediate premium decrease) or switching to lower stock holdings. However, the details of the rate structure would determine the actual outcome.

Arguably, it is fairer to conservative pension sponsors. Companies CAN choose the investment strategies of their pension plans, so it would seem fairer for them to bear the consequences, positive or negative, of the level of risk they choose to create for the PBGC.

Cons

Selling stocks and buying bonds could substantially raise accounting costs. Accounting rules allow firms to calculate their pension expense by assuming that they are earning investment returns consistent with a long-term expected average. Thus, executives may be able to plan on the basis that their accounting results will show returns for stocks in their pension funds in the 8-10% range, while bonds only show 5-6% returns. Therefore, selling stocks and buying bonds would hurt near-term earnings. The hit could be substantial for companies with large pension funds.

Firms that do not reallocate face higher premiums, which would be particularly hard on troubled companies. Higher variable premiums would produce both a cash and an accounting hit that could be significant for firms with large pension funds.

Some firms may exit the defined benefit system due to these higher costs. One of the remaining attractions of defined benefit plans to many large companies is that they can benefit from stock returns on a large pool of pension assets under their control. If the disincentive to own stocks in the variable premium structure is too strong, many firms may find the game no longer worth the candle.

The change could hurt the stock market modestly. A reduction in demand for stocks by large pension funds should, by definition, decrease stock prices. However, that change in demand is likely to be quite small compared to the size of the financial markets and any fall in stock prices should encourage other investors to buy more stocks at the cheaper price, largely counteracting the decline by bidding stocks back up towards their original levels. Politically, however, this could be a very powerful argument against the change as long as the stock market remains depressed.

Tighten funding rules for defined benefit plans

Many people have proposed that rules on pension funding be "tightened" in one manner or another. (Existing pension funding rules are too complex to describe here, but interested readers can see "PBGC: A Primer", available at www.coffi.org.) Tightening in this context generally means either (1) requiring maintenance of a higher average level of funding or (2) requiring contributions more quickly when underfunding occurs, or both. One argument for tightening is that funding rules currently use a measure of the pension liability that has often proven to be substantially lower than the pension fund's liability as determined in bankruptcy.

The details of tightening proposals will matter greatly, but, for simplicity, we will deal here with the generic concept of "tightening."

Pros

Claims on the PBGC would be lower than under current law, all else equal. There would be lower levels of underfunding that might result in claims on the PBGC.

Lower claims on the PBGC would also mean fewer participants losing non-guaranteed benefits. When the PBGC has a claim, there are often individuals whose benefits are cut back because they exceed those guaranteed by the PBGC.

Healthy companies might benefit from slightly lower borrowing costs. As noted under "Cons," weak companies might have to divert cash away from new investment or wages and into pension contributions. The flip side is that there would be more money in pension funds looking for investment opportunities. Healthier companies might find a slight lowering of their cost of borrowing and a slight increase in their stock price. Thus, a small group of companies might be hit hard, while a large number of firms were helped a bit.

Cons

More firms would exit the defined benefit system. There would be greater cash demands placed on companies, particularly during difficult economic times. (There is some correlation between recessions and poor stock market performance.) Many firms might freeze or terminate their plans in order to minimize the potential impact of higher cash needs.

Weaker companies might need to downsize. Weaker firms with large pension plans might find that cash demands from pension contributions made it difficult to make new investments and spurred layoffs.

The most troubled companies might go bankrupt. Additional cash demands for pension contributions could drive particularly troubled firms into bankruptcy, because they no longer had enough cash to pay debt and make pension contributions. In bankruptcy they could restructure their financial debt and also eliminate the cash drain from pension contributions through a distress termination.

Change funding rules to reduce volatility of contributions

Current funding rules, in combination with pension portfolios that are heavily invested in stocks, have produced swings in required contributions that discourage companies from offering defined benefit pension plans. Many have therefore insisted that reducing the volatility of contributions must be a goal of any pension reform. This is difficult to analyze without a specific proposal, but a few general points can be made.

Pros

Companies might be more inclined to retain defined benefit plans. Executives would be able to plan further in advance and to communicate clearly to the financial markets what the cash cost of contributions would be. This would reduce a major expressed concern of managements and markets.

Cons

All else equal, claims on the PBGC would be larger. Unless other actions are taken, there will be no reduction in the underlying volatility of pension fund adequacy. Funding adequacy changes with the value of investments, changes to benefit formulas, company-specific actions such as layoffs or hirings, changes in lifespans and other demographic factors, and other variables. Reducing the risk to one party by stabilizing company contributions merely shifts the risk to other parties, principally the PBGC but also participants with benefits exceeding guaranteed levels.

For example, contribution requirements went up sharply after the stock market losses from the bursting of the "dot com" bubble. If contributions had been held more stable, then the level of under-

funding would have remained higher than it has, increasing the likely size of claims on the PBGC from distress terminations from that time until such point as the stable contribution rules had caught up with the underfunding.

Raise the maximum pension funding limits

The Internal Revenue Code and ERISA place limits on the extent to which firms can make tax-deductible contributions to their pension funds. These limits are intended to reduce the loss of tax revenue while still allowing adequate funding. Some argue that the limits are based more on maximizing taxes than on ensuring sufficient funding and that the limits should therefore be raised. These arguments have become considerably less pressing since the Pension Protection Act of 2006 raised the full funding limitation to 150% of the plan's liabilities. However, we will lay out the arguments, as they remain of theoretical interest.

Pros

Claims on the PBGC might decrease modestly in number and size. Some companies would make more pension contributions during good times, giving them a greater margin for error if trouble struck. Even if they subsequently went bankrupt, funding would be higher, reducing losses to the PBGC and participants.

Sponsors might find it marginally more attractive to retain defined benefit plans. Firms that were interested in using this provision, and financially able to do so, would be able to reduce their risk of sharp increases in future contribution requirements, since they would have built up a margin for error. They would also have a larger tax break from the tax-exempt status of pension investments, as well as from deductions for their extra pension contributions.

Cons

The budget deficit would widen, at least temporarily. Higher pension contributions would reduce taxes initially. This might be offset over the long run by minimizing or avoiding a taxpayer rescue of the PBGC. The tax losses would be highest in the early years, as those companies that wanted to prefund built up their desired margin of overfunding. After that, contributions should revert roughly to the levels required to match newly accrued benefits.

The companies presenting the most risk to the PBGC are unlikely to prefund. From the point of view of the PBGC as a credit insurer, it would benefit most from additional pension funding at weaker firms. These are generally firms with high levels of debt already, the ones least likely to borrow more to increase their contributions and the ones most likely to prefer using cash flow to pay down existing debt or invest in urgently needed projects. GM's massive borrowing a few years back to pay down its pension underfunding might be cited as a counter-example, but key parts of their argument to the financial markets would not apply here. They argued that they were substituting financial market debt for an equally real liability representing pension underfunding and that eliminating underfunding also avoided the risk of paying variable premiums to the PBGC. Neither of these critical points would be true for overfunding. That said, there could be some firms in cyclical industries that chose to prudently build a margin of error during good times and that are weak enough credits that they would pose a risk to the PBGC without the overfunding.

The "wrong" companies are likeliest to increase funding. Firms with excess cash for which they do not have immediately attractive investment opportunities are the most likely to park the money in their pension funds, accelerating a tax deduction and increasing tax-free investment income. They can potentially retrieve the funds when investment opportunities arise by skipping future contributions, although there could be timing problems. Needless to say, firms strong enough, and conser-

vative enough, to have excess cash tend not to be the ones that present claims to the PBGC down the line.

Raise the PBGC's overall priority in bankruptcy

Under current bankruptcy law, the large majority of the PBGC's claims receive no special treatment. This results in a bankruptcy recovery rate of a few cents on the dollar, while higher priority creditors, such as those with a lien on fixed assets like airplanes, may be fully paid or at least receive a much higher payout ratio. Some have proposed a super-priority status for the PBGC that would result in substantially higher average recoveries.

As explained below, such a change could have powerful effects on the PBGC's position and on the defined benefit system, assuming the change in priority were sufficient to substantially change the PBGC's recoveries. There would be less effect on the PBGC if the details of the legislation left room for other creditors to take actions that would put them back above the PBGC.

Pros

All else equal, the PBGC's finances could improve markedly. The PBGC might easily recover half or more of the underfunding from the estates of bankrupt firms, rather than the current average of a few cents on the dollar.

Weaker firms would have a strong incentive to avoid underfunding. As noted in "Cons" below, other creditors would substantially raise their rates for weak firms with large pension underfunding. Companies would therefore wish to avoid such underfunding.

Cons

Weak firms with large underfunding would have to pay substantially more to other creditors. Higher PBGC recoveries would come out of the hide of other creditors. These creditors would raise their rates significantly to compensate for the risk of receiving less if the firms do go into bankruptcy. In many ways, the financial markets would be imposing the equivalent of a credit-based variable premium. Of course, some creditors, such as people who were promised retiree health insurance benefits, might not be in a position to charge more going forward.

Some weak firms could be pushed into bankruptcy that would otherwise have survived. Higher funding costs could force some weakened companies under. In general, there would be an increase in the speed of decline of firms that are flirting with bankruptcy. Each step down in credit rating would incur a higher cost for those firms with large underfundings, as other creditors increasingly focused on the possibility of bankruptcy in an environment where the PBGC would take a larger piece of the pie.

Lenders may over-react. Pensions are complicated and not well understood by all lenders and capital markets. Some creditors may over-react and shy away altogether from lending to firms with the potential to develop large pension underfunding, or they may charge exorbitant rates. Companies will not always have the time and resources to find an alternative lender who does understand pensions.

Many companies may exit the defined benefit system. Executives at all but the strongest firms pay serious attention to their funding sources. A threat that their pension funding situation could lead to difficulties in borrowing may be enough to trigger the freezing or termination of pension plans.

Severe transition problems are possible. It would be unfair, and politically impossible, to immediately vault the PBGC ahead of other creditors who had lent on the expectation that existing bankruptcy rules would remain. However, any transition arrangement is subject to at least three potential problems. One, creditors might force firms into

bankruptcy in advance of the change, even though some of these companies might have otherwise pulled through. Two, longer transition periods that minimize the first problem would fail to protect the PBGC from major claims that might arise in the next decade. Three, even a long transition period might not be long enough to be fair to existing creditors with very long-term obligations.

Bankruptcy proposals face two additional political hurdles. First, the Judiciary committees of both Houses would become involved, adding another party to already complicated negotiations. Second, financial institutions and others interested in bankruptcy legislation would add their voices.

Increase the PBGC's flexibility to negotiate with troubled firms

The PBGC has a limited arsenal of negotiating tools under current law. The biggest is one they have referred to as the "nuclear option", the right to terminate a pension plan involuntarily if they can show a reasonable probability that allowing the plan to continue will produce an unreasonable increase in the claim on the PBGC. This is a politically very unpalatable option. It puts the PBGC, rather than the company that arguably created the problem, in the position of denying employees future pension accruals and cutting back pensions to participants who have amounts above the guaranteed levels. Nonetheless, the PBGC has used the nuclear option, for example, moving at the end of 2004 to involuntarily terminate the pension plan for UAL's pilots. (The PBGC has also used this option many times with small plans, for technical reasons that are not worth detailing here.)

The PBGC also has negotiating flexibility in regard to various technical legal and actuarial issues that arise in given cases, although there they are often bound by the fear of setting an unfavorable precedent for other cases where they would not be receiving any quid pro quo for being as flexible as they might in the specific case.

Some argue that the PBGC should have more room to strike bargains with weak or bankrupt companies, as private insurers and lenders do. One proposal is to allow firms to make up their underfunding over a longer time period if they, and their unions, agree to freeze their pension plans and accept a freeze of the PBGC guarantee level. That is, if a plan were frozen today under this proposal, each participant would be subject to the current $54,000 cap on annual pension benefits paid by the PBGC, even if the plan were terminated in five years, when the cap might otherwise have risen to $60,000. Note that these companies are already able to freeze their plans, with union consent. The change is that the proposal would allow firms that freeze plans to contribute less money each year to catch up on the underfunding than is allowed under current law. In fact, a proposal of this type was incorporated in the Pension Protection Act of 2006 specifically for airlines, a number of whom have taken advantage of this feature. However, there is no ability for companies in general to do this or for the PBGC to assist them in arranging it.

Another proposal, which we will not examine in depth here, would give a bankruptcy judge the ability to modify funding obligations in exchange for freezing or lowering pension promises and limiting PBGC obligations. A bankruptcy judge theoretically has the neutrality and expertise to judge what is a reasonable balance.

Conceptual Basis

There is an underlying policy point that does not fit easily into the Pros and Cons below. This option principally makes sense from a public policy viewpoint if one accepts a key argument of the proposal's supporters. They argue that the companies that would take advantage of this option would be ones that *should* freeze their pension plans, but are unable practically to achieve this without the incentive of lower contribution rules, generally due to union opposition. This option is a non-starter from a policy viewpoint if one believes it would be a mistake to encourage these plans to be frozen.

Accepting this argument is a necessary, but not sufficient, condition. Other policy hurdles remain.

Pros

Some companies might avoid bankruptcy, based on lower pension contributions. Cash demands for pension contributions would be lower, which might allow some firms to successfully navigate through hard times.

Other companies might defer bankruptcy. The change might buy time, even if it does not prevent bankruptcy. The PBGC would benefit from any contributions the company has made to pay down its underfunding, since no new benefits would have accrued to add to the claim. The wild card would be the investment performance of the pension fund in the interim, which may or may not have exceeded what the PBGC would have earned with the assets if there had been an earlier termination.

All else equal, frozen guarantee limits would reduce the PBGC claims. The PBGC would benefit, at the expense of participants, if a company terminates in a later year. The lower PBGC cap would reduce its payments, to the extent that some participants would have been entitled to benefit levels falling between the two cap levels.

The PBGC's negotiating position would improve, since it could choose whether to allow the option. Negotiations between the PBGC and the companies would allow the PBGC to determine when it felt there would be an advantage to allowing this choice. It would also have room to negotiate other changes, such as a more conservative investment policy, as a quid pro quo for approval. Political constraints might reduce the PBGC's flexibility, but it would at least be a negotiating tool that does not exist now.

Cons

As noted, this option would encourage exit from the defined benefit system. Companies would have to cease awarding new defined benefit pension benefits in order to qualify. This might be limited by constraining the option to a particular industry, although it may be politically difficult to maintain this constraint over time.

PBGC claims might be higher than without the eased contribution rules, if firms go bankrupt anyway. If lower pension contributions do not prevent bankruptcy, they would increase the underfunding and claim on the PBGC as compared to freezing the plans today without benefit of the eased contribution rules. Depending on how much easing of the rules is allowed, the PBGC might even have been better off with continuing benefit accruals, but considerably larger pension contributions.

Limit the PBGC's guarantee further

There are already limits to the level of pensions guaranteed by the PBGC, of which the principal one is a cap of $54,000 of annual benefit for employees retiring at age 65 under plans taken over by PBGC in 2009. This figure is substantially reduced for early retirees and is lower for plans taken over earlier than 2009. See the discussion earlier in this paper for details on this and other limitations.

Steps to disallow or not guarantee improvements to pension formulas in plans that are very severely underfunded were included in the Pension Protection Act of 2006. This is an attempt to deal with the specific "moral hazard" issue of troubled companies that offer pension increases as a sweetener for employees to accept less attractive cash compensation than they otherwise would. Even if employees, or their union representatives, believe there is a high probability of bankruptcy by the plan sponsor, they know that the PBGC will pick up some portion of the benefit increases. Even before the Pension Protection Act, then-current law already reduced this incentive by phasing in the full PBGC guarantee for benefit increases that occur within 5 years of a subsequent bankruptcy. However, supporters of further guarantee limits believed that this limitation was not fully successful in eliminating the mor-

al hazard issue.

There are also questions, not addressed here, about how to treat increases in pension benefits triggered by plant closings ("shutdown benefits") and whether existing law is fair in how the 5-year phase-in works, since it effectively treats union plans less favorably than non-union plans, to the extent that non-union plans are more likely to use the "final average pay" concept. Finally, some have suggested that lower general guarantee levels in theory would increase participants' incentives to force firms to fund more fully. We are not aware of a specific policy proposal in this regard.

Pros

PBGC claims would be lower.

Arguably, the change would be fairer to "good" plan sponsors. It may be that some of the PBGC's losses come from severely underfunded companies that promise excessive benefits and pass the cost to the PBGC. Since the PBGC is, by law, supposed to be self-supporting, this cost would eventually be passed on to employers, unless there is a taxpayer rescue.

Cons

Pension increases might be constrained unnecessarily at some companies. In some cases, it may be reasonable to raise pension benefits at companies that are likely to survive, despite a short-term cash crunch that prevents bringing their pension funding to appropriate levels.

Increase PBGC investment returns

Some maintain that the PBGC's financial problems were exaggerated by an investment policy that relies heavily on bonds, rather than stocks. For a number of years, the investment policy at the PBGC was to target an allocation of 15-25% of investments in stocks. Virtually the entire remaining amount was in bonds, usually Treasury bonds. Premiums are required by law to be held in bonds, but there is no such limitation on other assets, primarily investments taken over from failed pension plans. The PBGC, under Director Millard, moved towards a somewhat higher allocation to stocks, a decision made not long before the stock market's recent major decline. Even with this move, the PBGC's actual allocation to stocks was only in the area of 30% of its investments.

Proponents believe that increasing the allocation to stocks will raise average returns and reduce the need for more premiums or a taxpayer rescue. Opponents believe that it is inappropriate to introduce the additional level of exposure to volatile stock markets. They prefer to match promises of future pension payments with known future principal and interest payments from bonds, minimizing interest rate and financial market risks.

A variant of this approach would be to own more high-quality corporate bonds, which would have nearly the certainty of the payments from Treasury bonds, but would yield perhaps a percentage point more each year over a long time period. The extra yield is higher in today's market, but is likely to come down over time. (Some of this added return would be eliminated, in practice, by defaults on these high-quality, but not riskless, bonds.) This would have a much smaller effect than increasing stock allocations, but would similarly increase expected returns at the expense of risking worse results.

Pros

Stock returns are expected to exceed those of bonds, on average. Since 1928, the U.S. stock market has returned an average of about 9% per year versus around 5% for long-term government bonds and 4% for short-term bonds. Most financial economists expect a smaller difference going forward for reasons too numerous to describe here. Our informal survey of the literature in 2005 suggested an average forecast of perhaps 3 percentage points greater return from stocks than from long-term government bonds. This difference may have

risen by a percentage point or two on average for the next decade as a result of the recent collapse of the stock market. (Many believe that the market has now overshot on the downside, just as it previously overshot on the upside, and will correct over the course of the next decade.)

Cons

Investors receive a higher EXPECTED return because they risk LOWER actual returns. No matter how long the time-frame, there is a risk that stocks will underperform government bonds, or even lose money. That risk is considered to be lower for long time horizons, but it does not vanish. As an extreme example, an investor buying at the peak of the market in 1929 would have been a net loser for 25 years, through 1954. It would have been some years after that before they caught up with bond investors.
Stock market returns generally rise and fall in tandem with bankruptcies. Bankruptcies are significantly more likely to occur in bad financial times, which are also normally bad times for the stock market. The PBGC's losses are closely tied to the level of bankruptcies, so owning stocks essentially "doubles down" on that risk.

Infuse taxpayer funds

General revenues, provided by taxpayers, represent one potential source of funds to fill the PBGC's deficit.

Pros

There would be less pressure on companies to exit the defined benefit system. Every dollar of taxpayer funds that is infused is one dollar less that has to be charged to plan sponsors. As noted, filling the PBGC's current hole through premiums means significantly over-pricing future pension insurance in order to make enough profit to pay for the past.

Arguably, the government created much of the problem and should bear much of the cost. There are at least two variants of this argument. First, some contend that the deficit really represents failed government industrial policy that has helped sink a large part of the steel and airline industries. Take away these two sectors and the PBGC would likely not have a deficit. Second, Congress has set the premium rates and minimum funding rules, including allowing the steel and airline industries extra leniency in funding. Perhaps the government should bear the consequences of its decisions.

Arguably, it is not fair to remaining plan sponsors to bear the full cost of past losses. A small number of companies are responsible for the PBGC's deficit. It may not be fair to transfer that burden onto the plan sponsors that have been "good citizens" by continuing to voluntarily offer defined benefit plans. Unfortunately, the government is the only other entity that might reasonably pick up the bill.

Cons

There may be better uses for taxpayer money. Given the dramatic budget deficits already in existence, adding to those deficits is not appealing. Nor are taxpayers in the mood for another bailout.

Arguably, plan sponsors have been the beneficiaries of the underpricing and should not be bailed out. Congress is supposed to set PBGC premiums at levels sufficient to pay the bills. Industry and union lobbyists have been instrumental in persuading Congress to set the rates as low as they are; often arguing that even these levels were too high. Plan sponsors then benefited from the low premium rates and perhaps ought to bear the costs.

Arguably, taxpayers should not be asked to bail out a group more affluent than the average taxpayer. People in defined benefit plans may be better off than the average taxpayer. To the extent that they are, it magnifies the perceived unfairness of asking taxpayers who have never had a chance to be in a defined benefit plan to bail out

others who have had that opportunity. On the other hand, given the progressive nature of taxation, it is not clear that the percentage of taxes coming from each segment of the income spectrum is distributed any more progressively than is the percentage of pension income going to each participant.

Privatize the PBGC

Richard Ippolito, former Chief Economist of the PBGC, has proposed that the federal government remove itself from the business of guaranteeing pensions. (His paper is available at www.cato.org.) Taxpayers would pick up the existing deficit, near-term expected claims, and future operating expenses related to existing and near-term expected claims. At the time of his proposal, he estimated this at $18.7 billion, based on runs of PBGC's PIMS financial model done as of the end of fiscal 2003. The PBGC's own recent modeling suggests this figure might now be about $26 billion. COFFI's analyses indicate that the number could be much greater than that, a concern magnified by the potential for a claim on the PBGC related to GM of $20 billion or more.

The core of the idea is that companies would be required to form a true self-insurance pool, with no possibility of further federal aid. (He believes that companies should be allowed at some point to buy private market insurance and exit the pool, but he does not address the mechanisms for this.) Ippolito postulates that under those conditions the pool members would set a variable premium that would apply to all underfunding, calculated on a true market basis. This variable premium would be at the same rate for all firms, with no gradations for creditworthiness. The rate would change from year to year, being set at the level necessary for the risk based on that year's business and financial market conditions.

Pros

Taxpayer costs would be limited to the initial rescue. If the pool is truly self-sufficient, no further funds would be forthcoming from the government. (However, see "Cons" for doubts about how this would work.)

Companies could not "game" the system. Firms that took actions which increased underfunding would soon find themselves paying substantially higher premiums to compensate other pool members for that risk.

Well-funded pension plans would draw low premium costs, encouraging the continuance of sound plans. All premiums would be based on underfunding, so firms with little underfunding would pay very little.

Cons

Taxpayers would be faced with a major up-front cost. As noted above, the cost is unlikely to be less than $30 billion and could easily be $50 billion or more, depending on near-term business conditions and actions triggered by transition considerations. Note that the proposal itself does not necessarily increase the present value of the eventual costs, but it does cause them to be borne by the taxpayers up-front.

Taxpayers would likely remain an implicit guarantor. It is difficult to envision how companies would be persuaded not to lobby for a rescue if the pool developed a large deficit, particularly in the first decade. A large deficit in the early years of operation would almost certainly be blamed on an insufficient initial payment from the government. Even if the problem occurred later, or could not reasonably be tied to the initial funding, lobbyists would likely assert that the pool was established by the government and that companies were forced to participate in a scheme that proved unsound. It is instructive to remember that the PBGC technically is already supposed to act as a self-insured pool, since premiums are intended to be set at break-even levels and federal support is limited by law to a potential $100 million loan.

Variable premium levels could prove very high, forcing some firms into bankruptcy. If the pool were to encounter again years such as 2002-4, it would need roughly $10 billion a year in variable premiums to stay even. Spread over 2008's estimated $250 billion in underfunding this would come to a roughly 4% charge on each dollar of underfunding. However, anticipation of the possibility of high variable rates would likely lead the stronger companies to fully fund, leaving only the weaker credits still underfunded. This might leave a $10 billion charge to be spread over perhaps $100 billion of underfunding which would be a 10% charge on each dollar of underfunding. Faced with that calculation, even the strongest of the weak credits would find a way to borrow and fund, but that would leave the very weakest companies with an overwhelming premium burden that could be 20% or more of the underfunded amount.

Admittedly, the proposal would over time encourage better funding so that there would likely not be many years with $10 billion in claims, but it is hard to see how this would have been accomplished in the first years of operation, given how many weak companies have major underfunding today. It might also be possible to deal with this problem by running deficits at the pool and spreading the premium cost over time, but this could produce other severe problems, including a higher likelihood of a government bailout of the pool.

Incentives to fund would be so strong as to be equivalent to extremely tight funding rules. All of the potential disadvantages of tight funding rules would exist in great measure.

It appears politically infeasible. Even if policymakers determined that the pool concept was desirable, it would likely be opposed strongly by virtually every segment of the pension community. All firms would dislike the pressure to fully fund so quickly. Strong firms would worry about being stuck with excessive losses from weak firms, without hope of government aid. Weak firms would worry about overwhelming cash contribution requirements and high premium rates.

Other generic proposals

Other ideas have been advanced that are difficult to assess without specific details. For example, virtually everyone agrees that greater "transparency" would be helpful. Participants and financial markets could then better understand a company's situation and would have incentives to encourage sensible behavior that would protect these stakeholders. The devil, however, is in the details. Some steps in this direction were taken in the Pension Protection Act of 2006, but it is difficult to measure the effects of these changes, given everything else going on in the markets and the economy.

The idea has been raised of giving the PBGC some regulatory authority over pension funds. For example, it might be allowed to limit the level of investment risk taken by seriously underfunded plans. Again, this is difficult to judge without a specific proposal and would need to be compared to existing authority held by the Department of Labor to ensure prudent management by pension trustees.

GLOSSARY

Actuarial assumption: One of the technical assumptions that are the basis for actuarial calculations. Examples include estimated life expectancies, retirement dates, and discount rates.

Actuary: A statistician who estimates characteristics, such as lifespans and retirement ages, of individuals and groups eligible for pensions or insurance.

Asset/liability matching: The technique of choosing investments to match the expected cash inflows to a set of future cash outflows.

Benefit accrual: The additional benefit earned with the passage of time, and possibly with an increase in salary.

Cash balance plan: A defined benefit pension plan that bases benefits on hypothetical individual accounts. Contributions to the accounts are usually based on current pay levels. The balance also grows based on interest credits. It is a common type of hybrid pension plan.

Cash flow: A cash payment or receipt, now or in the future.

Deficit reduction contribution: An additional pension contribution beyond that otherwise required, due from plan sponsors of certain underfunded pension plans. Only single-employer plans with more than 100 participants are subject to the deficit reduction contribution requirement.

Defined contribution pension plan: A pension plan with individual accounts where the amount ultimately paid to the exiting employee is based on the level of contributions plus or minus actual investment returns.

Discount rate: The interest rate used to calculate a present value.

Distress termination: A company-initiated termination of an underfunded defined benefit pension plan according to rules laid out in ERISA. The plan sponsor must be in severe financial trouble and is often in bankruptcy.

Early retirement benefit: A pension benefit received by someone who retires before the retirement age defined in a pension plan as normal. In many plans, the early retirement benefit is subsidized. That is, the present value of the early retirement benefit is greater than the present value of the benefit that would be received if the employee retired at normal retirement age.

ERISA: The Employee Retirement Income Security Act of 1974. The basic federal law that, along with the Internal Revenue Code, governs employee benefits. It generally pre-empts state laws in this area.

Final average pay formula: A formula to determine benefits in many defined benefit plans. The annual benefit is equal to the employee's highest compensation averaged over a specified number of years, multiplied by both years of service and an accrual rate per year of service.

Final determination of benefits: The final determination by PBGC of the amount of benefits owed to a retiree under a plan taken over by PBGC. The complexity of rules on guarantee limits and priority of payments forces PBGC to pay an estimated benefit for some time after taking over a plan. After the final benefit determination is made, PBGC makes up any shortfall in estimated payments in a lump sum payment that includes accumulated interest. Any overpayments are recouped (without interest) by temporarily reducing future benefit payments.

Flat-rate PBGC premium: A per participant premium charged to all insured single-employer and multi-employer pension plans. The rate for single-

employer plans is currently $34 per participant and the rate for multi-employer plans is $9 per participant.

Funding waiver: A waiver granted by the IRS that allows a plan sponsor to defer a pension contribution from the present year and to spread the payments over the next five years. ERISA defines fairly restrictive conditions for granting a waiver. Interest is charged and the IRS may require collateral.

GAAP: Generally Accepted Accounting Principles, the rules under which accounts must be kept for most private sector bookkeeping. PBGC reports under GAAP, as do certain other public entities.

Hybrid pension plan: A defined benefit pension plan that attempts to mimic many aspects of a defined contribution plan, for example, a "cash balance" plan.

Involuntary termination: A PBGC-initiated termination of an underfunded defined benefit pension plan, following procedures laid out in ERISA. PBGC must involuntarily terminate a plan if it is unable to pay benefits when due and *may* terminate a plan if it determines the underfunding in the plan will increase unreasonably if the plan is not terminated.

Lump sum payment: A single payment to a departing employee in lieu of monthly pension benefits in retirement. It is calculated as the present value of the employee's entire accrued pension benefit.

Multiemployer insurance program: The PBGC insurance program for pension plans that are established pursuant to a collective bargaining agreement between employees and two or more unrelated employers.

Off budget: An account that does not directly affect the calculation of the federal government's deficit or surplus.

On budget: An account that directly affects the calculation of the federal government's deficit or surplus.

Participant: Someone who is or may become eligible to receive a benefit from a pension plan. Participants include current employees, former employees with vested benefits, retirees collecting benefits, and beneficiaries of deceased vested employees.

PBGC Put: A slang term for the historical ability of plan sponsors to shed their pension obligations in exchange for turning over 30% of their net worth to PBGC. The term is sometimes still used, although the actual rules for turning obligations over to PBGC are far more stringent now.

PBGC's maximum single-employer benefit guarantee: The maximum amount that PBGC, by law, can pay as an annual pension benefit to a retiree from an underfunded single-employer plan that has been taken over by PBGC. The effective cap is lower for those retiring prior to age 65. However, if the plan has sufficient assets, some retired participants may receive benefits higher than this guarantee level. Also, if PBGC recovers assets from the plan's sponsor in bankruptcy proceedings, some participants may receive benefits that exceed the guarantee.

Pension trust: A trust fund set up under local trust law to receive contributions from the plan sponsor, invest plan assets, and pay pension benefits to plan retirees and beneficiaries.

Plan amendment: A legal change to the terms of a pension plan.

Plan freeze: The cessation of the crediting of new pension benefits to employees based on additional years of service, without termination of the pension plan. In a "soft freeze" benefits may still rise in final average pay plans if salaries rise. In a "hard freeze" benefits do not rise at all.

Plan sponsor: An employer who establishes or maintains a pension plan for its employees.

Plan termination: The ending of a defined benefit pension plan according to procedures prescribed by ERISA.

Prefund: To put aside money in advance of the need for payment.

Present value: The value in the present day that is economically equivalent to one or more payments in the future. The present value is determined by discounting the future payments using a specified discount rate.

Probable loss: A loss from an underfunded pension plan that PBGC determines is expected to terminate in the future.

Reasonably possible loss: A potential loss from an underfunded pension plan of a sponsor experiencing financial problems. However, this will be recorded instead as a probable loss if PBGC believes the sponsor's financial condition is so grave that it will have to terminate the plan in the foreseeable future.

Shutdown benefit: A supplemental or early retirement pension benefit in some plans that only becomes available if a plant or an entire company closes down.

Single-employer insurance program: The PBGC insurance program that covers insured defined benefit plans that do not fall into the Multiemployer program.

Standard termination: A termination of a well-funded defined benefit plan according to rules laid out in ERISA. The plan sponsor arranges for an insurer to take over all pension obligations except those where the employee or retiree chooses to take a lump sum payment from the pension plan.

Survivor benefits: Pension benefits paid to the named beneficiary of a deceased vested participant.

Termination liability: The estimated cost of terminating a pension plan and buying a group annuity from an insurance company to cover all pension obligations.

Variable rate PBGC premium: An insurance premium charged to underfunded single-employer plans by PBGC of 0.9% of pension underfunding.

Vesting period: A period of employment that must pass before a new participant in a pension plan earns a non-forfeitable right to benefits accrued under the plan.

Withdrawal liability: The obligation of a withdrawing sponsor from a multi-employer plan to pay its share of the unfunded vested benefits as of the time of its withdrawal.

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