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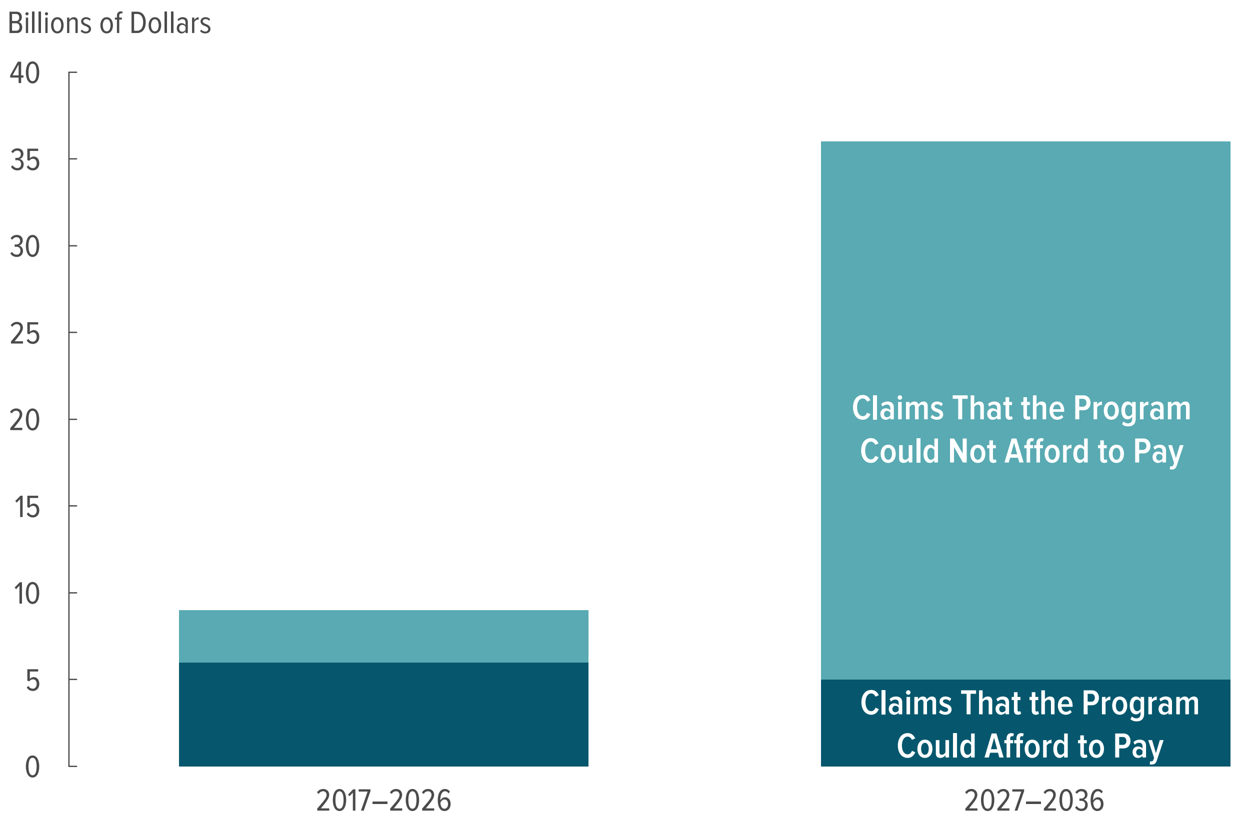
Options to Improve the Financial Condition of the Pension Benefit Guaranty Corporation's Multiemployer Program



Estimates of Financial Assistance Claims That Pension Plans Will File With PBGC's Multiemployer Program Under Current Law

AUGUST 2016

Notes

Unless specified otherwise, the term "multiemployer plans" in this report refers to multiemployer defined benefit pension plans.

Numbers in the text, tables, and figures may not add up to totals because of rounding.

The data underlying the figures in this report are posted along with the report on CBO's website.

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Summary

The Pension Benefit Guaranty Corporation (PBGC) is a government-owned corporation responsible for insuring the benefits of 41 million people who participate in defined benefit pension plans provided by private employers.[1] About 10 million of those participants are covered by plans offered by groups of employers; such plans are insured by PBGC's multiemployer program. That program has drawn increased scrutiny from policymakers in recent years because of the high likelihood that it will not be able to meet all of its insurance obligations, potentially causing participants to lose insured benefits or putting pressure on the government to provide PBGC with greater federal resources. The Congressional Budget Office has projected the claims on PBGC's multiemployer program—which are likely to be relatively small in the coming decade but are projected to be much larger in the following decade—and has analyzed options for improving the program's finances.

Why Will PBGC Probably Be Unable to Meet All of Its Future Insurance Obligations?

Many multiemployer pension plans have large funding shortfalls. In all, multiemployer defined benefit plans have promised nearly $850 billion worth of benefits to their participants but have assets worth only $400 billion.[2] Most plans with shortfalls hope to make up their funding gaps by earning investment returns on their assets that outstrip the growth of their liabilities and by getting larger contributions from participating employers. However, a small but growing number of multiemployer plans—which together have $100 billion in liabilities but only $40 billion in assets for about 1 million participants—have reported that they will probably not be able to make up their shortfalls. If so, those plans will eventually become insolvent (lack enough liquid assets to pay immediate obligations) and will file claims for financial assistance from PBGC. Those claims are likely to exceed the resources that PBGC will have available to pay them.

PBGC funds the costs of the multiemployer program from the premiums that plans pay for its insurance and the interest it earns on that premium income. Premium levels are set in federal law, as is the maximum amount of

1. Defined benefit plans promise retirees a particular benefit amount (generally based on length of service) regardless of how much participants have contributed toward their pensions. Such plans are less common than defined contribution plans, in which benefit amounts depend on the value of contributions by participants and their employers. PBGC does not insure defined contribution pensions because, by definition, such pensions are always fully funded.

2. Those figures are market valuations, but funding shortfalls can also be measured using actuarial valuations. In the case of assets, the market value reflects the current value of the investments held by a plan, whereas the actuarial value amortizes the value of previously realized investment gains and losses over time. In the case of liabilities, what pension actuaries call the current liability (which approximates the market value of liabilities) discounts future benefit obligations at a rate of interest based on that of 30-year Treasury securities. By comparison, the actuarial value of liabilities discounts those obligations at the higher expected rate of return on a plan's assets. According to actuarial valuations, multiemployer plans have total assets worth $440 billion to cover obligations worth $570 billion, CBO estimates. CBO aggregated the values of plans' assets and liabilities using information from Internal Revenue Service Form 5500 that plans filed for the 2012 plan year (downloaded from www.dol.gov/ebsa/foia/foia-5500.html, December 5, 2014). For details of how CBO conducted the analysis in this report, including how it constructed the data set used for this analysis, see Wendy Kiska, Jason Levine, and Damien Moore, *Modeling the Costs of the Pension Benefit Guaranty Corporation's Multiemployer Program* (Congressional Budget Office working paper, forthcoming).

an individual's pension benefit that PBGC guarantees. That maximum insured amount equals about 60 percent of the promised benefit in a typical multiemployer plan. However, by law, PBGC can pay financial assistance claims from insolvent multiemployer plans only to the extent that the premiums and interest it has collected under the multiemployer program allow. Because those funds are projected to equal only a small fraction of the looming claims on the program, many beneficiaries in insolvent plans would receive less than their maximum insured benefit.

The rules that govern how pension plans are funded expose PBGC to the risk of large losses—losses that would far exceed the corporation's ability to absorb them. Most multiemployer plans use risky investment portfolios to fund their benefit liabilities, which makes PBGC vulnerable to the risk that many plans will become significantly underfunded when returns on those investments are low during economic downturns. (A plan is said to be underfunded if the current value of its assets falls short of the value of its liabilities.) Moreover, the regulations that specify the minimum amounts that employers must contribute to their pension plans include various exceptions that can lead to the insolvency of underfunded plans. Thus, the holding of risky portfolios increases the risk that plans will become insolvent and file claims with PBGC.

In addition, the use of risky portfolios allows employers to promise a larger amount of benefits for a given amount of contributions than they could if a plan held less risky investments, which would be more certain to meet the plan's benefit liabilities. Under those rules, the higher return that a plan's actuaries expect a riskier investment to yield, on average, is treated as funding the promised benefit with certainty, despite the risk that asset values could fall short of those expectations.

How Much Are PBGC's Insurance Obligations Expected to Cost?

The cash flows of PBGC's multiemployer program are tracked in the federal budget, with claims recorded as federal outlays when they are paid and with premiums and interest recorded as offsetting collections when they are received. CBO routinely projects the budgetary effects of the multiemployer program over the coming 10 years on a cash basis as part of its current-law baseline budget projections. The baseline includes projections of claims that PBGC will be able to afford to pay as well as claims that PBGC will not have the resources to pay. In this report, CBO projects claims on the multiemployer program over 20 years instead of 10 years to capture the large amount of claims expected to occur in the second decade.

Those cash-based estimates, however, fall short of being a comprehensive measure of the value of the program's claims, for two reasons. First, plans that become insolvent in the next 20 years will have considerable insurance claims extending beyond that period. Second, cash estimates do not capture the cost of bearing the market risk that is embedded in the market values of assets used to fund pension plans and in the insurance claims that depend on the value of those assets.[3]

In this report, CBO supplements its cash estimates with fair-value estimates, which incorporate all of the projected claims associated with plans that become insolvent over the next 20 years and which account for the cost of market risk. The fair-value estimates express, in present-value terms, the lifetime value of projected claims, net of premiums received, for all multiemployer plans that become insolvent in the next two decades.[4] Those estimates can be interpreted as the amount that the government would need to pay a private-sector entity today to cover any shortfall between the lifetime claims from those plans and the premiums received by the program.

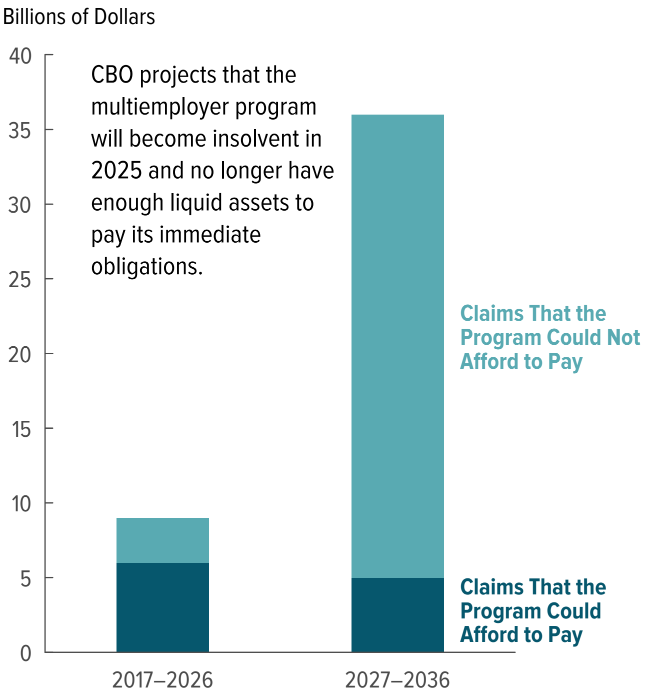
Cash-Based Estimates. Claims for financial assistance from the multiemployer program—which represent amounts that PBGC would be obligated to pay to insolvent plans to cover the cost of guaranteed benefits—are projected to total $9 billion from 2017 through 2026, CBO estimates (see Figure 1). However, under current

3. Market risk—which is one component of financial risk—represents risk that investors cannot protect themselves against by diversifying their portfolios. Market risk occurs because most investments tend to perform relatively poorly when the economy is weak and relatively well when the economy is strong. People value income from investments more when the economy is weak and their income is relatively low, so they assign a higher cost to losses that occur during economic downturns. The higher cost of losses in bad times (as well as the lower cost in good times) is captured in the cost of market risk. To bear market risk, investors require compensation (known as a risk premium), which typically equals the difference between the higher expected rate of return on risky securities and the rate that can be earned on safe securities, such as federal debt.

4. In those estimates, a present value is a single number that expresses a flow of current and future payments in terms of an equivalent lump sum paid today.

Figure 1.

Estimates of Financial Assistance Claims That Pension Plans Will File With PBGC's Multiemployer Program Under Current Law, 2017–2036



Source: Congressional Budget Office.

Under current law, PBGC is allowed to pay claims for financial assistance only to the extent that its accumulated assets (premium payments and interest income on its investments) permit.

PBGC = Pension Benefit Guaranty Corporation.

law, the multiemployer program is projected to become insolvent in 2025 for the first time in its history. In that case, $3 billion of those claims for financial assistance would not be paid, limiting projected outlays for the program to $6 billion over the 2017–2026 period. (All of CBO's cash-based projections for PBGC are probability-weighted averages from an estimated distribution of the cash flows that will potentially be realized in the future.)

Claims for financial assistance are projected to be much larger in the following decade, totaling $35 billion from 2027 through 2036. But only $5 billion of those claims (equal to the value of premiums expected to be collected over that period) would be paid under current law if the multiemployer program becomes insolvent in 2025 as projected. In total for the 20-year period from 2017 through 2036, CBO projects a shortfall of $34 billion on a cash basis between claims filed with the multiemployer program ($45 billion) and resources available to pay them ($11 billion).

Fair-Value Estimates. On a fair-value basis, the present value of claims for financial assistance, net of premiums received, over the 2017–2036 period totals $101 billion. That significantly larger estimate can be viewed as the amount a private investor would require to assume PBGC's obligations to pay all future claims under the multiemployer program for insolvencies that occur during the next 20 years.

How Much Are Participants' Benefits Expected to Decline?

Many participants in multiemployer plans are expected to receive pension benefits lower than their promised amounts, for three reasons. First, under certain circumstances, plans are allowed to reduce benefits when they are facing insolvency. Second, when plans become insolvent and file claims for financial assistance from the multiemployer program, they are required to decrease their benefits to the maximum amount insured by PBGC. Those two factors are projected to cause the total benefits paid by multiemployer plans in 2036 to be $5 billion lower than currently promised. That decline reflects a projected reduction of 49 percent in benefits from plans that are estimated to be significantly underfunded in 2016 (plans whose assets equal less than 65 percent of their liabilities) and a 6 percent reduction in benefits from plans that are not significantly underfunded in 2016. Third, the projected insolvency of the multiemployer program in 2025 would further reduce benefits for participants—by an additional $4 billion in 2036, CBO estimates.

How Could Lawmakers Improve the Finances of the Multiemployer Program?

In 2014, lawmakers enacted changes to shore up the multiemployer program, including raising premiums, allowing some significantly underfunded plans to reduce benefits (with the approval of PBGC and several federal agencies), and giving PBGC more flexibility to help merge or partition troubled plans.[5] Those changes modestly improved the outlook for the multiemployer program, but claims for financial assistance are still projected to greatly exceed the program's resources over the next 20 years.

5. For details, see the Multiemployer Pension Reform Act of 2014, P.L. 113-235, 128 Stat. 2774. Also see Multiemployer Pension Reform Act of 2014; Partitions of Eligible Multiemployer Plans and Facilitated Mergers, 80 Fed. Reg. 8712 (request for information, February 18, 2015), www.federalregister.gov/a/2015-03434.

Policymakers and others have proposed additional changes to improve the financial position of PBGC and the overall health of multiemployer pension plans. CBO analyzed the effects of several types of proposed changes (see Table 1) and concluded the following:

- *PBGC's ability to pay projected claims could be improved by altering the terms of its insurance or plans' funding rules.* Sharply raising premiums, reducing the maximum benefit amount that PBGC guarantees, increasing employers' contributions to significantly underfunded plans, or requiring better-funded plans to make sure their funding equals the market value of their liabilities and to curtail the riskiness of their investments could improve PBGC's finances without imposing costs on the federal government. However, employers that have better-funded plans can sometimes afford to withdraw from those plans, so options that rely primarily on larger contributions from employers are not likely to improve the outlook for the multiemployer program as much as options that also impose sizable losses on beneficiaries.

- *Providing federal funding to PBGC would enable the corporation to partition more troubled plans than it can under current law.* In a partition of a troubled multiemployer plan, some of the plan's liabilities are transferred to a new PBGC-supported plan, thus helping the original plan remain solvent. Under current law, PBGC cannot approve a partition if doing so would impair its ability to pay claims from other plans, which sharply limits the number of viable partitions for severely underfunded plans. To create viable partitions for the most troubled plans (which have total benefit liabilities of $81 billion), PBGC would need to receive $10 billion in federal funding, CBO estimates. Those partitions would be accompanied by cuts in benefits, so the projected reduction in claims—and hence the improvement in the financial position of the multiemployer program—would exceed the $10 billion federal cost over time.

- *The federal government could recapitalize PBGC to allow the corporation to pay all of its claims.* As described above, CBO projects a shortfall of $34 billion between claims filed with the multiemployer program over the 2017–2036 period and resources available to pay them under current law (CBO's cash estimate). Federal assistance in that amount would be sufficient to cover the program's projected claims on a cash basis. To cover the lifetime claims of all plans projected to become insolvent from 2017 through 2036 (CBO's fair-value estimate), private investors would demand $101 billion, which reflects the fact that losses could be significantly larger during an economic downturn. (In addition to recapitalizing PBGC, the federal government could fully or partially privatize multiemployer pension insurance, in which case premiums would be more likely to cover the cost of that insurance and reflect the risk posed by individual plans.)

Some options, such as providing federal funding to PBGC, would be effective at helping plans that are facing insolvency in the near term. Other options, such as restricting plans' investments in risky assets, would help prevent currently well-funded plans from becoming underfunded in the future but would have a limited effect on plans facing insolvency in the near term.

A number of other considerations are relevant to lawmakers weighing such changes. First, the savings from such options would come mainly at the cost of participants—who already face the prospect of large reductions in their benefits under current law—or at the cost of employers, increasing their incentive to withdraw from their plans. Second, cash-based and fair-value estimates of the projected effects of an option can differ greatly because of the adjustment for market risk in fair-value estimates. Third, neither type of estimate includes an option's effects on federal tax receipts. (Those effects can be large, particularly in shifting revenues between years, but they are difficult to estimate for various reasons.) Finally, the estimates are highly sensitive to the uncertainty surrounding several parameters of the model that CBO used for this analysis.

Multiemployer Plans and PBGC's Insurance

A multiemployer pension plan is provided by a group of employers, typically in a unionized industry (such as mining, transportation, or manufacturing) as part of a collective bargaining agreement. When a group of employers offers a common plan, workers can keep their pension benefits even if they switch employment among those employers. The multiemployer plans insured by PBGC promise defined benefits to each employee that are based on a formula tied to the employee's length of service. Participating employers are jointly obligated to fund those promised benefits, which represent deferred compensation. Federal laws regulate the amount of funds that employers contribute to their plans to meet the plans' liabilities and require all plans to purchase pension insurance by paying premiums to PBGC.

Table 1.

Estimates of the Financial Position of PBGC's Multiemployer Program Under Current Law and Various Policy Options, 2017–2036

Billions of Dollars

	Cash-Based Estimates, 2017–2036				Fair-Value Estimates, 2017–2036			Expected Exhaustion Date of Multiemployer Program's Funds
	Financial Assistance Claims	Financial Assistance Claims Payable[a]	Premiums and Interest	Cost to Federal Government[b]	Financial Assistance Claims	Premiums[c]	Cost to Federal Government[b]	
Current-Law Projections								
CBO's Projections for the Multiemployer Program	45	11	9	0	107	6	0	2025
Projections Under Various Policy Options								
Changes to the Terms of PBGC's Insurance								
Increase premiums 4.7-fold (to cover the program's projected claims over 20 years on a cash basis)	45	45	45	0	110	29	0	Solvent at least through 2036
Increase premiums 8.6-fold (to have a 90 percent probability of covering the program's projected claims over 20 years on a cash basis)	47	47	89	0	117	51	0	Solvent at least through 2036
Increase premiums 1.4-fold for better-funded plans (to cover those plans' projected claims over 20 years on a cash basis)	45	13	12	0	109	8	0	2025
Increase premiums 10.6-fold for better-funded plans (to cover those plans' projected claims over 20 years on a fair-value basis)	45	45	102	0	109	57	0	Solvent at least through 2036
Reduce the maximum benefit amount that PBGC guarantees by 25 percent	34	11	9	0	82	6	0	2026
Improvements in Plans' Funding								
Increase employers' contributions for critically underfunded plans by 20 percent	37	11	9	0	80	6	0	2025
Restrict risky investments by better-funded plans	40	11	9	0	80	6	0	2025
Federal Financial Assistance to PBGC								
Provide federal funding to partition underfunded plans[d]	22	12	10	10	73	7	10	2030
Provide federal funding to recapitalize PBGC and cover all multiemployer insurance claims	45	45	9	34	107	6	101	Solvent at least through 2036

Source: Congressional Budget Office.

These policy options are explained in detail in the text. CBO did not estimate the financial effects of privatizing PBGC's multiemployer pension insurance because such estimates would be highly dependent on the specifics of a given policy proposal.

Cash-based estimates account for the spending and revenues of the multiemployer program when they actually occur rather than when future obligations for them are incurred. For example, cash-based estimates of claims represent the amount of claims filed or paid during a given period. Fair-value estimates, by contrast, approximate the market value of the program's insurance obligations. Fair-value estimates of claims reflect the full lifetime costs of financial assistance claims from plans that are projected to become insolvent during a given period.

PBGC = Pension Benefit Guaranty Corporation.

a. Under current law, PBGC is allowed to pay claims for financial assistance only to the extent that its accumulated assets (premium payments and interest income on its investments) permit. The amount of financial assistance paid, not the total amount of claims, is recorded in the federal budget as the multiemployer program's outlays. The numbers shown here for financial assistance claims payable reflect approximately $2 billion in accumulated assets available to the multiemployer program as of 2016. (The fair-value estimates do not distinguish between financial assistance claims and claims payable because those estimates capture the entirety of PBGC's obligations without regard to the current-law limit.)

b. Excludes options' effects on federal tax receipts.

c. Fair-value estimates of premiums implicitly account for any interest that would be earned on the multiemployer program's assets. Thus, CBO does not distinguish between premium income and interest income in its fair-value projections.

d. For this option to provide federal funding to partition underfunded plans, the fair-value and cash estimates of the cost to the federal government are the same because they involve the same risk-free outlay of funds in 2017.

Table 2.

Examples of PBGC's Insurance Guarantee Under the Multiemployer Program

Dollars

	Example 1	Example 2	Example 3
Monthly Benefit Amount of an Illustrative Multiemployer Plan (Per year of service)	10.00	50.00	90.00
Monthly Benefit Amount Insured by PBGC			
100 percent up to the first $11	10.00	11.00	11.00
75 percent up to the next $33	0	24.75	24.75
Total Benefit Amount Insured by PBGC (Per year of service)			
Monthly benefit	10.00	35.75	35.75
Annual benefit	120.00	429.00	429.00
Annual Benefit for a Participant With 20 Years of Service			
Insured amount	2,400.00	8,580.00	8,580.00
Uninsured amount	0	3,420.00	13,020.00
Total	2,400.00	12,000.00	21,600.00

Source: Congressional Budget Office.

PBGC = Pension Benefit Guaranty Corporation.

Most employer-provided retirement plans—including defined benefit single-employer and multiemployer plans and defined contribution plans—are regulated at the federal level by the Internal Revenue Service and the Department of Labor under various federal laws. The most important of those laws is the Employee Retirement Income Security Act (ERISA) of 1974. ERISA was enacted in response to the failure of several large defined benefit pension plans in the late 1960s and early 1970s, which caused significant losses in benefits for many retirees. Under that law, all employers and plan participants are eligible for favorable tax treatment so long as a plan qualifies by following prescribed rules intended to improve the adequacy of its benefits and its financial integrity.[6]

ERISA established the Pension Benefit Guaranty Corporation to insure accrued benefits in virtually all qualified private-sector defined benefit plans. (There is no federal insurance program for employer-provided defined contribution plans because such plans specify contributions rather than benefits and thus are always fully funded.) ERISA created separate insurance programs for qualifying single-employer and multiemployer defined benefit plans and codified minimum funding standards for those plans as well as the terms of PBGC's insurance.

The amount of benefits that PBGC guarantees is determined by formulas specified in ERISA. The law allows PBGC to provide enough financial assistance to an insolvent plan for the plan to pay benefits up to a maximum insured level: $429 for each year of a beneficiary's service. For example, the maximum insured annual benefit for a participant with 20 years of covered service would be $8,580 (see Table 2).

Lawmakers stipulate an annual premium (most recently set in the Multiemployer Pension Reform Act of 2014) that PBGC must collect from each multiemployer plan it insures. That premium equals $27 per plan participant in 2016 and is indexed to increase at the same rate as average wages in the economy in future years.

A plan insured under the multiemployer program becomes eligible to receive financial assistance from PBGC if it becomes insolvent by having insufficient assets on hand to pay current benefits.[7] Once a plan has been determined by its trustee to be insolvent, it must cut benefits to the maximum level insured by PBGC. At that point, PBGC will make payments to cover any shortfall between the insured level of benefits and the funds that the plan has available to pay them. However, by law, the total amount of financial assistance claims from insolvent

6. For employers, favorable tax treatment includes being able to deduct contributions to pension plans from taxable income; for participants, it means that accrued pension benefits do not count as taxable income until they are paid. The requirements for recognition as a qualified plan, and thus eligibility for preferential tax treatment, are laid out in 26 U.S.C. §401 (2012 & Supp.).

multiemployer plans that PBGC can pay is limited to the total amount of premiums and interest it has collected under the multiemployer program.

Employers are jointly liable for the benefits of a multiemployer plan. However, limits on that liability mean that a plan can become insolvent even if all of its participating employers do not go bankrupt. In particular, employers that withdraw from an underfunded plan are required to keep making payments to the plan (called withdrawal liability payments), but current rules may allow those payments to fall short of the amount needed to fully fund the withdrawing employers' share of the plan's total liabilities. Alternatively, employers may be allowed to contribute less than the amount required to fund all benefits because of various provisions in the law that relax minimum contribution requirements for some critically underfunded plans.

The Methods Used to Value Plans' Assets and Liabilities Expose PBGC to Risk

A significant cause of risk for pension beneficiaries and PBGC is the fact that most multiemployer plans are funded with investments in risky securities, such as common stocks. The value of those assets can fluctuate considerably over time, while the benefits promised by plans remain fairly fixed.[8] Thus, a drop in the value of those assets can lead to significant underfunding of plans, which makes their insolvency more likely. Despite those risks, the rules for valuing plans' assets and liabilities create an economic incentive for plans to hold risky investments.

The minimum amount that an employer must contribute to a plan during a given period consists of a normal cost plus a contribution toward any funding shortfall. The normal cost is a measure of the additional liability to pay benefits that the plan has accrued during the period.[9] The minimum contribution toward a funding shortfall is an amount that would eliminate the shortfall between the value of the plan's assets and the value of its liabilities over 15 years, with exceptions for certain underfunded plans.[10] Although many employers contribute more than the minimum amounts, without the exceptions, those minimums would be binding for some plans that are significantly underfunded.

The incentive to invest in risky assets stems largely from the rules that specify how plans' assets and liabilities are valued. The estimated value of liabilities depends on the rate of interest (discount rate) used to translate a plan's estimated future benefits into a present value. A higher discount rate results in lower liabilities for a given stream of benefits, which lowers both the normal cost and the minimum contribution toward shortfalls that employers must make. In calculations of minimum funding requirements, the discount rate used to compute the actuarial value of a multiemployer plan's liabilities is the expected rate of return on the plan's assets, even if the assets are riskier than the liabilities.[11] That discount rate has the

7. The legal definition of insolvency for a multiemployer plan is similar to the cash-flow definition of insolvency: A debtor (the plan) does not have liquid assets available to pay immediate obligations. That definition almost always implies that the plan has no assets remaining to pay ongoing liabilities (excluding the promise of future contributions from participating employers and special payments from any employers that withdraw from the plan). If, instead, the balance-sheet definition of insolvency was used—in which the value of a company's assets is less than the present value of its liabilities—most multiemployer plans would be considered insolvent.

8. Benefits can fluctuate because of differences between projected and actual mortality rates, but that factor plays a smaller role in plans' funding shortfalls than investment risks do.

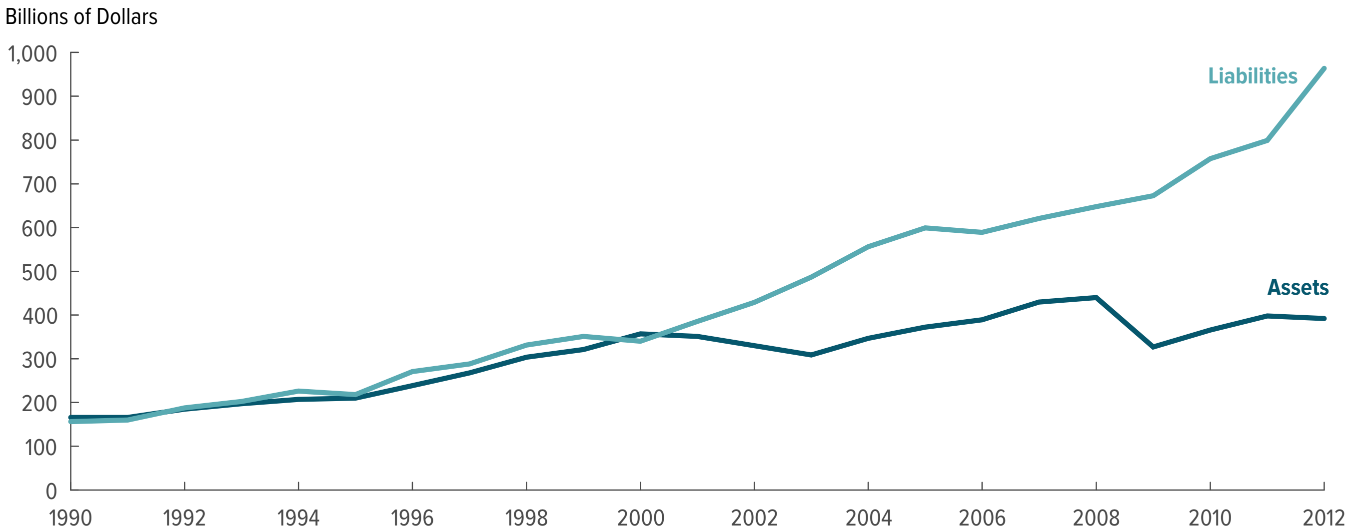
9. Put another way, the normal cost is a measure of the current value of the incremental benefit an employee has accrued over the period. Plans may choose the method used to value the normal cost, and they generally select either the entry-age-normal or unit-credit method. The entry-age-normal method attempts to create level contributions throughout an employee's career, whereas the unit-credit method attempts to fund benefits as they accrue rather than spreading costs out over time. The unit-credit method results in lower normal costs early in an employee's career, and higher normal costs later in an employee's career, than the entry-age-normal method does. (In 2012, 42 percent of plans reported using the entry-age-normal method, and 58 percent reported using the unit-credit method. Among plans considered critically underfunded, however, 26 percent used the entry-age-normal method, and 74 percent used the unit-credit method.)

10. The rules about minimum funding standards for multiemployer plans are specified in 26 U.S.C. §431 (2012 & Supp.). Special rules apply to plans deemed to be in endangered or critical status; they are specified in 29 U.S.C. §1085 (2012 & Supp.).

11. The minimum required contribution is based on the difference between the value of a plan's assets and either its actuarial liability or 90 percent of its current liability, whichever is greater. The interest rate used to compute the current liability is required to be no more than 5 percent above or 10 percent below the weighted average of interest rates on 30-year Treasury securities during the four years before the valuation date. The current liability is closer to an estimate of the market value of a plan's liability than the actuarial measure is. However, market discount rates (inferred from the prices of private-sector annuities) are often lower than the discount rates used to value the current liability. For a discussion about selecting discount rates to value pension liabilities, see Congressional Budget Office, *The Underfunding of State and Local Pension Plans* (May 2011), www.cbo.gov/publication/22042.

Figure 2.

Total Assets and Liabilities of Multiemployer Defined Benefit Pension Plans, 1990–2012



Source: Congressional Budget Office, using information from the 2013 Pension Benefit Guaranty Corporation Data Book (www.pbgc.gov/documents/2013-data-book-final.pdf).

Data for 2012 were the most recent available when CBO completed its analysis.

useful feature that if the realized return on assets matches the expected return, a fully funded plan will have exactly enough assets to pay promised benefits. However, that discount rate also makes it more attractive for a plan to hold a riskier portfolio of assets, because a higher expected rate of return reduces the size of employers' required contributions for a given level of benefits.

The distribution of potential losses widens as the riskiness of an investment increases. Thus, investments in riskier assets increase the possibility that a plan's funding position will worsen significantly if the realized return on the plan's assets fails to match the expected return. That outcome was seen in the wake of large declines in the stock market that occurred in the 2000–2002 and 2008–2009 periods, which left many plans significantly underfunded (see Figure 2). If plans had been required to fund their benefit liabilities—at the time those liabilities were accrued—with safer investments, such as bonds, the underfunding of multiemployer plans would have been far less significant and would pose less risk now to PBGC and beneficiaries.[12]

Requiring plans to hold less risky assets would make their investment returns less volatile, but it would also tend to reduce those returns over time. Under the current funding rules for plans, lower returns would reduce the amount of newly accruing benefits that an employer could fund for a given contribution and would raise the amount of contributions needed to fund existing benefits. That situation would increase the incentive for employers to switch to other types of retirement plans, such as defined contribution plans, which do not have such requirements (and whose investment gains and losses are borne exclusively by the plans' participants rather than by employers).

Other Factors Increase the Risk of Plans' Insolvency

Although employers are required to make contributions to offset unexpected shortfalls in a plan—such as after a loss on a risky investment portfolio—those requirements can be insufficient to avoid the plan's insolvency, for at least three reasons. First, the rules governing required contributions provide many exceptions that allow employers participating in some underfunded plans to make much lower contributions than the amounts necessary to shore up the plans' funding. Second, some employers may withdraw from a plan,

12. In contrast, if underfunded plans had switched to safer investments after incurring losses on their risky investments, the current risk to PBGC would be greater. Because the plans subsequently benefited from the higher returns on riskier assets after incurring those losses, switching to lower-risk investments at that point would have increased the probability of insolvency. Maintaining investments in risky assets, however, increases the risk to PBGC in the future because asset values continue to be volatile.

potentially exposing the employers remaining in the plan to greater risk of future underfunding and insolvency. Third, when an entire industry covered by a plan declines or when the active workforce participating in the plan shrinks, the plan is less likely to receive enough contributions to improve its funding.

Exemptions for Some Critically Underfunded Plans. The Pension Protection Act of 2006 and the Multiemployer Pension Reform Act of 2014 allow employers participating in plans that are deemed critically underfunded to contribute less than the minimum required amount as long as the pension plans are following an approved rehabilitation plan.[13] A critically underfunded pension plan is one that faces insolvency in the near term. Typically, it has a funding ratio (the value of the plan's assets divided by the value of its liabilities) of less than 65 percent. When a plan officially reaches critical status, it is required to develop a rehabilitation plan that includes all reasonable measures to put it on a path to solvency, or at least to forestall insolvency. Such measures may include reductions in benefits and gradual increases in contributions, but those contributions are allowed to be lower than the minimum required level while the pension plan remains in critical status, provided that the plan is adhering to its rehabilitation plan. Some of those critically underfunded plans, which together have $100 billion in liabilities and $40 billion in assets, have declared that they have exhausted all reasonable measures to avoid or forestall insolvency.

The effects of the exception to the rules governing minimum contributions can be seen in the contribution rates of plans with a funding ratio of less than 65 percent, almost all of which are following rehabilitation plans. More than half of those pension plans (weighted by liabilities) will be unable to eliminate their underfunding if they do not increase contributions or negotiate cuts in benefits (see Table 3).

Withdrawals by Employers. A participating employer may withdraw from a multiemployer plan for a variety of reasons. An employer in a significantly underfunded plan or in a declining industry may choose to withdraw rather than face rising contribution requirements in future years. Alternatively, an employer in a better-funded plan may decide, as part of its labor negotiations, to withdraw from its multiemployer plan and instead enroll employees in some other type of retirement plan, such as a defined contribution plan. (Defined contribution plans pose fewer administrative burdens for employers, do not require premium payments to PBGC, and shift all of the risk of investment gains or losses to employees.)

In a complete withdrawal, an employer ceases to have an obligation to contribute to a plan (for example, because the employer is no longer covered by a collective bargaining agreement) or ceases all covered operations under the plan (for example, because the employer has gone out of business). In a partial withdrawal, an employer either has a reduced obligation to contribute (for example, because the employer has multiple bargaining agreements but is no longer obligated to contribute under at least one of them) or experiences a decline of at least 70 percent in its contribution base units (the units by which employers' contributions are measured, such as hours worked or units of production).[14]

When an employer pulls out of a plan, it must make withdrawal liability payments to the plan equal to the employer's share of the plan's total unfunded liabilities at the time of the withdrawal. (Those payments become part of the plan's assets and are invested according to the plan's investment policy.) The amount of an employer's withdrawal liability may be calculated in several ways, but it is generally based on the employer's contributions as a percentage of all contributions to the plan for a previous period of years, multiplied by the plan's unfunded liabilities.

After a withdrawal, the remaining employers assume responsibility for contributing toward the benefits of participants who worked for the withdrawing employer—known as "orphan participants"—in the event that the plan becomes underfunded. Even if the withdrawing employer makes withdrawal liability payments to cover the entire liabilities of orphan participants, the fact of those participants' promised benefits raises the risk of future underfunding, because a withdrawing employer is not obligated to reimburse the plan for any investment losses on its withdrawal liability payments. Such losses raise the total contribution that remaining employers would need to make to cover the shortfall and, therefore, increase the likelihood that the plan will become insolvent.

13. The rules that govern employers' liability for contributions are laid out in 29 U.S.C. §1082 (2012 & Supp.) and 26 U.S.C. §412 (2012 & Supp.).

14. The rules for partial withdrawals are specified in 29 U.S.C. §1385 (2012).

Table 3.

Number of Years Needed to Eliminate Underfunding in Multiemployer Defined Benefit Pension Plans at Current Contribution Levels, by Plans' Actuarial Funding Ratio

Actuarial Funding Ratio in 2012[a] (Percent)	Number of Plans in That Category	Average Number of Years Needed to Eliminate Underfunding	Plans' Total Actuarial Liabilities (Billions of dollars)
		Plans Able to Eliminate Underfunding at Current Contribution Levels	
0–40	5	15	2
40–50	16	21	1
50–65	100	16	46
65–80	309	11	165
80–90	299	5	180
90 or More	195	2	59
Total	**924**	**n.a.**	**454**
		Plans Unable to Eliminate Underfunding at Current Contribution Levels	
0–40	26	n.a.	2
40–50	21	n.a.	13
50–65	38	n.a.	57
65–80	33	n.a.	15
80–90	15	n.a.	3
90 or More	2	n.a.	26
Total	**135**	**n.a.**	**115**

Source: Congressional Budget Office.

CBO determined the number of years necessary for a plan to eliminate its current underfunding if annual contributions continue at their most recent level. Plans estimated to be unable to reach full funding at current contribution levels would probably have to increase contributions or reduce benefits to eliminate their underfunding.

n.a. = not applicable.

a. A plan's actuarial funding ratio is the value of its assets divided by the value of its liabilities. A plan is said to be underfunded if the current value of its assets falls short of the value of its liabilities. At the time of CBO's analysis, data for 2012 were the most recent available from Internal Revenue Service Form 5500.

(That additional risk could be eliminated if a withdrawing employer was required to purchase an annuity to cover the employer's share of the plan's unfunded benefits.)

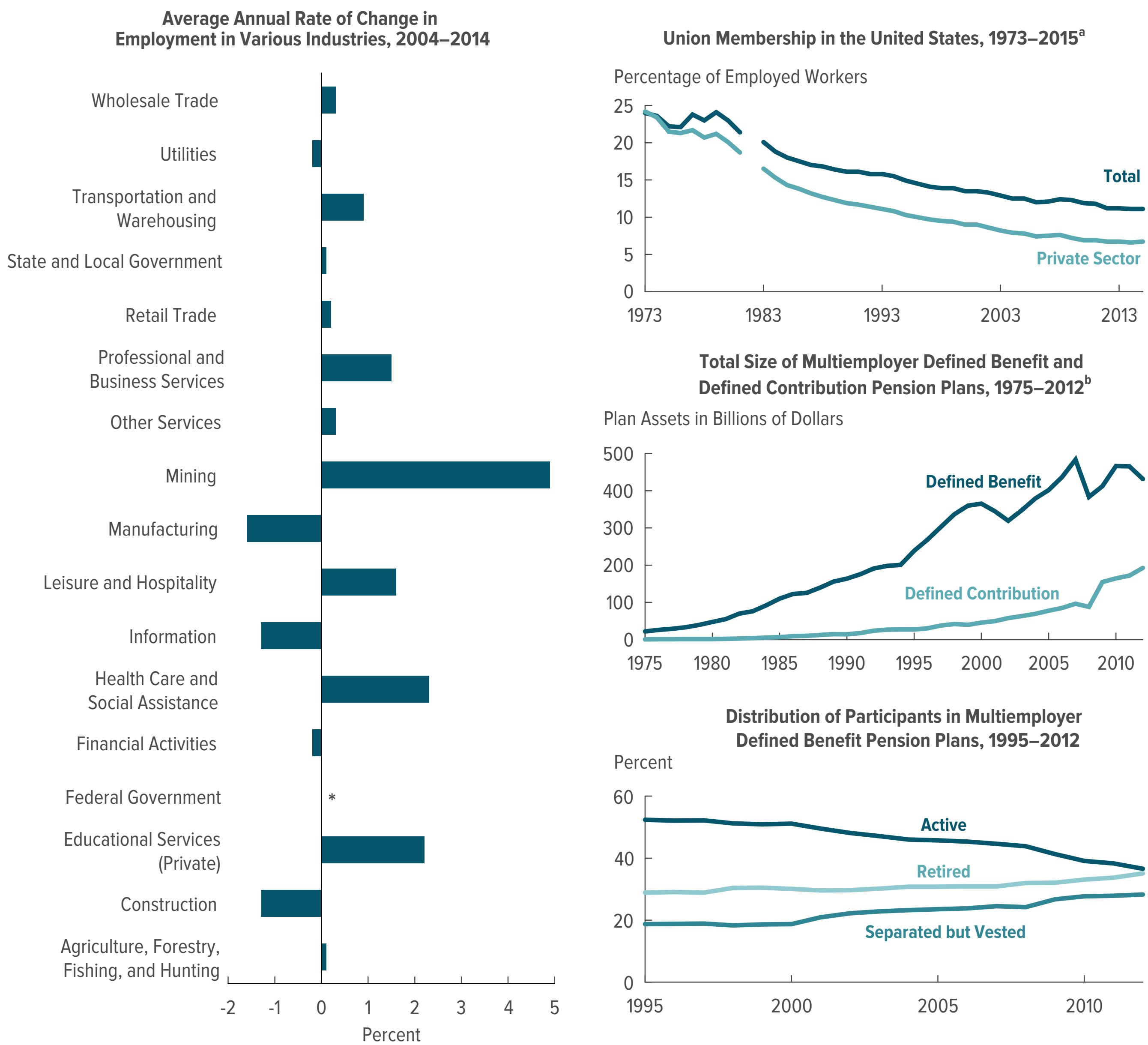
Withdrawal by one or more larger employers from a plan may precipitate a mass withdrawal by all employers, particularly in a declining industry. Historically, mass withdrawals have been costly to PBGC because the withdrawal liability payments that have been recovered from employers have been a fraction of the plans' funding shortfalls. One reason is that withdrawal liability payments typically receive lower priority in bankruptcy proceedings than other obligations do. However, the laws described above that allow critically underfunded plans to make less than the minimum required contributions and also, under some circumstances, to reduce benefits have probably decreased the probability of mass withdrawals in the future.

Industry and Demographic Factors. Industry employment trends and demographic factors have shrunk the population of active participants (people who are continuing to accrue benefits) in multiemployer defined benefit plans. That decline has reduced the ability of underfunded plans to forestall insolvency because, with fewer active participants, plans have less cash coming in from normal cost contributions that could be used to pay current benefits.

Some of the industries that offer multiemployer plans, particularly in the manufacturing and construction sectors, have been in decline and have shrinking workforces (see Figure 3). More important, union membership has steadily decreased in many industries, and employers are increasingly switching from offering defined benefit plans to offering defined contribution plans. Combined, those factors reduced the population of active participants as a

Figure 3.

Industry Trends and Demographic Factors Affecting Multiemployer Defined Benefit Pension Plans



Source: Congressional Budget Office, using data from the Bureau of Labor Statistics (www.bls.gov/emp/ep_table_201.htm), the Union Membership and Coverage Database (www.unionstats.com), the Department of Labor (www.dol.gov/ebsa/pdf/historicaltables.pdf), and the 2013 Pension Benefit Guaranty Corporation Data Book (www.pbgc.gov/documents/2013-data-book-final.pdf).

The spans of years in all but the left-hand figure represent the entire history of annual data available.

* = no change.

a. The data, which come from the Union Membership and Coverage Database (www.unionstats.com), are based on the Census Bureau's Current Population Survey. Questions about union membership were not included in the 1982 survey.

b. The data for defined benefit plans include both multiemployer and multiple-employer plans. Unlike multiemployer plans, multiple-employer plans require separate accounts for each employer and do not involve a collective bargaining agreement. However, CBO's analysis excludes multiple-employer plans.

Table 4.

Cash-Based and Fair-Value Estimates of Financial Assistance Claims and Premiums for PBGC's Multiemployer Program, 2017–2036

Billions of Dollars

	Cash-Based Estimates		Fair-Value Estimates,
	2017–2026	2027–2036	2017–2036
Financial Assistance Claims	9	35	107
Financial Assistance Claims Payable[a]	6	5	n.a.
Premium Payments by Insured Plans	4	5	6
Interest Earned on the Multiemployer Program's Assets[b]	1	0	n.a.

Source: Congressional Budget Office.

Cash-based estimates account for the spending and revenues of the multiemployer program when they actually occur rather than when future obligations for them are incurred. For example, cash-based estimates of claims represent the amount of claims filed or paid during a given period. Fair-value estimates, by contrast, approximate the market value of the program's insurance obligations. Fair-value estimates of claims reflect the full lifetime costs of financial assistance claims from plans that are projected to become insolvent during a given period.

PBGC = Pension Benefit Guaranty Corporation; n.a. = not applicable.

a. Under current law, PBGC is allowed to pay claims for financial assistance only to the extent that its accumulated assets (premium payments and interest income on its investments) permit. The amount of financial assistance paid, not the total amount of claims, is recorded in the federal budget as the multiemployer program's outlays. The numbers shown here for financial assistance claims payable reflect approximately $2 billion in accumulated assets available to the multiemployer program as of 2016. (The fair-value estimates do not distinguish between financial assistance claims and claims payable because those estimates capture the entirety of PBGC's obligations without regard to the current-law limit.)

b. Fair-value estimates of premiums implicitly account for any interest that would be earned on the multiemployer program's assets. Thus, CBO does not distinguish between premium income and interest income in its fair-value projections.

share of total participants in multiemployer plans from 76 percent in 1980 to 52 percent in 1995 and 37 percent in 2012.

The collective bargaining process can limit employers' ability to address funding deficiencies in multiemployer plans in the short term. Most bargaining agreements are multiyear contracts that cover a wide range of employment conditions and benefits. Negotiations typically cover total compensation costs, with the agreed-upon compensation levels allocated among wages and pension contributions, health care, and other benefits. In the case of pension benefits, it is common for a plan to be allocated a fixed percentage of compensation that is used both to fund new benefits and to cover increases in contributions for any shortfalls that occur. Thus, the cost of meeting shortfalls is often passed on to employees in the form of a reduction in new benefits. If increases in required contributions for a funding shortfall exceed the amount allocated to a plan under a bargaining agreement, coordinating the increase in contributions among multiple employers outside the collective bargaining process may be difficult.

CBO's Projections of Costs to PBGC and Losses to Beneficiaries

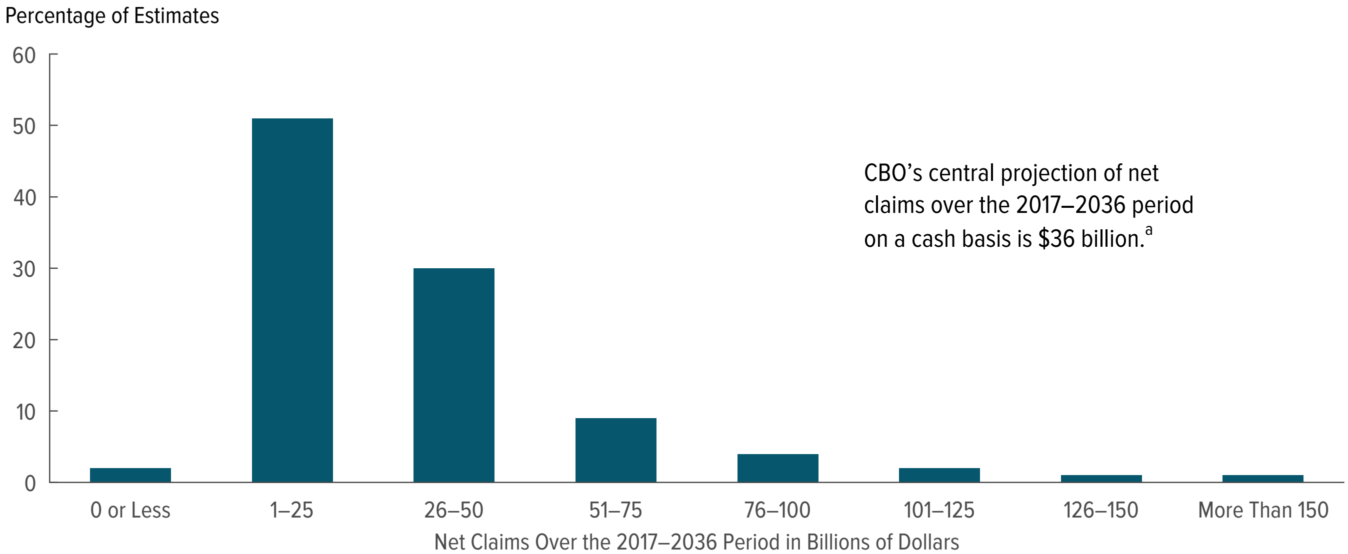
The costs of PBGC's insurance can be measured on a cash basis, which is the basis used for reporting PBGC's costs in the federal budget. The financial assistance payments that PBGC makes to plans and the costs of administering the multiemployer program are recorded in the budget as federal outlays in the year they are incurred. Similarly, the premium payments that PBGC receives from plans are recorded as offsetting receipts (that is, negative outlays) in the year they are received. The multiemployer program does not receive any funding from general tax revenues; its operations are funded from premium payments and interest earned on its invested assets.

In its latest 10-year baseline budget projections, CBO projects that if current laws did not change, the multi-employer program would receive claims for financial assistance totaling $9 billion from 2017 through 2026, while collecting premiums of $4 billion and earning interest of $1 billion on its assets (see Table 4).[15] With

15. CBO's latest projections for PBGC's multiemployer and single-employer programs can be found in Congressional Budget Office, "Baseline Projections for Selected Programs: Pension Benefit Guaranty Corporation" (March 2016), www.cbo.gov/publication/51305.

Figure 4.

Distribution of Estimates of Financial Assistance Claims, Net of Premiums, for PBGC's Multiemployer Program, 2017–2036



Source: Congressional Budget Office.

This figure shows the cash-based estimates of total net claims over the 2017–2036 period that resulted from 10,000 simulations of outcomes for the multiemployer program made using different values for economic factors, such as plans' investment returns, and key parameters, such as employers' contribution and withdrawal rates.

Premiums do not include interest earned on the multiemployer program's assets.

PBGC = Pension Benefit Guaranty Corporation.

a. The central projection is the average value for net claims under different economic conditions, such as investment returns, and using central estimates of key parameters, such as employers' contribution and withdrawal rates. The estimates discussed in most of this report and shown in Tables 1, 4, and 5 are central projections.

that expected pattern of cash flows, the program would exhaust the assets it has previously accumulated (projected to total $2 billion in 2016) and become insolvent for the first time in its history in 2025, CBO projects. As a result, a total of $3 billion in claims for financial assistance made in 2025 and 2026 would not be paid under current law.

Claims for financial assistance are projected to be considerably larger in the following decade (2027 to 2036): a total of $35 billion. The multiemployer program is expected to receive only $5 billion in premiums during that period (and not earn any interest, having exhausted its assets). Thus, under current law, financial assistance payments would be limited to about $5 billion over that decade.

Tracking all claims for financial assistance—not just those that can be paid under current law—provides important information to lawmakers about the effectiveness of any legislative changes to the multiemployer program. For example, a change in law that reduced the level of benefits that PBGC guarantees under the program could significantly reduce claims for financial assistance and thereby improve PBGC's financial position. But because PBGC does not have the resources to pay those claims under current law, a reduction in the guaranteed level of benefits would simply extend the time it took for the multiemployer program to exhaust its assets and thus would have a minimal effect on budget outlays in CBO's current-law projections. Consequently, it is useful to supplement estimates of outlays under current law with estimates that account for the entirety of PBGC's obligations. CBO regularly includes both types of estimates in its 10-year baseline projections.

The total amount of claims that can be paid—and hence the date of the insolvency of the multiemployer program—is very uncertain and could differ significantly from CBO's projection, which represents the average of the outcomes from the model used to project the condition of the multiemployer program (see Figure 4). On a cash basis, CBO estimates a 1-in-6 probability that financial assistance claims, net of premiums, over the 2017–2036 period would exceed $50 billion under current law, which would accelerate the program's insolvency to 2023.

Conversely, CBO estimates a 1-in-6 probability that net claims over that period would be less than $11 billion under current law, which would push back the program's insolvency to 2027. Those estimates reflect a range of possible outcomes for plans' investment returns, employers' contribution rates and withdrawal rates, and other factors, as well as uncertainty about key parameters that underlie CBO's model of the multiemployer program. (The uncertainty of those model parameters and the ranges of CBO's estimates of net claims are discussed in more detail in the appendix.)

Fair-Value Estimates Provide a More Comprehensive Measure of Claims Than Cash Estimates Do

An alternative way to measure the costs of PBGC's insurance is on a fair-value basis, which approximates the market value of the claims made on the multiemployer program, net of the premiums received.[16] On that basis, the value of PBGC's insurance is significantly larger than cash estimates indicate: $101 billion in financial assistance obligations, net of premium income, for plans that are expected to become insolvent over the next 20 years, CBO estimates (see Table 4 on page 12).[17]

That $101 billion fair-value estimate is more comprehensive than cash-based estimates in several ways:

- It captures the entirety of PBGC's obligations without regard to the fact that, under current law, the amount of financial assistance that PBGC can pay is limited to the amount of assets it has available. (A fair-value estimate under current law would not be an informative measure of PBGC's obligations because it would simply equal the current value of the assets available in the multiemployer program.)

- It is an accrual-based measure of cost that incorporates the full lifetime of financial assistance claims from plans that are projected to become insolvent over a specific period (unlike cash-based estimates, which track the financial assistance that is projected to be paid during a particular period).[18] Accounting for the lifetime costs of plan insolvencies is important because the structure of PBGC's insurance defers financial assistance payments until all other sources of funding have been exhausted.

- It is a present-value measure of cost, which discounts future cash flows to account for the fact that a dollar today is worth more than a dollar in the future.

- It includes an adjustment for the cost of market risk associated with PBGC's insurance. That cost is embedded in the market prices that CBO uses to estimate the fair values of PBGC's assets and liabilities—with the difference between those two fair values representing the amount that the government would have to pay a private-sector entity to take on any shortfall between the claims and premiums in the multiemployer program. Much of the risk of financial investments can be avoided by diversifying a portfolio; market risk is the risk that remains after a portfolio has been diversified as much as possible. It occurs because most investments (including the assets of defined benefit plans) tend to perform relatively poorly when the economy is weak and relatively well when the economy is strong. People value income from investments more when the economy is weak and income is relatively low, so they assign a higher cost to losses that occur during economic downturns. The cost of market risk captures the higher cost of losses in bad times (and the lower cost in good times).[19]

16. One way to think about the value of PBGC's insurance is as a financial derivative contract called a "put option." A put option gives the buyer the right to sell an asset at a prenegotiated price (called the "strike price") at some date in the future. PBGC's insurance gives employers rights similar to those of the buyer of a put option. By withdrawing from a plan, employers can effectively sell the plan's assets and make withdrawal liability payments to PBGC in exchange for the current liability of the plan, which represents the strike price. The put option is more beneficial to employers the more underfunded the plan is and the lower the withdrawal liability obligations are. The losses from exercising the put option are borne by PBGC and plan participants, whose benefits are cut to the level insured by PBGC when the plan becomes insolvent. The concept of PBGC's insurance as a put option has been the focus of several academic papers, most recently Jules H. van Binsbergen, Robert Novy-Marx, and Joshua D. Rauh, *Financial Valuation of PBGC Insurance With Market-Implied Default Probabilities*, Working Paper FR 13-27 (Simon Business School, University of Rochester, January 2014), http://dx.doi.org/10.2139/ssrn.2336304.

17. Fair-value estimates of premiums implicitly account for any interest that would be earned on the multiemployer program's assets. Thus, CBO does not distinguish between premium income and interest income in its fair-value projections.

18. In accrual accounting, the gains and losses from transactions are recognized when they are incurred rather than when they are paid, as is the case in cash accounting.

19. For a related discussion, see Congressional Budget Office, *Fair-Value Accounting for Federal Credit Programs* (March 2012), www.cbo.gov/publication/43027.

CBO's fair-value estimate is similar in concept to PBGC's estimate of its net financial position, which is also an accrual-based measure of cost. In its *FY 2015 Projections Report* (the most recent version available), PBGC estimated that its net deficit for the multiemployer program—which measures lifetime claims for plans projected to become insolvent by 2035—would have a discounted present value of $53 billion in 2015.[20]

However, PBGC's estimate differs from CBO's fair-value estimates in three key ways that make them difficult to compare. First, CBO's current 20-year estimate spans the period from 2017 through 2036, starting and ending one year later than PBGC's current estimate. The inclusion of an additional year of claims would raise PBGC's estimate. Second, unexpected changes in economic conditions since 2015 and differences in economic projections and modeling choices could lead PBGC and CBO to make differing cash flow projections for the multiemployer program, which underlie the present-value estimates. Third, PBGC does not include an adjustment for market risk in its estimate; instead, it simply discounts expected claims and premium income using the interest rates on Treasury securities with a range of maturities. As an example of the importance of the market-risk adjustment, CBO's estimate of the present value of PBGC's claims for plans that become insolvent from 2017 through 2036, net of premiums and interest received over that period, is $58 billion without the market-risk adjustment and $101 billion with the adjustment, a difference of $43 billion.

Beneficiaries of Multiemployer Plans Face Significant Losses

CBO expects the beneficiaries of many multiemployer defined benefit plans to face sizable reductions in their income because of benefit reductions and projected plan insolvencies, particularly for plans that have a low funding ratio and a relatively high ratio of retired to active participants. Those reductions and insolvencies are projected to cause the total benefits paid by multiemployer plans to be $3 billion (or 5 percent) lower in 2026, and $5 billion (or 10 percent) lower in 2036, than currently promised. Over the 2017–2036 period as a whole, those benefit cuts and insolvencies are projected to reduce plans' total payments to beneficiaries by $51 billion (or 5 percent) on a cash basis. The projected insolvency of the multiemployer program would cost beneficiaries an additional $34 billion over the 2017–2036 period in insured benefits that could not be paid.

Projections of benefit reductions vary considerably according to plans' initial funding ratio and the time horizon considered. For example, nearly 80 percent of the benefit losses projected for 2026 stem from plans that are estimated to be significantly underfunded in 2016 (plans that have a funding ratio below 65 percent), whereas only about 40 percent of the benefit losses projected for 2036 stem from such plans.

Plans that are significantly underfunded in 2016 or projected to become so in the future either would be permitted to reduce benefits or would be insolvent and thus would have to decrease benefits to the level insured by PBGC. However, CBO estimates that some of those plans would not be eligible to reduce benefits before reaching insolvency because they would not meet the current-law requirement that such reductions be projected to prevent insolvency. If those plans were allowed to decrease benefits before becoming significantly underfunded, they could forestall insolvency, and PBGC's financial position would be improved, but beneficiaries would incur losses sooner.

The impact on beneficiaries is even more significant when the effects of the projected insolvency of the multiemployer program are taken into account. Under current law, the program is expected to become insolvent in 2025 and thus be unable to honor all of its insurance obligations. Without financial assistance from the federal government, the estimated amount of benefits that PBGC would be unable to pay each year would grow from $1 billion in 2025 (representing 3 percent of benefits payable in that year) to $4 billion in 2036 (or 8 percent of benefits payable in that year), CBO projects. As a result, the amount of benefits paid in 2036 would be lower than the amount of benefits accumulated by a total of $9 billion (or 17 percent)—$5 billion in losses from negotiated benefit reductions or plan insolvencies plus $4 billion in unpayable insured benefits stemming from the insolvency of the multiemployer program (see Figure 5).

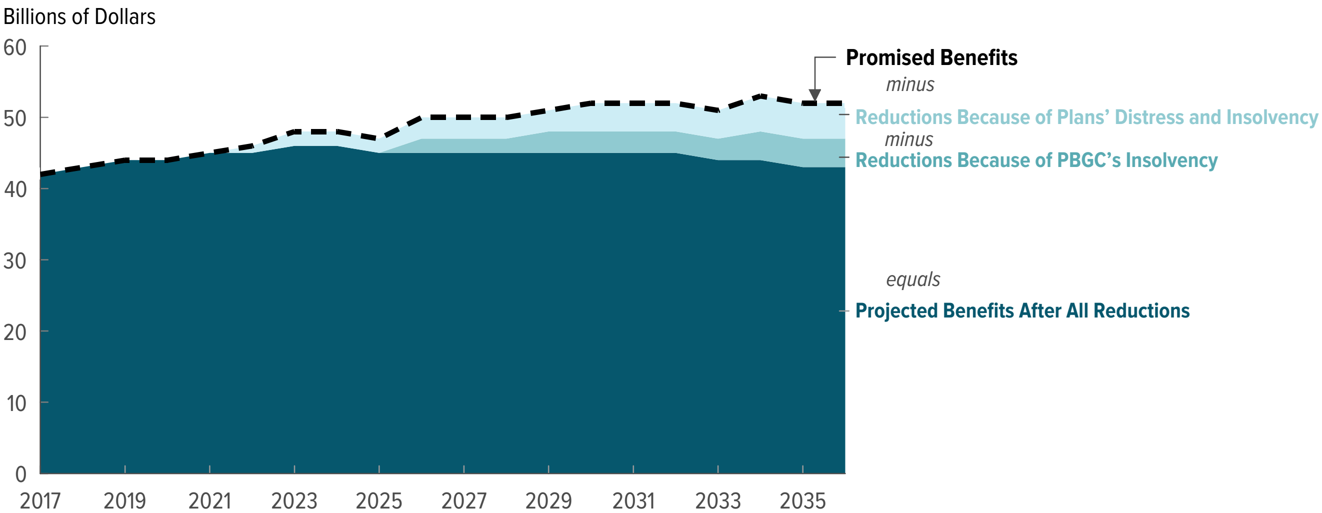
The Effects of Alternative Policies

In a bid to shore up the multiemployer program, lawmakers enacted legislation in 2014 that sharply increased the premiums plans pay to PBGC while allowing some plans in critical condition to reduce benefits. For example, benefit reductions are allowed for plans that are projected to become insolvent within the next 14 to 19 years

20. For additional discussion of PBGC's projections, see Pension Benefit Guaranty Corporation, *FY 2015 Projections Report* (2016), www.pbgc.gov/documents/Projections-Report-2015.pdf (1.6 MB).

Figure 5.

Projected Annual Benefits of Multiemployer Defined Benefit Pension Plans, 2017–2036



Source: Congressional Budget Office.

PBGC = Pension Benefit Guaranty Corporation.

and that have exhausted all reasonable measures to avoid insolvency.[21] (Those benefit reductions, which are proposed by the plans, must be approved by PBGC and various federal agencies.) The new law also gave PBGC greater flexibility to facilitate the merger of a troubled plan with another plan and to approve partitions, in which some of the liabilities of a troubled plan are placed in a new PBGC-supported plan, thereby improving the funding position of the original plan.[22] The premium increases and ability to reduce benefits improved the outlook for the multiemployer program modestly. However, CBO estimates that PBGC lacks the financial resources to significantly improve the funding positions of many plans through mergers or partitions.

Further policy changes could improve the financial health of multiemployer plans and reduce financial assistance claims on PBGC in the short or longer term. CBO estimated the effects of several types of policy options: changes to the terms of PBGC's insurance, improvements in plans' funding, and federal financial assistance to PBGC. (CBO also examined, but did not produce estimates for, the option of privatizing multiemployer pension insurance.) To help policymakers weigh such changes, CBO examined the effects of those options along several different dimensions—the financial condition of PBGC, the amounts paid to pension beneficiaries, and participation by new and existing employers in multiemployer plans.

Some of those options would address the looming costs that PBGC already faces from significantly underfunded plans; others would reduce the probability that PBGC would incur such costs from plans that become significantly underfunded in the future. For example, providing federal assistance to PBGC would help limit the corporation's exposure to risk from plans that are facing insolvency in the near term, whereas the other options would lessen prospective costs from better-funded plans and help make the system of multiemployer pension insurance more sustainable going forward. The options that CBO examined would also affect federal tax revenues (as explained in Box 1), but estimating those effects is beyond the scope of this analysis.

21. The exact time period depends on a plan's funding ratio and ratio of active to retired participants. See the Multiemployer Pension Reform Act of 2014, P.L. 113-235, 128 Stat. 2774.

22. If PBGC approves a partition, the plan transfers some of its liabilities—no more than what is necessary to keep the plan solvent—but none of its assets to a newly formed secondary plan. PBGC provides financial assistance to the secondary plan, which uses that assistance to pay benefits up to the guaranteed amount. The original plan must pay any benefits payable in the secondary plan in excess of the PBGC-guaranteed amount. It must also pay premiums to PBGC for the first 10 years following partition for the participants whose benefits were transferred to the secondary plan. Interim rules are described in Multiemployer Pension Reform Act of 2014; Partitions of Eligible Multiemployer Plans and Facilitated Mergers, 80 Fed. Reg. 8712 (request for information, February 18, 2015), www.federalregister.gov/a/2015-03434.

Box 1.

The Effects of Multiemployer Plans on Tax Revenues

Multiemployer plans and all other qualified pension plans are eligible for various types of favorable tax treatment. For example, accrued benefits are not treated as income under the individual income tax until they are paid. Furthermore, employers may deduct contributions and withdrawal liability payments from their income when figuring their taxable business income. According to the Department of Labor, employers' contributions to multiemployer plans totaled $24 billion in 2013 (the most recent year for which data are available).[1] In recent years, lawmakers have allowed employers in critically underfunded multiemployer plans to contribute less than previously required as long as their plans are following approved rehabilitation plans. Those reductions in contributions produce temporary savings for the federal budget by boosting corporate income tax revenues in the near term at the expense of revenue losses later on.

Some of the policy options examined in this report would alter the expected stream of employers' contributions—and thus tax revenues—because of a change in the rules for minimum contributions or an increase in the likelihood of employer withdrawal. Policies that would increase required contributions would result in lower tax revenues in the short term (as plans improved their funding ratios) but higher tax revenues in the long run (as plans reached full funding). Policies that would increase the likelihood of employer withdrawal would have less clear effects. Projected tax revenues would rise if employers' expected withdrawal liability payments were lower than the contributions they would otherwise have been expected to make. But revenues would fall if the withdrawing employers were also expected to contribute to another defined benefit or defined contribution plan.

The policy options analyzed in this report could potentially affect individual income taxes as well. When a plan becomes insolvent and benefits are lowered to the maximum guaranteed level, those losses reduce beneficiaries' income tax payments. Policy options that increased losses to beneficiaries would reduce tax revenues, and options that reduced losses to beneficiaries would increase tax revenues. Those options could change revenues in other ways, too, depending on how the losses and gains were distributed among employers, employees, and the Pension Benefit Guaranty Corporation (PBGC). Beneficiaries would face even steeper losses if the multiemployer program's funds were exhausted. However, if PBGC received federal funding to provide financial assistance to plans, taxpayers would bear the cost of that assistance.

The Congressional Budget Office did not estimate the specific effects of the policy options on federal tax revenues. Such effects are challenging to estimate because they are spread among multiple sources, including corporate and individual taxes, and because they can interact with other federal spending and revenues. For legislation proposed in the Congress, the staff of the Joint Committee on Taxation would be responsible for providing estimates of effects on revenues.

1. Department of Labor, *Private Pension Plan Bulletin Historical Tables and Graphs, 1975–2013* (September 2015), Table E14, www.dol.gov/ebsa/pdf/historicaltables.pdf (1.5 MB).

Options that strengthened plans' funding rules or made defined benefit plans less attractive could impose financial burdens on employers and active participants in a plan, increase the likelihood that employers would withdraw, and discourage new employers from participating in a multiemployer plan. In the case of some plans, the types of policy changes that CBO examined would be highly unlikely to prevent the plans from becoming insolvent without federal assistance—those plans may face circumstances such as a declining industry, unsustainable demographics, or costs that are beyond the employers' and active participants' ability or willingness to pay. Nonetheless, some of the options discussed here could alleviate part of the financial burden facing PBGC (see Table 5) and reduce losses to beneficiaries without imposing large costs on the federal government.

Most of the options discussed in this analysis would probably require a phase-in period before they could be implemented fully. However, CBO's estimates reflect full implementation in 2017 (unless otherwise noted) to make it easier to compare the effects of different options. In addition, CBO's estimates for the options in this report differ from the budgetary effects that CBO would estimate for such policy changes in a legislative cost estimate. The reasons are that cost estimates would generally cover a 10-year projection period rather than a 20-year period, would not report estimates related to claims that PBGC would not have the ability to pay under current law or under the proposed policy, and would include the policy's effects on federal revenues.

Table 5.

Effects of Various Policy Options on the Projected Claims, Premiums, and Exhaustion Date of PBGC's Multiemployer Program, 2017–2036

Billions of Dollars

	Cash-Based Estimates, 2017–2036			Fair-Value Estimates, 2017–2036			Expected Exhaustion Date of Multi-employer Program's Funds
	Financial Assistance Claims	Premiums and Interest	Claims Net of Premiums and Interest	Financial Assistance Claims	Premiums[a]	Claims Net of Premiums	
	Current-Law Projections						
CBO's Projections for the Multiemployer Program	45	9	36	107	6	101	2025
	Difference From Current-Law Projections Under Various Policy Options						
Changes to the Terms of PBGC's Insurance							
Increase premiums 4.7-fold (to cover the program's projected claims over 20 years on a cash basis)	1	36	-36	3	23	-19	At least 11 years later
Increase premiums 8.6-fold (to have a 90 percent probability of covering the program's projected claims over 20 years on a cash basis)	3	80	-78	10	45	-36	At least 11 years later
Increase premiums 1.4-fold for better-funded plans (to cover those plans' projected claims over 20 years on a cash basis)	*	3	-3	2	2	-1	No change
Increase premiums 10.6-fold for better-funded plans (to cover those plans' projected claims over 20 years on a fair-value basis)	*	93	-93	2	51	-50	At least 11 years later
Reduce the maximum benefit amount that PBGC guarantees by 25 percent	-11	*	-11	-25	*	-25	1 year later
Improvements in Plans' Funding							
Increase employers' contributions for critically underfunded plans by 20 percent	-8	*	-8	-27	*	-27	No change
Restrict risky investments by better-funded plans	-5	*	-5	-27	*	-28	No change
Federal Financial Assistance to PBGC							
Provide federal funding to partition underfunded plans	-23	1	-24	-34	*	-34	5 years later
Provide federal funding to recapitalize PBGC and cover all multiemployer insurance claims	0	0	0	0	0	0	At least 11 years later

Source: Congressional Budget Office.

These policy options are explained in detail in the text. CBO did not estimate the financial effects of privatizing PBGC's multiemployer pension insurance because such estimates would be highly dependent on the specifics of a given policy proposal.

Cash-based estimates account for the spending and revenues of the multiemployer program when they actually occur rather than when future obligations for them are incurred. For example, cash-based estimates of claims represent the amount of claims filed or paid during a given period. Fair-value estimates, by contrast, approximate the market value of the program's insurance obligations. Fair-value estimates of claims reflect the full lifetime costs of financial assistance claims from plans that are projected to become insolvent during a given period.

PBGC = Pension Benefit Guaranty Corporation; * = between zero and $500 million.

a. Fair-value estimates of premiums implicitly account for any interest that would be earned on the multiemployer program's assets. Thus, CBO does not distinguish between premium income and interest income in its fair-value projections.

Changes to the Terms of PBGC's Insurance

Many proposals to improve the funding situation of the multiemployer program focus on increasing the premiums that PBGC charges to insure multiemployer pension plans. Another option is to lower the maximum benefit that PBGC guarantees—and thus the level to which benefits are reduced when a plan becomes insolvent.

Raising Premiums. Lawmakers have set PBGC's multiemployer insurance premiums at $27 per plan participant for 2016, with premiums set to grow at the same rate as the Social Security Administration's national average wage index thereafter. Premium revenues are projected to rise in the next few years, but those revenues would not be sufficient to meet the obligations of the multiemployer program over the next decade, CBO estimates. Raising premiums further would improve cash flow projections for the program and delay the projected date when its funds would be exhausted. However, any given increase in premiums would also increase expected claims by affecting employers' decisions about contributions and withdrawal. Those additional claims would reduce the improvement in the program's projected cash flow.

With any increase in premiums, the improvement in PBGC's finances would be smaller if estimated on a fair-value basis rather than on a cash basis. The reason is that additional premiums would increase the likelihood of claims during an economic downturn, and fair-value estimates of claims include an adjustment for market risk. (That adjustment accounts for the value of the non-diversifiable risk that plans are more likely to become underfunded—and employers are less likely to be able to make up the shortfalls—when the economy is weak than when the economy is strong.)

CBO's Illustrative Premium Increases. CBO projects that over the 2017–2036 period, financial assistance claims on the multiemployer program will exceed the program's premium and interest income by $36 billion on a cash basis (excluding the $2 billion in assets that the program currently has on hand). To make up that difference, PBGC's current premium schedule would have to be increased 4.7-fold, on average, CBO estimates. However, eliminating that projected difference—which is the average of the distribution of possible differences projected by CBO's model—would not lessen the considerable risk that PBGC would have too few funds to cover all claims if claims proved larger than the average projection. To have a 90 percent probability of keeping the multiemployer program solvent through 2036, the current premium schedule would need to be increased 8.6-fold, CBO estimates.

On a fair-value basis, however, neither of those premium increases would be large enough to cover the present value of financial assistance claims, net of premiums, for plans that are projected to become insolvent during the 2017–2036 period. Raising the premium schedule 4.7-fold would lower the fair value of net claims by $19 billion (19 percent of net claims under current law) rather than by the $36 billion estimated on a cash basis.[23] Increasing the premium schedule 8.6-fold would lower the fair value of net claims by $36 billion (36 percent). Even the larger premium increase would not eliminate the fair value of PBGC's net claims because private investors, whose valuations form the basis for fair-value estimates, would require significantly more compensation to bear the market risk associated with those claims—specifically, the risk that losses could be much larger than expected during an economic downturn.

Significant increases in premiums could reduce the value of PBGC's insurance to employers and active participants and could encourage employers to switch to other forms of retirement plans. The 4.7-fold increase in premiums would add 5 cents an hour to an employer's compensation costs for an employee, and the 8.6-fold increase in premiums would add 11 cents an hour (assuming an average work week of 35 hours). Those higher costs would create an incentive for employers in overfunded plans to withdraw and offer defined contribution plans instead. CBO accounted for that possibility in its estimates by assigning plans with a funding ratio higher than 105 percent (on a market-value basis) a 10 percent probability of being terminated by their employers in the case of the 4.7-fold premium increase and a 15 percent probability of being terminated by their employers in the case of the 8.6-fold premium increase. (Those probabilities are two to three times as large as the probabilities of withdrawal that CBO uses for those plans in its current-law projections for the multiemployer program.)

In the case of poorly funded plans, however, CBO did not increase the probability of withdrawal under this option because, for those employers, the cost of a premium

23. Premiums involve little market risk, so the large difference between the effects on a cash basis and on a fair-value basis stems from the discount rates used to convert projected premiums into a present value.

increase would probably be smaller than the cost of withdrawing (the difference between the employers' projected withdrawal liability payments and contributions). Instead, because premiums are paid from plans' assets and employers would be unlikely to increase total contributions to poorly funded plans, CBO decreased the amount of employers' contributions that would go toward those plans' funding to account for the fact that a larger share of total contributions would be needed to pay for steep premium increases. For the option to raise the premium schedule 4.7-fold, CBO decreased contribution rates by 2.25 percent for plans with a funding ratio below 65 percent and by 1.2 percent for plans with a funding ratio of 65 percent to 80 percent. For the 8.6-fold increase in premiums, CBO lowered contribution rates by 4.5 percent for plans with a funding ratio below 65 percent and by 2.4 percent for plans with a funding ratio of 65 percent to 80 percent.

An alternative approach to raising premiums that would lessen the incentive for employers and employees in better-funded plans to stop participating would be to separate poorly funded plans from better-funded ones and set the premiums for better-funded plans to cover PBGC's projected costs from only those plans. PBGC's flat-rate premium schedule would have to increase 1.4-fold or 10.6-fold to cover the prospective costs—on a cash basis or a fair-value basis, respectively—of plans with a funding ratio of 80 percent or above in 2016, CBO estimates. For poorly funded plans, however, premium schedules set to cover those plans' projected costs would be so high that they would probably encourage mass withdrawals by participating employers or declarations that plans had exhausted all reasonable measures to avoid insolvency.

Other Approaches. Although CBO considered only flat-rate premiums in this analysis, options to increase premium revenues could be structured in a variety of ways. For example, plans funded below a certain ratio could be charged premiums that vary with the extent of their underfunding—similar to the practice in PBGC's single-employer pension insurance program. Those variable-rate premiums would encourage employers to increase their contributions to a plan to avoid higher costs associated with the premiums. Alternatively, premium amounts could be based on a plan's contributions, benefit payments, total liabilities, or a measure linked to its participant base (such as hours worked).

An extension of that approach might be to give PBGC the authority to assess premiums on the basis of a plan's riskiness, perhaps measured by some of those alternative assessment bases. In theory, linking premium assessments to the riskiness of each plan would limit PBGC's exposure to risk by more appropriately charging for the insurance it provides. However, the current state of many underfunded plans might make risk-based premiums unfeasible now. Because premiums are paid by plans, higher premiums would make underfunded plans even more underfunded and thus would raise employers' minimum required contributions to those plans. Many of those employers would be unable to increase contributions, so charging higher premiums could push those plans toward insolvency.

Assessing a tax on plans' investment returns or a tax directed at the most troubled industries would generate revenues in much the same way that premiums do. A tax on investment returns would produce more revenues from plans that invest in riskier assets and earn a greater return, on average, than from plans that invest in less risky assets. However, some of the most poorly funded plans have a significant share of their portfolios invested in risky assets. In their case, a tax on investment returns would probably absorb funds that could otherwise be used for contributions, thereby worsening the plans' funding and increasing their likelihood of insolvency. Alternatively, a tax directed at the most troubled industries would broaden the tax base to employers that do not offer defined benefit plans. But penalizing an entire industry, particularly a troubled one, for costs attributable to previous financial promises might not be the most efficient way to reduce PBGC's costs from those industries.

Changing the Level of Guaranteed Benefits. The multiemployer program insures annual retirement benefits up to a maximum of $429 for each year of an employee's service. That amount covers about 60 percent of the total benefit payable by insured plans, CBO estimates.[24] Policymakers could consider reducing the maximum annual

24. CBO estimates that in 2012, PBGC's maximum insured amount equaled 71 percent of the promised benefit for the average participant in a multiemployer plan, but considerable variation existed among plans. For example, for plans covering two-thirds of all retired participants, the maximum insured amount on average for those plans ranged between 43 percent and 100 percent of the promised benefit. That estimate is based on total benefit payments and the count of retired participants for each plan in CBO's sample of plans' filings of Internal Revenue Service Form 5500 for plan year 2012. CBO expects the insured percentage to decline over time as estimated benefit accruals increase, although that effect is expected to be partly offset by negotiated benefit reductions on the part of some plans.

guaranteed benefit to decrease net costs to PBGC, although doing so would effectively pass on those costs and more to pension beneficiaries.

As an example of such a reduction, lowering the maximum annual guaranteed benefit by 25 percent (to $322 per year of service) would reduce the estimated average insured benefit to 45 percent of the total benefit payable by insured plans. That option would decrease PBGC's financial assistance claims, net of premiums and interest, over the 2017–2036 period by $11 billion (or 31 percent) on a cash basis and by $25 billion (or 25 percent) on a fair-value basis. Despite those savings, the policy change would delay the projected exhaustion of the program's funds by just one year, to 2026.

The policy would impose large costs on beneficiaries both directly, because benefits would decline to an even lower level when a plan became insolvent, and indirectly, because a lower maximum insured benefit would give plans more opportunity to make further cuts in benefits to avoid insolvency. The indirect losses to beneficiaries would tend to occur later than the savings realized by PBGC, because any benefit cuts would take effect over the remaining life of a plan. Thus, although reducing the maximum guaranteed benefit by 25 percent would cause total benefits paid by plans during the 2017–2036 period to be $61 billion (or 6 percent) lower than promised on a cash basis, the present value of beneficiaries' losses would be much larger, $132 billion. Under current law, by comparison, total benefits paid by plans during the 2017–2036 period are projected to be $51 billion (or 5 percent) lower than promised on a cash basis, and the present value of beneficiaries' losses would again be much larger, $110 billion.

Insured benefits that could not be paid because of the projected insolvency of the multiemployer program would cost beneficiaries an additional $23 billion in promised benefits over the 2017–2036 period under this option. That reduction is $11 billion smaller than the reduction projected under current law because this option would reduce net claims to the multiemployer program and delay its insolvency by one year. Thus, reducing the level of guaranteed benefits would cause beneficiaries to experience benefit cuts earlier but would let plans and the multiemployer program forestall insolvency and pay benefits longer.

PBGC's guarantee could be structured in many other ways, which would affect how losses were distributed among beneficiaries. For example, PBGC could increase the retirement age for participants in insolvent plans, which would push back the insolvency of the multiemployer program by reducing claims for financial assistance. The effects on the present value of benefits would be similar to the effects from changing the level of guaranteed benefits. Alternatively, PBGC could limit the number of years of service that its guarantee covered, which would also allow the multiemployer program to pay financial assistance claims longer before facing insolvency. That option would limit benefits for employees with longer tenure and allow plans to continue to provide benefits for employees with fewer years of service.

Other Approaches to Changing the Terms of PBGC's Insurance. Other options to improve PBGC's finances that CBO did not estimate include allowing PBGC to terminate a pension plan (which would prevent the plan from offering new benefits), reduce benefits when a significantly underfunded plan is terminated because of mass withdrawal by its employers rather than waiting until the plan becomes insolvent, or invest PBGC's assets in higher-yielding securities. Allowing PBGC to terminate troubled plans would reduce the expected value of those plans' liabilities, but the potential reduction in claims for financial assistance would probably be small relative to the total claims projected under current law.

Reducing benefits (to no less than the maximum guaranteed level) at termination rather than at insolvency would make it more likely that a plan could fund its remaining promises. Such a reduction would also spread the burden of losses among more participants and decrease the potential claims on PBGC. However, terminations are likely to be less common in the future than they have been in the past because the Pension Protection Act of 2006 exempted critically underfunded plans from minimum funding requirements and thus made it more attractive for employers in such plans to continue to participate rather than withdraw.

Investing PBGC's assets in higher-yielding securities would improve the corporation's ability to provide financial assistance because of the higher returns that those securities earn, on average. But that strategy would also expose PBGC to the risk of incurring significant investment losses. On a fair-value basis, purchasing high-yield instead of low-yield assets at market prices would do nothing to improve the present value of PBGC's financial position (because fair-value estimates account for the cost of the greater market risk inherent in high-yield assets).

Improvements in Plans' Funding

The Pension Protection Act of 2006 changed the funding requirements for multiemployer pension plans that are significantly underfunded. The law required such plans to adopt a funding improvement or rehabilitation plan designed to reduce underfunding by a specified amount over a certain period. Plans classified as endangered (broadly defined as having a funding ratio of less than 80 percent) must adopt a funding improvement plan to reduce underfunding by 33 percent over 10 years, whereas plans considered seriously endangered (broadly defined as having a funding ratio of less than 70 percent) must adopt a funding improvement plan that reduces underfunding by 20 percent over 15 years. If a multiemployer plan fails to adopt a funding improvement plan, it becomes subject to a default funding schedule that reduces future benefit accruals and increases contribution requirements.

The rules differ slightly for pension plans classified as critical (those likely to become insolvent in the near term, in many cases because they have a funding ratio of less than 65 percent). Instead of a funding improvement plan, they must develop a rehabilitation plan to reduce their underfunding, typically over a period of at least 10 years. In turn, employers participating in critically underfunded plans are allowed to make contributions below the otherwise-required minimum level without incurring an excise tax. On the one hand, that relief may help prevent employer withdrawals and eventual insolvency for some plans, which can reduce costs to PBGC. On the other hand, that relief might encourage some plans to allow their funding to deteriorate to a critical state, increasing PBGC's exposure to risk.

Policymakers could make further changes to improve plans' funding, such as raising the requirements for employers' contributions to underfunded plans, restricting the extent to which plans can invest in risky assets, and changing the discount rate used to estimate the present value of plans' liabilities (which help determine plans' funding requirements).

Increasing Required Contributions for Underfunded Plans. As an illustrative policy, CBO analyzed the effects of raising total contributions by 20 percent for all plans with less than a 65 percent funding ratio. The higher contribution requirements would increase the likelihood of employer withdrawals, so CBO's estimates for this option incorporate probabilities of withdrawal twice as large as those used in current-law estimates—for employers participating in the most underfunded plans, that means a 4 percent chance of withdrawing each year rather than a 2 percent chance. This option would reduce claims for financial assistance, net of premiums and interest, over the 2017–2036 period by $8 billion (or 22 percent) on a cash basis and by $27 billion (or 27 percent) on a fair-value basis, CBO estimates. However, most of the reduction in net claims would not occur until the second decade of that period. As a result, this option would not alter the expected insolvency date of the multiemployer program.

Changes to contribution rules would have additional budgetary effects beyond those on PBGC. In particular, because contributions to multiemployer plans are tax-deductible, raising required contributions would reduce federal tax revenues in the short run but would increase them in the long run as plans' funding improved. (The effects of multiemployer plans on federal tax revenues are discussed in Box 1 on page 17.)

Contributions are often determined by plans' collective bargaining agreements. Those agreements are negotiated for multiyear periods; thus, contributions could not easily be raised without further negotiations.

Restricting Risky Investments by Plans. Pension plans are administered by trustees who adopt an investment policy that is shaped by their fiduciary responsibilities to the plans' participants. A typical pension plan invests 45 percent to 50 percent of its assets in common stocks, 20 percent to 25 percent in investment-grade bonds, and the balance in other risky assets (including high-yield debt and real estate). Such an investment policy poses several problems. First, the value of risky assets is much more volatile than the value of a plan's benefit obligations; that greater volatility means that the risk of funding shortfalls is larger when plans invest in risky assets than when they invest in less risky assets. Second, actuarial valuations of a plan's assets recognize investment gains and losses gradually, and thus those valuations lag behind market valuations. Third, if a plan wanted to reduce its risk by investing in less risky, lower-yielding assets, it would need to hold more assets to maintain its funding level. The reason is that the actuarial valuation of a plan's liabilities is calculated using a discount rate equal to the expected rate of return on the plan's assets; the lower that discount rate, the higher the valuation of liabilities.

To address those problems, policymakers could limit the riskiness of a plan's investment strategy. However, imposing such restrictions on poorly funded plans would transfer costs from employers and beneficiaries to PBGC. Poorly funded plans would probably be unable to increase shortfall contributions to the new required level and thus would be more likely to declare that they had exhausted all reasonable measures to avoid insolvency than they would be under the current funding rules. Consequently, CBO examined an option that would apply only to plans with a funding ratio above 80 percent. Those plans would be required (after a five-year phase-in period) to invest 80 percent of their contributions in annuities or low-risk assets. The investments in low-risk assets would decrease the expected return on a plan's assets, but the reduced volatility in the value of those assets would improve the plan's funding overall.

Restricting plans to low-risk investments would decrease the volatility of asset values and the risk of underfunding and would improve plans' funding ratios over time. Despite the improved funding, this option might encourage employers in better-funded plans to switch to other types of retirement plans, in part because PBGC's insurance would be less valuable to employers. To account for the likelihood that some employers would choose to switch to other forms of retirement plans, CBO assigned a 10 percent probability that a plan with a funding ratio above 105 percent would be terminated by its employers.

This option would decrease claims for financial assistance, net of premiums and interest, over the 2017–2036 period by $5 billion (or 14 percent) on a cash basis and by $28 billion (or 28 percent) on a fair-value basis, CBO estimates. Unlike changes to PBGC's investment policy, changes to plans' investment policies would have a significant impact on a fair-value basis. The reason is that reducing investment risk would lower the risk of plans' becoming underfunded and would raise plans' required minimum contributions, both of which would reduce the possibility that plans would become insolvent when asset values were low. However, such changes to plans' investment policies would not alter the expected exhaustion date of the multiemployer program's funds.

Changing the Discount Rate Used to Calculate Liabilities. The rules that determine plans' funding requirements are largely based on actuarial valuations of plans' assets and liabilities. As noted above, the discount rate used to calculate the value of liabilities is equal to the expected return on a plan's assets and thus may be a higher rate than is warranted given the plan's more certain benefit promises. Policymakers could consider a change to plans' funding rules that required liabilities to be valued using a lower discount rate—or a series of rates that matched the maturity of the plan's obligations, as in PBGC's single-employer program.

Using a lower discount rate would increase required contributions and improve plans' funding, but it might also be difficult to implement for poorly funded plans. Furthermore, if a plan was required to use market values for liabilities but continued to pursue a risky investment strategy, it would probably improve its funding ratio each year, on average (because the return on the risky asset portfolio would exceed the discount rate used to value liabilities). Any resulting overfunding, beyond the maximum allowable for favorable tax treatment, would probably be considered the property of beneficiaries, which could cause the plan to increase benefits. Even with improvements in its funding, a plan's decision to invest in risky assets would still expose PBGC to risk from large adverse market shocks that could put the plan on a path to insolvency.

Federal Financial Assistance to PBGC

Under current law, PBGC cannot pay more in financial assistance claims than it has available in resources collected from premiums and accumulated interest. However, lawmakers could choose to approve direct transfers to PBGC from the general fund of the Treasury to help the most distressed multiemployer plans or, more broadly, to allow the multiemployer program to pay some or all of its claims as they fall due. To assist the most distressed plans, lawmakers could provide PBGC with funds to increase the number of partitions it performs. Expanding partitions could limit the risk that the most troubled plans would deteriorate further and potentially cause larger losses for PBGC. Alternatively, lawmakers might opt to provide enough federal funding to help cover the program's claims and forestall its insolvency. An extension of that approach might be to recapitalize PBGC and either fully or partially privatize the pension insurance system.

Providing Federal Funding to Partition Underfunded Plans. Lawmakers might prefer to target federal assistance narrowly to prevent the insolvency of the most troubled multiemployer plans. CBO's projections indicate a high probability of insolvency for several large plans and for many smaller plans, despite the enactment of legislation in 2014 allowing for benefit reductions and partitions in certain situations. The rules governing partitions are complicated; they require that the original plan be able to achieve solvency after the partition and that PBGC's ability to provide financial assistance to other plans not be impaired.

Under the law, before a plan can be partitioned, benefits for most of its beneficiaries must be reduced to the lowest permissible level—generally 110 percent of the maximum amount insured by PBGC. In the partition, the reduced liabilities for some beneficiaries are transferred to a new PBGC-supported plan, which has no assets but receives financial assistance from PBGC to pay benefits up to the insured amount. The original plan continues to operate and must pay any benefits payable by the PBGC-supported plan in excess of the insured amount. (The original plan continues to provide benefits in excess of the insured amount equally for all beneficiaries of both the original and PBGC-supported plans.)

PBGC cannot legally approve a partition if doing so would worsen its financial position (CBO interprets that legal restriction to mean that such a partition cannot hinder, on an expected-value basis, PBGC's ability to meet its obligations to certain other plans).[25] That constraint will limit the number of viable partitions to, at most, a few severely underfunded plans. The reason that so few partitions would be viable is that a partition that put a severely underfunded plan on a path to solvency would have immediate costs to PBGC by accelerating claims for financial assistance and thus hastening the projected insolvency date of the multiemployer program.[26] Furthermore, not all partitions would achieve an eventual reduction in claims that offset the cost of the partitions.

One approach to supporting partitions would be for the federal government to provide enough funds to allow partitions that were economically viable when combined with benefit reductions. As an example of such an option, plans that are considered critical and declining in 2016 could be made eligible for a partition if they are projected to be unable to eliminate their underfunding within 15 years at their current contribution level. The liabilities transferred to a PBGC-supported plan as part of the partition would be the amount necessary for the original plan to have a funding ratio of 80 percent. Beneficiaries of both the original and PBGC-supported plans would have their benefits reduced to no more than 200 percent of the guaranteed level, and employers would continue to make contributions to eliminate any remaining underfunding in the original plan. Under this option, the federal government would provide funds to PBGC to pay the benefits of the PBGC-supported plan. To decrease the risk of future underfunding and to reduce costs to PBGC, investments in the original plan could be restricted to low-risk assets. That change could help lessen the incentive for employers to seek federal assistance for large-scale partitions when they might otherwise be able to fund their pension plans without assistance.

This option would affect plans with liabilities totaling \$81 billion, CBO projects, or 8 percent of the total liabilities of multiemployer plans. Without federal aid, financial assistance claims for those eligible plans over the 2017–2036 period would amount to \$20 billion on a cash basis and \$27 billion on a fair-value basis, CBO estimates. Under the option, federal assistance of \$10 billion would be necessary to fund a portion of each eligible plan's liabilities so that the plan's contribution level as of 2016 would be sufficient to fund its remaining obligations over 15 years.

The unpartitioned liabilities (those remaining in the original plans) would pose much less risk to PBGC because the plans would be better funded after the partitions and would be more likely to remain solvent. CBO projects that, on a cash basis, financial assistance claims for those plans would total \$1 billion from 2017 through 2036, and the exhaustion date of the multiemployer program's funds would be pushed back by five years. The fair value, however, of financial assistance claims from those unpartitioned liabilities would be \$4 billion, which is consistent with the difference between cash and fair-value estimates for unpartitioned plans with a comparable funding ratio.

If policymakers wanted to offset the \$10 billion direct federal cost of partitioning the liabilities and the \$4 billion exposure to remaining unpartitioned liabilities, the premiums levied on all multiemployer plans would need to increase 3.2-fold. Alternatively, plans could be

25. That measure of financial position, unlike CBO's fair-value estimates, does not include the cost of any change in the market risk borne by PBGC because of such a partition.

26. In addition, CBO estimates that partitions made under the terms available under current law would have small effects on PBGC's financial condition. For those reasons, CBO does not explicitly incorporate partitions into its current-law projections for the multiemployer program.

directed to switch to a safer structure, such as a composite design that combines features of defined benefit and defined contribution plans.[27] In those plans, employers make fixed contributions, and shortfalls between the value of plans' investments and the amount needed to meet target benefit levels are shared among beneficiaries.

A similar approach to prevent plans' insolvency is for PBGC to facilitate mergers of troubled plans with other plans by providing financial assistance to make up underfunding. As in the case of partitions, PBGC cannot facilitate a merger if doing so would cause its financial position to deteriorate. The option discussed above could be used for mergers as well as for partitions.

Providing Federal Funding to Recapitalize PBGC and Cover All Multiemployer Insurance Claims. Federal law states that PBGC's pension insurance is not guaranteed by the government. But that could change if lawmakers enacted a federal guarantee that covered some or all of PBGC's current obligations. To cover all of the current obligations of the multiemployer program on a cash basis through 2036, PBGC would need $34 billion in federal assistance, CBO projects. That amount represents the difference between $45 billion in projected financial assistance claims during that period and $11 billion in claims payable under current law (see Table 1 on page 5), both estimated on a cash basis. On a fair-value basis, a private insurer would require an estimated $101 billion to assume the multiemployer program's insurance obligations through 2036.

Lawmakers could also consider combining an explicit federal guarantee with the other policy changes discussed in this report. In that case, the federal assistance needed to cover all claims through 2036 would be the difference between projected financial assistance claims and projected claims payable under current law for a given policy option. For example, if federal assistance was combined with higher contributions for underfunded plans, a total of $26 billion in federal funding rather than $34 billion would be necessary for PBGC to cover all claims on the multiemployer program on a cash basis from 2017 through 2036.

27. For a detailed discussion of composite plans, see Josh Shapiro, *Composite Plans: A New Approach to Modernizing Multiemployer Retirement Benefits* (Groom Law Group, July 2015), www.awci.org/pdf/awci-positions-pension-reform.pdf (356 KB).

Providing Federal Funding to Recapitalize PBGC and Privatize the Multiemployer Insurance Program. Another approach to shoring up the pension insurance system is for lawmakers to transfer PBGC to private owners or replace it with private insurance policies that plans buy from competing insurers. That approach would allow insurance premiums to be determined competitively, which means they would be likely to reflect the risks posed by the insured plans. Such premiums might vary with the age distribution of a plan's participants and the investment strategy of the plan. However, privatization would require the federal government to provide funds to recapitalize PBGC's programs before a private entity would be willing to assume the programs' large prospective obligations.

CBO's fair-value estimates provide an indication of how much capital would need to be set aside to cover the existing obligations of the multiemployer program under current law: approximately $101 billion. Fair-value estimates also indicate the level of premiums that would provide an adequate return to the insurers. For example, CBO estimates that a fair insurance premium for plans with a funding ratio of 80 percent or more would be $286 per participant in 2016 (a 10.6-fold increase from the current level). Privatization could make the costs of pension insurance more transparent, because the government would have to pay private entities to provide insurance at below-market terms.

The idea of fully privatizing the pension insurance system raises several concerns, however. First, if plans were required to buy private insurance, the federal government would remain involved in regulating the terms of the insurance. That continued involvement would raise the question of how much risk and responsibility the government could effectively transfer to private insurers. A large marketwide shock could cause many insurers to go bankrupt, in which case the government might choose to provide assistance. Nevertheless, the risk to the government from large-scale plan losses would be much less than with full federal provision of insurance.

Second, providing insurance on market terms without federal subsidies might hasten the shift to defined contribution plans, which place all of the risk of investment losses on beneficiaries. That shift would be more rapid if the premiums charged by private insurers were higher than the fair premium implied by CBO's fair-value estimates. (A large share of the premiums for many private insurance policies covers marketing and other overhead costs that could be better controlled in a centralized system.)

Third, during periods of market turmoil, private insurers might become unwilling to provide new policies or renew existing ones without large increases in premiums. Such increases would further strain plans' finances.

An alternative to fully privatizing the pension insurance system would be to partially privatize it. For example, the insurance could be provided by private companies, but the federal government could guarantee it against catastrophic losses. Or the government could offer insurance alongside private insurers and use the private insurers' premiums to determine its premiums. The government insurer would limit its role to a small percentage of the market during stable economic conditions, but it could scale up its role during a crisis to ensure the continued availability of pension insurance to new or renewing policyholders. Fair-value estimates could be used to help determine the pricing of federal insurance and to manage the government's exposure to risk.

Such partial privatization would reduce some of the drawbacks of full privatization. However, the federal government would still be at risk of losses from pension insurance, and the costs it incurred by continuing to subsidize pension insurance would be less visible. Lawmakers would need to strike a balance between the continued availability of reasonably priced insurance and the cost of subsidies inherent in the government's role in providing insurance against catastrophic losses.[28]

28. Similar privatization options have been proposed or implemented for other federal programs. CBO analyzed the budgetary effects of a variety of proposals to change the mortgage market that would increase the role of private guarantors; see Congressional Budget Office, *Transitioning to Alternative Structures for Housing Finance* (December 2014), www.cbo.gov/publication/49765. The federal government provides catastrophic reinsurance to private insurers who cover businesses against losses from terrorism. Options for changing that program are discussed in David Torregrosa, Perry Beider, and Susan Willie, *Federal Reinsurance for Terrorism Risk in 2015 and Beyond*, Working Paper 2015-04 (Congressional Budget Office, June 2015), www.cbo.gov/publication/50171.

Appendix: How CBO Projected PBGC's Costs

To produce cash and fair-value estimates for its baseline budget projections, the Congressional Budget Office developed a simulation model of the Pension Benefit Guaranty Corporation's (PBGC's) multiemployer program that projects the costs of a representative sample of multiemployer plans insured by the program.[1] For each plan, the model yields a probability distribution of potential outcomes for participants' benefits, employers' contributions and withdrawal decisions, the plan's assets and liabilities, and financial assistance claims on PBGC. Using a simulation model lets CBO capture the asymmetric nature of PBGC's insurance, in which the largest losses follow from large downturns in the overall economy. CBO's model is conceptually similar to PBGC's Pension Insurance Modeling System (PIMS), but it is simpler because it does not account for many of the intricacies of plans' benefit and contribution rules that are modeled in PIMS.[2] Instead, CBO's modeling approach uses past levels of benefits, contributions, assets, and liabilities to calibrate the formulas that are used to simulate employers' contributions and plans' benefit levels.

The model also enables CBO to test how sensitive its projections are to alternative values for key parameters of the model. The base-case estimates of those parameters are intended to represent the average values from the distribution of probable values, in CBO's judgment. To quantify the effects of uncertainty about those parameters, CBO estimated the financial condition of the multiemployer program repeatedly using alternative values (deviations from the base-case estimate) for the following parameters, which are the most important in the model:

- *Probability of employer withdrawal.* The greater the likelihood that employers withdraw from underfunded plans, the greater the estimated financial assistance claims on PBGC.
- *Contribution rates.* The more that employers contribute to a plan, the less likely the plan is to become underfunded. However, an increase in required contributions may make it desirable for employers participating in better-funded plans to withdraw and choose other forms of retirement benefits.
- *Risk premium earned on plans' risky assets.* The larger the difference between the rate earned on a plan's risky assets and the rate used to discount liabilities, the greater the improvement in PBGC's financial position on a cash basis. On a fair-value basis, however, that higher return is considered adequate compensation for risk and thus does not change PBGC's financial position.
- *Discount rate for calculating actuarial liability.* A higher discount rate lowers the value of a plan's actuarial liability and improves the plan's funding ratio. The actuarial discount rate is equal to the expected return on the plan's assets, so the greater the expected return on those assets, the lower the actuarial liability and required contributions.

1. For details of CBO's modeling approach, see Wendy Kiska, Jason Levine, and Damien Moore, *Modeling the Costs of the Pension Benefit Guaranty Corporation's Multiemployer Program* (Congressional Budget Office working paper, forthcoming). For an analysis of PBGC's single-employer pension program that uses a similar modeling approach, see Congressional Budget Office, *The Risk Exposure of the Pension Benefit Guaranty Corporation* (September 2005), www.cbo.gov/publication/17160.
2. The PIMS model for PBGC's single-employer program is summarized in Steven Boyce and Richard A. Ippolito, "The Cost of Pension Insurance," *Journal of Risk & Insurance*, vol. 69, no. 2 (December 2002), pp. 121–170, http://ssrn.com/abstract=314354. The PIMS model for the multiemployer program is similar, but it simplifies many of the components because less detailed information is available about participating employers for the multiemployer program than for the single-employer program.

- *Growth rate of the active workforce*. The higher the growth rate of a plan's active workforce, the higher the level of contributions toward newly accrued benefits, and the more cash a plan will have to pay current benefits. That additional cash improves the outlook for PBGC by shifting potential losses to new beneficiaries. The improvement is more pronounced with cash estimates than fair-value estimates because in fair-value estimates, the value of the additional cash is partly offset by the cost of market risk from deferring potential losses to the future.

- *Distribution of benefits*. Variation among participating employees in the amount of benefits accrued in a plan affects the effective percentage of benefits guaranteed by PBGC. A plan whose benefit levels vary widely among participants will have a smaller percentage of its benefits insured than a plan with the same average benefits but less variation among participants. The larger the percentage of total benefits that PBGC insures, the higher the cost to the corporation.

- *Mortality rate*. The greater the mortality rate, the fewer years that benefits are paid to plan participants, and the lower the estimated financial assistance claims on PBGC.

CBO found that the range of average costs from the model was most sensitive to assumptions about employers' contribution rates and the distribution of insured benefits. CBO produced 100 estimates of financial assistance claims, net of premiums, for the multiemployer program over the 2017–2036 period using values for key inputs chosen according to their likelihood of occurring.[3] The result was that the average estimates of net claims over the 2017–2036 period were between $10 billion and $44 billion on a cash basis, and between $31 billion and $157 billion on a fair-value basis, about two-thirds of the time.[4] By comparison, CBO's central estimates of net claims over the 2017–2036 period are $36 billion on a cash basis and $101 billion on a fair-value basis.

The policy options included in this analysis are sensitive to the same uncertainties that affect CBO's current-law projections. To illustrate the uncertainty of the estimates of expected financial assistance claims, net of premiums, for each option, CBO calculated the range containing the middle two-thirds of selected estimates, again using key inputs randomly sampled according to their likelihood of occurring (compare Table A-1 with Table 5 on page 18). For each option, CBO's estimate of financial assistance claims, net of premiums, using central values for key parameters is located roughly in the middle of the range calculated using randomly sampled parameters.

3. Technically, the values were drawn from a joint normal probability distribution with no correlation between the variables.

4. Those ranges represent the central two-thirds of the range of average costs for the 100 draws from the joint distribution of parameter values. That joint distribution was constructed assuming that the uncertainty about each parameter was normally distributed with a mean equal to CBO's central estimate of the parameter and uncorrelated with other parameters. Variables with a lower bound of zero were treated as normally distributed in the natural logarithm of their levels.

Table A-1.

Likely Range of Net Claims on PBGC's Multiemployer Program, 2017–2036

Billions of Dollars

	Financial Assistance Claims, Net of Premiums[a]	
	Cash-Based Estimates	Fair-Value Estimates
	Current-Law Projections	
CBO's Projections for the Multiemployer Program	10 to 44	31 to 157
	Difference From Current-Law Projections Under Various Policy Options	
Changes to the Terms of PBGC's Insurance		
Increase premiums 4.7-fold	-33 to -24	-25 to -13
Increase premiums 8.6-fold	-65 to -45	-48 to -28
Reduce the maximum benefit amount that PBGC guarantees by 25 percent	-15 to -5	-39 to -10
Improvements in Plans' Funding		
Increase employers' contributions for critically underfunded plans by 20 percent	-11 to -1	-45 to -4
Restrict risky investments by better-funded plans	-10 to 5	-67 to 8
Federal Financial Assistance to PBGC		
Provide federal funding to partition underfunded plans[b]	-29 to -15	-41 to -24
Provide federal funding to recapitalize PBGC and cover all multiemployer insurance claims[b]	n.a.	n.a.

Source: Congressional Budget Office.

To analyze how sensitive its projections are to uncertainty, CBO calculated the range containing the middle two-thirds of selected estimates using key inputs randomly sampled according to their likelihood of occurring.

CBO did not analyze the sensitivity of the two options to increase premiums only for better-funded plans. Such an analysis requires a significant amount of time to perform, and CBO expects that the range of effects, relative to the size of the premium increase, would be similar to those presented for the other options to increase premiums.

PBGC = Pension Benefit Guaranty Corporation; n.a. = not applicable.

a. Premiums do not include interest earned on the multiemployer program's assets.

b. The options to provide federal funding would have a federal cost and would change the amount of financial assistance claims payable (not shown). The amount that would be recorded as an outlay in the budget would be the difference between the cash projections for financial assistance claims payable and for premiums.

List of Tables and Figures

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About This Document

This report was prepared in response to a request from the Chairman of the Senate Committee on Finance. In keeping with the Congressional Budget Office's mandate to provide objective, impartial analysis, the report makes no recommendations.

Wendy Kiska of CBO's Financial Analysis Division wrote the report with assistance from Jason Levine and guidance from Damien Moore. Paul Burnham, Sheila Dacey, Noah Meyerson, Felix Reichling, and David Torregrosa of CBO provided useful comments. Helpful comments were also provided by Michael Falkenheim of the Office of Management and Budget; Deborah Lucas of the Massachusetts Institute of Technology (a consultant to CBO); Timothy Taylor of the *Journal of Economic Perspectives*; and staff members of the Joint Committee on Taxation, the Pension Benefit Guaranty Corporation, and Segal Consulting. (The assistance of external reviewers implies no responsibility for the final product, which rests solely with CBO.)

Wendy Edelberg and Jeffrey Kling reviewed the report, Christian Howlett edited it, and Maureen Costantino and Jeanine Rees prepared it for publication. An electronic version is available on CBO's website (www.cbo.gov/publication/51536).

Keith Hall
Director

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