The Pension Analytics Group

A Proposal to Strengthen the PBGC’s Multiemployer Insurance Program Through a Combination of Premium Increases and Benefit Reductions

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Overview

Using the Multiemployer Pension Simulation Model (MEPSIM\(^1\)) we project that, absent significant remedial action, about 160 multiemployer pension plans covering over two million participants will become insolvent by 2040. We also project that the Pension Benefit Guaranty Corporation’s (PBGC) multiemployer guarantee fund\(^2\) — the backstop against such insolvencies — will itself be exhausted by 2027\(^3\). This constitutes a systemic failure for the PBGC, the bankrupt plans, and the participants and retirees in those plans.

In an effort to mitigate this crisis, the House of Representatives recently passed the Rehabilitation for Multiemployer Pensions Act (RMPA), also known as the Butch Lewis Act. If passed by the Senate, this would provide troubled multiemployer pension plans with low interest rate loans funded by the federal government.

Using MEPSIM, we determined that RMPA will not alter the downward trajectory of most struggling multiemployer plans because it doesn’t address plans’ underlying funding deficits\(^4\). Rather, it would temporarily mask the deficits rather than reduce them. Despite the loans, many troubled plans would still become insolvent, and those insolvencies would exhaust the PBGC’s multiemployer guarantee fund. In addition, the federal government could potentially be saddled with tens of billions of dollars of unpaid loans.

In this paper, we examine a reform package designed to stabilize the guarantee fund without relying upon loans from the federal government. The proposed reform would increase the premium income flowing into the guarantee fund and reduce the assistance payments flowing out of the fund. This is accomplished via four adjustments to current law, each with an implementation date of July 1, 2020:

1. Any plan within 15 years of projected insolvency, based on an assumed rate of return on assets of 6\(^%\)\(^5\), would be required to cut benefits to the level guaranteed by the PBGC. In the unlikely event that this cut were to result in overfunding (measured at a 6\% discount rate), the plan would be required to cut benefits only to the level needed to achieve a 100\% funding ratio. For any plan implementing the required cut, future benefit increases would be prohibited while the plan’s funding ratio remains under 100\%.

2. Under current law, the first $11 of a participant’s monthly benefit rate\(^6\) is 100\% guaranteed by the PBGC, the range between $11 and $44 is 75\% covered, and no coverage is provided above $44. Under the proposed reform, the coverage would be 100\% up to a benefit rate of $25, and 0\% above that level. These

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\(^1\) MEPSIM is a model of the multiemployer pension system that was developed by the Pension Analytics Group. MEPSIM is available online at www.pensionanalytics.org/mepsim.

\(^2\) For a description of the PBGC’s multiemployer insurance program, see https://www.pbgc.gov/prac/multiemployer.

\(^3\) Across 500 stochastic trials, we project a median insolvency date of 2027, which is close to the PBGC’s own estimate presented in its latest projections report: https://www.pbgc.gov/news/press/releases/pr18-02.

\(^4\) Our simulation results are presented in “The Multiemployer Solvency Crisis: Estimates of the Cost and Impact of the Butch Lewis Act”, which can be downloaded from our website: www.pensionanalytics.org/our_papers.

\(^5\) The rationale for using a 6\% return is presented subsequently in the paper. Briefly, our research suggests that, across the next 25 years, 6\% is a realistic expectation for the annualized return of the typical asset portfolio of a multiemployer plan.

\(^6\) The “monthly benefit rate” is an individual’s monthly pension divided by their total years of service.
adjustments would make the guarantee more progressive\textsuperscript{7}, with increased protection at lower benefit rates and reduced protection at higher benefit rates. In addition, these adjustments would lead to a slight reduction in the total projected present value of assistance payments.

3. The existing “flat” premium would be increased from $29 to $80 per participant per year, which is the same rate used for the PBGC’s single-employer insurance program.

4. A variable rate premium (VRP) would be introduced, equal to 4.3\% of each plan’s underfunding, using a 6\% discount rate\textsuperscript{8} to compute plan liabilities. The 4.3\% rate is identical to the VRP rate used for the PBGC’s single-employer insurance program. Each plan’s annual VRP would be capped at 5\% of its total annual benefit outflows, and plans would be permitted to implement across-the-board benefit cuts of up to 5\% to facilitate payment of the VRP.

Under this reform package, across 500 MEPSIM trials in which plans’ asset returns were varied stochastically, there is a 50\% chance that the PBGC’s multiemployer guarantee fund will remain solvent in the long run\textsuperscript{9}, compared to a 26\% chance under the Butch Lewis Act and a 0\% chance under current law (i.e., there is a 100\% chance that the guarantee fund will become insolvent under current law).

The remainder of the paper presents our simulation results in greater detail, beginning with current law simulations and then progressing to simulations of the reform package. An appendix provides a description of the assumptions underpinning the simulations.

**Current-Law Simulations**

The PBGC’s projections of the multiemployer guarantee fund typically run only 20 years into the future. This limited time horizon captures only a subset of the insolvencies that are likely to occur, and, as a consequence, understates the severity of the multiemployer solvency crisis.

Consequently, when using MEPSIM, we generally perform 50-year projections to ensure that we capture the entire iceberg rather than merely its tip. Under current law, we project PBGC assistance payments of $217 billion (Table 1) and a long run PBGC deficit of $204 billion\textsuperscript{10}. In contrast, the PBGC’s most recent report projects a PBGC deficit of only $66 billion\textsuperscript{11}.

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\textsuperscript{7} To date, the multiemployer guarantee fund has been financed by a “flat” premium equal to a fixed dollar amount per participant. A plan with generous benefits pays the same flat premium as a plan with much lower benefits. Taking this into account, the insurance program could be viewed as regressive rather than progressive. In effect, plans with low benefit rates subsidize plans with higher benefit rates. The proposed reform reduces the insurance program’s regressivity.

\textsuperscript{8} Multiemployer plans’ discount rates for measuring liabilities are not determined by law. Rather, each plan has discretion to set its own discount rate. The most common practice among multiemployer plans is to set the discount rate equal to the expected long run rate of return on each plan’s asset portfolio. In 2017, based on 5500 data from the Department of Labor, 90\% of plans used discount rates falling between 6\% and 7.75\%, with a median of 7.25\%. These rates are high relative to the forecasts for future investment returns that we examined (see the appendix). If the VRP were calculated using each plan’s discount rate, this would create an additional reason for plans to leave their discount rates at what appear to be unreasonably high levels. Therefore, to value liabilities for determining the VRP, our proposal uses a fixed discount rate rather than the existing plan-specific discount rates. If multiemployer plans continue to use optimistic discount rates, it is possible that the multiemployer funding crisis will grow broader and deeper with the passage of time.

\textsuperscript{9} By “solvent in the long run”, we mean that the PBGC will have sufficient assets to pay assistance payments associated with the plans that we project will go insolvent across the next 50 years.

\textsuperscript{10} $217 billion is the present value of projected assistance payments, computed using the Treasury yield curve. Because the guarantee fund currently has about $2 billion of assets, and because the fund will receive future premium income, the projected deficit of the fund is slightly less than the present value of assistance payments. We use the Treasury yield curve for computing the PBGC’s liabilities because this reflects our understanding of the calculation approach used by the PBGC itself.

\textsuperscript{11} The PBGC’s most recent projections report can be found here: [https://www.pbgc.gov/about/projections-report](https://www.pbgc.gov/about/projections-report)
Arguably, a plan projected to go insolvent more than 20 years in the future still has time to implement the benefit cuts and/or contribution increases that are needed to restore financial stability. However, our simulations indicate that, for many plans, the required adjustments are quite severe as a consequence of the plans’ demographic maturity and low funding ratios\(^\text{12}\).

Table 2 shows that a 25% across-the-board reduction of benefits, implemented immediately across all underfunded plans, fails to resolve the solvency crisis. Even with this strong downward benefit adjustment, we still project that over 280 plans will become insolvent, resulting in $141 billion in PBGC assistance claims payable to 4.5 million plan participants. The median projected year of insolvency for the guarantee fund is 2030, which is only a slight improvement relative to the baseline scenario.

Note that to develop Table 2, we applied a benefit floor equal to 110% of the PBGC-guaranteed benefit level. Under current law, plans are not permitted to cut benefits below this level.

In Table 3, the 25% benefit reduction is combined with a 60% surge in contributions-per-worker, implemented across the 10-year period from 2020 to 2029:

\(^{12}\) Our paper “Multiemployer Solvency Crisis: Assessing Plans’ Capacity for Self-Stabilization” provides a detailed analysis of the magnitude of the contribution increases and/or benefit cuts required to stabilize plans that are projected to go insolvent at various time intervals in the future.
Table 3. Projections Assuming a 25% Across-the-Board Benefit Cut Combined with a 60% Surge in Contributions Per Worker

<table>
<thead>
<tr>
<th>Projected Year of Insolvency</th>
<th>Number of Insolvent Plans</th>
<th>Total Number of Plan Participants (1000s)</th>
<th>Total Number of Retirees (1000s)</th>
<th>Present Value of Assistance Payments (Billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before 2030</td>
<td>41</td>
<td>250</td>
<td>168</td>
<td>13</td>
</tr>
<tr>
<td>2030 to 2039</td>
<td>42</td>
<td>535</td>
<td>244</td>
<td>18</td>
</tr>
<tr>
<td>2040 to 2049</td>
<td>32</td>
<td>1,017</td>
<td>382</td>
<td>26</td>
</tr>
<tr>
<td>2050+</td>
<td>37</td>
<td>1,094</td>
<td>293</td>
<td>22</td>
</tr>
<tr>
<td>Total</td>
<td>152</td>
<td>2,895</td>
<td>1,087</td>
<td>79</td>
</tr>
</tbody>
</table>

The results in Table 3 reflect an aggressive set of plan adjustments. To our knowledge, few plans have implemented adjustments of this magnitude. Yet even after these adjustments, 152 plans are projected to become insolvent.

Over the past several years, many articles and editorials have indicated that only 10% of multiemployer plans – covering about 1 million participants – are at risk of insolvency. By contrast, our simulations suggest that the multiemployer solvency crisis is much larger. Based on our analyses summarized in Tables 1 through 3, we believe that about 15% to 20% of plans, covering over 3 million participants, will be unlikely to avoid insolvency.

Our simulation results are more pessimistic because our forecasts look beyond the 20-year projection horizon that has been used by the PBGC and various consulting firms to develop their estimates. A 20-year forecast is insufficient because there are many plans that, on their present trajectories, will go insolvent beyond year 20. While some of these plans could avoid insolvency through minor adjustments to contributions and/or benefits, most will require major adjustments that will be difficult to implement.

The Proposed Reform Package

To deal with the immense funding problem and to stabilize the PBGC’s multiemployer guarantee fund, a strong, fast-acting set of effective reforms is required. We simulated a variety of options and determined that it is necessary to both significantly increase premium income (flowing into the guarantee fund) and significantly reduce projected assistance payments (flowing out of the guarantee fund).

Under current law, a plan’s benefits are cut back to PBGC guarantee levels only after the plan has exhausted its assets. This is a costly approach, analogous to driving a car at full speed into a brick wall, with no attempt to decelerate before impact.

To reduce projected PBGC assistance payments, the proposal requires any plan within 15 years of projected insolvency — based on an assumed asset return rate of 6% — to reduce benefits to the level guaranteed by the PBGC. This benefit cut could potentially prevent a plan from going insolvent. But even if the cut fails to prevent plan insolvency, the eventual claim on the PBGC will be significantly reduced relative to current law. The 15-year warning period would also signal current workers to start saving more for their future retirement.

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13 For example, the American Academy of Actuaries released an issue brief in June 2017 entitled “Overview of Multiemployer Pension System Issues”. The brief states that “Of the more than 10 million people who participate in multiemployer pension plans, approximately 1 million are in plans that will be unable to pay the full benefits that have been promised under current projections”. A second example: the Segal Group – a consulting firm with a large multiemployer pension practice – released an online article entitled “The Multiemployer Pension Plan Crisis: Segal’s Observations”, which states that “around 130 multiemployer pension plans are projected to become insolvent in the next 20 years. Some of these plans are projected to run out of money within the next 10 years.”

14 Our paper “Multiemployer Solvency Crisis: Assessing Plans’ Capacity for Self-Stabilization” provides a detailed analysis of the magnitude of the contribution increases and/or benefit cuts required to stabilize plans that are projected to go insolvent at various time intervals in the future.
Based on our simulations, if a plan is within 15 years of insolvency using an assumed rate of return of 6%, then, in the absence of benefit cuts, the plan is highly likely to become insolvent. The high likelihood of insolvency is, in our view, justification for implementing a mandatory benefit cut.

Of course, there are other ways to estimate the likelihood of insolvency. For example, stochastic simulations could be performed, and, in the event those simulations indicate a high probability of insolvency, the plan would be required to cut benefits. However, in our view, such an approach would be excessively complicated and difficult to implement.

To boost premium income, the proposal increases the per-participant annual premium from $29 to $80, which is the same rate applicable to single-employer pension plans. This will produce an additional $500 million of premium income per year across the entire multiemployer system. We do not believe that this increase will be a significant burden on plans because it is small relative to the total costs faced by the employers who participate in the multiemployer system. For example, in 2017 employers in the multiemployer system paid $31 billion in pension contributions. In addition, wages were paid to the 4 million workers in the multiemployer system. If we assume that the average wage was $40,000 a year, then total wages were $160 billion, which, when combined with pension contributions, sum to more than $190 billion. Relative to this amount, the $500 million of additional premiums is trivial (merely 0.26% of $190 billion).

In addition to increasing the per-participant premium, the reform introduces a variable rate premium (VRP), payable on an annual basis, and equal to 4.3% of a plan’s total underfunding. This is the same rate used to calculate the VRP in the single-employer system. To ensure uniformity across plans, liabilities would be measured at a 6% discount rate, as opposed to using a discount rate determined by the plan’s actuary or trustees.

In 2017, according to 5500 data, the median discount rate used by multiemployer plans to determine their liabilities for funding purposes was 7.25%. Based on our review of capital market forecasts produced by well-known investment firms such as Vanguard and JP Morgan, 7.25% is well above the expected rate of return across the next 25 years for the typical asset portfolio held by pension plans. Our research suggests that a 6% return is a realistic expectation; therefore, we have used this rate as the basis for the VRP calculation.  

At a 6% discount rate, we estimate that total underfunding across all multiemployer plans is about $260 billion. Therefore, a 4.3% VRP rate would lead to annual premium income of about $11 billion. This burden would be excessive. Therefore, the proposal caps each plan’s VRP at 5% of its annual benefit outflows, which reduces the total projected annual VRP to about $2.5 billion. This is still a significant burden, but the proposal permits plans to reduce accrued benefits and benefits in pay status by up to 5% to facilitate payment of the VRP. This ensures that all plans could indeed pay the VRP.

Lastly, as mentioned earlier, the proposal simplifies the PBGC’s benefit guarantee such that benefit rates up to $25 would be fully guaranteed, but no coverage would be provided above $25. For example, an individual with 30 years of service and a monthly benefit of $1200 has a benefit rate of $40 (equal to $1200 divided by 30 years). The individual would be covered up to a benefit rate of $25, and, therefore, would receive a guaranteed benefit equal to $25 multiplied by 30 (years), or $750.

Not only does the proposed adjustment of the guarantee lead to a slight reduction in projected assistance payments, but it also provides a greater level of protection for those participants with the lowest benefit rates. This is a more efficient use of scarce resources if one’s objective is to keep retirees out of poverty.

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15 Multiemployer plans’ seemingly optimistic discount rates may be a key factor that has contributed to the present solvency crisis. Therefore, policymakers should consider options for ensuring that multiemployer plans adopt reasonable discount rates for measuring their liabilities.
Table 4. Guaranteed Benefits: Current Law versus Proposal

<table>
<thead>
<tr>
<th>Example #</th>
<th>Individual’s Full Benefit</th>
<th>Guaranteed Rate</th>
<th>Guaranteed Benefit for 30 Years of Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$300</td>
<td>$10</td>
<td>$10</td>
</tr>
<tr>
<td>2</td>
<td>600</td>
<td>20</td>
<td>18</td>
</tr>
<tr>
<td>3</td>
<td>900</td>
<td>30</td>
<td>25</td>
</tr>
<tr>
<td>4</td>
<td>1200</td>
<td>40</td>
<td>33</td>
</tr>
<tr>
<td>5</td>
<td>1500</td>
<td>50</td>
<td>36</td>
</tr>
<tr>
<td>6</td>
<td>1800</td>
<td>60</td>
<td>36</td>
</tr>
</tbody>
</table>

Results are rounded to the nearest dollar

Simulations of the Reform Package

We incorporate a range of specific modeling assumptions to project the multiemployer system forward in time.16 Of these, the return on plan assets is the most important for ensuring plan solvency. Relative to other assumptions, assumed asset returns have the strongest impact on simulation results. Favorable asset returns lead to better outcomes, with fewer plans projected to become insolvent, while poor asset returns have the opposite effect. To capture the broad range of possible outcomes for each plan, we simulated 500 trials in which asset returns varied stochastically, with a mean geometric average return of 6% and a standard deviation of 11%. The reasoning we used to develop this assumption is outlined in the appendix.

Simulation results are presented in the figures below. Each figure shows deciles computed across the distribution of 500 stochastic trials, where “0%” corresponds to the most favorable outcome, “100%” corresponds to the worst (i.e. most costly) outcome, and “50%” is the median outcome. Outcomes are strongly correlated with simulated asset returns, particularly the returns across the next 20 years.

For the sake of completeness, each figure shows simulation results for (1) current law, (2) the Butch Lewis Act17, and (3) the reform package proposed in this paper. In the figures, our reform package is labeled “proposed reform.”

Figure 1 shows the projected year of insolvency of the PBGC’s multiemployer guarantee fund. The median projected year of insolvency is 2027 under current law, 2051 under the Butch Lewis Act, and 2071 under the proposed reform.18 Under current law there is a 0% chance that the guarantee fund will remain solvent in long run; under the Butch Lewis Act, this probability rises to 26%, and under the proposed reform it rises to close to 50%.

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16 See the appendix for an explanation of how we arrived at these assumptions.
17 If passed by Congress, the Butch-Lewis Act would establish a Pension Rehabilitation Trust Fund (“PRTF”) and require the Treasury to issue bonds to provide capital for the Fund. PRTF would, in turn, provide lump-sum loans to troubled multiemployer pension plans that are projected to become insolvent within 20 years. The repayment schedule would entail 29 years of interest-only payments, and a final payment of both interest and principal due 30 years after loan origination. Any plan accepting a loan would be prohibited, for the duration of the loan, from either implementing benefit increases or decreasing contribution rates negotiated with participating employers.
18 For the median outcome under the proposed reform, we project that the multiemployer guarantee fund will exhaust its assets in 2071. However, in subsequent years the fund runs a surplus that fully offsets prior deficits. Thus, it is arguable that the fund could successfully operate beyond 2071.
Figure 1. Projected Year of Insolvency of the PBGC’s Multiemployer Guarantee Fund

Horizontal axis: “0%” corresponds to the most favorable projected outcome, while 100% corresponds to the worst outcome. An insolvency year of “2100” indicates that the guarantee fund is projected to remain solvent in the long run.

Figure 2 shows the present value of the PBGC’s projected deficits (i.e. its cash shortfalls) plus the present value cost of the loan program provided under the Butch Lewis Act. The cost of the loan program is equal to the present value of lending to plans minus the present value of loan repayments from plans. Under current law and under our proposed reform, this cost is zero because there is no loan program. The results in Figure 2 are in billions of dollars, discounted to 2019 using the Treasury yield curve from September 12, 2019. Discounting using this curve is roughly equivalent to using a flat discount rate of 2%.

Figure 2. Present Value of the Projected Deficits of the Multiemployer Guarantee Fund plus the Projected Net Cost of Subsidized Loans
Under current law, for the median outcome ("50%" on the horizontal axis of Figure 2), we project that the PBGC’s multiemployer guarantee fund will experience a cumulative deficit of over $200 billion. This can be interpreted as the additional resources that the PBGC would require in order to pay for the projected stream of guaranteed benefits arising from plan insolvencies.

Under the Butch Lewis Act, we must consider both the projected deficit of the PBGC’s multiemployer guarantee fund as well as the net cost of subsidized loans provided by the Treasury. For the median projected outcome, the sum of these two costs is $114 billion, of which $20 billion is due to loan defaults and $94 billion is due to PBGC deficits.

Under the reform package we propose, the median outcome is favorable: There is no projected deficit, and the guarantee fund is expected to remain solvent. Across the most favorable 50% of stochastic trials, the reform package is sufficient to ensure the solvency of the guarantee fund. In contrast, under the Butch Lewis Act, the guarantee fund remains solvent in only 26% of the stochastic trials.

In addition to examining median results, it is important to consider the upper tail of the distribution of outcomes. By “upper tail” we mean the worst outcomes across the 500 stochastic trials. At the 90th percentile, under both current law and the Butch Lewis Act, Figure 2 shows a total shortfall of about $390 billion. For the Butch Lewis Act, the $390 billion consists of a PBGC deficit of $290 billion plus a $100 billion loss on subsidized loans. Under our proposed reform, the total projected shortfall (for the PBGC’s guarantee fund) is $175 billion.

These bleak results illustrate the multiemployer system’s sensitivity to future asset returns. Of course, any funded defined benefit system is sensitive to asset returns, but the multiemployer system is particularly sensitive because most plans are (i) demographically mature, (ii) heavily invested in risky assets, (iii) severely underfunded and (iv) lack the ability to dramatically increase contribution levels in the event of a capital market downturn.

Figure 3 shows the impact of the proposed reform on the number of plans projected to become insolvent, and Figures 4 and 5 show the number of participants and retirees in those plans. For the median scenario, 416 plans are projected to go insolvent under current law. This number declines to 331 under the Butch Lewis Act, and drops to 214 under the proposed reform. The number of participants in plans projected to become insolvent is 5.5 million under current law, 4.7 million under Butch Lewis, and far fewer at 3.3 million under the proposed reform. Similarly, retirees in insolvent plans are projected to be nearly 2 million under current law, 1.7 million under Butch Lewis, and 1.1 million under the proposed reform. While this is a significant improvement relative to current law, it is nevertheless a sobering result.

Because the system’s underfunding is so severe, many plans will go insolvent regardless of actions taken by plans and policymakers. However, the results in Figure 1 are encouraging, indicating that the proposed reform will greatly strengthen the guarantee fund such that it is better positioned to withstand the impending wave of insolvencies.
Projected Losses on Government-Backed Loans Under the Butch Lewis Act

Figure 2 compares the funding outcomes for current law, the Butch Lewis Act, and the proposed reform, but the Figure doesn’t tell the whole story because it lumps together the PBGC funding shortfall and the cost of loan defaults under the Butch Lewis Act. To better understand the impact of the Butch Lewis Act, Figure 6 separates the projected PBGC deficit from the projected net cost of the loan program.

The net cost of the loan program was computed as the present value of lending to plans less the present value of repayments from plans, using the Treasury yield curve for discounting. A positive net cost indicates that the lending program lost money, while a negative value indicates that the program generated a profit (for the Treasury or the federal government). A loss can be viewed as a cost that will ultimately be borne by taxpayers.
Across about 75% of stochastic trials, the loan program operates at a loss. For the median scenario, this loss is $20 billion. For less-favorable scenarios, the loss is much larger. At the 90th percentile, for example, the projected loss on the loan program is over $100 billion.

Thus, while the Butch Lewis Act reduces pressure on the PBGC’s multiemployer guarantee fund (as illustrated by Figure 2), it transfers substantial risk to taxpayers, who will ultimately bear the cost of any loan defaults.

Conclusions

Stakeholders and policymakers may be under the impression that only about 10% of multiemployer plans, covering 1 million participants in total, are at risk of insolvency. But these estimates are based on a projection horizon of only 20 years, which is much too short to capture all expected plan insolvencies.

Our analysis looks further into the future, and, consequently, our results suggest that the crisis is much broader, with about 15% to 20% of plans, covering 3 million participants, facing a high risk of insolvency under current provisions for multiemployer plans under ERISA.

A funding crisis of this size cannot be resolved by legislative sleight-of-hand. The loan program that recently passed the House of Representatives simply delays the day or reckoning, pushing a very large, looming problem further down the road. Essentially, the proposal requires future generations to deal with financial problems that were created by current generations. Moreover, by failing to take serious action now, there is a risk that, with the passage of time, the crisis will swell to even larger proportions.

We acknowledge that the proposal presented in this paper involves painful adjustments to both PBGC premiums and plan benefits. But this is the nature of any proposal to resolve a deep financial crisis — that is, the resolution of large financial problems necessarily involves difficult adjustments.

Our proposed adjustments to the multiemployer insurance program are justified, in our view, for two reasons: (1) they lead to a much stronger guarantee fund that will be available to provide insured benefits for the long run, and (2) they will prevent nearly 200 plans covering over 2 million participants19 from becoming insolvent.

Of course, there are other reform options worth considering besides the specific package outlined in this paper, and we look forward to continuing to be part of this dialogue. Policymakers should beware of any proposal claiming to offer a painless pathway to financial health.

The Pension Analytics Group

We are a group of economists and actuaries who are deeply concerned about the large number of multiemployer plans and public pension plans that have dangerously low funding levels. Our goal is to accelerate discussions of funding solutions by providing robust and timely simulations of policy options.

We are not affiliated with any political organizations, and our group has a diverse set of political views. What binds us together is our shared belief that important policy decisions must be guided by unbiased analysis. We arrive at conclusions only after carefully reviewing data and simulation results.

Data

The starting point for the MEPSIM simulations presented in this report is 5500 data downloaded from the Department of Labor’s website:


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19 These results refer to the median outcomes shown in Figures 3 and 4.
This data provides the assets, liabilities, discount rate, contributions, current benefits, normal cost and participant counts for each multiemployer plan. We used the most recent filing for each plan, which, for almost all plans, is from 2017. Each plan’s assets and liabilities were rolled forward deterministically to July 31, 2019. The stochastic simulation period begins on August 1, 2019. To roll assets forward from 2017 to July 2019, we assumed that each plan was invested 60/40 in the SP500 and the Barclay’s Capital US Aggregate Bond Index.

**Simulation Modeling Assumptions**

The key assumptions underpinning the simulations are as follows:

- We simulated the entire universe of multiemployer plans.
- Contributions per worker are assumed to increase at a rate of 1.5% per year through 2028, after which time they are held constant. This assumed trend reflects our analysis of historical 5500 data. We believe that most weak plans are reaching a point at which it is unrealistic to expect further contribution increases.
- The number of workers in each plan is assumed to decline at a rate of 1.5% per year through 2028, after which point it is held constant. This assumed trend reflects our analysis of historical 5500 data.
- The annual rate at which each worker accrues new benefits is held constant across time. This assumed trend reflects our analysis of historical 5500 data.
- Plans’ asset returns are varied stochastically assuming a geometric average rate of return of 6% and a standard deviation of 11%. To set this assumption, we reviewed medium and long-term capital market forecasts by Vanguard, the McKinsey Global Institute, and JP Morgan. Together, these reports suggest that, for a portfolio allocated 60% to equity and 40% to bonds, a realistic expected return over the next 25 years is 6%. Therefore, we adopted 6% as our baseline assumption for rate-of-return. The standard deviation of 11% was selected based on discussions with several investment experts.
- The assets in the PBGC’s multiemployer guarantee fund are assumed to have a constant rate-of-return of 4%, reflecting the relatively conservative asset mix used by the fund.
- The Treasury yield curve as of September 12, 2019, was used for computing the present value of the stream of projected PBGC assistance payments and loan cash flows. A flat discount rate of roughly 2% would produce roughly the same present value results as the yield curve. We use the Treasury yield curve to compute the PBGC’s liabilities because this reflects our understanding of the approach used by the PBGC itself.
- Contributions per worker are assumed to be unaffected by the increase of the flat premium and the introduction of the variable rate premium (VRP). Keep in mind that the proposal permits plans to lower accrued benefits by up to 5% to help pay for the VRP.

Other than plans’ asset returns, which were varied stochastically, all other assumptions were modeled deterministically. This approach may understate the possible range of outcomes. For example, there may be uncertainty associated with the future rate-of-increase or decline in the number of workers in each plan, as there have been significant decreases over time in both unionization and multiemployer participants overall. A future version of MEPSIM may include the ability to stochastically model changes in the number of workers or other assumptions.

To model the Butch Lewis Act (BLA), the following additional assumptions are used:

- We assume that the window in which new loans are originated runs from 2020 through 2029.
- To be eligible for a loan, we require a plan to be within 20 years of projected insolvency.
• Loans are assumed to have a maturity of 30 years. Plans are required to make interest-only payments for the first 29 years. A final payment, including both interest and principal, is due 30 years after loan origination.

• We assume that plans are not permitted to refinance their debt at the end of 30 years, and they are not permitted to borrow additional funds if they exhaust their assets before the 30-year mark.

• The interest rate on the loans is assumed to be 2.5%, which is just slightly above current yields on medium and long-term Treasuries.

• For each eligible plan, the loan amount is set equal to the present value of the future benefits of current retirees, computed using a discount rate of 2.5%.

• BLA requires cash from loans to be invested in low-risk portfolios or annuity contracts designed to fund the liabilities of participants in pay status at the time of the loan. We assume that low-risk portfolios can be established by purchasing high quality corporate bonds with an average interest rate of 3%.

• Excluding the assets purchased with cash from loans, asset returns are varied stochastically assuming a geometric average rate of return of 6% and a standard deviation of 11%.

• BLA permits plans to simultaneously receive a loan and receive assistance from the PBGC. We did not model this portion of the Act. Our simulations assume that PBGC financial assistance begins only after a plan has become insolvent. We do not believe that this simplifying assumption has a material impact on simulation outcomes because a plan that is so weak that it requires both a loan and PBGC assistance to continue operations has little chance for long-term solvency. Moreover, unless additional capital or revenue is provided to the PBGC, it is presently too weak to play a significant role in stabilizing the many plans that are heading towards insolvency.