Overview

Using the Multiemployer Pension Simulation Model (MEPSIM)\(^1\) we project that, absent significant remedial action, about 175 multiemployer pension plans covering over two million participants will become insolvent over the next 20 years. 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 2025\(^3\).

Over the past year, using MEPSIM, we have analyzed various options for mitigating this crisis:

- Providing troubled plans with subsidized loans backed by the Federal Government
- Adjustments to the Multiemployer Pension Reform Act to enable a greater number of plans to voluntarily implement significant benefit cuts
- Requiring plans to cut benefits to the PBGC’s guaranteed level five years before projected insolvency (rather than waiting until plans become insolvent, as under current law)
- Reductions in the PBGC benefit guarantee

This paper explores an additional option for addressing the solvency crisis: the introduction of a new PBGC premium assessed as a percent of benefits in pay status\(^4\), applicable across all solvent multiemployer plans. For the remainder of the paper we refer to this as a “Benefits-Based Premium” or “BBP”.

Across the multiemployer system as a whole, $45 billion in benefits were paid out in 2017. Our model projects that this amount will gradually rise across the next ten years as the system continues to mature. Therefore, a BBP rate of 10% would be expected to generate upwards of $4.5 billion of additional premiums each year. As a reference point, note that only $290 million in premiums were collected in 2017 under the existing premium structure, so the proposed BBP would dramatically boost the flow of premium income.

Because the projected funding deficit of the PBGC’s multiemployer program is so large, a BBP rate smaller than 10% is unlikely to be sufficient to keep the program afloat, unless other policy changes are implemented in conjunction with the BBP, such as a reduction of the PBGC’s benefit guarantee. In a future paper, we will explore combinations of policy options, while in this paper we focus solely on the BBP.

The proposed BBP will be a significant burden on plans. Some plans will be unable to pay the BBP unless they lower benefits by the BBP rate. We propose, therefore, that the legislation regulating benefit cuts be modified to permit percentage reductions up to the BBP rate, for the purpose of financing the BBP. Furthermore, to ensure that plan funding remains unaffected by the BBP, plans would not be permitted to reduce the level of contributions per worker. Thus, to obtain resources to pay the BBP, plans would either have to (a) cut benefits, (b) ask employers to pay the BBP (without any reductions to contributions) or a combination of (a) and (b).

Of course, there are other ways to increase multiemployer premiums. For example, the existing per-participant premium could be significantly increased. However, there are two advantages to the BBP. First, because it is

\(^{1}\) MEPSIM is a model of the multiemployer pension system which 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 2025, which matches the PBGC’s own estimate presented in its latest projections report: https://www.pbgc.gov/news/press/releases/pr18-02.

\(^{4}\) In any particular year, “benefits in pay status” are the benefits paid out to retirees in that year.
expressed in terms of a plan’s annual outflow of benefit payments, and because the law would be modified to permit benefit reductions of up to the BBP rate assessed, it is clear that all plans could in fact pay this premium. Second, the BBP would produce premium income in proportion to the generosity of a plan’s benefits. A monthly benefit of $2000 would incur a BBP of $200, while a monthly benefit of $500 would incur a BBP of only $50. The BBP is similar to a flat tax rate, while the existing flat-dollar-per-participant premium is regressive, generating a heavier premium burden, in relative terms, for sponsors of the least generous plans.

Our MEPSIM simulations indicate that a 10% BBP would significantly improve the outlook for the PBGC’s multiemployer insurance program. Under current law, across 500 trials in which plans’ asset returns were varied stochastically, we project a median insolvency date of 2025. In contrast, if a 10% BBP is implemented in 2020, the projected median insolvency date for the insurance program shifts to 2056, providing an additional 31 years of solvency. A 5% BBP provides an additional 13 years of solvency, while a 15% BBP enables the program to avoid insolvency altogether across most of our stochastic asset return scenarios.

Our analysis is described in greater detail in the pages that follow.

The Proposed Premium

For each solvent plan, the proposed annual premium would be equal to a fixed percentage of benefits in pay status. If, for example, a plan paid out one million dollars in benefits in 2020, and the premium rate were set at 10%, then the plan would owe $100,000 in premiums, plus the premiums already required under current law ($29 per plan participant). Going forward, annual premiums would rise (or fall) each year in lock-step with benefit payouts. For example, if the plan’s total benefit payouts were to rise to $1.05 million in 2021, then the plan would owe $105,000 in premiums in 2021, plus the premiums already required under current law.

Plans would not be permitted to reduce contributions in an effort to pay the BBP. A plan could obtain the resources needed to pay the additional 10% premiums by (A) reducing payments to pensioners by 10% and having the plan pay the savings directly to the PBGC. Alternatively, a plan sponsored by financially strong employers could (B) ask those sponsors to pay the 10% BBP -- while not reducing their level of contributions to the plan -- thereby insulating pensioners from the burden of the premium. Or a blended approach, (C), could be used, with the pensioners bearing a portion of the premium cost and the employers bearing the remainder; for example, benefits might be cut by 3%, with sponsors paying the other 7%.

Under current law, plans have some discretion to reduce benefits, but they do not have unlimited freedom. Therefore, to facilitate the introduction of the proposed premium, the legal framework would need to be modified to grant plans the authority to lower pensions by any percentage up to the proposed premium rate. For example, if the premium rate were 10%, then plans would be permitted to reduce pensions, uniformly\(^5\), by up to 10%. A plan using approach (A) above to fund the BBP would take full advantage of the permitted reduction, whereas a plan using the blended approach, (C), would reduce benefits only as required by the blend (3% in the above example).

Note that, from a modeling standpoint, the flow of funds into and out of the plan is identical, regardless of whether the BBP is “funded” using approach (A), approach (B), or a blend of the two, as in approach (C). The same is true regarding the funds flowing into (and out of) the PBGC. The approaches differ only insofar as the burden of the BBP is assumed by (A) pensioners, (B) sponsors, or (C) both; whereas the model concerns itself with the financial conditions only of the multiemployer plans and of the PBGC. For this reason, the modeling remains “agnostic” as to which BBP-funding approach is used by each of the plans.

\(^5\) By “uniformly”, we mean that all participants in a plan would experience the same percent reduction of their pensions. Alternatively, legislators could consider protecting the pensions of the oldest retirees -- perhaps those above the age of 80 -- so that they would be unaffected by the reductions.
Simulation Results

Using MEPSIM, we simulated four different policy options:

1. Current law
2. BBP of 5%
3. BBP of 10%
4. BBP of 15%

The most important assumption in our simulations of the multiemployer system is the return on plan assets. 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 10%.

Simulation results are shown in the tables below. Each table shows deciles computed across the distribution of 500 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.

Table 1. Projected Insolvency Date of PBGC’s Multiemployer Program: Distribution Across 500 Stochastic Trials

<table>
<thead>
<tr>
<th>Percentile</th>
<th>0%</th>
<th>10%</th>
<th>20%</th>
<th>30%</th>
<th>40%</th>
<th>50%</th>
<th>60%</th>
<th>70%</th>
<th>80%</th>
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<tr>
<td>Current Law</td>
<td>2028</td>
<td>2027</td>
<td>2026</td>
<td>2026</td>
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<td>2024</td>
<td>2024</td>
</tr>
<tr>
<td>Premium 5%</td>
<td>Solvent</td>
<td>Solvent</td>
<td>2045</td>
<td>2040</td>
<td>2038</td>
<td>2036</td>
<td>2035</td>
<td>2033</td>
<td>2032</td>
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</tr>
<tr>
<td>Premium 10%</td>
<td>Solvent</td>
<td>Solvent</td>
<td>Solvent</td>
<td>Solvent</td>
<td>2056</td>
<td>2049</td>
<td>2045</td>
<td>2042</td>
<td>2038</td>
<td>2032</td>
<td></td>
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<tr>
<td>Premium 15%</td>
<td>Solvent</td>
<td>Solvent</td>
<td>Solvent</td>
<td>Solvent</td>
<td>Solvent</td>
<td>2057</td>
<td>2049</td>
<td>2043</td>
<td>2034</td>
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Under current law, the multiemployer program fails to remain solvent in any of the stochastic trials. With 5%, 10% and 15% premium rates, the program remains solvent in 18%, 41% and 61% of stochastic trials, respectively.

Table 2. The PBGC’s Funding Deficit (Billions, Discounted to 2019): Distribution Across 500 Stochastic Trials

<table>
<thead>
<tr>
<th>Percentile</th>
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<th>20%</th>
<th>30%</th>
<th>40%</th>
<th>50%</th>
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<th>80%</th>
<th>90%</th>
<th>100%</th>
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<tr>
<td>Current Law</td>
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<td>65</td>
<td>105</td>
<td>140</td>
<td>191</td>
<td>230</td>
<td>271</td>
<td>322</td>
<td>376</td>
<td>433</td>
<td>556</td>
</tr>
<tr>
<td>Premium 5%</td>
<td>0</td>
<td>0</td>
<td>19</td>
<td>83</td>
<td>142</td>
<td>183</td>
<td>231</td>
<td>281</td>
<td>342</td>
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<tr>
<td>Premium 10%</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>78</td>
<td>146</td>
<td>206</td>
<td>277</td>
<td>348</td>
<td>498</td>
</tr>
<tr>
<td>Premium 15%</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>105</td>
<td>197</td>
<td>283</td>
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<td>459</td>
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</table>

The PBGC's funding deficit is equal to the present value of its projected cash shortfalls. The Treasury yield curve from June 14, 2019 was used to discount the projected shortfalls. A flat discount rate of 2.3% would produce approximately the same result as the yield curve.

Table 3. Number of Insolvent Plans: Distribution Across 500 Stochastic Trials

(Note that these results are identical across all four simulated policy scenarios because the BBP doesn’t affect a plan’s cash flows)

<table>
<thead>
<tr>
<th>Percentile</th>
<th>0%</th>
<th>10%</th>
<th>20%</th>
<th>30%</th>
<th>40%</th>
<th>50%</th>
<th>60%</th>
<th>70%</th>
<th>80%</th>
<th>90%</th>
<th>100%</th>
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<tr>
<td>Total Insolvent Plans</td>
<td>62</td>
<td>133</td>
<td>189</td>
<td>257</td>
<td>354</td>
<td>441</td>
<td>551</td>
<td>623</td>
<td>718</td>
<td>813</td>
<td>999</td>
</tr>
<tr>
<td>Insolvent Before 2030</td>
<td>38</td>
<td>53</td>
<td>61</td>
<td>63</td>
<td>72</td>
<td>78</td>
<td>85</td>
<td>95</td>
<td>102</td>
<td>117</td>
<td>235</td>
</tr>
<tr>
<td>Insolvent Before 2040</td>
<td>49</td>
<td>94</td>
<td>107</td>
<td>123</td>
<td>146</td>
<td>176</td>
<td>201</td>
<td>240</td>
<td>304</td>
<td>441</td>
<td>803</td>
</tr>
<tr>
<td>Insolvent Before 2050</td>
<td>59</td>
<td>114</td>
<td>141</td>
<td>174</td>
<td>211</td>
<td>290</td>
<td>365</td>
<td>455</td>
<td>553</td>
<td>673</td>
<td>937</td>
</tr>
</tbody>
</table>

“Insolvent before 2030” includes all plans that are projected to go insolvent before year 2030. “Total” includes all projected insolvencies, including those that are projected to occur beyond 2050.

6 See the appendix for an explanation of how we arrived at these assumptions.
Under current law, the PBGC’s multiemployer program is projected to exhaust its assets across all scenarios (Table 1). Under a 10% BBP, the median projected insolvency date is delayed until 2056, and, in 41% of trials, the program remains solvent.

The median funding deficit is $230 billion under current law, and $183 billion, $78 billion and $0 billion under 5%, 10% and 15% BBP rates, respectively (Table 2). For those trials in which the PBGC’s multiemployer program is projected to remain solvent, its funding deficit is zero.

The median current law funding deficit of $230 billion, projected by MEPSIM, is much larger than the $54 billion deficit shown in the PBGC’s 2018 report. Our simulation results are worse than the PBGC’s for two primary reasons: (1) the PBGC excludes plan insolvencies that are expected to occur more than 20 years in the future, while we include all projected insolvencies, and (2) long-term Treasury yields have fallen by about 50 basis points since the release of the PBGC’s report. All else equal, lower yields increase the present value of projected PBGC cash shortfalls.

In our view, the 20-year time horizon used in the PBGC’s modeling of the multiemployer program is too short. While one can argue that a plan projected to go insolvent more than 20 years in the future has plenty of time to reduce its funding deficit, our simulations indicate that many such plans require significant adjustments to either contributions and/or benefits to avoid insolvency. These adjustments will not be easy, and, as a consequence, it is quite possible that they will never occur.

**Conclusions**

Our simulations indicate that a 10% premium assessed on benefits in pay status would provide the PBGC’s multiemployer program with an additional 31 years of solvency (our median estimate) and reduce the program’s median projected deficit from $230 billion to $78 billion.

While some plans might be sponsored by financially strong employers who could absorb the cost of the proposed premium, others would have to cut pensions by up to 10% in order to obtain the necessary cash. This will be a painful cut for many retirees. However, due to the magnitude of the solvency crisis, pain is now unavoidable. It is simply a question of who will bear this burden. The primary options are as follows:

1. Let the PBGC’s multiemployer program collapse, in which case retirees in insolvent plans will experience severe cuts in their pensions.
2. Implement a significant cut to the PBGC’s benefit guarantee.
3. Rather than waiting until a plan becomes insolvent before cutting benefits down to guaranteed levels, implement the cuts 5 to 10 years before projected insolvency.
4. Increase premiums flowing into the PBGC’s multiemployer insurance program (as discussed in this paper).
5. Bail out the multiemployer program using Federal funds. In this case, the taxpayers bear the burden.
6. Offer federally subsidized loans to troubled plans. In prior papers we demonstrated that, even with access to loans, many plans would still become insolvent (absent being allowed to periodically refinance the loans, a “revolving credit” program that would differ little from the above bailout approach). The default rate for a loan program would be very high, thus shifting much of the burden onto taxpayers.

7. Some combination of options 2 through 6.

In a future paper, we will explore option 7, mixing together various policy options in an effort to develop a balanced proposal that could, perhaps, find political support on both sides of the aisle.

Additionally, we may attempt to model a variant on the option covered herein, #4, wherein BBP’s are not always assessed, or assessed at the same level, indefinitely. In particular, for stochastic scenarios where plans are experiencing favorable investment returns that are sufficiently beneficial to restore them to better health, the variant proposal would allow for commensurate reductions in BBP and -- for plans that had been financing their BBP’s with retiree benefit-cuts -- for commensurate restoration, at least prospectively, of the suspended amounts.

When evaluating these options, it is critical that policymakers have access to robust cost estimates because good decisions are seldom made without good information. We are therefore concerned that much of the multiemployer policy dialogue appears to be taking place in a numerical vacuum. This is a recipe for disaster.

At this late hour, with so many plans on the verge of insolvency, the window of opportunity for Congress to mitigate the multiemployer solvency crisis is rapidly closing. To make the most of this opportunity, Congress needs a menu of policy options, each of which has been carefully analyzed and modeled. If a particular option (such as subsidized loans) is judged to be painless and costless, that is a sign that it hasn’t been properly modeled. Unfortunately, there are no easy remedies for a funding problem of this magnitude.

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 2027, after which time they are held constant.
- The number of workers in each plan is assumed to decline at a rate of 1.5% per year through 2027, after which point it is held constant.
- The rate at which each worker accrues new benefits is held constant across time.
- Plans’ asset returns are varied stochastically assuming a geometric average rate of return of 6% and a standard deviation of 10%.
- The assets in the PBGC’s multiemployer insurance fund are assumed to have a constant rate-of-return of 4%.
- The Treasury yield curve as of June 14, 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 2.3% would produce roughly the same present value results as the yield curve.
- Contributions per worker are assumed to be unaffected by the BBP. Keep in mind that the proposal prohibits plans from reducing contributions in order to free up cash to pay the BBP.

To set our assumption for plans’ asset returns, 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 10% was selected based on discussions with several investment experts.

With respect to rates of increases of workers and contributions-per-worker, we developed our assumptions via an 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.

Other than 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.

**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 groups, 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.