PBGC Insurance of Multiemployer Pension Plans:

A Five Year Report

Report to Congress required by the Employee Retirement Income Security Act of 1974, as amended

March, 2016





Office of the Director

March 31, 2016

- U.S. House of Representatives Committee on Education and the Workforce
- U.S. House of Representatives Committee on Ways and Means
- U.S. Senate Committee on Health, Education, Labor, and Pensions
- U.S. Senate Committee on Finance

Every five years, PBGC is required under §4022A(f)(1) of ERISA to review its multiemployer insurance program to determine the premiums needed to maintain the current guarantee levels and whether the guarantee levels may be increased without increasing the premiums.

This report is issued in compliance with the five year timetable and reflects new premium rates and assumptions regarding plan trustee behavior under the Multiemployer Pension Reform Act of 2014 (MPRA). These extend the solvency of the multiemployer program fund for a medium term. We look forward to working with the Congress to ensure the long term solvency of multiemployer plans and a strong guarantee program.

Sincerely,

W. Thomas Reeder

PBGC INSURANCE OF MULTIEMPLOYER PENSION PLANS – MULTIEMPLOYER FIVE-YEAR REPORT, 2016

SUMMARY

PBGC insures multiemployer defined benefit pension plans. When a multiemployer plan becomes insolvent, PBGC provides financial assistance to cover the cost of guaranteed benefits to participants and the plan's administrative expenses.

The statutory guarantee limit for participants in multiemployer plans has two tiers and varies by years of service. For a participant with 30 years of service, PBGC guarantees 100 percent of benefits up to an annual benefit of \$3,960; benefits in excess of this level are 75 percent guaranteed subject to a cap. In total, PBGC's guaranteed annual payment for an individual with 30 years of service will not exceed \$12,870 and that level is only attained by cutting the original plan benefit by at least 18 percent. Participants with less/more service are subject to proportionately smaller/larger guarantees. The multiemployer guarantee is less than the benefits many multiemployer plans provide and less than the PBGC guarantee for single-employer plans.¹

Plans pay PBGC a premium for this insurance—\$27 per participant per year in 2016 and indexed thereafter.² Every five years PBGC is required to conduct a study to determine the premiums needed to maintain the basic-benefit guarantee levels for multiemployer plans and whether such guarantee levels may be increased without also increasing basicbenefit premiums for multiemployer plans.³

Although the timing is uncertain, PBGC projects that current premiums ultimately will be inadequate to maintain benefit guarantee levels. However, given the projected extension of the PBGC's Multiemployer Program solvency due to the Multiemployer Pension Reform Act of 2014 (MPRA), the uncertainty of how plans will use the suspension, partition and merger provisions incorporated in MPRA, as well as additional changes which may be contemplated in the laws governing such plans, it is not possible to determine now what corresponding changes in PBGC's multiemployer program will be necessary or appropriate.

¹ For more information on the structure and coverage of PBGC's multiemployer guarantee see the 2015 Multiemployer Guarantee Study at http://www.pbgc.gov/documents/2015-ME-Guarantee-Study-Final.pdf.

² The Multiemployer Pension Reform Act of 2014 (MPRA) doubled multiemployer premiums beginning in 2015.

ERISA \$4022A(f)(1) requires PBGC to report the findings of the study to PBGC's committees of jurisdiction in 3 the House of Representatives and the Senate. 1



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Frequently Used Abbreviations

| FY | Fiscal Year |
|--------|--|
| ERISA | Employee Retirement Income Security Act of 1974 as amended |
| MAP-21 | Moving Ahead for Progress in the 21st Century Act |
| ME | Multiemployer |
| MEPPAA | Multiemployer Pension Plan Amendments Act of 1980 |
| MPRA | Multiemployer Pension Reform Act of 2014 |
| PBGC | Pension Benefit Guaranty Corporation |
| PIMS | Pension Insurance Modeling System |
| PV | Present Value |



UNDERSTANDING AND USING THIS REPORT

This report is an actuarial evaluation. It contains estimates and projections for PBGC's multi-employer program over the next decade and beyond, based on current economic conditions, and our understanding of current law. The standard for such evaluations is that the estimates be reasonable and be based on the use of reasonable methods and assumptions; in the professional opinion of the signers, this report meets those standards.

The values shown are estimates, not predictions, and reflect a range of values that might result based on the assumptions and behavioral relationships that underlie PBGC's projection model. To make the projections, PBGC uses a stochastic modeling system: the Multiemployer Pension Insurance Modeling System (ME-PIMS). ME-PIMS runs many simulations of highly variable factors such as future interest rates, future equity returns, and future plan decisions to derive a range of future outcomes. No single projection represents the expected results under the program – actual results that occur in future years can and likely will vary materially from the projections in this report.

This Multiemployer Five-Year Report is based on the version of ME-PIMS described in PBGC's 2014 Projections Report.⁴ The Projections Report contains detailed descriptions of the assumptions, methodology and results of the modeling underlying the numerical results contained in this Report. The model is continually revised in light of changing law and plan sponsor behavior and PBGC's understanding of that behavior. However, because MPRA is so recent (December 2014), there has been no time for Trustee, plan and agency experience to develop under the law.⁵

Expected claims under the multiemployer program depend on (1) the likelihood that a plan will fail, or become insolvent, either in the course of ongoing operations or following a mass withdrawal, (2) the value of the benefits promised by the plan and (3) the percentage of benefits which will be guaranteed.

Claims may also be generated by a plan that requests assistance from PBGC under MPRA, either through partition of a plan, which generates a claim on PBGC's resources to support the partition plan, or through a facilitated merger. The 2014 Projections Report assumes partition and merger are limited because of constraints on PBGC's ability to assist plans without impairing its existing obligations. This report illustrates the effect of removing those constraints in the context of alternate revenue streams.

Uses of This Report Under the Statute

The Multiemployer Pension Plan Amendments Act of 1980 (MEPPAA) amended ERISA to add §4022A(f). Paragraph (1) of subsection (f) requires that PBGC conduct a study no later than the fifth year following enactment and at least every fifth year thereafter to determine the premiums needed to maintain the basic multiemployer guarantee levels and whether those levels may be increased without increasing multiemployer premiums. It also requires that the results of this study be reported to the

⁴ PBGC's 2014 Projections Report is available at the Projections Report web page at PBGC.gov.

⁵ The 2014 Projections Report contains an extensive discussion of the uncertainties surrounding modeling under MPRA. For more information on PIMS, including links to user publications and peer review papers see the <u>PIMS</u> <u>Web Page.</u>



Congressional Committees that have jurisdiction over PBGC's affairs.⁶ This year's report is issued in accordance with the five-year schedule, representing the 35th year following enactment.

Paragraphs (2) and (3) of subsection (f) call for additional information to be provided by March 31 of a year in which congressional action is requested under subsection (f). This information would include proposed revised schedules of guarantees and premiums. Since PBGC is not requesting Congressional action under subsection (f), this report does not include the additional schedules of information that would be required under paragraphs (2) or (3). Instead, this report is issued in compliance solely with the 5-year reporting requirements of paragraph (1) of subsection 4022A(f).⁷

⁶ Public Law 96-364 §102.

⁷ For instance, under §4022A(f)(2) of ERISA, if the five-year report under §4022A(f)(1) indicates that a premium increase is necessary, PBGC is required to transmit to its committees of jurisdiction by March 31 of any calendar year in which congressional action is requested (i) a revised schedule of basic-benefit guarantees which would be necessary in the absence of an increase in premiums, (ii) a revised schedule of basic-benefit premiums which is necessary to support the existing benefit guarantees, and (iii) a revised schedule of basic-benefit guarantees for which the schedule of premiums necessary is higher than existing premium schedule but lower than the revised schedule of premiums in clause (ii).



ANALYSIS OF PREMIUMS

Current and Historical Premium Rates

The PBGC premium rate for multiemployer plans is a flat \$27 per participant for plan years beginning in 2016 and increases by an inflation factor in subsequent years. Multiemployer pension plans pay the flat-rate per-participant premium for each participant in the plan.

MEPPAA contained a schedule of PBGC premium rates increasing over a nine-year period. Rates increased gradually from the 50 cents per participant annual rate that had been in effect through 1979 to \$2.60 per participant per year for plan years beginning on or after September 27, 1988.⁸

The Deficit Reduction Act of 2005 increased the annual premium rate for multiemployer plans from \$2.60 per participant to \$8, effective for plan years beginning after December 31, 2005. It also indexed the multiemployer premium to National Average Wages. The indexing resulted in an increase in the rate to \$9 per participant for the 2008 plan year.

The Moving Ahead for Progress in the 21st Century Act increased multiemployer premiums to \$12 per participant beginning in 2013, indexed thereafter. In October, 2014 PBGC announced that the indexation would increase the rate to \$13 per participant for 2015.

MPRA doubled premiums to \$26 for 2015, indexed thereafter. Total multiemployer premiums during the fiscal year ended September 30, 2014, were \$122 million.⁹

For single-employer plans, on the other hand, the flat per-participant premium increased to \$57 for plan years beginning in 2015 (up from \$49 in 2014); the single-employer flat rate will be \$64 in 2016 and increases in steps to \$80 in 2019, indexed thereafter. In addition, underfunded single-employer plans pay a variable-rate premium, and sponsors of certain terminated plans pay termination premiums, but there are no variable-rate or termination premiums for underfunded multiemployer plans.

Current Guarantee

By statute, PBGC's maximum guarantee for a multiemployer participant varies with a participant's service. The amount of the guarantee has two tiers and is based on the participant's monthly accrual rate.

PBGC guarantees 100 percent of a benefit up to \$11 per month per year of service. This translates to a 100 percent guarantee of benefits up to \$330 per month or \$3,960 per year for a participant with 30 years of service, and up to \$110 per month or \$1,320 per year for a participant with 10 years of service.

PBGC partially guarantees (at a 75 percent level) the next \$33 per month per year of service. Thus the maximum amount PBGC will pay a participant with 30 years of service is \$1,072.50 per month (\$12,870 per year); for an individual with 10 years of service the maximum is one-third of that level -- \$357.50 per month or \$4,290 per year. The two-tier

⁸ Public Law 96-364 §105.

⁹ Based on approximately 10.3 million participants in 2014, mostly at the \$12 rate.



structure of the guarantee implies that individuals receiving the maximum guarantee amount will have a reduction of at least 18 percent in the benefit promised and potentially much more for plans with benefit accrual rates in excess of \$44 per month per year of service.

The following graph¹⁰ illustrates the operation of the guarantee for participants through a range of benefit accrual rates.

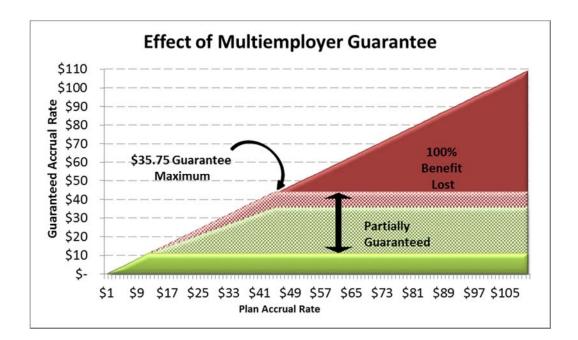


Figure 1 -- Structure of Multiemployer Guarantee

Congress increased the guarantee limit to this amount in 2001 from the limits established in MEPPAA (100% of the first \$5 per month per year of service plus 75% of the next \$15 per month per year of service). The guarantee is not indexed for inflation, and there are no adjustments for the age at which benefit payments begin or for the form of benefit payment.

By comparison, under the single-employer program, the guaranteed annual benefit for 2015 and 2016¹¹ for a retiree receiving a straight-life annuity at age 65 is \$5,011.36 per month, or \$60,136 per year. It is adjusted annually for inflation and depends on both the age at which payments begin and the form of benefit. It is not dependent upon the participant's service once the participant is fully vested. For 2014, the single-employer maximum guarantee at age 65 was \$4,943.18 per month.

There are other key differences between the multiemployer and the single-employer guarantees. Unlike the single-employer guarantee,

¹⁰ 2015 Multiemployer Guarantee Study, Figure 11.

¹¹ In October, 2015 PBGC announced the 2016 single-employer guarantee levels would remain unchanged from 2015. Increases in the guarantee are linked to the cost-of-living-adjustment for Social Security, which was zero for the relevant determination period.



- The multiemployer guarantee is not indexed for inflation and is not adjusted for the age at which benefit payments begin or for the form of the benefit payment.
- Plan assets are not available to provide non-guaranteed benefits.
- Benefit increases that occur in the five years prior to plan termination are excluded rather than phased-in over the five years.

Maintaining the Multiemployer Program

PBGC's multiemployer and single-employer insurance programs are separately funded and administered. As of September 30, 2014, the multiemployer program had total assets of \$1.8 billion, while PBGC's multiemployer liabilities totaled \$44.2 billion. (Multiemployer liabilities are obligations, measured in present value, for future financial assistance payments for plans that are already insolvent or projected to become insolvent.) As a result, the program reported a negative net position or "deficit"¹² of \$42.4 billion, as of September 30, 2014.¹³

To maintain the multiemployer program, premiums must be sufficient to cover current and future financial assistance obligations. Note that unlike the single-employer program, PBGC does not recover and invest assets from multiemployer plans; thus the multiemployer program's only sources of income are premium revenues and the modest investment income derived from them.

The deficit reported in PBGC's financial statements does not take into account either future premiums or future plan insolvencies that are not yet sufficiently certain to be recorded as liabilities on PBGC's financial statements.

Estimating Future Claims and Premiums

In the 2014 Projections Report PBGC looks out beyond the FY 2014 annual report to estimate changes in future insolvencies and premiums. To estimate future multiemployer claims and premium revenues, PBGC uses a stochastic model, ME-PIMS, which is described in the Appendices to the 2014 Projection Report, along with the model's assumptions, methodology, and sample statistics. These Appendices are integral to understanding the information presented in this Multiemployer Five-Year Report.

MPRA provided certain troubled plans with potential options for suspension and partition to help them improve their long term solvency. Plans' use of these options will affect PBGC's future claims.

Adequacy of Current Premiums

After the premium increases legislated under MPRA, projections of premiums at legislated rates plus current assets and likely returns on those assets appear sufficient to cover PBGC's existing multiemployer program cash flow needs for the next five to nine

¹² "Deficit" in this Report means total booked liabilities less total assets in the multiemployer program as of a certain date.

¹³ Pension Benefit Guaranty Corporation Annual Report Fiscal Year 2014, page 10. The annual report is available at <u>http://www.pbgc.gov/about/reports/ar2014.html.</u> Figures cited are for the 2014 Fiscal year, which is the starting position for measurement in this report. Subsequently, on November 16, 2015, PBGC reported an increased deficit of \$52.3 Billion in the multiemployer program as of September 30, 2015. The 2015 annual report is available at <u>http://www.pbgc.gov/about/reports/ar2015.html</u>

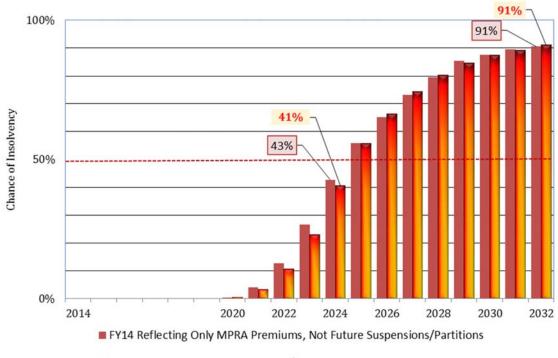


years, but not for an extended period. These projections depend heavily on the timing of projected cash flows, which in turn are sensitive to variations in the occurrence and timing of withdrawals from plans by contributing employers.

As in PBGC's 2014 Projections Report, the projections illustrate two scenarios reflecting two different sets of assumptions regarding whether plans and participants will elect to use suspension and partition under MPRA to preserve plan solvency at a level sufficient to pay benefits higher than PBGC guarantee amounts. The first scenario shows the risk of multiemployer program insolvency assuming no future suspensions or partitions. MPRA requires PBGC to limit its assistance to plans so as to be able to certify to Congress that providing assistance to a particular plan will not impair its ability to provide assistance to certain other plans. Thus, as in the 2014 Projections Report, the second scenario reflects assumptions that suspensions and partitions will be approved, but that approvals of partition applications will be at levels that will not significantly change the insolvency risk for the PBGC.

The following chart projects the likelihood that the multiemployer program fund will be insolvent (i.e., the assets will be exhausted) over a 20-year projection period.

Figure 2 -- Multiemployer Risk of Insolvency



Multiemployer Program Risk of Insolvency

FY14 Reflecting Future Suspensions/Partitions

The multiemployer program had a net deficit of \$42.4 billion as of the end of FY 2014, the result of liabilities of \$44.2 billion and assets of \$1.8 billion. Because the multiemployer program has only a small base of assets, the program's large deficit carries



a substantial risk of exhaustion of multiemployer fund assets in the foreseeable future. Based on these projections, and assuming no changes either in multiemployer plans or in PBGC's multiemployer program, there is more than a 40 percent likelihood that the assets of PBGC's multiemployer insurance program will be exhausted by 2024 (43% if no plans elect to suspend or partition, 41% using best estimate assumptions of future suspensions and partitions) and over a 90 percent likelihood of exhaustion by the end of the projection period (93% if no plans elect to suspend or partition, 92% using best estimate assumptions of future suspensions and partitions). It is more likely than not that PBGC's multiemployer fund will be exhausted by 2025, whether or not plans make use of suspension and partition.

The high likelihood of insolvency and the current program net deficit indicate that current premium levels do not support an increase in the multiemployer guarantee level.

Factors Relevant to Assessing Appropriate Future Premium Levels

While increasing premiums is likely to be necessary in order to maintain the solvency of PBGC's Multiemployer Insurance Program, determining the amount of any potential increase is not a simple exercise. The process of estimating increased premium levels is not straightforward, because of substantial uncertainties about the timing and magnitude of future plan insolvencies and about whether efforts to prevent those insolvencies will succeed. In addition, it is uncertain whether plans and participants will elect to use the suspension and partition options available to them under MPRA, as it is too soon for experience to have developed.

In the 2014 Projections Report, PBGC modeled future program deficits using assumptions regarding the estimated future use of suspension and partition. We reflected the likelihood that a plan will attempt to and succeed in suspending benefits through assumed election rates, modeled stochastically. Plans that will need partition as well as suspension are modeled separately, with election rates limited to reflect MPRA's requirement that PBGC's provision of financial assistance through partition not impair its ability to assist certain other troubled plans. MPRA also gave PBGC authority to support plans by providing financial assistance to help troubled plans merge. This facilitated merger authority has similar impairment constraints and is not separately modeled, but is incorporated within the modeling of the constrained financial assistance available under partition.

With one significant exception, our assumption is that approximately 60 percent of critical and declining plans would take steps to suspend benefits that would meet the requirements for a participant vote, after reflecting the provisions for systemically important plans.¹⁴ As discussed above, the 2014 Projections Report further assumed that PBGC's ability to provide financial assistance in partition or merger is limited so that the combination of suspension and suspension plus partition and merger assistance does not significantly change the risk of PBGC insolvency. This constrains to 20 percent our assumption for the percent of plans that would otherwise potentially qualify for

¹⁴ For modeling purposes, ME-PIMS also assumes that one large systemically important plan has a 100 percent likelihood of applying for and complying with the requirements for suspending benefits.



assistance. Thus, the universe of plans for partition is reduced three-fold (from 60 percent to 20 percent.)

To report on the premiums needed to maintain current guarantee levels for multiemployer plans, PBGC provides the following order-of-magnitude analysis on three bases: (1) assuming no future suspensions or partitions; (2) assuming that rates of partition remain constrained to 20 percent; and (3) relaxing that constraint to 60 percent, reflecting additional premium revenues. The analysis estimates the effect of varying premium increases on PBGC's risk of insolvency at the tenth and twentieth future year and on PBGC's average present value of projected financial position at the end of the tenth year. The premiums are expressed in terms of multiples of the current premium structure for convenience – alternate formats for setting additional premium may be appropriate.

Figure 3 shows the effect of alternate levels of premium using an assumption that no plans will suspend benefits or apply for partitions under MPRA.

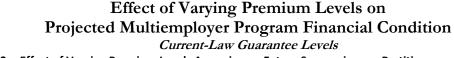


Figure 3 -- Effect of Varying Premium Levels Assuming no Future Suspensions or Partitions

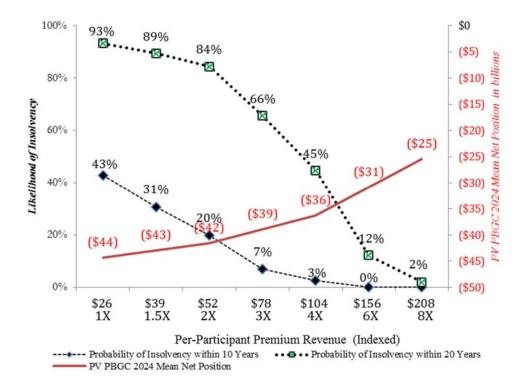


Figure 4 shows the effect of alternate levels of premium using an assumption that only 20 percent of plans will apply for and receive financial assistance under MPRA. It shows the percentage of modeling outcomes at each premium rate that result in the exhaustion of the multiemployer program's funds in 2024 and 2034 (10 and 20 year likelihoods of insolvency), and the value of PBGC's mean projected net financial position, in 2024.



Progressively greater revenue to PBGC's multiemployer program results in a decreasing likelihood of program insolvency, and an improving projected financial position.

Effect of Varying Premium Levels on Projected Multiemployer Program Financial Condition Current-Law Guarantee Levels

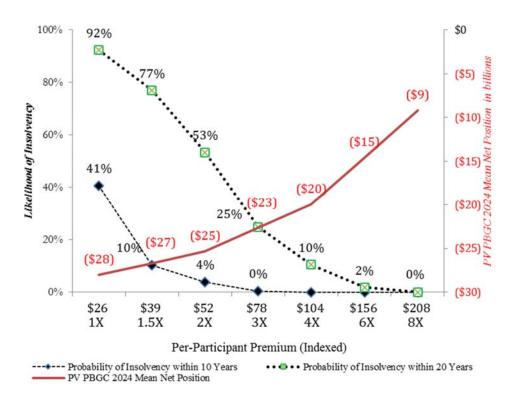


Figure 4 -- Effect of Varying Premium Assuming 20% Partition Rates

Figure 5 assumes that the prospect of additional funding for the multiemployer program will relax the constraint on availability of funding through partition and merger so that PBGC can finance all the assumed (60 percent of eligible) plans that might apply. At current premium levels this would considerably worsen the 10-year solvency of the multiemployer program, while at greater premium revenue levels the solvency ratios are comparable to those in Figure 4. This demonstrates the ability for PBGC to assist additional plans through a partition with the additional premium revenue. The 20-year results change in similar fashion as the 10-year solvency results, but show marginal improvements through the authorization of additional partition assistance at the higher revenue levels.



Effect of Varying Premium Levels on Projected Multiemployer Program Financial Condition Current-Law Guarantee Levels

99% 100% \$0 X 85% (\$7) (\$5) 80% E Likelthood of Insolvency (\$12 (\$10) 60% Mean Net (\$15) (\$1 40% (\$20 (\$20) (\$23 21% (\$24) K (\$26) 20% (\$25) 9% 1% 図. 1% 0% 0% X (\$30) \$39 1.5X \$52 2X \$78 \$208 \$26 \$104 \$156 1X 3X 4X 6X 8X Per-Participant Premium Revenue (Indexed) - Probability of Insolvency within 10 Years •• . • Probability of Insolvency within 20 Years PV PBGC 2024 Mean Net Position

Figure 5 -- Effect of Varying Premium Assuming 60% Partition Rates

For some plans, the options under the Pension Protection Act of 2006 as amended and MPRA will still be insufficient to ensure long-term solvency. Congress may consider further proposals that affect the future prospects of these plans. This could, in turn, affect the level of any necessary changes in premiums.

Alternatives to Raising the Flat-Rate Premium

Congress has historically based multiemployer premiums solely on per-participant rates. At higher premium rates, alternative premium structures may need to be considered. Plans, both healthy and stressed, may consider actions to reduce their premiums should the per-participant rate climb too high.

The President's budget proposal (Budget) proposes to give the Board the authority to adjust premiums to better account for the risk that different sponsors and plans pose. The Board would consider a number of factors, including increases in the risk of losses to PBGC when plans or participants exit the system, the need to avoid premium increases exacerbating outcomes in the most troubled plans, the burden on plan sponsors, and the amount of a plan's underfunding. The Budget assumes that the Board would raise these revenues by using its premium-setting authority to create a variable-rate premium (VRP) and an exit premium in the multiemployer program. A multiemployer VRP would require plans to pay additional premiums based on their level of



underfunding—as is done in the single-employer program. An exit premium assessed on employers that withdraw from a plan would compensate PBGC for additional risk imposed on it when healthy employers exit.

Non-premium alternatives could include targeted support for large troubled plans in certain industries.

Figures 3 through 5 above are primarily structured in terms of the amount of revenue provided by the premium; they do not reflect efforts by sponsors to reduce the basis on which premiums are assessed. Thus, they should be viewed in terms of revenue generated; that is, based on current revenue levels (one times) or higher revenue levels (up to eight times current level).

Next Steps

Although the timing of PBGC's Multiemployer Program's insolvency appears to be delayed until after the next Multiemployer Five-Year Report, PBGC is at risk of not having the funds to continue to pay benefits beyond the next decade under the multiemployer insurance program. The Budget's proposed VRP and exit premium, along with authority for the Board to raise premiums, provide a path to solvency for the multiemployer program.

The Administration expects to engage with Congress and the multiemployer community in a cooperative process, to develop a supportive, financially-sound insurance program and to help preserve the multiemployer plans that provide lifetime retirement security for more than 10 million participants and their families.



STATEMENT OF ACTUARIAL OPINION

We, the undersigned, certify that this actuarial evaluation has been prepared in accordance with generally accepted actuarial principles and practices and, subject to the disclaimers herein, to the best of our knowledge, fairly reflects the possible distribution of projected outcomes relative to the operations and status of the Corporation's multiemployer plan insurance program as of September 30, 2014, after reflecting estimated effects of MPRA on multiemployer plans.

In preparing this evaluation, we have relied upon information provided to us regarding plan and participant data, historic asset yield and other matters. We have checked this information for reasonableness, as appropriate, based on the purpose of the evaluation; the responsibility for the source information obtained from Forms 5500 and elsewhere rests with the preparers of these data.

The methods and assumptions used in this report are described in the Appendices to the 2014 Projections Report.

Subject to the disclaimers herein, in our opinion,

(1) The techniques and methodology used are generally acceptable within the actuarial profession

(2) The assumptions used are appropriate for the purposes of this report

(3) The resulting evaluation represents a reasonable estimate of the possible distribution of projected outcomes relative to the operations and status of the multiemployer program.

The undersigned are available to discuss the material in this report.

I, Christopher M. Bone, am the Director of PBGC's Policy, Research, and Analysis Department. I am a Member of the American Academy of Actuaries, a Fellow of the Society of Actuaries and an Enrolled Actuary. I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained in this report.

I, Jensen Chan, am the Supervisory Actuary at PBGC who directly oversees PIMS. I am a Member of the American Academy of Actuaries, a Fellow of the Society of Actuaries and an Enrolled Actuary. I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained in this report.

Done (3/31/1/

Christopher M. Bone Date Director, Policy, Research and Analysis Department, PBGC Member, American Academy of Actuaries

Jensen Chan Manager, Pension Insurance Modeling Division, PBGC Member, American Academy of Actuaries

Date