

U.S. Multiemployer Pension Plan Update: Previous Benefit Cost and Previous Benefit Cost Ratio

By Lisa Schilling

January 2017

Introduction and Executive Summary

Multiemployer pension plans (MEPPs) in the United States generally cover unionized participants from more than one participating private sector employer. In August 2015, the Society of Actuaries introduced two metrics for measuring the financial stress imposed on pension plans by the combination of unfunded liabilities and declining numbers of active participants: Previous Benefit Cost (PBC) and Previous Benefit Cost Ratio (PBCR).¹

This article presents updated results across the MEPP system for 2009–2014, as well as preliminary results for 2015 and results for prior to 2009. Analysis is based on Department of Labor Form 5500 data as of Oct. 28, 2016. For 2015, approximately half of MEPPs have reported—primarily those with plan years beginning January 1—representing roughly 60% of MEPP liabilities. Here are highlights of the updated results:

- While stress levels remain high, both PBC and PBCR show slight improvements from 2013 to 2014 for much of the MEPP system—indicating slight reductions in stress imposed by unfunded liabilities. In general, plans below the median stress level show greater improvement than plans above the median.
- Compounding the funding stress in the MEPP system, dependency ratios (the ratio of inactive participants to active participants) generally continued to increase. With a slight uptick from 2013, by 2014 the MEPP system bore 1.75 inactive participants per active participant, compared to 1.40 in 2009.²

Aggregate MEPP Liabilities and Funded Status

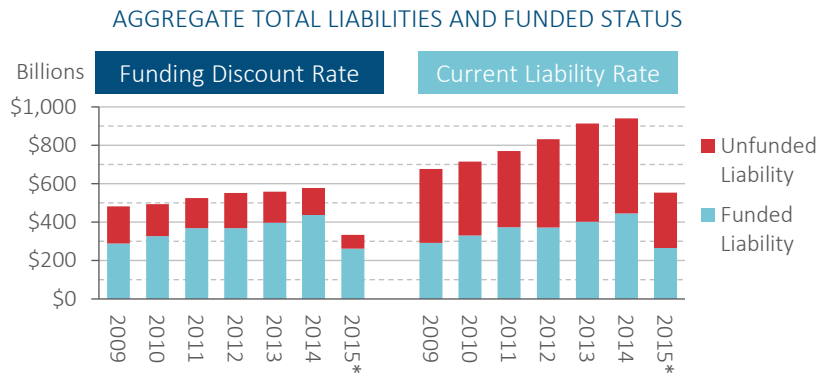
The MEPP system carries significant unfunded liabilities regardless of how they are measured, as Figure 1 shows, and most MEPPs have an unfunded liability. Aggregate unfunded liabilities for 2014 ranged from \$136 billion when determining the liabilities using the discount rate applied for funding purposes to \$517 billion on a Current Liability basis, an improvement from 2013 (\$162 billion and \$530 billion, respectively).³ One significant factor in declining unfunded liabilities was greater investment returns than assumed during the 2013 plan year. While the weighted average assumed rate of return was 7.3% (see Figure 2), the weighted average return on the market value of assets for 2013 was 15.5%.

¹ Society of Actuaries, “Multiemployer Plan Stress Metrics,” August 2015, <http://www.soa.org/Research/Research-Projects/Pension/research-2015-08-multiemployer-plan-stress-metrics.aspx>.

² Inactive participants include retirees as well as participants no longer accruing benefits but not yet retired.

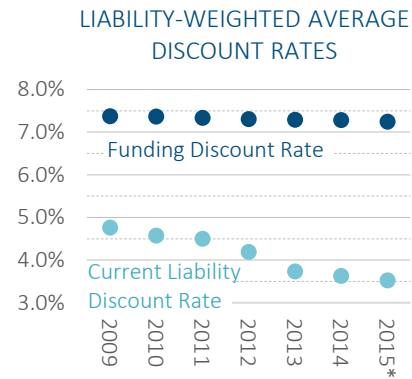
³ Liabilities are based on the unit credit cost method and assets reflect market value. Current Liability discount rates are based on an average of Treasury discount rates, whereas the plan actuary’s discount rate for funding purposes typically is based on a long-range expected return on plan assets.

Figure 1



* Partial year of reporting; data as of Oct. 28, 2016, reflect roughly 50% of plans with roughly 60% of MEPP system liabilities for 2015.

Figure 2



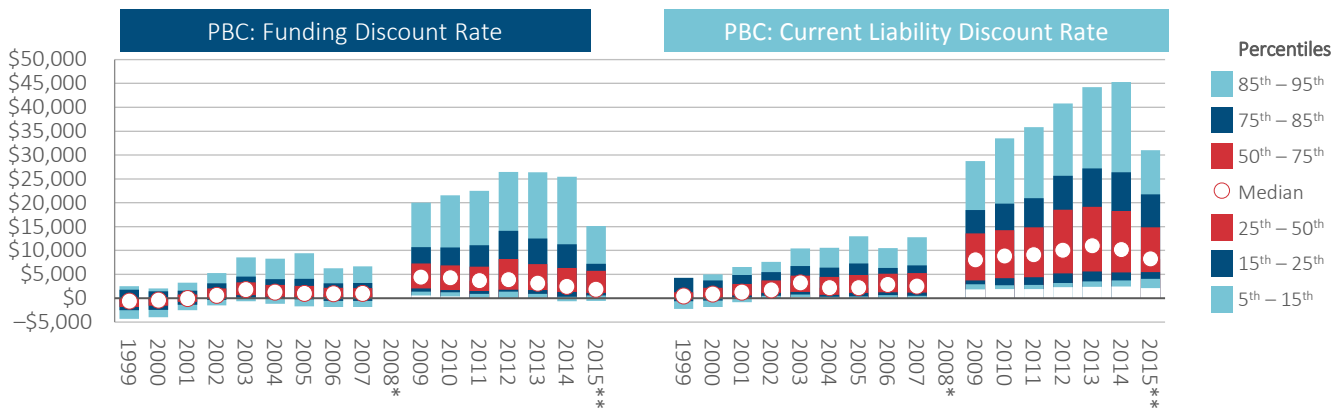
* Data as of Oct. 28, 2016, reflect roughly 50% of plans with roughly 60% of liabilities reporting for 2015.

Previous Benefit Cost (PBC)

A plan’s PBC represents the annualized cost of funding its unfunded liability per active participant.⁴ Figure 3 shows the distribution of PBCs across the MEPP system by percentiles, weighted by participants in order to better represent the system as a whole. PBCs presented here are nominal—they have not been adjusted for inflation.

Figure 3

PBC AT FUNDING AND CURRENT LIABILITY DISCOUNT RATES: PERCENTILES



* Data for 2008 is missing.

**Partial year of reporting; data as of Oct. 28, 2016, reflect roughly 50% of plans with roughly 60% of MEPP liabilities for 2015.

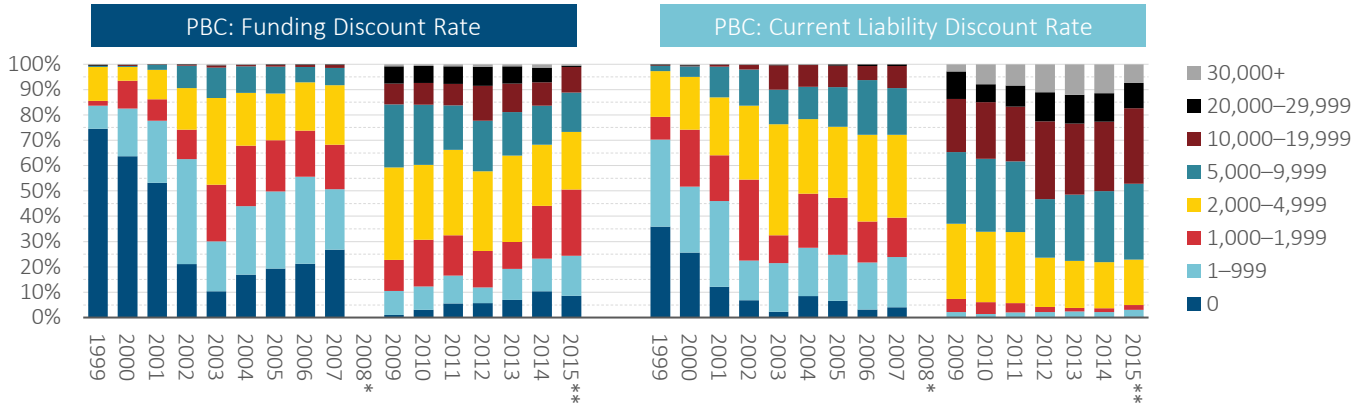
Figure 3 shows the distribution of plans via percentiles, and Figure 4 shows percentages of plans with PBCs falling within specified ranges. Both graphs show that in general, stress levels are much higher than they were 10 to 15 years ago, but they have started to show signs of improvement. However, Figure 3 also shows that plans with the highest stress levels have felt increasing stress levels.

Early indications for 2015 show potentially further declining stress levels, although reporting is not yet complete.

⁴ PBC and PBCR measure unfunded liability using the unit credit cost method and market value of assets; annualized cost of the unfunded liability is defined as a 15-year level-dollar amortization payment on the unfunded liability.

Figure 4

PBC AT FUNDING AND CURRENT LIABILITY DISCOUNT RATES: PERCENTAGES BY RANGE



* Data for 2008 is missing

** Partial year of data; data as of Oct. 28, 2016, reflect roughly 50% of plans with roughly 60% of MEPP system liabilities.

Previous Benefit Cost Ratio (PBCR)

A plan’s PBCR represents the annualized cost of its unfunded liability as a portion of its total annualized cost, including the cost of current benefit accruals and administrative expenses.⁵ Figure 5 and Figure 6 show the same types of distributions for PBCR that Figure 3 and Figure 4 showed for PBC.

Figure 5

PBCR AT FUNDING AND CURRENT LIABILITY DISCOUNT RATES: PERCENTILES

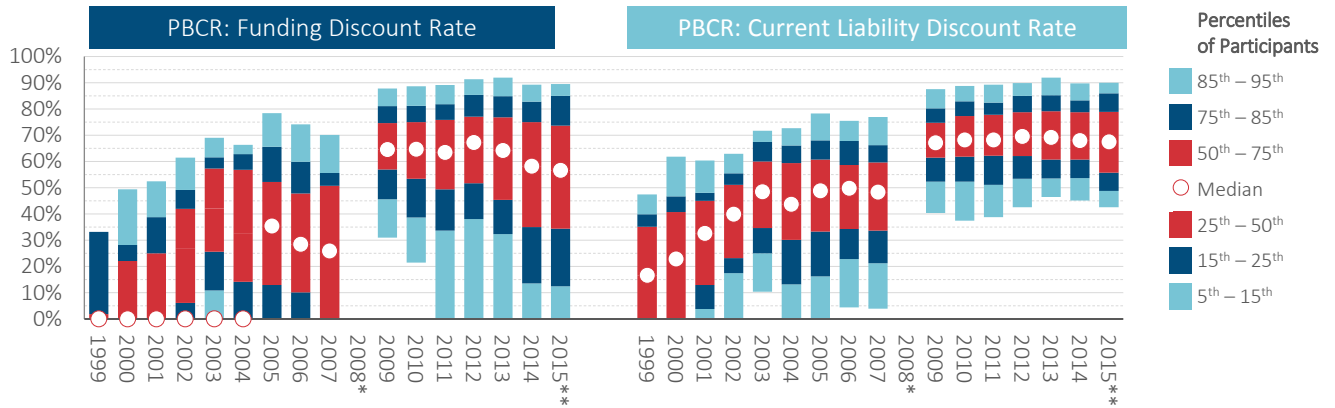
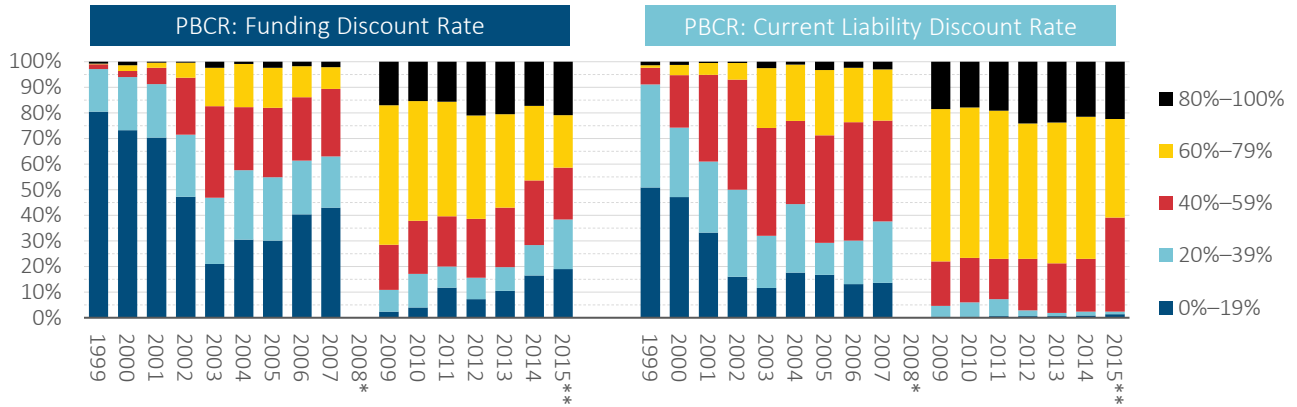


Figure 5 shows that since 2009, over half of MEPP participants are in plans that have a PBCR of 50% or more on either basis, meaning the annualized cost of the unfunded liabilities outweighs the cost of current participants’ benefit accruals for the year. When measured at funding discount rates, some plans enjoy rather low PBCRs with a few at 0%, indicating no unfunded liability. However, when measured at the lower Current Liability discount

⁵ PBC and PBCR measure unfunded liability using the unit credit cost method and market value of assets; annualized cost of the unfunded liability is defined as a 15-year level-dollar amortization payment on the unfunded liability.

rates, even the lowest PBCRs are 50% or greater. Figure 6 shows the distribution of PBCRs via percentages of participants in plans with PBCR in a given range.

Figure 6
PBCR AT FUNDING AND CURRENT LIABILITY DISCOUNT RATES: PERCENTAGES BY RANGE



* Data for 2008 is missing.
** Partial year of data; data as of Oct. 28, 2016, reflect roughly 50% of plans with roughly 60% of MEPP system liabilities.

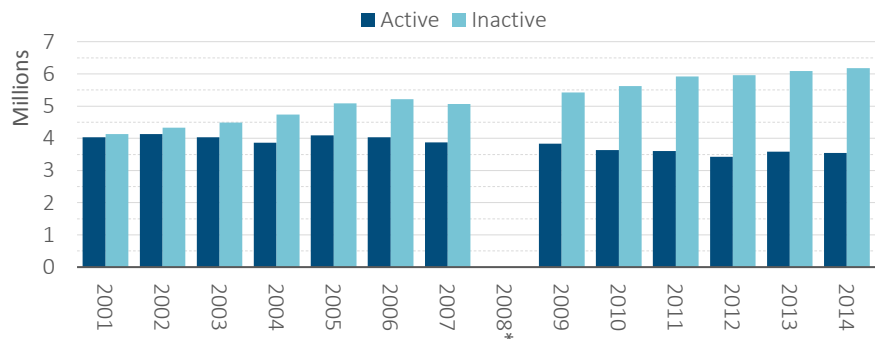
Both PBCR distributions show that although the system has seen steady improvement (decreasing PBCRs) since 2009, the annualized costs of unfunded liabilities significantly outweigh the cost of current participants’ benefit accruals for at least half of the participants in MEPPs. PBCRs on the Current Liability basis are generally greater than on the funding basis because the lower Current Liability discount rates result in greater unfunded liabilities.

Dependency Ratio

Unfunded liabilities reflect benefits earned by both active and inactive participants. However, MEPP contributions are typically negotiated as a rate per unit of work—for example, \$X per hour—and employers contribute based on active participants’ actual level of work. Therefore, all other things being equal, a plan with more inactive participants relative to active participants (dependency ratio) will feel greater pressure on its contribution rates.⁶

Throughout the period studied, inactive participants outnumbered active participants in the MEPP system. Figure 7 shows that since 2001 the number of inactive participants steadily increased, while the number of active participants decreased. On the following page, Figure 8 shows the increasing aggregate dependency ratio, and Figure 9 shows the frequency of dependency ratios among plans.

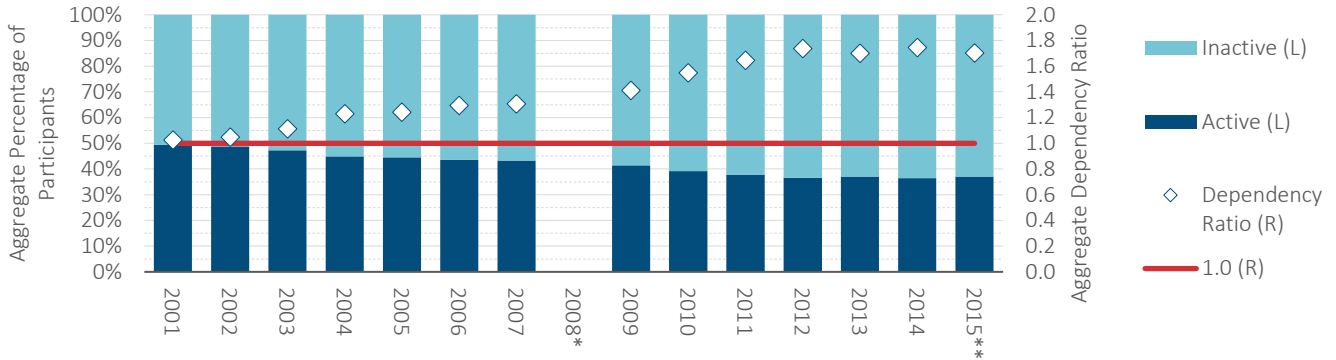
Figure 7
NUMBER OF PARTICIPANTS



* Data for 2008 is missing.

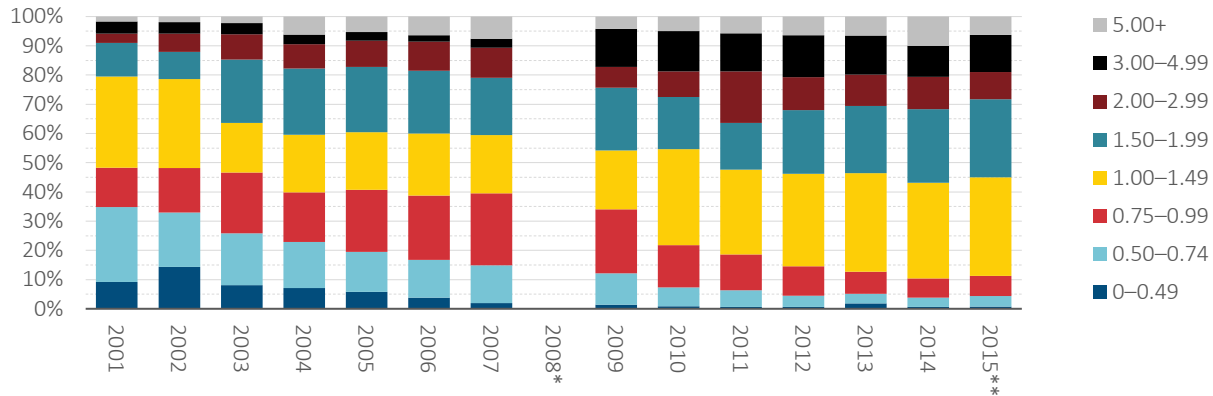
⁶ Inactive participants include retirees as well as participants no longer accruing benefits but not yet retired.

Figure 8
AGGREGATE DEPENDENCY RATIO



* Data for 2008 is missing.
** Partial year of data; data as of Oct. 28, 2016, reflect roughly 50% of plans with roughly 60% of MEPP system liabilities.

Figure 9
DEPENDENCY RATIO: PERCENTAGE OF PARTICIPANTS IN RANGES



* Data for 2008 is missing.
** Partial year of data; data as of Oct. 28, 2016, reflect roughly 50% of plans with roughly 60% of MEPP system liabilities.

Figure 8 shows that in 2001, there were 1.02 inactive participants per active participants in the MEPP system. In 2014, the aggregate dependency ratio had risen to 1.75. Figure 9 shows that in 2001, nearly 1 out of 10 MEPP participants was in a plan with a dependency ratio of 2.0 or greater. By 2014, 1 out of 10 MEPP participants was in a plan with a dependency ratio of 5.0 or greater, and 3 out of 10 were in plans with a dependency ratio of 2.0 or more.

Data and Methods

Analysis is based on publicly available data from the Department of Labor Form 5500 as of Oct. 28, 2016. Data for the 2015 plan year represents roughly 50% of the plans, which have roughly 60% of the liabilities of the MEPP system. Plans reporting by Oct. 28, 2016, are primarily those with plan years beginning in January.

Other than adjustments for obvious errors, data were used as reported. The use of the reported values is not intended to provide commentary on the appropriateness of the underlying assumptions for funding these plans or any other purpose.

Specific notes about the data:

- For 2014, analysis included 1,199 plans representing 9.7 million participants and approximately 205,000 employers. Many participants participate in more than one plan, and many employers contribute to more than one plan. Data reflected in this article is the sum of counts for each plan.
- Data for the 2008 Schedule MB is missing from the Department of Labor database.
- Plans identified as frozen were included in this analysis; the analysis released in August 2015 excluded frozen plans, so results for previously published years may differ slightly.

Liabilities for PBC and PBCR are based on Current Liabilities. For values using the discount rate reported for funding purposes, Current Liabilities have been adjusted using assumptions for duration and convexity that were developed to represent the MEPP system as a whole and may not be appropriate for any single plan.

Modifications to the assumptions and methods used may result in different numerical outcomes, but the overall conclusions are likely to be similar. Different assumptions and methods may be more appropriate for analysis of a specific plan or small set of plans.

Acknowledgments

The author thanks the following volunteers for their arm's-length review of this article. Any opinions expressed may not reflect their opinions nor that of their employers. Any errors are the author's, not theirs:

- Christian E. Benjaminson, FSA, EA, FCA, MAAA
- James B. Dexter, FSA, EA, FCA, MAAA
- Paul B. Dunlap, FSA, EA, FCA, MAAA
- Josh A. Shapiro, FSA, EA, FCA, MAAA

About the Society of Actuaries

The Society of Actuaries (SOA), formed in 1949, is one of the largest actuarial professional organizations in the world dedicated to serving more than 27,000 actuarial members and the public in the United States, Canada and worldwide. In line with the SOA Vision Statement, actuaries act as business leaders who develop and use mathematical models to measure and manage risk in support of financial security for individuals, organizations and the public.

The SOA supports actuaries and advances knowledge through research and education. As part of its work, the SOA seeks to inform public policy development and public understanding through research. The SOA aspires to be a trusted source of objective, data-driven research and analysis with an actuarial perspective for its members, industry, policymakers and the public. This distinct perspective comes from the SOA as an association of actuaries, who have a rigorous formal education and direct experience as practitioners as they perform applied research. The SOA also welcomes the opportunity to partner with other organizations in our work where appropriate.

The SOA has a history of working with public policymakers and regulators in developing historical experience studies and projection techniques as well as individual reports on health care, retirement and other topics. The SOA's research is intended to aid the work of policymakers and regulators and follow certain core principles:

Objectivity: The SOA's research informs and provides analysis that can be relied upon by other individuals or organizations involved in public policy discussions. The SOA does not take advocacy positions or lobby specific policy proposals.

Quality: The SOA aspires to the highest ethical and quality standards in all of its research and analysis. Our research process is overseen by experienced actuaries and non-actuaries from a range of industry sectors and organizations. A rigorous peer-review process ensures the quality and integrity of our work.

Relevance: The SOA provides timely research on public policy issues. Our research advances actuarial knowledge while providing critical insights on key policy issues, and thereby provides value to stakeholders and decision makers.

Quantification: The SOA leverages the diverse skill sets of actuaries to provide research and findings that are driven by the best available data and methods. Actuaries use detailed modeling to analyze financial risk and provide distinct insight and quantification. Further, actuarial standards require transparency and the disclosure of the assumptions and analytic approach underlying the work.

SOCIETY OF ACTUARIES
475 N. Martingale Road, Suite 600
Schaumburg, Illinois 60173
www.SOA.org