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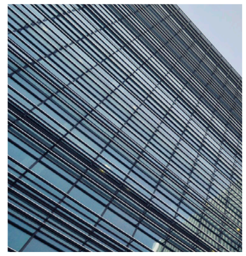
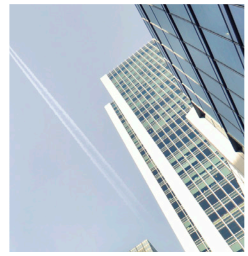
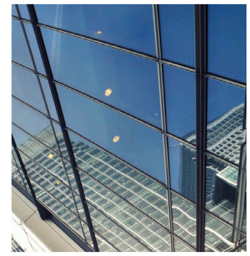
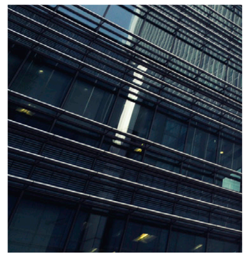

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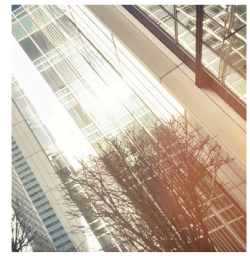

SOA DATA-DRIVEN RESEARCH: HIGHLIGHTS OF OUR REPORT ON THE EFFECTS OF EXTENDING MAP-21 INTEREST RATE SMOOTHING

By Joseph J. Silvestri

The Moving Ahead for Progress in the 21st Century (MAP-21) Act, passed in 2012, eased short-term funding requirements for private sector sponsors of U.S. single-employer defined benefit plans. It modified the interest rates used to measure plan liabilities in a way that deferred required plan funding into future years and reduced the level of funding that sponsors needed to maintain to avoid restrictions on their ability to transfer plan obligations to insurers or offer lump sum settlements to plan participants.

The MAP-21 modifications limited smoothed interest rates to a percentage range around a 25-year historical average of interest rates. Given the disparity between long-term and short-term historical interest rates in 2012, the new interest rate smoothing provisions increased the average of interest rates used to calculate funding requirements from approximately 5.40 percent to 7.03 percent. This, in turn, greatly reduced contribution requirements for 2012 and the prevalence of benefit restrictions that otherwise would have occurred. The effects of the MAP-21 smoothing provisions were expected to phase out over several years as the historical average gradually declined and the percentage limits were scheduled to expand, thereby lowering the "floor" interest rates.[1]

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At several points during the last year, the United States Congress has contemplated an extension of the MAP-21 corridor.[2] The proposed changes are often referred to as an "extension" because they would extend the period of time during which the percentage limit around the 25-year average would remain at 10 percent. (See Exhibit 1.) The implications of such an extension would, in general, be similar to the implications of the original provisions—near-term contribution requirements would be deferred and the prevalence of benefit restrictions would be reduced. The specific effects would, however, differ from the effects of the original provisions as the circumstances of the single-employer system have changed since 2012.

The SOA's Data-driven In-house Research (DIR) group recently investigated the specific effects of temporary (five-year) and indefinite extensions of the 10 percent "corridor" limits. Using 5000 market simulations[3] provided by Barrie and Hibbert, a Moody's Analytics company, and a modified version of the PBGC's Pension Insurance Modeling System (PIMS), we projected the effects that these alternative corridor limits would have on statutory interest rates and funding requirements.

As expected, the narrower corridor would increase interest rates used in the calculation of funding requirements for several more years. For example, we estimated that the weighted average of interest rates used to measure funding liabilities for plan years beginning in 2014 would increase from 5.82 percent (using the originally scheduled 20 percent corridor) to 6.51 percent (using the extended 10 percent corridor). While this 69 basis point increase may seem small relative to the 163 basis point increase that occurred in 2012, it is still 207 basis points higher than the 4.44 percent interest rate that would have applied on the pre-MAP-21 basis (a 24-month average).

An extended 10 percent corridor would likely prolong the phase-out of the corridor's effects. In 2012, we estimated that significant effects of the MAP-21 corridor would phase out by 2016. In more than half of our Jan. 1, 2014 simulations,[4] the weighted average interest rate rose above floor levels by 2018 if the 10 percent corridor is extended five years and by 2019 if it is extended indefinitely. While these results may seem to imply that there is little difference between a five-year and an indefinite extension of the 10 percent corridor, they do not illustrate the full range of potential scenarios. Our analysis also found that a 10 percent corridor modified plan year 2026 interest rates in 61 percent of the simulations and an expanded (30 percent) corridor modified rates in 9 percent of the simulations that year. Thus, comparisons of corridor alternatives over more than a few years should consider a range of potential interest rate scenarios beyond a single expected scenario.

As noted previously, any extension of the 10 percent corridor would have the same general effects on funding requirements as the original MAP-21 corridor. The temporary boost in interest rates would defer required funding and reduce the prevalence of benefit restrictions for some period of time. Naturally, the period of time would be related to the additional time that the interest rates used to measure liabilities for these purposes remain at the corridor floor. If rates remain at floor levels for two more years, as described above, required funding would generally take two more years to catch up to the level it would have reached using the original corridor. Using average assumptions based on the Barrie and Hibbert simulations, the system would reach 99 percent funding in 2023 if the corridor remains as originally prescribed and 2025 if the 10 percent corridor is extended five years.

Though an extension of the 10 percent corridor would reduce the prevalence of benefit restrictions, we expect the effect to be small relative to the original corridor. We examined the portion of defined benefit liabilities considered better than 80 percent funded on the applicable statutory basis because the restrictions begin to take effect below the 80 percent threshold. We estimated that 94 percent of outstanding liabilities in 2014 would be considered better than 80 percent funded on the statutory basis if the 10 percent corridor is extended, whereas 92 percent would be considered 80 percent funded if the corridor remains unchanged. Because a large portion of liabilities would be considered above the 80 percent threshold with the original corridor in place, the narrower corridor had little effect on reducing the prevalence of restrictions.

Since we first analyzed the effects of the MAP-21 corridor in 2012, PBGC premium rates have attracted a lot of attention. Recognizing that deferred funding comes with increased premiums, we added an estimate of the potential effect that deferred contribution requirements could have on PBGC variable premiums. If all sponsors maximized their deferral opportunities in our deterministic scenario, we estimated that they would pay a combined additional $10 billion in PBGC variable premiums as a result. Unlike deferred contribution requirements, which move a plan sponsor's terms of payment from one time period to another, increased premiums are a true cost to sponsors. As such, sponsors may want to carefully consider whether it makes sense for them to defer contributions to their plans, weighing, for example, the certainty of the value they hope to extract from deferring contributions against the certainty of increased PBGC premiums.

An indefinite extension of the 10 percent corridor is much more likely to have longer-term implications for funding of the single-employer DB system than an expanding corridor would have. I noted earlier that a permanent 10 percent corridor affected six times as many interest rate simulations as the expanded 30 percent corridor. As such, the interest rates used to target plan funding levels would, over the long-term, bear a stronger resemblance to the very stable 25-year average of interest rates if the 10 percent corridor is effectively made permanent and a weaker resemblance to the 24-month average, which tracks movements in interest rate markets more closely.

Shifting the interest rate basis used to calculate funding requirements from a 24-month average to a 25-year average would alter the existing balance between maintaining stable funding targets and funding plans to market-consistent levels. Our analysis included a brief table to demonstrate this effect. (See Table 1) Relative to a 30 percent corridor, a 10 percent corridor would approximately halve the average year-to-year change in interest rates used to calculate funding targets, making funding targets more predictable. The 10 percent corridor would also increase the variability of the system's funding level over the long-term, which affects the security of benefit promises.

Table 1

Corridor Effect on Interest Rate Stability and Funding Level	Average Change in Stabilized Interest Rates from 2025 to 2026	Likelihood System Is Less Than Funded[1] in 2026	Average Funding Gap in 2026 when System is Less Than 99% Funded[5] (Adjusted for Inflation to 2014)
30 Percent Corridor Limit	0.21%	46.8%	$284 billion
10 Percent Corridor Limit	0.12%	52.4%	$330 billion

The actual effects of an extended 10 percent corridor will depend on sponsor decisions about when and how to fund their plans. We analyzed the effects that an extension would have on required funding levels and found

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that—in the short-term—sponsors would gain greater flexibility in how they time their plan contributions as a result of any extension. Experience since 2012, when the corridor was first implemented, has shown that a significant number of sponsors did not take advantage of the more flexible contribution requirements offered at that time. Returns on plan assets since 2012 have mitigated much of the underfunding that existed at the beginning of 2012, which may reduce the demand for greater contribution deferral opportunities. Finally, the cost of deferring plan contributions continues to rise—at least in terms of variable premium payments. Nonetheless, some plan sponsors will find the ability to defer more contributions useful. As a result, a five-year extension of the 10 percent corridor would cause funding of the single-employer defined benefit system to lag several years behind current standards and continued extensions would have less predictable effects. ■

ENDNOTES

1 See the SOA report on Proposed Pension Funding Stabilization for projections and a more detailed description of the MAP-21 provisions.

2 As of this writing, an extension of the MAP-21 corridor is included in a bill to fund the Highway Trust Fund.

3 The market simulations were calibrated to and projected from conditions as of Jan. 1, 2014. We used historical data for pre-2014 experience.

4 It is important to note that interest rate movements through the first half of 2014 have been in the lower range of our simulations. Lower than expected interest rates would prolong the effects of any corridor alternative, relative to our estimates. It would also increase the disparity of effects between the original and extended corridors.

5 Funded ratios are based on the market value of assets and the present value of accrued benefit payments, which are discounted on the corporate spot curves underlying the stabilized interest rates.