The Future of DB Plan Funding Under PPA, the Recovery Act and Relief Proposals

The overlay of the dramatic decline in asset values of the last few months on the incipient tougher funding requirements of the Pension Protection Act of 2006 (PPA) has prompted widespread concern about the magnitude of the required contributions to single-employer defined benefit (DB) plans in 2009 and 2010. In this analysis, Watson Wyatt estimates contribution amounts using a comprehensive and realistic model of plan funding under four scenarios: PPA alone; the Worker, Retiree and Employer Recovery Act of 2008 (signed by the President on Dec. 23, 2008); and two other major relief proposals, individually and in combination. Our calculations are based on market conditions as of Dec. 31, 2008 (see appendix for further details).

Funding results for current market conditions under the Recovery Act
Figure 1 below shows the funded status and contributions for DB plans under the Recovery Act, using historical data through 2006, estimated data for 2007 and projected results from our model for the 2008 through 2010 plan years.

Figure 1
Funded status and contributions of large single-employer DB plans under Recovery Act and "back to normal" economic assumptions

Plan year	Average regulatory funded status (%)	Contributions ($ billions)	Extra contributions ($ billions)
2000[a]	115.7	18.5	
2001[a]	104.7	33.8	
2002[a]	100.0	72.5	
2003[a]	86.9	100.7	
2004[a]	98.4	75.0	
2005[a]	97.3	71.6	
2006[a]	92.6	66.5	
2007[a, e]	95.1	48.5	
2008[p]	97.1	38.0	0.8
2009[p]	75.1	108.7	3.2
2010[p]	80.5	102.8	4.7

a – actual total contributions paid based on Department of Labor, Employee Benefits Security Administration Summary Reports.
e – estimates based on relationship between past Form 5500 and financial disclosure reports.
p – contributions are minimum required, projected based on weighted and scaled-up results of model using current valuation elections (extra contributions by certain plans are to avoid benefit restrictions at the 80 percent funded status level), 2006 initial funded status, market conditions as of Dec. 31, 2008, and 2008 asset allocations, under "back to normal" economic assumptions, and assuming no changes to elections, asset smoothing or other provisions.

Source: Watson Wyatt Worldwide.

As plans moved from an overfunded to an underfunded status at the beginning of this millennium, contributions skyrocketed to more than $100 billion. The amount as well as the volatility of these contributions led many plan sponsors to close or freeze their pension plans. The impact on other corporate financial and employment decisions during these slow growth and recession years is unknown, but cannot have been positive.

Funded status again improved in 2004, as the market produced positive results and employer contributions accumulated. We estimate that most plans were fully funded by 2007, when contributions dropped to roughly $50 billion, and again in the 2008 plan year (i.e., as of Jan. 1, 2008).

According to our model, however, average regulatory funded status will plummet to about 75 percent in 2009, and sponsors will be required to contribute $108.7 billion to their plans. Moreover, some sponsors are likely to contribute more — the model projects roughly another $3 billion — to avoid benefit restrictions at the 80 percent funded status level (see appendix for details). Although conditions are expected to improve slightly in 2010, massive contributions will again be required ($102.8 billion), and sponsors will likely contribute an additional $5 billion or so to avoid benefit restrictions.

Funding results under Recovery Act and various relief proposals

Our model projects regulatory funded status and contributions in 2009 and 2010 under the Recovery Act and two other relief proposals. The two proposals are analyzed — on top of the Recovery Act — separately and as a combined package. In total, four different scenarios are analyzed as follows:

1. Scenario 1 (the Recovery Act) allows smoothing of asset values, universal phase-in of funding targets for 2009 and later years, and a one-time look-back to 2008 funded status for the purpose of determining whether a plan whose funded status falls below 60 percent must be frozen. In particular, the Act removes the “cliff” effect in the PPA’s phase-in rules. The PPA did not require shortfall amortization in 2009 if a plan’s funded status is 94 percent in 2009 *and* was 92 percent in 2008. Similarly, no shortfall amortization was to be required in 2010 if the plan is 96 percent funded in 2010 *and* was funded to at least the phase-in targets in 2008 and 2009. Under the PPA, if those requirements are not met for any year, however, the shortfall amortization would have been based on 100 percent of liabilities rather than on the phase-in targets, creating a cliff-like effect. Under the Recovery Act, shortfall amortizations are based on the 2009 and 2010 phase-in targets regardless of whether earlier years’ targets were met.
2. Scenario 2 is the Recovery Act plus an asset value corridor of 80 percent to 120 percent of market value in 2009 and 2010 for plans using averaged or smoothed valuation methods.
3. Scenario 3 is the Recovery Act plus free election of asset and liability valuation methods in the 2009 plan year, but under the assumption that plan sponsors choose either full smoothing of assets and liabilities or a full mark-to-market approach. Although a combination of smoothed asset valuation and mark-to-market liabilities would produce the lowest contribution in 2009, the election cannot be changed for five years under IRS rules and may not represent the best long-term choice for many plans, so it is not included in our modeling.
4. Scenario 4 combines 1, 2 and 3.

Figure 2 shows the results under the Recovery Act and the two relief proposals (Scenario 0 is the PPA alone, included for reference).

Figure 2
Projected impact of Recovery Act and relief proposals on plan funding

Scenario	Plan year	Average regulatory funded status (%)	Contributions ($ billions)	Extra contributions ($ billions)
0	2009	75.1	125.1	3.2
	2010	80.1	117.6	5.1
1	2009	75.1	108.7	3.2
	2010	80.5	102.8	4.7

2	2009	77.2	101.5	2.4
	2010	80.6	102.8	4.7
3	2009	80.0	90.8	4.4
	2010	85.3	84.1	2.4
4	2009	87.3	65.7	2.3
	2010	85.5	84.4	2.2

Source: Watson Wyatt Worldwide.

The Recovery Act has certain but relatively small impact on funded status because most sponsors have elected to use market value of assets, market losses are so large and liabilities are unaffected. The universal phase-in of funding targets offers some modest relief, however, on contribution requirements for both 2009 and 2010. Because the Recovery Act does not change the regulatory funded status of the plans, it provides no relief from the benefit restrictions at the 80 percent funded status level.

Scenario 2 combines the Recovery Act with a wider corridor around market value for plans that choose to average their asset values. Although it improves funded status and reduces required contributions, the relief is modest because most plans chose market value as their asset valuation method in 2008.

In Scenario 3, the allowance for a free election of valuation methods in 2009 without an expansion of the corridor encourages plans to move to smoothed valuations for both assets and liabilities. This significantly improves funded status and lowers contributions in 2009 and 2010.

Scenario 4 combines all the provisions and offers the most improvement, consistently, in reported funded status and reduction in required contributions, as plans move to full smoothing valuation methods for both assets and liabilities. It is the most effective in providing significant relief. Nonetheless, market conditions still take their toll, as contributions for 2009 and 2010 plan years are higher than in 2007 and 2008. Also, under the model's projections of a steady decline in discount rates, the relief in required contributions will be smaller in 2010.

Conclusions

Some may question the necessity of additional funding relief. After all, the current funding situation results, in part, from asset allocation and funding choices made by plan sponsors. But funding is largely influenced by the law, and the PPA , which will eventually lead to better and smoother funding, is being implemented at possibly the worst time — before sponsors had time to build up surplus funding cushions to soften the extremely volatile and negative market conditions of the last three months. Similarly, despite some recent movement to more conservative and "hedged" asset allocations under a liability-directed investment (LDI) framework, that shift will take time. In any case, LDI will not entirely eliminate equity investments from pension portfolios, which remain appropriate for long-term investors, particularly for active pension plans. Moreover, the terrible conditions in credit markets preclude even creditworthy corporate sponsors from borrowing to make their plans' much higher required contributions. The Recovery Act will lower required contributions for 2009 and 2010 somewhat, thereby providing some measure of relief. But the Act's effect on funded status will be slight and it offers no relief from benefit restrictions.

So these large employers will have to skimp elsewhere, possibly on investments in plant and equipment, on compensation and even on numbers of employees. To protect pension plans as well as for reasons of broader macroeconomic policy, it makes sense to give plan sponsors temporary relief from hardships arising from new funding requirements coincidentally taking effect during an unforeseen massive financial crisis. Such relief will help ensure that the PPA is the success that the administration and both political parties in Congress expected when the law was passed in 2006.

Appendix: The funding model
The model simulates some 8,000 representative plans of various initial funded statuses, asset allocations, valuation election methods and active statuses. It then applies weights to these plans to reflect the relevant empirical distributions, as calculated from governmental form and financial disclosure data files and Watson Wyatt databases and surveys. To project future

funding, stylized but still accurate representations of measurement and funding requirements are imposed on these plans, for the PPA, for the Recovery Act and for various relief proposals, and certain economic assumptions are made. The weighted results are scaled to produce an estimate for the universe of large single-employer DB plans in the United States.

Each simulated plan starts with a $1 million liability on Jan. 1, 2006 (the 2006 plan year) and the model moves it forward by actual and projected market conditions to Jan. 1, 2010 (the 2010 plan year). Pre-PPA funding law is not sketched out because most plans were either fully funded (or close to it) or overfunded in 2006 and 2007; in any case, we report actual 2006 and estimate 2007 contributions, and in the model assume that normal cost is contributed. For 2008 forward, PPA funding rules are approximated by:

- Funding target is 100 percent of liabilities after 2010, when the PPA is fully in effect. Over the phase-in years of 2008-2010, the "applicable percentage" is 92 percent of the funding target for 2008, 94 percent for 2009 and 96 percent for 2010, assuming the prior year's applicable percentages were attained; otherwise, it is 100 percent.
- Minimum required contributions are determined by the seven-year amortization on funding shortfalls.
- If a plan is less than 80 percent funded ("lump-sum restriction level"), lump sum payments are constrained.
- Plans that are less than 60 percent funded are frozen and no benefit accruals are allowed.

The model does not reflect "at-risk" status, industry-specific provisions, various minor election and other provisions, and credit balances. The funding impact of at-risk status is probably quite small in the aggregate, especially in the PPA's first years, because of all the phase-ins, exceptions and exclusions. Credit balances could be a more significant factor; they can reduce required cash contributions directly, but also increase them indirectly by being subtracted from asset values in the calculation of funding requirements. However, empirical estimates of the size and distribution of credit balances are not available. Moreover, plan sponsors may voluntarily surrender credit balances, and there are circumstances where it is advantageous to do so.

The PPA combines incentives and penalties to encourage funding. As mentioned above, if the plan is less than 80 percent funded, lump sum payments are constrained. In our model, we assume that some plan sponsors respond to PPA's signals by making extra contributions to avoid the restrictions. In particular, based on Watson Wyatt data files and other data, we assume that 50 percent of plans offer lump sum payments to participants. We also assume that about half of frozen plans that offer lump sums are not subject to restrictions because they were frozen before Sept. 1, 2005 (the date in the PPA giving a carve-out from the restrictions). But we assume that only sponsors of moderately underfunded plans — those within 5 percentage points of the 80 percent funding level — make extra contributions.

Depending on the plan sponsor's election, pension assets are measured under current law, at either fair market value or average value (over 25 months), constrained by the law's restriction that such average value is not less than 90 percent nor more than 110 percent of market value. In our analysis of relief proposals, we also model "smoothed" value, which is computed similarly to average value, except that an expectation of future investment earnings (at no more than a specified interest rate, the third segment rate) is included. Our model divides assets into domestic equities and corporate bonds, and assumes that returns are approximated by the S&P 500 total return index and the Dow Jones corporate bond total return index. Actual returns are used for calendar years 2006, 2007 and 2008; projections are made for 2009 and 2010 under a "back to normal" scenario whereby both equity and bond returns follow Watson Wyatt Investment Consulting projections (see **Figure A1**). (The model also uses other market projections, but the results do not differ much and hence are not reported here. The 2010 calendar-year projections are not used in the simulations and are shown only to indicate the assumed path of market conditions.)

Figure A1
"Back to normal" economic and financial assumptions, calendar years

		2006	2007	2008	2009	2010
Equity return (%)	Market	15.80	5.49	-37.00	7.90	7.90
	Smoothed	9.89	12.48	-0.11	-16.65	-6.77
Bond return (%)	Market	3.70	5.24	1.80	5.30	5.30
	Smoothed	2.96	3.34	3.63	3.95	5.69
Interest rate, monthly yield curve (%)	Market	5.79	6.28	6.64	6.46	6.28
Interest rate, 2nd segment (%)	Smoothed	5.79	5.90	6.38	6.66	6.45
Interest rate, 3rd segment (%)	Smoothed	5.79	6.41	6.68	6.66	6.45

Notes:
1. Asset returns for 2008 based on equity and bond indexes as of Dec. 31, 2008.
2. Annual equity and bond returns for 2009 and 2010 are based on WWIC forward-looking (October 2008) assumptions. Monthly returns are log-linearly interpolated.

Source: Watson Wyatt Worldwide.

Pension liabilities are valued using either the spot corporate bond yield curve or the smoothed segment rates, both published by the IRS. The model does not contain the full cash flow profiles of the representative plans, so the discount rates are approximated by using the composite corporate bond rate (for the curve) and the second segment rate (for the segment rates), and by assuming an average duration of 14 years for active plans and nine years for frozen and closed plans. According to Watson Wyatt survey results and other data, about 60 percent of plans are active, 20 percent are closed and 20 percent are frozen. The spot rate for Dec. 31, 2010, is assumed to be the same as the rate at the end of 2007. Monthly rates between Dec. 31, 2008, and 2010 are linearly interpolated. For 2006 and 2007, the discount rate is the IRS corporate bond weighted-average interest rate. Again, see Figure A1 above.

We base the distribution of asset allocations on the targeted allocations for 2008, as disclosed in corporate financial reports, weighted by plan size. The average allocation is a 65/35 equity/bond mix, but there is a wide range across plans. The distribution of initial funded status is based on 2006 Form 5500 files. Elections of asset and liabilities valuation methods are based on a Watson Wyatt survey for the 2008 plan year. For their 2008 valuations, about 66 percent of plans elected to use the combination of market value of assets and the segment rates for liabilities; 20 percent chose the average value of assets and the segment rates for liabilities; 4 percent chose the average value of assets and the full yield curve; and 10 percent chose a full mark-to-market approach. More plans would have chosen an averaging method for assets, but many were disappointed that smoothing methods were not available under the PPA. Active plans are assumed to have a 5 percent benefit accrual rate and a 4 percent payout rate; frozen and closed plans have a 1 percent accrual and a 4 percent payout rate. Finally, the weighted results are scaled by pension plan liabilities of $1.78 trillion for single-employer DB plans with at least 100 participants in 2006, based on our estimate from Form 5500 data files and relationships with other data.

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