Economic Value of Contribution Cashflow for a Sponsoring Employer of a DB Pension Plan and Measures to Bring the Economic Value under Control within an Affordable Range[1]

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Pensions: Managing accumulation and decumulation

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[1] Any views or thoughts expressed in this paper are strictly those of the author and have no relation to the organisation to which the author is belonging.

Abstract

In many countries defined-benefit (DB) pension plans are suffering from sudden and significant funding gaps caused by the asset price depreciation and the interest rate decline in the current financial crisis. Many employers are required to pay additional contributions to make up for the shortfalls within a period of time permitted under the country-specific funding standards and/or by the competent supervising authorities. It should be noted that the additional contributions have to be made under such circumstances that the employers face difficulties in raising money.

Even if the plan had accumulated sufficient amounts of assets and its funded status had reached for instance 1.5 times of the minimum liabilities, the accumulated risk buffer would evaporate in an instant when asset prices fall by 20% on average due to market depreciation and the amounts of liabilities rise simultaneously by 20% due to interest rate decline. This would pose a serious question on the effectiveness of the funding standards on the mark-to-market basis. At the same time, we have to keep in mind that it is inevitable to take into account to some extent the expected rates of return of risky assets in the calculation of contributions.

This paper first evaluates the economic value of the contributions (risk-adjusted costs) for the sponsoring employer using a stochastic discount factor and shows that the economic value of the contributions is much higher than their best-estimated present value. This paper then explores several measures to bring under control the economic values of the contributions from the aspects of benefit designs, funding policies and standards, and investment strategies.

With regard to benefit designs, this paper considers a structure in which a minimum benefits are supplemented by variable components, in order to lessen the burden of accumulating fairly large amounts of risk buffer, which would become indispensable under the mark-to-market accounting and funding standards. On funding policies and standards, this paper proposes unique payout-year-specific (PYS) funding standards, under which assets and contributions are divided by each payout year and loaded respectively on the 'sequentially chained containers.' The PYS funding standards then specify the spectrum of minimum funding ratios assigned for every container. Each minimum funding ratio would be a function of the period from the measurement date to the payout date when the assets are unloaded from the container. The PYS funding standards may require partial ring-fencing of assets by payout year, but allow taking into account the expected rates of return of risky assets progressively as the investment horizon extends and thus enable us to reduce the volatility of funded status significantly.

Furthermore, this paper considers appropriate investment strategies under this investment sympathetic PYS funding standards. One of the possible strategies would be waiting, separately by each container, for the chance that the amount of assets surpasses the value of corresponding liabilities, seizing the chance and switching the speculative strategies up to that time to complete liability-hedging strategies. Since this strategy has countercyclical nature, there is no fear that the issue of "error of synthesis" might occur in the market.

For preserving favourable environments that sponsoring employers are willing to bear some portion of risks with regard to preparing steady post-retirement income streams for their employees, it is essential to retain the costs of maintaining such arrangements within the affordable range even under volatile market conditions and the mark-to-market accounting. For this purpose, we have to devise innovative and synthetic measures covering all the aspects of benefit designs, funding policies and standards and investment strategies.