

Supervision of defined benefit pension plans

Case Study: South Africa

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1. Abstract:

Even though Defined Benefit (DB) pension plans are being phased out worldwide, countries like the USA, UK and the Netherlands have a fair amount of DB pension plan liabilities and hence the need for supervision of these plans. In the South African retirement fund landscape, a fair amount of DB pension plan liabilities exist, and the supervision of these plans must be brought in line, as far as it is practical and relevant, with international standards.

The author intends to present a case study on the South African experience as viewed from a prudential supervisory perspective. An overview of the DB pension landscape will introduce the presentation and brief comments will be made about the surplus legislation which was promulgated during late 2001 in terms of which pension plans had to distribute large actuarial surpluses which had accumulated over the years, in stark contrast to many other countries where DB pension plans were experiencing funding crises.

South Africa is now in the post-surplus era and the need arose, in line with international practice, to develop prudential supervisory tools by which DB pension plan liabilities can be regulated efficiently. The presentation will cover the options and suitability thereof within the South African context, and draw on inferences made from acceptable international standards, such as those published by the International Organisation of Pensions Supervisors. In addition, feedback will be provided about the regulation of South African DB pension plans within a more robust supervisory framework that aims to encourage long-term sustainability.

2. Introduction

The Financial Services Board (FSB) is the regulatory authority overseeing the supervision of pension plans in South Africa. Proposals are in place to bring the Government Employees Pension Fund, the largest DB pension plan in South Africa and one of the largest worldwide in terms of liabilities, under the auspices of the FSB in the near future. Furthermore, as there are still a substantial number of DB pension plans and the associated DB liabilities in South Africa, it is necessary to maintain proper supervision of these plans to ensure financial soundness.

The paper is structured as follows:

Section 3 outlines the relevance of defined benefit (DB) pension plan supervision in South Africa, with specific reference to the surplus legislation which was promulgated at the end of 2001. Following the surplus legislation, a new regulatory era was introduced.

Section 4 is a description of the most commonly used methods in determining the financial soundness of a DB pension plan, namely a risk-free discount rate approach and equity risk premium approach.

Section 5 provides the reasoning for our implementation choices, including aspects relating to the prudential supervisory tools in this regard.

3. South African surplus legislation

As a result of large surpluses that historically built up in pension plans, South Africa promulgated surplus legislation on 7 December 2001 that required all pension plans registered with the FSB, to distribute actuarial surpluses in a prescribed manner between various stakeholders of these plans.

The surplus arose mainly as a result of the following:

- Favourable experience of pension plans compared to the assumptions used by actuaries, of which the most significant were extraordinary investment returns earned by plans during most of the 80s and 90s;
- A generally conservative approach employed by actuaries in determining the valuation assumptions;
- Significant movements of members from DB pension plans to DC (Defined contribution) pension plans or other arrangements. In 2001 it was estimated that as much as 80% of DB members had moved from DB to DC funds over the period from 1980 to 2000.

In addition, in some industries employees were contracted on a part-time basis, resulting in a large number of retrenchments. In many cases these members exited their pension plans and the resulting withdrawal benefit was significantly below the actuarial reserve held for them.

A DB fund was often perceived as a vehicle providing retirement benefits only, and was used as a vehicle to incentivise employees to remain with the same employer for life; and

- Pension increases granted were often less than what could be afforded given that in some periods, excellent investment returns were achieved.

The legislation was necessary to establish guidance in terms of ownership of actuarial surplus in an attempt to deal with the conflicting interests of various stakeholders.

The surplus legislation required funds to apportion actuarial surplus at the first statutory actuarial valuation following 7 December 2001. As a statutory actuarial valuation is required at least once every three years, by implication all funds would have passed their surplus apportionment dates by 7 December 2004.

The FSB was pressed to issue guidance in terms of a consistent actuarial valuation method and basis to quantify actuarial surplus. As a result, guidance that sets out the standard for valuations to determine the actuarial surplus at the surplus apportionment date was issued.

The guidance required that best-estimate assumptions be used in the determination of the accrued liabilities, meaning an assumption that:

- is realistic;
- depends on the nature of the business concerned; and
- is guided by past experience, as modified by any knowledge or expectation of the future, including events, such as changes in tax or legislation, which impact the expected experience of the pension plan.

Furthermore, no deliberate margins of conservatism were to be included and the assumptions were to be motivated by reference to any of the following:

- the experience of the pension plan, taking into account its size and underlying trends in that experience where the actuary deems it appropriate to do so;
- statistical evidence relating to
 - pension plans in general, or
 - relevant published annuitant or in-service mortality or morbidity, including the effect of HIV/AIDS, or
 - an investigation performed within a firm of actuaries in respect of pension plans advised by that firm;

- where that evidence may relate to demographic items or to economic items such as the equity premium; or
- yields on classes of government or corporate bonds which, in terms of the actuarial method used by the actuary, determine the discount or inflation rates assumed at the valuation date.

The actuary had to include the motivation in the report, and had to make a copy of any investigation used in this motivation available to the FSB upon request. Importantly, it was acknowledged that the use of best-estimate assumptions may result in a strengthening of the actuarial valuation basis since the previous statutory actuarial valuation. This was acceptable provided it has been motivated as required.

Limitations of current position

In all likelihood a prescribed actuarial valuation basis to determine actuarial surplus would have been less problematic as it would have prevented any issue of the FSB, or any stakeholder, disagreeing with the actuarial valuation basis that the actuary applied.

However, other problems may have arisen, such as if the prescribed basis was either more conservative or more optimistic than the basis previously used, funding problems could have arisen in that even though it may have resulted in the apportionment of surplus, and if the actuary at the subsequent valuation were to revert to the previous (and possibly) more appropriate basis, a huge deficit may be reported.

Furthermore, the previous basis may not have been suitable anymore, so it may well have been inappropriate to insist on the actuary using the previous basis, knowing that it is not appropriate and reasonable to use. In the end, the FSB had to rely on the professionalism of the actuaries concerned and even though the different actuarial valuation bases were interrogated in many instances, no large scale of abuse of the system had been found.

The requirement that best-estimate assumptions were to be used implied that all margins of conservatism had been removed. Pension plans were allowed to set up a contingency reserve to act as a buffer against future adverse experience (solvency reserve) but it was not a requirement to do so. Furthermore, even where a solvency reserve was established, there was no requirement to fully fund it. As a result, a pension plan which was previously in deficit could now appear to be financially sound.

In the UK, pension plans are required to be funded to the level of technical provisions, which is the value of liabilities including a margin for prudence. The expected return of underlying investments is taken into account, so discounting is not done using risk-free rates. This is potentially a more optimistic basis than what is used by the majority of actuaries who advise South African pension plans. They would value pension plan liabilities using a risk-free rate of return, but more conservative than a basis which takes into account underlying rates of asset returns, without any allowance for margins of prudence. It is my opinion that the range of assumptions used by South African actuaries is within reasonable limits and compares reasonably well with those in the UK.

4. Determining the financial soundness of a DB pension plan

4.1 Financial Soundness

A pension plan may be deemed to be financially sound where the value of the assets of the plan exceeds the value of the plan's liabilities plus the balance of any contingency reserve accounts. The immediate question arises as to the basis in terms of which the assets and liabilities are determined, as different bases would produce different results for the same pension plan.

The above can be expressed as a funding level where the numerator represents the assets of the plan and the denominator represents the value of the plan's liabilities plus the balance of the contingency reserve accounts.

A strict interpretation of financial soundness would require the funding level to be greater than or equal to 100%. A more lenient interpretation would allow plans greater flexibility and may be necessary as an actuarial valuation reveals a snapshot in time whereas the pension plan is a going concern.

4.2 Asset valuation

In any actuarial valuation, it is important that the valuations of assets and liabilities are consistent.

The market value of assets is consistent with best-estimate assumptions that are used to value liabilities, representing a market-based valuation. It is objective, easy to understand and generally readily available.

In some instances, such as that of investment in a guaranteed fund, the book value of assets can be considered to be consistent with the liability valuation on an ongoing basis.

Market values are subject to fluctuations in the short term. This creates problems in valuing the liabilities consistently unless the assets and liabilities are matched.

In accounting, the concept of fair value is used, this is the amount for which an asset could be exchanged or a liability settled between knowledgeable, willing parties at arm's length.

For the purposes of the asset valuation, fair value can be considered as the equivalent of market value, as the definition of fair value does not specify the method of calculation of the value.

The biggest challenge of using a market value approach is to ensure consistency with the liability valuation basis.

Irrespective of the method of valuation of the assets, it is critical that its implications are communicated to the client.

4.3 Liability valuation

In any actuarial valuation, the valuation of the assets should be consistent with the valuation of the liabilities. In the case of a discontinuance valuation, assets must be valued at the market value that can be realised when the assets are immediately disinvested. This market value must then be compared to the value of the liabilities valued on a discontinuance valuation basis. In comparison, for an on-going valuation, assets must be valued on a long-term on-going basis of investment and the corresponding liabilities as the discounted value of future cash flows.

For the sake of being consistent in performing an on-going valuation, a market value of assets, as discussed in the previous section, will be appropriate where the valuation of the liabilities is performed at an equivalent market-based rate of discount. This implies that the assumptions used to value the liabilities should have regard to the implicit assumptions underlying the assets.

A suitable discount rate for valuing liabilities consistent with the market value of assets could be determined from current interest rates and current yields. Hence, if market values should fall (i.e. by implication assuming higher market interest rates), the value of liabilities would move in line with that of the assets as the latter would be valued using a higher discount rate.

As a result, the actuary can either calculate expected future investment returns on assets that are based on their market values at the current valuation date, or use a single risk-free discount rate.

By combining the information available on all the investment portfolios of a pension plan, a single discount rate could be determined to discount the liability cash flows. This is typically referred to as a risk-premium approach which has the limitation that this rate may not be appropriate as it does not reflect the riskiness of the assets and liabilities being valued.

Discount rates

The main components of potentially market-consistent discount rates, according to Daykin, et al. [2010: 40], have the following potential additions to the risk-free rate:

- Credit risk;
- Liquidity risk;
- Equity risk premium – additional yield obtainable on a risk-free basis from investing in equities as compared to government bonds, bearing in mind the long-term character of the investment in the absence of any need to realise investments; and
- Diversification premium.

In South Africa, either a risk premium approach or a risk-free approach is typically used. In most cases where the risk premium approach is used, allowance is made only for the equity risk premium and this concept is extended to other asset classes, specifically cash and property.

Risk premium approach

As a starting point for this approach, the risk-free rate of discounting is determined and a risk premium is added to reflect the risk characteristics of the liability cash-flows, as reflected by the associated assets.

Therefore, the risk premium approach should result in a higher discount rate than the risk-free rate and hence a lower value of liabilities. The expected additional investment returns from investing in higher risk assets are taken into account at the time the calculation is performed.

Risk-free approach

Under the risk-free approach, the actuary would choose a proxy for risk-free rates, such as a government bond of appropriate term. At the valuation date, the discount rate assumption would be set as the current yield on the chosen bond.

The risk-free approach should result in a more conservative valuation of the liabilities compared to the risk premium approach and as it leaves very little room for judgment, it may be a desirable measure in assessing financial soundness from a supervisory perspective.

4.4 Margins and / or contingency reserves

A best-estimate actuarial valuation basis removes any margins of prudence. It is therefore prudent to establish contingency reserves in addition to the liability calculated on a best-estimate actuarial basis.

The establishment of a contingency reserve reduces the actuarial surplus in a pension plan. In South Africa as a result of the surplus legislation, it is important from a supervisory perspective that the establishment and magnitude of such reserve be properly motivated and furthermore, that the establishment of a contingency reserve does not result in a pension plan being in deficit. Even where contingency reserve accounts existed prior to a pension plan's surplus apportionment date, there was no guarantee that these accounts automatically continue to exist. For the purpose of apportioning surplus, the contingency reserves had to be justified in terms of their establishment and magnitude. In the post-surplus era, the intention is that contingency reserves established could either be funded from future contributions or future surplus.

For a DB pension plan, it is considered prudent to establish a solvency reserve and fund to this level. The solvency reserve would be calculated as the difference of the value of the liabilities calculated on a best-estimate basis and calculated on a more conservative basis. In a DC pension plan, an investment reserve that facilitates smoothing of investment returns fulfils the equivalent role of a solvency reserve in a DB pension plan. Typically, actuarial modelling techniques may be employed to establish a reasonable level for an investment reserve.

A further example of a commonly used contingency reserve is a data reserve to allow for data errors underlying the valuation. It would be prudent to establish such a reserve where the actuary is not satisfied with the quality of the data provided. The magnitude of a data reserve can be motivated in line with the characteristics of the pension plan and possibly through actuarial modelling techniques as well.

Where pension plans self-insure risk benefits, the creation of a risk reserve is deemed prudent and the calculation of the required balance should follow equivalent principles as those employed to calculate a capital adequacy ratio underlying life insurance contracts.

Processing errors reserves may include provisions for mismatching and for timing differences in the actual investment or disinvestment of moneys from the times when they are deemed to have occurred in the calculation of benefits or the accrual of investment returns, where the magnitude of such a reserve must be motivated with reference to the past experience of the pension plan or to a statistical model which is relevant to the pension plan.

For DB pension plans which are closed to new entrants and where a prospective benefits funding method has been used to value the liabilities, it would be prudent for the actuary to calculate the present value of future service benefits less the present value of future contributions at the contribution rate that would be required to secure the total service benefits for the average new entrant using “best-estimate assumptions” and establish this balance as a contribution reserve to subsidise future contributions.

5. Conclusion

The FSB must require that best-estimate assumptions be used to determine financial soundness of DB pension plans. By implication, these assumptions must be realistic, depend on the nature of the business concerned, and be guided by past experience as modified by knowledge or expectation of future events.

The fair value of assets must be used and by implication, the risk discount rate applied to value the liabilities must be market related. A risk-free discount rate approach is desirable in this regard.

A best-estimate basis (i.e. where there is a 50% chance of being underfunded) in isolation cannot be regarded as being financially sound. An additional layer of solvency is required, either calculated on a more conservative basis than the best-estimate basis, or added as a loading determined as a fixed percentage of the liabilities. This would be consistent with international practice as applied by the UK and the Netherlands.

The actuary must provide for any statutory minimum benefits.

Any change in funding method or assumptions must be motivated.

Contingency reserves may be established to protect a pension plan from future adverse experience or to provide for specific items, such as data errors. Where the establishment of a contingency reserve results in a pension plan being in deficit, a recovery plan must be implemented to restore financial soundness.

Financial soundness, for regulatory purposes, needs to be properly defined. Statutory submissions must be prepared according to the prescribed definition of financial soundness to enable the supervisory authority to objectively assess the solvency of a DB pension plan.

6. References

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