

Asset Liability Management – Case of With-Profit Funds

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Abstract

This paper is intended to briefly discuss the asset liability management of a with profit fund.

Keywords

Asset Liability Management, With Profit funds, Asset Shares, Equity Backing Ratios.

1. An introduction to Asset Liability Management (“ALM”)

- 1.1. The insurance industry is still an evolving industry in various parts of the world including India. As the industry develops, a greater focus is being put on the management of insurance assets. Over recent years, increasing competition in the industry, has led to a variety of insurance products being launched and premium rates or charges being driven down. While greater available choice in products has complicated the liability cash flow projection, lower premiums and charges have effectively increased the value of the guarantees given to policyholders. Other than meeting the requirements of the policyholders, insurers also feel pressure from the stakeholders to make additional profit. This has led the industry to move towards aggressive investment strategies.
- 1.2. Asset Liability Management (“ALM”) is a fundamental financial risk assessment and asset-planning activity. ALM uses mathematical modelling to project future liability cash flows and future asset cash flows under a range of different possible economic scenarios to identify and quantify investment risk and to evaluate and compare alternative investment strategies. ALM considers financial risks from multiple perspectives, for example, by not only testing that the insurer has enough funds to meet its liabilities but also testing that the cash flow is satisfactory so that money is available at the right time.
- 1.3. ALM is more complex than it seems. Most insurance products offer long-term guarantees paying out on death or on maturity, and some others may have a long policy term. Policyholders usually have the ongoing option to surrender their policy or to make it paid up and the liability cashflows are often dependent to some degree on the assets held. These features pose challenges firstly in accurately modelling the expected liability cashflow in a range of economic scenarios and then in finding a portfolio of assets that represents a reasonable match for the liability characteristics.
- 1.4. The main aim of ALM is to derive an investment strategy that takes into account the insurer's attitude to and appetite for taking on investment risk, i.e. the extent to which it is prepared to accept a mismatch between the assets and liabilities in pursuit of its objectives (e.g. increasing shareholder value).
- 1.5. While establishing an ALM model is obviously useful on trialling a range of investment strategies, there are a number of other applications:

- Capital Allocation: An ALM model can be used to determine economic capital requirements at a business unit or product line level and this can then be used to assess risk adjusted profitability and to make decisions as to where to allocate capital.
 - Bonus Policy: An ALM model is useful in checking whether the current bonus levels or smoothing approaches are sustainable.
 - Product Pricing: An ALM model can also be used to explore the impact of writing varying levels of new business within a with-profits fund and to test the adequacy of premium rates/charges.
 - Financial Reporting: Regulators in many countries such as United States, Canada and United Kingdom and accounting standards such as European Embedded Valuation (“EEV”) require complex ALM models be used in the determination of technical provisions and shareholder value.
- 1.6. ALM is relatively easier for non-profit business as compared to with-profit business. For with-profits, the process is harder due to the interaction between the performance of the assets and the amounts paid to policyholders. The split between regular bonuses, which accumulate over the life of the contract depending on the performance of the with-profit funds, and terminal bonus and the amount by which the insurer feels able to change a bonus from year to year (smoothing) will impact the pace at which guarantees build up and hence affect the matching requirements.
- 1.7. For instance in the UK, the mid to late 1990s saw a sustained and dramatic decline in interest rates and was followed by significant falls in share values from 2001 to early 2003. Regular and terminal bonuses were cut, but these cuts occurred relatively slowly as insurers attempted to smooth the impact of lower investment returns and lower reinvestment rates. Consequently low investment returns (achieved and prospectively to be earned on new premiums under regular premium contracts) eroded the capital base of most insurers.
- 1.8. Low interest rates persist in the UK and this has made it difficult for insurers to offer attractive new with-profits business due to the high cost of guarantees and relatively poor perceived value of this product by customers. Traditional with-profits new business volumes have declined dramatically.
- 1.9. In summary, an insurer must understand its future liabilities and choose its assets accordingly. To achieve this it must carry out policy projections, which can be done by either deterministic or stochastic methods. This paper focuses more on the deterministic projections of the liabilities and assets.

2. ALM - Case of with-profit funds

With-Profit funds - An introduction

- 2.1. Participating or “with-profit” policyholders share in the profits of the insurance fund. Contracts often have a minimum guaranteed return, e.g. sum assured or investment return. Any surplus is then typically distributed to policyholders via bonuses or cash dividends. The advantage for a with-profit policyholder lies in payouts which smooth market movements, as opposed to the more volatile payouts from unit linked contracts. With-profit funds have been in most markets for many years and form an integral part of most insurer’s portfolios.

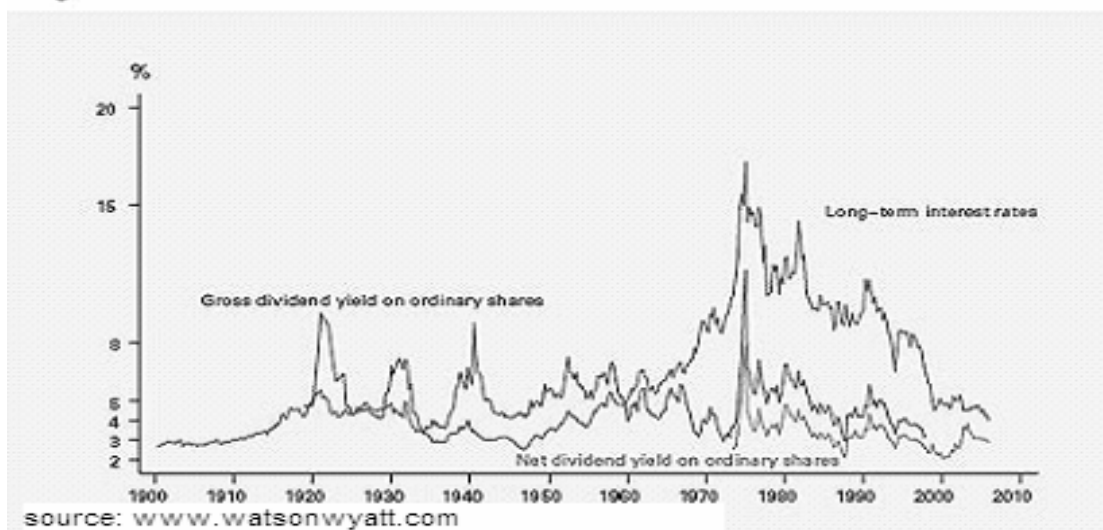
ALM considerations in with-profit funds

2.2. Under a with-profit fund, the insurer needs to satisfy the reasonable expectations of the policyholders and also meet the requirements of the regulator. Most insurers believe that they can expect to generate higher returns for the policyholders (and shareholders) by investing more in equities, real estate or other “risky assets” rather than in high credit quality fixed interest assets. However, in these cases, the regulator requires the insurer to use lower valuation rates, thereby increasing reserves. This results from the generally low running yield on equities, which does not take into account capital appreciation as against a higher redemption yield on fixed interest securities. The regulations are therefore, emphasising more on investing in fixed interest assets.

Gross dividend yield on ordinary shares (1919 to 1997)

Net dividend yield on ordinary shares (1973 to 2005)

Long-term interest rates (1900 to 2005)



- 2.3. The performance of funds with high equity backing ratios is largely dependent on the market performance of the equities. As equities do not have a fixed term and a guaranteed maturity value, insurers with a high equity-backing ratio (“EBR”) are introducing a substantial mismatch between the assets held and the guaranteed liabilities at the time of maturity i.e. if the surplus assets above those required to cover the guaranteed liabilities are insufficient or if equity market values fall far enough then there may not be enough assets available to cover the liabilities. As equity markets are volatile, it is essential to quantify this risk.
- 2.4. An important part of ALM is to understand the interaction between assets and liabilities under different investment scenarios. The investment approach for a with-profit fund is affected by factors such as the bonus policy of the company, the level of free assets, policyholders reasonable expectations and also the past performance of company’s assets amongst a few. The model chosen should link appropriately the bonus rates to the investment returns recognising these factors. The model should also consider appropriately the responsiveness of the statutory liabilities to the yield on assets and asset mix.
- 2.5. Liability cash flows are dynamic in the sense that new cash flows are continuously added through new business and through policyholder surrender behaviour, both of which may be dependent on the investment returns achieved and bonuses declared. Therefore even if one achieves a satisfactory level of ALM risk, this will likely need to be changed periodically.

- 2.6. In a with-profits fund, most of the investment return (about 90%) is distributed amongst the policyholders in the form of bonuses. Potential with-profit policyholders are also influenced more by the recent performance of the fund than by the premium rates. Therefore, it becomes important for an insurer to choose an investment strategy that meets the guaranteed benefit and at the same time, earns sufficient returns to meet the policyholders' reasonable expectations ("PRE"). A sound bonus philosophy differs from company to company. Generally considered principles include:
- Maintaining relatively stable reversionary bonuses but allowing terminal bonuses to be more volatile;
 - Linking reversionary bonuses to a cautious assessment of the prospective returns that can be earned;
 - Targeting a proportion of the final payout to be made in the form of terminal bonus, such as 25% of the maturity payout;
 - Targeting a payouts based on a percentage of asset shares; and
 - Defining the amount by which bonus changes are smoothed from year to year (eg capping changes in reversionary bonus to +/- 0.5% in any one year unless solvency is threatened).
- 2.7. PRE is formed as a result of many factors including policy illustrations at the point of sale and historical bonus practice of the company. In a developing market like India, declared bonus rates are more driven by competitive pressures rather than being strictly based on actuarial calculations.
- 2.8. As mentioned above, policy asset shares are widely used by companies as a tool in setting bonuses and in determining whether the policyholders' expectations are being met. If policy payouts equal asset shares on average then a company may feel that it is meeting its policyholders' reasonable expectations. Some companies use 'base asset share' as a minimum value that should meet PRE. 'Base asset share' is sometimes used to refer to an asset share calculated by excluding any allocations of miscellaneous profits or deductions of capital charges. However, PRE may include an expectation of an allocation of such profits if this has been mentioned in any policy literature.
- 2.9. From a regulator's perspective, it is also important that the insurer meets the regulatory requirements of having sufficient reserves and capital to meet liability payments (including those defined by PRE) as they fall due with an appropriately high probability.

Measures of performance and ALM framework for with-profits

- 2.10. ALM plays an important role in determining the portfolio of assets that the insurer must maintain in order meet its future liabilities. The Statutory Ratio, which is defined as the ratio of the insurer's assets to its statutory liabilities, is sensitive to the portfolio of assets maintained. Increasing the EBR increases the insurers statutory liabilities, thereby reducing the Statutory Ratio and vice versa. Hence an insurer can consider shifting funds to fixed interest assets in case of a low Statutory Ratio, for reasons already discussed.
- 2.11. An insurer can project its assets, liabilities and Statutory Ratio under a range of future economic scenarios to test whether the current investment strategy will permit the insurer to

continue to pay claims as they fall due and continue to demonstrate the desired level of solvency/target Statutory Ratio.

- 2.12. These investment scenarios can be drawn from historical experience (e.g. low interest rate environment in Japan), from hypothetical scenarios or from statistical models.
- 2.13. The ability to maintain solvency or a target minimum Statutory Ratio in the scenario tested is one risk metric or constraint that might be used, but others include not needing to cut bonuses below a specified level, maintaining a minimum payout as a percentage of asset shares or maintaining a minimum ratio to a proxy for competitor payouts.
- 2.14. Performance may be measured in a number of ways including total asset returns (although this can be weak as it ignores the change in liability values), increase in free assets/Statutory Ratio and, as is increasingly common in leading companies, increase in economic shareholder value.
- 2.15. Once an investment strategy has been selected as offering the best expected performance whilst meeting the constraints/risk metric targets consistent with the insurer's risk appetite, the insurer will need to set benchmarks for the performance of the investments based on the proportions allocated to each asset class and the appropriate indices for those asset classes. The insurer will also need to set limits for deviation away from the target asset allocation by the investment managers.
- 2.16. Investment performance against the benchmark portfolio and, where available, against competitors will need to be checked on a regular basis and the whole ALM process will need to be revisited at least annually.

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