

Managing Policy Guarantees

BY SAKET KAWATKAR

ABSTRACT

In this paper, I discuss the topical issue of guarantees in life insurance products; assess what constitutes guarantees, their implication on the overall financial management of life insurance companies. I also discuss the tools available for managing such guarantees.

KEYWORDS

Guarantees, Stochastic, Replicating Portfolio

CONTACT ADDRESS

Sanket Kawatkar; FIA, FASI; Watson Wyatt Insurance Consulting Private Limited, JMD Regent Square 9th Floor, Mehrauli-Gurgaon Road, Gurgaon - 122 001, India. Phone: (91) 124 501 3333 Fax: (91) 124 501 3344 Email: sanket.kawatkar @watsonwyatt.com

1 Introduction

- 1.1 There have been wide ranging discussions on the topic of guarantees in life insurance products in the last few years. Although historically, the policies offered by life insurers contained guarantees, it is only in recent years that the issue of guarantees has attracted greater attention within and outside the actuarial circles. The enhanced tools available to measure the guarantees and some of the high profile debacles of insurance companies, as a result of improper management of the guarantees have contributed to such increased attention being paid to this issue.
- 1.2 In this paper, I discuss what constitutes guarantees and their importance in financial management of life insurance companies.

2 What constitutes a guarantee?

- 2.1 A guarantee is simply any promise made by the insurer. However, the focus of this paper is guarantees in life insurance products, which run the risk of being financially costly for the insurer. Examples of such guarantees may include:
 - Guaranteed annuity terms under a deferred annuity contract;
 - Guaranteed surrender value terms;
 - Guaranteed charges under a unit-linked contract;
 - Provision for a 'No Market-Value-Adjustment' at certain durations, under a unitized with profits contract;

- Implicit guarantees in any policy contract (e.g. relatively high guaranteed yield to policyholder at maturity).
- 2.2 The examples of guarantees listed above are those, where a life insurer is contractually bound to make good its promises, how-so-ever costly they may be. All non-participating products can be argued to belong to this category.
- 2.3 However, some may argue that although not contractual promises, policyholders' reasonable expectations (PREs) with respect to future bonuses on a participating policy; the variable charges in a unit-linked contract etc.; unless managed effectively by the insurer, may have similar financial consequences for an insurer as those of 'guarantees'. However, these are not discussed in this paper.
- 2.4 There are situations, wherein the advertisements issued by insurers talk about the existence of guarantees (e.g. 'guaranteed additions') in their insurance products. Although the generality of the term would suggest that this may constitute a 'guarantee', if the premium rates charged by the insurers are such that the cost of the so called 'guarantee' is already allowed for in the pricing, the resulting financial impact of the 'guarantee' may be no more than a similar product, without such 'guarantee'. This may be explained by an example:

Company A	Company B
20 Year participating endowment No guaranteed additions	20 Year participating endowment Guaranteed addition of 5% of SA every five years, payable upon death after 10 years and at maturity
All other benefits identical to those in B	All other benefits identical to those in A
Male, issue age 25 Premium rate per mille: 61.0	Male, issue age 25 Premium rate per mille: 80.0
Guaranteed yield to policyholder at maturity: -1.9%	Guaranteed yield to policyholder at maturity: -2.8%
Illustrated yield to policyholder at maturity (assuming 3% compound RB and 25% terminal bonus at maturity): 4.5%	Illustrated yield to policyholder at maturity (assuming 3% compound RB and 25% terminal bonus at maturity): 3.8%

- 2.5 In the example above, although company B has 'guaranteed additions' in its endowment plan, both the guaranteed yield to policyholder at maturity (i.e. equating office premiums with the sum assured and guaranteed additions) as well as the illustrated yield to policyholder at maturity (i.e. including the illustrated bonus) are lower than that of company A, which doesn't offer such guarantees.
- 2.6 In such situations, can we say that company B offers costlier guarantees than company A? The answer would be a 'No', as the overall benefits to the policyholders in financial terms (denoted though the low yield to policyholder at maturity) for providing the 'guaranteed additions' in company B are lower than those in company A. In the above example, it is company 'A', which has higher implicit guarantees than the overall (implicit plus explicit) guarantees provided by company B.

3 Are guarantees desirable?

3.1 The answer to this question varies for different stakeholders in this issue and the circumstances. There are four main stakeholders with respect to provision of guarantees in insurance policies. These are:

- Policyholders;
- Regulators;
- Shareholders; and
- Government.

Policyholders

3.2 Policyholders would, naturally, like policy guarantees. This may be mainly due to the natural preference for certainty for the risk-averse policyholders. Some may argue that one of the main reasons for the policyholders buying life insurance policies is to remove the uncertainties – financial or otherwise. Thus, if an insurance company does not want to offer ANY guarantees in its products, it should not be in the insurance business at all.

3.3 If we extend this argument further, it may mean that policyholders *should* expect some guarantees in life insurance policies. However, this argument is often put forward on the assumption that the other terms and conditions of the policy (e.g. premium rates) remain unchanged and insurers are able to meet all the guarantees provided under *all* circumstances.

3.4 Historical events suggest that financial uncertainties faced by insurers may mean that insurers would either be forced to vary the terms and conditions of a policy (e.g. enhance the premium rates to charge for the cost of guarantees) or in extreme circumstances would default on payment of full contractual benefits (including guarantees), due to insolvency. In the past, such insolvencies were largely caused by the approach adopted by insurers in costing the guarantees, which effectively meant an inadequate provision being made at the valuation date for the guarantees, when they bite. In such circumstances, it may be argued that policyholders might have preferred not having guarantees in products in the first place. However, overall, there may still be a section of the policyholders who would prefer guarantees.

Regulators

3.5 Regulators, in theory, may be neutral on the issues of guarantees. Regulators should allow guarantees, if they are convinced that insurers have properly assessed these guarantees and have provided for them (in pricing as well as in reserving) and would have adequate capital / access to capital to meet these guarantees in most (if not all) of the extreme circumstances. This may, of course, result in an excessive capital requirement for the insurers, deterring them from offering a useful feature (i.e. guarantees) in life insurance policies.

3.6 Similarly, regulators may very well accept products without any guarantees, if they are convinced that the non-existence of any guarantees is properly communicated to the policyholders.

3.7 However, historical events and the in-built uncertainty of the business would mean that in practice, regulators would be rather cautious. One of the main objectives of the regulators

would be to ensure that the insurers remain solvent at all times and all the contractual benefits to the policyholders are met. Given this, the regulators may prefer insurers not offering potentially expensive and risky guarantees in their products.

Shareholders

- 3.8** Shareholders' main objective may be to achieve growth by writing profitable stream of business. However, there may be a trade-off between profitability and business growth. High business growth may be achieved by selling relatively cheap products containing high guarantees (and thus easier to sell in a less sophisticated market such as in India), with relatively thin profit margins. On the other hand, the business growth may be constrained if the products are expensive, highly profitable and does not contain guarantees (so may be more difficult to sell in a less sophisticated market as in India).
- 3.9** Shareholders would also have limited capital to support business growth by selling products that contain many guarantees.
- 3.10** As such, the shareholders may need to strike a balance between offering guarantees in insurance products and selling high new business volumes, against not offering any guarantees at all, but foregoing some of the business volumes from the market which prefers guarantees.

Government

- 3.11** The government may have to strike a balance between pressure from political parties, pressure from consumer movement organizations, press, insurance industry etc. In certain circumstances, it may be desirable from the government's point of view to ensure that guarantees are offered in insurance policies. Such circumstances may include:
- A minimum guaranteed retirement pension to a vast number of senior citizens in a relatively low investment return climate;
 - Minimum guarantees on investments / savings of certain vulnerable sections of the population etc.

4 Implications of guarantees on the financial management of insurers

- 4.1** Inclusion of guarantees in insurance products, on its own, is not a major source of risk for the insurance company. However, not understanding the impact of the guarantees provided and not managing the same is a major risk for the overall financial management of insurance companies.
- 4.2** Guarantees in products would bite in several years time – often well after the tenor of the current management team of insurance companies is over. The guarantees provided in the past would have implications on the financials of the company at present time. Hence, it is important to manage such guarantees effectively from day one.
- 4.3** There are several options available to companies in managing guarantees effectively:
- Not to offer any guarantees at all in its products, subject to satisfactorily addressing all the conflicting issues for different stakeholders;
 - If offered, keep the guarantees at a minimal level;

- Price the guarantees appropriately and charge the cost of providing guarantees in the premium rates of traditional contracts or through an explicit charge in unit-linked contracts;
 - Set aside adequate reserves for the guarantees provided;
 - Set aside appropriate level of solvency margin, such that the guarantees can be met in most of the circumstances, including the more extreme ones;
 - Aim to hedge the guarantees with a replicating portfolio of assets.
- 4.4** In India, historically, the market has seen high level of guarantees. Even after liberalization in 2000, some private sector companies offered products with relatively high content of guarantees for an initial period. However, global trends and the declining investment return climate in India forced many companies to move away from such guarantees very quickly.
- 4.5** Given the start-up nature of many insurance companies, the guarantees offered in the initial period were seen by many as business establishment costs and a way to acquire business volumes to achieve economies of scale. Many perceived that the initial capital requirements (Rs100 crores) were high and as such argued that guarantees provided in the initial period were ‘well covered’.
- 4.6** Some also believed that it is for the shareholders / promoters to decide how their capital should be spent whilst establishing businesses in India. So long as they appreciate the costs and risks attached to providing guarantees in the products and understand how much additional capital is consumed in providing high guarantees in the product, it should be perfectly acceptable to offer guarantees in the product.
- 4.7** However, as business volumes increased and more and more capital was required to continue to offer such guarantees, companies decided to move away from offering guarantees in the products. The declining investment return climate also meant that the guarantees offered initially, which were perceived to be inexpensive, could not be offered any more, without additional capital support.
- 4.8** The lack of appropriate long term assets to match the guarantees provided is also one of the important considerations for lowering the exposure to such guarantees by many insurers.
- 4.9** Although one may try to take a conservative view whilst pricing and reserving for the guarantees offered, there are a few obstacles that companies in India often face in such an approach:
- Market and competitive pressures mean that the degree of ‘conservatism’ itself may come under pressure;
 - Start-up nature of almost all insurers means that there is no historical data available, which can be used in deriving assumptions for pricing and reserving for guarantees;
 - Many use a deterministic approach, which does not enable an in-depth assessment of the guarantees and as such runs the risk of the product being under-priced or under-reserved for. It may result in an inadequate provision being made at the valuation date for the guarantees, when they bite.

- 4.10** Relative lack of appropriate long-term assets as well as relatively under-developed derivatives market means that matching of assets and liabilities and hedging of risks pertaining to guarantees may not be feasible.
- 4.11** Relatively low awareness regarding the risks attached to providing guarantees in life insurance products, amongst the press, media, analysts, investors and policyholders at large make it difficult for insurers to move entirely away from guarantees.
- 4.12** The sovereign guarantee provided to the LIC means that there is no level playing field for the insurers. In such a situation, there remains a high risk of insurers competing with the LIC by providing costly guarantees.
- 4.13** If managed appropriately, guarantees may still be acceptable. Needless to say, that this may mean:
- Companies have to charge for the cost of guarantees in the premium rates or through the charges in unit-linked products, making the products more expensive;
 - This may have an impact on the business volumes that can be written by the insurers and the overall profitability of the business;
 - Companies may need to support such guarantees by appropriate level of additional capital in a scenario, where they have already capitalized themselves 3-4 times the perceived high level of initial capital requirement.
 - As and when we move towards a risk based capital regime (RBC), the regulatory capital requirements would be higher for companies providing guarantees in their products. This may be significantly high, if the discount rates used in valuing the guarantees are the risk free rates. This too, will require additional capital support.
- 4.14** However, the risks of not managing the guarantees effectively are great. These include:
- Low overall profitability of business, as the guarantees bite;
 - Worsening of the ‘problem’ if high business volumes are written for policies with high guarantees;
 - Sudden capital calls as and when the guarantees bite;
 - Possible regulatory intervention if the company appears to have solvency issues;
 - Insolvency of the company, with its adverse impact on the industry as a whole.

5 Tools available to manage guarantees in life insurance products

- 5.1** At times, companies argue that they offer guarantees which are ‘low’ and are ‘unlikely to bite’. Such views are formed, mainly as a result of taking a deterministic view of the likely worst case scenarios.
- 5.2** In year 2000, when many insurers entered the market, an investment return guarantee of 5% appeared sufficiently ‘low’ and ‘acceptable’. However, in just over four years, an investment return guarantee of 5% would run a high risk of resulting in a loss on the portfolio with such

guarantees. It may be worthwhile reminding ourselves of the guaranteed annuity rates in the UK in 1980s, which too were thought to be low enough and unlikely to bite at that time.

- 5.3 Similarly, the deterministic thinking of companies may lead to believing that in the present environment, offering a guarantee of 2% may be 'low' and is 'unlikely to bite', as the investment return climate has already depressed 'enough' and the returns are unlikely to fall further. However, we are all aware of the 'zero interest' environment that prevailed in Japan and there may be a risk of a similar situation arising in India in future.
- 5.4 Thus, it may not be possible to think about all the scenarios / situations, which are likely to emerge in future and allow for them deterministically in pricing and reserving for guarantees.
- 5.5 Insurers in India have, so far, used a deterministic approach in costing and reserving for guarantees. In pricing or reserving, the actuary would use a 'conservative' assumption (based on his/her judgement) for parameters that would result in a financial loss as a result of the guarantees biting. The degree of conservatism adopted would be a judgement call. The relatively stable external environment and the lack of computing power meant that perhaps such techniques might have been suitable until now.
- 5.6 However, the external environment has become much more volatile. Also, the enhanced computing power has enabled usage of stochastic techniques, which are useful in assessment of guarantees in life insurance products. The stochastic approach would generate random scenarios of investment returns and the future liabilities including the cost of guarantees can be computed under all such scenarios. The likely profitability or capital requirements under the products offering guarantees can, thus, be computed under all such scenarios and an appropriate level of allowance can be made in premium rates or an appropriate level of reserves can be kept aside, which would meet the profitability or solvency requirements etc. at the quantile basis (e.g. 95th or 99th percentile).
- 5.7 The other alternative may also be to hedge the guarantees with a replicating portfolio of assets that replicate the value of the guarantees under all circumstances. The cost of the guarantee is then simply the value of the replicating portfolio.
- 5.8 This may ensure that even under the extreme circumstances, the products containing guarantees would meet the target profitability and or reserving / solvency requirements.
- 5.9 Although a stochastic approach or a replicating portfolio approach in management of guarantees is desirable, they have certain limitations:
 - The stochastic approach requires an asset model that would generate the desired number of random scenarios. In India, there is a lack of historical credible data on asset returns, inflation, yield curves etc., which can be used to calibrate an asset model suitable for this market.
 - The relatively under-developed investment markets means that any asset model calibrated based on historical data may run the risk of not appropriately reflecting the likely future scenario in India. The imperfect markets, regular financial scams make it more difficult to calibrate an asset model suitable for India.

- Even after a suitable asset model is calibrated, interpreting the results from the model requires extreme care. Not being able to understand the results may mean that it would have an impact on the effective management of guarantees.
- The other statistics (e.g. consumer behaviour) is also relatively scarce. Until insurers develop their own statistics, such parameters may also have to be provisional. It may be argued that a stochastic approach may also be required for such parameters (e.g. policy withdrawals).
- There is a lack of appropriate derivative instruments in India, to hedge the guarantees.

5.10 In spite of such limitations, a stochastic approach is desirable, for companies to manage the policy guarantees. The Actuarial Society of India (ASI) has recently issued a draft Guidance Note, GN22 - Reserving for Investment Guarantees, which is a step in the right direction.

6 Conclusion

6.1 Inclusion of guarantees in insurance products, on its own, is not a major source of risk for the insurance company. However, not understanding the impact of the guarantees provided and not managing the same is a major risk for the overall financial management of insurance companies.

6.2 Companies should use stochastic techniques for managing the policy guarantees effectively.

About the author

Sanket Kawatkar

Sanket graduated from Sydenham College, Mumbai University, in 1995 and qualified as the Fellow of the Institute of Actuaries in 2000. Later, he also became a Fellow of the Actuarial Society of India.

Sanket has worked with AIG for several years, in Singapore and in India. After joining Watson Wyatt in 2002, he has been involved in supporting its clients in India. Throughout his career, he has been involved in several assignments such as products development and pricing, valuations and statutory reporting, market entry and business planning, research and experience analysis. Sanket is a member of the Life Insurance Board of the ASI and has been involved in several other professional activities.

“All implicit or explicit views expressed in this paper are mine and not necessarily those of my employer, Watson Wyatt.”