Traditional Vs Market Consistent Pricing

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Agenda

- Traditional Pricing of Life Insurance Products
- Market Consistent Product Pricing
- Comaprison of Results
- Reasons for difference in VNB & MC VNB

Traditional Product Pricing - VNB

Product	Term Assurance Plan	Single Premium Bond	Critical Illness Rider	Unit Linked Endowment Plan
Entry Age	35	45	35	35
Sum Assured	25,00,000	5,00,000	5,00,000	3,00,000
Annual Premium/ SP	6,850	1,00,000	2,050	20,000
Policy Term	25	10	25	25
Premium Payment Term	25	SP	25	15
Premium Frequency	Annual	-	Annual	Annual
VNB as a % of APE (Traditional Method)	**20.8%**	**22.0%**	**19.3%**	**15.0%**

Market Consistent Pricing

Key Objectives

- Product risks are measured and priced in comprehensive and accurate way i.e. all business risks are considered at the time of product pricing
- Product Risks are measured consistently and objectively as far as possible
- Remove personal judgement from assumptions
- Use market observable values or well defined methodolgies to quantify risks
- New business procured provides returns commensurate to the risks undertaken in the business
- Efficient product strategy to deploy capital to new business

Market Consitent Product Pricing Methodology

- Product profitabilty measure is “Market consistent value of new business” (MC VNB)
- MC VNB = - MVL_0 (Market value of net liabilities at policy issue)
- What is MVL?

> The liability under a life insurance contract is said to have market (observable) value if it is transferable to a willing, rational, well diversified counterparty in an arms length Transaction under normal business conditions.

- Key issue is whether there is a deep and liquid market place to get the reliable market value of life insurance business liabilities?
- So, there are practical limitations to get MVL
- Alternative modelling techniques, called Economic Capital Modelling (ECM), are used to determine the MVL where market value is not available

Determination of MVL

- MVL = Value of Hedgeable Risks
  + Value of non hedgeable risks
  + Value of Impact of Tax Timing
- Hedgeable risks (HR) are those where the emerging cashflows can be replicated by financial instruments in the market
- Examples of hedgeable risks are
  - Savings element in the policy cashflows
  - Best estimate cashflows pertaining to insurance risks (death claims, lapses, surrenders etc.)
  - Cash flows pertaining to financial options and guarantees
- Non hedgeable Risks (NHR) are those where the laibilities can not be matched/ replicated by traded financial instruments
- Examples of NHR are
  - Long term liabilities, say 30+ years (difficult to replicate by tradeable assets!)
  - Risk of insurance risks unfold worse than best estimate values e.g. Higher mortality, higher lapses etc.

Determination of MVL – contd..

Value due to Impact of Tax Timing

- Tax timing difference arises because Value of liabilities for tax purpose is different from Transfer price of liabilities (TPL)
- Example: Statutory Liability = 110; TPL = 100
  - Transfer tax on liability = 33.99% * (110 – 100) = 3.4
- TTL of 3.4 is payable in future years, hence it has positive value to the entity as the tax payment is deferred. This is called VLTD, Value of Tax Timing Difference.

The impact of tax timing is TTL less VLTD

Determination of MC VNB

Value of hedgeable Risks:

- Traditional products
  - PV of benefits, expenses and commission less PV of premiums, using best estimate assumptions;
  - Discount rate to be taken as risk free rate
- Unit Linked Products
  - PV of non-unit benefits, expenses and commission less PV of charges, based on best estimate assumptions
  - Discount rate to be taken as risk free rate

Product	Term Assurance Plan	Single Premium Bond	Critical Illness Rider	Unit Linked Product
Value of Hedgeable Risks	-6,042	8,047	-1,500	-10,133
Value of HR as % of Annual Premium	-88.2%	8.0%	-73.2%	-50.7%

Value of Non Hedgeable Risks

- Calculate the Economic Required Capital (ERC) by applyimg the worst case shocks

Mortality/ Morbidity Paramter Shock	Ecomomic loss due to increase in mortality by +30%
Mortality/ Morbidity Contagion Risk	Ecomomic loss due to mortality/ morbidity amount increases by Rs.2 per thousand sum at risk in next 12 months
Lapse Paramter Risk	Ecomomic loss due to lapses higher/ lower by 50% of best estimate
Lapse Contagion Risk	Ecomomic loss due to lapse contagion (lapses increase in next 12 months by 10% of the inforce business)
Operational Risks	Ecomomic loss due to operational risks
Investment Mismatch Risk	Ecomomic loss due to mismatch of assets and liabilities by duration

- The value of non hedgeabkle risks is the cost of ERC, also called the Market Value Margin (MVM)
- Since the above risks are independent and are unlikely to occur at the same time, so the ERC is reduced for the diversification benefits.

Market Value Margin

- The MVM i.e. Cost of ERC at policy issue for the 4 model points are as under:

Item	Term Assurance Plan	Single Premium Bond	Critical Illness Rider	Unit Linked Product
MVM for Mortality/ Morbidity Parameter Risk	1,387	225	559	41
MVM for Mortality/ Morbidity Contagion Risk	4,625	439	921	431
MVM for Lapse Parameter Risk	413	371	220	354
MVM for Lapse Contagion Risk	93	2,611	8	966
MVM for Investment Mismatch Risk	11	822	1	109
MVM for Operational Risks	72	244	27	483
Total MVM	**6,602**	**4,711**	**1,737**	**2,384**

MC VNB Calculation

Item	Term Assurance Plan	Single Premium Bond	Critical Illness Rider	Unit Linked Product
A. Hedgeable Risks				
HLV	-6,042	8,047	-1,500	-10,133
B. Non Hedgeable Risks				
MVM	6,602	4,711	1,737	2,384
C. Tax Consequences				
Total impact of tax consequences	162	-3,048	-42	-35
Market value of Liability (MVL)	721	9,710	194	-7,784
MC VNB (in Rs.)	-721	-9,710	-194	7,784
MC VNB as % of APE	**-10.5%**	**-97.1%**	**-9.5%**	**38.9%**
Traditional VNB as % of APE	20.8%	22.0%	19.3%	15.0%
Difference in VNB as % of APE	-31.3%	-119.1%	-28.8%	23.9%

Why MC VNB different from Traditional VNB?

Key reasons for difference between MC VNB & Traditional VNB

Traditional pricing	ECM pricing
All risks combined reflect through margin in RDR	Each risk element is evaluated separately and aggregated
Investment Retun Assumptions are based on management's view on the expected returns on the assets to be held. This may lead to credit capitalization at point of sale. Management may have view on market anomalies, market inefficiencies which may affect the value of liabilities.	There is no investment return assumption; The market risk free rate prevailing at the time of valuation is taken. This ensures that credit risk is not capitalized.

Summary

- The product risks should be evaluated and priced accurately so as to get the realistic picture of risk adjusted returns
- Product profitability may change significantly with change in economic conditions
- Product pricing needs to be monitored more frequently compared to traditional pricing

Thank you