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Product Development and Pricing: Challenges of design of Insured Pension Products

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This brief note combines two topics suggested in 6th GCA request for papers. Actuaries/ students/ practitioners would have studied theories on the subject in varying details in actuarial and non-actuarial literatures. I will highlight practical issues, problems & pitfalls drawing from my experience as a general manager as well as an actuary while working in LICI in India & the UK and now in the UK subsidiary of a Canadian Multinational. Needless to say, any opinion expressed is my own view only.

First step: Identification of Need: for Life Insurance / Pension Products in a commercial environment

The starting point of any product development is: identification of a need. An existing product of a competitor in the line of business, a substitute product from another line of business is obvious examples of needs identified by others. A new Life office in India will sell products similar to ones sold by LICI for many years; for example traditional endowment policy. They would introduce products a parent company sells in another market, for example Single Premium Bonds with or without Life cover. Such products were sold by Mutual Funds in India for many years, but LICI did not introduce / effectively promote/ encourage its sales force to sell single premium products till a few years back.

If you are a pioneer / visionary, you may come out with something new that breaks the mould once in many years. The most important example in recent history from our industry: Unit linked Products introduced after 2nd World War; the theory was known in early fifties, the practice started in early sixties and the produce 'flew' only in seventies. Another example: Unitised With-Profit; commercially introduced in mid-eighties.

Critical Illness Benefits and Long Term Care products are also new products emerging out of needs identified recently. LTC plans in particular are part of retirement planning and should be termed as a pension product. With the break up of joint family and no state provision, old-age care is a pressing need for modern Indian society. Unfortunately supply is lagging behind the demand and many simply can't afford commercially provide care. The need for saving by the working population for such care is evident.

Often developments in other areas like technological improvements make a theoretical concept implementable in real life in the form of a new product. Easy availability of very

fast computers with huge memory and rapid progress made in telecommunications in recent years opened up new possibilities. A few more examples of such drivers of change: regulatory changes permitting introduction of product that was previously forbidden, economic/social/ consumer behavior changes, developments of new money market instruments like index-linked bonds/ derivatives, changes in Government Provision of benefits. Sometime, direct pressure from the public and/or government can lead to providers introducing new products; for example annuities with return of capital on death (Jeevan Akshay/ Jeevan Dhara introduced by LICI in mid-eighties).

Not all changes are beneficial to the provider/ consumer, adverse changes in taxation in early nineties killed off JA/JD policies of LICI. Though the cut was restored to a small extent later on, the market failed to regain its momentum. Pension products in particular are very sensitive to external forces like tax concessions. This also demonstrates the effect the fiscal regime has on Pension savings. If the govt. wants people to save long term in illiquid Pension savings vehicle, it should be prepared to give unique tax break for such savings.

Is there any need for Insured Pension products in India?

Taking literally, an Insured Pension means a pension/ benefit guaranteed by the Insurance Company for a price paid/determined at the outset. An individual annuity (immediate or deferred) may have investment return guarantees in deferment and mortality/ interest/ expenses guarantees in payment. Pension funds are often required to buy immediate annuities on retirement and will seek an insurer to provide the annuity at a fixed price paid upfront. Many public sector finance institutions provide index-linked pension to employees and will be glad to pass on (i.e. insure) all risks to a Pension Provider (a Life Office) willing to take the risk at a 'reasonable' price. Many small firms will like to have fully 'insured' Gratuity Schemes, due sums payable on death/ retirement/ resignation / redundancy/ company going out of business. Who will provide such covers? A need clearly exists, but one cannot ignore the negative realities that may not permit a commercial / private provider to introduce products that satisfy such needs.

The existence of Compulsory Provident Funds (Employers as well as Public PF) clearly reduces the need (and affordability) of individual or personal pension products. For various reasons a vast number of self employed people are not covered by any pension/ PF/ Gratuity arrangements. But they too may have other forms of savings / assets to provide for retirement income. Though the share of Financial (paper) assets as opposed to traditional fixed (real) assets like house, land or gold has gone up dramatically in last two decades in India, and the joint family structure is rapidly disappearing , private provision for retirement by way of a regular income (annuity / pension) is still not a big phenomenon in India. But things will change as various reforms of savings market and tax regime, broadening & deepening of the stock market instruments, opening of other Investment opportunities including overseas investments start working.

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Can an insurer provide products to meet these needs?

Let us start with Insured Pension Schemes for occupational pension benefits provided by employers. The administration of Defined Contribution Scheme or a Deposit Administration / Managed Fund arrangement for a Defined Benefit Scheme is relatively easy to provide by a private Insurer. But any guaranteed return on fund asked by the client (here the employer, may be driven by the employees / trade unions) will be more difficult to provide. A guaranteed annuity option on retirement date is a similar issue.

Till the other day in India, the demand for a non-trivial 'minimum' guarantee was very strong. Any sensible business/ employer would like to off load any risk not related to its core business, provided the cost is not too high from his perspective. The individuals as well as the employers / institutions want high returns as well. UTI thrived by mass-selling of Unit Trust Schemes with high levels of guarantees with disastrous consequences for it's solvency later on. UTI kept on selling such products even when the new money investments were generating returns much lower than the guarantee provided. Unfortunately LICI too in recent past sold single premium bonds with high guarantees not matched by investment returns of underlying assets. The rapid decline in interest rate needed faster response. Such commercial decisions have costs and normally the shareholder bear the resultant loss. In case of Govt. owned / guaranteed Institutions it is ultimately the tax payers of the country that pay the bill for such commercial recklessness. For LIC, with profit policyholders may get the hit, as the govt. (shareholder) is unlikely to bear the cost.

Life Insurers through out the world are increasingly unwilling to bear investment / interest risks. Even 'low' level guarantees over a long term can cause serious distress to the provider (example: Equitable Life). Yesterday's 'low' became unsustainably 'high' today. The Risk-Based Capital (a Regulatory requirement in much country) approach now will require extra capital to back the guarantee. In the days of state monopoly in India, the concept of capital backing a business or a guarantee did not figure in the decision making process of UTI or LICI. That no longer is the position.

Globally, a parallel process of decline of risk-sharing via With-profit Funds is also taking place for various reasons. The risk-sharing business model based on 'mutuality' is in nears-terminal decline. The enthusiasm of policyholders for demutualization windfalls in 1990s and Equitable debacle (sharing the good time and not the bad time) merely confirms the trend.

The Life Insurance Industry in many western countries has unfortunately reached a stage where they do not wish to bear even mortality or expenses risks for any length of time. The 'attraction' of Unit-linked products to the provider companies is therefore obvious. Without any guarantee the risks will reside with the employer or more likely with the individual employees. And the role of the Insurance Company reduces to that of a Fund Manager. A legitimate question arises: why do the country need a Life Insurance Industry at all? What is unique about the products sold by Life offices if they are not even prepared to cover mortality/ longevity risks? The definition of an Insurance contract adopted by International Accounting Standards focuses on the problem. The contract and not the provider entity any longer defines Insurance.

Some risks are not fully commercially insurable.

Is inflation an insurable risk? Insolvency? Redundancy?

For that matter, War Risk? In western countries Airlines and others are struggling to get unlimited cover against Terrorist attack risk.

Only the Government can be the Insurer of last resort. Govt. can issue index-linked bonds to cover inflation risk. It can offer safety net for workers loosing jobs due to redundancy or employer going bust. Will Govt. of India provide these in near future, to assist introduction of new products by the private sector Life offices? Industry wide cover is a halfway solution, but it usually penalizes the good businesses who pick up the bills for failure of bad ones.

Often an incomplete /partial cover is better than no cover. For example, actuaries can cost an annuity/pension product that is index-linked subject to a maximum increase of x% p.a. The private sector (including the reinsurers) can cover such risks with a cap, leaving the govt. to pick up the top slice of unlimited cover. Whether govt. will oblige is another matter.

Pricing related Issues:

Annutisation

On retirement usually the amount saved in a pension vehicle is converted into annuity. The income is usually taxed, to claw back part of the tax relief allowed on the savings. The basic logic for annutisation is to protect the pensioner from himself, it is assumed that he may exhaust the savings before death if the money is paid in lump sum. There are evidences to support this assumption from the experience of people who retired with PF and Gratuity in India. In UK, the govt. is required to provide a minimum income to every pensioner; the one who spends the pension fund will fall back to state to provide the minimum income. The state has therefore a stake in compulsory annuitisation.

The starting point for pricing an annuity is again market research, to find out what others are charging for similar products. Often own experience in some form is available, but it may not be credible. Look for any industry wide data. Reinsurer can help in providing relevant information / data. In general, the Reinsurer can help immensely in product development and pricing.

Mortality risk

The main risk with immediate annuity contract is a longevity risk; associated risk is anti-selection. In addition there will be investment and expenses risks. And capital requirement is another factor.

For pension products in India, a major hurdle is absence of any reliable mortality experience of annuitants. LIC experience published a few years back can be a starting point. Mortality data by subdivision like OPS Pensioner/ Individual Annuitants is not available. Separate experience of female pensioner will be scarce. In India, geographical variation of mortality is expected, but LICI did not make any distinction. There will be political problem if one attempts to introduce different rates by geography for life insurance and pension products. May be, a regional insurance company will one day take the plunge.

Mortality improvements in future years are to be anticipated in pricing immediate annuity. The mortality at higher age is expected to improve significantly in India, as it happened & is still happening in more developed countries. In last century the life span of a European male increased by about 25 years and the increase is continuing. It is no longer inconceivable that many more people will live up to age 100 than was the case 10 years back.

It will be of interest that not many insurer in UK market offer immediate annuity. Some have stopped selling such products.

Annuity Trap

Ever increasing mortality coupled with reducing interest rates & collapse of stock market has created an 'annuity crises' in UK and other western markets. An individual retiring in early 2003 would get less than half the amount as income compared to another who retired in 1998 after making same monthly contributions for say 10 years. Once an annuity is purchased the client gets locked for the rest of life to whatever monthly annuity it fetched at the date of purchase. He/she does not get any benefit if the conditions improve later on. Finally the fund is 'lost' on early death of the annuitant. The UK government, and I am sure others too, gets bashed by the consumer groups / media for allowing the 'annuity trap' to continue. Compulsory purchase of annuity at 'normal retirement age' of 60/65 is already a thing of past. Income drawdown from the fund instead of annuitisation is permitted upto age 75, when the balance of fund must be converted into an annuity. The latest proposal from Govt is to allow income draw down in some form even after age 75. Companies have come out with products like a temporary annuity for say 5 years with a part of the fund (33% for example) and leaving the rest to 'grow' for future annuitisation. The tax is an additional complication.

In some countries compulsory annuitisation is not necessary. In that case money saved for 'pension' merely becomes another savings, possibly with tax benefits not available to other form of savings. For OPS, A DC Pension funded for cash is nothing but Provident Fund as we know in India.

The debate on annuity trap is not going to disappear. For a country like India without any state provision of old age pension, govt. does not pick up the cost of maintenance of the pensioner if he spends the lump sum paid on retirement. Hence there is even less argument in favour of the state curbing individual's right to have retirement income in

more flexible form. With top tax rate down from high 60-70% a decade back to 30% now, the worth of tax relief is also eroded. Other, more flexible, savings too have tax relief available.

Matching assets:

Immediate annuities need matching assets, by term as well as by coupon. Till recently, Govt. of India was not issuing long term gilts; even now the quantity and diversity of long tern fixed interest stocks in India is relatively small, with not much secondary market. A term mismatch will expose the insurer to reinvestment risks i.e. as the liability is of longer term, the asset will mature earlier and will be exposed to a risk of re-invested at lower yield. The coupon mis-match will produce inadequate income to pay monthly annuity. Both mismatch will increase the cost of annuity and will need extra capital. Allowing Pension Funds to invest overseas, at least in gilt markets of developed western countries will be a way forward. With India's foreign exchange reserve approaching $93bn, the need for restriction on the ground of outflow of savings is less compelling. Overseas Investment will raise the question of security of investment, and the risk of adverse currency & interest rate movements. Protections in form of hedging / swaptions will be available in the international market. Asset default risk for non-govt. stocks will also add to the cost, though increased yield should compensate the risk.

For index-linked liability or liability linked with final salary, there is really no matching asset other than index-linked bonds issued by the govt. The equity market is too volatile and the market in India is not sufficiently deep and wide compared to the demands.

An expenses assumption of course will also be necessary for pricing. Company's own cost base will be the critical factor for expenses.

A profit test will be done, on cash flow projection, to test the profitability of the product on different sets of assumptions. The technical process of pricing is not discussed here. The shareholder would have a target rate of return to achieve for the capital.

Immediate annuity is very price-competitive. The rates change frequently, with changing gilt yields. The scope of leaving large margins in pricing bases due to inadequacy of data / uncertainties may not be acceptable in the market, the product may become too expensive. However, if competition permits, a with-profit annuity can be a partial risk sharing vehicle. Any initial overcharge can be refunded to the annuitant by periodic bonus. It may particularly be attractive for an annuity with return of capital on death (JA/JD products of LICI)

Impaired Life / Underwritten Annuities

There is no reason why such annuities cannot be introduced in India. Smoker/ Non-smoker apart, substandard lives can be offered better annuity rates. The usual underwriting problems faced in India will have to be addressed to make the product profitable.

It will be interesting to watch the effects of HIV/AID in Indian Life Insurance and Pension industry. Can impaired life annuity be sold to HIV positive persons of younger age? That may serve a social need of future.

Capital Requirement

The capital requirement depends on the contract design, the initial expenses including commission, the premium paying frequency and importantly, the relationship between the pricing bases and the Regulatory reserving bases. The Regulators may make a product very costly with onerous reserving requirement. Deferred Annuities with guarantees require much higher solvency margin and lock more capital, compared to say unit-linked products. The provider of Capital must get a return commensurate to the risk undertaken, otherwise capital will go elsewhere.

Market conduct issues

Freedom with publicity Vs Product Regulation:

Fifteen years back UK was a free market, operating on the principle of Freedom with Publicity. The regime was supposed to encourage product innovation and help entrepreneurship. Germany on the other hand was highly regulated and products needed approval before marketing. The product range was very narrow and the bases were well prescribed by the regulators.

Financial Service Act effective from April 1988 started a process of reversal which has now made UK one of the most regulated markets in the western world for Life assurance and Pension Industry. With the Treasury designing ' stakeholder pension' a few years back and now developing 'Sandler's suit of Products' for other forms of savings with price caps, much vaunted Freedom with Publicity has disappeared. Due to various market conduct regulations, Life Companies are now scared of selling through own agency force. Mis-selling comes soon after selling!

Product development in such environment can be seriously damaging to the health of the company!

The situation in India is still different, but consumer courts / regulators with their activism may soon change the picture. A few major points to remember while designing new products:

- What is the target market? Is the product suitable for the target market? Is there a process of analyzing the customer's individual circumstances & needs, current & future disposable income, savings priorities, attitude to risks and risk profile etc.? Is it the best advice to recommend purchase of the product? Is the term of the policy too long for his circumstances? The aim is to prevent future mis-selling complaints. The seller should be able to demonstrate that all alternatives (including say buying gold or not saving at all instead) were compared and

discussed before the current product was recommended as the best advice. Not easy!

- Is the product sufficiently transparent? Can it be explained easily in plain language to the target customer?
- Product literature should be sufficiently clear about the promises made, so that policyholder's reasonable expectation (PRE) can be met. Mis-leading promises should not be made and small prints should be avoided
- Is the product suitable for the distribution channel? Are the salespersons sufficiently knowledgeable and trained for the product? The price may vary by distribution channel, something that has not happened in India as yet.

Concluding words:

The Life and Pension Industry universally depends on the salesmen and the shareholders. They don't work or provide capital for free. They must get a reasonable remuneration/return. India is just emerging from a long period of License Control Inspector Raj. We should not replace that with Regulation Mad Regulation Raj or Compensation Culture Raj. Otherwise there will be no private provider left in the market.

About the Author

A gold-medal winning Direct Recruit officer, Dilip worked at LICI in India and UK for 30 years. His experience covers most operational areas of LICI. For family reasons, he left LICI when he was the youngest Zonal manager of his generation and joined Canada Life Limited in UK in 1999. He is now the Actuarial Controller of CLL.

Dilip got an award in 1984 for his performance in the Actuarial Exams.

He presented papers on actuarial subjects on different occasions. He attended International Congress of Actuaries in 1988, 95 and 98. He was a member of EC of ASI and is now the Ambassador of ASI for EU Countries. He has traveled widely and is well known in the profession in India and the UK.