

***Challenge S to Actuarial Profession and Traditional Endowments & DB Pensions – An Overview***

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**KEY WORDS**

Traditional Endowments, DB Pensions, DC Pensions, Reversionary Bonus, Unit Linked, Estate, Classical Economics, Global Capital Credit, Domestic Capital Credit, Social Good, Public Interest

**ABSTRACT**

This paper examines the challenges to the actuarial profession in the background of the introduction and popularization of Unit Linked products and Defined Contribution Pension Schemes as against the traditional With-profit Endowments and Defined Benefit Pension Schemes. The traditional role of the actuaries continues to have relevance and can only be the basis of the profession's identity. The capability of the actuarial profession to promote social good and public interest by the principle of collectivism is high lighted. The individualistic trends and the transfer back of risks to the clients in various guises by operating the Linked and DC contracts are contrasted. In particular the weakness of the Linked and DC products to provide the guarantees sought in insurance is set against the tradition of maintainability of such guarantees by various actuarial techniques in combination with the reversionary system of profit sharing and preservation of an 'estate'. The volatility of interest rates is to be traced in the new economics and the role of the actuaries to alert the macro economies against the depressive trends set by the free flow of global capital is touched upon. The relevance of domestic savings to provide for institutional investments and the distortion to interest rate regime caused by foreign capital in competition with local capital also cited as a worrisome problem for addressing insurance guarantees. The paper concludes on a note that the actuarial philosophy of promoting guarantees as against promoting volatile gains through market exposure can only ensure durable and lasting security and protection for the insuring public.

**1. Introduction**

The purpose of this paper is to bring into focus the current challenges to the actuarial profession and juxtapose the same against the traditional With Profit Endowments and DB Pensions. Though the subject is discussed in a general way the points are more relevant in the Indian context. In Section 2, a preliminary look into the challenges against a historical perspective is set, followed by a quick review in Section 3 of the nature and content of the Unit Linked Products and DC Pensions. In Section 4 the discussion moves on to the economics through which the challenges came in. In Section 5 the volatility of markets and their impact on products are touched upon and then in Section 6 the challenges to the actuarial skill set are highlighted. In Section 7 some points as to where the solutions to these challenges lie are brought forth, followed by a conclusion (Section 8) in which the present orientation of the actuarial profession is summarized.

## **2. Professional Challenges, a Preliminary Look**

2.1 The esteem and even envy of membership in the actuarial profession though still lingers there is no doubt that there exists serious challenges. The challenges came up not all on a sudden. Probably it started somewhere in the 1980s or thereabouts. Those were days when the market interest rates regime were high and the attractiveness of equities and properties still higher. The smooth rather continuous calm days had given ground to the economic springs and the markets were flourishing. It is in this scenario that we have to source the beginnings of the challenge. The traditional With Profits were being offered by insurers in a big way to satisfy the need for protection and maturity values with high returns. Expectations were allowed to soar. Naturally, the maturity values along with the gradually rising reversionary bonuses used to be accepted smilingly by clients. Similarly on the pension front, the Defined Benefit (DB) was doing a nice job. Beneficiaries were happy that the DB instrument provided a right package of survival cover in the shape of a lump sum, early ill-health exit option, a degree of inflation proofing of the pension annuities plus a contingent pension flow to the spouse of the pensioner since his death.

2.2 The gradually rising reversionary system of bonus released by a stable net premium valuation method had to be recast. The traditional endowments no longer returned equitably the benefits due to the policyholders through such a release of surpluses and instrumentality of distribution. A large source of surplus surfaced from stable and high capital appreciation of equities or through sudden and growing jumps in the rate of interest of fixed interest securities. Unless these sources of surpluses are released, inequity will ensue between generations of policyholders and the so-called 'estate' of the life office will grow too much leading to unsolvable problems of unduly accumulated surpluses capitalized in the 'estate'. The challenges were rather effectively met by introducing what is called Terminal Bonuses and Final Additional Bonuses. Such departures from smooth continuous release of reversionary bonuses are bound to raise questions as to the incongruity of the mechanism. No longer could the alternative contribution method effectively be shepherded away by the convincing and sound argument of smooth stable release of surplus combined with the financial soundness by the maintenance of an estate. In a climate where other market instruments of savings were producing remarkably higher yields and liquidity options, the unit-linked came on the scene with the powerful argument that it fares better, releases what is due then and there appropriately and at the same time tells the clients what was being done with the monies trusted in the coffers of insurance offices.

2.3 Although way back actuaries like Lidstone had demonstrated that the simple reversionary bonus can be fashioned to exactly produce the same benefit as the contribution method, the arguments had to be taken a step further to include the terminal or final bonus in the return package to assure parity of treatment against similar unit linked products. But the question of transparency argument behind the linked products could not be met effectively. Clients could visibly see the performances in the linked products but the reversionary form now confounded by the second component certainly was more mystifying. Only actuaries know why the totality of the reversionary distribution is just and fair. If it still persists and continues today it is only because of the implicit faith in the actuarial profession who lifted life insurance from a mere speculation and developed it into a sound business over the years that served eminently the public interest.

2.4 A similar impact was also felt in pensions. The great majority of the pension arrangements were of the DB type. The DC type by comparison also existed in a small way. If the impact on the traditional assurances was on the distribution of surpluses, it was on the investment side for the pensions. Pension is a provision for old age. The prevailing belief was that the wage/salary earners' money meant for that should not find its way overmuch to stock markets. Fixed interests may be

attractive enough and carry superior performance guarantees as to capital and income. Since the providers of pension are employers, actuaries who handled pensions were expected to settle contribution rates at as low a level as is practicable without diluting the actuarial prudence and justice. But equities are even more attractive. Either the cost of pension can be substantially cut or pension benefit increased by roping in a larger chunk of equities and properties as investment support for the pensions. There was the attraction for traditional DBs. But both for pensioners and employers DC type appeared to be much more attractive, being less costly and more flexible. Where there is greater labour mobility, DC has the attraction of greater and easier portability from one employer to another. Transfer values are also more clearly understood. Thus began the challenge against the Traditional Insurance and DB pensions from Unit Linked and DC pensions. The challenge was just not on the products, but on the profession.

### **3. A quick review of Unit Linked and DC**

- 3.1 Unit Linked was born out of the pressure for unbundling the traditional With Profits Endowments. Under Unit Linked, greater transparency was demonstrable by express expenses provisions in a realistic manner, showing clearly the risk cost and then the balance money in the premium going in for investment in equities and properties. It must have been also due to the availability of shorter term higher yielding gilts. Such instruments emerged under economic compulsions of those times to follow a policy of inflation and fiscal deficits. Savings not through insurance related products tended to prefer fixed interests to equities or shorter term gilts. The matching of assets and liabilities to secure solvency yielded ground for better prospects.
- 3.2 There is therefore the market compulsion to find ways to attract savings into equity. Unit Linked answered at once the problem of the markets and that of the insurers' pressure to meet the strong desire of the befuddled clients about the mysteries of reversionary bonus. The role of the actuary in Unit Linked is much less than in the traditional With-profits. On the contrary, Non-actuarial professionals could design Unit Linked keeping the protection part of the business as cheap non-profit traditional product. The challenge was becoming clearer.
- 3.3 DC pensions are similarly straight forward. The contributions going into the pension fund on behalf of a worker is clearly visible. What those contributions earn is clearly visible. Similarly the expenses part. Instead of the employer deciding the shape of the pension, the employee can now decide it by additional contributions from time to time, uniformly or non-uniformly. What is more he can carry it about from employer to employer if he is subject to high mobility. Furthermore, he could by careful choice of his own, move it to two or three broad investment mixes consisting of fixed interest, equity like and cash. He has the advantage of the investment manager of the Pension Fund to maximize the results to his contribution account. The only but not insignificant draw back is that his pension is determined by the size of his contribution and the annuity rates prevailing at the time of conversion to pension. There is also no possibility of inflation proofing. Contribution is defined but not benefits. As against this under DB the benefit is defined (as a proportion the average salary at some period of employment) and since salary gets automatically inflation proofed in one way or other automatically, effectively the pension also is quite more attractive, but the contribution falling to the lot of the employer is not defined in advance. The risk associated with annuity costs is not on the employee but on the employer. Portability is there but it has to be actuarially determined. Contribution rate has to be actuarially worked out. Salary

escalation leading to the probable pension size is a matter of actuarial judgment. Investment matters such as consideration of matching assets and liabilities are also subject of actuarial review. The role of the actuary is paramount and that is exactly what is sought to be taken away from the profession following a move to DC from DB. The challenge for the profession is deepening.

#### **4. The Economics behind the Challenge**

- 4.1 The evolution of these challenges has also to be traced in the macro economic mutations in specific regions all over the world in the past. One of our subjects of essential study is Economics and Investment. As actuaries come to handle huge funds he is expected to know the operations of the forces that bring about economic conditions and situations from time to time and is also expected to be equipped with the know-how to ride the tides of such economic upheavals. So it is only proper that we try to trace the origins of the challenges that have manifested in the evolution of the economic scenario.
- 4.2 Adam Smith through his monumental work “An Enquiry into the Nature and Causes of the Wealth of Nations” has put the foundations of Economics by studying the financial affairs of his times. From this point the subject was developed in stages through the contributions of Economists like Stuart Mill, Lock, Hobbs, Ricardo, Marx, Marshall, Robbins, Keynes, Robinson to name a few. It seems appropriate to add the name of Drucker to this list as his involvement in recent times in the field of economics and management is singular and has to be evaluated against the current travails of actuaries. Broadly the economic history of the world can be classified into three parts. The first part is characterized by the predominance of mercantilism lasting up to the end of the 18<sup>th</sup> century, the second part by capitalism and the third commencing around 1990s by what is now called globalization which is but an advanced form of capitalism. It would be interesting to look at the rise of the actuarial profession in this historic background, because that would impart a clearer understanding of the economic forces at work and how they throw challenges at various socio-economic groupings especially our profession.
- 4.3 During the times of mercantilism the production relations were feudalistic. Economic growth was slow and pursuit of greater well being was sought through trade and commerce, particularly international trade and commerce. The main business of economic activity was to transfer goods from places of plenty to places of relative scarcity through trade. International trade was possible because even though cost of production may vary from one country to another, there was comparative advantage by exchanging products relatively less costly to produce for those that are more costly. But nations sedulously sought to protect the trade on wares on which they had a definite absolute advantage. To facilitate trade, thrift was practiced as perhaps the greatest virtue. In this setting Life assurance started in the form of assessmentism with little or no basis to justify the contributions to the pool from which claims used to be settled. Where claims exceeded expectations, further calls of contribution were the course adopted. The need for insurance especially life insurance arose from the risks involved in commercial travels and voyages. The principle of pooling the huge economic consequences of risks was the basis of risk management. Though individual trader stood in competition with every other trader, all had no choice but to come together in a co-operative spirit to bear the risks which single handed none could assume.
- 4.4 The limitations of the pool arrangement were that the basis of contribution was rather crude and far from scientific and there was always the case of selective

withdrawal from the pool causing intensification of the aggregate risk remaining in the pool. Open mutual societies defining rights and duties of members evolved. The expert role of actuaries was beginning to catch up with the emerging need for scientific basis and longer duration contracts. Dodson's role in developing the scientific principles of assurance under the Equitable Society (1762) pointed the way to modern actuarial practice. The accumulation of money under the mercantilist economy could find way to establishment of such risk pools that later became prospects of growth through interest earnings from contributions. The economic system of protected trade pursuing more wealth was based on physical and money capital. The prospects of freeing the money capital riding piggy back on physical capital of goods for sale enabled the establishment of proprietary life offices. The important contribution of the actuarial thinking was that risk could now be commoditized. Risk can now be bought and sold just like any other commodity.

- 4.5 Trade in goods is generally profitable. But trade in capital is much more profitable. Insurance was one of the best and acceptable forms of mobilization of capital. By applying the same on huge ventures involving mass production of goods the consumer base could be expanded to increase profits. If the era of commercialism was marked by small traders who had very little power to influence the market, under capitalistic system, mass production of goods of high quality at cheap prices was possible by the establishment of large firms. The large firms could establish monopolies. The classical economic theories with an abundance of small firms putting the consumer at the centre of focus with neither the producers nor the consumers being in a position to influence the market, was working smoothly till the monopolies by large firms appeared. But the period of low interest rates when the net-premium method and simple reversionary bonus were satisfactory actuarial solutions for protection and some profit was soon to end. On the one hand the mass productions under the guiding philosophy of free trade as against protectionism, witnessed periods of excessive accumulation of inventories. Even the supposed effectiveness of Say's Law that production itself creates the requisite demand for it, could now be seen manifestly as not fully true. If true it answered only an insignificant part of the spiraling production under the new capitalistic regime. The result was an inevitable trend towards slow down and rampant unemployment. Depression ensued bringing with it the shocking levels of unemployment. The equilibrium economics of the classical kind with free markets replaced by monopolistic not so free market but still regulated by consumer pressure could not sustain the stability of it. But the actuarial profession managed to tide over the storm despite the fall in the rate of interest because of their prudence to maintain 'estates' in the life office accounts coupled with the net premium valuation and the reversionary bonus system. But for the 'estates' which is looked down upon by the protagonists of greater transparency and imprudent immediate distribution, there would have been all round collapse of insurance offices. There is no gainsaying the fact that here was the shining example of the actuarial profession making 'financial sense of the future'.
- 4.6 Following the end of World War II and the debates in Breton Woods, Lord Keynes came on the scene with his humanitarian remedies to avoid such depression and the inevitable sufferings to the public. After all, Say's law was only an academic and unworkable hypothesis. Free and unhindered market with governments divesting its responsibilities, leaving everything to the economics of the market is not enough. Governments must interfere. Keynesian doses of inflation at the behest of government were directed towards resurgence of demand for goods and services. Credit creation to balance the trend towards accumulation of inventories and maintaining near full employment was bound to push up the mild inflationary

dozes to manifest in full scale inflationary situations. To take back the excess credit and maintain government expenditure, savings have to be promoted to ensure social security and achieve the ideal of welfare states. Life offices responded well by introducing into the market a variety of savings instruments like endowments with attractively rising bonuses, affordable and cheaper pension annuities. These savings through insurance find its way largely into supporting Public Sector Borrowing Requirements of the government and the enormous growth of the national debt. The fiscal policy compulsions to contain inflation administered as a remedy naturally ushered in the era of rising rates of interest.

- 4.7 Just as in the low interest rates regime, the actuaries in life offices designed products that mopped up savings and took away extra purchasing power which need be returned through the longer term contracts of insurance and pensions. The profession was addressing the high interest rates regime problem. One could say both the government interest and the public interest were satisfactorily addressed by the profession. Had a fresh challenge did not come about such a state of affairs would have continued with the dynamic equilibriums under Keynesian managed economics operating.

## **5. Rise of Volatile Markets and the Attendant Problems for the Profession**

- 5.1 The joint stock principle led to the formation of large scale firms that mass produced consumer goods, non-durables as well as durables. With it was born the capital market to facilitate liquidity. Gilts occupy a prime position in the debt market. Thus both government and the private sector competed for the market for absorbing savings. At the same time large scale financial companies sprouted in various non-banking guises. The birth of institutional finance through such banking as well as non-banking entities now play a dominant role. Finance capital that used to ride piggy-back on physical capital is now entirely free and what is more they are capable of creating credit money. The traditional suppliers of finance like the insurance companies and pension funds now face acute competition. Such financial institutions absorbed long term instruments especially government paper held them to maturity through their need for liability matching. The arrangement was helpful to stabilize markets for such instruments. Any active involvement would have accelerated the volatility in the markets. But volatility did come with the onslaught on the traditional with profits and defined benefit pensions.
- 5.2 Unbundling of the traditional with profits chasing the prospect of higher returns from greater volatility in the markets and liquidity through offer and bid price mechanism under the unit linked, naturally drew away considerable savings from the traditional products. Attempts to weave the risk-prone prospect of gain under the linked funds into the traditional with profits with managed funds have proven very unsuccessful. The unfortunate state in which the Equitable has landed is proof that one cannot operate a guarantee as well as risk-prone greater gains together. Very rarely can these two aspects move in the right direction together. Since higher gains go with higher risks and guarantees arise from caution and the maintenance of an estate, the two are concepts that pull in opposite directions. Policyholder expectation of loss or gain from the risk given to his lot is one thing. The smooth rising accrued bonuses under the traditional endowment guarantees are another thing. While one represents to the policyholders to expect losses, the other induces them to expect reasonable gains. The anxiety of the actuarial profession throughout the history of insurance is the one about falling interest rates. The mechanism of operating an estate and attempting a high degree of match by term between assets and

liabilities were the best possible way to steer clear of the economic storms that do blow time and again.

- 5.3 The current economic scene is characterized by the relative abundance of finance capital which is seeking avenues for investment not merely in the home territory but all over the globe. The impact is on the rate of interest which has fallen to phenomenal troughs from dizzying peaks within a very short time. In a macro economic unit be they individual nations or monetary unions there are mechanisms for credit control. But there exists institutions capable of creating credits unhindered by any sort of regulations with the result capital emanating from deliberately deprived spending and others freely created float together.
- 5.4 The consequence is that the return expected on induced savings gets defeated by the competition for avenues of investments from the latter category of floating credit. Probably the chief cause of the falling rates of interest is this mechanism. Naturally macro economic imbalance resulting from this is also creating social tensions as social securities are forced to absorb the shocks. This aspect must be an area of interest for the profession because social security on business lines is the area of its operation. If the cause is identified for the profession's crisis the cure for it can also be found, but any exercise divorced from such a larger view and concentrating on tinkering solutions may not work for long.
- 5.5 In the context of free flow of credit by the opening of all markets there is no effective way by which such iniquitous treatment of domestic capital against the floating capital can be set right by macro economic regulatory regimes.

## **6. Challenges on the skill-set front**

- 6.1 The actuarial tool-kit is also getting challenged with the arrival of new methods of addressing problems which fall to the lot of actuaries to solve and manage. A fundamental aspect of actuarial approach is identification of risks, their classifications and then applying actuarial tool kit to price the risks. The job of the actuaries does not end with pricing, he has to manage the finances of the office in such a way that things do not move far out of steps with the assumptions underlying the pricing philosophy. The role of the actuary in an office is thus continuous. Actuaries are managing together the mortality and monetary risks in a single bundle in combination with the reversionary method of profit sharing.
- 6.2 On the question of pricing of mortality risk, there is very little new challenge. But it is on the monetary risk front that the challenge to the actuarial skill-set has come in a big way. This is quite understandable because the volume of money subjected to monetary risk is quite substantial in comparison with what goes to neutralize the mortality risk. In the unbundled form the savings component of the premium can be subjected to the capital market and thus the risk associated with it is left to be answered by the market rather than handled by the actuary. To put it plainly the burden of the monetary risk is passed back to the policyholder, a thought so very repugnant to traditional actuarial thinking.
- 6.3 IT has also taken away the need for calculation aids like the commutation tables. This sort of development is rather a welcome feature as the drudgery associated with long calculations and the high probability of errors and limited possibilities for checking data can all be almost completely eliminated. Still, junior level jobs for

those who begin in actuarial work are now no longer a specialized job. Just anyone can fit in with equal efficiency.

- 6.4 If markets existed for goods and services today we have markets for financial instruments of varying kinds some backed by government guarantees and most others thriving on the confidence of insuring public and institutions. The surplus capital has thus found floating residence in these market instruments whose clout is growing. There is no doubt that these instruments carry within it risk. In fact the market is for risks. Way back in the formative days of insurance as a business, actuarial profession converted the promise of indemnification or guaranteed payments into floating risks. In other words risk was commoditized so that insurance companies sought to purchase these risks facilitating cover for any person unlike in the protection secured through joining pools. Interestingly today even professional actuarial services are sought to be commoditized. This trend is not confined to actuarial profession alone but it has become a matter of concern for all professions including Accountants, Company Secretaries and the like.
- 6.5 Professional consultants have to yield ground to institutions trading professional consultancy service where persons previously members of a profession work for salaries. Rating standards are now a raging service, previously jobs of professional consultants. The eminence and status enjoyed by profession commanding the confidence and trust from public are being marginalized. This is a serious challenge. An actuary working for an office or a society or a pension scheme or fund enjoys a large measure of independence of thought and backed by the profession he is able to call a spade a spade. Can such a status be expected in consultancy institutions?
- 6.6 To borrow a phrase from Peter Drucker, a whole range of knowledge workers have come on the scene calling themselves Financial Experts, Financial Analysts, Economic Risk Evaluators, Financial Risk Managers and so on seeking employments in these new institutions. Many of them are truly persons with an abundance of knowledge and skills to apply mathematics and statistics. Claims that the actuarial tools developed over the years can be bettered by the new applications they offer have already posed serious concern to the profession. No doubt the profession has taken steps to measure up to such challenges through equipping the next generation actuaries by exposing them to such new knowledge and persuading existing practitioners also to adapt appropriately through involvement. There are even strong suggestions to go in search of other fields than traditional.

## **7. Where should we look for solutions, in “Wider Fields” or “Wider Thoughts”?**

- 7.1 To reshape the profession from its present identity and asking budding actuaries to seek placement in wider fields is one way of addressing the challenge. But most of the wider fields are either already occupied or the ground realities there do not fit in with the atmosphere to which the members of the profession are accustomed. Attempts to rope in persons competing with the profession may not also succeed. For one thing these experts are not actually organized in the form of a profession as profession is generally understood. Inter-action with them can certainly help sharpen our intellectual pursuits.
- 7.2 For example asking a qualified actuary to work in a stock market related firm may be more economically rewarding to that person. But he is certainly not doing the work of an actuary there, but some other works like that of an investment manager



making deft switching operations for example. The situation is something like a mathematics professor becoming a school master in a prestigious school where the reward may be substantially more. Certainly it may not be psychologically satisfying to the professor, but he is able to settle his travel bills and such other expenses without default. Perhaps he had to settle for such a situation by force of circumstances. Has such a circumstance come about for the actuarial profession?

- 7.3 Going back to basics of actuarial philosophy and objectives one cannot fail to discover the guiding principle of social good and public interest. The latter we still project as our logo. The abiding public faith in the actuarial profession rests mainly on these objectives. In the pursuit of these objectives, the profession attempts to relieve the individual from harsh economic pains resulting to him and his kith and kin originating from risks to which the individual is exposed. As against voluntary organization to alleviate such economic pains, the profession devised means to socialize the risk, beneficial both to the participating individual as well as others who set out to organize such schemes as a business venture. There is the historic track record of the profession to service such needs at equitable costs treating every one fairly enough which might not be resulting in social pools. The capacity to absorb larger risks also resulted through such businesses in contrast to pools like funeral funds. At the bottom of all these exercises lies the ability to provide a 'guarantee' to the beneficiary members. We ensure this guarantee with several actuarial concepts like differential pricing of products, introduction of participating life funds, the methodology of distribution of surpluses. Another important aspect is that the 'guarantee' could be successfully carried through intermittent periods of economic convulsions and extended to longer periods. This is a unique feature which cannot be replaced by any other method like unit linking of assurances or DC system of pensions. Such products may have attractions for people who seek to gain in the short run and are willing to take chances for the ultimate shape of the benefit that will flow to him. This is some what equivalent to adventurous living, the adventure being confined to riding the turbulent waves of rough economic seas. There is no doubt that the great majority of the public who desire protection and assured income at advanced age want the type of guarantees the profession could offer this far long. The market for actuarial guarantees enshrined in the philosophy of actuarial thinking will always remain and would even grow. For that to happen, the profession should move away from a mind set in search of wider fields to wider thoughts.
- 7.4 Some attempts made to absorb the "new" concepts within the traditional actuarial concepts failed because they are proven to be incompatible. Any well meaning attempts to combine in a single product the traditional guarantees with the risky gains from assuming investment risks from equities and the like could be undone by unforeseeable forces. The 'estate' cannot be replaced by funds. For a time when inflationary pressure is there both gilts and equities might move in the right direction, the climate being good. When interest rates begin to fall, then there will be no estate to fall back upon and equities may not also measure up to compensate the fall. The guarantees can not be maintained however well meaning the intentions are or market compulsions be by operating the two differing concepts together in a single product. The traditional products derive their attraction from guarantees, however limited. But the linked products are risk based and so quite different.
- 7.5 The 'new' products that came in competition with the actuarial traditional products were invented by the study of the economics in the short run. What could be gainfully done for a client by making him participate in the ups and downs of

economic forces in the short or even medium run? This was the occupation of such a mind set. Though the 'new' products are valuable and will find a market always, they are dramatically different from the traditional products. Both address clients' needs. But the needs fall into exclusive categories. If the 'new' thrives in the appetite for risk of the clients driven by the prospects of greater returns, the traditional is motivated by a desire for a measure of security in the long run. Just as commoditized risks have markets, commoditized guarantees will also continue to have markets.

- 7.6 There is another side to the traditional actuarial value system. It lies in the collectivism clearly seen in the formation of entities like friendly societies or welfare funds. But the actuarial thought though firmly rooted in collectivism it ensures collectivism through the mechanism of running it on business lines. Just as there are takers for running risk-appetite business in the private sector for the traditional collectivist products also there are takers both in private and public sector. The important difference between the two methods of trading is that whereas the "new" products individualize, the traditional work it on socialization. In the new the risk gets transferred to the individual though the product is called 'insurance', but the traditional spreads risk and minimizes the risk cost to the individual and truly remains 'insurance' as it is generally understood.
- 7.7 The "new" are offered as products resulting from objective approach to pricing and management of risks. The objective aspect is asserted as existing in the 'new' manifestly through the stochastic models that lead to pricing and management strategies as opposed to the subjective evaluation by the traditional actuary. However the use of objective inputs from statistical studies from the past is not entirely denied to be existent in the traditional products. But ultimately the actuarial subjective view plays the big role, is perhaps the criticism. The application of any statistical model has two limitations. One is on the choice of the family of the statistical model and the other is about the values assigned to the parameters of the chosen model. Both have to be necessarily based on some subjective propensity of the model builder. Subjectivism is not entirely eliminated in the "new" products. More importantly the reliability of application of a model sharply declines with the length of the period over which the model is sought to be applied. Any attempt to overcome this deficiency by repeated modifications of the model in spells of short runs through varying the family of stochastic structure, its parameters or even both is bound to shift unjustly the financial interests between generations in an unpredictable manner. As against this the traditional actuarial approach for a smoother growth of the value returned for the prices paid by a combination of a cautious approach to distribution of surpluses with the maintenance of the 'estate' appears superior as well as simple for the clients to understand.
- 7.8 The maintenance of the 'estate' answers to a very large extent capital adequacy, but such an approach is possible for only an existing insurer. For new players infusion of capital has to play this traditional role. By running both infusion of capital as well as a growing 'estate' in the fund, even new players have opportunities to do business. If and when such new insurer grows in size the estate will also grow in size. The requirement of additional capital will naturally be based on the size of the estate. The move away from traditional therefore is but an attempt to move away from concepts like estate, which are time tested and demonstrated to be the hall mark of security of insurers, mutual or proprietary. The argument against the actuarial subjectivism (passivism) is therefore nothing but an effort to remove the safe actuarial guarantees from insurance. If there is no such guarantee, what then

is insurance? But such products can be sold with very little capital backing with the label insurance on them.

- 7.9 Coming once again back to the concept of risks, the nature of risk falls broadly into two categories – Random and Non-random. The Non-random risk category further breaks into systematic and imperfect market risks. A suitable statistical theory can address random risks satisfactorily. Stochastic processes based on Brownian motion with drift are sought to be applied to absorb both random and non-random. Clever modeling, which is in fact a move away from strict objectivism, for particular situations may be able to account for random and systematic risks with such an approach. But how do you go about the imperfect market risks? These constitute a very significant part of the total risk in many insurance products and the only way open is to fall back on the traditional actuarial techniques. A large proportion of the systematic risks are what constitute the technical risks such as mortality, operating expense risk, new business strain risk etc. By maintaining appropriate technical reserves and also margins in the premiums the actuary can meet these contingencies. The “new” products simply avoid this kind of risks by an active mortality and expense charge on an annual basis. The market side risk is fully transferred to policyholders. The actuary on the other hand handles the market risk such as liquidity risk, interest rate risk and currency mismatch risk, cash flow mismatch risk by such techniques as asset-liability matching, currency matching and maintenance of a reserve traditionally called ‘estate’. Furthermore by operating the profit distribution in reversionary form the capability to address such risks is reinforced. The maintenance of such reserves and margins could be argued as purely subjective, but the fact remains that the decision is based on experience unfolding from time to time and so they are realistic though strictly not objective.
- 7.10 An area where the profession has to look deeply is the emergence of the globally operating Capital Credit just like the cash credit (bank money) that works within a macro economy. The cash credit within a macro economy is amenable to desirable regulation through the various mechanisms available to the Central Banks of the countries. Just as bank money the global capital credit is fiduciary. The cash credit market with the banking institutions of one kind or other within a national boundary is based at least on some real public savings, there appears to be not even such a proportional backing (guarantee) for the global capital market. True it serves a good purpose by creating economic activities in regions where these were either slow or absent. But it comes in competition with domestic savings in a nation and capable of upsetting economics within that nation by cheapening credit or unduly influencing the local capital markets. The local market rate of interest is vulnerable to this kind of situation. As insurance and pension fund savings get converted into investments through the local capital market, the large presence of such global capital credit can defeat the policy objectives of the local insurers as well as the policy makers of the country concerned. This is one reason why the guarantees the insurers can operate are put to pressure and methods have to be found to overcome it or at least insulate such insurance guarantees from the influence of such unregulated capital supply into a macro economy.

## **8. Conclusion**

- 8.1 The challenges to the profession traced above are now manifested in the areas of our work – traditional With Profits and DB Pensions. The basic attraction of these products is the extremely valuable ‘guarantees’ that can be provided to the clients. These are absent in the products offered as substitutes and hence are not likely to last beyond a time. The market for the traditional DB will continue notwithstanding

current compulsions from global relational imbalances. Already there are some examples of bad experience of DC pensions not serving the objective it was intended to achieve. In the circumstances the relevance and need for the traditional products are bound to continue and therefore the actuarial techniques. There has to be greater public awareness of what the profession is doing in the public interest. Since the profession's skill set and objectives are applied to social good. Promoting the public interest by involving more openly the relevance can be further emphasized. The profession truly makes financial sense of the long term future. We should keep telling this to the public who really need the long term guarantees we create and offer to them. So far no effective alternatives to these socially purposive guarantees could be offered by any one. That is our strength and *raison d'etre*.

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