9th Global Conference of Actuaries

Paper On

Bulk Purchase of Annuities – An Emerging solution for DB pension schemes

Subject Group - C) Pension and Social Security

Authors (a) M.M.Shyam Sankar Kartik, Consultant, Wipro Technologies
(b) Shrinivas Susarla, Domain Consultant, Wipro Technologies
(c) Sanjay Nene, Senior Consultant, Wipro Technologies

Disclaimer: This report was prepared on a commission by Wipro Technologies. The opinions expressed and conclusions reached by the authors are their own and do not represent any official position or opinion of Wipro

Table of Contents

1 Executive summary

Defined benefits pension crisis is making headlines in many countries across the world especially in developed countries. Declining birth rates, increasing longevity, declining capital market returns and corporate bankruptcies have shaken time-tested social security and old-age provisions in developed as well as developing countries. Emphasis on retirements/pensions is shifting from Pillar 1 (state pensions) and Pillar 2 (Occupational pensions) to Pillar 3 (private pensions).

Several trends have emerged in various markets including pension reforms driven by Government as well as market and regulatory developments. One such market development is Bulk Purchase Annuity (BPA). Although the BPA market has been around for quite some time, it has evolved very rapidly, especially in the UK. BPA attempts to buy-out existing pension liabilities of an employer for a premium.

Though BPA provides a possible answer for the pension shortfall, one of the potential drawbacks in BPA as perceived by the market is the high price of the transaction over and above the shortfalls in the reserves, if any.

The needs of large, medium and small employers differ widely and needs tailor-made market solutions. The presence of new players would not only provide innovative solutions and improve capacity but also reduce the price of the transaction in a competitive environment. Technology and outsourcing is an inherent part of business strategy especially for the newer BPA players.

This paper analyses the BPA market in detail, dealings of a BPA transaction and highlights the areas where an actuary could contribute significantly in not only addressing the current needs but also in developing the market further.

2 Global trends in Pensions and Annuities

Globally, social security structures and old age provisions are undergoing a revolution. These have been influenced by multiple factors including increasing longevity of population, recent shocks in investment markets and associated low returns, realizations by governments that existing time-tested social security arrangements are unsustainable and increased regulatory scrutiny on financial institutions' solvency and management practices.

For example, in the United Kingdom, Government-led pension reforms have resulted in wide-ranging changes in pension provisions and administration mechanisms. The Pensions Act of 2004 introduced Pension Protection Fund (PPF) and its related operational overheads for firms. There has been additional scrutiny on employer-sponsored pension fund deficits, both by The Pension Regulator and the Financial Services Authority.FRS-17 provision in the UK requires actuarial valuation of defined benefit schemes at least once a year and transparency of actuarial loss/gain in Profit & Loss statements. Likewise in India, AS 15 of ICAI - Accounting for Retirements Benefits in Financial Statements of Employers, inter-alia, requires disclosure to be made in the financial statements regarding gratuity and defined benefits schemes.

In several countries in the EU, notably Germany and Italy, there has been increases to retirement age to mitigate the pension time bomb. In France, for example, there has been a decoupling of the occupational and state pension schemes, potentially increasing costs to employers.

In the US, the recent Pensions Protection Act 2006 (US) passed introduces far-reaching changes to single-employer defined benefit plans. For example, some significant provisions of the Pensions Protection Act 2006 are mentioned below

- Amortizing the shortfall within 7 years,
- Increased minimum required contribution for at-risk plans,
- Multiple restrictions like restriction on benefit accrual, increase, etc. on poorly funded plans etc.
- Additional PBGC premiums requirement for companies that under-fund their pension schemes
- Extra PBGC premiums for companies that terminate their pension schemes
- Tighter norms and scrutiny for under-funded plans so that pension payments are not skipped

A plethora of inter-related factors has resulted in a move towards the individual taking more responsibility towards his/her retirement and reduce the burden on the state and the employer. The number of Defined Benefit (DB) schemes closed to new members or winding up is increasing with increasing shift to Defined Contribution (DC) schemes. For example, in India, as per the Central Government, defined benefit schemes like General Pension are closed for government employees from 01/01/2004. Employees who have joined on or after 01/01/2004 are eligible only for defined contribution schemes. For example, 10 per cent of the salary goes as pension contribution along with a matching contribution from the government.

Also in Chile, in the 1980s, the traditional pay-as-you-go structure had a pension deficit equal to the country's output. Through a series of reform programs, it was replaced with a personal retirement account defined contribution system. In the personal retirement accounts, employees contribute 12.5 percent of their wages for old age and retirement provisions. Nearly 80 percent of the employee's contributions go towards personal accounts which are administered by privately owned pension management institutions; the remainder pays for disability and survivorship insurance, administrative fees, and commissions. Net contributions are accumulated in personal accounts and earn investment returns. Workers choose who they want to administer their personal retirement account. Investment choices are restricted to five investment funds.

Shortfalls in occupational pension portfolio run into hundreds of billions of dollars globally. Bulk Purchase Annuity (BPA) mainly addresses the occupational Defined Benefit schemes. BPA aims at removing the inherent DB pension scheme risk which the employer and trustee face by transferring the risk to an insurer or a pension provider. The insurer/pension provider guarantees employee pension benefits through his state-of-the-art mortality modeling, expertise in fund management and economies of scale in administration and operations.

3 Risks inherent in DB Schemes

The current crisis in the occupational defined benefit schemes is a result of various inter-related factors – inherent risks in the schemes and external factors like government policies and market forces. Some of the risks that the schemes face are:

- <u>Poor investment returns</u> - The trustees makes investments with some expected returns on which the contributions are defined, especially equity related investment. The employer always carries the risk that the returns are not in line with the assumptions.
- <u>Better than expected longevity</u> - While defining the contribution to be made in the scheme the actuary assumes life expectancy of the members of the scheme. If the mortality experience improves (i.e. members living longer than anticipated), it proves costly thereby needing more capital to manage the pension schemes.
- <u>Unexpected rise in wages/inflation/interest</u> - Benefit of most of the DB pension schemes is based on the last salary drawn. Any unexpected rise in wage, which is directly linked to inflation, plays a crucial role in aggravating the situation. This risk is less in schemes which calculate benefit on average annual salary.
- <u>Government policies</u> – government policies play an important role in the working on any defined benefit pension schemes. Any change in government/regulatory policies regarding investment and taxation has a direct impact on the asset management of the funds adding to the other existing risks.

All or some of the risks mentioned above contribute to arising of deficit in the DB pension scheme over a period of time. The employer is forced to look at alternative ways of mitigating this risk or removing it completely. Some of the options available to the employer are:

- Increasing the employee contribution, which can be unpopular with the employees

- Increase own contribution, which will entail a huge investment and locking up of capital
- Curtail benefits or close the scheme for new members, again an unpopular solution
- Wind up the pension scheme which would attract negative publicity and affect the prospects of the company in future
- Buy-out of pension liabilities by the insurance companies

Buy-out of pension liabilities is a method by which the employer transfers the risk of running a defined pension scheme completely to a regulated insurance company. In this way the deferred benefits of the employees are protected and the employer also gets rid of the risk of the pension scheme running into deficit in future. This method of transfer of pension liabilities from the employer to the insurance company is called the Bulk Purchase Annuity.

In a Bulk Purchase Annuity, the buyer of the DB pension scheme would offer the employer/trustee the option of offloading the entire liability of the scheme. In return the buyer would take over all assets of the pension scheme along with a premium which would cover the regulatory capital requirement, among other things. The paper discusses in detail the features of Bulk Purchase Annuity as is done in the United Kingdom.

4 Bulk Purchase Annuities (BPA) – An emerging market force

BPA or Bulk Purchase Annuity is the term traditionally used to describe a buy out of the assets and liabilities of pension schemes that are closed or wound up. It is a route adopted by firms intending to reduce or eliminate the negative effect of pension shortfall in their books. Firms which are insolvent, or are a take-over target for a merger or an acquisition, take the BPA route to address their pension portfolio.

Bulk Purchase annuities (BPA) have emerged as a market response to widening pension deficits especially in employer sponsored pension schemes. BPA transfers pension liabilities of the employer to the chosen life insurance company or pension provider. BPA sometimes occur even from a pension scheme of an insurer.

In the UK market, Legal & General and Prudential are big operators in BPA market space. Due to UK government announcements, Pensions Act 2004 and other related developments, new operators have entered the market which includes AVIVA, Aegon, Paternoster, Synesis and others. New operators like Paternoster and Synesis are backed by funds of several hundred million pounds from investors.

Sales of bulk annuities currently amount to £3 billion a year in the UK. There are estimated to be 10,000 occupational pension schemes in the UK with over 15 million members and over £1 trillion in assets. Only 0.1 percent of this market has to date been secured through buyouts each year. While not all of these schemes will be available for buy-outs, it gives an indication about the market potential for buy-outs.

5 Key advantages of BPA deals

BPA deals provide a lot of benefits to all involved stakeholders. Though the list of business drivers and benefits of a BPA deal is not the same for all employers, an indicative list of benefits are provided below.

From trustee perspective

- BPA offers pragmatic opportunities to protect employee pension rights in the event of a wind-up or M&A situations or otherwise

From the employer's perspective

- The risk that the pension payout commitments will not be met in the future is removed.
- Pension liabilities are matched with pension assets and any shortfall in the corpus is eliminated
- Pension liabilities are removed off balance sheet and improve credit rating of an employer. It also increases the bargaining power in an M&A situation.

From the employees' perspective

- A guarantee that their pension commitments will be met by their employer over a long employment period and after retirement

6 BPA and its business drivers

The main drivers for DB pension buy-out market in the UK are

- Reporting requirements – FRS 17 sets out the accounting treatment for retirement benefits and its requirements are
    - Assets to be measured using current fair (market) values
    - Actuarially estimated liabilities (using the projected unit method) are discounted to their NPV using a rate of a AA corporate bond (this in turn leads to a higher liability depending on history of funding)
    - Pension scheme surplus/deficit to be recognized in full on the balance sheet as a new item

- Formation of The Pensions Regulator: The Pensions Regulator replaced the erstwhile regulator of occupational pension schemes Occupational Pensions Regulatory Authority (OPRA) and is effective since April 2005. The newly formed Pensions Regulator is armed with more powers to force companies to make good the deficit, constrain capital expenditure and change dividend policy if necessary among others. Thus there is more pressure on companies running DB pension schemes to comply with the directives of the Regulator.

- Improving Longevity: The longevity of the average resident of UK has increased over the years and more so of citizens who are members of DB pension schemes. This has resulted in a situation where the companies have to pump in more capital to ensure that the members continue to get their pensions till they are eligible to get, resulting in an additional strain on the scarce capital. Better working conditions, life style and excellent health care available are seen as major contributors to increased longevity. The mortality rates are improving dramatically which was not foreseen earlier resulting in asset-liability mismatch. To put the problem of longevity in the right perspective, life expectancy of a 65 year old male in 1980 was 13 years; by year 2000 it was 16 years and it is projected that by year 2008 it would be approx 18 years.

- Emerging best practices: In the yesteryears there was not much pressure on the companies to disclose the actuarial assumptions used in arriving at the liabilities of a pension scheme. But due to the emerging best practices and corporate governance, companies are under tremendous pressure to disclose the mortality assumptions used in determining surplus/deficit. This is then open to scrutiny in the public domain which can find whether the assumptions used are realistic or not. This is putting a lot of strain on the companies having defined benefit schemes.

- Pension fund deficits act as a barrier to mergers & acquisitions. Buyer companies consider pension fund deficits as a deal-killer and it also adds to the cost of the M&A transaction.
- Employee pressures – Pressures brought on the employers and trustees through unions and other employee associations are also factors driving the bulk buy-out market.

The above factors have forced firms to act on their defined benefit pension challenges by either reducing them and their impact on the balance sheet or to get rid of them completely.

The need for a tangible solution for the pension problem has been exploited by the new and existing players in the market. They are offering innovative solutions to firms who are considering some response to their pension burdens. Business drivers mentioned above combined with innovative solutions has resulted in tremendous growth of the BPA market. BPA buyers bring in state-of-the-art expertise in mortality/longevity modeling, modern asset liability management methodologies and economies of scale. They are backed by substantial capital to underwrite large pension liabilities.

7 Types of BPA deals

Today, there are alternative ways of approach to close BPA deal which are finding favor, both with the buyers as also the sellers. The various ways of doing a BPA deal are listed below

- Full buyout scheme: In a BPA transaction, pension schemes of an insurer or an employer are identified for purchase. In a BPA purchase the buyer usually buys the total liabilities of the pension scheme along with the related assets for a premium in one shot (single payment). This form of BPA deal is called the full buyout scheme. Full buyout is normally preferred for pensions in payment.

- Phased buy out: The pension scheme liability is transferred over a period of time. In this type of deal the pension scheme portfolio is broken down into segments and then each segment is transferred over a defined period. In this type of deal the seller as well as buyer company does not have to commit much capital upfront. Phased buyout is preferred for pensions in payment as well as schemes closed to future accruals/members

- Profit sharing: For a higher premium, buyer of the scheme may be willing to share any 'super profits' generated through pension fund investment performance or reductions in life expectancy.

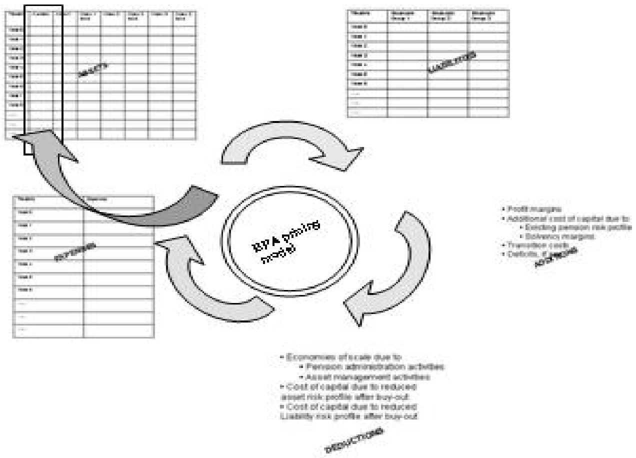
- Longevity guarantee – In this type of deal only the longevity risk is covered while the trustee still retains the financial liability of the pension scheme.

Other smaller forms of BPA deals are possible including outsourcing pension administration and asset management. In both these types of BPA deals, the pension service provider takes responsibility for executing pension administration and asset management as per pre-defined Service level agreements (\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\SLAs). In this case, the service provider does not assume responsibility for financial liabilities of the pension scheme. The provider is paid a fee for services rendered.

In addition to price, competitors in the BPA business could compete on tailor –made solutions for each buyout. Customer service could also be a differentiating factor in the buyout.

8 How a BPA deal is structured?

An elementary example is provided below to explain how a BPA deal is arranged. Readers have to appreciate that this paper is not the right forum to present the complete internal workings of a BPA deal



Pricing a BPA deal involves extensive modeling of underlying pension assets, current and future liabilities and operational expenses. It also involves additions and deductions for the initial BPA price due to the portfolio risk profile of the buyer and seller.

Asset modeling involves assumptions on the rate of return (RoR) on underlying assets, their risk profile and timelines. This modeling also involves assumptions on one-time or periodic payments of contributions by the seller.

Liability modeling involves longevity, life style and other assumptions over the tenure of the pension period for various employee groups. The key differentiator for the buyer is the state-of-the-art modeling tools they use for liability modeling.

Expense modeling involves pension administration and asset management expenses. The buyer is able to leverage his economies of scale and new/existing outsourcing arrangements to deliver better expense realization than the seller.

Appropriate discount rates are used to calculate present value of assets, liabilities and expenses.

There are additions to the preliminary BPA price due to differences in cost of capital for the buyer and the seller. These arise from the variations in the risk profile of the portfolio before and after the buy-out, required solvency margins of the buyer and the seller and the buyer's profit margins. There could also be deductions for the BPA price due to a diversified asset and liability mix of the buyer.

The entire BPA pricing is an iterative process to arrive at a mutually acceptable amount.

Some times, the quotations for BPA transactions are higher than the actual deficits in the pension books. This is due to the inherent differences in regulatory valuations for employer-sponsored pension schemes and insurance firms. Some of the key differences between the insurer run schemes and employer run schemes are as follows:

Parameter	Employer run scheme	Insurer run scheme
Valuation	These schemes can run deficits, although temporarily	No deficits allowed
Asset liability matching	Not regulated by legislation, could be out of sync	Assets have to match liabilities w.r.t time durations and risk profile
Asset investment	Freedom to choose investment options, for e.g., high equity content	Investments have to match liabilities
Capital requirements	Solvency margins not applied	Solvency margins as per regulations to be applied

9 Various stages of a BPA Deal

A typical BPA deal is a long-drawn affair and goes through various stages before the pension liabilities are transferred from the employer to the BPA buyer. Typically the various stages of a BPA deal along with role of an actuary are discussed below.

Stage I

Proposal – Trustees of the pension fund provide information related to the scheme (like number of members, benefit formula for various categories of employees, scheme demographics, underlying assets, scheme assumptions, scheme documentation, financial soundness of the scheme etc) currently administrated by them. Based on the information provided, providers/buyers are requested to respond with a preliminary proposal. Buyers/Insurance companies are invited to participate in this phase based on their understanding and experience in the market.

Initial proposal Pricing – Analyzing the various schemes currently managed by trustees, insurance companies i.e., buyer of bulk purchase annuities will determine the initial price to takeover the pension liabilities.

Stage II

Provider/buyer selection - Based on the bids received from various providers, the best and competitive provider is selected for the BPA deal. Thereon, an initial agreement is reached between the seller/trustee and the provider/buyer. Normally the focus in this stage is to evaluate competencies of the bidders and the solution approaches offered.

Due Diligence - Immediately after the agreement between the buyer and the seller of BPA, the buyer is permitted to undertake due diligence of the various pension schemes. This is a critical phase in the BPA wherein complete and comprehensive understanding of the schemes is essential to validate the pricing and the assumptions made.

Final Pricing – Based on the scheme analysis, buyer of annuities would have a re-look at the assumptions made while sending the response to the tender. Buyer of annuities will submit a revised response to the trustees/seller of pension fund with due modifications to the pricing, if required. A very detailed analysis involving not only mortality experience but also factors like exposure to crime, household density, nationality, employment, education background, etc. are taken into account for the final pricing.

Stage III

Treaty/agreement finalization – After the due diligence phase, based on revised response submitted by the buyer, formal contract is signed listing out various terms and conditions based on the type of BPA deal.

Member communications – Trustees of the pension fund send communications to all the members regarding the revised set-up. This has lot of significance as all members should be aware of the developments and the background in order to keep aside any kind of speculation. In many geographies, this is also a regulatory requirement.

Regulatory approval – Pension buy-outs will have to be approved by the regulators concerned to ensure that scheme member benefits are protected in the buy-out process.

Transition – Transition process involves detailed understanding of processes, systems and procedures to ensure that service levels are not affected in the deal finalization process. There could also be a parallel run in the transition phase where the pension processes are executed simultaneously by the insurer as well as the employer to ensure zero probability of failure after complete transition.

Stage IV

Scheme Administration – The buyer of BPA will perform role of pension administration of the taken over scheme.
Payments – The buyer of BPA, in this phase fulfills the responsibility of making annuity payments as and when they fall due. BPA buyer also fulfils yet another responsibility of admitting and settling death claims received from nominees of members of the pension scheme.

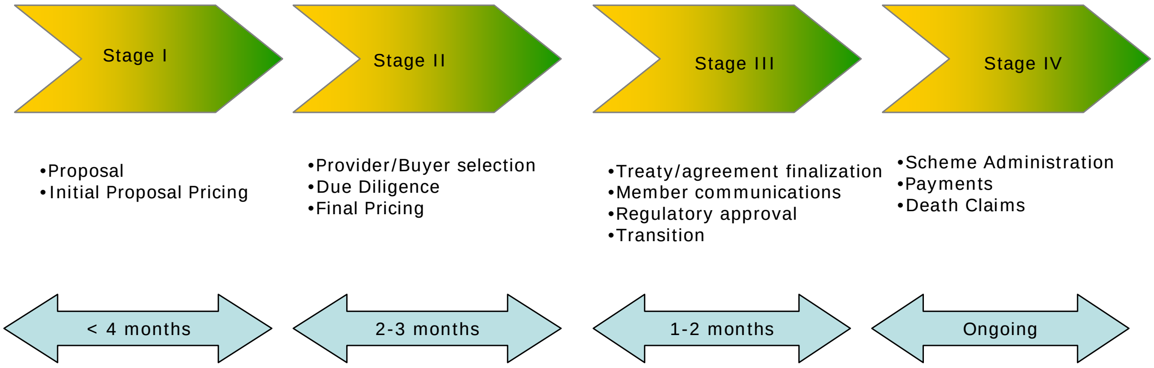


Figure – Stages in BPA Deal with corresponding time frame

The time lines shown above are only indicative and could vary significantly from deal to deal.

10 Recent BPA deals in UK

Some sample BPA deals in the UK are mentioned below:

- In Nov 2006, Paternoster has taken on the liabilities of a total of five company retirement schemes -- including the Cuthbert Heath Family Plan. Of the five schemes, three are valued at up to 10 million GBP, while the other two are worth 10-50 million GBP. Paternoster has a strong pipeline of buying up pension liabilities of small and medium companies.

- In mid 2006, Wesleyan Assurance Society purchased the ASW pension plan and ASW Sheerness Steel Group pension fund through a bulk annuity transfer. The deal, worth £230 million, has been undertaken by the trustees and advised by Mercer Human Resource consulting and Hymans Robetson.

- Legal & General, the existing behemoth in BPA business, did 150 deals in the first half of 2006, with an average portfolio size of about 3 million GBP.

- Prudential is also a prominent player in the bulk annuities field. The Prudential's bulk annuity sales fuelled the insurer's UK and European growth in 2005, generating sales of £203 million.

BPA market has attracted big names in the insurance space like Aegon, AIG, Aviva and Canada Life etc.

11 Leveraging technology and outsourcing in BPA

As in any insurance operations, technology plays a major role in bulk annuities administration too. The role of technology and outsourcing is discussed in Stage III & IV of a BPA transaction i.e. in final pricing and long-term administration and payments.

- As a competitive advantage - One of the key factors in pricing a BPA bid is estimation of the longevity of the members of the scheme i.e. getting the mortality risk assumptions as close to actual as possible. The margin of error is very thin in mortality risk assumptions and thus insurance companies invest a lot of time and money in developing models which would forecast longevity as accurately as possible. Creating actuarial forecasting models for longevity, which uses a lot of historical data and a variety of demographic and social parameters, requires sophisticated and complicated mathematical, statistical and actuarial calculations. Technology helps the actuaries and statisticians in creating complicated stochastic modeling tools which would give almost accurate longevity patterns.

- As a cost saver - Insurers participating in BPA deals have economies of scale in pension administration and asset management. Through innovative outsourcing arrangements with service providers, insurers will be able to deliver lower operating costs per member. Such outsourcing arrangements, not only span across technology services but also operations and human resources and is for a term of up-to 10 years or more, typically in an off-shoring location like India. Lower administration and asset management costs become predictable and guaranteed up-front in most cases, thereby reducing the over-all BPA deal price. Lower costs can be expected even when scheme members retire and portfolio size reduces over a period of time.

- As a service enabler – Insurers participating in BPA deals have the necessary wherewithal and infrastructure to deliver a differentiated service to scheme members. These insurers typically have extensive service operations, call centers and help desk, often off-shored to low cost locations like India, thereby increasing member service level at lower costs.

- As a foundation for future business growth – Technology and outsourcing infrastructure built by insurers are designed for future business growth thereby ensuring that service levels to scheme members does not suffer. Also having gained experience in this space, substantial improvement in transition time frame could be achieved.

12 Role of an actuary in a BPA deal

Actuarial roles are crucial both from the seller as well as buyer perspective in a BPA deal. Actuaries perform innovative roles in a BPA deal. These are described below.

- Valuation – In addition to traditional valuation methods, other methods like buy-out methods could be used to decide on the pension shortfall.
- Proposal pricing – In a BPA deal, pricing the deal involves complex modeling and assumptions regarding the pension portfolio. Actuarial roles in the buyer or seller firms could allow for getting the best possible price.
- Portfolio segmentation – Actuaries could provide for innovative buy-out arrangements after a detailed investigation of the current pension situation. For e.g., actuaries could segment the pension portfolio as per age group, sex and other parameters to help decide the right arrangement for the pension portfolio. With the help of actuarial investigations under such a situation, it is possible to retain some sections of the portfolio while having a BPA

arrangement (partially or fully) for the rest of the portfolio. Some segments of the retained portfolio could be funded while others could be reorganized.

- Portfolio risk analysis – Actuarial roles could segment the pension portfolio as per their risk profile. For e.g., credit risk, longevity risk, market risk and other relevant risk parameters could be considered and appropriate decisions could be taken accordingly. One of the innovations could be to transfer mortality risk to a buy-out partner while retaining other types of risk. In-depth understanding of the expense risk in the pension portfolio could lead to a third-party administration deal thereby reducing or even completely eliminating run-away costs in pensions administration.
- Capital market solution – Capital market solutions are very recent in pensions business. In cases where the buy-out options are not enough to cover the mortality risk in a portfolio, capital market solutions could be used for the same. For e.g., extreme mortality bonds have been used by some players to hedge the longevity risk in the portfolio. Other risks like credit risk and interest rate risk could be hedged with relevant financial instruments and derivatives. Many times such capital market solutions offer a better utilization of capital than traditional measures.
- Decision modeling – Based on the in-sights gained through pension portfolio segmentation and risk profiling, actuaries could recommend various options open to the employer and the trustees. These options include making up the shortfall, closing the scheme to new members, reducing the benefits (within the confines of the scheme rules as well as regulatory/government rules) to a partial and a full buy-out. Such decisions taken could be modeled to ensure that the expected outcomes are made possible by these decisions. Such decision modeling could show the impact of these business decisions on the balance sheet and Profit & Loss statement. Such decision modeling steps could also help in refining the business decisions.

13 Expected future trends

As the Bulk annuities market evolves and matures, possible future trends are analyzed and presented below.

- Hedge longevity risk - The burden of longevity risk on pension schemes is increasing as people are living longer. In terms of capital market innovations that can be used to hedge mortality and longevity risk, appropriate capital market instruments would evolve in helping pension funds manage longevity risk.

- Multi-buyer buy-outs – Multiple buyers' scenario could evolve in a BPA deal in the future. The deal could be unbundled by risk segments or in other ways. As the market matures and size of the deals increase in value and complexity, there will be a need for multiple buyers in a single deal. A lead buyer with secondary buyers' scenario could also emerge in the near future.

- Restructure Pension Benefits – Under restructuring of pension benefits, fund managers will have two options
  - Reduce future benefit accruals for current employees as well as for future employees. This approach will have the greatest impact on costs. But it likely will be politically difficult and may also result in a legal challenge.

- Reduce benefit accruals for future employees only. It will take many years for this two-tiered approach to significantly impact costs.

- Two-Tier Retirement Programs - In view of the difficulty in reducing benefits for current employees, scaling back retirement packages for newly hired workers is considered more viable and practical option for cutting down pension costs. Such two-tier retirement programs, are quite common nowadays, reduce retirement and health benefits for employees hired after a specific date, while maintaining agreed-upon benefit packages for existing workers.

Two principal options for initiating two tier programs:

- Defined contribution plans. Probably the most common two-tier pension program strategy is to shift newly hired public employees from traditional defined benefit plans to less risky (from an employer cost perspective) defined contribution plans. Defined contribution plans don't necessarily reduce employee retirement benefits, but they limit employer and taxpayer exposure to investment risk because ultimate retirement benefits under a defined contribution plan are determined by the performance of an employee's retirement investments. By contrast, defined benefit plans pay a set pension amount regardless of a fund's investment performance.
- Floor offset plans. Another two-tier idea is to provide a defined contribution benefit to new workers, but with a guaranteed minimum retirement income (or floor) provided through a defined benefit plan to reduce the investment risk. This approach has some limitations as it is more expensive than simply providing a defined contribution benefit alone to newly hired workers, but it may be more politically palatable.

Although BPA has been used extensively for DB schemes, some of the best practices of BPA could be utilized for defined contribution (DC) schemes as well. Some of the best practices are described below:

- Longevity modeling – State-of-the-art longevity modeling techniques provides deeper insights that could be exploited for better risk pricing.
- ALM – Matching assets with liabilities in terms of risk profile, time lines and cash flow patterns reduces the over-all enterprise risk and cost of capital.
- Investment management – Professional investment management ensures better returns at lower cost and risk.
- Operational excellence – Operational excellence in day-today pension administration and asset management activities through better utilization of technology results in predictability and lower operating costs per member.

14 Regulatory aspects of BPA business in the UK

UK government regulates the pension industry through various Acts and other reform programs like The Pensions Act 2004. Other institutions like Financial Services Authority (FSA) and The Pension Regulator (TPR) also play a major role. Role of FSA and TPR in the BPA business are discussed below.

The Pensions Regulator

The occupational pension schemes in the UK were traditionally regulated by the Occupational Pensions Regulatory Authority. With the passing of the Pensions Act in the year 2004 a new entity was created to regulate the work-based pension schemes (occupational pension schemes are part of the work-based pension schemes). The new regulatory body created is the Pensions Regulator with the mandate of protecting the interest of the members of all the work-based pension schemes, more so for members of defined benefit pension schemes.

The creation of The Pensions' Regulator has forced the employers and trustees to bring in more seriousness to the defined benefit funds and to carry out Asset Liability matching on a more concerted basis. This has also ensured that the trustees make enough contributions to the scheme so that the scheme does not go into a deficit.

The Financial Services Authority (FSA)

FSA is an independent non-governmental body, given statutory powers by the Financial Services and Markets Act 2000. The FSA is accountable to Treasury Ministers and through them to Parliament. FSA regulates insurance companies, banks, investment houses, intermediaries etc. It is operationally independent of Government and is funded entirely by the firms it regulates. In the UK, if the pension scheme liabilities are taken over as an annuity, the buyer has to be a registered insurance company and regulated by FSA.

The responsibilities of FSA in relation to pension market include

- The regulation of advice on and the sale and marketing of investments such as personal, including stakeholder pensions
- The prudential regulation of pension providers such as insurance companies and friendly societies.

It is mainly the Pensions Regulator which regulates work-based pension schemes with it's' focus on employers, scheme trustees and managers, and their advisers. Despite these differences, FSA has an indirect interest in work-based pension schemes because it regulates firms which provide investments to work based pension schemes like investment managers, insurers selling insurance-based pension products advice etc.

The FSA also has a role to play in the space of DB pension schemes when an insurance company plans or acquires defined benefit pension schemes either in part or full. The FSA has a very vital role to play in a BPA deal to ensure that the valuation of the pension liability is calculated as per accepted, standard and valid assumptions and that reserving for such liability is done prudently and as per regulations which are enforced by the Financial Services Authority (FSA)

ICAS (Individual Capital Assessments) framework of FSA has proved to be an excellent tool for assessing this credibility and also provides an illustration of how the BPA market will be subject to the same rules as all other insurance firms we supervise. Any potential new entrants to the BPA market will be subject to the same rules, including both conduct of business and capital requirements, as all insurance firms. This includes, of course, the requirement to treat their customers fairly. As a result, policyholders in schemes transferred to these new entrants will enjoy the same protections granted to all insurance policyholders.

15 Glossary

- Scheme winding up - This is where a scheme is in the process of being terminated. Once the winding up is complete, there will be no assets or liabilities left in the scheme, and the scheme will cease to exist. The scheme must be wound up in accordance with the scheme rules and any overriding legislation.
- Pension Protection Fund is a statutory fund in UK formed under the Pensions Act 2004 which became operational in April 2005 with an express mandate to pay compensation to members of eligible defined benefit pension schemes, when there is a qualifying insolvency event in relation to the employer and where there are insufficient assets in the pension scheme to cover Pension Protection Fund levels of compensation. The PPF is funded by all schemes eligible for protection by way of pension protection levy and administrative levy.
- International Accounting Standard - IAS 19 - The objective of IAS 19 (Revised 1998) is to prescribe the accounting and disclosure for employee benefits (that is, all forms of consideration given by an enterprise in exchange for service rendered by employees). The principle underlying all of the detailed requirements of the Standard is that the cost of providing employee benefits should be recognized in the period in which the benefit is earned by the employee, rather than when it is paid or payable. The International Accounting Standards Board (IASB) issued an amendment (December, 2004) to IAS 19 Employee Benefits. The IASB has decided to allow the option of recognizing actuarial gains and losses in full in the period in which they occur, outside profit or loss, in a statement of recognized income and expense. This option is similar to the requirements of the UK standard, FRS 17 Retirement Benefits
- Financial Reporting Standard - FRS 17, UK - The standard dictates that pension scheme assets must be marked to market each year and the liabilities discounted using the yields on long-term government bonds. The net pension scheme surplus or deficiency is brought into the company's accounts, resulting in a big increase in the volatility of its earnings.
- Occupational Pension Regulatory Authority, UK - The Authority set up under the Pensions Act 1995 to make occupational pensions more secure. On 6 April 2005 the Pensions Regulator took over from OPRA (the Occupational Pensions Regulatory Authority). The Pensions Regulator is the new regulatory body for work-based pension schemes in the UK,
- The Pensions Regulator - The Pensions Regulator is the UK regulator of work-based pension schemes, replacing OPRA, the Occupational Pensions Regulatory Authority
- Defined Benefit Schemes - A scheme that provides a retirement benefit usually based on salary and/or a pre-determined formula for calculating that benefit. Unlike an accumulation scheme, the retirement benefit and method of calculation is known to the member at all times
- Defined Contribution Schemes - A defined contribution scheme is where employer pays a percentage of employee’s salary into the scheme each year. The final pension received will depend on the amount paid in and the investment returns
- SLA – Service Level Agreement. SLA indicates the service deliverables from a service provider to any client. For e.g. SLA could cover service turnaround time, service errors (upper and lower limit), lead times before a service call is attended to etc.

- Pay-As-You-Go structure – Time-tested method of providing social security from tax payers' monies. These are not funded schemes. Here the current generation pays for the previous generations. Many times, pension credits are allocated to workers after retirement based on their contributions during their working lifetimes. This is predominantly found in government social security programs.
- Asset-Liability matching (ALM) – The method of matching assets in a portfolio against the liabilities in the portfolio w.r.t. risk profile, cash flow, time horizon, investment returns etc. .
- Longevity risk – The risk that pensioners will live longer than originally anticipated during pension scheme design
- Accounting Standard 15 - Accounting for Retirements Benefits in Financial Statements of Employers - Institute of Chartered Accountants of India states that in case the costs related to gratuity and other defined benefit schemes are based on an actuarial valuation, the financial statements should also disclose whether the actuarial valuation was made at the end of the period or at an earlier date. In the latter case, the date of the actuarial valuation should be specified and the method by which the accrual for the period has been determined should also be briefly described, if the same is not based on the report of the actuary.
- PBGC – Pension Benefit Guarantee Corporation - PBGC is a federal corporation created by the Employee Retirement Income Security Act of 1974. It currently protects the pensions of nearly 44 million American workers and retirees in 30,330 private single-employer and multiemployer defined benefit pension plans. PBGC Operations are financed by insurance premiums set by Congress and paid by sponsors of defined benefit plans, investment income, assets from pension plans trusteed by PBGC, and recoveries from the companies formerly responsible for the plans.
- ICAS (Individual Capital Adequacy standards) – ICAS is the new regulatory requirement introduced by the FSA in the UK which aims to determine the capital requirements of insurers based on their assets and liabilities risk profile rather than based on a 'one-size-fit-all' formula

16 Acknowledgement

The authors would like to thank Shri Krishnaswamy Rajagopal, Domain Head-Insurance, Wipro Technologies, Bangalore for his encouragement and valuable guidance in writing this article. The authors would also like to thank Shri K P Sarma, Appointed Actuary, Metlife India Insurance Private Limited, Bangalore for his valuable inputs as reviewer of contents of this article.

References

- www.limra.com – LIMRA website
- www.pwcglobal.com – Price Water House Coopers website
- www.towergroup.com – Tower group website
- www.fsa.gov.uk – UK Financial services agency website
- www.deloitte.com – Deloitte Touche Tohmatsu website
- www.paternoster.uk.com – Paternoster website
- www.thepensionsregulator.gov.uk – The Pensions Regulator (TPR) UK website
- www.dwp.gov.uk – Department of works and pensions, UK website
- www.bc.edu/crr - Center for retirement research, Boston College
- FSA Newsletter - A regulatory update from the Insurance Sector Team Issue No.8 – September 2006
- www.legalandgeneralgroup.com – Legal and General website
- www.actuaries.org.uk – Institute of actuaries website
- www.icai.org – Institute of Chartered Accountants of India website
- www.pbgc.gov – US Pension Benefit Guarantee Corporation website

About the Authors

M.M.Shyam Sankar Kartik is a Consultant in Insurance Domain Competency Group of Wipro Technologies. He has over 8 years experience in delivering business solutions to global insurers. He has worked extensively with insurers in Japan, China, Hong Kong, India, Sri Lanka and the UK. He is a student member of Actuarial Society of India. He can be reached at manakkal.kartik@wipro.com.

Shrinivas Susarla is a Domain Consultant in Insurance Domain Competency Group of Wipro Technologies. He has over 12 years experience in insurance. He has worked extensively with insurers in Asia-Pacific, US and the UK. He is a student member of Actuarial Society of India. He can be reached at Shrinivas.susarla@wipro.com

Sanjay Nene is a Domain Consultant in Insurance Domain Competency Group of Wipro Technologies. He has over 16 years experience in insurance. He has extensive experience in insurance operations, regulatory aspects of Indian insurance market and deployment of IT for operational excellence. He is a student member of Actuarial Society of India. He can be reached at sanjay.nene@wipro.com