Issues and Options in the Pay-out Phase in Defined Contribution Pension Schemes

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Consistent with international trends, the role of a Defined Contribution (DC) schemes is expected to grow substantially in India. The payout phase of DC schemes has received relatively less attention than the accumulation phase. Key risks to be addressed are the longevity and inflation risks, along with provisions for survivors' benefits. The paper discusses pros and cons of lump sum, a phased withdrawal, and annuities as options during the payout phase. It emphasizes that for small accumulations, a phased withdrawal may be a better option than annuities. There is a need to research on designing annuities which permit differing risk sharing arrangements among insurance companies, the annuity buyers, and government. Need for developing a world class pension research centre is strongly emphasized to enable India to address pension challenges in an informed and effective manner. We would like to thank S.P. Subhedar for useful comments. The usual caveat applies. (June 2006)

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I Introduction

The recent years have witnessed the increasing importance of Defined Contribution (DC) schemes in pension systems of many countries. In a DC scheme, while contributions are explicitly defined, benefits are not. This is because the risks associated with investing them, and then converting them to a regular retirement income stream are borne by the individual members. In contrast, in Defined Benefit (DB) scheme, the benefits to be provided are explicitly stated, while contributions are left undefined. In a DB scheme, it is the plan sponsor which bears the investment, mortality, and other risks. It should be stressed that full funding of liabilities is feasible and highly recommended for both the DC and DB schemes.¹

In any Defined Contribution (DC) pension scheme, there is an accumulation phase as well as a pay-out phase (Figure 1). During the accumulation phase, a member of a DC plan or an annuity purchaser² contributes towards accumulating balances. The value of such accumulation depends on the amount of contributions (for a DC plan, covered wage level times the contribution rate) less pre-retirement withdrawals plus

returns (net of investment management expenses) obtained from the investment of funds less applicable taxes. It is usual for administrative expenses to be borne by the members collectively.



Figure 1

Cumulative Balances = Net contributions (contributions minus withdrawals), plus interest credited on accumulated balances.

Payout phase: the funds accumulated can be spent rapidly or slowly. Death may occur before the funds are exhausted or reverse is also a possibility. So need to protect against longevity risk. As it is the purchasing power of the funds that is relevant, protection against the inflation risk is also desirable. Source: Author

The key variables during the accumulation phase are thus the wage level and its growth, pre-retirement withdrawal provisions, returns from investments, and the tax rates. To gain from the power of compound interest, the balances must be accumulated over a long period. Large pre-retirement withdrawals permitted by various provident funds therefore detract from the retirement objective, and need to be actively discouraged. The investment management costs and the cost of administration need to be minimized as well.

As India embarks on reforming its pension system, the role of DC schemes is expected to grow. By 2030, the population over 60 years old (the current retirement age) will approach 200 million (Asher, 2006). Most of them will require at least a partial recourse to DC type schemes to finance old-age³. There is also an increasing trend to diversify investments of gratuity and related funds⁴. Such a trend is also likely in the medium term for the Government Provident Fund (GPF) schemes of the government employees.

The New Pension Scheme (NPS) for civil servants (except those in the armed forces) of the Central Government who join after January 1, 2004, is also of the DC type⁵. Under it, civil servants as an employee, and government as an employer each contribute 10 percent of the salary to the individual's account. It is portable in the sense that even if a civil servant changes employer, the accumulated balances remain in the individual's account⁶. The balances can not be withdrawn till age 60, thereby ensuring that the power of compound interest will be harnessed for retirement provision.

As of May 2006, 16 States have also decided to implement the NPS, with minor modifications.

In the pay-out phase, up to 60 percent of the accumulated balances can be withdrawn as a lump sum. For the remaining, there is provision for compulsory annuitisation.

While the NPS is mandatory for the civil servants, there is provision for voluntary participation⁷. A Hong Kong based financial institution has estimated that by 2015, there are likely to be 8.6 million mandatory members of the NPS, with accumulated balances of US\$26 billion (Cashmore *et al.*, 2005). The study also estimates that in 2015, 85 million individuals may voluntarily join the NPS, with accumulated balances of US\$150 billion. While the projections appear over-optimistic, they illustrate the potential for growth of membership and pension assets in DC schemes in India.

The NPS is to be regulated by Pension Fund Regulatory and Development Authority (PFRDA). Interim PFRDA was set up in 2004, but the Bill has not yet been passed by the Parliament. It is imperative that all stakeholders cooperate to pass this Bill in the monsoon session of the Parliament in 2006 as the longer its passage is delayed; the more difficult it will be to bring under regulation currently unregulated pension arrangements (Asher, 2006).

The role of DC schemes is also evident in the micro-pension initiatives. The UTI Mutual Fund has started an initiative which can be credited as the country's first micro-pension scheme for the unorganized sector. It has entered into a customized arrangement with Shree Mahila Sewa Sahakari Bank Ltd. for providing its members who are self-employed low income women, a retirement financing opportunity through a micro-pension initiative under its UTI-Retirement Benefit Pension Fund.

The scheme focuses on self-provision through its micro-pension scheme. With contributions ranging from Rs. 50 to Rs. 100 per month per applicant, members joining the scheme are required to contribute till reaching the age of 55 years so as to receive periodic pension after they reach 58 years.

The savings are pooled by the Bank and transferred to UTI for investment management. This reduces the investment management and record-keeping costs. Each worker receives a unique account number, and a passbook which records contributions history and accumulated balances. The scheme has provision for periodic cash flow through its Systematic Withdrawal Plan, but the details are as yet unclear.

Pension policy debates and academic literature have usually emphasized the accumulation phase. The arrangements for the pay-out phase however are equally crucial

in determining retirement income security. Accordingly, this paper provides an overview of the issues and options involved in the pay-out phase in the Indian context.

Π

Issues

In the pay-out phase (usually coinciding with retirement⁸), longevity, investment and inflation risks need to be addressed. In addition, survivors' benefits and disability insurance are also essential. This is particularly the case in India as life-time labor force participation of women is relatively low, and even when they do participate, women as a group earn less than men, and therefore require more years of support. Uneven property rights and social status of women, particularly of widows, are additional reasons for the need to provide survivors' insurance benefits. More systematic consideration of these issues, informed by international experiences, and analytical insights, is needed.

The longevity risk concerns the fact that while each person is certain to die, the age, the cause, and the place of death are not known. Some may die within a short period after retirement; while others may live for a much longer period. The latter category of persons may find their financial resources exhausted, while those dying early in retirement may not face this challenge (Figure 1).

The earlier the age at which final withdrawal is permitted, the longer the period for which the accumulated balances will be required to be used to finance old-age. In 2001, in India, average men and women at age 60 had life expectancy of 16 years and 17 years respectively. This implies that accumulated balance in provident fund at age 55 will on an average need to last for 21 years for men, and 22 years for women. For some groups, such as civil servants, the life expectancy is much higher⁹. Moreover, the dispersion around the mean life expectancy should also be taken into consideration. India's demographic trend therefore suggests that there will be considerable lengthening of the pay-out phase (Subhedar, 2006).

If this risk is to be addressed by the purchase of annuities, then their pricing reflecting not just the investment risks, but different mortality and morbidity trends among occupational groups, regions, ethnic groups, etc. is essential. This requires extensive database and indigenous research capacity¹⁰.

The inflation risk arises as the real value of the nominal pension or annuity will erode each year if the inflation rate is positive. Maintaining constant value of the pension or an annuity is essential but it is expensive. Moreover, appropriate investment vehicles for asset-liability matching will need to be developed.

In India, every life insurance company that has been licensed by the IRDA can provide both deferred and immediate life annuities. Only the Life Insurance Corporation (LIC) is permitted to provide annuity certain, i.e. annuity which is payable for specified number of years and there is no life element involved in it.

The key challenge for the DC schemes in India is to develop viable risk-sharing options for the payout phase which are robust (can withstand macroeconomic shocks), sustainable over a prolonged period, and can accommodate diverse needs. As insurance companies are the only ones mandated to provide annuities, they bear a large

responsibility in developing appropriate products, supported by rigorous research and robust databases.

III Options

There are three possible options.

(i) Lump sum Option: This is currently the practice with the EPF, gratuity scheme, and with commutation benefits. In the NPS, up to 60 percent of the balances can be withdrawn as a lump sum¹¹. For those who are liquidity constrained, those who do not expect to live long after retirement, or have large health expenditure needs, and those with social obligations such as marriage or higher educational expenses, may prefer a lumpsum withdrawal.

The EPF permits all of the balances to be withdrawn. To the extent a member belongs to both the EPF and the Employees Pension Scheme (EPS), this may be defensible, as the EPS does address longevity risk, and has provision for benefits to the survivors. But the EPS is widely regarded as being hugely underfunded and financially not sustainable (Shah, 2005). So reliance on it for financing old age may be risky.

The initial commutation of the pensions for civil servants can be defended in principle, on the above grounds, but its restoration after a period (of 15 years) has extremely weak rationale. The existence of gratuity benefits, leave encashment benefit, and the government provident fund benefit, all of which are paid in lump sum at retirement to the civil servants significantly weakens the case for even the initial commutation in India. This is one of the parametric reforms which the Centre and the states need to urgently consider (along with updating the commutation formula to reflect current and prospective mortality and discount rate) with appropriate transition provisions.

The main limitation of the lump sum is that it negates the rationale for mandatory saving for retirement. This rationale is based on the insights from the behavioral finance literature which suggests that most individuals have difficulties in self-control and lack self-discipline to voluntarily save for old-age, especially when they are young (Mitchell and Utkas, 2004). A lump sum option implies that at final withdrawal age, individuals suddenly become wiser and acquire selfcontrol, which is improbable. Low level of financial literacy, combined with complexity of financial products and their aggressive marketing by an

oligopolistic industry are also major issues faced by the regulators¹².

(ii) **Phased Withdrawal Option**: This option is appropriate when the accumulated balances are insufficient to warrant the use of annuity instrument, and to provide a degree of flexibility.

The accumulated balances in EPF are fairly low for most members (Table 1). The average balance of the members is not only low, but 16% members account for 84% of the balances¹³. While design changes, particularly limiting the pre-retirement withdrawals, and more sophisticated risk management strategies in

managing the accumulated balances of the EPF and EPS (amounting to Rs. 0.5 million crores) are needed, a phased withdrawal option would be more consistent with the insights of the behavioral finance literature.

Balance (in Rs.)	No. of members	% of total members	% of total accumulation	Average Balance (in Rs.)
Up to 20,000	293.4 lakh	84.58	16.98	3133
20,000 - 49,999	28.77 lakh	8.30	21.52	40,468
50,000 - 99,000	12.77 lakh	3.68	16.67	70,663
1 lakh – 1.99 lakh	7.91 lakh	2.28	20.25	1,38,414
2 lakh – 2.99 lakh	2.33 lakh	0.67	10.37	2,40,616
3 lakh – 3.99 lakh	82,629	0.24	5.23	3,41,959
4 lakh – 4.99 lakh	34,593	0.10	2.83	4,42,575
5 lakh – 9.99 lakh	36,297	0.10	4.29	6,40,229
10 lakh – 24.99 lakh	5973	0.02	1.45	13,16,782
25 lakh – 49.99 lakh	5973	0.0001	0.31	25,06,620
Above 50 lakh	86	0.00001	0.90	54,48,660

Table 1: Members Balances in the EPF, 2004

Source: EPFO, Computed from Sridhar (2004).

The UTI micro-pension plan could also benefit from a phased withdrawal option. The contributions in the plan are expected to range from Rs. 50 to Rs. 100 per month, too small to generate sufficient balances to warrant use of formal annuities.

The NPS mandates annuities for 60 percent of the accumulated balances. But even in this case, a phased withdrawal option for balances below a certain level may be desirable to reduce transaction costs, and provide flexibility. The period for NPS would however need to be much longer (at least 20 years) than for other schemes.

A phased withdrawal could be structured through a special arrangement with the banks; through a special bond; or through post offices. Some risk sharing is also possible. For example, government institutions may provide an interest rate of 25 or 50 basis points above the applicable bank deposit or a bond rate prevailing in the market. The phased withdrawal period could range from 10 to 25 years. More research however needs to be undertaken concerning various design features appropriate for different schemes. Given the diversity, only one design is unlikely to be appropriate.

(iii) **Annuity**: As noted, an annuity offers guaranteed income either for life or for a fixed period. There are many variations of the annuity product, and its pricing is determined accordingly. Thus, annuity may be structured for an individual or for a

couple. The later has the advantage of addressing the gender issue, i.e. providing income support to wife. Since women as a group live longer, this is an important need. However, the price of annuity for a couple is higher, i.e. for a given capital sum, periodic payments are lower, than for a single individual¹⁴. Annuity should thus be regarded as a product whose features determine its price.

There are different annuity product structures corresponding to the risk-sharing arrangements.

Figure 2 illustrates the space within which different annuity products may be structured for addressing longevity and investment risk. Point A in figure 2 corresponds to a guaranteed lifetime annuity option, where the above risks are borne entirely by the provider. Point B corresponds to a situation of selfinsurance, where the pensioner receives a lump sum only from its pension assets, but bears subsequent investment and longevity risk. However, such risk may prove to be too heavy on the consumer. There is no access to the annuity market at such a point.

Pension regimes of many countries tend to promote structures represented by such extreme points like A and B. A point like D corresponds to the purchase of a variable, or with profit annuity. Here the consumer bears the investment risk but no longevity risk. Point E corresponds to an annuity product, the income from which varies with survival experience but gives guaranteed investment returns. Finally, a point like C corresponds to a product with income (investment and survival rates) reviewable at regular intervals.



Figure 2: Sharing Investment and Longevity Risk

Source: Impavido et. al. (2004), p.19.

In the Indian context, there are additional considerations. In the above space, inflation risk, and survivors' benefits are not addressed. With increased longevity, health care needs also become important. In India, the state provision of health care is weak, both in terms of access and quality.

Health insurance is only gradually being introduced in the country. But in the absence of a strong regulator, (IRDA is in the early stages of the learning curve in regulating health insurance), and recent introduction of medical technology, cost control and access will be major challenges. This will particularly impact the elderly disproportionately as health care is relatively large share of their household budget, and annuity and other pension products address inflation risk in a very limited way.

In the Indian context, a partial risk pooling arrangement involving government contributing to annuity costs for persons beyond a certain age (for example for those above 75 years of age) may be considered. Any product design will however need to be empirically-based and should have features to guard against political considerations overwhelming the sound economic and social considerations.

IV Concluding Remarks

Consistent with international trends, the importance of defined contribution (DC) schemes is expected to grow considerably in India. In contrast to the accumulation phase, the payout phase has not received deserved attention in the policy debates, designing of schemes, and in the academic literature. Given the increasing life expectancy, the length of payout phase will correspondingly increase. Developing appropriate products for managing longevity and inflation risks will therefore pose considerable challenges. As the importance of DC schemes grows, substantial improvements in financial literacy, combined with strong regulation of pension products will be needed. India urgently needs a world-class pensions research centre. Its primary task should be to help develop appropriate strategies, policies and instruments for both the phases of the DC system, based on robust database and rigorous but relevant research. In structuring the payout phase, a phased withdrawal option should be seriously considered. As the DC pension system takes root, the annuitisation through life insurers could pose huge systemic risk to the insurance sector due to adverse selection and unanticipated increase in longevity. There is also a need to formulate annuity products which permit differing risk-sharing arrangements among insurance companies, the annuity buyers, and the government. How India addresses this challenge will have an important bearing on the future of 200 million elderly projected in 2030, and their families.

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² An annuity provides for a systematic liquidation of a capital sum. It is distinguished by a variety of features such as how the funds are invested, when annuitized payments are scheduled to begin, and how they are paid for (Shapiro and Streiff, 2004, p. 2). The mortality risk is the main risk faced by the life insurer, while investment risk is the main risk in provision of annuities. The increased life expectancy therefore reduces life insurance costs, but increases the annuities cost, i.e. lower annuity benefits for a given capital sum. The risk profile of those voluntarily seeking annuities increases if there is significant adverse selection problem, i.e. those who are especially likely to live longer constitute disproportionately large proportion of the demand for annuities.

³ It should be emphasized that a risk averse individual must obtain retirement income from not just one source (or scheme) but from a variety of sources, including formal provident and pension funds, property and other assets, support from children, and selective labor force participation.

⁴ The Life Insurance Corporation (LIC) is to market unit-linked group pension product, Gratuity Plus, for the corporates. This plan, which has been approved by the Insurance Regulatory and Development Authority (IRDA), permits corporates to choose the level of exposure in equities. LIC also plans to introduce group superannuation product under the unit-linked Superannuation Plus. These superannuation plans offered by the life insurers do not *per se* provide for annuitisation. The trustees have to be instrumental in buying annuities from the life insurer.

⁵ See Shah (2005) for the rationale and mechanism of the NPS.

⁶ Currently, 20 years of service by a civil servant is required for pension eligibility, hampering inter-sectoral labor mobility.

⁷ This will be facilitated if the Public Provident Fund (PPF), and other similar schemes providing the above market administered interest rates are discontinued with appropriate transition provisions.
⁸ The age at which final withdrawal is permitted may or may not coincide with the retirement age. In the Employees Provident Fund (EPF) scheme, administered by the Employees Provident Fund Organization (EPFO), the withdrawal age is 55 years, but the retirement age in India is generally higher, ranging from 58 to 60 years. In the pension plans of insurance companies, such as by HDFC Standard Life Insurance, the age at which vesting occurs (i.e. the pay-out phase begins) may vary between the age of 50 and 70 years.

⁹ According to LIC (1996-98) Occupational Pensioners Mortality, the life expectancy at age 60 was 22.5 years for all occupational pensioners.

¹⁰ Developing such a database, and then ensuring that it is used for developing appropriate pension products, and monitoring their impact should be among the major responsibilities of a Pension Research Centre such as the one at the National Insurance Academy (NIA).

¹¹ Some have argued that the discretion permitted in allocation of balances between lump sum and annuity may create adverse selection bias as those civil servants who are expecting to live long are likely to commit larger share of balances to annuities.

¹² Even in the high-income developed countries, "studies on financial literacy – which question people on their knowledge of everything from risk diversification to interest rates on credit cards – have found levels of understanding remain appallingly poor" (Plimmer, 2006). The PFRDA and IRDA should combine to sponsor research on the best methods and messages to enhance financial literacy in India. Their name includes the word 'development', and such research and its implementation are an important part of the development function.

¹³ The EPFO should be required to publish such information on a regular basis and ensure its wide accessibility.

¹⁴ From an actuarial point of view, annuity for women should be priced higher than for men as women live longer. Some countries however do not permit gender-based differential pricing of annuities. In this case, men as a group will be subsidizing women as a group.

¹ DC schemes are usually fully funded as accumulated balances are paid out as benefits. For a DB scheme, full funding requires that contributions and benefits be adjusted to be equal over a certain period of time. Thus, full funding in a DB scheme is consistent with low accumulation of reserves.