The development and reform of social security pensions:

The approach of the International Labour Office

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This paper provides a synopsis of a forthcoming book to be published by the ILO entitled Social Security Pensions: Development and Reform. It has been edited by Colin Gillion, John Turner, Clive Bailey and Denis Latulippe but in fact is the product of a large number of contributors both within the Social Security Department of the ILO and from outside. The editors wish to express their thanks to all who have contributed, although any errors and omissions remain their own. Although this summary, and the book on which it is based, have been produced by the Social Security Department, the views expressed do not necessarily reflect the opinions of the International Labour Organisation.

At the beginning of the last century few workers possessed the security of an old age pension. In the developed countries most either died early or worked until they were in their late sixties, spent a brief retirement living with their children, then died in their early seventies. To be old generally meant to be poor. Being disabled signified that poverty began earlier. To survive the wage earner implied that poverty lasted longer. No support from children meant being thrown back on charity or minimal public support. For developing and middle-income countries matters were a great deal worse: incomes were substantially closer to subsistence levels and the capacity of children to support their parents was less: death came earlier: life was nasty, brutish and short. But by the beginning of the 21st century the situation has dramatically changed. In developed countries the incidence of poverty in old age is now at comparable levels to that in the remainder of the population. Life expectancy is longer and most workers can expect a significant period of retirement with a reasonable income. Disability pensions and the possibility of early retirement have reduced the financial risks of incapacity to work. Almost all women are entitled to a survivor's pension, and a growing majority are entitled to a pension as workers in their own right. Alongside these changes, an increasing number of developing countries are beginning to emulate the experience of the developed countries, in terms of the extension of coverage and in the improvement of benefits.

A large part of this profound improvement in social conditions can be attributed to the creation of social security pensions which must be counted as one of the great social developments of the last hundred years. After growing hesitantly in the first part of the 20th century, they underwent an accelerated development in the second half. Pension outlays in the developed countries grew at twice the rate of GDP: and more and more developing and middle-income countries joined the number of countries attempting to provide pensions for their people.

But, as this book shows, the task is only half complete. Pension schemes throughout the world are in a state of upheaval. On one hand the developed countries are contemplating new architectures for the financing of pension outlays. This will require careful thought and the development of a new consensus. But on the other hand the overwhelming majority of the world's population is still without some form of income security in old age or disability. To extend the security available to workers in the developed countries of the world to workers in all other countries remains a paramount task for the early years of this century. It will require great effort, great imagination and an enlightened adaptation to the different circumstances of developing countries. It means extending the coverage of pension schemes (and all other forms of social security), improving their governance, and ensuring that the design of the schemes is both economically efficient and compatible with internationally accepted human and social values.

About this book

This book has three main purposes.

Its first and principle intention is to act as a reference work for policy analysts and decision-makers in countries which are seeking to reform their existing pension programmes, or which are seeking to establish pension programmes for the first time. For this group of readers what is happening in other parts of the world, and its implications, is of critical relevance to the decisions which they themselves must take and implement. This is especially the case because few such countries possess their own prior experience on which to draw in shaping their decisions. A balanced assessment only can come from a factual review of what other countries have done, modified by its applicability to the particular circumstances and history of the country contemplating reform.

The second main intention of the book is to act as a textbook, mainly for graduate students or for undergraduate students in their last year who wish to find out about the structure of pension programmes on a global basis, and who wish to understand not only the current situation as far as pension schemes are concerned but also some of the analytical social and economic consequences which arise from different pension structures.

These first two groups of readers are addressed mainly in Part I of the book which, as far as possible, is descriptive and which, again as far as possible, avoids taking sides in what has become a controversial and sometimes heated policy debate.

The third purpose of the book is frankly more prescriptive and because of this may be more controversial. It is concerned with making the right choice of policies. It should be of interest both to all members of the general public, who will be affected by the choice of policy, as well as to those members of the international community whose task it is to set normative as well as economic standards for the reform and development of pension schemes. Part II of the book sets out the normative basis for pension programmes -- in terms of the replacement incomes which they can generate, their desired universality, the extent to which they can assist in the avoidance of poverty, the extent to which they can guarantee an adequate retirement income, and the degree to which they should be managed on a tripartite basis. This normative underpinning is largely taken as a set of self-evident axioms, although it has been endorsed by the international community and consecrated in International Labour Standards. It also raises the question of whether these Standards may require revision and whether the same set of Standards can be universally applied to all countries. Part II goes on to discuss the views of the International Labour Office about the various policy options which are available to countries undertaking reform and development, especially in the areas of extending the coverage of pension schemes, improving their institutional structure and governance, adjusting the age of retirement, in setting the structure of benefits and contributions, in the broad question of the funding or non-funding of pension schemes, and of casting the whole in a pluralistic and flexible framework.

The subject matter of the book is social security pensions. This is an extraordinarily vast topic. Broadly it is taken here to mean those pension schemes (including invalidity and survivors', as well as retirement, benefits) which require mandatory participation by workers. On the benefit side it also includes social assistance to the elderly, and on the revenue side pension schemes financed from general taxation as well as from earmarked social security contributions. Private pension schemes in which participation is voluntary are given a much slighter treatment, and are referred to only in so far as they supplement social security pension schemes. But these are not hard and fast definitions and, as the book itself shows, there are many areas where public social security schemes and private and/or personal pension or savings schemes interact, and cannot be considered one without the other.

Much of the book is concerned with detail - the practicalities of running a pension scheme which are the lifeblood of most pensions agencies - and it provides numerous examples, including institutional structure, of how things are managed across a wide range of countries. These illustrate both what works in some countries and what does not work in other countries. They cover the administrative regulations and operational procedures used to collect contributions, to pay pensions, to invest any reserves, and to set the various formulae which determine contribution and benefit rates. But pension issues are seldom open to black and white resolution. Except in a very few instances it is not possible to give a single categorical answer which fits all circumstances. This information is displayed throughout the book, but it can also be found in the regional and technical annexes which give summary accounts of the situation in the main regions of the world and deal with particular issues. It is backed up a statistical annex which presents quantitative information concerning demography, capital markets and other features of social security pension schemes.

The climate of change

As a starting point, it is necessary to recognise the widespread turbulence which is affecting almost all social security pension schemes throughout the world. In retrospect, the 1980s and 1990s may appear as one of the great watersheds in the development of social policy. A large number of countries are at present contemplating, planning or implementing major changes to their existing schemes of retirement protection. Others are undertaking large-scale expansions of their schemes, frequently from a very limited base. A majority of countries, across all regions, now fall into one of these two categories and there is almost no country throughout the world (including the advanced countries) where the reform, development, adjustment, improvement or modification of pension schemes does not appear on the political agenda. By the early years of the next century, the international landscape of income protection in old age may have changed beyond recognition.

The list of countries affected is a long one. In China, the government is planning to introduce major reforms to pension schemes, as well as to employment injury insurance, unemployment compensation and health care. After decades of discussion, Thailand is establishing a social security pension scheme for employees. A number of countries in Africa, are converting national provident funds into pension schemes, and partial conversion has been implemented in India, and is also under consideration in Malaysia. Conversely, in Latin America many countries are contemplating a change to privately-managed pension schemes based on individual accounts. In Central and Eastern Europe, most countries face an almost complete overhaul of their pension schemes, together with the installation of new programmes of unemployment compensation and social safety nets. Many schemes in Africa, such as that in Madagascar, are undertaking a basic reconstruction, both of their design and coverage, and their organisation and management. Timing differs. Chile, introduced major reforms nearly 20 years ago. Other countries, such as Tanzania, are in the middle of their transformation. And yet other countries, such as Mexico and Vietnam, are just beginning the process of change. Waiting in the wings are countries such as Cuba, Nepal and South Africa.

Public and non-public pension programmes

In many developing countries, the social security retirement benefit programme provides benefits to only a small fraction of the population, primarily upper-income urban workers. For most workers, there is no public-private mix. There is only private provision for consumption in old age, which occurs through work, transfers from other family members, and support from charities and other non-governmental organizations. In some countries, low coverage is the result of widespread contribution evasion. In others, it is the result of legislated exclusions of certain groups from coverage. Legislated exclusions, however, are often a pragmatic policy based on the realization that if certain groups were covered in the legislation, these groups would have high contribution evasion.

By contrast, in many of the countries making the transition from planned economies to market economies, the provision of retirement income remains largely a public sector responsibility. This situation is also in transition in some of these countries, however, as they are preparing and enacting reforms to shift responsibility to the private sector.

In developed countries, for the bottom 40 per cent of the income distribution, retirement income is provided almost exclusively by the public sector through social security retirement, disability and social assistance benefits. In these countries, the top 60 per cent of the income distribution also finance retirement consumption through private savings, occupational pensions and work.

In most developed countries, the largest component of the provision of retirement benefits is the social security retirement benefits programme. This programme is generally a defined benefit pay-as-you-go programme providing monthly or biweekly benefits. In some middle-income and developing countries, the public sector retirement benefit programme is a provident fund - a funded defined contribution plan managed by the government. Provident funds generally provide benefits as a single lump-sum payment at retirement. In a small but growing number of countries, social security defined contribution pension schemes are managed by private sector management companies. Other governmental components include benefits for disabled workers and for survivors of deceased workers, for the unemployed and benefits for workers taking early retirement. Government provision or financing of health care in old age is an important benefit in some countries. In addition, most countries provide social assistance benefits for some low-income elderly. Often, in countries with a personal income tax, the elderly receive a governmental subsidy through preferential income tax treatment

Government may influence the public-private mix in a number of ways. The most important way is by setting the generosity of the benefits it provides. It may allow voluntary privatization through contracting out, as is done in Japan and the United Kingdom. It can mandate provision of employer-provided benefits, as in Switzerland, or that workers contract with private pension fund management companies, as in Peru. It may provide incentives for private sector provision by providing preferential tax treatment for occupational pensions, as in Canada, or, as in the United States, affect the level of private sector provision through regulations as to the characteristics of benefits provided.

Part I: Development

The structure of pension schemes and their problems

Part I begins by discussing benefits. The first three chapters discuss the major types of retirement pension benefits. A conclusion running across the three chapters is that the entitlement conditions - the requirements for qualifying to receive benefits - are an important aspect of the structure of benefits. Particularly for disability and social assistance benefits, the entitlement conditions may ease or tighten based on bureaucratic interpretation or application of the rules. Because of budgetary pressures, many countries are seeking to reduce the generosity of benefits. This can be done as an equal percentage reduction for all beneficiaries or a targeted reduction. A targeted reduction that reduces benefits relatively more for upper-income workers may be fairer because they generally have other sources of income and consequently depend less on social security benefits than do lower-income workers.

Retirement benefits

While countries structure social retirement benefits in different ways, in all cases they need to decide the entitlement conditions under which benefits will be paid and the factors that determine the level of benefits. Retirement (old-age) benefits provided by social security defined benefit and defined contribution schemes are the main focus of the book. In defined benefit schemes, the benefit formula determines the level of benefits the individual receives and the link between contributions and benefits. A number of countries have made changes in their defined benefit programmes to tie benefits more closely to contributions. Defined contribution schemes generally more closely link benefits to contributions than defined benefit schemes, but often have features that break the connection between contributions and capital market returns. These features include guaranteed minimum benefits, rate of return guarantees and benefits based on rates of return fixed by the pension fund, which are often lower but less variable than market rates of return. Thus, social insurance features in both defined benefit and defined contribution schemes weaken the link between benefits and contributions, but serve to reduce risk faced by retirees.

The annuitization of benefits in defined contribution schemes is the conversion of the account balance at retirement into a flow of periodic benefit payments. Typically, defined contribution schemes do not automatically provide annuitized benefits, and when they do, those benefits generally are not price indexed. By contrast, defined benefit schemes typically provide annuitized benefits with indexation based on increases in prices or earnings.

Disability and survivors' benefits

All developed countries, and many others, have established disability benefit programmes. The level of protection against the hazards of job separation that disability benefits provide varies dramatically across countries. In some countries, disability benefits are an important source of benefits for older workers who leave the work force before reaching the minimum age for retirement benefits. This path to retirement is especially likely to be widely used if a high minimum age has been set for receipt of benefits through the retirement benefits programme.

In countries where welfare benefits are low or difficult to obtain compared to disability transfers, unemployment is high and unemployment benefits are of short duration and little is available in terms of rehabilitation and job protection, it is likely that the supply of applicants for disability benefits will be relatively large. This supply of applicants will increase as the unemployment rate increases, disability benefits increase, and as the period over which benefits can be received lengthens.

The generosity of survivors' benefits has an important influence on the well-being of older widows. Because women have a longer life expectancy than men, they are the principal recipients of survivors' benefits. While many countries still do not treat men and women equally with respect to the receipt of survivors' benefits, there is a trend towards equality of treatment

Social assistance benefits

Social assistance benefits are provided by governments to low-income people. These benefits are not tied to previous work or contributions but are based solely on need. Thus, a means test must be satisfied in order to qualify to receive them. They are important for some retirees who would receive low or no benefits through the retirement benefits programme, due to low wages or not having substantial periods of work. Social assistance includes:

- general assistance - providing cash benefits for all or most people below a specified minimum income level;
- categorical assistance - providing cash benefits for specific groups (sometimes at a level above the minimum);
- tied assistance - providing free or subsidized access to specific goods or services, either in kind or in cash. Housing assistance is an example.

The financing of pension programmes

In most countries, social security retirement benefits are financed through contributions by both workers and employers. Generally, employers finance 50 per cent or more of contributions in defined benefit schemes, but in many defined contribution schemes workers provide all the financing. In many countries the government provides partial financing out of general tax revenues, it being considered fair that the government, employers and workers share in financing social security retirement benefits. The government's share can be determined by a formula or can be a back-up source to cover deficits.

To encourage coverage through voluntary compliance by self-employed workers, and even in some cases to encourage self-employment, those workers have generally been charged a lower rate than the total rate charged to employees and employers. Numerous countries, however, charge self-employed workers a rate equal to the sum of the worker and employer rate on the theory that ultimately employees bear through reduced pay the rate paid by the employer, and thus self-employed workers should also bear the full rate.

The management of investment

The difficulties facing pay-as-you-go social security pension schemes in both developing and OECD countries are leading to growing interest in the advance funding of pensions as a complement or even a substitute for pay-as-you-go. Most countries do not provide funded benefits, but for those that do particular issues relating to the management of investments arise. The investments financing funded benefits may be managed by employers, workers, financial institutions or the government.

If employers or financial institutions are given responsibility for managing pension funds, considerable government oversight is required to protect the interests of the workers. Placing responsibility for managing the considerable sums of money in mandatory defined contribution pension accounts in the hands of private pension fund managers requires some mechanism to ensure that those funds are not stolen or otherwise misused. Experience with the management of private pension funds in OECD countries suggests that the regulation of pension managers requires considerable care. Pension fund management presents notable and perhaps obvious opportunities for self-dealing whereby the managers improperly benefit themselves. In addition, managers may mismanage their funds, either through laziness or excessively zealous pursuit of profit, to the detriment of beneficiaries who will often find it difficult to evaluate accurately the performance of the managers in whose funds they participate. There must be realistic and effective legal means of addressing these potential problems.

If pension policy gives individuals responsibility for managing the investments of their defined contribution retirement accounts, that policy should also assure that workers have sufficient financial knowledge to make wise decisions. Experience has shown that workers tend to be conservative in their investment decisions, which causes them to receive low expected returns and thus low benefits compared to what they would have received had they invested in higher risk assets. If government is given the responsibility, care needs to be taken to prevent the politicization of the investments. While there are numerous examples of poor management of investment by government, there are also examples, such as the Quebec Pension Plan, where government management of investment has been effective.

Whoever manages the investments, pension funding in capital markets requires that those markets are adequately regulated. This criteria is not met in many capital markets, where there is a lack of transparency as to the value of assets.

Coverage and its shortfalls

In 1944, the International Labour Conference recognized in the Declaration of Philadelphia that economic security should be a right for all people and that the nations of the world should develop programmes "which will achieve ... the extension of social security measures to provide a basic income to all in need of such protection and comprehensive medical care". More than 50 years later, however, that right is still denied to the vast majority of retired and disabled people, widows and orphans. For them the key issue concerning social protection is their lack of entitlement, and not the basis for determining benefit.

Lack of coverage tends to be a problem among workers with particular characteristics - informal sector, agriculture, rural, low wage, household workers and the self-employed. While workers with these characteristics are likely not to be covered or to evade contributions in both developed and developing countries, they are a much larger percentage of the workforce in developing countries, which explains in part why the problem of lack of coverage is more severe in developing countries.

The extent of population coverage for social security pensions, however, depends on many factors, of which the following are particularly significant:

- **The method of financing**

Universal, or social assistance, schemes are typically financed from general taxes rather than social security contributions. Provided that the tax base is broad and yields sufficient resources, coverage may be extensive and not directly dependent on individualized financing.

- **The age of the scheme**

Generally, the more established the scheme, the broader the coverage.

- **The level of economic development**

There is a close link between the level of coverage and the level of social protection resources available to finance it, with more developed countries generally having a higher level of coverage

- **The size of the formal sector**

It is easier to collect contributions and taxes from those in formal sector employment than from those in the informal sector.

- **The capacity of the social security administration**

This affects both the credibility and viability of the scheme and has implications for existing coverage in that many schemes experience difficulty in ensuring compliance. It also limits, however, the extension of coverage to excluded groups and contingencies.

- **Government policy**

The extent to which the government gives priority to extending coverage for social protection varies according to national priorities and may be sufficient to counteract other factors. Thus, for example, Costa Rica is less developed than Mexico but has considerably higher coverage due to government initiatives in the 1970s.

Governance and administration

The overall performance of social security pension schemes in many countries has been disappointing. This is attributable to a broad range of problems some of which are outside the control of the social security administration. Some, however, reflect mismanagement, or are due to weaknesses in the design of the scheme. Good governance is the key to an effective social security scheme, but it is essential to be clear as to what this term means. The definition used here is broad and embraces the processes of consultation and decision making, the institutional arrangements, and the managerial and administrative functions relating to the implementation and supervision of social security schemes. It is also concerned with the interrelationship between national policy, national management and scheme management.

Many countries have had problems with poor functioning of their social security schemes. Frequently, these problems are due to poor governance. Sometimes they arise because of politicization of the social security institution. Sometimes they result from the poor design of administrative procedures, or the benefit formula. Poor governance in some countries results in high administrative costs and poor service. These issues of coverage and governance are primarily relevant for developing countries because developed countries generally have high coverage and are fairly well governed.

The following are objectives for good governance, grouped according to whether they relate to strategic and macro policy issues, institutional arrangements or administrative obligations at the operational level.

Strategic and macro-policy objectives

- establish a process of policy formulation which takes account of the full range of social protection needs and which balances those needs against national resources;
- create a balance within national policy between public and social security schemes and individual and private provision which ensures widespread coverage and achieves the desired level of income redistribution;

- create a mechanism for the enactment of legislation to give effect to policy decisions.

Institutional arrangements

- establish institutional arrangements which are accountable for the implementation of social security programmes;
- ensure that contributors and beneficiaries have an opportunity to influence the decision-making process and to monitor the administration of social security schemes;
- establish financial control mechanisms to monitor the allocation and management of resources;

Administrative obligations

- ensure that contributions are collected and accounted for and that benefits are paid promptly and accurately and with appropriate explanation;

- minimise the cost of administration within the desired level of service;
- ensure that contributors and beneficiaries are aware of their rights and obligations;
- establish a mechanism for monitoring and reviewing administrative performance.

These objectives for good governance provide the basic framework for the conception, development and monitoring of a sound and viable social security scheme. The governance of social security has received increasing attention in recent years as part of a growing awareness that schemes are only as effective as they are administered. There has been a tendency in the debate on the reform of social security, however, to fail to distinguish governance issues from conceptual ones. This has led to criticism of social insurance principles when, often, the focus should have been on weaknesses as to how such schemes were administered.

Contribution evasion

Contribution evasion, or noncompliance, is a critical issue in the design and operation of contributory social security pension programmes. It influences the adequacy of benefit payments to participants as well as both the financial status and the political legitimacy of the entire programme. Contribution evasion occurs when employers, employees and the self-employed do not pay required social security contributions. It is a major problem in much of Central and Eastern Europe, Latin America, Africa and Asia. It has seriously undermined the social security scheme in some countries, with revenue falling far short of that needed to pay benefits. This shortfall has resulted in social security schemes failing to pay benefits, paying low benefits and in their receiving subsidies from general revenue. Even in OECD countries, many schemes lose considerable revenue due to this revenue gap.

Contribution evasion is one of the reasons why social security schemes are mandatory - some workers will not voluntarily save enough on their own to fund their retirement. The problem is compounded because employers generally act as a collection agent, and they may have even less interest in collecting contributions than some workers do in making them. However, the causes of contribution evasion are more complex. In some countries, contribution evasion is primarily a result of high inflation. In other countries, corruption and lack of trust in the government are important reasons. While a loose connection between contributions paid and benefits received may be a factor in contribution evasion, it is certainly not the only factor and is probably not the most important one.

Contribution evasion can only occur if three conditions coincide:

- employers wish to evade, or place a low priority on making social security contributions relative to other expenses;
- employees prefer non-payment of contributions, are reluctant to report non-payment to authorities or are unaware of the non-payment;

- government enforcement tolerates evasion or is inadequate to prevent it.

Pension transfers and the redistribution of income

Redistribution is an important feature of many social security pension schemes. Governments design pension schemes to be redistributive to guarantee adequate retirement income for retirees who were in low-paid employment while working, or whose accrual of pension benefits was reduced because they were temporarily out of work for reasons such as sickness, unemployment or family responsibilities. Redistribution between generations may also be desired to share the benefits of economic growth or to provide decent pensions to people who had low lifetime income due to a depression or war.

Redistribution from upper-income to lower-income workers is generally seen as an essential feature of a pension scheme. The desire of governments to redistribute income raises questions about how this can be done equitably, both for those who contribute and those entitled to benefits.

Pension schemes can be designed so as to be progressive, meaning that they provide low-income workers a higher rate of return on their contributions than upper-income workers. While progressive features are commonly built into the structure of defined benefit schemes, that is rarely the case for defined contribution schemes. Defined benefit schemes often have features designed to reduce the inequality of income, although features that increase income inequality by benefiting privileged groups may also be present in some countries. In many countries, including countries with defined contribution schemes, the military and government employees are treated as privileged groups. Political pressure by powerful groups may result in redistribution favouring the military and the judiciary, or upper- and middle-class workers, rather than the poor. For both defined benefit and defined contribution schemes, the fact that higher-income workers tend to have higher life expectancy causes annuitization of benefits on a uniform basis to favour those workers in terms of lifetime benefits received.

The risks to individuals

The challenge in delivering stable and predictable retirement income is that the world is changing and is inherently unpredictable. Pension schemes are subject to a variety of risks. The economy may not behave as expected, demographic trends may alter, political systems may change, and private and public sector institutions important to the pension scheme may fail to execute the responsibilities they have been assigned. Moreover, at the beginning of a working career, the worker's own fortunes are not entirely predictable. He or she may experience prolonged unemployment, or have a promising career disrupted or prematurely ended by industrial restructuring. Each of these possibilities introduces risk that expected pension benefits may not be received.

No pension scheme in an unpredictable world can completely succeed in providing a predictable source of retirement income. Some threats to a predictable retirement income, however, have more serious consequences under one approach to pension provision than another.

The following categories of risk affect pension benefits:

- demographic risk arising from unexpected changes in birth rates or mortality rates;
- economic risk arising from unexpected changes in the rate of growth of wages or prices or from unexpected changes in the rate of return earned in financial markets over the course of the worker's career;
- political risk arising from a breakdown in governmental decision processes which allow politicians to make benefit promises in excess of what society can afford to pay, cause benefits to be reduced on short notice due to political changes, lead to other flaws in system design, or which prevent the political system from making timely adjustments to changing economic and demographic trends;
- institutional risk arising from the possible failure of private financial institutions, or their government regulators, or from the inability to obtain retirement benefits due to inadequate record-keepi0ng or other kinds of incompetence on the part of pension administrators; and
- individual risk arising out of uncertainties about the individual's future work career.

The risks of social security pension schemes differ between pay-as-you-go defined benefit, funded defined contribution and unfunded notional account systems. Risks as to replacement rates provided by defined contribution schemes are affected both by unexpected changes in capital markets and unexpected changes in the rate of growth of wages. For example, an unexpected rapid growth in real wages will lead to a low replacement rate in a defined contribution plan just as will an unexpected decline in asset values in capital markets. Relying on defined contribution schemes may lead to considerably over-saving or under-saving in comparison to that needed to reach a target replacement rate, depending on the performance of capital markets and wage growth rates near the point of retirement. Fluctuations in interest rates also affect the value of annuitized benefits provided by defined contribution. For defined contribution schemes, a decrease in interest rates will cause a given account balance at retirement to provide lower annuitized benefits. However, it will also affect the value of assets held by the pension fund, and the two effects may be partially offsetting. Neither of these effects of interest rates, however, directly affect the benefits provided by defined benefit schemes.

Economic effects

Social security retirement pensions are determined by the political process in democratic countries. Thus, their effects are to some extent desired outcomes of conscious decisions concerning design. Some effects of social security, however, may be undesired, due either to inherent trade-offs in the design of systems or consequences unanticipated when systems were designed.

Economists have extensively analysed the effects of defined benefit social security schemes. These schemes may affect hours employees' work, their choice of work in the formal or informal sector, and the age they retire. They may also affect savings decisions of workers, national aggregate savings and the development of capital markets. In most cases, theory yields ambiguous predictions concerning these effects, empirical studies have failed to resolve the issues and controversy remains. However, there is little support for large effects of retirement benefits programmes in either labour or capital markets. In many countries, disability benefits programmes, and to a lesser extent special early retirement programmes and unemployment benefits, are the primary paths to early retirement. Empirical evidence suggests that even a relatively large change in the generosity of benefits would affect the average retirement age by only a few months. Evidence concerning effects of unfunded social security programmes on savings or effects of switching to funded programmes are mixed, but do not consistently indicate a negative effect of unfunding, nor a positive effect of switching to funding. Other government policies targeted specifically at encouraging savings, such as tax policies, are more appropriate tools for influencing national savings because they do not involve a sacrifice of social insurance goals in order to increase savings.

Because of the apparent simplicity of defined contribution schemes, economists have hardly analysed them. These schemes collect contributions, make investments and disburse payments. Policy analysts generally treat them as savings plans that do not affect how workers behave. A closer look at the provisions of mandatory defined contribution pension schemes indicates that they may affect retirement age and other worker labour supply decisions. These effects occur because the schemes are mandatory. Any mandatory programme that induces people to change their behaviour, such as causing them to increase their savings, will cause distortions, as individuals act to minimize the consequences of the programme that is undesired by them. Defined contribution schemes also have behavioural effects because of their relationship to minimum benefit and poverty programmes, their sometimes high administrative expenses, and the effects of capital market risks on account balances and interest rate risks on monthly benefits when they are annuitized.

The consequences for public finances

Social security pension revenues and benefit payments affect public finances but common accounting practices have weaknesses in recording these effects. Single period accounting methods commonly used to measure the effects of social security pensions on public finances do not indicate whether the long-term financing for social security is adequate. The commonly used definition of implicit pension debt, measured using private sector insurance concepts, is misleading for social insurance. Pension debt is created when benefits have been promised but not funded. Social security financing is adequate if projections indicate that in each period revenue plus reserves are sufficient to meet benefit payments. Standard accounting methods have difficulty incorporating the value of implicit and explicit contingent liabilities, such as for guaranteed minimum benefits, and thus understate the costs of social security defined contribution schemes where contingent liabilities may be relatively important.

The primary conclusion of Part I is that for the majority of workers in the world, the most important social security pension issue is not how benefits are financed or determined, but the fact that they are not covered by a social security pension programme. This problem occurs primarily in developing countries.

The second main conclusion of Part I is that governance is an important issue in many countries. A well-designed social security pension programme can fail to meet its goals if it is poorly governed. Many of the problems of social security schemes in developing countries result from poor governance and can be resolved by improvements in governance rather than requiring major reforms.

Part II: Reform

The search for a new balance

Recognizing that social security schemes need to adjust to their changing economic, demographic and social environments, Part II provides policy analysis and major policy prescriptions geared towards finding a new balance for social security schemes.

The normative basis for policy

Guidance on social security pension policy is always underpinned by the normative views or values of the policy adviser. The normative basis for policy concerns value judgements as to how social security retirement benefits ought to be structured. The general objectives for the benefit structure of pension schemes can be thought of in terms of five components:

- the extension of coverage to all members of the population;
- protection against poverty in old age, during disability, or on death of the wage earner for all members of the population;
- provision of an income, in replacement for earnings lost as the result of voluntary or involuntary retirement, for all those who have contributed;
- adjustment of this income to take account of inflation and, at least to some extent, of the general rise in living standards;
- creation of an environment for the development of additional voluntary provisions for retirement income.

In addition to these aspects, which affect the amount of benefits to be delivered and their universality, there are other considerations. These include:

- the principle of compulsory affiliation;
- equality of treatment, for men and women and as between nationals

and non-nationals;
- the need to provide guaranteed and predictable benefits, at least up to a certain level;
- democratic management of the pension scheme, through the inclusion of workers' and employers' representatives on the controlling body;
- the responsibility of the state to ensure that the conditions for the delivery of benefits is fulfilled (although this does not mean that the state is obliged to carry out this task itself, only to ensure that it is done);
- the establishment of benefit (and contribution) ceilings which limit the states' responsibilities to high-income earners.

Most of these principles are contained in the various International Labour Standards established by the ILO, which also set out the minimum level of benefits: broadly speaking, these amount to a replacement rate of 40 per cent of previous earnings after 30 years of contributions, with safeguards and minima for those whose lifetime earnings were low, or who experienced significant periods of non-contribution.

Extending coverage to the informal sector

A number of common considerations lie behind the policy options for extending coverage:

- there is unlikely to be, in any country, only one solution to the goal of universal coverage;
- in developing countries it may be unrealistic to rely on an extension of a social insurance scheme designed for the formal sector as a means of covering the self-employed and those in the informal sector;
- high levels of coverage depend on a high degree of consensus and the latter depends on the scheme being related to the needs and circumstances of those that it seeks to cover;
- achieving an extension of coverage is interdependent with good governance and scheme design.

Policy options include:

- extending, without a significant modification of the contribution and benefit structure, existing schemes to cover excluded groups;
- restructuring or adapting existing schemes to facilitate coverage of excluded groups;
- designing special schemes for excluded groups;
- introducing tax-based universal or targeted schemes;
- encouraging the development of special schemes based on self-help

or mutual insurance principles.

The first three approaches seek, each to a different extent, to bring the excluded within the scope of the existing system and imply the general application of at least some social security principles, particularly contributory-based entitlement and compulsory insurability and related obligations that ensure compliance. The fourth breaks the contributory link and presumes, with financing from general taxation, the payment of benefit based on evidence of a contingency such as old age or low income. The fifth presumes that, at least for some of those excluded, coverage under a public social security scheme is unrealistic and implies that private and group arrangements based on mutual support might be the only solution.

Extending coverage to the informal sector may require special programmes be constructed or special treatment be provided to those workers to make the programme better fit their needs and their limited capacity for contributing. This may involve providing them only disability and survivors' benefits, or providing retirement benefits at a relatively high age, such as age 70. In some cases, special programmes need to be designed specifically to meet the needs of informal sector workers. Legislative restrictions on coverage in the retirement benefits programme may need to be eased. For example, in some countries, workers employed in small enterprises are excluded.

Improving management, governance and compliance

Some of the problems social security schemes have encountered can be addressed by policies to improve management, governance and compliance.

Governance can be improved by involving workers and employers in the process. The way they would be involved depends on the circumstance of the country, but in some cases it would involve tripartite (worker, employer, government) participation in a management board. Management needs to be structured so that employers and workers have input into the structure of social security programmes. While in some cases, it may be useful to have the formal input of these groups through their participation in management committees, in other cases, participation could occur through lobbying, voting, and their otherwise being involved in the political process.

Maintaining compliance requires an enforcement policy and mechanism. Compliance problems have occurred in both defined benefit and defined contribution schemes. Compliance needs to be a responsibility of the government. In some defined contribution schemes, compliance has been assigned as a responsibility of private sector pension providers. Because the small pension accounts of low-income workers tend to be as expensive to manage as the larger accounts of upper-income workers, and thus result in little profit, frequently private sector providers do not have an incentive to maintain compliance among low-income workers, where compliance problems tend to be found.

Influencing the age of retirement

The lower the minimum age at which retirement social security pension benefits can be received, the more expensive it is to finance a given replacement rate. Wealthier countries can afford to finance longer retirement periods, and as wealth increases workers tend to want to spend more years in retirement. With increases in life expectancy the retirement period tends to increase. Population ageing, however, raises the number of retirees relative to workers, which raises the cost of providing benefits through pay-as-you-go schemes. These are some of the factors that need to be considered in setting the minimum age at which benefits can be received. Raising the minimum retirement age may cause people to retire later or it may have little effect on the actual age at which people retire but instead be a cut in retirement benefits. When countries raise the minimum retirement age, there tends to be an increase in demand by older workers for other types of benefits, such as disability and unemployment benefits, and that should be factored in when figuring any cost savings.

Developing pluralistic designs and flexible structures

There is no one universal perfect retirement income scheme. The level of economic development, the population age structure and political factors affect the retirement income scheme appropriate for different countries. As the economic, demographic and political situation in a country alters, changes in retirement income schemes may also be required. Because of the interaction between social security retirement benefit schemes and economic development, retirement income schemes evolve over time and different systems may operate more successfully in different countries and at different periods.

All countries need to develop pluralistic designs and flexible structures for their social security schemes. To meet the goals of alleviating poverty in old age and providing low risk retirement benefits, generally multiple sources of benefits are needed.

This book stresses the roles of the retirement income scheme in reducing poverty and providing low risk retirement income. To do that, retirement income must have an element that is redistributive and it must be provided from diversified sources. The relative importance of the different sources will depend on the rate of return and risk of the different sources. Whether the sources are managed in the public or private sector will depend on political philosophies towards individual and private sector responsibilities versus the role of the government and views as to the relative governance capabilities of the private and public sectors.

To reduce risk through risk diversification, the best approach for developed countries can be characterized as a multi-tiered system, with the tiers being determined by their risk and redistributive characteristics. They would include a bottom, anti-poverty and means-tested tier, financed from general revenues, a second pay-as-you-go tier, a third tier which would be a mandatory defined contribution component, and an upper tier of voluntary retirement savings and non-pension sources of income. The essential aspect of this approach is not a particular number of tiers, however, but that retirement income be provided from different sources having different risk characteristics in order to diversify risk. This approach stresses the desirability of increasing complexity in retirement income schemes as they develop to allow for greater diversification of retirement income risks.

For developing countries with low coverage, priority needs to be given to expanding coverage. This could be done by having special programmes designed for workers in the informal sector, or by having a national programme that includes most workers while only higher-income workers are required to participate in a more expensive programme. In order to keep costs low for poor workers, the basic programme could provide only disability and survivors' benefits, or could provide retirement benefits starting at a relatively high age, such as 65 or 70.

The reform process and its political management

Managing the political aspects of the reform process is an essential aspect of successful social security reform. Strategies are needed for developing and reaching consensus on reforms. Because of difficulties in reaching consensus, many countries have found that it takes years to enact reforms once the need for reform has been agreed upon.

Instituting reforms gradually, and allowing for options for workers, are strategies to reduce opposition to reform. However, for a country to be able to use these strategies, it needs to have long-term planning concerning the financing of its social security pension benefits, otherwise, it may not be able to afford postponement of reform.

In planning reform, government consultation with workers and employers is needed at all stages. The government may need to educate the public about the problems and issues, and investments may be needed in strengthening the knowledge of staff and parliamentarians involved in the process. Once reform has been achieved, periodic review is needed of the social security scheme to evaluate what adjustments are required.

The main conclusion to Part II is that different types of retirement income schemes are appropriate for different countries. Typically pluralistic programmes are desirable that diversify retirement income sources to reduce risk, and that have a redistributive function targeted at alleviating poverty.

For most developed countries, meeting the goal of providing low-risk retirement income requires a programme that has a pay-as-you-go element that is subject primarily to macroeconomic labour market risks and a funded element that is subject primarily to capital market risks. (Both types of programme are subject to risks as to the individual becoming unemployed, with the consequences typically being more serious in a defined contribution scheme than in a traditional defined benefit scheme.) These two elements could be in one or several programmes. Because of the fixed costs of individual accounts, it may be better for low-income workers to have a less complex system.

Introduction to regional briefs

The regional briefs discuss social security schemes and related policy issues around the world. They divide the world into six regions: Africa, Asia, the Arab states of the Middle East, Latin America and the Caribbean, Central and Eastern Europe and Central Asia, and the countries of the OECD. This division of the world is by geographic region, except for the OECD countries, which have as their unifying element that they are the most highly developed economies but are found in different regions. Thus, for example, Japan is included in the OECD regional brief rather than the one for Asia.

Social security schemes vary greatly around the world. Even within regions, large variation reflects diversity in level of development, views towards policies of income redistribution, and historical experience. Thus, while it is possible to generalize to some extent within regions, the division of the world into regions was not done on the basis of retirement income schemes being similar within a region. For many aspects of social security the briefs stress the variations within regions. Low coverage is a problem, however, in all the regions except the OECD region.

Asia and the Pacific

One striking feature of this region is the large number of countries with no mandatory pension scheme. Most of these countries are former British colonies and the main reason they do not have a pension scheme is that they have provident funds. Indonesia, Malaysia and Singapore provide benefits through provident funds. A provident fund does not fulfil the same function as a pension scheme, as it does not provide a replacement income for the length of retirement. A few countries, such as Thailand until 1998, have not had any statutory retirement benefits. Countries in the region less exposed to British influence have, for the most part, set up social insurance pension schemes to cover employees and sometimes also the self-employed. These include countries as diverse as the Republic of Korea, the Philippines and Viet Nam. Pakistan, despite its strong British connections, opted for a social insurance pension scheme in the 1970s. This may reflect the influence of the Arab countries, which almost all have such schemes. India has also recently established a social insurance pension scheme, though this did not happen until half a century after the end of British rule. The funded schemes in the region have been hard hit by financial turmoil, arising in part from problems with the government regulation of the national financial systems in the region.

Africa

Some countries provide benefits through provident funds, but there is a trend towards ending those funds and converting them to defined benefit pay-as-you-go funds, as was recently done by Tanzania. In general, and with certain exceptions, the coverage and effectiveness of existing social protection schemes relating to the contingencies of retirement, invalidity and death in Africa is weak. This is attributable to a number of factors, some political and economic, and others which reflect failures in governance at all levels from the design of schemes to their operation. The schemes introduced by the colonial countries often took insufficient account of the socio-cultural context and thus proved limited and inappropriate. Since independence, this has been compounded by adverse economic and political circumstances as well as by mismanagement. Many African schemes have failed to provide effective social protection, even for the small minority of the population that they cover.

Latin America and the Caribbean

Most of the countries of this region provide benefits through defined benefit pay-as-you-go schemes. However, because of the poor functioning of their defined benefit social security schemes, an increasing number of countries - eight as of 1998 - have converted at least partially to defined contribution schemes. These schemes involve fully-funded individual accounts that are managed by private sector pension fund managers with sometimes the government also operating a pension fund management company that competes with the private companies to attract workers as clients. While it was thought that converting to a defined contribution scheme would reduce contribution evasion because benefits would be tied more closely to contributions, contribution evasion remains a problem in these countries, suggesting that, as discussed earlier, the causes of contribution evasion are more complex.

A trend towards defined benefit schemes has occurred in the Caribbean, where countries have converted their provident fund defined contribution schemes into defined benefit pay-as-you-go schemes.

The Arab states of the Middle East

The Arab states of the Middle East include both some of the world's wealthiest and poorest countries. Birth rates tend to be high in this region and population ageing is not viewed as a problem. In most countries, the schemes are relatively young. All have been established since 1950. All the programmes are traditional defined benefit social insurance programmes. In most cases, the schemes are financed by contributions from both employers and employees with the state covering any deficit. Some of the wealthy countries provide very generous social security benefits.

Some of the countries in the region have work forces with a high percentage of foreign workers. The treatment of foreign workers is a social security issue in the region because some of the countries exclude them from coverage under the social security retirement benefits programme.

Central and Eastern Europe and Central Asia

The countries of Central and Eastern Europe and Central Asia are in the process of converting their economies from command based to market economies. The social protection schemes in most of these countries have features inherited from the systems of the former planned economies, which consisted of a visible (explicit) and an invisible (implicit) component. The visible institutionalized system of social security provided pensions, short-term cash benefits and health care. The implicit component added security through specific socialist income redistribution mechanisms, such as guaranteed employment, the provision of low-cost housing and heavily subsidized basic goods and services (for example food and services for large families, educational supplies, books and cultural goods and services). There was also a system of cash and in-kind benefits provided by state enterprises to employees, their families and retirees - such as cash allowances, subsidized recreational facilities and vacations, and subsidized short- and long-term loans.

Many of these countries are rethinking their social security schemes, with some adopting defined contribution schemes. The defined contribution schemes in the region are just being instituted and it is too early to evaluate their performance.

The OECD countries

The OECD countries have the oldest populations, which is a motivating factor in their reforms. OECD countries spend on average 10 per cent of their Gross Domestic Product (GDP) on old-age retirement benefits, exceeding their health care spending. OECD countries rely primarily on pay-as-you-go defined benefit schemes for providing social security retirement benefits. The pay-as-you-go social security schemes are frequently supplemented by voluntary funded schemes, mostly operated by the private sector.

Most OECD countries are considering changes in their retirement income schemes to ensure the financial viability of their systems in the face of population ageing. Many of them have legislated increases in the age for early or normal retirement in an attempt to reduce benefits and encourage workers to postpone retirement. A number of countries have reduced benefits by increasing the years used in the earnings averaging period, reducing the generosity of cost-of-living increases for retirees, or requiring more years of work to qualify for certain benefits.

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Throughout this book, and in addition to its attempt to provide a comprehensive and global view of pension schemes, a number of major themes will be apparent which in turn give rise to a number of important general issues. The approach to these issues is based on the International Labour Standards which have been established in the International Labour Office over many years, and which have been confirmed by the world community. These Standards heavily influence the ILO's view of what ought to be the guiding principles for the design of pension schemes. But that is not to say that they are universally observed by all countries. Many countries find it impossible to implement all the main principles, largely because their economic circumstances do not permit it. In other cases countries have opted for different approaches mainly because their perception - in many cases a mistaken perception - is that it is not to their economic advantage. And in other cases conflict between different groups and classes of society leads them to adopt other regimes. The reader who comes to the end of the book will be fully aware of these divergencies and the ILO's attitude to them. But it is both useful and important to provide some brief statement at the start.

Two main problems are at the heart of the issues facing pension schemes in almost all countries of the world (the exceptions relate entirely to developed countries). These are questions of coverage and governance.

Universal coverage of pension schemes is the first and most important of the normative principles. But many countries find it impossible to apply because of the large informal sectors of their labour force: the rural self-employed, the urban self-employed and the many who are employed, in one way or another, by informal sector enterprises. For these social groups earnings cannot easily be monitored or contributions collected and frequently the state does not possess the fiscal means to pay even basic pensions from general revenues. Participation in the pension scheme on a voluntary basis breaks another of the central principles - that of compulsory participation - and if an attempt is made to make participation mandatory it opens the way to large scale evasion of contributions from groups of people who are too poor to contribute much anyway. Even where workers are employed by small enterprises, say less than five or ten employees, the social security pension scheme may find it too difficult, or the administrative costs too high to enforce compliance.

There does not appear to be any easy answer to this problem, although two approaches are worth trying. The most obvious approach is for the pension agency to enforce compliance by all firms of any size, even if doing so makes the cost of collecting contributions from small firms greater than the benefits which will ultimately need to be paid. The social benefits from greater coverage far outweigh the additional administrative cost and reduce the social assistance which the state may ultimately need to pay to the poor. An alternative approach is to rely on institutions built up within the informal sector itself - savings clubs, cooperatives and other informal organisations - and to offer such organisations assistance in forming their own retirement anti-poverty protection schemes. This has implications for the design of such schemes. They would need to be self controlling. They would be voluntary. They are likely to cover a range of social contingencies - health care, unemployment, family needs, food shortages and crop failures, education and business needs - as well as strictly retirement income. They would also need to operate on the basis of individual retirement savings accounts and could not benefit from the collective force of large-scale pension schemes. Nevertheless, they would bring a degree of protection to large numbers of people who would otherwise be excluded. The problem is recognized in the International Labour Standards, which originally (Convention No. 102) accepted less than universal coverage but have subsequently increased the stipulated level of coverage. But many countries, especially those in Africa, have great difficulty in complying with these requirements and the problem is far from being solved.

The other major problem of pension schemes in developing countries is that of governance. Many schemes, or their beneficiaries, are in financial difficulties simply because of an inability to collect all the revenues due to them, to invest any reserves wisely, or to pay benefits promptly and in full. Administrative costs may be excessively high. In some cases the origin of these difficulties may lie with the government, which may usurp the reserves of the pension fund for other purposes, or which may impose financial requirements - for example investment of the pension funds in government bonds at unrealistically low or negative real rates of interest - which effectively transfer resources back to the state. But the shortfall in contributions, or equally the non-payment of benefits, may also arise from general deficiencies in management and administration and from large-scale contribution evasion on the part of employers and their workers. Staff of the pension agencies may be too numerous, their salaries too high, and they may lack the necessary skills and training. And auditing and control techniques may be too weak. The remedy would seem to lie in improving the performance of pension agencies in all these areas. But the process is likely to be a long one and is likely to rely on general improvements in a country's governance, both public and private, and a greater degree of autonomy on the part of the pension agency itself. In some countries the difficulties may arise because of fundamental actuarial imbalances: the government has over-promised the benefits it can deliver on the basis of the contributions it expects to collect, but may be unwilling to increase contribution rates, reduce benefits or to meet the deficit from general revenues. Or retirement ages may be set unrealistically low. In this case the problem of governance becomes a political one.

In these two cases - coverage and governance - the problems of pension schemes in a large part of the world do not permit easy or simple answers. Ultimately much depends on the economic growth of the country concerned, the transformation of its labour force into one largely incorporated into the formal sector of the economy, and a greater maturity in its political and corporate governance. This will all take time. For the moment, the situation of pension schemes, and social security generally, in many developing countries resembles the situation in the developed countries a hundred years earlier. However there are also major issues, affecting especially developed countries, which are more amenable to an analytical resolution. These are issues concerning the prospective ageing of population structures and whether or not to move from pay-as-you-go public social security schemes to schemes based on fully funded, defined contribution structures, based on individual accounts and possibly managed by private sector agencies.

As is well known, the population structure of the advanced OECD countries is likely to age dramatically over coming decades, both as a consequence of earlier declines in fertility and as a result of increases in life expectancy. As a result, the proportion of total national income which must be transferred to retired persons - provided their relative incomes are to be maintained and provided their actual age of retirement is to remain unchanged - will need to be increased almost pro rata. OECD countries currently allocate about 10 per cent of national income to the 18 per cent of their population over the age of 60. By the year 2030 the proportion of the population over the age of 60 will have increased to nearly 31 per cent and will require a comparable increase in benefit expenditures. Together with other social charges, especially on health care, social assistance and unemployment, the contribution rate required to support these public expenditures is thought to become too high and politically unacceptable. At the same time, the social basis of public social security schemes is being questioned, quite apart from the necessity to support ageing populations. The public transfers to retired persons are thought to be too generous and to result in distortions in labour and capital markets (lowering the participation rates of older workers and reducing the national savings rate) which in turn affect the level and growth of GDP. One answer to both these perceived problems - ageing and too expensive public sector involvement - which has been widely proposed is to convert public pay-as-you-go social security pension schemes into defined contribution ones, possibly managed by private sector pension funds. It is claimed that the pre-funding of pension schemes would avert the major increase in pay-as-you-go contribution rates to be expected as the population ages, would improve labour force participation by older workers, increase national savings, improve national competitiveness, reduce the financial obligations of the state, and generally create a much more specific link between contributions and benefits. Such a scheme would need to be mandatory and it would need to be supplemented by a basic anti-poverty pension financed from general revenues. The pension itself would need to be determined from an actuarially calculated annuity based on the lump sum accumulated at retirement.

Analysis of such proposals and their comparison with existing structures is complicated. The reader is directed to the relevant chapters for an account of the analytical details. For the purposes of this introduction however there are two main points to be made.

In the first place, some of the perceptions about the operation of such a scheme are factually and analytically wrong. It would not reduce the burden (on the national economy and the population at large) of supporting an ageing population unless pension benefits were reduced relative to income in work, or unless it resulted in a significant increase in the actual age of retirement. But both these changes could also be achieved under a public social security scheme of the pay-as-you-go type. The reason is fairly straightforward. The standard of living of retirees can only be provided from the real incomes of those in work, whether this transfer takes place through a public mechanism or through market-based savings. If it is the former, contribution rates must be increased. If it is the latter, then the accumulated financial assets of pensioners must be sold to contributors in order to provide the pensioners with money for consumption. In both cases the amounts of money involved (contributions or mandatory savings) are equivalent. Both must react in the same way to increases in the proportion of pensioners to the active population.

More importantly, the introduction of a mandatory retirement savings scheme (MRS) clashes with some of the normative principles established for social security schemes. There are a number of divergencies.

In the first place, one of the most important fundamentals of the International Labour Standards is that the retirement income of workers should be predictable and guaranteed. Defined contribution schemes cannot do this. The lump sum accumulated at retirement relies on the income from the (market) rate of interest accumulated on a lifetime of contributions to the scheme. This can be very uncertain: simulations presented suggest that it might vary by 30 per cent or more, depending on the course of interest and wage rates over the previous 40 years. In addition, the current interest rate at the actual point of retirement has a strong influence on the value of the annuity which can be derived from the lump sum. There can be major differences in the pension received according, to whether interest rates are high or low at the point of retirement and negotiation of an annuity.

Other principles are engaged, although perhaps less importantly than the question of the guaranteed income. One is the question of indexing benefits to prices, and at least to some extent to wages. To achieve this the institutions providing annuities must have access to some form of indexed bonds in order to fix their benefit rates, or must provide their own indexing calculating the annuity on the basis of expected real rates. Another is the question of the responsibility of the State. If defined contribution schemes are to be operated by private agencies, they must be carefully regulated and monitored by the State and subject to a range of prudential regulation. Finally there is the question of democratic management, by which is meant that contributors and beneficiaries must have a voice in their management. This is difficult under a system of privately-managed funded schemes. But it could be replaced by providing workers with a transparent choice of scheme, and the right to switch from one to the other without loss of assets.

Two alternative pension designs are currently being proposed, which would attempt to avoid this conflict between the normative principles and the wish to develop more direct links between contributions and benefits, and the desire to split risks more evenly between contributors and pensioners.

The first design consists of financing retirement incomes from a range of different sources, in particular a mixture of defined benefit and defined contribution schemes. One such design would comprise a number of tiers:

- a bottom anti-poverty tier, means tested, and financed from general revenues, which would provide income support for those without other means;
- a second pay-as-you-go defined benefit tier, mandatory and publicly managed, which would provide a moderate replacement rate (say around 40 or 50 per cent of lifetime average earnings) for all those who had contributed to it, and which would be fully indexed;
- a third tier which would be defined contribution based, mandatory up to a determined ceiling, possibly managed by private pension agencies, and which would provide a pension by means of annuities;
- a fourth tier which would be defined contribution, voluntary, without ceiling, and also managed by private pension agencies.

Such a structure would have the merit of splitting the risks inherent in pension schemes - both the risks associated with public management of defined benefit schemes and the market-based risks associated with defined contribution schemes - but would at the same time provide a basic guaranteed retirement income for the large majority of workers in the middle bands of income.

A second alternative is a notional defined contribution (NBC) scheme. The structure of such a scheme is very similar to a defined contribution (DC) scheme: a notional account is accumulated during the working life based on contributions and the (notional) interest obtained on them which, at retirement, can be converted into a pension by means of an annuity. The main difference is that the interest rate applied is not the market rate of interest but some other indicator, such as the rate of growth of GDP, or the rate of growth of wages. The scheme would be mandatory and it would need to be managed by the state. Both the interest, and the capital sums to which it contributes, are notional ones and although pension entitlements are built up in terms of individual contributions, these are accounting ones without any equivalence in terms of real money. It would provide a more direct link between contributions and entitlements. But at retirement the risk of increasing longevity would be borne by the individual contributors/beneficiaries since the value of the annuity would be calculated over the then expected lifetime of the pensioners. Other risks, such as those related to economic progress, or those demographic risks arising from previous increases in birth rates, would be borne by contributors and involve some adjustment of contribution rates as the scheme progressed. It would also be necessary to incorporate a bottom tier of income protection in old age for those whose lifetime earnings were insufficient to provide a basic, anti-poverty income in old age.

But the future of pension schemes is evolving very rapidly. Obviously there is no single design which fits all circumstances, and the question of what is the most appropriate design has to be weighed against the other factors, in particular the need to provide universal coverage and good governance, which will determine where the most desirable balance lies.

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