



Chris Daykin

The Challenge of  
Ageing:

Pension Reform,  
International Trends and  
Future Imperatives

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# The Challenge of Ageing:

## Pension Reform, International Trends and Future Imperatives

Chris Daykin

**POLITEIA**

2006

First published in 2006  
by  
Politeia  
22 Charing Cross Road  
London WC2H 0QP  
Tel: 020 7240 5070 Fax: 020 7240 5095  
E-mail: info@politeia.co.uk  
Website: www.politeia.co.uk

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Social Science Research Series No. 9

ISBN 1 900 525 81 0

Cover design by John Marenbon

Support for this series has been granted by the Foundation  
for Social and Economic Thinking

Sponsor...TO SUPPLY

Printed in Great Britain by  
4 Print  
138 Molesey Avenue  
West Molesey  
Surrey KT8 2RY

## The Author

Chris Daykin has been HM Government Actuary since April 1989. He served as a member of the Council of the Institute of Actuaries from 1985 to 1999 and as its President from 1994 to 1996. His international interests include the development of actuarial education in actuarially less developed countries. For Politeia he has written *Funding the Future: Problems in Pension Reform* (1998), *Incapacity and Disability; Paying for the Consequences* (2000) and *Pension Systems: The EU and Accession Countries, Lessons for the UK* (2002).

## CONTENTS

	Preface	1
I	Introduction	2
II.	The Imperatives of Pension Reform	9
III.	Pension Reform Typology	13
IV.	Notional Defined Contribution (NDC) Schemes	22
V.	Recent Reforms: An Analysis	26
VI.	Pension Reform in the United Kingdom	38
VII.	Annuitisation and the Pay-out Phase	49
VIII.	Pension Reform: A Common Thread	59
	References	63

## Preface

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Given the changing demographic patterns in so many countries around the world, with a falling ratio of working age people to the retired, and the average life expectancy continuing to increase rapidly, how can retirement be paid for in a way that is politically and economically possible and acceptable? How can pension schemes, both public and private, be made financially sustainable, whilst still providing adequate retirement income to participants?

This study considers a number of different pension systems, the challenges they face and the different approaches to reform. Many of the problems are similar in the various countries, but diverse solutions are being sought. Routes to reform have been varied: through adapting the financing (the amounts of tax or contributions paid towards, or benefits available for, retirement); encouraging longer working life (e.g. the age when the state pension becomes payable and arrangements to encourage later retirement); structural change (new statutory frameworks for retirement income); additional measures or fundamental change to the system (e.g. the introduction of a notional defined contribution pension arrangement in Sweden and elsewhere).

This study does not advocate solutions, but it is hoped that a thorough explanation of different experiences of pension reform will help to stimulate the thinking of policy-makers.

# I

## Introduction

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Pension reform is well up the political agenda in the United Kingdom (UK), as in most other industrialised countries and in many less developed and transition economies too. It is one of the great challenges of our day. Although sometimes described as a crisis, it is more the consequence of a success story. Life expectancy has risen dramatically in most countries and continues its inexorable increase. The vast majority of people live long enough to be able to enjoy a reasonable period of retirement; this period is forecast to lengthen steadily in the future. In the UK about 75 per cent of men who were born in 1940 have reached the age of 65 (by contrast almost 90 per cent of women born in 1945 have reached the age of 60). It is estimated that more than 90 per cent of those born today (both men and women) will live at least to the age of 65. Of those reaching 65 today, more than 85 per cent will live to at least 75 and some 55 cent will live to at least 85.

Today there are about 3.3 people of working age in the UK for every person over state retirement age. The ratio was more than 4½ in the early 1950s and is projected to fall almost to 2 by the 2050s. There are about 11.4 million people in Great Britain over state pension age, of whom almost 100 per cent of men and 95 per cent of women are in receipt of some contributory state pension. The number over state pension age (assuming it will become 65 for both men and women from 2020) is projected to rise to 15.3 million by 2031. According to Pensions Policy Institute estimates, based on Department for Work and Pensions data, about 50 per cent of pensioner benefit units (singles and couples) are currently eligible for some means-tested pension credit, with the possibility that this could rise to 80 per cent by 2050 (PPI, 2006; see also Thornton, Gardner and Orszag, 2004). There are about 9 million occupational pensions in payment (5.6 million in the private sector and 3.4 million in the public sector), although a rather smaller number of individuals will actually be beneficiaries, since some people receive more than one pension.

Retirement ages (or ages when a pension can be taken), both of national social security schemes and of occupational (employer-sponsored) pension plans, were generally set when the prospects for long life were not so good. In many countries they have even been lowered in relatively recent years in order to facilitate early retirement and corporate restructuring; in some because of a belief that it would help to ease the growing problem of unemployment among the young.

In 1948, when the Beveridge national pension scheme was launched in the UK and male pension age was set at 65, the expected period that a retiring 65 year-old man could have to live was only about 12 years. Only about 42 per cent of men born in 1883 had lived to the age of 65. Now, on retiring at 65, a man is expected to have on average 20 years to live. A woman at that age would have on average 22 years to live. By the time those starting work today reach 65, their life expectancy could

easily be as high as 24 years for men and 26 years for women. This should be good news rather than a message of crisis, provided that the period of healthy life expectancy is also increased, but the downside is that it costs a lot more to provide people with their pensions if they are going to live so much longer. So they need to have saved up considerably more by the time they reach retirement, or else have an employer who has been contributing large amounts to a corporate pension plan to provide a good pension as part of the remuneration package.

In the case of state pension arrangements, such as the UK basic pension and the state second pension, future liabilities are financed not through investing money in advance, but through transfers from workers to retirees (and other beneficiaries) via the National Insurance Fund. This works on the basic principle that amounts contributed by workers and employers in any year in National Insurance Contributions will be sufficient to meet all the pension payments, survivors' benefits, maternity benefits, unemployment benefits and so on which need to be paid out in that year. This type of financing mechanism is known as pay-as-you-go (PAYGO in North America). In the UK, the means-tested pension credit is also on a pay-as-you-go basis, but paid directly out of the general budget, from the proceeds of taxes, rather than from any hypothecated contribution income.

Under pay-as-you-go financing, it is not so much how long people are expected to live that affects the arithmetic directly. It is more a question of how many workers there are (and how much productive capacity there is in the economy) relative to the numbers of beneficiaries. This relationship is also getting more and more adverse, particularly in demographically mature countries such as those in most of Europe, where life expectancy is high and fertility rates have come down to very low levels by historical standards. In the UK the ratio of workers to pensioners is not projected to develop as adversely as in some other countries, because fertility rates are not so low and there is continuing immigration.

### **Setting the scene – social security**

To help understanding of the issues, we should first distinguish between three types of pension arrangement: social security, occupational pensions and personal pensions. Social security provided by the state is in principle much broader than just the payment of retirement pensions, since it often incorporates benefits for injury or incapacity, sickness and many other contingencies. This pamphlet will, however, focus on the pensions component, which is almost always the largest financial element and the one which is of most interest in terms of the current policy debate. We will consider how state pension arrangements can be based on the contributory principle, on the principle of residence or citizenship and on the principle of need.

In almost every country in the developed world social security schemes are run by the government, or a public agency, and are financed on a pay-as-you-go basis, so contribution income received is used to pay for benefits in the same period. No attempt is generally made to build up assets to meet future liabilities, although in

*Chris Daykin*

practice many schemes do have a small buffer fund to equalise payments over periods of varying lengths. Most social security schemes have until recently been defined benefit schemes, that is to say they define the benefit that participants are going to get at retirement, usually on the basis of their salary history and the period of time for which they will have contributed. However, new styles of social security scheme have been coming into play, which are structured in a different way; some of these will be discussed in later sections.

Although there are many variations on the benefit formula – almost as many as there are countries with contributory social security schemes – it is convenient to categorise schemes under two major types – flat-rate and earnings-related. The first offers benefits that do not depend on the individual participant’s career salary history and can be described as “flat-rate”.

The UK basic pension, introduced by Beveridge in 1948 and still an important component of our social security structure, is flat-rate. Entitlement depends on years of contribution but not on wage or salary level (although credits are also available for some periods for which contributions have not been paid, such as home responsibilities protection for men or women at home looking after children under the age of 16). The idea is to provide a basic safety net of pension provision, at a suitable level of minimum income. Since the contributions are generally related to earnings, there is significant cross-subsidy between high earners and low earners. The benefit is worth much more, relatively speaking, to low earners and will offer them a higher level of replacement of earnings in retirement than is the case for high earners. Some have argued that the greater longevity of those with higher earnings neutralises this cross-subsidy. It may do in part, but the differences of life expectancy relating to earnings levels are generally insufficient to undermine significantly the inherent cross-subsidy involved in financing a flat-rate pension with earnings-related contributions.

The other type of formula is based on the earnings history of the participant, and may take the form of total earnings during working life or the number of years of participation multiplied by final salary (or more often salary averaged over some period of years). In cases where total career earnings are taken into account, it is common for there to be some revaluation adjustment, so that earnings in earlier years are brought up to current levels by means of a price or earnings index. The revaluation formula, although apparently just a matter of technical detail, can be fundamental to the generosity or otherwise of the system. It may often be the case that a ceiling is applied to the earnings that count for benefit, which will reduce the effective replacement rate of earnings in retirement for higher earners, but the general idea is to provide a certain level of income replacement and not to effect significant transfers or cross-subsidies between high earners and low earners.

#### *The contributory principle*

There are three main principles on which social security schemes may operate. The first is the contributory principle, as assumed in the paragraphs above, whereby

participation in the scheme is based on the payment of contributions from earnings, usually by both employer and employees (and by the self-employed when they are covered). Pension entitlement is gained from periods for which contributions are made, although this principle is frequently modified in order to give credit for periods of higher education, sickness, unemployment and absences from the workforce occasioned by family or caring responsibilities. Although most contributions are from earnings, it may be possible to make voluntary contributions when one is not in the workforce, in order to maintain one's contribution record.

The contributory principle envisages a close relationship between payment of contributions and receipt of benefit, although this is not necessarily an "actuarially fair" relationship. The expected value of the benefits is not necessarily closely related to the accumulated amount of contributions, since there are generally cross-subsidies between some groups of contributors and others. In addition, the contributions are not usually invested, but are used to pay the benefits for the previous generations, now receiving their pension, so that the level of contributions is driven more by the costs of providing pensions to the current elderly than by the expected cost of providing benefits to the contributors when they eventually reach pension age.

#### *Citizenship based social security*

The second possible principle is that of residence. Some countries provide social security pensions to everyone who meets a given set of criteria for residence in the country. Such pensions are known as citizenship pensions, or as demograts. Since they are based on residence rather than contributions, entitlement does not depend on work history, or on having paid anything for the pension. Clearly the financing mechanism has to be different and the costs will normally be met out of government general revenue. There are a number of potential complications, especially in respect of migrants, who will usually be required to have been in the country for some years in order to qualify.

#### *Means-tested social security*

The third possible principle for social security pension benefits is that of payment according to need. This approach seeks to target resources on those who do not have enough income from other sources, which is done by means-testing – in other words by assessing the individual's income and deciding whether it is below some defined threshold. The test may also include wealth-testing (or asset-testing), with payments of benefit being restricted to those who have assets below a threshold level as well as low income. There is usually a system of tapers to avoid very high levels of marginal tax on additional income at the point where the means-tested benefit is withdrawn.

A variant is to apply the income test just to pensions from other sources (or more simply just to the pension from mandatory social security or its equivalent) and not to income as more generally defined. In countries where the majority of pension income comes from a centrally administered earnings-related contributory pension

*Chris Daykin*

scheme (for example in Finland – see p.29), topping up this pension to a minimum level in cases which would otherwise be below the threshold is a relatively simple process and involves very little administrative burden. Many of the recently introduced individual account social security systems have a minimum pension guaranteed by the government if certain conditions are met.

Apart from these cases where the minimum pension is related to a specific income from a statutory pension, means-tested systems, although in principle well-targeted in their outcomes, are costly and cumbersome to administer, since they involve individual income (and asset) testing. To many benefit recipients they have negative connotations as charity, rather than benefit that has been earned. And they are also often criticised on the grounds that they undermine incentives to save for pensions through other routes, since thrift tends to be penalised rather than rewarded.

### **Setting the scene – private pensions**

#### *Occupational pensions*

The second type of pension arrangement is known as an occupational, or employer-sponsored, pension scheme (“plan” in North America). Such schemes are associated with the employment relationship and are arranged or “sponsored” by employers, who usually also meet a major part of the cost. They are often contractual, in the sense that membership of the scheme is offered as part of the employment contract and, in many countries, may be a mandatory component of the contract. In the UK it is no longer permitted for an employer to make membership of an occupational pension scheme mandatory (this prohibition was introduced from 1988), although the employer can arrange for membership to be automatic initially, with the member having the right to opt out (known as auto-enrolment). The cost to employees is typically limited to a defined percentage of salary, although sometimes the member’s contributions can increase or decrease according to whether there is a deficit or a surplus. Since they are “collective” schemes, the costs of administration and investment are relatively low, although generally significantly higher, as a proportion of benefit paid, than national social security schemes.

Many of these occupational pension schemes have in the UK traditionally been in defined benefit (DB) form, with benefits promised according to some formula relating to salary and service. The most common form is the final salary scheme, in which the benefit is defined as a certain fraction of final salary for each year for which the individual has been a member (or more usually the average of salary over the last year, or two or three years, before retirement). There are also career average revalued schemes, which are similar to the social security arrangements already discussed, in which earnings over the whole career are taken into account, with earlier years of salary being revalued up to the level appropriate for the time of retirement.

Increasingly, occupational pension schemes are moving to a defined contribution (DC) format, whereby the amount of benefit is determined by an accumulation of the

contributions paid, by the member and by the employer. This is happening for a number of complex reasons, with employers particularly concerned about the growing cost of DB schemes and the volatility of the impact they have on their company balance sheets. DC schemes involve less commitment on the part of the employer, since there is no need for the employer to provide any commitments regarding the level of benefit. However, some DB commitments may still be given in relation to salary and service, in which case the scheme is known as a “hybrid” scheme.

There are also defined contribution schemes that provide guarantees because the contributions are used to purchase contracts with an insurance company. Although in the UK most of these insured DC schemes are unit-linked in form and therefore do not provide guarantees of investment performance, they may in some cases offer a maturity guarantee or a guaranteed level of annuity. These types of guarantee have become less and less common, as insurers have become unwilling to provide guarantees without a substantial charge for the guarantee. In other countries, for example in Denmark (see page 36), DC occupational pensions are still typically provided in the form of with profits deferred annuities with insurance companies (or specialised pension companies), and there is thus a significant level of guaranteed benefit, topped up by bonuses which depend on investment performance and other surplus achieved by the insurer.

Defined benefit schemes are exposed to longevity and investment risk, as well as to tax changes and to changes in the legislative and regulatory requirements. They require substantial commitment by, and support from, the sponsoring employer and there is a strong trend in the UK, at least among private sector employers, to close DB schemes and replace them with DC, at least in respect of new employees and sometimes also in respect of future service accrual of benefit for existing employees.

#### *Personal pensions*

The third type of pension arrangement is the personal pension. These are known internationally as individual accounts, but in the UK they are more often described as personal pensions (“stakeholder” pensions are a particular form of personal pension). They have been available for many years, particularly for the self-employed, although the 1986 social security reforms popularised the concept for employed workers who were not in an occupational pension scheme. Indeed, with the ending of mandatory membership of occupational schemes in the UK, and also the opportunity to contract out of the state earnings-related pension scheme by means of a personal pension, these individualised pensions effectively became available to anyone who wanted one.

Personal pensions, or individual accounts, are now very common in many countries around the world. Some pension reforms have introduced them on a mandatory basis, either as a supplement to social security, or in some cases in replacement of social security. They are almost always DC in format, since there is generally no “sponsor” to underwrite a commitment to provide a particular level of benefits. However, insured DC arrangements may be offered on a basis which includes some

*Chris Daykin*

guarantees (such as a with profits contract or a unit-linked contract with maturity guarantees). In countries with mandatory individual accounts systems, there are sometimes legislative requirements for the pension plans to provide guarantees for example, of a guarantee of capital invested, a minimum rate of interest, or a guarantee that the rate of return will not deviate from the average of all pension fund providers by more than a defined margin. Some countries also provide a guaranteed minimum level of pension, but that is usually underwritten by the government, and should be considered as a social security arrangement (see p.5 above on means-tested social security).

Individual account pensions of this type are fully funded, with assets available to back the full liability. In many cases there is an automatic linkage between assets and liabilities, since the amount of benefit is defined by the value of the assets available. If guarantees are provided, the responsibility for financing these, and holding sufficient assets to ensure that the guarantees can be met, rests with the pension plan provider, which will usually be a regulated financial institution.

Personal pensions in the UK, and in some other countries, have been beset by problems of mis-selling, where over-enthusiastic sales agents have persuaded individuals to take out a personal pension when it is not necessarily the most appropriate arrangement for them. This was a particular problem when individuals were persuaded to opt out of DB occupational pension schemes into personal pensions, thereby often forfeiting a substantial level of contribution from their employer towards their pension. Other countries have had problems of "churning" individual accounts between alternative providers.

Individual account pensions have also been criticised, both in the UK and elsewhere, for high expenses (transaction costs), which have not been driven down by competition. In fact competition may have the effect of pushing up charges, since insurers or commercial pension funds are willing to pay higher commissions to agents in order to boost their acquisition of new affiliates. Other issues include the exposure of individual investors to the volatility of equity markets and also the high, and growing, cost of purchasing annuities (see section VII). If the accumulated assets in an individual account are not used to purchase an annuity, then there is direct exposure of the pensioner to longevity risk, with the strong possibility that they may run out of money if they draw down the pension pot too quickly, or that they may be left with significant unused balance in their account when they die if they are cautious and hold back from drawing down their account.

## II

### The Imperatives of Pension Reform

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#### **The changing demographic pattern: higher expectation of life and declining birth rates**

Probably the biggest single factor that has driven interest in pension reform internationally is the persistent trend towards higher expectation of life, and the consequent increasing costs of providing pensions for the rest of life. Women reaching age 65 in 1900 had an expectation of life of about 12 years; men had an expectation of 11 years. Today these figures have risen to 22 and 20 years respectively, with most of the increase having taken place in the last 50 years. The latest official UK population projections for 2050 point to continued increases in longevity, though not as rapidly as recently, with women at 65 having an expectation of 26 further years and men 24. Some demographers think that the steep increase of the last 50 years could continue; others argue that increasing longevity will plateau as a result of less healthy lifestyles and obesity, as well as the fact that mortality from many causes has already fallen to such an extent that further significant falls are not possible.

The rapid increase in longevity has, fortuitously, been accompanied by falling fertility, with women on average having much smaller families. Total fertility rates<sup>1</sup> in the UK rose steeply after World War II, to reach almost 3 children per woman in 1966, and then fell just as rapidly to 1.7 in 1976, since when they have fluctuated within a fairly narrow band, between 1.6 and 1.8. The cohort of women born in 1940 had an average completed family size of 2.4 children, those born in 1955 have an average completed family size of 2.0, and the indications are that women born in 1975 will have an average completed family sizes of around 1.8.

Rising expectation of life and falling fertility combine powerfully to give rise to the phenomenon commonly referred to as the ageing of the population. There will be an increasing imbalance between the numbers of people over pension age and the numbers of working age. Figure 1 compares the development, for a number of countries, of this so-called old-age dependency ratio, which for the purposes of standardisation has been taken to be the ratio of the number of people of 65 and over to the number between 15 and 65. Figure 1 shows that, in all the countries represented, including China and Russia, there are expected to be substantial increases in the level of old age dependency after 2010. The period of most dramatic ageing is still not quite with us, but it is coming soon enough and has now become sufficiently imminent to feature on the political radar screen. The issue does now need to be addressed in many countries, because the pressures on the pay-as-you-go pensions systems will intensify in the period from 2010 to 2035. One country which is experiencing the ageing process more rapidly, and in advance of most other

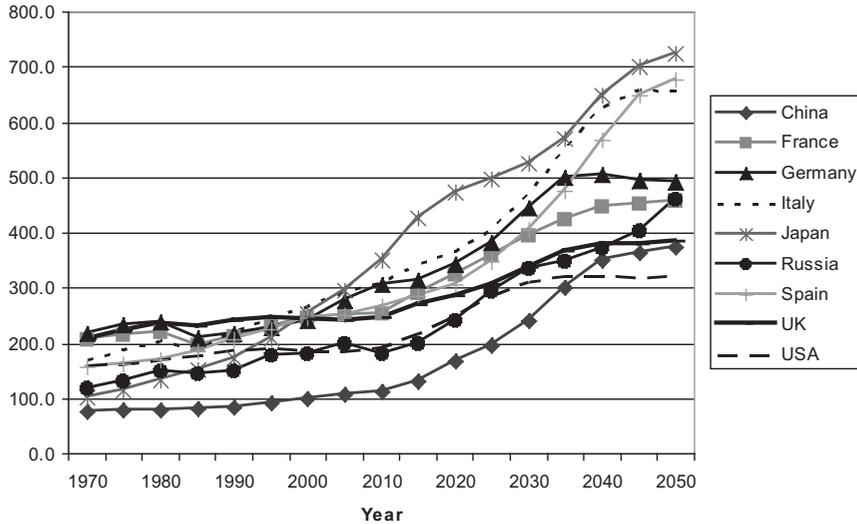
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<sup>1</sup> A measure of the fertility level in a particular year, obtained by adding up the number of births per woman for that year at each age of possible child-bearing.

Chris Daykin

countries, is Japan, where the dependency ratio has been increasing steadily since before 1970 and is already higher than any other major country, as a result of a combination of particularly high longevity and persistently low fertility (Italy comes a close second).

**Figure 1: Dependency ratios 1970 -2050 (number aged 65 and over per 1000 aged 15-64)**



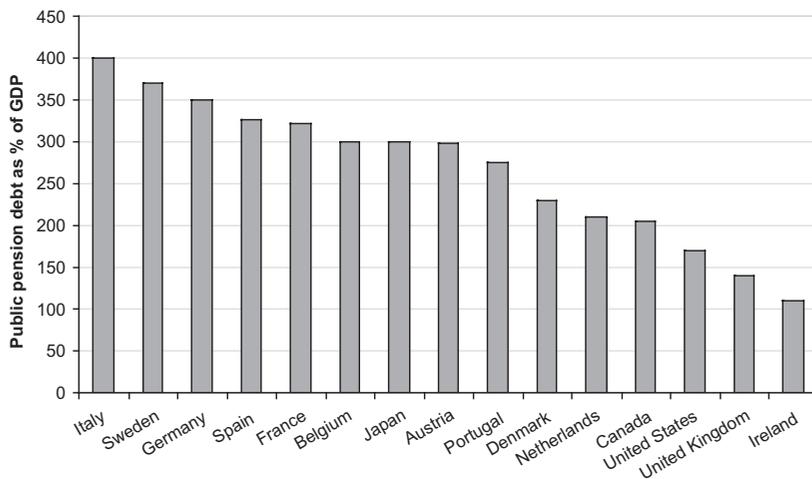
**Source:** Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, *World Population Prospects: The 2002 Revision*. <http://esa.un.org/unpp>

The old-age dependency ratio is a rather crude measure, focusing as it does just on the numbers in the population of different age-groups, rather than on whether they are economically active or dependent, contributing to social security or pension arrangements, or receiving benefits. The impact of the rising dependency ratios could be substantially lessened if the proportion of people remaining in work up to 65 could be increased to a significant extent, or if the age at which people become entitled to pension were to be increased above 65. It can be seen from Figure 1 that the dependency ratio increases projected for the UK are relatively modest compared to other countries. This is the result of three factors: a relatively mature population structure compared to many other countries, continued expected inwards migration at working ages, and fertility levels that have not reached the low levels experienced recently elsewhere.

In their analysis of the problems facing social security worldwide, the World Bank has focused in particular on the concept of “implicit pension debt” (World Bank, 1994; Holzmann and Hinz, 2005). The somewhat artificial concept is that, if you were running social security in the same way as an occupational pension scheme, you would have accumulated assets to meet the accrued liabilities. The actuary checks the

accrued liabilities against the assets from time to time and the sponsoring company is required to disclose the unfunded liability. Most national social security systems have not done that, since they are not seeking to accumulate assets to meet the liabilities, but intend to continue to meet future payments on a pay-as-you-go basis. The World Bank argues that these commitments are akin to government debt which is implicit, since the government has not actually issued securities of the form that usually make up the national debt. In order to make the process more transparent, and show the impact on the economy in future, it is sometimes argued that governments should disclose the size of the implicit pension debt alongside the explicit national debt. It is also argued that it would be more transparent for governments to issue bonds to be held by the social security scheme, so as to make the debt explicit.

**Figure 2: Implicit pension debt as percentage of GDP**



*Source: Michal Rutowski, World Bank, in a presentation to the 9<sup>th</sup> Regional Pension and Social Insurance Conference, Beirut, February 2005.*

Figure 2 shows that the implicit pension debt is as much as four times GDP in Italy and over three times GDP in France, Spain, Germany and Sweden. The UK and Ireland have relatively modest implicit pension debt because they have less generous social security schemes than the other countries shown, relying more on occupational and private pension provision. In the case of the UK, the implicit pension debt according to this calculation is around 150 per cent of GDP.

Other ways of analysing the sustainability of existing social security systems are to look at the expected future development of employer and employee contribution rates or at the percentage of GDP which the future annual benefit payments can be expected to represent. On both these measures the UK is in a relatively strong position. A number of continental European countries can expect to have to devote at least 3 per cent of GDP more over the whole of the next 50 years than they are

*Chris Daykin*

doing at present, simply in order to maintain the social security systems (Chand and Jaeger, 1996; Franco and Munzi, 1996).

Since pension reform is always politically difficult, it is rare for governments to grapple with the problem before it becomes an imminent crisis. The UK was something of an exception to this, because of its tradition of regular reports to Parliament by the Government Actuary on the long-term financial sustainability of the social security system. As a result, pension reform initiatives began to be enacted in the UK from 1980 onwards, long before most other countries. However, all countries are now beginning to recognise the impact of increasing longevity and continuing low fertility on the sustainability of their social security systems. Most countries are actively seeking to make changes to their systems which will render them more sustainable for the next 40 or 50 years, from the point of view both of structure and financing. Reform initiatives increasingly focus on seeking to reduce intergenerational dependency, although this is inherent in pay-as-you-go systems, since it is nowadays seen by many as unfair that some generations should have to bear a much heavier burden of support for previous generations than did the working generations before them. However, most reforms introduce other forms of inequity and there is no perfect solution.

The redesign of social security systems now also pays far more attention to incentive effects than has generally been the case in the past. Adverse incentives in the social security system may encourage people to retire earlier rather than later, and lead to people playing the system in order to optimise their benefits. Contribution and benefit conditions can create their own perverse incentives. Means-tested benefits are a particular problem, since they interact with occupational and personal pensions and with other savings, and this may discourage a significant sector of the population from making additional private provision, in the fear that such savings will simply be clawed back against future means-tested benefit entitlement. This situation is in direct conflict with one of the main objectives of pension reform in many countries, namely to increase the level of saving in the economy. Additional private saving for pensions is seen as desirable, and even essential if the potentially large increases in public spending on pensions are to be averted through cutting back commitments to social security.

In many parts of the world, a major issue facing reformers is the low level of coverage in traditional social security schemes, often restricted to the formal labour market, which can be a very small proportion of the economy. There is a real issue as to whether social security is fulfilling its function if overall levels of coverage are very low. The focus of the concerns of international agencies such as the World Bank and the International Labour Office has shifted heavily in recent years towards seeking solutions to the social security issues in very low-income countries, where most people do not enjoy any social security at all. However, solving this issue is highly complex.

# III

## Pension Reform Typology

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The changing demands and pressures on pensions systems have already led to a number of schemes for reform. The process of reform is inevitably politically sensitive, as large amounts of public expenditure are involved and reform almost always has implications for redistribution between different stakeholders, with plenty of potential for some to be worse off as a result. Even the use of the word “reform” is resisted in some countries, with people preferring to refer to adjustments or modifications to the pension system or to a process of evolutionary change. Because a major focus of reform is usually to make the system more affordable or sustainable in the light of adverse demographic changes, it is usually apparent that contributions may have to increase or benefits may be reduced.

Because of the great variety of different structures of social security and pension provision and the infinite number of amendments, adjustments, innovations and restructuring to which they can be subject, it will be useful, for the purposes of this pamphlet, to consider a few generic categories of reform:

1. Contribution adjustment and reform
2. Benefit adjustment and reform
3. Structural reform
4. Reform of retirement age and structures
5. New approaches to financing
6. Development of funded complementary schemes

### **Contribution adjustment and reform**

Adjusting the level of contributions to meet the changing level of expenditure on a pay-as-you-go basis might not be regarded as reform. However, it is one fundamental approach by which social security schemes have adapted over the years and in some cases it will be a more acceptable and politically feasible solution than many of the alternatives.

Unfortunately, this is not a politically acceptable solution everywhere, as many governments are very reluctant to legislate for contribution increases (particularly given the extent of increases which may be necessary). Pressures to keep contributions down include perceptions of social security contributions as a tax, concerns about the employment, labour market and competitiveness consequences of high taxes or social charges, concerns about whether different generations will get a fair return on their contributions (for example, looking at money’s-worth calculations) and pure political considerations of voting power.

Japan is an example of a country where raising the contribution rates has been seen as an essential part of a coherent strategy. However, the political debate has been over

Chris Daykin

how far and how fast. Following the interesting approach of surveying the views of “knowledgeable people”, a consensus developed around limiting the ultimate contribution rate for the Employers’ Pension Insurance (EPI) to 26 per cent of monthly salaries. This represents quite an increase from the current level of 17.35 per cent, but will still require benefit expenditure to be reduced by 20 per cent. This is a typical trade-off which will have to be made in reforms which amend existing structures. How much can the benefits be reduced, and how much can the contributions be increased, so that a balance is achieved at a politically acceptable level?

In practice most industrialized countries will see some increases in contributions, as, even when other reforms are enacted, there is a momentum within the existing structure resulting from the worsening demographics. The challenge is to keep the increase in contributions to a reasonable level, as we will see in the case of Germany on page 32. What is seen as a reasonable level will vary from country to country.

Contribution reform need not be restricted to the *rate* of contribution. Many social security systems have ample scope for changing the structure of contributions – for example, to adjust the band of earnings on which contributions are levied (or the bands on which they are levied at different rates), to integrate with the tax system, to try to remove features which may distort labour markets, to make the system more redistributive, to change the balance between employers and employees, or between employees and the self-employed. The UK has been through a number of changes to the details of the contribution structure, mostly without significantly increasing overall contribution income, but only redistributing its impact. In Italy an upper limit was introduced on income assessed for contribution purposes, with a view to encouraging those on higher incomes to contribute to complementary schemes.

Another key area of contribution reform for many countries is to tackle areas of abuse or non-compliance. If social security financing problems are caused (in part at least) by failure to collect contributions from those who should be paying them, or by underpayment caused by false disclosure of income, then this seems an obvious place to start with reform. Tackling such problems may not be easy, and a number of countries have seen the solution being in more radical structural reform, such as changing to a notional defined contribution scheme (see section below on structural reform) in order to improve the incentives to contribute.

Contribution income can also be increased by broadening the coverage of the scheme, which may be a worthwhile objective for other reasons. Bringing new categories of insured persons within the scheme will increase expenditure on benefits in future years, but in the short term the additional contribution income has a positive impact.

### **Benefit adjustment and reform**

If contributions cannot realistically be increased over time to meet the rising cost of benefits which have been promised, an alternative may be to reduce the cost of the benefits. This may, however, be even more unpopular politically.

There are many ways in which the cost of benefits can be reduced. A mechanism used in many reforms is to change the formula for indexation after award. This can have quite a major impact on costs in the long run but affects individuals only gradually. An early reform of this type was in Switzerland, where in 1980 the pension uprating was changed from increases in line with earnings to half-way between the movement in prices and earnings. In the same year the UK moved from upratings in line with the higher of prices and earnings to a straight prices uprating approach. A number of other countries have made changes to their uprating formula in recent years. Germany moved from indexing in line with gross earnings growth to increases in line with net earnings, so that rising social security contributions for the working population could also be passed on to an extent to pensioners.

Benefit costs may also be able to be reduced by tightening the conditions for eligibility. This might include raising retirement age (see section on this on page 17), increasing the number of contributions required to qualify for a full retirement pension, removing "seniority" provisions which permit immediate pension on completion of a certain number of years' contributions, regardless of age, making it more difficult to qualify for incapacity or invalidity pensions, limiting the entitlement of widows (or widowers) to a survivorship pension (e.g. according to their age or whether they have dependent children), reducing access to credits (e.g. for higher education), or even introducing means-testing.

Further scope may be found in the benefit averaging formula. The UK 1986 pension reform replaced "the average of the best 20 years of revalued earnings factors" by "the average of revalued earnings factors over the whole working life". Inevitably this led to lower pension entitlements, in some cases significantly lower. Many other countries have increased the averaging period for earnings with a similar objective. This is also motivated by a desire to have a closer link between the amount of contributions paid and the benefit received. A defined benefit based on career average revalued earnings can have very similar characteristics to the notional defined contribution arrangements discussed in the next section.

If changes such as the above are insufficient to bring down costs to the desired extent, then more drastic and explicit measures may be necessary, such as reducing the pension accrual rate or level of benefits. Direct reduction of 5 per cent in earnings-related benefits was envisaged in the Japanese 2000 reform. In 1986 in the UK, accrual of earnings-related pension was cut back to a target of 20 per cent after a full working life, as compared to 25 per cent previously. This is only gradually having an impact, as it only affected benefits accruing after 1987.

### **Structural reform**

The political opposition to cutting back benefits, or raising contributions to the extent otherwise necessary, led to the development of some more radical structural reforms in Italy and Sweden, and later in Poland, Latvia, Brazil and other countries.

*Chris Daykin*

A number of these reforms have taken a similar direction. Defined benefit schemes have been replaced by defined contribution individual notional accounts, now generally known as “notional defined contribution” schemes (NDC). The individual accounts into which contributions are paid (by or on behalf of the members) are notional in the sense that there is no underlying fund and no investments are purchased or used to determine the value of the account. In fact these arrangements continue to operate on a pay-as-you-go basis, with contribution income being used to finance benefit outgo year by year. The contributions paid are accumulated in the notional individual account, with revaluation being defined as in line with some index, e.g. average earnings, total wage mass or GDP growth.

At retirement age (which may be quite flexible under such schemes) the accumulated amount in the individual account is used to “purchase” an annuity at the rate then applicable for the attained age (and according to sex, unless unisex factors are applied). This enables the latest estimate of (projected) mortality to be used in calculating the annuity value and fair and actuarially equivalent benefits to be provided over a range of possible retirement ages. The annuity is calculated using a notional rate of interest (usually a real rate of interest net of price increases, if the pension is designed to increase after award in line with a price index) but the payments are financed on a pay-as-you-go basis. The incidence of early retirement may be reduced by requiring that the pension which can be purchased exceeds a threshold level.

This type of structure is seen as having advantages of transparency and ease of understanding. It creates a direct incentive to make contributions, since the ultimate benefit is dependent on the contributions paid. However, although improving post-retirement mortality can be taken into account through worsening the conversion terms to an annuity, there is limited flexibility with regard to the balance between income and spending on a pay-as-you-go basis. Ability to cope with changing demographic relationships can be enhanced by incorporating a demographic factor in the revaluation factor for the individual accounts.

Under the Italian version of NDC, revaluation of the amounts in the individual accounts is in line with the average five-yearly variation of nominal GDP, whereas pensions in payment are indexed in line with the retail price index.

The Polish social security system has been restructured with the old age pension separated from other social security benefits and operated as a notional defined contribution structure along similar lines to the Swedish reform. This is financed on a pay-as-you-go basis, although a small reserve fund is to be built up as a demographic equalisation fund, based on a contribution of 1 per cent of earnings.

In the Brazilian version, a real return on the individual accounts is achieved by applying a factor to the price revalued sum of the contributions. The factor depends on duration of contributions and age at retirement. It can be shown that this is equivalent to using fixed real rates of return for any particular combination of contribution period and age at cessation. However, the structure of the formula implies that the real rate of return falls for longer periods of contributions and later retirement ages.

## **Reform of retirement age and structures**

An obvious way of addressing the financing problems arising from an ageing population (at least from a theoretical point of view) is to increase the age of retirement. This reduces the number of people entitled to pension (or reduces the amount of pension payable if earlier retirement is still permitted) and increases the potential number of contributors. However, in practice it is not quite as simple as this, since a deferment in the age at which pension can be taken does not necessarily guarantee availability of employment. In fact some countries have been reluctant to raise the retirement age, although it could help to solve the financing problem, because of fears that it would worsen unemployment levels.

With expectation of life continually increasing in many countries, it does have a ring of logic to expect retirement ages to go up in the longer term, in order to maintain some sort of balance between the expected length of working life and the expected period in receipt of a pension.

Raising the retirement age has formed part of many reform programmes. Switzerland is now raising the female retirement age from 62 to 65, to match that of men. In 1995 the UK enacted an increase in the female retirement age from 60 to 65. However, this will not take effect for a while, since 60 remains the retirement age for those reaching that age up to 2010. 65 will be the retirement age from 2020, with a gradual increase from 60 to 65 between 2010 and 2020. Further reforms recently announced by the UK Government include a proposal to increase the pension age (for both men and women) from 65 to 66 over the two years 2024 to 2026, from 66 to 67 between 2034 and 2036 and from 67 to 68 between 2044 and 2046 (Department for Work and Pensions, 2006).

The latest Japanese reform includes raising the retirement age for the earnings-related Employees' Pension Insurance from 60 to 65. In the United States the standard pension age is being increased from 65 to 67, although an actuarially reduced pension will still be available from age 62. The reduction at any particular age will, however, increase as the standard retirement age goes up.

## **New approaches to financing**

Concerns about rising social security contribution rates in the future have focused attention on whether there are new and innovative ways which could be used to finance social security. The idea that part of the pay-as-you-go cost could be met from the government budget is not a new idea. Indeed many schemes were set up with an explicit contribution from the government, either to reflect a deliberately tripartite philosophy or to finance specific elements of the costs, such as rapid maturity, improvements in benefits to existing beneficiaries or credits for the lower paid, unemployed, those caring for families, etc. The Japanese 2000 reform includes a proposal to raise, from  $\frac{1}{3}$  to  $\frac{1}{2}$  of the total costs of basic pension benefits, the subsidy to contribution income which comes from general revenue.

*Chris Daykin*

In some countries the basic pension (some or the whole of the first pillar) is already financed entirely, or to a significant extent, out of general revenue. Where the basic pension has an explicitly universal or redistributive intent, there is a rationale for a greater level of general revenue financing, as the concept of social insurance is weaker, e.g. where the basic pension is payable in accordance with financial need (e.g. Australia) or according to a residence criterion (e.g. Denmark – see p.36).

Charging more of the costs to general revenue may merely shift the problem from having to increase social security contributions to having to raise other taxes. Some might feel that changes such as those proposed for Japan sweep the social security financing problem under the carpet, since it is not clear whether it will be any easier to raise tax to cover the additional  $\frac{1}{6}$  of the cost of basic pension than it would be to raise contributions. One advantage that may be perceived of a greater proportion of tax financing is that income tax is usually more progressive than social security contribution structures, which often exempt income above some threshold level where earnings above that, or some other, level do not count for calculating benefits.

Financing through other types of taxes may also provide an opportunity for lessening the adverse impact on employment costs of increasing social security contributions. The Swiss example of levying additional value added tax (VAT), to cover some of the growing costs of social security, demonstrates the potential for shifting the burden from tax on employment to tax on consumption. However, some countries are very reluctant to earmark taxes (other than perhaps social security contributions, which are not technically a tax) to specific purposes. Some countries have used “windfall” income, e.g. from privatization proceeds (China and Ireland) or from oil and gas revenues (Norway), to assist in the financing of social security.

Another facet of new approaches to financing is the interest in the scope for pre-funding a greater proportion of the social security liabilities. This may have several justifications:

- avoiding large increases in contributions in future
- exploiting real rates of return on investments to reduce overall costs
- demonstrating good national housekeeping by reducing unfunded liabilities

The first of these is exemplified by recent reforms in Canada. The Quebec Pension Plan increased joint contribution rates to 9.9 per cent by 2003 (with similar increases planned for the Canada Pension Plan) in the hope that this level will be sustainable for many years, taking into account the ability to draw income, and eventually capital, from the sizeable funds which will be built up over a number of years in which the contribution income will exceed benefit payments.

A superficially similar policy has been operating in the United States of America for a number of years, since the social security legislation (following reforms in the late 1980s and early 1990s) provides in advance for a schedule of social security contribution rates which aims to achieve actuarial balance over a 75-year period. Underlying this is an excess of contribution income in earlier years, with a corresponding build-up of social security trust funds, which are assumed to be

drawn down later when contribution income is expected to fall below benefit payments. Recent trustee reports show that the scheme is no longer in actuarial balance, and this situation is worsening as more years of income shortfall at the far end of the projections come into the 75-year period of consideration.

There is a significant debate in the United States about the true effect of the present build-up of social security trust funds. They are invested solely in government fixed interest securities, which some would argue has no real benefit to the economy, offers little in the way of real returns to offset future costs and merely obfuscates the true extent of government borrowing. The Canadian reform attempts to address these potential criticisms by distancing from government the investment decisions in respect of social security funds through the Canada Pension Plan Investment Board, and using these funds to invest in the real economy through shares and corporate bonds. Investment of social security assets remains a controversial topic in many countries, with concerns about back-door nationalisation and government interference in investment decisions conflicting with the desire to maximise real returns on the funds to reduce long-term costs. Some small social security schemes have had great success in keeping their costs down by investing their assets on world markets in much the same way as corporate pension funds would. It is more difficult to achieve this in larger countries, where large-scale investment of social security funds outside the country would be frowned upon, and where the potential volume of investment generated by a partially funded social security scheme could swamp local investment markets.

### **Development of funded complementary schemes**

A significant component of pension reform proposals in many countries has been the development of complementary schemes. Although pay-as-you-go complementary schemes have played an important role in some jurisdictions (e.g. in France), the development of complementary schemes in the current context rests on the assumption that they will be funded and privately managed.

An extreme example of this is the pension reform in Chile, which was initiated in 1981. This involved the effective replacement of a publicly managed defined benefit social security scheme by a compulsory system of funded, privately managed individual account (defined contribution) pension plans. The Chile reform has been exhaustively discussed and reported on (see, for example Vittas and Iglesias (1992), Starck (1993), Superintendency of Pension Fund Administrators (1996), Daykin (1998) and International Federation of Pension Fund Administrators, 2006)) and will not be described in detail here. However, the concept has been influential in driving the development of World Bank thinking and a number of more recent reforms have built on these ideas (however, only Kazakhstan of the more recent social security reform programmes has replaced the first pillar social security entirely by funded schemes).

Argentina and Uruguay are examples of South American countries which followed many of the principles of the Chilean reform, whilst retaining a significant pay-as-you-go first pillar social security scheme. Argentina introduced a further element of

Chris Daykin

choice into the second pillar, by permitting an option to make additional contributions to the social security scheme in return for additional benefits. In fact, total contributions of 27 per cent of earnings were split, with 16 per cent automatically going into the pay-as-you-go scheme (the employer's share), whilst the member could choose whether the further 11 per cent was used to purchase better benefits in the pay-as-you-go scheme or was allocated to the private pension fund (AFJP) of the individual's choice (contribution rates have been adjusted in recent years as part of a package of measures to address the financial crisis that the country was facing). Uruguay offers a funded scheme which is run by a public agency. A full appraisal of all the reforms in Latin America has recently been published (Gill, Packard and Yermo, 2004).

In most western European countries there is strong opposition to following closely along the lines of a Chilean-style funded pension system. Most countries are too strongly attached to having a substantial pay-as-you-go first pillar to see funded complementary schemes as being anything more than just complementary. The European countries with the most mature experience of funded pensions have large numbers of defined benefit schemes sponsored by employers or groups of employers (e.g. UK, Netherlands and Ireland). However, in countries where there is no such established tradition of funded schemes, new complementary schemes are mostly being established on the defined contribution model. This is the case for the new complementary schemes legislation in Italy. In Sweden also there is a new funded defined contribution scheme, into which 2½ per cent of salaries (up to a modest ceiling) are channelled from the overall social insurance contribution.

Poland offers an example of compulsory second pillar provision through defined contribution schemes (Daykin, 2002). A system of mandatory private pension funds was introduced in Poland from the beginning of 1999. Everyone under the age of 50 at the start joined the new defined contribution system. Those over 50 remained in the old defined benefit pay-as-you-go system. Contributions of 19.52 per cent are mandatory on earnings up to 2½ times national average income. For those under 30 at the start, an amount of 7.3 per cent of relevant income is passed to a funded individual account with a pension fund of the individual's choosing. The pension funds will just handle the accumulation and investment of monies up to retirement age, when an annuity must be purchased from a specialised pension annuity company. Those aged between 30 and 50 at the start were able to opt to have 100 per cent of their contributions paid into the notional defined contribution scheme or to have part going to a pension fund, as for younger people. The government underwrites a minimum level of pension (from the first and second pillar systems together).

The second pillar pension funds (PTE - *Powszechne Towarzystwo Emerytalne*) are regulated by the Pension Fund and Insurance Supervision Office (KNUiFE - *Komisji Nadzoru Ubezpieczeń i Funduszy Emerytalnych*). They are obliged to diversify their investment risk, with limits set for the maximum which they may invest in particular types of asset: 40 per cent maximum in quoted stock, 5 per cent in foreign shares, 10 per cent in the secondary stock market, 10 per cent in National Investment Funds, 10 per cent in National Bank paper and 15 per cent in municipal bonds. Members are

allowed to invest in one fund, and switching (starting to contribute to a new fund and transferring accumulated assets to the new fund) is made relatively onerous, so as to discourage agents from “churning” the accounts of their clients. At the start of the new system, initial charges varied between PTEs, from a minimum of 7.9 per cent to a maximum of 11 per cent, although some promised to deduct a lower percentage in future, with a scale varying according to the number of years of contribution. However, charges have now been standardized. An annual investment management fee of 0.6 per cent of the accumulated funds is charged. The Polish reform has coined the descriptor “Security through Diversity” to emphasize the risk reduction benefits of a balanced mixture between pay-as-you-go and funded systems.

In the UK, individual account personal pensions were given new prominence from 1987, when appropriate personal pensions became available as a further choice for contracting out (opting out) of the state earnings-related pension scheme (in addition to salary-related defined benefit occupational pension schemes). Successful though this was in expanding the numbers of employees with a funded private pension, there was unfortunately widespread mis-selling of personal pension products by financial institutions. Some of the problems arose from the fact that members of employer-sponsored occupational pension schemes now had the right to choose a personal pension (from April 1988 no employer could make membership of an occupational pension scheme compulsory). Many such people were persuaded to purchase a personal pension, without adequate consideration of their existing entitlements, thereby forfeiting substantial contributions from their employer into their pension arrangement.

The latest innovation in the UK has been the stakeholder pension scheme. This possibility was introduced by the Welfare Reform and Pensions Act 1999 as a simpler, cost-effective alternative to personal pensions. From April 2001 every employer with more than 5 employees who does not sponsor an occupational pension scheme has been required to make available for their employees access to a stakeholder pension scheme (although they are not required to make any contributions). Stakeholder pension schemes have to satisfy strict criteria regarding cost, access and terms (CAT standards). In particular, charges were originally limited to 1 per cent a year on the accumulated amount in the fund, with no up-front charge, exit charge or any other charge. This limit has now been relaxed somewhat (see p.42).

The UK does in effect have a compulsory earnings-related second pillar, with a choice between occupational pension schemes (defined benefit or defined contribution), appropriate personal pensions (defined contribution) and stakeholder pensions (also defined contribution). Membership of the state second pension is available as a further choice (or some would see it as the fall-back). The latest proposals from the UK Government include putting in place a new scheme of personal accounts, with automatic enrolment for workers (who will, however, have the option to opt out) and contributions of 4 per cent of relevant earnings from employees and 3 per cent from employers (plus 1 per cent tax relief) (Department for Work and Pensions, 2006).

# IV

## Notional Defined Contribution (NDC) Schemes

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The introduction of individual notional accounts (defined contributions) in place of defined benefits for the state pension system has already been mentioned as an important example of structural reform. This type of first pillar reform was pioneered by Sweden and Italy in 1994. Contributions are paid into individual accounts and at retirement age the amount accumulated is used for purchasing an annuity. However, there is no underlying fund or investments and financing continues to be on a pay-as-you-go basis, with current contribution income paying for current benefit payments. This is attractive because it is relatively transparent, appears on the face of it to be easier for people to understand, offers a greater sense of ownership of pension rights and provides better incentives for contribution and for retirement behaviour. There has been some discussion about whether the use of the word “notional” may be misunderstood, but these arrangements are still commonly referred to as notional defined contribution schemes or NDC.<sup>2</sup>

The individual member is expected to regard the account as their personal accumulation of pension wealth, and the intention is to try to avoid any explicit transfers or cross-subsidies. The use of the latest annuity factor for the appropriate age to convert the individual account into pension means that there is less of a perverse incentive to retire early and that some of the risk from increasing longevity is carried by each generation of members.

Sweden pioneered the NDC approach after a lot of discussion about reforming their pensions system. Although now widely heralded as a revolutionary new approach, there was a considerable measure of pragmatism in its introduction in Sweden, since significant benefit reductions were necessary in order to make the social security system affordable and sustainable. It was easier to do this in the context of a more radical structural reform than it would have been through making parametric changes to the old scheme. The Swedish reforms are discussed in more detail below (see p.26).

Although less frequently cited than Sweden, and less sophisticated in some of its mechanisms, Italy introduced a very similar system in the same year. The nature of the political process in Italy meant that it took several legislative bites at the cherry to complete the process, and they ended up with a rather extended transitional period, which means that it will take some time for the benefits really to be felt.

As a result of World Bank involvement, and the influence of consultants from Sweden, NDC has now been introduced in Poland, Latvia, the Krygyz Republic, Russia and Mongolia. Brazil has introduced a modified NDC system, but this has a

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<sup>2</sup> Recently the World Bank has been trying to promote the alternative name “non-financial defined contribution schemes”, although it is difficult to see in what way these social security arrangements are not financial (Holzmann and Palmer, 2005).

greater affinity to the French complementary schemes (see p.25) and has more of a defined benefit feel to it. China also introduced an NDC approach with defined benefit characteristics, omitting one of the key elements of the modern NDC, which is the ability to transfer some of the longevity risk to the participants. In China the pension was defined as one-tenth of the accumulated individual account, which did not allow properly for current life expectancy, let alone for possible future improvements. However, more appropriate annuitisation factors are being introduced in a series of pilot reform projects.

In 1994 the World Bank published a seminal book on pension reform, entitled *Averting the Old-Age Crisis* (World Bank, 1994). This promoted the three-pillar concept, with the second pillar being a system of mandatory individual accounts invested through competitive private pension funds<sup>3</sup>. There have been several new World Bank books on pension reform in the last year or so. One of these is *Old-Age Income Support in the 21<sup>st</sup> Century: An International Perspective on Pension Systems and Reform* (Holzmann and Hinz, 2005). Another is *Pension Reform: Issues and Prospects for Non-Financial Defined Contribution (NDC) Schemes* (Holzmann and Palmer, 2005).

Both of these recent World Bank publications promote the concept of NDC, arguing that it improves the incentive structure in social security and is more transparent than other models. Traditional defined benefit social security schemes are heterogeneous in the way in which they translate contributions into rights. There is no close relationship between the amounts contributed and the benefits received by members. In many countries there are very high levels of heterogeneity, as certain groups of people are allowed to retire earlier and some groups of people get special additional benefits. It is argued that the period of receipt of pension is on average much longer for those in higher social classes or with higher earnings levels. There are thus many elements within the system that could be regarded as not particularly fair or equitable for some individuals, although it could be argued that they embrace a more collective concept of equity and fairness.

NDC is said to be more transparent, in that it offers a direct link between contributions and benefits. It avoids perverse incentives to early retirement and encourages later retirement, because the longer you leave it before you take your pension the more you will get in terms of pension, and the earlier you retire, the greater the cost in terms of reduction in the size of your pension. So it offers a genuine trade-off between retirement date and amount of pension, in a way which could be seen to influence retirement decisions.

Although presented as a defined contribution scheme, NDC is in fact mathematically equivalent to a career-average revalued earnings (CARE) defined benefit scheme, such as the UK State Earnings-Related Pension Scheme (as it was from 1988 to 2002). Both approaches take a percentage of each year's earnings and accumulate these annual tranches up to retirement age. Both can use a variety of different indices for the accumulation process but the accumulation is not usually directly related to

<sup>3</sup> This differed from the international typology which was previously accepted in the literature, under which the second pillar was occupational or employer-sponsored pension schemes, whether mandatory or not (and frequently defined benefit).

Chris Daykin

investment returns. Both approaches are designed to have constant accrual rates (this being achieved through maintaining a constant contribution rate in the NDC case), but in the CARE version there is perhaps more flexibility to have a discussion about future accrual rates, revaluation parameters, retirement age and so on.

This sort of discussion is not envisaged in the pure version of NDC, where constancy of contribution rates and maintenance of the direct link from contributions to benefits are seen as among its key virtues. The problem with this is that it creates an inherent instability, since you cannot fix both contributions and benefits in a pay-as-you-go scheme, unless you have unlimited buffer funds or recourse to supplementary general budget financing. As discussed later in relation to the specifics of the reform, the Swedish solution to this lies within the so-called *automatic balancing mechanism*, which is designed to achieve financial balance but results in unpredictable consequences for benefit levels.

The automatic balancing mechanism is not found in the reforms of the other countries which have decided to implement NDC, such as Italy, Poland and Latvia. However, a substantial buffer fund is planned for the Polish reform. It seems very likely, therefore, that the issue of reform will need to be reopened at some stage in the future in these countries, since the rigidity of NDC will not be sustainable in a range of future scenarios. It is not possible to fix both contributions and benefits (in this case as an accumulation of contributions) in a pay-as-you-go system unless there is effectively unlimited recourse to some supplementary funding, which is clearly not intended to be the case, since these schemes are supposed to be stable without government financial support. Even for Sweden, where the structure is more sophisticated and should ensure continuing financial balance, there may need to be a review of the sustainability of having an immutable contribution rate. There may also be demand for more open and transparent debate about the implications of the current structure for social justice and equity.

Returning to the similarities (and differences) between NDC and CARE, an important feature of NDC is its formulation as an accumulation of pension wealth, which can be converted into a pension at retirement age, by dividing by an appropriate annuity factor. CARE is presented as an accumulation of pension benefits from each tranche of accrual. However, there is no reason why CARE should not be designed to generate accumulated pension wealth – in other words a capital sum at retirement, which could then be converted to pension using an annuity factor in exactly the same way as with NDC. The ability to use a current annuity value, providing a mechanism for transferring some of the longevity risk to the pensioners, is seen as one of the great advantages of NDC, but it could equally well be incorporated into the design of a CARE defined benefit scheme (see the example of Finland on page 29). The same applies to the scope for allowing retirement at different ages, with appropriately adjusted pension conversion factors. Thus some of the key advantages that are asserted for NDC could readily be incorporated into other designs, which could have the advantage of offering a more transparent discussion about what they are designed to achieve.

*The Challenge of Ageing: Pension Reform, International Trends and Future Imperatives*

The French *régimes complémentaires* (complementary schemes) are a much earlier version of a “notional” defined contribution scheme. This is the French “second state pension”, which covers all workers and supplements the basic scheme, being particularly important for those with slightly higher incomes. The financing is pay-as-you-go but the entitlement to pension is built up by accumulating credits in a personal account based on contributions paid. However, rather than maintaining the individual accounts with accumulated monetary amounts, pension “points” are awarded on a specified basis in return for contributions. Pension points can then be swapped for pension at the time of retirement. The French approach gives more flexibility than NDC, as the exchange rate of points for contribution and the value of the point at retirement age are within the discretion of the scheme managers. In addition, various special contributions have from time to time been required as a form of surcharge, with no or only limited value for purchasing points.

Although this is effectively the same underlying idea as the Swedish notional defined contribution scheme, the flexibilities make it very different in practice. For this very reason the French approach is regarded by the World Bank as old-fashioned and lacking in transparency. The pure concept of NDC, as now espoused by the World Bank and others, specifies a direct and rigid link between contributions and pension rights and also envisages that the contribution rate will not change for the foreseeable future, the very features which create unfortunate rigidity in the NDC systems and make it doubtful whether they will be sustainable in the longer term.

# V

## Recent Reforms – An Analysis

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### Sweden

In 1994 Sweden implemented the pension reform that has become internationally acclaimed and widely debated as a radical and effective solution (Hörngren, 2001). Until then the system in Sweden had been the hallmark of the strong Swedish social welfare system and offered the possibility of a full pension (of around 65 per cent of earnings in employment) after 30 years of work, with the pension being based on earnings in the best 15 years. Pension age had not been raised in line with rapidly increasing life expectancy. Moreover, a period of adverse demographic development was imminent as a result of the combination of longer lives, fewer births and a large “baby boom” generation approaching retirement.

The reform contained the following main features (Scherman, 2005):

- a completely changed pay-as-you-go scheme, based on the NDC model;
- life-time earnings as the basis for calculating the retirement pension;
- abolition of “normal pension age”;
- taking increasing life expectancy into account in the calculation of pensions;
- the introduction of a funded pension component alongside the pay-as-you-go element;
- phasing out of the minimum pension in the light of economic growth.

It was introduced after a long period of consensus-building, and had the support of many political parties. There was no significant public opposition to its introduction, which was presented as achieving long-term sustainability. However, as discussed below, it is unclear that the full implications for individuals in the system were widely appreciated.

The basic form of an NDC arrangement has already been discussed in the previous section. In the Swedish case the contributions to the pay-as-you-go NDC element are at 16 per cent of earnings<sup>4</sup> up to a ceiling of about 125 per cent of national average earnings. An additional 2½ per cent of earnings up to the ceiling is collected with the NDC contributions and passed to the Premium Pension Authority (PPM) for investment in funded individual accounts. Of the total contribution of 18½ per cent, 11 per cent is paid by the employer and 7½ per cent by the individual.

The contributions paid to the NDC scheme constitute pension rights and are accumulated over the whole of the working career, using an index of average wage growth in the economy. Pension rights are also credited on the basis of the amount of social security benefits which people may be receiving if they are not earning, and,

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<sup>4</sup> The total contribution is actually 17.21 per cent of earnings up to the ceiling. When expressed as a percentage of earnings less the employees’ contributions of 7 per cent, it comes to 18.5 per cent.

on a specified basis, for child care, military service and higher education. In order to reinforce members' perception of the scheme as an accumulation of their own personal pension wealth, annual statements are sent out ("orange envelopes") with a summary of the individual's accrued pension rights.

Pension may be taken at any age from 61 onwards. The amount of pension is determined by dividing the accumulated pension rights (contributions) by an appropriate annuity factor, which is specific to the year in question and the age of retirement chosen. Pensions in payment are indexed to the annual rate of average wage growth reduced by 1.6 per cent a year, and this is taken into account in the annuity factors. The annuity factors take into account the then current estimate of the mortality rates above retirement age for the birth cohort in question. Individuals may take a full or partial pension and can combine receipt of a pension with continued gainful employment (which will also serve to increase further the amount of pension available from a later age).

There is also a minimum pension guaranteed by the government for all Swedish residents. The maximum amount of minimum pension is payable on the basis of 40 or more years' residence and is around 30 per cent of national average earnings for a single person. However, it is intended in future to revalue the level of the minimum pension in line with the cost of living index, so its relative value is expected to reduce over time. With average real earnings growth of 2 per cent a year, the level of the minimum pension would fall by about a third in 20 years and by half in 35 years, relative to earnings in the economy. The Swedish welfare model also includes significant benefits in kind and subsidies towards health care provision, which need to be borne in mind to get the complete picture.

Two important features of the Swedish reform are the "buffer fund" and the "automatic balancing mechanism". A fundamental problem with NDC is that the contributions are a fixed element of the scheme design, since they are the basis for constituting pension rights. Benefits emerge as an accumulation of contributions paid, according to a set formula for revaluation and depending on the density of contribution payments of individuals during their working life, economic activity rates, and survival and retirement patterns. In effect the scheme is both defined contribution and defined benefit, and, since financing is on a pay-as-you-go basis, it is inevitable that there will be financing strains, as there is nothing to adjust to keep contribution income in line with benefit outgo. This is why the French *régimes complémentaires* (see p.25) allow for the possibility of special contributions that do not give rise to additional benefit entitlements and for some flexibility in determining the value of pension points.

One potential solution is to have a reserve fund, which can be drawn upon at times when benefit payment exceeds contribution income. At times when contributions exceed benefits the reserve fund can be topped up. However, it would be difficult to have a reserve fund large enough to ensure that it would be sufficient in all possible circumstances. In the case of the new Swedish NDC, the assets that had accumulated under the old system were transferred into the NDC to establish a buffer fund, giving the scheme effective start-up capital of around 5½ years of pension payments.

Chris Daykin

On the basis of reasonably optimistic scenarios, this buffer fund will grow and will remain adequate for a considerable period. On more pessimistic scenarios it will be exhausted in a few years.

However, the Swedish NDC does have a further mechanism to keep it in balance. This is known as the automatic balancing mechanism or “actuarial accounting” (Settergren, 2003 and Settergren and Mikula, 2003). Each year a balance sheet is drawn up of the assets and liabilities of the scheme. The assets consist of the real assets in the buffer fund plus the “value” of future contributions, which is determined as the product of the contribution rate, the wage mass and the “expected turnover duration”. This last concept (Settergren, 1999, 2001) is in effect the average period from when wages are earned by an individual to when pension benefits are paid to that individual, or the number of years elapsing from the expected average age at which wages are earned until the expected average age at which a pension is received. The calculated assets are then compared with the liabilities, which, in an NDC scheme, are the accumulated pension rights, as recorded for all persons not yet in receipt of a pension, and the present value, calculated under certain rules, of all future outlay for pensions in payment at the time when the calculation is made. If liabilities exceed assets, then the liabilities have to be reduced to keep the system in balance. The factor to be applied to the liabilities is the ratio of assets to liabilities according to the above calculation. Although referred to as “actuarial accounting”, this method is more accounting than actuarial, as no projections are made of what is likely to happen in the future. The balance sheet is drawn up purely on the basis of current information and does not allow for any future expected demographic developments. The principle is for the experience to emerge year by year, rather than to try to anticipate it using actuarial projection methods.

Critics of the Swedish reform (e.g. Scherman, 2003 and 2005, Hagberg and Wohlner, 2002 and Cichon, 2005) have pointed out how dependent the new system is on the automatic balancing mechanism. Applied mechanistically, as it is intended to be, it will keep the system in formal balance, but with an essentially arbitrary impact on the eventual benefit levels. All the risks of potential imbalance in the system are in effect channelled through into adjustment to individual benefits. As Scherman (2003) writes, “*There is no way to monitor the generational contract that is laid down in the pension formula, and no way of adjusting the system in the face of changes in external conditions to attain a fair balance between social goals and financial constraints in the future.*” Of course, it is partly because of this feature that the World Bank is promoting the NDC concept, since one of its criticisms of many traditional defined benefit social security schemes (World Bank, 1994) is the way in which legislators can amend contribution rates and benefit rates. Whilst it may be reasonable for the benefits of individuals to be adjusted to allow for improved life expectancy, it does seem somewhat arbitrary for them to be adjusted downwards to allow for low fertility levels, lower than expected immigration, low economic activity, low real wage increases or poor investment returns on the buffer fund. Perhaps the strongest criticism is about the political process, since the automatic balancing mechanism seeks to take the issue out of political hands and make the changes mechanistic. This could result in the effects not being widely understood and not subject to any political debate.

Apart from the possible impact of the automatic balancing mechanism (which will depend on the outturn in regard to a large number of factors), there are also transitional rules which were an integral part of the introduction of the new system and which will result in a considerable reduction in the replacement rate of pension achieved by individuals. This was indeed deliberately built into the structure of the new system, in order to make it more affordable and sustainable. However, it seems unlikely that this feature of the system is understood by more than a few people. Moreover, it was also implicit, in the mind of the system designers, that individuals would have to work for longer, and retire later, to be able to achieve a reasonable level of income in retirement. This message has not been made explicit. Indeed, providing for the possibility of individuals taking their pension at any time from the age of 61 may send out a contrary message.

At the same time, the policy is gradually to reduce the level of underpinning provided by the state-financed guarantee pension, thus increasing the risk of rising incidence of poverty in old age.

It should be noted that, in addition to the new NDC pay-as-you-go system, there is also the PPM contribution of 2.5 per cent of earnings, which goes into fully funded and invested individual accounts. The individual can choose how that is invested between some 700 funds. If they do not make a positive choice, there is a default investment procedure. There is some concern that this number of possible investment vehicles serves only to confuse most contributors, the majority of whom are not interested in making sophisticated investment choices. There have also been criticisms that the expense levels of the system are too high, although they are actually quite low compared to most collective investment schemes, since the cost of collecting the contributions is effectively shared with the NDC scheme and the costs of the individual investment managers have been driven down by the bulk purchasing power of the PPM. Savings in the PPM will certainly provide some offset to the reduction in replacement rates in the NDC system, but there is still expected to be a considerable overall reduction in what people can expect to receive, compared to the previous social security arrangements (Scherman, 2006).

It is also relevant that in Sweden around 90 per cent of wage-earners are covered by some form of occupational pension insurance under collective agreements, offering replacement rates of some 10 to 15 per cent of final salary.

## **Finland**

Following an extended treatment of NDC, and the Swedish reform in particular, we turn now to some other examples of effective pension reform. Although another Scandinavian country, Finland is entirely different from the perspective of social security and pension reform. Until 1992 Finland had a system that was more like what we are used to in the UK. There was a flat-rate basic pension, paid for by earnings-related contributions and administered by the Social Insurance Institution (*Kansaneläkelaitos*).

Chris Daykin

The second pillar<sup>5</sup> is a mandatory earnings-related pension scheme organised on an industry-wide basis and administered through a variety of pension institutions and pension insurance companies. The original legislation was passed in 1961, following extensive negotiations between the social partners. There were separate statutes for central government and local authority workers, and some statutes covering relatively small and specialised groups of workers, with some differences in benefits between the different groups. However, the whole system was co-ordinated by a single entity, The Finnish Pensions Centre (*Eläketurvakeskus*), which also acts as a clearing-house to manage transfers between the schemes and oversees the funding arrangements and setting of contributions. There is a substantial degree of pre-funding of the earnings-related scheme, although it is not fully funded to the extent that one would expect for occupational pension schemes of individual employers, since it is in effect a national social security scheme run through a decentralised set of agents. The financing of the scheme is not, therefore, dependent on the continuing financial viability of individual employer sponsors.

In the early 1990s Finland suffered some severe economic conditions as a result of the economic collapse and political break-up of its neighbour and significant trading partner, the former Soviet Union. In the light of this, the basic pension was redesigned to make it less costly, both in the short and longer terms, by turning the basic pension into a minimum pension guarantee. However, unlike the UK version of the minimum pension guarantee (pension credit) it is not means-tested against assets or income. Advantage was taken of the fact that the earnings-related pension is mandatory, and therefore covering 100 per cent of the working population, in order to create a minimum pension guarantee which simply tops up the individual's entitlement to earnings-related pension to a guaranteed level.

In the difficult economic conditions of the 1990s there were some reductions in the benefits of the earnings-related schemes. However, by the turn of the millennium, there were discussions about further reform of the earnings-related pension system, and these finally came to fruition in 2005, which saw the enactment of some fundamental changes to the earnings-related pension system, including the harmonisation of the public and private pension schemes. The main objectives of the reform were:

- to postpone the average effective age of retirement by two to three years
- to adapt the pension system to increased expectations of life
- to reduce pressures for future increases in pension contributions
- to unify and simplify the various separate private sector pension schemes
- to harmonise public and private pension schemes

In Finland, changes to the earnings-related pension scheme are negotiated between the social partners, with little involvement of the Parliament. A Bill is only presented to the Parliament once the social partners have agreed on its contents. This contrasts with reform to the social insurance pension, which is much more in the hands of Parliament.

Reforms affected primarily the old age pension, retirement age and partial pensions, with no change to survivors' pensions and only some technical changes to disability

<sup>5</sup> In Finland the mandatory earnings-related pension scheme is regarded as the second part of the first pillar

pensions. The calculation of the old age pension is being changed from the average of the last 10 years, earnings from each period of employment to career average revalued earnings. The old accrual rate was 1.5 per cent for each year between the ages of 23 and 60 and then 2.5 per cent a year above 60 (subject to a maximum pension accrual of 60 per cent of pensionable earnings after 40 years). The new accrual rate is intended to incentivise later retirement and has three different phases:

- 1.5 per cent a year from 18 to 52
- 1.9 per cent a year from 53 to 62
- 4.5 per cent a year from 63 to 68

There is no ceiling on the earnings covered by these accrual rates.

If someone is away from work on the grounds of illness, unemployment, or because of family responsibilities, there is usually an earnings-related daily allowance. Earnings-related pension will continue to accrue on the basis of this allowance. Accrual is enhanced for a period of child care lasting less than a year, but otherwise is a little lower than would be the case if the individual was working. For longer periods of caring for children under three years old, pension accrues on the basis of notional monthly pay (€556.60 in 2006). This is also the case for students, although it may be paid for as long as five years for the more demanding degrees.

An important additional factor in the pension calculation is the life expectancy coefficient. This is to be effective for the first time in 2010, based on the change in expected cohort life expectancy at age 62 from the level in 2009 (which will be given a coefficient value of 1). So, if the cohort life expectancy of those reaching 62 in 2010 is deemed to be 1 per cent higher than for those reaching 62 in 2009, the pensions of those reaching 62 in 2010 will be multiplied by a factor of 0.99. Interestingly, this incorporates into a defined benefit design the concept of adjusting for cohort life expectancy that is seen to be one of the advantages of moving to NDC.

In addition, by adopting a career average revalued defined benefit formula, the structure of benefits is also similar to the Swedish NDC. However, the revaluation is different. Under the 2005 law, the revaluation of earnings up to retirement will be on a weighted earnings/prices index, which uses 80 per cent of the growth in earnings and 20 per cent of the change in the consumer price index. Once pensions come into payment they are adjusted annually using a different weighted earnings/prices index, with the weights the other way round, i.e. 20 per cent of the growth in earnings and 80 per cent of the growth in the consumer price index.

Retirement age is to be changed from a fixed age of 65 (albeit with quite generous provision for early retirement pensions from age 60) to a flexible range of retirement ages from 62 to 68. At age 63 it will be possible to retire with a pension calculated according to the unadjusted formula. However, an immediate old-age pension will be available from age 62, subject to an actuarial reduction factor of 7.2 per cent. Deferment of pension beyond age 63 is compensated by the 4.5 per cent annual accrual factor referred to above. Deferment above age 68 is rewarded by actuarial increments for delayed receipt of pension.

Chris Daykin

Apart from the changes to the benefits, there will also be increases in contributions, starting with an enhanced level of contributions to be introduced straightaway for employees aged 53 and over, but with contributions for all then rising steadily over the period up to 2013.

These reforms are thought to be sufficient to make the system affordable and sustainable for the medium term. They are designed to encourage later retirement, whilst offering greater flexibility to individuals. Changes to disability pensions will seek to encourage the possibility of rehabilitation rather than just facilitating early exit from the labour market. Accrual rates are improved at the age of 53 and above, but pensions will reflect earnings over the whole working life instead of just the last 10 years. A key factor to underpin longer term sustainability, and also to add to the incentive for later retirement, is the life expectancy adjustment coefficient. For example, it is estimated that those retiring at 63 in 2050 will need to work a further two years (assuming they have accrued a pension of 60 per cent of earnings) to offset the impact of the projected life expectancy coefficient of 0.855. This is in fact very similar to the expected effect of changed life expectancy on the pensions of those due to retire (at 65) in 2050 in the Swedish NDC.

With the generous and mandatory earnings-related scheme in Finland, covering all earnings, without any ceiling, there is little in the way of supplementary occupational pension provision, so pension provision is now essentially through a single simplified statutory earnings-related scheme, coupled with provision for an integrated guaranteed minimum level of pension administered through the Social Insurance Institution.

## Germany

Pension reform in Germany has been largely driven by concerns about the financial unsustainability of the existing pay-as-you-go pension system, in the light of fertility levels that are among the lowest anywhere in the world. The costs of the German social security system had already risen to an uncomfortable extent following the absorption of the *Länder* (administrative regions) of the former East Germany.

Germany operates a traditional three-pillar pension system, with an additional “zero” pillar of means-tested social assistance. The first pillar is the statutory pension insurance, which covers employees in the private sector, with parallel systems for civil servants, farmers and the liberal professions. The second pillar is made up of occupational pension schemes, sponsored by employers and typically operated largely on the basis of direct promises (*Direktzusage*). These are contractual promises from employers to employees, although historically they have not been handled through segregated funds, but with the benefits paid directly by the employer when they become payable.

The future liabilities are carried by the company as a “book reserve” on the balance sheet, at a level which is determined by tax law and requires an interest rate of 6 per cent, thus not allowing for the effects of future inflation or salary increases on the liabilities, nor

including any liability in respect of employees under the age of 28. The only exception is for pension rights accrued by salary sacrifice in lieu of a deferred retirement benefit. Allocations to book reserves on the approved basis are tax-deductible for the employer and are not treated as taxable income in the hands of the employee. Pension benefits from book reserve schemes are taxed as ordinary income, subject to certain special allowances. Lump sums are taxed as income in the year paid. Some 60 per cent of employer-sponsored pension plan liabilities in Germany are held under this system.

The employer may reinsure all or a part of his liability through an insurance policy (indirect insurance) but such a policy remains part of the assets of the company, to which the pension fund members have no legal rights. Apart from taking out insurance policies, an employer can invest in equities, bonds, property, etc. Both constructions can effectively be restricted for benefit purposes only. Book reserve schemes are required to take out insurance with the *Pensionsversicherungsverein*, a mutual insolvency insurance company, to protect employees whose pension rights might otherwise be lost in cases of liquidation or bankruptcy. However, protection only extends to "legally vested" pension entitlements and pensions in payment, with full legal vesting only being required for employees over the age of 30 who have completed five years' membership in the company pension plan. Under salary sacrifice arrangements, vesting is immediate.

Most medium to large companies operate a private pension plan but fewer than half of smaller companies. Some 50 per cent of all private sector employees are covered. Benefits vary but many plans aim to produce retirement income of 40 per cent to 50 per cent of final pay after a full career, inclusive of social security. Integration with social security is frequently achieved by offering a relatively low accrual rate (perhaps 0.2 per cent to 0.4 per cent of final earnings per year of service) on final earnings below the social security earnings ceiling, and a higher accrual rate (from, say, 0.8 per cent to 1.5 per cent) on final earnings above the ceiling. The ceiling is  $\text{€}63,000$  a year in 2006. Schemes are not usually contributory; indeed employee contributions are not permitted for schemes using the *Direktzusage* financing method, unless a salary sacrifice arrangement is in place.

The second most important funding vehicle for German occupational pension schemes has been the independent pension fund (*Pensionskasse*). These are established quite separately from the employer as insurance companies. They are operated only by the larger companies (some 170 of them) since the administration and supervisory requirements are burdensome. There are also industry-wide or provider-run funds. They are subject to insurance supervision.

Employer contributions are tax-deductible and, for new arrangements after 1 January 2005, are no longer treated as taxable income in the hands of the employee. The benefit is liable to tax when it is paid. There are fairly modest limits to the amounts of employer contributions that are tax-deductible.

The third method of finance is direct insurance with an insurance company (*Direktversicherung*). This is a method often used by smaller companies and is usually operated as a group pension contract by level annual premiums. The tax treatment

Chris Daykin

is much the same as for the *Pensionskasse*. It is also often used in conjunction with other methods to optimise tax efficiency.

The fourth method is the support fund (*Unterstützungskasse*), of which there were believed to be some 5,300, covering some 9 per cent of total German pension reserves. Although these are legal entities that are separate from the employers, members have no legal right to the benefits, as they do with a *Pensionskasse*. There are limitations on the extent to which employer contributions to an *Unterstützungskasse* are tax-deductible, unless the support fund is simply being used as a vehicle for indirect insurance of the benefits with an insurance company. Taxation of benefits is the same as for book-reserved plans. Insolvency insurance is required.

A fifth method, introduced in 2001, is a modified pension fund, called a *Pensionsfonds*. This vehicle also falls under formal insurance supervision. In comparison with a *Pensionskasse*, a *Pensionsfonds* has no investment restrictions, but it is also subject to insolvency insurance.

The social security pension is normally payable from the age of 65 (for both sexes) on the condition that the individual has five years of contributions or credits. An early retirement pension without actuarial reduction may be awarded to male employees from the age of 63 with 35 years of credit and subject to there being only limited income from continued employment. Females may receive a pension from 60 under certain conditions (completion of waiting period of 15 years; more than 10 years' compulsory membership of the State pension scheme in the previous 20 years). For males born after 1936 and females born after 1939, the early retirement ages will be gradually increased to 65, with an actuarial reduction of 0.3 per cent for each month the pension is drawn prematurely.

The calculation of pension has some similarities with the French *régimes complémentaires*, being also based on accumulating pension points, which then have a current value. The current pension formula is as follows:

Monthly pension = Pension Factor x Pension Points x Pension Value x Access Factor  
where

Pension Factor is 100 per cent for retirement pensions and permanent disability pensions, 66.7 per cent for occupational disability, 60 per cent for spouses' pensions, 25 per cent for a reduced widow or widower pension, 20 per cent for full orphan and 10 per cent for half orphan pensions;

Pension Points are derived from the ratio between the individual's covered earnings and the average earnings covered by social security;

Pension Value is the monthly amount of pension payable for each pension point accrued (the current pension value in Western Germany is ?26.13 and in Eastern Germany it is ?22.97); and

Access factor is the actuarial factor for early or late retirement.

In practice the formula is said to produce a full career pension of some 48 per cent of final earnings on a gross replacement basis, although around 70 per cent in net of tax terms. Pensions in payment are revalued in line with the increase in the current

pension value, which is increased in line with wages.

Joint contributions of employers and employees are at the level of 19.5 per cent of gross earnings up to the earnings ceiling (*Beitragsbemessungsgrenze*) of 263,000 (252,800 in the Eastern *Länder*). There is a Federal Budget subsidy to the social security scheme of some 26 per cent of the cost. Employer contributions are tax-deductible up to a ceiling, as are employee contributions.

Social security reform legislation in 2001 restricted increases in pensions in future years so that they will be based on changes in wages net of social security contributions instead of gross wages. After a long transition period there was to be a fixed retirement age of 65 for both sexes and the replacement rate at 65 was reduced. Early retirement would still be allowed from the age of 62 for both sexes, with an actuarial reduction of 0.3 per cent for each month by which retirement is brought forward from 65. Retirement could be deferred to the age of 67, with an actuarial increase of 0.5 per cent per month of deferral. Social security contributions were expected to increase to 21.5 per cent (joint) by the year 2010.

Legislation to introduce *Riester-Rente* and *Pensionsfonds* was passed alongside these changes to social security, in order to permit fully funded pension vehicles for personal pensions and for occupational pension schemes respectively. These new pension vehicles have also been granted certain tax privileges. However, the *Riester-Rente* have not so far been as popular as expected. Some commentators consider that this is in part because of administrative complexity and their highly restrictive legal form, which requires a full guarantee to be given on the capital invested and requires benefits to be paid as whole of life annuities. As far as employer-sponsored pension plans are concerned, there has been a steady trend towards more external funding of company pension liabilities.

Further pension reform in 2004 introduced reduced levels of survivorship benefits and some other changes. However, the most significant change was a new pension adjustment formula. The annual pension adjustment is now composed of two factors: 1) the change in average income, net of contributions to the supplementary old age provision and the state pension scheme and 2) the sustainability factor. The sustainability factor mirrors the number of pensioners relative to the number of active contributors in the previous year. This is, therefore, another form of demographic adjustment factor, which passes on to the beneficiaries, through the annual pension adjustment formula, adverse change in the old age dependency ratio. Experts predict that these two measures together will lead to a series of zero adjustments for the coming years. Future contributions were projected to be capped at a maximum of 22 per cent by 2030. Should this level be exceeded, the federal government would have to take immediate action to reduce the contribution rate in an appropriate way. Projections suggest that the gross replacement rate for a standard pensioner will be reduced from 48 per cent to 39 per cent by 2030 as a result of these changes, with two-thirds resulting from the 2001 reform and one-third from the 2004 reform.

Chris Daykin

The introduction of the sustainability factor is seen as enabling the German pay-as-you-go pension system to distribute the costs of changing demographics in a legitimate way, leading to a reduction in pension level for future generations of pensioners, which, it is hoped, will be compensated for by additional private second – and third – pillar pension provision.

## Denmark

The pension system in Denmark is quite unique, but has some interesting features. It has evolved over a period of 115 years since 1891 and has strong overtones of labour market collective agreements. Since 1935 it has been prescribed that assets backing pension liabilities of employer-sponsored pension schemes should be separated from the assets of the employers themselves.

The basic public old-age pension (*Folkepension*) was introduced in 1956 as a universal benefit payable from age 67, depending only on citizenship and years of residence in Denmark. It is financed on a pay-as-you-go basis out of the state budget, with no earmarked contributions from either employers or workers. A further means-tested element of the *Folkepension* was introduced in 1964, a year which also saw the introduction of the ATP (*Arbejdsmarkedets Tillaegspension*), a supplementary labour market old age pension for all wage earners. From 1983 the basic level of *Folkepension* has been subject to abatement in case of any earnings from continued employment.

In 1999 Denmark took the counter-intuitive step of bringing down the pension age for the *Folkepension* from 67 to 65. This was associated with rationalising the arrangements for early retirement pensions, and, in spite of appearances to the contrary, was a cost-cutting measure. Possibilities were introduced from 2004 to postpone receipt of the *Folkepension* by up to 10 years, with corresponding actuarial increases. Much of the *Folkepension* benefit is now subject to means-testing, with different rules applying to three separate sub-sections. The benefit level is at about 40 per cent of national average earnings. The system is based on the idea that people live their entire life in the country in which they are born and is not well adapted to the more mobile migratory situation that now exists in the EU (Petersen, 2005).

The ATP is a funded scheme based on insurance principles and subject to full actuarial valuations. Initially it took the form of a pay-as-you-go defined benefit scheme, but it is now defined contribution and fully funded. From 2002 the funding approach has been based on full cohort projections of future life expectancy. Some saw the ATP as a step towards introducing a fully earnings-related national pension scheme, as in Sweden, but in practice this has not happened.

In 1998 the scheme was extended with the addition of the DMP (*Den midlertidige pensionsopsparing*), a mandatory savings scheme for all workers, with a contribution of 1 per cent of earnings, available for withdrawal at the age of 67. In 1999 the DMP scheme was amended to become the SP (*Særlige Pensionsopsparing*) scheme, still continuing with a mandatory contribution of 1 per cent of earnings, but with an

element of redistribution and eventual withdrawal phased over a ten year period from age 67. The redistributive element was stopped in 2001 and new SP contributions were suspended in 2004 and 2005 (the suspension was subsequently extended to 2007). From 1 January 2005 individuals have been able to make their own decisions regarding the investment portfolio for their SP savings.

Occupational pension schemes are widespread in Denmark, with most of the wage-earners covered by at least one scheme through the operation of collective agreements between the social partners, which mostly stem from the end of the 1980s and the beginning of the 1990s. Some two-thirds of the population is expected to be eligible for old age benefits from occupational pensions. These collective labour market agreements have the effect of making membership of the occupational pension schemes (*arbejdsmarkedspension*) compulsory. These schemes are mostly of a defined contribution nature and the majority are based on with-profits deferred annuity insurance contracts. They are thus in a sense defined benefit as well as defined contribution, although the benefit is increased from time to time through the award of bonuses. This development in effect sealed the prior decision not to introduce any national earnings-related pension scheme.

Most Danish citizens will thus receive their pension income from several sources, including one or more occupational pensions, the ATP and SP and the *Folkepension*, the latter subject to means-testing. Currently it is estimated (Danish Ministry of Economic and Business Affairs, 2003) that, in the middle deciles of the income distribution, about 95 per cent of retirement income comes from the *Folkepension*, and 2 or 3 per cent each from the ATP and occupational pensions. In the top decile of the income distribution, almost 70 per cent of retirement income comes from the occupational schemes and about 30 per cent from the *Folkepension*. However, this situation is expected to change dramatically over the next 40 years, by which time the *Folkepension* will make up only 50 per cent of the retirement income of the middle deciles, with ATP and SP accounting together for about 20 per cent and occupational and personal pensions for about 30 per cent. For the top decile, the *Folkepension* will account for only about 15 per cent and ATP and SP for about 10 per cent. It is still a major challenge to supply people with satisfactory information about their multiple pension entitlements in a comprehensible and standardised way.

# VI

## Pension Reform in the United Kingdom

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Pension reform in the UK could be said to have been in progress since 1975, when the State Earnings-Related Pension Scheme (SERPS) was enacted. Successive reforms have produced a contributory pension system which is financially sustainable and relatively low-cost (compared to most other industrialised countries). The UK has also had one of the most well-developed funded occupational pension scheme sectors in the world. There are, however, pressures today on both the state retirement system and on occupational pension schemes, with particular concerns being expressed about the increasing number of pensioners in receipt of means-tested top-ups to their state pension from pensions credit and the possible impact of this on incentives for individuals to save for their own pension. As life expectancy continues to increase rapidly, there are undoubtedly pressures for the pension age to be raised in order to maintain a more sustainable balance between years spent in work and years spent in retirement. There is also a concern that the role played by occupational pension schemes will decline, as more and more defined benefit schemes are closed and replaced by defined contribution schemes, with lower rates of contribution overall. This will also place more investment and annuitisation risk on individuals.

A universal contributory social security system was introduced in the UK in 1948 on the basis of a plan devised by Beveridge during the second world war. It was designed to provide a safety net of social protection for the working population and their dependants, with flat-rate benefits and flat-rate contributions. It was intended to offer only a very low level of income, given its role as a safety net, and individuals were expected to provide to a large extent for their own retirement, through personal savings and through membership of occupational pension schemes.

Initially the contributions were assessed actuarially on the basis of meeting the average cost of providing the benefits over the lifetime of the individual. However, the excess of contribution income over benefit payment soon began to be used to pay pensions on an accelerated maturity pattern, and the contributions frequently had to be reassessed because of benefit increases resulting from both inflation and decisions to increase their real value. As a result, the direct link between the value of contributions and the value of prospective benefits for particular cohorts was soon abandoned and the scheme became fully pay-as-you-go, with only a very small fund maintained as a working balance.

Occupational pension schemes had been well-established in the public sector for some time, although in 1948 there was only limited coverage in the private sector. With the clear signal that the social security benefit would only be established at a safety net level, however, the next 20 years saw a spectacular growth in occupational pension provision.

By the end of the 1950s, the social security system was looking for ways of increasing contribution income, without imposing an excessive burden on the low-paid. It was decided to introduce an element of contributions related to earnings and the so-called Graduated Pension Scheme was born in April 1961. This provided a modest level of additional benefit according to the amount of graduated pension contributions paid, subject to an option for members of occupational pension schemes to contract out.

Over the 1960s and early 1970s concern grew about the failure of occupational pension schemes to extend their coverage beyond about half of the working population. Various ideas were developed for a second tier of compulsory social security provision, either on a defined benefit (e.g. the Crossman Scheme) or defined contribution (e.g. the Keith Joseph Scheme) basis. Each were intended to be broadly self-supporting on the basis of employer and employee contributions, without significant financial support from the state budget. Each proposal was abandoned when there was a change of government and political hue, to be replaced by another proposal.

At last, in 1974, a political consensus was built to introduce the State Earnings-Related Pension Scheme (SERPS) by means of the Social Security Pensions Act 1975. Earnings-related pensions were to be provided, on a career average revalued formula (based on the best 20 years of revalued earnings), in respect of earnings in the band from the level of the basic pension (then about one quarter of national average earnings), to seven times this amount, i.e. just short of double national average earnings. The new SERPS pensions started to accrue from 1978. Meanwhile, contributions in respect of employees had been put on a fully earnings-related basis from 1975, even though a significant part of the benefit structure was flat-rate, thus increasing the redistributive effect of the scheme.

It was recognised that the full SERPS pension could lead to substantial overprovision of pension benefits for those who were in reasonably generous occupational pension schemes, particularly for those with earnings below double the national average earnings. It was decided, therefore, to offer employers the possibility of contracting out of SERPS. Contracted-out employees and their employers received a rebate on their National Insurance Contributions, which was intended to represent the average value, for defined benefit occupational pension schemes, of providing a guaranteed minimum pension (GMP). This amount was similar to the SERPS benefit but was not calculated in exactly the same way. In particular, the SERPS pension included indexation in line with the price index (which the GMP did not). As a result, even those who were contracted out still gained entitlement to a partial pension from SERPS.

Initially the rebate was set at 7 per cent of earnings in the relevant band, but in successive five-year periods it has been reduced. The principal reason for this was the accelerated maturity of the benefits in SERPS for those who were of working age when the scheme was introduced. As time goes by, fewer of these people are left in the scheme and the rebate (other factors being equal) should approach its ultimate level. From a financial point of view, contracting out reduces the costs of SERPS in the long term, but there is a loss of contribution income as a result of the rebate. In practice

*Chris Daykin*

National Insurance Contribution rates still have to be set to cover the expenditure on benefits and administration from year to year, based on a pay-as-you-go financing criterion. The contracting-out rebate, which determines the relative level of contributions between those contracted out and those contracted in, is, on the other hand, set according to the principles of funding the relevant contracted-out benefits.

Concerns about the projected increasing cost of the social security scheme, particularly in the period from 2010 to 2035, led to a reappraisal of the scheme soon after the Conservatives were returned to government in 1979. In 1980 the Government introduced an apparently innocuous but far-reaching amendment to the social security legislation, whereby the basic state pension was to be increased every year in line with the increase over the previous year in the retail price index. The previous legislation provided for increases to reflect the greater of price increases or earnings increases. Since, on average, earnings have increased by 1½ per cent to 2 per cent a year more than prices over most periods, this has had a significant effect on the amount of basic state pension already and, if it continues, will have a major effect in the future. It has been expected to play an important role in keeping down the costs of the UK social security scheme over the period of demographic ageing.

Further amendments to the structure of the social security scheme began to be considered in 1984. The idea was floated of abolishing SERPS and replacing it with a requirement to contribute to a private pension arrangement (occupational or personal). However, in the end this idea was dropped and it was decided to extend the scope of contracting out by expanding the definition of the GMP to incorporate 3 per cent a year indexation once the pension came into payment. The rebate was correspondingly increased to include the cost of this indexation. The accrual rate for earnings-related pension was reduced from April 1988, leading to an ultimate target of 20 per cent of relevant earnings, rather than 25 per cent, and the “best 20 years” provision was removed, making the scheme based on career average revalued earnings over the whole working lifetime.

Changes were also made to permit contracting out for employees whose employers ran defined contribution pension schemes, and by individuals who did not belong to an employer sponsored pension scheme but opted to take out an Appropriate Personal Pension. The rebate for these new types of contracted-out arrangement was the same as for those contracted out through a defined benefit pension scheme, except that an additional incentive payment of 2 per cent of earnings in the relevant band was provided for all new contracted-out arrangements in the five years from April 1988. Where contracting out was on a defined contribution basis there was no obligation to provide a GMP. The invested rebates were, however, required to be given special treatment as so-called protected rights, with the accumulated amount at retirement age being used to purchase pension benefits with 3 per cent a year indexation and a pension at half the level continuing to a surviving spouse on the death of the pensioner. These annuities have to be sold by life insurance companies on unisex terms.

Notwithstanding the fact that the UK social security scheme was much less threatened by rising costs, as a result of maturity and demographic ageing, than

most other social security schemes, further changes were proposed to the contracting-out arrangements as a result of a review carried out in 1994. The Pensions Act 1995 proposed the equalisation of the state pension age for men and women at 65 from 2020, with a phasing-in from 60 to 65 for women born between 1950 and 1955, as well as making some further changes to contracting out. Further details of the various changes that were made to the contracting-out arrangements over the years are given in Daykin (2005).

The Pensions Act 1995 also provided for the rebates in respect of these modes of contracting out to vary according to the age of the individual. They were to be the same for men and women, in spite of continuing differences in the age at which the relevant SERPS benefits will become payable for those then aged 40 or over. On the same principle as for the rebate for contracted-out salary-related schemes (COSRS), the amount of the rebates for appropriate personal pensions (APPs) and contracted-out money purchase schemes (COMPS) had to reflect the cost of providing, by means of these pension vehicles, benefits of equivalent value to the SERPS benefits forgone.

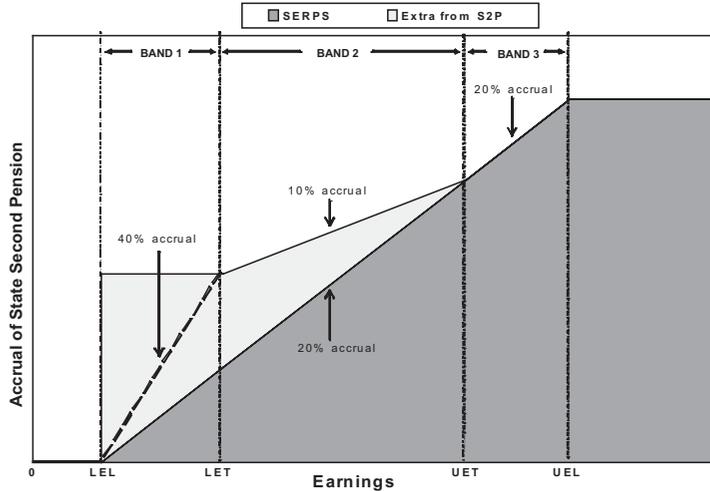
The Government's stated intention was to make contracting out through an APP attractive at all ages. However, at older ages the rebate would have had to be very large, and the differences in State pension age between men and women made it difficult to offer fair terms for contracting out on a unisex basis. The APP and COMPS rebates were therefore capped at 9 per cent of relevant earnings, implying that the rebate would not be attractive for contracting out at the oldest working ages.

The number of people contracted out through COSRS has been around 9 million, out of an estimated membership of defined benefit occupational pension schemes of 10 million. Around 5 million appropriate personal pensions were in force by the end of financial year 1992-93. About 8 million people remained reliant on SERPS and the basic pension, although probably only about 5 million of these are earning above the lower earnings limit, and hence accruing rights from SERPS.

From April 2002 SERPS was replaced by the State Second Pension (S2P). This is also a career average revalued earnings social security scheme, still financed on a pay-as-you-go basis, but it provides a higher rate of accrual than SERPS on lower bands of earnings and a lower rate on higher bands, and includes some additional subsidies towards very low earners and those who are not economically active because they are caring for elderly or disabled dependants. Contracting out is still available, although somewhat more complicated now than hitherto. Figure 3 shows the accrual structure of S2P according to earnings level of the employee.

Chris Daykin

**Figure 3: State Second Pension (S2P) accrual in 2003/04 relative to that under SERPS for an individual subject to the ultimate SERPS accrual rates (i.e. 20/N per cent. where N is the working life)**

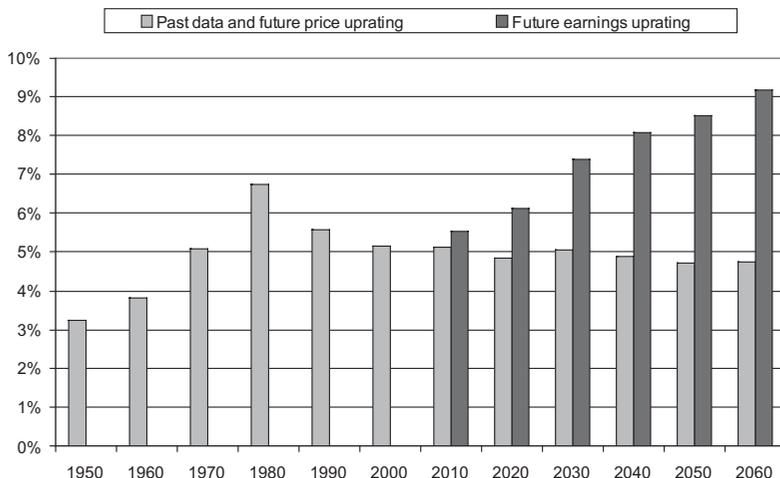


The latest innovation for contracting out in the UK is the stakeholder pension scheme. This possibility was introduced by the Welfare Reform and Pensions Act 1999 as a simple and cost-effective alternative to personal pensions. From April 2001 every employer with more than five employees who does not sponsor an occupational pension scheme has been required to make available for their employees access to a stakeholder pension scheme (although they are not required to make any contributions to it). Stakeholder pension schemes have to satisfy strict criteria regarding cost, access and terms (CAT standards). In particular, charges were limited to 1 per cent a year on the accumulated amount in the fund, with no up-front charge, exit charge or any other charge. For people who join a stakeholder pension scheme on or after 6 April 2005 the cap is an annual management charge of 1.5 per cent a year for the first 10 years, reducing to 1 per cent a year thereafter if they remain in the scheme.

Figures 4 and 5 show the latest published projections of the costs to the National Insurance Fund, from the update of the Government Actuary's Fifth Quinquennial Review (Government Actuary's Department, 2003) published in January 2005 (Government Actuary's Department, 2005). These show that both the required pay-as-you-go contribution rate and the expenditure as a percentage of GDP are expected to fall gradually over the next 60 years if the basic pension is uprated in line with prices. They would both rise significantly if benefits were to be uprated in line with earnings, without any change to the retirement age.

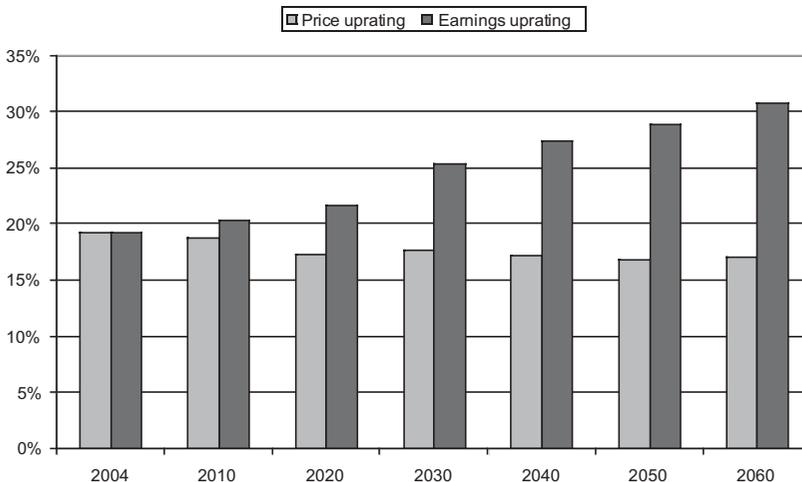
The financial projections in the Quinquennial Review, on the prices uprating basis which is stipulated in the current legislation, show a remarkably stable future level of expenditure on social security, with the major part of the cost being on pensions. This is in the face of quite significant ageing of the population that can be expected over the next 30 years.

**Figure 4: Expenditure from the National Insurance Fund as a percentage of GDP from 1950/51 up 2060/61, showing figures for price uprating and earnings up rating from 2003/04 and assuming 2per cent a year real earnings growth**



**Source:** Government Actuary’s Quinquennial Review of the National Insurance Fund as at April 2000. Cm 6008. Update published on [www.gad.gov.uk](http://www.gad.gov.uk) in January 2005.

**Figure 5: Projected joint (employer and employee) Class 1 pay-as-you-go contribution rate required to balance income and expenditure in the year, excluding the contributions allocated to the NHS, based on real earnings growth of 2 per cent a year**



**Source:** Government Actuary’s Quinquennial Review of the National Insurance Fund as at April 2000. Cm 6008. Update published on [www.gad.gov.uk](http://www.gad.gov.uk) in January 2005.

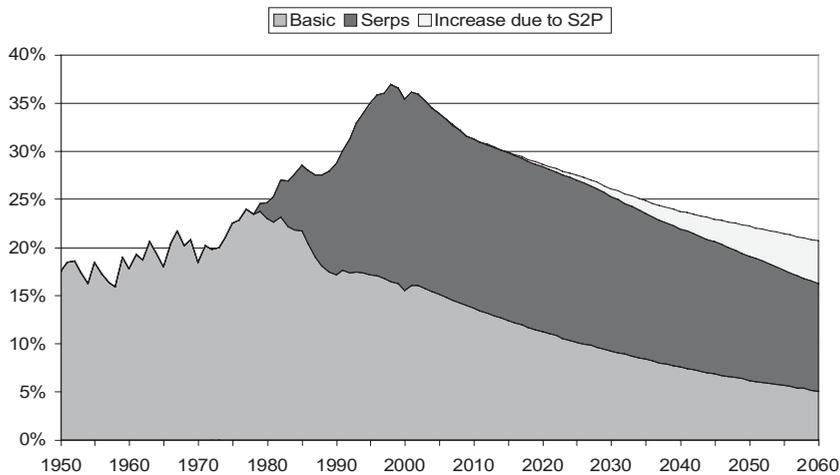
Chris Daykin

The main reasons are the extent to which pension liabilities have been transferred to occupational and personal pension arrangements, the cut backs that there have been in the generosity of the State Second Pension (from its original 1975 conception as SERPS), the raising of the state retirement age for females to 65 and, most significantly of all, prices up rating of the basic pension, whilst contributions are collected as a percentage of earnings.

Figure 6, also taken from the Quinquennial Review, shows how replacement rates<sup>6</sup>, for someone earning at the level of national average earnings throughout their working life, have varied, and are projected to vary in future, for different years of reaching state pension age.

So, although it can be said that the UK does not face a social security financing problem in the same way as most other OECD countries, this is achieved through contributory social security benefits becoming much less significant in future as a source of income in retirement. Individuals will thus inevitably be much more dependent on occupational and personal pensions and on other forms of saving. The costs of non-contributory, means-tested benefits are projected to rise, but even so the total percentage of GDP projected to be devoted to all financial support for those over retirement age is expected to remain substantially lower than in most other European countries.

**Figure 6<sup>7</sup>**  
**Pensions by year of award as a percentage of earnings before state retirement age, for different years of reaching retirement age, assuming individuals earn at the level of national average earnings throughout their working life.**



<sup>6</sup> The ratio of social security pension awarded at State pension age to earnings just before retirement, not taking into account any occupational or private pensions to which individuals may be entitled.

<sup>7</sup> Government Actuary's Quinquennial Review of the National Insurance Fund as at April 2002 (Figure 9.1) Cm 6008

The Quinquennial Review deals primarily with the expenditure of the National Insurance Fund, which is concerned only with the payment of contributory benefits. However, the latest Review also referred to other government expenditure on benefits for the elderly and suggested that, if Pension Credit, Housing and Council Tax Benefits, Attendance Allowance and Winter Fuel Benefits are taken into account, the total expenditure would be currently around 6.1 per cent of GDP, projected to rise to 6.6 per cent of GDP by 2050 (Table 5.9, Government Actuary's Department, 2003). The Pensions Commission estimated this figure to be slightly higher, at 6.9 per cent (Pensions Commission, 2005). Even taking this broader view, it can be said that the UK has achieved, by a process of almost continuous reform of the social security pension system since 1975, a stable low cost of social security.

The system of contracting out, cut-backs in SERPS/S2P, prices up rating of the basic pension and raising female pension age to 65 have effectively neutralised the impact of the demographic ageing of the UK population, which is no less significant than for other EU countries. Home responsibilities protection and other credits will ensure that in future women who take time out of the labour force for family responsibilities will, for the most part, qualify for a good level of basic pension. In fact, recent Government Actuary's Department (GAD) projections suggest that the average contribution record of women below retirement age will, within the next few years, exceed that for men. Proposals in the latest Government White Paper will reinforce this trend (Department for Work and Pensions, 2006).

A critical element of the current strategy is to use the Pension Credit as the effective underpinning for social security rights, with the level of the minimum pension guarantee being increased in line with earnings, whilst at the same time the basic pension is being increased only in line with prices. This will result in more and more people receiving means-tested top-up benefits and is reflected in the projections of overall benefits for the elderly referred to in the previous paragraph, of which expenditure on Pension Credit shows the most significant growth over the next 50 years. The Pensions Policy Institute have estimated that the proportion of pensioner units eligible for Pension Credit could rise to about 80 per cent by 2050 under current policies (PPI, 2006).

The UK has traditionally had a relatively high level of private pension provision, mostly through defined benefit occupational pension schemes, but with personal pensions and occupational defined contribution plans also playing an important part. The strategy of reducing the long-term impact of expenditure on social security benefits has been predicated on an assumption that occupational and personal pension provision would continue to be a very important element of income after retirement, and indeed that it would become increasingly important.

However, the situation has changed dramatically in the last few years, with the majority of private sector defined benefit plans now being closed to new entrants, and often to new accruals for existing members. Many of these defined benefit schemes have been replaced by defined contribution schemes, but the contributions to such schemes are generally at a much lower level and it can be expected, therefore,

*Chris Daykin*

that the future pension benefits from private schemes will be lower than for those reaching pension age now. The reasons for the demise of private sector defined benefit schemes are complex, but key factors which, it has been suggested, have combined to yield this outcome include the following:

- the introduction in 1986 of regulations to tax the surplus in pension funds over a given level, coupled with encouragement to employers to take contribution holidays to keep the surplus below the statutory surplus limit;
- legislation passed in recent decades to require private sector schemes to guarantee a certain level of pensions increase on benefits in payment, vesting of benefits for early leavers and cost of living dynamism for preserved rights;
- the removal of advanced corporate tax (ACT) credits from pension schemes in 1997;
- falling interest rates increasing the effective cost of purchasing annuities and of buying out pension scheme liabilities on closure of schemes;
- rapidly improving life expectancy;
- the FRS17 accounting standard and other trends towards requiring marked to market valuations of pension funds;
- increasing focus on the possibility of closing pension schemes and winding them up, rather than on long-term financing;
- greater accountability of companies to shareholders based on short-term performance;
- weakness of the equity markets in 2001 and 2002.

These and other factors have, it seems, combined to bring to an end the hey day of defined benefit occupational pension schemes in the UK, with few schemes now still open to new members, other than in the public sector. The public sector schemes are all undergoing major reviews in order to reduce the costs to the public purse and some will be converting to career average revalued schemes for future service, although it is envisaged at present that most will remain as defined benefit schemes.

With the apparent retreat from the provision of defined benefit schemes in the private sector (although it should be noted that they never covered more than about half of employees in the private sector, even back at their peak in the late 1960s<sup>7</sup>), the relatively low (and falling) basic state pension and State Second Pension are seen by many commentators as increasingly unsupportable as a long-term policy. The short-term palliative of raising the minimum level of pension through means-tested Pension Credit, with the important Savings Credit element to avoid too severe a clawback in respect of benefits from occupational and personal pensions, has been successful in the short term in raising the income of many pensioners to more satisfactory levels, but is seen as causing uncertainty for the future, since the increasing dominance of means-tested benefits raises a question-mark for a wide group of individuals over the value of any additional saving through occupational or personal pensions. In these circumstances it is difficult for any employer to

<sup>7</sup> In 1967, out of 15.8 million employees in the private sector, about 4.5 million (28 per cent) were members of final salary schemes, 1.6 million (10 per cent) were members of schemes offering a fixed amount of pension per year of service, 1.2 million (8 per cent) were in schemes where pension depended on salary ranges, 0.4 million (3 per cent) were in other pension arrangements and 0.4 million (3 per cent) were in lump sum schemes, making a total of 51 per cent (GAD, 1968)

encourage membership of an occupational pension scheme or for a financial adviser to recommend pension saving.

In this uncertain situation, the Government established the Pensions Commission in December 2002, chaired by Sir Adair Turner (later to become Lord Turner). In its First Report, published in October 2004, the Commission set out the clear choices that the UK faces with its ageing population (Pensions Commission, 2004). Society and individuals must choose between four options:

- pensioners will become poorer relative to the rest of society;
- taxes/National Insurance Contributions devoted to pensions must rise;
- savings must rise; or
- average retirement ages must rise.

In a sense this is a statement of the obvious, but the analysis of the current UK pension situation in the Commission's First Report was impressive and extremely valuable as a basis for the ensuing debate. The Commission's Second Report was published at the end of November 2005 (Pensions Commission, 2005) and proposed a set of recommendations which it believed would be affordable and would address the pension issues facing the UK in an effective way.

Key elements of the Commission's recommendations were that:

- the resources of the National Insurance Fund should be focused on keeping people out of poverty in retirement;
- means-testing should be avoided to the greatest extent possible;
- improvements should be made to enable those with broken work records and caring responsibilities to qualify for an adequate pension;
- State Second Pension should become flat-rate and should as soon as possible be combined with the basic state pension to give a simpler structure and a more adequate flat-rate basic pension;
- the flat-rate basic pension should increase broadly in line with earnings growth;
- state pension age should be raised, at least to 67 and perhaps to 68 or 69;
- contracting out should be phased out;
- consideration should be given to making the flat-rate pension universal (i.e. based in some way on residence rather than on contributions), particularly at older ages;
- earnings-related pension provision should be funded;
- the state should encourage earnings-related provision through a National Pensions Savings Scheme (NPSS) with auto-enrolment;
- the NPSS should be administered nationally, but with the availability of a range of individual investment choices.

There seems little doubt that the proposals of the Pensions Commission would result in increased state expenditure on benefits for the elderly by the middle of the 21<sup>st</sup> century. However, the Commission has argued that the increase required is not great, compared to a realistic assessment of where the total costs of the present structure are heading, particularly if it is assumed that it will be politically essential

*Chris Daykin*

to keep revaluing the Pension Credit in line with the growth in earnings. In any case, it would be reasonable to offset some of the cost in the long term by planning on a gradual increase in the State pension age, which would go some way towards maintaining a reasonable relationship between the expected periods in the workforce and in receipt of social security pension benefits.

The Pensions Commission published a further and final report on implementation at the beginning of April 2006 (Pensions Commission, 2006). The Government published a White Paper with their proposals on 22 May 2006 (Department for Work and Pensions, 2006). The proposals include the following major elements:

- basic state pension will be uprated in line with earnings from 2012 (or at the latest before the end of the next Parliament);
- contribution conditions will be reformed, in order to make it possible to qualify for a basic state pension with 30 years of contributions;
- the current arrangements for home responsibilities protection will be replaced by a weekly credit for those caring for children, with a view to increasing the proportion of those with family responsibilities who can qualify for a substantial basic state pension;
- pension age will be progressively increased from 65 to 68 by 2046 (see p.19), accompanied by measures to support people working for longer and to increase flexibility around state pension age;
- contracting out for defined contribution arrangements will be abolished;
- the earnings-related State Second Pension will evolve to become a simple, flat-rate weekly top-up to the basic state pension;
- means-tested Pension Credit will continue to play an important role for those with small savings; and
- a new scheme of personal accounts will be introduced, with auto-enrolment and an opt-out provision; employees will contribute 4 per cent of earnings in the band £5,000 to £33,000 a year, with employers contributing 3 per cent and tax relief providing a further 1 per cent.

# VII

## Annuitisation and the Pay-out Phase

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As we move towards a much greater preponderance of defined contribution (DC) schemes, active consideration needs to be given to the implications of this for the pay-out phase. With DC, the accumulated sum at retirement often has to be converted into income, and this is usually done by the purchase of an annuity, which is a regular payment for as long as the recipient lives. NDC schemes also involve the (notional) purchase of an annuity to determine the amount of pension to be paid. Whilst in defined benefit schemes the payment of a pension for life is expected and uncontroversial, many people with defined contribution schemes are often unhappy about having to use all of their accumulated savings to purchase an annuity. This is partly because annuities are perceived as expensive at the point of purchase, but mostly because of a concern about relinquishing control of the invested pension wealth and passing it over to an insurance company. With many types of annuity there is no possibility of bequeathing any balance to heirs. The pension pot dies with the owner – or rather it is recycled to those annuitants who are still alive in order to keep the price of annuities down.

The benefit which is defined in the scheme rules in a defined benefit (DB) scheme is normally a regular income from date of award for the rest of life, commonly with payments continuing to a surviving spouse or partner. In some jurisdictions there may be an entitlement to take part of the benefit as a lump sum on favourable tax terms, but the rest of the benefit usually has to be taken as a pension; the scheme is funded and invested on that assumption. This means that the pension scheme bears the post-retirement longevity risk and the investment risk; members are protected against those risks, however long they live (subject to the scheme continuing and remaining financially viable). The expected future cash-flows involved in paying out pensions are taken into consideration in deciding on the investment policy for the fund. However, although the investment policy might change gradually over time as the scheme becomes more mature, there is no need to consider selling assets at the point of retirement of individual members. The pay-out phase can be regarded as an integral part of the benefit cash-flow, and, except for a closed scheme in an advanced state of run-off, there will usually be contribution inflows at the same time as pension payment outflows.

Most defined contribution schemes, on the other hand, are segregated into the investment (accumulation) phase and the pay-out (decumulation) phase, often with different entities supplying the respective services. This has advantages in terms of transparency, enabling the investment and management objectives of the two phases to be clearly articulated and permitting a degree of choice to operate at the moment of retirement. However, complete segregation of the two phases may lead to sub-optimal asset allocation over the life-cycle and may introduce new risks for the individuals from the choices which have to be made at the point of switching from an accumulation vehicle to a pay-out annuity.

Chris Daykin

Annuities have existed in one form or another for many centuries. James (1947) reported that contracts called *annua* existed even in Roman times, providing for a stream of income for a fixed or variable period of time in return for a payment at the start. Annuities for fixed periods (annuities certain) were used in more recent centuries for the repayment of loans. Immediate life annuities, payable from the date of purchase for as long as the purchaser lives, were offered by some private entities as retirement income for former employees, and were available from some governments as a quasi-commercial product. However, it seems that governments usually under-charged for such products and some of the earliest actuarial calculations were carried out to demonstrate this and to propose a sound basis for calculating the consideration (premium) for such annuities. Witt (1671) and Halley (1693) both studied this problem, as far as we know independently, in Holland and England respectively, and arrived at a solution which is still used by actuaries more than three hundred years later, based on the combination of a mortality table and compound interest (see also Hendricks (1852) and Haberman and Sibbett (1995)).

Immediate annuities work by pooling the risk of longevity among the cohort of pensioners buying an annuity at a particular age. The mathematics assume that each person buying an annuity at the same age pays the same amount and that payments are made in return each year to the surviving members of the cohort, with the numbers assumed to reduce over time in accordance with an assumed life table. Those who live longest will receive payments substantially in excess of the consideration for purchasing the annuity. Those who die soonest will receive less than they paid. The pooling of risk means that the surplus funds which remain with the insurer in respect of those who die early are used to finance the extra cost for those who live a long time. The insurer makes a profit on the basis of the profit margin which is priced into the contract, and if the experience of the cohort is such that members on average do not live as long as allowed for in the pricing assumptions. If the members of the cohort live longer on average than allowed for, the insurer is likely to make a loss (although it may not find this out for a long time). Profits or losses can also be made in respect of the investment of funds to back the reserves for future payments under the contract.

Life annuities have obvious attractions from the point of view of the pensioner, since the income continues for as long as he or she lives, substantially reducing the risk of outliving one's financial resources. An annuity for a fixed period is risky, even if payable for the individual's expectation of life. Since hardly anyone dies "on time", in the sense of surviving for exactly the period indicated by their expectation of life at retirement, the payments would almost always stop before the individual's death or continue afterwards. However, notwithstanding the apparent attractions of life annuities, they are generally not very popular with the investing and saving public.

### **Lump sums at retirement**

Since many defined contribution plans are in effect a simple accumulation of savings during the working life, they naturally give rise to an accumulated amount of capital at the date of retirement. Many retirees would be glad to get their hands on their pensions savings at this point, since it would provide them with flexibility to use the

savings in whatever way they chose, such as paying off a mortgage on a house or other debts, investing in new or additional property or spending on leisure activities. It would also facilitate passing on part of their accumulated savings to children or other family members, particularly with a view to giving children the use of the money earlier than if they had to wait for their inheritance, which in some jurisdictions can also have the beneficial effect of reducing the amount of tax potentially payable on the eventual estate.

Whether the accumulated savings can in practice be taken as a cash lump sum will depend, not just on the contractual arrangement, but on the tax rules in the particular jurisdiction. Full access to the retirement savings as a lump sum is often not permitted, although in a number of countries it may be possible to take a proportion of the accumulated savings as a lump sum on retirement and in some the permitted lump sum receives favourable tax treatment. Purely from the tax point of view there would seem to be no reason to prevent further immediate withdrawals of cash, provided that they are subject to tax in the hands of the recipient.

However, in practice other public policy considerations predominate, namely the concern that pension savings, which have usually received (or are perceived as having received) significant tax advantages, should not be “squandered” but be utilised to provide income in retirement and, in particular, to prevent the individual eventually falling back onto any form of income support which may be available to supplement the income of the retired (Lunnon, 2002).

#### **Income withdrawal or “draw-down”**

Given the public policy concern to ensure that pensioners’ savings are not used up too quickly, and the unpopularity of forced annuitisation of the whole of the accumulated investment in a defined contribution plan, many countries permit some form of controlled withdrawal of money from the pension fund. The basic idea is to keep the pension fund invested, with the affiliate still having some control over the investment of the funds, whilst income can be withdrawn on a discretionary basis. Most systems of “draw-down”, or “programmed withdrawal”, are subject to a variety of constraints. In particular it is common for there to be a ceiling on the amount which can be withdrawn in cash in each period. For example, this might be equivalent to the amount of a level single-life immediate annuity which the remaining fund would be sufficient to purchase at that point of time. Sometimes there is also a minimum amount that can be withdrawn.

In Chile, the maximum amount which can be drawn down each year under what is known as “programmed withdrawal” is calculated by dividing the fund balance at the start of the year by the expectation of life for an individual of that age.

When draw-down was introduced in the UK, both a maximum amount and a minimum amount were specified for the amount of draw-down. The maximum was calculated as the fund balance divided by the level immediate life annuity; the minimum was 35 per cent of that figure. These bounds were set by the Inland

*Chris Daykin*

Revenue (then the UK tax authority) and were implemented using tables provided by the Government Actuary, which sought to approximate the income produced from a single-life level annuity at different ages based on current government bond yields at the time. The maximum and minimum income that an individual could take were reviewed every three years. Pensioners using draw-down had to annuitise the remaining balance in their fund by the age of 75.

Substantial changes were made to these arrangements from April 2006. There are now two types of draw-down, known as “unsecured pensions” – for those aged under 75 – and “alternative secured pensions” for those aged 75 and over, the latter concept being primarily intended to offer an alternative to full annuitisation for those with religious objections to buying an annuity. For both unsecured and alternative secured pensions there is no longer any minimum income requirement. The maximum annual income is a multiple of the income from a reference annuity, which is taken from a table produced for HM Revenue and Customs by the Government Actuary’s Department. The multiple is 120 per cent for unsecured pensions and 70 per cent for alternative secured pensions. Reviews of the amount of the reference annuity must take place every five years for unsecured pensions and every year for alternatively secured pensions. For the latter the review must assume that the pensioner is 75, whatever the actual age.

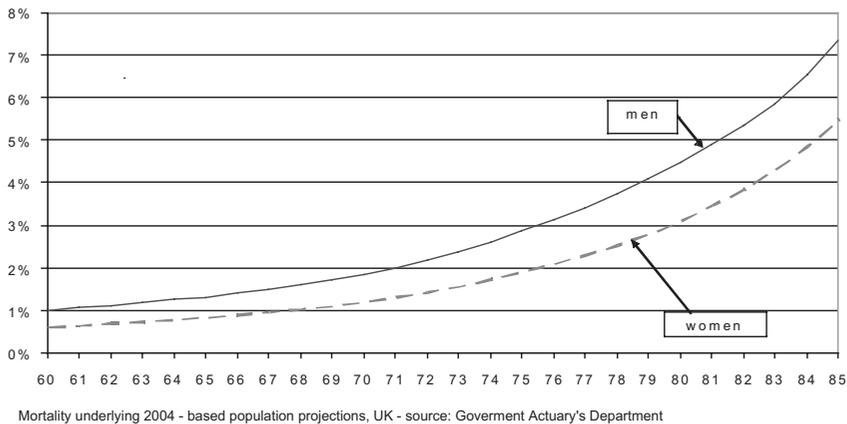
Income draw-down is seen as offering more choice to the individual, permitting continued investment of a proportion of the pension assets in equities well into retirement and also permitting greater flexibility in the way in which pension is received. For example, a pensioner may wish to defer taking pension during a period for which some other income from employment is being received, or whilst a partner has still not retired. Many people would also see as an advantage the possibility of not having to hand over the whole of their pension savings to an insurance company, and retaining the capital so that it can be inherited by their spouse or partner or other family members if they die before having had to purchase an annuity.

The principal disadvantage of draw-down arrangements is that individuals have to self-insure the longevity risk; they may well end up on insufficient income in the long term if they survive to a great old age. The risk of running down the money too quickly may be exacerbated by poor investment performance of the balance of the fund, since the pensioner is clearly exposed to investment risk as well as to longevity risk. On the other hand, a cautious pensioner may hold back too much of the fund in order to keep reserves for later, or in case the investments perform less well than expected, with the result that they enjoy a lower income than they ought to have had and leave a large amount of the fund in their estate when they die. Since no-one knows exactly when they will die, it is inevitable that either the draw-down fund will be exhausted before death or that there will be money left in it at the end.

A more technical (but nevertheless real) point is that, relative to annuitisation, draw-down arrangements suffer from what is known as “mortality drag”. Put simply, this means that, because they are self-insuring the mortality/longevity risk, they do not gain any benefit, as they would implicitly if they had purchased an annuity, from the

release of funds in respect of those who die relatively young. This means in effect that it becomes increasingly expensive to annuitise what is left of the pension fund balance, necessitating an additional return on the assets (which increases the longer annuitisation is deferred) just to stand still.

**Figure 7 shows the additional return which needs to be earned on the fund in order to compensate for the effect of mortality drag at each age, clearly rising to quite significant levels at older ages.**



Apart from having to earn enough return on the balance of the fund to overcome the mortality drag, the individual with a draw-down contract may face the possibility of annuity prices moving against him or her, because of falling interest rates on the bonds which insurance companies use to back their annuity portfolios and because of downward revision of the future mortality rates which are taken into account by insurers in pricing annuities (i.e. assumed improvements in expectation of life).

In addition, many draw-down arrangements incur higher operating expenses than would be implicit in the purchase of an annuity. These arise because of the investment and other advice needed (or required to be offered by the provider or intermediary) and also because draw-down may be a regulated product which is much more complicated for the provider to offer than an immediate annuity would be.

The attraction of draw-down is its greater flexibility and the possibility of keeping the pension fund invested in a wider range of assets than those which back traditional annuities. However, for the various reasons already discussed, together with the likelihood of variability in the value of the fund resulting from the greater choice of assets (for example, continued higher exposure to equities), the chances of achieving a better result than purchasing an annuity at the start may not be high. Thus it is vital that individuals contemplating draw-down should have access to financial advice.

Another approach, adopted in Denmark, is to permit the purchase of a temporary

*Chris Daykin*

annuity with a proportion of the fund at retirement. The rest of the fund remains invested and the individual retains investment control. After the first temporary annuity comes to an end, a proportion of the remaining fund is used to purchase a further temporary annuity. This process continues until a specified advanced age is reached, at which point a life annuity must be purchased.

### **Annuitisation**

Given the choice, many retirees would choose not to lock their savings into a life annuity and, where annuitisation is compulsory, there is often significant discontent about this requirement. The main reasons for such discontent are:

- concern about the loss of flexibility;
- concern about the fact that, if all their financial resources are used to buy an annuity, there will be nothing left for them to pass on as a bequest when they die;
- concern about effectively having to switch all their investments into bonds;
- exposure to the level of the market for the accumulated pension fund at the specific date at which an annuity has to be taken;
- exposure to the level of interest rates used to price annuities at the specific date at which an annuity has to be taken;
- belief that annuities are expensive, particularly arising because of a lack of appreciation of how many years of life to expect;
- distrust of insurance companies;
- concern about putting all one's eggs in one basket (although diversification between annuity providers is clearly an option);
- a general trend in society towards individual rather than collective approaches.

The real advantage of life annuities is that they offer insurance against longevity. No-one can foresee how long they are going to live, which makes it impossible to plan draw-down efficiently to provide a stable lifetime income. Life annuities ensure that the money will not run out, however long the pensioner lives, with the insurance company taking the risk that pensioners on average will live longer than allowed for in the annuity pricing. It was shown many years ago that immediate life annuities are in fact an income maximising strategy for someone at the point of retirement, in the absence of a bequest motive (Yaari, 1965). They can also offer a highly effective strategy when there is a strong bequest motive, since annuitising to the extent of providing an adequate income to live on in retirement can then free up the remainder of the pensioner's wealth to be handed on to children or others.

However, such theory does not allow for the psychological factors which seem to predominate in many individuals' thought processes, such as the desire to retain control over their assets. Although, as we have seen, this can in principle be achieved though allowing pensioners to retain control of the accumulated pensions savings fund under a draw-down approach, this is likely to lead in practice to the fund being exhausted too early, leaving the individual in poverty, and perhaps falling back onto government welfare support, for the remaining years of their life, or to the individual exercising undue caution in withdrawing income, leaving to a

significant balance remaining at the time of death. Perhaps another reason for the lack of enthusiasm about annuitisation is that the accumulated lump sum available does not seem to be sufficient to buy a very large pension. This may be attributed to the high cost of annuities, but a more realistic appraisal may simply be that not enough has been saved.

Much of the economics literature on annuities, over the decades since Yaari's seminal paper, has been devoted to attempts to explain why annuities are not as popular as the theory suggests they should be and why annuity markets in most countries are very poorly developed (Bateman and Piggott, 1999; Palacios and Rofmann, 2001; Cardinale *et al* 2002). Many papers have been written, for example, about the concept of the "money's worth ratio" (Murthi *et al*, 1999; Brown *et al*, 2001; Finkelstein and Poterba, 2002; Daykin (2004)), which purports to measure the value for money which an individual gets from purchasing an annuity. In fact most of these papers are based on a technical approach which is of debatable validity, with the result that mostly what they are measuring is the effect of the different mortality assumptions adopted by the insurer and the researcher.

One would, of course, expect there to be some transaction costs involved in purchasing an annuity, since the insurer has to price to make a profit, to cover sales commission and other expenses, and to finance the cost of capital, which they need both for economic and market reasons and because regulators set down minimum requirements. In practice, in some of the more highly developed annuity markets, it seems likely that consumers may have had very good value from annuities, since many insurers failed to make sufficiently optimistic allowance for the rate at which expectation of life would increase, with the result that many annuities have probably been under- rather than over-priced. Money's worth ratio analyses do not usually take this reality into account, as they are prospective rather than retrospective.

Public policy has two conflicting dimensions with regard to pay-out options. There will usually be a concern that pensioners do not use up their income too quickly, as this may result in them falling back on the state, through qualifying for means-tested income support from the welfare system. However, tax authorities are eager for individuals to draw down their pension assets reasonably speedily, since in most jurisdictions they will have been tax-protected up to this point and it is only pensions in payment which are taxable. This combination of factors may lead legislators to impose conditions on the draw-down of pension fund assets, even if annuitisation as such is not required.

### **Investment-linked annuities**

One of the main criticisms of traditional level immediate annuities (and also price-indexed annuities) is that they rely on effectively switching all of one's pension assets into investment in bonds. Those who prefer to maintain exposure to a wider range of investments, including equities and property, may have to choose a draw-down approach, under which they have to carry their own longevity risk. Alternatively, subject to it being permitted under the regulatory structure, they could

*Chris Daykin*

purchase an annuity to provide a basic level of income and retain the rest of their retirement income in a more flexible vehicle.

It would seem desirable for annuity products to be available where there is sharing of mortality risk but with the possibility of maintaining a wider range of underlying investments. We will consider three options for such annuity products: with-profits annuities, unit-linked annuities and an annuitised fund.

Under a **with-profits annuity**, a basic level annuity is guaranteed but as time goes on bonuses may be added to increase the amount of the annuity in payment. The bonuses are financed by the insurer achieving investment returns higher than those required to finance the guaranteed level of annuity, and possibly from other experience profits, for example because the mortality rates experienced are higher than those allowed for in the pricing, or because expense levels are lower. Bonuses, once added, usually become part of the guaranteed level of annuity. Investment policy needs to recognize the guaranteed element of the annuities, but can be more flexible over and above securing the guarantees, in order to provide an expectation that investment surplus will arise to finance bonuses. As any particular cohort of annuities ages, the investment policy for that cohort will become more conservative, as an increasing proportion of the annuity becomes guaranteed.

Unlike a price-indexed annuity, a with-profits annuity does not guarantee any particular level of future increases, since this will depend on the investment and other experience. However, the initial annuity payment will be significantly lower than under a level immediate annuity. With-profits annuities suffer from a lack of transparency, in common with most other with-profits products. They may be a good way of getting access to a wider range of investments without direct exposure to the investment risk, but it may be difficult for the annuitant to have a good understanding of the underlying processes and there may be concern that, in order to operate the smoothing and to keep on the safe side, the insurance company may hold back the distribution of surpluses unnecessarily.

Under a **unit-linked annuity** the annuitant has direct exposure to the investment risk, but the mortality risk is shared and the insurer carries the risk of systematic improvements in mortality. The premium is invested in a unitised fund (or split between several unitised funds), with a corresponding number of units in each fund being allocated to the annuitant, according to the price of units at the time. The value of the individual's fund varies with the current unit price, just as with a unit-linked pension product in the accumulation phase. Income to the annuitant is provided by the cancellation of units, the amount of income being dependent on the current selling price of the units. The number of units to be cancelled each year is determined at the start of the contract by dividing the total number of units purchased by the annuitant by the expectation of life for a person of that age at the start date. This type of annuity was pioneered in the United States of America by the Teachers Insurance and Annuity Association and they are known there as TIAA-CREF annuities.

The number of units runs down proportional to the expectation of life, which tends to zero as the age rises to the limit of life, running down in accordance with the number of survivors from the original group according to the assumed mortality table. Everything works out well if the mortality experienced by the cohort corresponds to the mortality table underlying the expectation of life. However, if the cohort experiences lighter mortality, the insurer has to go on providing the survivors with income based on the stipulated unit cancellation rate, even though all the units in force have been used up.

An **annuitised fund** is a name given to a unitised product where each cohort of participants shares the mortality risk, as well as each individual bearing their own investment risk. The pension fund remains invested in unitised funds, with individuals having a choice of investment options. Income is provided to participants by the cancellation of units, the amount of income depending on the current selling price of the relevant units. As in a typical draw-down contract, the number of units which can be cancelled may be subject to maximum and minimum levels. The maximum might be defined as for a unit-linked annuity. Whenever a participant dies, their units are shared out equally to the survivors in the cohort. The surviving members of the cohort thus benefit from worse than expected mortality and lose out if mortality improves.

If the reallocation of units from deceased participants to survivors were permitted to continue indefinitely, the result would be a tontine<sup>8</sup>. However, the process is likely to become rather unstable as the number of survivors declines and a viable commercial product of this sort would probably require the purchase of annuities with the remaining balance of funds standing to the credit of each survivor at a particular advanced age, e.g. 85.

This, and other variants of mortality and investment risk sharing, are discussed in more depth in Wakeling and Yang (2000), Wadsworth, Findlater and Boardman (2001), Daykin (2004), Impavido, Thorburn and Wadsworth (2004) and Rosconi (2006). There is scope for innovative product development in this area, with different approaches to sharing the risks between the product provider and the participants.

### **The future for annuities**

Annuities are one of the oldest types of insurance product and yet are subject to a great deal of topical discussion. In the design of pension reforms, a mandatory requirement to annuitise accumulated pensions savings in individual accounts seems an obvious way to provide protection against longevity risk and a steady source of income in retirement. Economic theory suggests that annuities provide an optimal route to managing wealth over the personal life cycle, and that, in the absence of a strong bequest motive, individuals should annuitise all their wealth at retirement. However, in practice annuities are not popular and, if they are not

<sup>8</sup> A tontine is an agreement where the proceeds from an annuity are distributed among the survivors of a group of individuals, with the shares increasing as member of the group die and the last survivor scooping the pool.

*Chris Daykin*

mandatory, most people avoid annuitising their wealth as much as possible. Annuity markets worldwide are, with only a few exceptions, still quite undeveloped.

Annuities are not popular with the consumer because they are perceived as poor value for money and because they are inflexible regarding the payment streams and limiting regarding investment opportunities. Insurers, on the other hand, are wary about taking on too much annuity business, since it represents a high concentration of systemic longevity risk and usually also exposes the insurer to significant asset/liability mismatch risk. In those countries where annuitisation is mandatory, the annuity business runs the risk of becoming an extremely dominant insurance product, which could in the end put the whole insurance market at the risk of systemic mortality improvement.

In many environments some form of draw-down of fund is available as an alternative to annuitisation. However, this requires the individual to manage the consequences of their own longevity, without any cross-subsidies from those who die earlier, and is almost certain to result in the money running out too soon, or being run down with unnecessary caution, so that more money is left at death than intended.

The future probably lies in the development of different forms of risk-sharing between pensioners and annuity providers. These could offer both greater flexibility to the pensioner (at the expense of some greater level of risk) and some moderation of the risks underwritten by the providers. Developing new products and new mechanisms for risk-sharing will be the challenge of the next decade.

# VIII

## Pension Reform: A Common Thread

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The first World Bank publication on pension reform (World Bank, 1994) argued strongly for a three-pillar system of pension provision consisting of:

- a mandatory publicly managed first pillar;
- a mandatory privately managed second pillar; and
- a voluntary third pillar

They argued that the first pillar should be flat-rate or means-tested or a minimum pension guarantee and that all pension provision related to earnings in the workforce should be channelled through the second and third pillars. Benefits in the first pillar should be set at a modest level. Moreover, they proposed that retirement age should rise regularly to reflect rising life expectancy. Any investment of funds relating to the first pillar should be kept separate from general government funds and assets should be properly diversified.

Their concept for the second pillar was primarily based on a mandatory level of contributions to fully funded individual accounts, organised on a competitive basis through a number of regulated private sector entities - in short the Chilean model. Although they did not completely rule out the alternative of a system of defined benefit occupational pension funds, there was little doubt that the preferred route was a competitive model of defined contribution individual accounts.

Since then the World Bank has been involved in numerous implemented pension reforms, or considerations of possible pension reform, in countries around the world. In general the World Bank does not get involved in these issues with higher income industrialised countries but only with low to medium income countries. However, pension reform has been proceeding in countries at all levels of development and national income. There is therefore now a wealth of experience of planning and implementing pension reform in all sorts of different situations – both gradual reform, often in a series of steps, and more radical reform.

The latest statement of pension reform policy by the World Bank (Holzmann and Hinz, 2005) provides a most interesting review of how everybody has learnt from the practicalities of pension reform, and how, in particular, the World Bank has modified its earlier ideas and softened its approach. They set out five additional elements to the Bank's perspective:

- *a better understanding of reform needs and measures*, including a) assessing the need for reform beyond purely financial and demographic aspects, b) understanding the consequences, particularly for low income groups, of making participation in pension systems mandatory, c) reassessing the importance and limitations of prefunding for dealing with the issues of population ageing and d) recognising the importance of behavioural changes,

Chris Daykin

- including impacts on the labour supply and retirement patterns;
  - *the extension of the multi-pillar model beyond the three pillar structure to encompass as many as five pillars and to move beyond the conventional concentration on the first and second pillars.* Experience with low income countries has brought into focus the need for a zero (or non-contributory) pillar with a primary focus on poverty alleviation. The new fourth pillar is a formal recognition of the important role of access to informal support (such as within the family), other formal social programmes (such as health care and housing), and other individual financial and non-financial assets (such as home ownership and inheritance).
  - *an appreciation of the diversity of effective approaches, including the number of pillars, the appropriate balance among the various pillars, and the way in which each pillar is formulated in response to the circumstances and needs of particular countries and situations.* There is now a key recognition of the importance of tailoring solutions to the needs of each country, rather than seeking to apply a standard model.
  - *a better understanding of the importance of initial conditions in establishing the potential for and the limitations within which reforms are feasible.* It is clearly vital to take into account where a country is starting from.
- a strong interest in, and support of, country-led innovations in pension design and implementation.* The transition process is key to success and should be innovative and led by the country concerned.

So the World Bank has recognised that pension reform depends to a great extent on the political economy of each country. From my experience of pension reform in a number of different countries, there is no doubt that each country is quite different in terms of the way in which people react to pensions issues. Unsurprisingly, they all start from different points and have a different background of history, tradition, social policy and reform dynamic. When working on Turkish pension reform a few years ago, one of the most significant problems was that a very high proportion of people managed to evade contributions, or pay only at the minimum possible level to give them access to the national health service, for 90 per cent of their working lives, and then started to contribute for the last few years before retirement and to get a full pension.

In Chile, and in other countries of Latin America that have implemented systems of mandatory individual accounts, there is still a high level of contribution evasion. There is also clear evidence of people playing the system to contribute for the minimum period necessary to secure access to the government-financed guaranteed minimum pension. Some analysis and projections that have been carried out in Mexico suggest that around 80 per cent of employees could end up with the guaranteed minimum pension and not get any benefit beyond that from a working life of contributions to their mandatory individual accounts with AFORES.

Outcomes are thus highly dependent on individual (and group) behaviour and a key aspect of any pension reform must be to identify in advance the perverse incentives that could be created by any change in structures and to try to minimise the opportunities for taking advantage of them.

*The Challenge of Ageing: Pension Reform, International Trends and Future Imperatives*

The UK has its own challenges in this regard, in spite of having generally a very high level of contribution compliance, achieved through integration with the Pay As You Earn (PAYE) tax system and the fact that almost everyone pays income tax. These challenges arise from the interaction between the means-tested benefits system and occupational and personal pension schemes (as well as other savings for retirement). Means-tested guaranteed pensions have been an attractive policy option for addressing poverty in old age and for targeting limited resources on those most in need of financial assistance. However, as the Pensions Commission has recognised, this causes considerable difficulties for the development of a coherent long-term strategy which includes a major role for private funded savings for retirement. There is a need to address this issue in the proposals for reform that are expected to emerge on the foundations of the thorough groundwork carried out by the Commission.

Another important issue concerns the age of retirement, or at least the age at which people become entitled to a state pension. With the dramatic increase in life expectancy at the age of 65 that has already taken place, and the further increases that can be expected, with a reasonable degree of confidence, for the future, it cannot be sustainable to keep the state pension age fixed at 65. However, proposals to increase the pension age are inevitably politically difficult, and they tend to fly in the face of widespread expectations on the part of workers that they should be able to retire before 65, and the personnel policies of many employers, that have reinforced such expectations by forcing early retirement on many employees.

The raising of state pension age needs to be tackled with a very long lead time and in close co-ordination with appropriate labour market policies to open up the opportunities for continued employment at older ages. Following all the discussion on this issue, the wider public may probably now be attuned to the need for a higher state pension age in future and this may be the time to start the process of moving it up.

A common thread between several of the successful pension reforms in other countries has been the move to share longevity risk between cohorts in a different way. Raising pension age is one way of achieving this, but, in addition to, or to some extent instead of, changing the formal age of entitlement to pension, it should be considered whether to adjust the level of benefits in some way to allow for the most up-to-date estimate of the cohort expectation of life. This can be done in either a defined benefit or a defined contribution framework and permits a fairer allocation of cost between cohorts. Ideally there should also be some flexibility about when an individual takes their pension, with the choice being actuarially fair between different ages, or incentivising later rather than earlier retirement.

A key policy question to address is the role of funded private savings for retirement. Occupational pension provision is changing, with most private sector defined benefit schemes closing to new entrants. Replacement arrangements are almost exclusively defined contribution and generally have a much lower level of employer contribution than the predecessor DB schemes. However, coverage of occupational schemes in the private sector is very incomplete. The Pensions Commission recommended a National Pension Savings Scheme with auto-enrolment and the

*Chris Daykin*

possibility of opting out. Others have promoted the idea of a compulsory level of savings for retirement. This is a politically contentious topic. The Government's latest proposals are broadly in line with the recommendations of the Commission.

Pension provision is a long-term business, with decisions taken today likely to affect people's retirement income for the best part of a century into the future. It is vitally important, therefore, that pension reform be focused on developing a stable, sustainable and fair pension system. The World Bank has put it that the primary goal of a pension system should be to provide adequate, affordable, sustainable and robust old-age income. The UK has been a leader in pension reform, particularly in relation to making our social security system affordable, but it is now important to address further the issues of fairness and sustainability, learning as well as we can from the experiences of other countries. The Government's May 2006 White Paper makes proposals to respond to these aspects, whilst also emphasizing the personal responsibility and the necessity of making the system simpler. There will now be a further period of debate before the proposals are turned into legislation and reforms are implemented.

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Chris Daykin

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