

# Pension Reform in Europe

*Pension reform is high on the agenda almost everywhere in Europe. The contributions to this Forum outline the different pension systems of selected European countries, providing an assessment of both the reform steps taken so far and the need for further reform.*

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## Pension Reform in France: Where Do We Stand?

Among countries facing the prospect of rapid population aging, France is often classified as one of those where the process of pension reform has been the slowest, with little tangible outputs at this stage. Such a view is excessive. Two major reforms have taken place, one in 1993 and one in 2003. None of them will be sufficient to fully ensure equilibrium for the pension system, but both of them have had, or should have, very significant impacts.

On the other hand, it remains true that France faces some specific difficulties in solving its pension problem. Some of these difficulties come from the complexity and the fragmentation of its pension system. Another problematic element is the fact that we are one of the countries where the "culture" of preretirement has been most extensively developed during recent decades. More generally, excluding the 1997-2001 parenthesis, the French performance in terms of job creation has been poor. On top of this, France combines a high level of mandatory levies and a debt/GDP ratio the growth of which has been almost

uninterrupted over the last 25 years. All this strongly reduces margins of manoeuvre for the years to come.

Here, we shall present these two sides of the coin: trying to give a brief sketch of what has been done already and presenting the problems that remain, with a particular emphasis on the early retirement problem.

### **The Context and the Prospects under No-reform Scenarios**

A basic view of rules governing French pension benefits is necessary to explain the contents of French pension reforms. The French system is often pointed at for its high complexity. Its major characteristics can however be summarised relatively easily if we chose to concentrate on the two major categories of workers, i.e. wage-earners in the private sector and civil servants.

For the first group, the pension system has two main components. The first component is the *régime général*, a basic scheme where the pension can be obtained at age 60 but with an additional condition concerning the number of years of contribution. Until the 1993 reform, this condition was to totalise 37.5 years of contribution, either actual employment or assimilat-

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ed periods, including periods of paid unemployment. Under this condition, the pension was equal to one half of the average wage of the ten best years of people's careers, truncated to the social security ceiling. Leaving before 65 without these 37.5 years led to very strong penalties (a 10% reduction per missing year), while working additional years beyond this duration condition had no positive impact on the pension level.

The second pillar for these private sector employees consists in one or two complementary pensions (ARRCO and AGIRC) providing pensions according to a PAYG system close to the principle of notional accounts: contributions are used to buy "points", and the pension level is equal to the number of accumulated points, multiplied by the value of one point.

For civil servants, the system is a one pillar system: access to retirement is possible at 60 or even 55 for some categories. The normal duration also used to be 37.5 years, but this time with only small penalties for people not fulfilling this condition. Since the system is a one pillar system, the replacement rate that is offered is naturally higher than in the private sector: 75% of the last wage for 37.5 years of contributions under prereform conditions, i.e. a 2% annuity rate. Here again, the system offered no incentive to postpone retirement beyond these 37.5 years of activity.

On the whole, including other specific schemes, pension expenditures in France currently represent about 12% of GDP and the system, at the beginning of the 1990s, was generally described as having been able to close the income gap between workers and retirees. After taking into account differences in household size and capital income, the average standard of living of pensioners could be considered as roughly equivalent to that of workers.

Aging puts this system under strains that are comparable to those of other countries. A favourable element is that France has kept a relatively high fertility rate, at least higher than in most of its European neighbours, but it also benefits from a relatively high life expectancy, and there is also the fact that our baby-boom has had a relatively high amplitude. The conjunction of these three factors can be summarised in the projected increase of the 60+/20-60 ratio: from about 37% today to more than 70% in 2040 under median demographic assumptions. Offering the same relative standard of living to this increasing share of retirees would have implied an increase of the pension/

GDP ratio from 12.1% in 2000 to 15.2% in 2020 and 18.6% in 2040.<sup>1</sup>

### Two Reforms

These perspectives have been known for a long time. The first report on the topic goes back to the mid 1980s, followed by a more influential report by the General Planning Agency at the very beginning of the 1990s, the *Livre blanc sur les retraites* (white book on pensions), which paved the way for the first of the two reforms that we have had, the one introduced in 1993.<sup>2</sup>

This 1993 reform concerned only the private sector. Its most symbolic measure was a first tightening of the 37.5 years condition for getting a full pension: the reform scheduled a shift in this condition by one quarter each year until 2003, in order to reach the new value of 40 years. Yet, despite its symbolical importance, this measure was not the one that was expected to have the largest effect in the short or medium run. The reason is that cohorts that currently leave for retirement started working earlier than 20 on average, and, thanks to the fact that periods of paid unemployment are validated as full years of contributions, a large majority of new retirees are still able to fulfil this duration condition at age 60, even after it has been raised to 40.

More rapid and more decisive reductions in expenditure levels were expected, rather, from three more technical measures.

- One has been the shift in the number of years on which past wages are averaged for computing the reference wage to which the replacement rate is applied. From 10 years in pre-1993 conditions, the reform scheduled its increase each year until reaching the value of 25 years.
- A second change concerned the formula used for re-evaluating these past wages before computing their average. Under pre-1993 rules these wages were re-evaluated according to general productivity growth. The 1993 reform changed this rule to a re-evaluation based only on prices, meaning a much weaker re-evaluation for wages received several years ago. This new rule considerably strengthens the impact of having shifted from an average of wages over the ten best years to the average over the twenty-five best years of one's career.

<sup>1</sup> Conseil d'Orientation des Retraites: Retraites: renouveler le contrat social entre les générations, Premier rapport, La Documentation Française, Paris 2001.

<sup>2</sup> Commissariat Général du Plan: Livre Blanc sur les retraites : garantir dans l'équité les retraites de demain, La Documentation Française, Paris 1991.

- Lastly, but this was rather a confirmation of a policy introduced in the second half of the 1980s, the reference to prices rather than wages has been also retained for the indexation of pension *after* entry into retirement.

Quite surprisingly, this reform was implemented almost without any strong opposition. This is probably due to its relatively technical character: its consequences were not immediately understandable to the public. The next attempt to reform the pension system was much less successful in this respect. It took place in 1995, in the context of a global plan for reforming the French system of social insurance, the Juppé Plan. This included an extension of the 1993 reform to public sector employees. This gave rise to a very strong social movement that led to the full withdrawal of this component of the plan.

This episode put a temporary halt to pension reform. A new commission was created instead for re-examining perspectives and policy options. It led to a new report prepared by the General Planning Agency, the Charpin report.<sup>3</sup> One of the scenarios explored in this report was a further tightening of conditions for access to a full pension to 42.5 years of contribution, compensated by a moderation of penalties for people leaving before this full rate. In short, the proposal was to shift the normal age at retirement upward and at the same time to propose a computation of benefits around this normal age closer to the rule of actuarial neutrality.

The large number of negative reactions to these proposals showed that times were still not ripe for a second reform. The choice was then made to try to give one more chance to dialogue, with the creation of a *Conseil d'Orientation des Retraites* (pension advisory committee) in 2000 which itself published its first own report in 2001.<sup>4</sup> This institution is not itself in charge of proposing reforms, but constitutes a forum where pension issues are debated and which is in charge of establishing pension projections as consensually as possible.

It was after the publication of this first COR report that a new general reform was finally launched, according to the announcement made by the new government resulting from the 2002 elections. Approved by parliament in August 2003, this reform finally fol-

<sup>3</sup> J. M. Charpin: *L'avenir de nos retraites*, rapport au premier ministre, La Documentation Française, Paris 1999.

<sup>4</sup> Conseil d'Orientation des Retraites: *Retraites: renouveler le contrat social entre les générations*, La Documentation Française, Paris 2001.

**Table 1**  
**Effect of the 1993 and 2003 Pension Reforms on Total Pension Expenditures (in % of GDP)**

	Projected expenditures before reforms	Reductions induced by the 1993 reform	Reductions induced by the 2003 reform			Projected expenditures after the two reforms
			Private sector	Public sector	Total	
2020	15.2	-1	-0.2	-0.6	-0.8	13.4
2040	18.6	-2.3	-0.3	-1.0	-1.3	15.0

Sources: Conseil d'Orientation des Retraites: *Retraites: renouveler le contrat social entre les générations*, Premier rapport, La Documentation Française, Paris 2001; Rapport Economique Social et Financier: perspectives économiques 2003-2004.

lowed many of the initial recommendations of the Charpin report. It has the following main features.

- The first measure is to organise a convergence of conditions for access to a full pension between employees from the public and private sectors. The duration condition will be raised from 37.5 to 40 years in the public sector by 2008.
- After this convergence has been achieved, the duration condition should increase in parallel, by one more year between 2008 and 2012. After this, it is expected to follow a path indexed on future life expectancy gains, in order to split these gains between 2/3 of additional length of working life and 1/3 of a remaining increase in the retirement length. This is expected to bring this condition to 41.75 years in 2020.
- In addition and partly in compensation for this strengthening of conditions for access to full pensions, a greater flexibility has been introduced around this normal retirement age. The penalty for early exits has been reduced, and a financial incentive to postpone retirement has been introduced, consisting of a 3% bonus for each year of postponement.
- At last, a series of more technical changes should lead to reductions in pension levels at the full rate, but to a much lesser extent than had been the case with the 1993 reform.

#### **How Far Do Reforms Go in Limiting the Growth of Pension Expenditures?**

Table 1 shows expected changes due to reforms. As mentioned earlier, with no reform at all, the pension/GDP ratio was expected to increase to 18.6% in 2040, with an intermediate point at 15.2% in 2020. Let us consider first the impact of the 1993 reform alone. According to the second column of Table 1, the impact of

**Table 2**  
**Projected Effect of the 1993 and 2003 Pension Reforms on Average Ages at Benefit Claiming**

Cohorts	Private sector			Public sector	
	Before reforms	After the 1993 reform	After the 1993 and 2003 reforms	Before reforms	After the 2003 reform
1945-54	61.2	61.6	61.6	58.6	60.2
1955-64	61.1	61.6	62.0	57.9	60.1
1965-74	61.5	62.1	62.3	58.6	60.8

Source: S. Buffeteau, P. Godefroy: Conditions de départ en retraite selon l'âge de fin d'études: analyse prospective pour les générations 1945 à 1974, Document de travail INSEE/DESE no. G2005/1, 2005.

this reform is a reduction in expenditures amounting to 1 percentage point of GDP in 2020 and 2.3 percentage points in 2040. Part of this impact comes from an increase in the average retirement age in the private sector but, as shown in Table 2, this component of the reform remains relatively limited, i.e. an average increase in the retirement age of about 0.6 years for the youngest cohort. The reason for this limited effect is that, as already mentioned, the new condition of totalising 40 years of affiliation with a pension scheme should remain fulfilled by large proportions of workers even for this cohort.

More important for the reduction of the total pension bill is the fact that the 1993 reform should lead to a very significant decline in the ratio between the average pension and the average wage, through the two mechanisms outlined above, i.e. the computation of pensions on the basis of the 25 best years of people's careers, and the impact of the systematic indexation of these pensions on prices rather than on average net wages. The impact of this change in the indexation rule is quite strong when we assume relatively dynamic wages (the assumption used here was that of a growth rate for wages of 1.8% per year). On the whole the impact of these assumptions on the average pension/wage ratio for the private sector is a reduction of 18%, compared to a no-reform scenario.

The 2003 reform did not pursue this direction of reducing pension benefits. This reform tried instead to reinforce incentives for later exits, and particularly for the public sector, which had remained unaffected by the 1993 reform. It is actually in this sector that the 2003 reform should have the largest impact, i.e. a 2.2 year long-term increase in the average retirement age, and a projected reduction of pension expenditures representing 0.6 percentage points of GDP in 2020 and 1 percentage point of GDP in 2040. By comparison,

the impact of the 2003 reform in the private sector has been intentionally more limited, with a further reduction in total expenditures representing only 0.2 and 0.3 percentage points of GDP in 2020 and 2040 respectively and an impact on the average age at benefit claiming that is not only weaker but also more uncertain. On the whole, after introducing both reforms, the share of pension expenditures in total GDP would be reduced from 15.2 to 13.4% of GDP in 2020 and from 18.6 to 15.0% in 2040.

### What Remains to Be Done?

In view of these results, the conclusion could be that one half of the way toward the future balancing of the French pension system has been completed. What are the options and difficulties for the next steps?

On the one hand, there is the temptation to consider that we have now gone as far as possible on the expenditure side, and that the remaining adjustments could, rather, be on the revenue side, i.e. new increases in contributions, which have been more or less avoided at this stage.

This view cannot be ruled out a priori. Indeed, there is no well-defined limit to the share of its GDP that a given country can allocate to pension expenditures. The French general situation makes this solution problematic, however. Resistance to further increases of mandatory levies is significant. There is also strong suspicion that these levies penalise employment at least for low wage earners and it is precisely for this reason that the general tendency over the last decade has, rather, been to reduce the socio-fiscal wedge for these low-income workers.

On the whole, margins for increasing mandatory levies are therefore limited and, if they exist, it is probably preferable to use them for the solution of other problems, e.g. for restoring the sustainability of general public finances (the debt/GDP ratio has increased almost continuously over the last 20 years) or facing the costs of other social expenditures, such as health expenditures.

Between the two other instruments, continuing to reduce the relative standard of living of retired people also raises problems. The 1993 reform has had relatively strong consequences in this respect. As we have seen, it is expected to lower the standard of living of retired people by nearly 20% at the 2040 horizon. It is precisely for this reason that the 2003 reform did not continue significantly in this direction. Of course, one could always argue that such decreases could be compensated by increases in other sources of pen-

sion income, such as incomes provided by pension funds. The introduction and development of such tools has been strongly disputed in France since the early 1990s. The 2003 reform has taken measures to encourage their development, and this is probably a positive element. But this policy cannot be considered a panacea. From a macroeconomic viewpoint, one of the most widespread arguments in favour of the development of funded pensions is their positive impact on total savings. This argument has little appeal for France, where savings rates are already high by international standards. The true motive for the development of pension funds is, rather, the fact that this policy may help reorient these savings toward firms. A positive impact on the future standard of living of pensioners is possible, but remains uncertain.

There are therefore some good reasons to maintain a strong focus on further increases in the retirement age. In view of the relatively high life expectancy of French people, this solution has attractive features. But it currently hits the obstacle of low employment for older workers. Actually, France is not only characterised by a low age at normal retirement, but also by an important development in preretirement: the actual age at exit from the labour force is between 58 and 59 years. This situation finds its origins in the creation of specific preretirement schemes during the 1970s, which have been used to lower the social costs of

shrinking activity in specific sectors, such as the steel industry. These schemes have then been generalised, with the hope that this would facilitate access to the labour market for younger workers. Quite the contrary has happened: France now combines a very low age at effective retirement and particularly hard conditions for young people entering the labour market. And we are now stuck in what has all the characteristics of a vicious circle: lower demand for older workers has led to the development of early retirement schemes which, in turn, discourage labour supply by these workers.

The problem is to find the best way to break this vicious circle. A liberal view is to consider that increasing the normal retirement age, restoring incentives to work longer (as done with the 2003 reform) and strongly limiting access to preretirement schemes could be sufficient to achieve this. Results that are expected from this policy are to induce well-inserted workers to stay longer in their jobs, and to force other senior workers currently excluded from the labour market to re-enter the labour market with lower reservation wages. But one can question the efficiency of such a supply-side policy. The *demand* for senior workers remains structurally very weak. The 2003 reformers have explicitly stated the need for efforts on the demand side. But we are still waiting for signals that French firms are ready to rely more on this segment of the labour force.

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## Shifting Perspectives: German Pension Reform

Until recently, the German public pension system has been one of the most generous ones in the world. Today, the system is in great financial distress. On the one hand, expenditures rise as pensions have to be financed for longer pension periods due to continuous increases in life expectancy and an early retirement age induced by generous early retirement options. On the other hand, revenues stay behind as younger, working cohorts become smaller thus accounting for fewer contributors. This situation will de-

teriorate even further when the baby boom generation begins to retire around 2015.

While a series of *parametric* reforms in the 1990s tried to cut down a little on the generosity of the system and also imposed stricter retirement options narrowing down the retirement window, more *fundamental* reform measures in order to cope with the demographic pressures have been taken up in the last five years. Since then, the system has been subject to major changes, converting the once exemplary and monolithic Bismarckian pension insurance system into a complex, sustainable multi-pillar system. This paper gives a bird's eye view of the German pension system and the current reform process. It delivers an assess-

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ment as to how far these reform steps will solve the pressing problems of a prototypical pay-as-you-go system of old age provision, hopefully with lessons for other countries with similar problems.

### Basic Principles of the German Pension System

The German pension system as a whole consists of three pillars. The first pillar comprises the publicly financed PAYG system, which is mandatory and currently about 85% of retirement income. Company pension schemes form the second, voluntary private pension arrangements the third pillar. In contrast to the first pillar, which we describe in the sequel of this section, the second and third pillar are funded systems.

*Benefits:* Benefits from the public PAYG system are strictly work-related. They can be interpreted as the product of four elements: (1) the earning points (EP) that reflect the employee's relative earnings position, (2) the employee's years of service life (SY), (3) adjustment factors (AF) for pension type and (since the 1992 reform) retirement age, and (4) the current pension value (PV). The annual value of a pension  $P_{t,i}$  in year  $t$  for pensioner  $i$  is thus computed as follows:

$$P_{t,i} = EP_i * SY_i * AF_i * PV_t$$

The first three factors make up the "personal pension base" while the fourth factor determines the income distribution between the current workers and the stock of pensioners.

*Earning points (EP):* These are expressed as a multiple of the average annual contribution (roughly speaking, the relative income position) in each historical working year: one EP corresponds to average earnings in that year, 0.5 EP to 50% of average earnings, and 2 EP to earnings twice as large as average earnings in that year.

*Years of service life (SY):* These comprise years of active contributions plus years of contributions on behalf of the employee and years that are counted as service years even when no contributions were made at all. These include years of unemployment, years of military service, three years for each child's education for one of the parents, some allowance for advanced education etc. Unlike many other countries, there is neither an upper bound of years entering the benefit calculation, nor can workers choose certain years in their earnings history and drop others.

*Adjustment factors (AF):* This factor is one for a normal old-age pension. Before 1999, it included several adjustments to disability pensions. Depending on the

type of disability pension, AF took on values between 0.25 and 1.

*Current pension value (PV):* This is the crucial link between worker's earnings and pensioners' benefits. The PV is indexed to the annual changes in the level of wages and salaries net of pension contributions and thus enables pensioners to share in the rising prosperity generated by the economy. This link between changes in workers' earnings and pensioners' benefits is specified as a mathematical "benefit indexation formula". The German public pension system has so far provided a generous benefit level. The standard replacement rate<sup>1</sup> or pension level was around 70% net and 48% gross in 2000.

### The 2001 Reform: Shifting towards a Multi-Pillar System

In May 2001, a new pension reform act was ratified in Germany, popularly referred to as the "Riester reform" after the then labour minister Walter Riester. The key objective of the Riester reform was to stabilise contribution rates. The law actually states that contribution rates to the public pension system must stay below 20% until 2020 and 22% until 2030 ("Riester limits"). In order to reach these objectives, pensions were to be gradually reduced by a rather complex new benefit indexation formula from the level of 70% of average net earnings in 2000 to around 67% by the year 2030. The decline in public pensions was to be offset by supplementary (occupational and private) pensions. In order to achieve this aim, supplementary pensions were subsidised, either by tax deferral and tax deduction, or by direct subsidies to individual and occupational pension plans. These supplementary pensions are, however, not mandated. Since many restrictions apply, it remains to be seen how many workers actually start building up private pensions.

The main restriction is on payment plans. Since additional private pension schemes are intended to supplement or replace benefits from the public pension scheme, the government decided that incentives will only be available for investment vehicles which guarantee payment of a life annuity payable from the date of retirement. Investment vehicles which provide for lump-sum disbursements are not subject to state subsidies. This restriction was met with considerable criticism in the public debate as it excludes other

<sup>1</sup> Note that the word replacement rate may be misleading: In the German context, it does *not* refer to last earnings before retirement. Rather, the "standard replacement rate" refers to the pension of a worker, who had 45 earnings points, divided by the average earnings of all current workers.

**Table 1**  
**Direct Savings Subsidies**

From ... on	Savings rate (per cent)	Basic subsidy (euros/year)	Child subsidy (euros/year)
2002	1	38	46
2004	2	76	92
2006	3	114	138
2008	4	154	185

forms of provision for old age (such as investments in old-age or nursing homes).

*Direct savings subsidy for private Riester pensions:* All dependently employed and certain self-employed workers who pay personal contributions to a certified retirement pension policy are entitled to receive a direct retirement savings subsidy. The subsidy is paid directly into the beneficiary's savings account. A basic subsidy and a child subsidy for each child for which child benefits were received during the previous year is paid. In the case of married couples, both partners receive a basic subsidy if they have each taken out their own supplementary private pension policy. In addition, non-entitled partners (such as mothers not in paid employment) are also entitled to receive the full subsidy for their own retirement pension policy provided that the respective married partner subject to compulsory insurance contributions has paid his or her minimum personal contribution to their supplementary retirement pension policy.

Table 1 shows the maximum incentive subsidies available as of 2002. In order to qualify for the maximum subsidy the beneficiary must invest a specified percentage of his or her gross earnings (denoted as "saving rate"). This percentage increases until 2008 in four steps ("*Riester-Treppe*"). The percentage is applied to the actual earnings level, capped at the same cap as the PAYG contributions are (about double average earnings). If less money is invested, the state subsidy is reduced accordingly. The scheme is complicated by the fact that the subsidy is included in the savings amount. Hence, the actual saving rate necessary for the maximum subsidy is lower than the percentages indicated in the second column of Table

**Table 2**  
**Minimum Savings**  
(euros/year)

Year	No child	One child	Two or more children
2002 – 2004	45	38	30
As of 2005	90	75	60

**Table 3**  
**Maximum Savings**

From ... on	Tax deductible special expenses (euros/year)
2002	525
2004	1.050
2006	1.575
2008	2.100

1. In turn, certain minimum amounts are necessary (see Table 2).

*Tax deductible special expenses:* Alternatively, qualifying retirement savings can be deducted as "special allowances" from income taxes. This is usually more advantageous for workers with higher than average earnings. Saving rates, caps etc. are the same as in the subsidy case. Table 3 shows the maximum tax-deductible contributions to private retirement savings accounts.

As shown in Tables 1-3, the subsidies for private old-age provision are being phased in rather slowly. Together with the restriction in investment plans, this has led to a rather hesitant uptake of Riester pensions. The Riester reform did not produce the "big bang" which a fundamental reform might need in order to change habits of old-age provision.

*Deferred taxation:* While old-age pension contributions will be tax exempt during the saving phase, pension payments during the benefit phase will be taxed in full as normal income. This applies to all benefits regardless of whether these accrue from contributions, subsidies or capital gains. One may regard this as another form of subsidy, since taxes occur later in life (hence, an implicit tax credit) and usually at a lower rate due to progressivity.

*Direct salary deduction for occupational pension schemes:* The Riester reform remained largely undecided on the role of occupational pensions versus individual accounts. Traditionally, occupational pensions have played a minor role in Germany, particularly in comparison with other countries. On the other hand, occupational pensions should not provide a psychological substitute for private pensions. In order to strengthen occupational pensions, additional subsidies were therefore introduced with the Riester reform. The most important change was the general right to convert part of the salary directly into contributions to pension plans. This applies regardless of whether the contributions are paid by the employer or the employee. Arrangements may be based on either gross

or net pay. If they are based on net pay, there is a large implicit subsidy since the so-converted salary may not only be subject to deferred taxation but can also be exempt from social security contributions, at least until 2008. If they are based on gross pay, contributions may enjoy the same direct subsidies or tax relief as contributions to individual accounts, as long as the occupational pensions meet certain criteria which are less restrictive than the criteria for individual pension plans. Which contribution rules apply depends on the chosen investment vehicle and the incentives they attract. Collective bargaining agreements, however, have precedence over the right to convert salary.

### **The 2004 Reform: Shifting towards Long-term Sustainability**

It soon became obvious that the Riester reform measures would not suffice to meet the contribution rate and pension level targets. A new reform commission, the "Commission for Sustainability in Financing the German Social Insurance Systems", popularly referred to as the Rürup Commission after its chairman, Bert Rürup, was therefore established in November 2002. Its twin objectives were those of the Riester reform: to stabilise contribution rates while at the same time ensuring appropriate future pension levels.

The Rürup Commission met a very different situation than Riester in 2001. Unexpectedly high unemployment rates and the poor performance of the German economy with extremely low growth rates precipitated a short-run financial crisis of the pension system and created a sense of urgency for reform. Moreover, the electorate became increasingly aware that stabilising social security contributions in total labour compensation is essential to enhance future growth. This paradigm shift away from thinking in pension claims towards thinking in financing possibilities had a noticeable impact on the commission's work.

In 2003, the Rürup Commission published a reform proposal that comprised two major elements: a gradual increase of the normal retirement age from 65 to 67 years and a further modification of the pension benefit indexation formula. The introduction of the "sustainability factor" came into effect with the latest pension reform in spring 2004. The shift in the retirement age, however, was not legislated. Since the commission proposed that the phasing-in period should start in 2011, it was decided that there is no need for immediate legislative action.

*Increases in the normal retirement age:* The commission proposed a step-wise increase of the normal

retirement age from 65 to 67 until 2035. This increase corresponded to two-thirds of the projected changes in life expectancy. In order to prevent substitution into early retirement and disability pensions as a result of the increase in the retirement age, the commission also proposed increasing the early retirement ages (to the same extent and with the same schedule as the normal retirement age) and increasing the actuarial adjustments for disabled and long-term insured workers. Since there were additional worries about the coverage for workers subject to extreme physical wear and tear due to long years of hard work, a new pension type was introduced which makes it possible for workers with a service life of at least 45 years to retire two years earlier, with additional actuarial adjustments however.

*The sustainability factor:* The commission proposed extending the Riester benefit indexation formula by a new factor, the "sustainability factor". This factor reflects the development of the relative number of contributors to pensioners, the system dependency ratio, which is the most important long-term determinant of pension financing. It is weighted by a factor  $\alpha$  which, if set to one, would imply a purely income-oriented pension benefit adjustment policy. The commission set the value of  $\alpha$  at 1/4, thereby fulfilling the Riester objective of keeping the contribution rate under 20% until 2020 and under 22% until 2030.

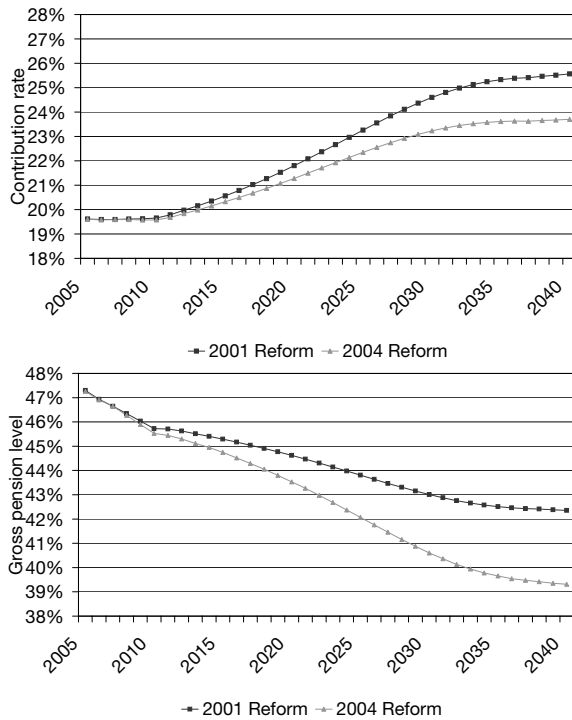
The new pension formula led to further decreases in pension benefit levels vis-à-vis the path planned by the Riester reform. In contrast to an earlier proposed but never enforced "demographic factor" in 1999, the sustainability factor considers not only the development of life expectancy but the entire demographic development (including changes in migration and notably in birth rates), as well as the development of the labour market. This is important as the inevitable reduction of the working-age population can be compensated by a higher labour force participation of women and elderly workers.

### **An Assessment of the 2001 and 2004 Pension Reforms**

Are the 2001 and 2004 reforms sufficient to counteract the foreseen consequences of demographic change and to stabilise the system? Can the contribution rate be kept below the targets set by Riester, and at the same time generate a level of pension income that, taking all pillars into account, corresponds to today's level? This subsection gives a brief assessment of the two reforms.



**Figure 1**  
Development of Contribution Rates and Pension Levels



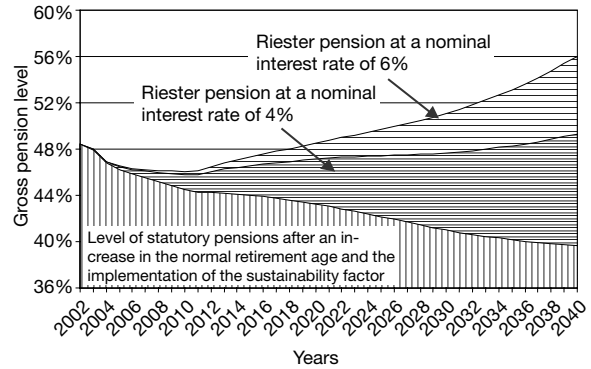
Note: Contribution rates turn out higher than according to the commission's report since the proposed but not yet implemented increase in the statutory retirement age is not taken into account.

Source: MEA calculations based on the Rürup Commission's (2003) demographic and labour market projections. Kommission für die Nachhaltigkeit in der Finanzierung der Sozialen Sicherungssysteme: Abschlußbericht. Bundesministerium für Gesundheit und Soziale Sicherheit, Berlin 2003. (<http://www.bmgs.bund.de/deu/gra/themen/sicherheit/kommission/index.cfm>).

*Did the reforms succeed in stabilising the pension system?* Of course, the main litmus test of the reforms is whether contribution rates for the younger generation can remain relatively stable with acceptable replacement rates for the older generation. Model calculations of the long-term impact of pension adjustments demonstrate that – under the current demographic and labour market projections – contribution rates stay below the given Riester limits if the proposed changes in the normal retirement are implemented and lead to the projected increases of the effective retirement age (see Figure 1). Pensions in turn drop to around 40% of gross wages. As Figure 1 shows, a large part of this pension gap can already be attributed to the 2001 reform measures.

<sup>2</sup> We use the word "subsidy" for both the direct subsidy and the tax-deductible special allowance.

**Figure 2**  
Total Pension Level Including Private Riester Pensions

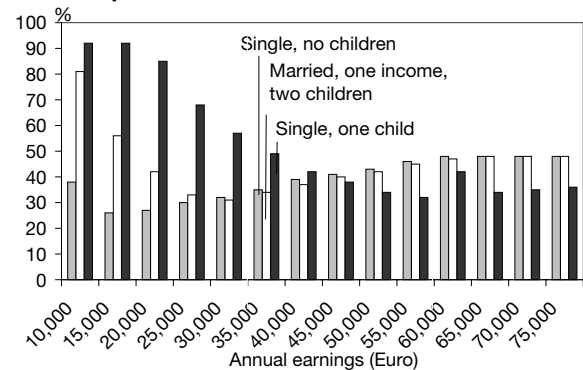


Source: See Figure 1.

*Can the Riester pensions fill the projected pension gap?* The main point of introducing the Riester pensions was to compensate for these reductions of pension levels in the public pension system. Model calculations show that an envisaged savings rate of 4% of gross income would in principle be sufficient to close this gap (see Figure 2). However, the crux of all transition models remains: the transition generation will have to pay extra in order to maintain their total retirement income when the income from pay-as-you-go pensions is reduced.

*Will the Riester pensions take off?* Since the new pensions are voluntary, one of the most debated issues in the context of the Riester reform is the question whether workers will actually overcome the temptation to procrastinate. How many will build up

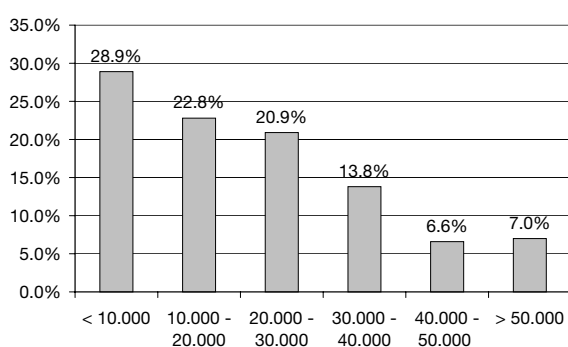
**Figure 3**  
Depth of Subsidies to Riester Pensions



Note: Direct subsidy/the tax advantage as a percentage of savings in form of the new supplementary pensions.

Source: Deutsche Bundesbank: „Kapitalgedeckte Altersvorsorge und Finanzmärkte," Monatsbericht Juli, Frankfurt am Main 2002.

**Figure 4**  
**Uptake of Riester Pensions According to Income**



Source: U. Stolz, C. Riekhoff: Drei Jahre "Riester-Rente": Aktuelle Zahlen aus der Zentralen Zulagenstelle für Altersvermögen, Berliner Kolloquium zur Sozialpolitik, 11 July 2005.

supplementary pensions? How much will they save? At this point, it is still too early to tell.

Two aspects need to be taken into account when assessing the benefits offered by Riester incentives: the subsidies/tax exemptions during the contribution phase and any tax-related advantages or disadvantages which arise during the disbursement phase. The direct subsidies during the contribution phase are very deep for those who have relatively low income and those who have children. The reverse is the case for the tax-deductible special allowances, due to the progressive tax system. Here, households with higher incomes benefit more. This results in a U-shaped relation between subsidies and income, visible in Figure 3 which shows the subsidy as a percentage of savings in form of the new supplementary pensions.<sup>2</sup>

For lowest income households, the subsidy is almost as large as the contribution itself. Even for the well-to-do, subsidy rates are high around 40-50%. Given these deep subsidies, uptake is likely to be high. The picture of Figure 3, however, is misleading insofar as this U-shaped curve flattens out during the disbursement phase when pension benefits will be taxed. This flattening effect is due to the impact of progressive taxation. Taxation will not affect pensioners in the lower half of the income distribution because their pension income is below a generous exemption for retired households. It will, however, considerably reduce the effective lifetime subsidy to households with incomes above average (see also Figure 4).

*Preliminary evidence on take-up rates:* First survey results shortly after the introduction showed that demand for Riester products was sluggish: only around 9% had actually taken out a policy by mid 2002; a

further 16% planned to conclude a policy by the end of 2002. By spring 2005, however, 4.4 million private contracts were concluded, which represents a take-up rate of about 15% of all eligible workers.

Moreover, many households, especially in the higher income brackets, merely may restructure their existing pension plans in order to reap Riester subsidies. At this point, we do not have much hard evidence on such substitution.

### Conclusions and Outlook

Two major reforms have been implemented in the past five years that introduced a paradigm shift towards a sustainable, multi-pillar system.

The Riester reform in 2001 attempted to reduce the tax and contribution burden by transforming the monolithic PAYG system into a multi-pillar system with subsidised or tax-privileged private pensions in individual accounts or as occupational pensions. The reform thus was an important first step towards solving the demographic problems confronting the pension system. It did not, however, succeed in stabilising the public PAYG pillar in the coming decades and the uptake of private pension plans has been slow.

The remaining instability of the public system precipitated the creation of the Rürup reform commission. In contrast to the Riester reform, this commission took the political risk of proposing a rise in the normal retirement age and a further reduction in long-term benefits at the same time. As a major innovation, this reduction was rationalised by linking benefits to the system dependency ratio. It therefore provided an automatic stabiliser and de facto converts the defined benefit system to a system which mimics a "notional defined contribution" system. While this mechanism became law in 2004, the change in retirement age was postponed. This seems surprising, since in the light of a prolonged life span, increasing the active part of it appears to be a rather natural reform option, in particularly since it simultaneously increases the number of contributors and decreases the number of beneficiaries.

Without a change in the complex system of statutory and effective retirement ages, contribution rates are bound to increase beyond the Riester limits. Moreover, without a faster uptake of private individual and occupational pensions, gaps in retirement income may emerge. Hence, the slow but steady reform process of the German pension system must continue as the German population ages. Still, the first, fundamental moves have been made.

Oliver Ehrentraut, Matthias Heidler and Bernd Raffelhüschen\*

## En Route to Sustainability: History, Status Quo and Future Reforms of the German Public Pension Scheme

The German public pension scheme was the first compulsory old-age provision system for workers in the world. Since the Reichstag adopted the "Law on Invalidity and Old-Age Insurance" proposed by Bismarck in 1889 until the present day, a number of fundamental reforms have been undertaken. In this article, we wish to provide an overview of the most substantial changes since the harmonisation of the pension system for blue collar workers and salaried employees and the adoption of wage-indexation in the year 1957, focussing on the sustainability of financing the German pension scheme. To do so we use the method of generational accounting and show sustainability gaps for each year between 1957 and today. We shall start with a brief outlining of the generational accounting approach and of the data used for our calculations. Subsequently, we shall present our results together with a chronological description of the major changes in German pension policy, and close with an outlook on the necessity for future reforms.

### Method and Data

As mentioned above, we wish to compute historical sustainability gaps in the German pension system starting with the year 1957. These sustainability gaps are shown by using a modified method of generational accounting. Generational accounting is based on the idea of calculating all future tax and transfer payments between individuals and the public sector, mainly in PAYG-financed social security systems.<sup>1</sup> Only if the sum of all payments to and from the public sector is equal is the intertemporal budget constraint fulfilled. This means that the current fiscal policy can be continued for all future generations. If the intertemporal budget constraint is not balanced, however, a sustainability gap arises. It quantifies the present value of all future deficits of a public sector, thereby illustrating the necessity of reforming the social security systems. For an easier understanding the value of a sustainability gap is measured as total debt in proportion to GDP.

The standard approach to a generational accounting study starts by using projections of expenditures and revenues on an individual level. Hence, the age- and gender-specific profiles are rescaled according to the initial macroeconomic aggregates of public revenues and expenditures and then extrapolated into the future by using the constant annual real growth rate. To obtain all future revenues and expenditures of the public sector, these profiles are multiplied with the number of members of the respective cohorts. The latter are derived from a population projection.

For this task we need to modify the standard method.<sup>2</sup> Firstly, instead of calculating an account for the whole public sector, we focus solely on the German pension system. In other words only the expenditures (pension benefits) and revenues (contribution and federal subsidies) of the German public pension scheme are considered. Secondly, we apply the same method several times for a variety of projection years; beginning with the year 1957 until today. More precisely, to calculate the sustainability gap of one specific projection year, we use only the macro-budget and micro-data known at this point in time. For example, the 1957 database only contains a cross-section of contribution rates, federal subsidies and pension benefits as actually incurred in that year. To calculate the sustainability gap for the following projection years, we reapply the same method simply updating the new data information known in the specific year. In general, for the extrapolation of the data the real growth rate is used. Up to 2003 we rely on the actual rates and for the period

<sup>1</sup> The method of generational accounting was developed by A. Auerbach, J. Gokhale, L. Kotlikoff: *Generational Accounting: A Meaningful Alternative to Deficit Accounting*, in: D. Bradford (ed.): *Tax Policy and the Economy*, Volume 5, Cambridge 1991, MIT Press, pp. 55-110. For a detailed depiction of the version used at the Research Center for Generational Contracts see H. Bonin: *Generational Accounting - Theory and Application*, Berlin and Heidelberg 2001, Springer-Verlag, and B. Raffelhüschen: *Generational accounting: method, data and limitations*, in: European Commission (ed.): *Generational Accounting in Europe*, European Economy, Reports and Studies No. 6, 1999, pp. 17-28.

<sup>2</sup> The following calculation approach is based on M. Heidler, B. Raffelhüschen: *How Risky is the German Pension System? The Volatility of Internal Rates of Return*, Discussion Paper, Research Center for Generational Contracts, Freiburg University, forthcoming.

\* Research Center for Generational Contracts, Freiburg University, Germany. The authors gratefully acknowledge financial support provided by the Gesamtverband der Deutschen Versicherungswirtschaft (GDV). All errors remain their own.

after 2003 we assume a constant real growth rate of 1.5%. In order to ensure comparability of the results over the whole time-series all calculations refer to the same base year 1957 and all sustainability gaps are calculated in 2003 values.

The last modification to the method affects the handling of the benefits of entering retirees. Usually in generational accounting studies only the payments to existing retirees of the respective projection year are taken into account for the extrapolation of future developments. In our case the projection of the future payments to existing retirees is based on the accumulation of annual payments to entering retirees. In other words, every future existing retiree will receive the same benefits as at the beginning of his retirement period.

In order to calculate the historical sustainability gaps for the German pension system, diverse data for the years 1957 to 2003 are required: population, macroeconomic aggregates and age- and gender-specific micro-profiles of the German pension system and real growth rates. Furthermore we need a population projection for the future.

*Demography:* The population data for the past and the assumptions for the projection are taken from the "German Bureau of the Census" (Statistisches Bundesamt). For the projection of the population after 2003 the assumptions of the middle variant of the "10th coordinated population projection" (10. koordinierte Bevölkerungsvorausrechnung) are chosen.<sup>3</sup>

*Aggregates:* The time-series of aggregates used for the former West German states since the year 1957 and the New Laender since the year 1992 are published by the "Association of German Retirement Insurance Organisations" (Verband Deutscher Rentenversicherungsträger).<sup>4</sup>

*Micro-profiles:* Before projecting the rescaled per capita net payments, we need to distribute the aggregates on age- and gender-specific profiles per capita of the population. Therefore, we use profiles of the contribution payments and the federal subsidies on the one hand, as well as the expenditure profiles on the other. The contribution payments and the ex-

penditure profile are published by the Association of German Retirement Insurance Organisations.<sup>5</sup>

### Reforms and Sustainability

The historical sustainability gaps in Figure 1 illustrate chronologically major changes in German pension policy. We split the period from 1957 to 2002 into three periods. Every period starts with a fundamental reform. Characteristic for each period is a phase of increasing generosity within the pension system, hence forcing a phase of rising funding requirements, namely higher contribution rates or reductions in pension benefits.

*Period I (1957-1971):* In 1957 the wage-indexed adjustment of the pension benefits was introduced. Furthermore early pensions due to unemployment and pensions for women were implemented. In the 1960s the increasing number of pensioners due to unemployment and the increasing share of credits for times spent at war as well as higher credits for education raised the generosity of the system. Therefore, as shown in Figure 1, the sustainability gap started at a level of 336% and culminated in 1967 at 952%. These extensions were followed by a raising of the contribution rate from 14% in the year 1965 to 17% in 1970. Hence, the sustainability gap decreased to 568% in 1971.

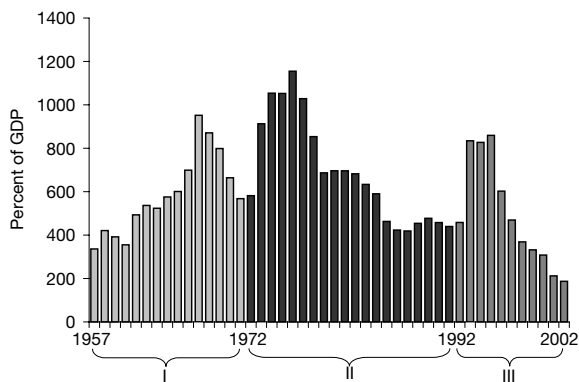
*Period II (1972-1991):* At the beginning of the seventies the second major pension reform took place. It basically enacted generous rules for diverse paths of early retirement and a minimum pension. Consequently, the sustainability gap almost doubled from 582% in 1972 to 1,155% in 1976. This reform was followed by cuts in the benefit level: the indexation of the pension adjustment formula was capped in the second half of the seventies, resulting in a sustainability gap of 687% in 1979. At the beginning of the eighties earlier retirement due to inability to work was introduced, but the eligibility for these pensions was tightened. Moreover, the eligibility for regular retirement was eased. So altogether the generosity of the pension system remained quite constant at a high level of about 660%. Finally, policy-makers increased the contribution rate step by step to 19.2% in the year 1986. As a result, the sustainability gap decreased almost to the level of 1958.

<sup>3</sup> The calculation method of the projection is based on H. Bonin, op. cit. The resulting old-age dependency ratio – individuals aged over 60 in proportion to the 20 to 59 year olds – amounts to 0.45 in 2003, rises only slightly up to 0.5 in 2015 and afterwards increases faster culminating in 0.78 in 2058. We use this ratio as approximation for the ratio of retirees to labour force in the calculation of the sustainability factor later in this paper.

<sup>4</sup> Cf. Verband Deutscher Rentenversicherungsträger (ed.): *Rentenversicherung in Zeitreihen 2004*, DRV-Schriften, Vol. 22, Frankfurt 2004.

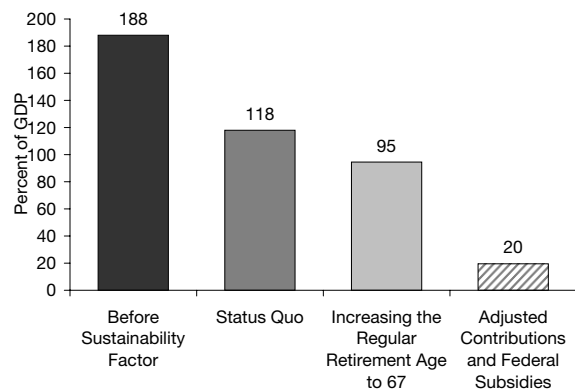
<sup>5</sup> The expenditure profiles for entering retirees have been published since 1957, whereas the existing retirees data before 1984 is taken from the Federal Ministry for Labour (Bundesministerium für Arbeit). The contribution profiles have also been published by "Association of German Retirement Insurance Organisations" since 1984. For the period 1957-1983 we keep the profiles at a constant level. The federal subsidies distribution is obtained from the Income and Consumer Survey 1993 (Einkommens- und Verbrauchsstichprobe).

**Figure 1**  
Sustainability Gaps of the German Pension System  
1957-2002



*Period III (1991-2002):* The third period is characterised by two major impacts. Firstly, beginning with the pension reform in 1992 policy-makers started to respond to the demographic change in the German population. Secondly, the secular shock of German reunification inflated the existing West German social security system. The pension system faced additional expenditures due to the integration of the New Laender. The sustainability gap blew up to 860% in 1995. At the same time, the extensive reform of 1992 marked the beginning of a consolidation period in German pension policy: the minimum pensions were abolished, credits for education were decreased, and deductions for early retirement were introduced – being effective at the beginning of the next decade. Finally, the net-indexation of the pension benefits capped the pension adjustment and established a negative impact of raising contribution rates in the adjustment formula. Furthermore the contribution rate was raised to 19.5% to cope with the demographic transition and increasing unemployment. During the nineties the sustainability gap decreased continuously reaching a value of 308% in the year 2000. The new century started with the “Riester Reform”, which marked the beginning of a shift from the PAYG-system to a partially funded pension scheme. More precisely, the reform introduced the possibility of government-subsidised investment amounting to a fixed percentage of the individual’s gross income, annually increasing from 0.5% to 4% in 2009. In addition, the pension adjustment formula has been modified such that the increasing share of gross earnings used for savings reduces the pension adjustment by about 0.6%. Finally, the net-wage indexation of 1992 was replaced by a modified gross-wage indexation. This leads to a stronger negative reaction

**Figure 2**  
Sustainability Gaps: Status Quo and Outlook  
Projection Year 2003



of the pension adjustments in the case of increasing contribution rates.<sup>6</sup> Altogether, the sustainability gaps show a significant drop to 187% in 2002.<sup>7</sup>

As our results in Figure 1 show, the sustainability gap was extremely volatile over time. It seems to be evident that the participants in the German pension system strongly react to the political parameters imposed by policy-makers. However, note that after more than 40 years of reforming the pension system, we quasi return to our point of departure: comparing the sustainability gaps of 1957 with the year 2000 results in an almost identical amount of unfunded payment commitments. We should like to emphasise that the whole system, in spite of similar sustainability gaps – 336% in 1957 and 308% in 2000 – has been significantly extended during this period. This conclusion is emphasised by the fact that the overall expenditure to GDP ratio was 6.5% at the beginning of our time series and had increased to 10.5% in 2000.

It is important to mention that policy-makers are apparently much more anticipatory than generally assumed. Another look at Figure 1 indicates decreasing sustainability gaps since 1975, with the exception of the macroeconomic shock of German reunification. If one abstracts from this event, we observe a constant diminishing trend. In other words, politicians seem to take a sort of medium-term sustainability of the PAYG-system into account and are not blind – as some might assume – to future demographic changes.<sup>8</sup>

<sup>6</sup> However, this effect is not considered in our results since we assume – according to the method of generational accounting – that the contribution rates remain constant at the level of the respective projection year.

<sup>7</sup> Note that the deductions for early retirement implemented in 1992 also affect this result.

### Current Developments and Future Reforms

The latest reform efforts of 2004 led to the introduction of the sustainability factor, effective since 2005. This factor reduces the pension adjustment according to the development of the ratio of retirees to contribution payers. This yields, under the given population projections, a long-term reduction of the benefit level of about 13% by 2050.

Figure 2 illustrates the effects on the sustainability of financing the German pension system. The sustainability gap quantifies the actual reform. Without the sustainability factor the gap amounts to 188% in the projection year 2003. The enactment of the sustainability factor reduces the sustainability gap by about 70 percentage points. Summing up we can state that the current reform marks a substantial step towards sustainability. With only 118% left, the German pensions system today faces a situation with the lowest unfunded payment obligations to future generations since 1957. Overall, we find that policy-makers have

<sup>8</sup> For a closer look at the impact of future demography on the generosity of the German pension system see C. Borgmann, M. Heidler: Demographics and Volatile Social Security Wealth: Political Risks of Benefit Rule Changes in Germany, CESIFO Working Paper No. 1021, 2003.

been quite successful in consolidating the pension scheme. However, as another plausible reaction to the still increasing life-expectancy, postponing the regular retirement age from 65 to 67 years would lead to a further reduction of the sustainability gap amounting to another 23 percentage points, also illustrated in Figure 2. Considering the fact that the method of generational accounting does not allow changing contribution rates and federal subsidies in the projections, this remaining gap of 95% of the GPD presumably overestimates the real sustainability gap of the pension system.

Since the current legislation already specifies an upper bound for the contribution rate in the year 2030 of 22%, higher revenues due to these increasing contributions and also rising federal subsidies can be expected. In addition the increasing contributions lead to reductions in the pension adjustment. Violating the usual projection assumption of an unchanged extrapolation of the status quo, we computed a scenario considering these effects. Our calculations result in a sustainability gap of about 20%. Taking these probable changes into account, one could conclude that today's pension system is already very close to being sustainable.

Richard Disney\*

## The United Kingdom's Pension Programme: Structure, Problems and Reforms

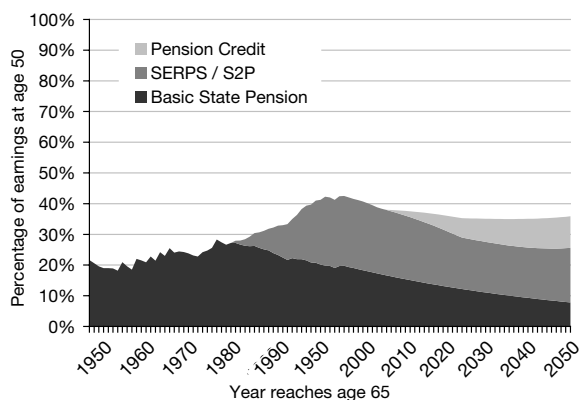
The United Kingdom (UK) pension system combines a publicly run pay-as-you-go programme with funded retirement saving through employers' pension plans and through individual contracts with private insurance companies. The UK's programme has become increasingly complex and has been much reformed in recent years. However, one of the beneficial consequences of this almost constant tinkering is that the UK public pension programme does not face the sustainability problem that confronts many other EU member states' pension programmes. Nevertheless, this constant change incurs other costs and raises reform issues that I discuss subsequently.

### Structure of the UK's Public Pension Programme

The origins of the current public pension programme in the UK lie in the so-called "Beveridge" social insurance system named after Sir William Beveridge, its architect, and developed between 1911 and 1946. The Beveridge system provided for a range of flat insurance benefits in the event of unemployment, illness, disability and old age, originally financed by flat contributions notionally levied on employees and employers. The flat pension benefit is known as the Basic State Pension (BSP). The UK programme retains only some of its original features; crucially social insurance contributions have become earnings-related and the programme has become much more redistributive. Given the flat benefit, the average "replacement rate"

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**Figure 1**  
**Replacement Rates for State Pensions at 65 for a Person with MALE Median (age-specific) Earnings, Full Employment History, and No Private Income, 1948 to 2050**



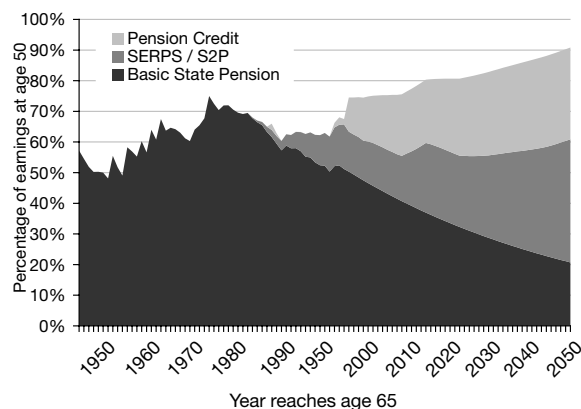
Notes: Calculations for individuals with full contribution history with median male age specific earnings and 2% annual economy-wide real earnings growth. Age profiles estimated from Family Expenditure Survey 1968 to 2000. For further details, see R. Disney, C. Emerson: Public pension reform in the United Kingdom: what effect on the financial well being of current and future pensioners?, in: Fiscal Studies, Vol. 26, No. 1, March 2005, pp. 55-82.

of public pensions to average earnings is however rather low (see next section).

There have been two substantive changes to public pension provision. In the 1970s, the then Labour government moved towards a more "Bismarckian" programme of comprehensive earnings replacement by the public pension programme, either by direct or indirect provision. Employers who offered a separate funded pension plan were given a rebate on their social insurance contributions, as well as generous tax reliefs on the accumulated pension fund, provided that the company offered defined benefit pension plans to a certain standard to all their employees. In effect, the government made those companies the agents for provision of an additional pension over and above the BSP. Many public sector workers were also offered partially funded or unfunded plans where contribution rebates might also be applied. For employees not covered by a company pension plan, the government introduced a new additional contributory pension: the State Earnings Related Pension Scheme (SERPS), which would reach full maturity in the period 2010 on.

This combined reform raised prospective replacement rates significantly, but fears about the prospective costs of the programme led to cutbacks in SERPS benefits by the Thatcher administration in 1986 and

**Figure 2**  
**Replacement Rates for State Pensions at 65 for a Person with FEMALE Median (age-specific) Earnings, Full Employment History, and No Private Income, 1948 to 2050.**



Source: See Figure 1.

1995 and indeed also to less generous indexation of retirement benefits from the Basic State Pension (BSP). In 2001, the Blair administration also reformed SERPS, replacing it over time by a new, more redistributive, formula known as the State Second Pension (S2P).

The other component of the public pension programme in the UK is a comprehensive system of tax-financed income support for people with insufficient contributions to obtain a full pension through BSP/SERPS. For various historical reasons, this means-tested programme has been at least as generous as the flat first pillar pension (the BSP) in the UK. More recently, the Blair administration has opted to make this programme a central component of first pillar provision, by indexing eligibility thresholds and means-tested benefits in payment to the growth of earnings (whereas BSP/SERPS/S2P will be more-or-less indexed to price inflation). The minimum means-tested pension is now branded the "Pension Credit Guarantee". Since withdrawal of the benefit is tapered (that is, withdrawn at an effective rate of less than 100% if the family acquires "outside" income such as private pensions or income from other sources) and thresholds are rising in line with earnings rather than prices, the "Pension Credit" will, on present trends, assume increasing importance as a tool for redistributing income towards poorer and even middle income pensioners. This shift from "social insurance" to redistribution as the apparent primary aim of public pension policy has

not been greeted with enthusiasm in all quarters and remains a controversial issue (see below).

### **Replacement Rates in the Public Pension Programme by Cohort**

These changes in public provision will have an effect on replacement rates from the public programme for cohorts retiring soon and in the future. The shift to a more “Bismarckian” programme in the 1970s has fed through into more generous replacement rates at retirement for “cohorts” of individuals on above-average earnings retiring from around 2000 through the first quarter of the 21<sup>st</sup> century. The cutbacks in SERPS in the 1980s and 1990s, and the planned shift towards a more redistributive programme reverse this process in subsequent decades (see Figure 1).

For low earners, the increased generosity of average pensions introduced in the 1970s has had, and will have, much less impact. Conversely, the increased emphasis on redistribution, and in particular the introduction of the more generously indexed Pension Credit, will have a substantial effect. Note, in particular (relative to the “Bismarck” programmes of continental Europe) the much higher replacement rates for our stylised low earners, cohort by cohort, in Figure 2.

### **Retirement Options**

There is no direct option for early retirement through the UK’s public pension programme. Currently normal state pension age for men is 65 and for women is 60 – the latter will rise to 65 in increments between 2010-11 and 2020-21. There is also no “retirement test” for the state pension – that is, individuals can continue to work after 65 and not lose eligibility for BSP/SERPS/S2P (although eligibility for Pension Credit will of course be affected as it is income-tested). Receipt of state pensions can be deferred by up to 5 years at relatively generous deferral rates – that is, the rate at which benefits are increased by postponing receipt of the benefit. The only opportunity for early retirement within the public programme is through the system of disability benefits, which has been relatively generous in the UK but which has also seen several reforms in recent years.

### **Private Pensions in the United Kingdom**

As suggested in the previous discussion, the UK encouraged a close link between public and private pensions in the UK by allowing certain pension providers to obtain rebates from their social insurance contributions in exchange for providing pensions of a minimum standard. Until the mid-1980s, “minimum

standard” meant that approved private pension plans had to be of the defined benefit (DB) type and to provide a benefit no worse than the publicly provided alternative, SERPS. Of course, companies could also provide unapproved plans (such as a “defined contribution” plan) but members of such plans would still have to join SERPS. Roughly half of the workforce was covered by approved DB plans by the 1980s and had thereby “contracted out” of SERPS.

However in the 1980s the government decided to cut back on SERPS – the second tier public benefit, fearing the costs of providing SERPS benefits in the future (and also the costs of current rebates to companies that would provide funded SERPS-type benefits in the future). At the same time as cutting SERPS, the government decided to permit a much wider range of private plans to be approved for “contracting-out” purposes. In particular, defined contribution pension schemes – whether provided by companies as a “group” scheme or indeed as an individual DC pension contract with an insurance company known as a “Personal Pension” – were now eligible to receive a rebate from the government and to be an approved alternative for SERPS. This “privatisation by individual choice” has perhaps been the major innovation in pension policy provided by the UK experience.

Because individuals were given large tax incentives to opt out of SERPS in the late 1980s and early 1990s, purchase of defined contribution plans – particularly Personal Pensions – was very popular in that period. By the end of the 1990s, almost three quarters of the workforce had some form of private pension and only around 20% remained in SERPS.<sup>1</sup> Nevertheless there was disquiet about the rapid take-up of Personal Pensions, especially by younger people on rather low incomes. Administrative costs, relative to contributions, were high, some individuals had chosen to opt out of private DB plans into DC plans, there was a rather loose regulatory system, and many people with the new pensions did not make large and regular contributions to their accounts, relying merely on investing the (by the mid 1990s) rather low rebates from the government.

In 1998-99, therefore, during its re-evaluation of welfare policy, the Blair administration decided to introduce a new form of individual DC pension account

<sup>1</sup> Some workers with very low incomes were not required to have a “second tier” pension of any sort. For details on the take-up of Personal Pensions, see R. Disney, E. Whitehouse: *The Personal Pension Stampede*, Institute for Fiscal Studies Report Series, London 1992 ([www.ifs.org.uk](http://www.ifs.org.uk)).



known as a “Stakeholder Pension”. All companies of more than 5 employees that did not offer their own (approved) pension plan were required to provide employees with a contract with an insurance company offering a basic “no frills” DC pension product, with administrative costs of not more than 100 basis points on contributions (later raised to 150) from 2001. Again, take-up was voluntary, and employees could opt for some other alternative, such as remaining in SERPS or making their own arrangements with an insurance company to buy a Personal Pension. However employees had to choose *something* as their second tier pension, whether a private pension or, by default, SERPS/S2P.

### Recent Trends in Private Plan Coverage

It is clear by now to the reader that second tier provision of pension benefits in the UK requires complicated choices; a complexity exacerbated by the fact that individuals can switch between options (not always costlessly) and that tax incentives and the size of the rebate for “contracting out” of SERPS/S2P have changed over time. For example, most actuaries now recommend that purchasers of DC pension products should *not* opt out of S2P and should continue to acquire rights in the public programme while contributing to their private pension. People will likely retire with pensions drawn from several different sources, and find it hard to predict what their final (combined) pension will be. In all this, take-up of the new Stakeholder Pensions seems to have been rather low and private coverage appears to have stagnated. There are reasons for this: with the decline in stock market values, equity-dominated products (such as pension funds) become less attractive relative to other investments (such as in housing equity). Nevertheless, a major factor is that tax reliefs for pensions are now much less generous than at the time that Personal Pensions were introduced. Although it is now fashionable in “behavioural finance” to question whether people do make optimising life cycle decisions, there is plenty of evidence in UK private pension policy that take-up has been highly responsive to changes in tax reliefs, and that more generous tax relief (as in the early 1990s) was associated with increasing private coverage whilst less generous tax relief (as in the early 2000s) is associated with lower private coverage.<sup>2</sup>

A final recent shift to be noted is in the character of company-provided pension plans in the UK. As mentioned previously, when SERPS was introduced, companies were allowed to provide their own DB

**Table 1**  
**Public Pension Spending on 55+ as % of GDP**

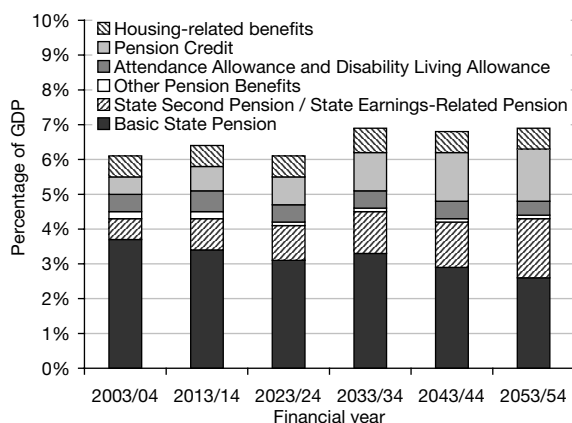
	2000	2040	Change
Belgium	10.0	13.7	+3.7
Denmark	10.5	14.0	+3.5
Germany	11.8	16.6	+4.8
Greece	12.6	23.8	+11.2
Spain	9.4	16.0	+6.6
France	12.1	15.8	+3.7
Ireland	4.6	9.0	+4.4
Italy	13.8	15.7	+1.9
Luxembourg	7.4	9.3	+1.9
Netherlands	7.9	14.1	+6.2
Austria	14.5	18.3	+3.8
Portugal	9.8	13.8	+4.0
Finland	11.3	16.0	+4.7
Sweden	9.0	11.4	+2.4
UK	5.5	5.0	-0.5
EU	10.4	13.6	+3.2

Source: Economic Policy Committee: Budgetary challenges posed by ageing populations, EPC/ECFIN/655/01-EN, 24 October 2001, mimeo, European Commission, Brussels.

pension plans to employees and receive a rebate of social insurance contributions by doing so. Once the variety of pension types that could opt out of SERPS was broadened, the obligation to provide DB plans has been lifted. Since 1997, a number of factors have conspired to make the offer of DB plans less attractive to employers, relative to DC plans or indeed to no offer of a company pension plan at all (other than the obligation to make an arrangement for a Stakeholder Pension to be offered by a preferred provider). These factors include: a reduction in tax reliefs to pension funds, the increasing difficulty in meeting target DB plan benefit commitments when equity markets are weak, and a change in the accounting procedures by which fund liabilities are measured and treated in a company’s balance sheet. As a result, there has been something of a “stampede” by companies out of DB plans (at least, for newly hired employees) and into DC plans, where there are of course no pre-committed liabilities to be met, especially in the private sector. Increasingly, the public sector has become the stronghold of traditional DB plans, and here the reform strategy has primarily been to raise the effective retirement age at which benefits can first be received – a

<sup>2</sup> Although private pension coverage has stagnated recently in the UK, there has been a significant increase in coverage amongst a group affected by recent changes in the ceilings below which pension contributions are tax relieved. For this and other evidence on the impact of incentives on UK pension take-up, see R. Disney: Economics of pension take-up: theory and evidence for the UK, 2005, at <http://www.nottingham.ac.uk/economics/cpe/publications/present.html>.

**Figure 3**  
**Government's Projections of Public Spending**  
**on Transfer Payments to Pensioners, 2003–04 to**  
**2053–54**



Notes: "Other pension benefits" include winter fuel payments, TV licences for those aged 75 or over and Christmas bonus. "Housing-related benefits" include housing benefit, council tax benefit in Great Britain and rate rebates in Northern Ireland as well as discretionary housing payments.

Source: Department for Work and Pensions: Benefit Expenditure Tables, London 2004, DWP.

strategy which has proved as hard to implement as in many other European countries.

### Sustainability

One of the consequences of the UK's "privatisation by individual choice" has been that the future commitments of the public pension programme have been stabilised, at the expenses of extra upfront costs such as rebates and tax reliefs to private pension providers. In common with other OECD countries, the UK's population is ageing: the UK Government Actuary's Department estimates that there are currently 3.32 people of working age for every person at or above state pension age. This ratio will fall to 2.31 by 2040. Nevertheless, the UK does not see the increase in public pension costs, as a share of GDP, that is seen in other EU countries (see Table 1).

However, Table 1 does not allow for recent increases in the generosity of the public pension programme in the UK, in particular the introduction of Pension Credit, which assumes increasing importance as illustrated in Figures 1 and 2. A more recent calculation of projected costs suggests a slight rise rather than a fall – but still well below other EU (and OECD) countries (see Figure 3).

Figure 3 includes various other income-tested benefits, such as housing allowances benefit to low

income pensioners, and also expenditure on disability benefits. Moreover, two other public costs should be added to total expenditure. The first is forgone tax receipts arising from tax rebates and subsidies to private pension provision, although this is likely to be a declining amount. The second, more serious omission, is the exclusion of the (largely unfunded) pension liabilities to public sector workers such as civil servants. Estimates of the future costs of these commitments are, not surprisingly, harder to find in official publications but the value of these outstanding liabilities have been estimated to be as high as £690 billion (€1,030 billion). We consider this issue briefly below.

### UK Programme: Problems and Reform Issues

*Public sector pensions:* In common with many other countries, the UK faces a large overhang of liabilities in the form of unfunded public pension commitments to public sector workers (over and above the universal programme of state retirement pensions). The key issue here is that public sector workers have tended to retire before the state pension age, often as early as their fifties, with relatively generous defined benefit pensions. The Blair administration has made various half-hearted attempts to raise the effective retirement age of public sector workers, but this sector remains a stronghold of trade unionism in contrast to the private sector, where the Thatcher administration succeeded in dismantling militant trade unionism and where, as I have described, there has been a general shift towards funded DC provision.

*Saving incentives and redistribution:* A second key issue concerns the interaction between the greater redistribution towards poor and middle income pensions which has been an aim of government policy since 1997 (if not before) and the desire of government to encourage private retirement saving. With the decline in private sector DB coverage, and greater emphasis on individual provision of retirement saving, incentives to save for retirement have become an increasingly important issue. As suggested previously, there is evidence that individuals respond to tax incentives but the value of these tax incentives for retirement saving has tended to decrease since the windfalls provided by the introduction of Personal Pensions in the early 1990s. Moreover, the indexation of Pension Credit thresholds to earnings growth means that an increasing proportion of pensions will potentially become eligible for this extra benefit. Since Pension Credit is withdrawn at a high effective tax rate against outside income (such as income from accumulated assets),

there is a strong disincentive to save for retirement for low to middle income earners.

The tension between targeting of public pension benefits (to keep average public spending down) and consequent disincentives (which raise the marginal cost of retirement saving) lies at the heart of the UK's pension problem. A series of reviews, culminating in the deliberations of the government appointed Pension Commission, due to report at the end of November 2005, have attempted to grapple with this problem. The basic problem is that there is little incentive for many low and even middle income individuals to save as they would be better off on BSP/S2P and Pension Credit. But this raises the cost of public provision and also generates relatively low replacement rates for middle income groups (compare Figures 1 and 2). There is therefore perceived to be a "savings gap" between what households *need* to save for retirement to achieve a reasonably high replacement rate and what they are actually saving. It should be added that most macroeconomic aspects of the "savings gap" are very much "back of the envelope calculations" (and very small envelopes at that) and that these estimates lack any analysis of other sources of wealth available to older households, such as housing wealth.<sup>3</sup>

Various reforms have been suggested to this problem including an increase in the generosity of the universal basic state pension and phasing out of Pension Credit (which would be expensive), with perhaps an age-related element to the pension (with older people, for example aged 75+, receiving higher pensions). The issue of compulsion in retirement saving is also a central topic, and whether the UK should introduce, like Australia, a compulsory retirement saving requirement, by which households are required to invest a certain proportion of their income in some form of mandated DC pension plan. This last solution has been well canvassed but has raised many objections: it goes against the essentially voluntary nature of UK private pension arrangements, it forces low earners to invest in a programme earning negative returns (since they would otherwise be eligible for Pension Credit) when such people might be better served investing

in other assets (such as home ownership or in further education), and so on.

### Excessive Complexity

The United Kingdom's pension programme has, as shown in previous sections, been subject to a high degree of incremental reform. This has had the major advantage of avoiding a sustainability problem in the public pension. The drawback is increasing complexity, which exacerbates the "saving problem" described previously. In the face of imperfect information and regular changes in policy, it is hard for individuals to make "rational" choices concerning life cycle saving. In my view, it is this, rather than short-sightedness or other defects of individual planning, that lies at the heart of the "saving problem". The tendency has been for each successive political administration to belittle previous pension reforms and to trumpet new "fundamental" reforms of the pension programme, often before any such reform programme has been thought out coherently. Tensions between the Cabinet Office and the Treasury under the Blair administration as to the direction of reform have also not helped. Suggestions to simplify the programme might include: a restoration of the primacy of the basic state pension and consistent indexation of the various parameters of the public programme, and attempts to unify various private retirement saving instruments (especially of the "defined contribution" type) into a single unified "pension account".

### "Asset meltdown"

The final risk, sometimes mentioned in the UK context, is that high exposure to capital markets (UK pension funds have traditionally been equity-dominated) expose UK pensioners to excessive asset risk, especially if demographic ageing causes a shift from net inflows into pension funds to net outflows as "baby boomers" retire. This is a substantial issue, on which much has been and will be written. My own view is that, whilst recent downturns in equity markets have been a salutary lesson to pension fund managers, the international diversification of UK pension plan funds, coupled with the diversification of UK pensions themselves into public and private provision, DB and DC provision, etc., should allow the UK's programme to adopt a balanced response to the *variety* of risks: political, labour market and investment risks, to which pension programmes are exposed. By avoiding placing all the eggs in the basket of wholly *public* provision of pension pensions, the UK has avoided some fundamental problems that beset many continental European countries.

<sup>3</sup> Estimates of the wealth of older households have been conspicuously lacking in the UK. For older estimates based on data from the early 1990s, see R. Disney, P. Johnson, G. Stears: Asset wealth and asset decumulation among households in the Retirement Survey, in: Fiscal Studies, Vol. 19, No. 2, May 1998, pp. 153-175. For more recent evidence, see J. Banks, C. Emmerson, Z. Oldfield: Preparing for retirement: the pension arrangements and retirement expectations of those approaching state pension age in England, Institute for Fiscal Studies Working Paper W05/13, 2005.

Marek Góra\*

## Adequacy of Contributions: The Key Goal of the Polish Pension Reform

The traditional (continental) European way of thinking on various social benefits, including pensions, is dominated by an attempt to provide needy groups of people with help at a level that is perceived as socially just. The level is typically defined as a percentage of a statistical measure of the labour income of other citizens. Sharing income with those who need this is natural and good, as long as society knowingly participates in taking decisions on the scale of such redistribution. A problem arises when the social utility of transferring a part of society's income becomes smaller than the disutility of reducing the disposable income of the society. This paper does not discuss socially effective versus ineffective types of redistribution in general. The key problem discussed is whether the pension system, especially its old-age part in its traditional form, is socially effective.

A pension system assuming obligatory participation is a special case within social policy since it is based on redistribution between generations. Each of the generations is first a working generation and then a retired generation. Irrespective of the particular type of pension system the level of pensions depends only on the level of the burden on the working generation and on demographic structure.<sup>1</sup> This relationship can be temporarily violated but then the welfare of subsequent generations varies. Given current and projected changes in the demographic structure that means a reduction in the welfare of subsequent generations.

The design of traditional pension systems is institutionally as well as conceptually rooted in the situation observed in Europe many decades or even a century ago. The key goal at that time was to support the very old who would not survive without help. Family structure proved to be insufficient to provide them with such help, so institutionalised help became necessary. Since that time life expectancy has substantially increased (including disability-free life expectancy). At

the same time a couple of post-war decades of strong economic and demographic growth led to a lowering of effective retirement age. Consequently those who retire are no longer very old. The social rationale behind the system is much less strong. Moreover, demographic change led to a situation in which the vast majority of those who enter the labour market as workers leave it as pensioners. Hence, the nature of the system has changed from insurance (many people pay contributions, few people receive benefits) to saving (people receive back what they paid in plus interest – if not those who still pay have to pay more).

The design of the new Polish old-age (OA) pension system stems from the observation that traditional pension systems constantly favour the welfare of each current generation at the expense of coming generations. Consequently, the new Polish system aims at intergenerational equilibrium understood as equal value of welfare of each subsequent generation. The system's design is focused on the key role to be played by the system, namely the role of an institutional framework for intergenerational exchange.

In this paper I focus my presentation of the Polish system on the above-mentioned key goal. The technical details of the design are also presented but only to the extent that they play important economic or social role.

### Initial Situation: Traditional (Continental) European Pension System

From the twenties until 1998 Poland ran a defined benefit system, a typical case of a "Bismarckian" pension system. That system was terminated for people born after 1948 but it still exists for people born before 1949. The level of pensions was and still is determined by a formula (the replacement rate typically slightly below 70 per cent). Regulations related to the old system are very complicated, and full of exceptions and special arrangements. Effective retirement age is

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<sup>1</sup> This relationship can be derived from a simple model of demand for, and supply of, pension rights. Cf. M. Góra: Reintroducing Intergenerational Equilibrium, William Davidson Institute Working Paper No. 574, 2003.

59 for men and 55 for women. Pensions have always been paid punctually.<sup>2</sup>

Demographic change together with early retirement schemes<sup>3</sup> led to growing costs of the system, contributing to the tax wedge and consequently to persistently high unemployment. The entire social security contribution increased from 15.5 per cent in 1981 to 45 per cent of the individual wage base in 1998. OA expenditure was slightly above half of total social security expenditure.

The cost of participation in the OA system has constantly been increasing and according to projections this cost would keep increasing very sharply from 24 per cent in 1998 to around 48 per cent in 2050. If the cost of participation had not been increased the system would have gone bankrupt a long time ago.<sup>4</sup>

The termination of the old system was necessary to avoid further worsening of the situation. The OA expenditure contribution to the budget deficit was 0.98 percentage points in 1998. If the system had not been terminated it would contribute 5.5 percentage points to the 2050 budget deficit. However, the most important reason for the termination of the old system was the risk it created instead of security for system participants.

### **Social and Economic Foundations of the New System Design**

The welfare of the entire population – including coming generations – should be given the same value. Each generation prefers its own welfare to the welfare of coming generations. Politicians are aware of that and provide their voters with methods to push the cost of their welfare onto coming generations. The game can be played until one generation refuses to pay inherited bills. This can be done either directly (rather unlikely) or indirectly. In the latter case the working generation, being demotivated, may slow down its economic activity or hide it.

The condition for long-term intergenerational equilibrium is:

<sup>2</sup> People are very sensitive in this respect. Allowing for pension payment arrears would be a kind of political suicide for any government.

<sup>3</sup> Early retirement schemes mostly originated in the early 1980s, just after martial law was introduced. Promising early retirement was a part of policy to reduce political protests. The bill for such a policy implemented in the 1980s is payable now.

<sup>4</sup> The structure of the traditional pension system is similar to the Ponzi scheme.

$$\frac{GDP^R}{GDP} = const$$

where:  $GDP^R$  is the part of GDP allocated to the entire retired generation.

The ratio can vary year by year but in longer intervals it must be constant. If not, then the welfare of one generation will be preferred to the welfare of another one. Keeping the ratio constant is the role of the pension system. Changing demographic structure means that the system has to be adjusted in order to keep the ratio constant. Traditionally adjustment was left to discretionary policy decisions. This type of exogenous adjustment proved to be inefficient since politicians tend to avoid decisions that can be perceived badly by the public. So even if provided with expert advice, politicians do not take the necessary decisions unless the system is on the brink of collapse.

The adjustment can be also achieved automatically, without the need to take political decisions. This endogenous adjustment is possible if the entire system is based on individual accounts. Such a system of accounts can, but does not need to, use financial markets. Using individual accounts causes the present value of individual contributions to equal the present value of pension benefits and, in consequence, the present value of the entire flow of contributions equals the present value of the flow of benefits. The system adjusts automatically, providing society with stable security. The welfare of each subsequent generation is not affected. The remuneration of production factors is not affected by the pension system. The economy works as if the pension system did not create any burden on the people.

The design of the new system is not based on the opposition of social and economic goals. On the contrary, the design combines the two types of goal focusing on long-term intergenerational equilibrium that is both an economic and a social goal. From the above viewpoint we can say the key goal of pension reform is to let pension expectations adjust *ex ante* in order to avoid a need to reduce pensions *ex post*.

### **Design of the New Polish OA Pension System**

The commonly used term “pillar” is also used in public communication in Poland. However, it is not needed to explain the merits of the design of the new Polish system. The explanation is much clearer if the Polish system is perceived as a “no-pillar” one.

Intereconomics, September/October 2005

**Table 1**  
**Introduction of the New System (Age Groups)**

<i>New system</i> (people born after 31 Dec. 1948)		<i>Old system</i> (people born before 1 Jan. 1949)
People born after 31 Dec. 1968	People born before 1 Jan. 1969	
<i>Automatically covered by the new system; OA contribution automatically split between two accounts [NDC+FDC]</i>	<i>Automatically covered by the new system; OA contribution either split between two accounts or paid into one account [(NDC+FDC) or NDC]</i>	<i>Stay in the old system (no possibility to switch for the new one); no accounts</i>

Description of the new pension system is often focused on technical details. Here I present the design of the system from an economic viewpoint.

*Focus on the mandatory part of the system.* Of two options, namely reforming the mandatory (public) system versus supplementing the existing mandatory system with additional voluntary (private) options, the former was chosen and applied in practice. Additional options are available for more affluent groups of people. Less affluent groups can in principle be supported via budgetary channels but this creates additional problems and makes the pension system even less transparent than it typically is. If we accept the view that a public mandatory system is needed then it has to work effectively. Leaving it as a “reservation” for less affluent people could be an easy economic solution but it would not be desirable from a social viewpoint.

*Separation of the OA part of social security from the non-old-age part of social security (NOA).* A long time ago, when the foundations of traditional pension systems were established, it was rational to combine the so-called old-age risk with other social risks such as disability, sickness and so on. At that time most workers died before retirement. The risk stemmed from being too old to earn. Nowadays the vast majority of those who enter the labour market retire afterwards. The risk of unknown longevity becomes significant after retirement. Consequently, paying contributions is saving, since future benefits will not be significantly increased by the contributions of those who die before retirement. The OA pension system in the accumulation period is different from other elements of social security that remain risk-related. Separating the OA part was one of the key decisions that were necessary to make the reform possible.

*Termination of the OA part of the previous system.* Using the term reform is partially misleading in the Polish case since the old system was not reformed

**Table 2**  
**Mandatory Contributions in Poland before and after Implementation of the New Pension System**

	Total	NDC individual account	FDC individual account	Other elements of the system
before 1 January 1999				
Mandatory contribution	36.59 <sup>a</sup>	--	--	36.59
since 1 January 1999				
Mandatory old-age contribution	19.52	12.22	7.3	--
Other mandatory contributions	17.07	--	--	17.07

<sup>a</sup> Equivalent of 45 per cent (after grossing-up).

but its OA part (defined benefit) was terminated and replaced by the new OA system (defined contribution). The old system was kept only for older people (see Table 1).

Those people who started their working careers before 31 December 1998 received the “initial capital”. This was a hypothetical amount that would have been needed by the old system to pay them pensions at the age of 65 taking into account only the period in which they actually paid contributions.<sup>5</sup> Actually the best short explanation of the termination of the old system is to say that on 31 December 1998 everybody (those to be covered by the new system) retired from the old system, receiving to their new system accounts whatever was due according to the old system rules.

*Creation of a new OA pension system.* The new OA system receives the entire OA contribution (see Table 2). Individual contributions are channelled through individual accounts. The contributions create account values. Account balances from the close of the preceding period earn a rate of return. Only paid contributions create pension system liabilities. If for any reason a group of people should receive additional pension rights (parental leave, military service etc.) then additional contributions need to be paid into individual accounts. The old system in similar cases just promised additional pension rights to be financed out of future contributions. That created a strong incentive to distribute various promises.

*Splitting each person's OA contributions.* In order to provide the system with more stability it was split into two parts based on two different types of individual

<sup>5</sup> The old system formula had to be appropriately adjusted since in the original version it did not allow for retirement irrespective of age.

<sup>6</sup> The publicly promoted name of the new system was “Security through Diversity”.

accounts.<sup>6</sup> The first account is the NDC (non-financial defined contribution). It is based on government quasi-bonds not traded in financial markets, bringing a rate of return equal to wage sum growth (GDP growth in the long run). The second account is the FDC (financial defined contribution). It is based on instruments traded in financial markets, bringing a rate of return generated in the markets.<sup>7</sup> From the participant's viewpoint the two accounts are very similar. The two accounts are different in the way in which the contributions flowing through the system are managed.<sup>8</sup>

NDC accounts are managed by a state institution. However, the institution could be privatised without any need to change the way in which contributions are managed. FDC accounts are managed from the very beginning by specialised private asset management firms supervised by a state agency.

Both accounts play exactly the same role within social security.

*Annuity of account values.* NDC as well as FDC accounts are part of the universal mandatory social security system. This requires aiming at the social goal of the system, namely providing people with a method of efficient allocation of income in the entire period of life. Therefore only annuities can be used as a method applied for the payout phase.

In the new system account values accumulated in both types of accounts are transformed into annuities on the day of retirement. Individual annuity depends on two factors, namely accumulated account value and the age of the retiring person on the day of retirement.

*Minimum pension supplement.* The new system is individualised. Among other things this means there is no redistribution within the system. However, redistribution is not abolished but it is simply moved to the state budget. For many reasons the pension system is not a good channel for financing redistribution. To mention just a few: lost transparency of participation in the pension system, smaller tax base, only labour is taxed, linear contribution (tax) rate.

<sup>7</sup> In the long run the two rates of return will converge. The financial one can be larger only in two cases: the first is buying foreign instruments, the second at the expense of the next generation (if pension portfolios are based on instruments systematically better than average).

<sup>8</sup> One may say NDC contributions are spent on current pensions while FDC contributions are invested. Money is always spent. If FDC contributions are spent on government debt instruments then it is equivalent to NDC contributions. If they are spent on private instruments then we may expect dynamic effects but this is not a part of the pension system.

In the new system minimum pension guarantee is financed out of the state budget. If in the case of a particular person the sum of annuities, to which each of the two individual accounts have been transformed, is below a certain level then a supplementary amount is transferred to this person. This method of financing does not affect the pensions of the remaining participants.

### Phasing-in the New OA System

Starting from 1 January 1999 the entirely new system replaced the old one for all people born after 31 December 1948. Participation in the new system was not subject to individual choice. The new system automatically covered the entire group of people born after that date. There was no switching. However, a group of participants took decisions on choosing one of two versions of the new system. Decisions were taken in the period until 31 December 1999. Table 1 provides details.

Since 1 January 1999 social security contribution is split into four separate contributions, of which relevant for this paper is the distinction for OA and NOA (the three other contributions). Table 2 provides details.

The implementation of changes in pension systems is always difficult. Even minor rationalisation pushes people to protest. Paradoxically, minor changes provoke protest as strongly as, or even more strongly than, radical reforms. This is probably the case because people feel cheated by pension systems. Their perception of the situation can be summarised as receiving much less than they have paid in. In fact it is just the opposite: the present value of pension benefits is typically larger than the present value of contributions paid, which is exactly the reason for reforms. Minor rationalisation is perceived as more "cheating", while deep reform is perceived as termination of the system that cheats.

The pension reform implemented in Poland in 1999 was very radical. The system was substantially changed; actually the old system was terminated and replaced by the new one. That helped in promoting the new system. The general public as well as most political parties and also trade unions supported the reform or were neutral. The media also played a very positive role explaining and promoting the new system.

Poland had one additional "rent", which made the radical reform possible. Although it was not a part of the economic transition which Poland was still undergoing at that time (the second half of the 1990s),

people perceived the reform as a part of the necessary transition. Moreover, the transition of the 1990s was really deep. It changed a lot in the country so people got used to changes. Contrary to stable western societies, Polish society was open to new arrangements. This dynamic economic and social environment worked in favour of the reform.

The Polish reform was designed with very limited political influence. A task force preparing the reform was politically protected but at the same time politically independent. The new system was designed without political guidelines. The reform proposal prepared by the task force was almost 100 per cent accepted and implemented.<sup>9</sup> Three subsequent governments of very different origins supported the new system.<sup>10</sup>

Implementation of the new OA pension system contributes and will continue to contribute for many decades to the economic and social potential of the country. According to projections pension expenditure will decrease significantly in the decades to come, which is contrary to the projected increasing expenditure in most other OECD countries.<sup>11</sup>

### Remaining Tasks

The new OA system does not need any type of further reform. The existing design of the system is the target one. It is economically efficient and socially just. There are however, some remaining legislative tasks. They concern parts of the system's institutional infrastructure that are not needed right now but will be needed soon. Moreover, the lack of these pieces of legislation creates a feeling of insecurity, which negatively affects perception of the functioning of the new system. So it is highly desirable that the missing pieces of legislation are processed without any further delay.

There are two laws that need to be passed through parliament, namely the law on annuities and the law on bridging pensions. The former is politically easy but non-trivial from the point of view of merits, while the latter is technically easy but politically sensitive.

<sup>9</sup> The only substantial deviation from the original design was not accepting equal retirement age for both genders.

<sup>10</sup> There have been partially successful attempts to make changes in the new system. Fortunately the undesirable effects have not been devastating.

<sup>11</sup> According to T. Dang, P. Antolin and H. Oxley: Fiscal Implications of Ageing: Projections of Age-Related Spending, Economics Department Working Paper No. 305, OECD, Paris 2001, the decrease in pension expenditure will be 2.5 per cent of GDP by 2050. Poland will be the only country within the OECD area to reduce the expenditure so substantially.

### The Law on Annuities

Existing legislation clearly states that annuities will be the only form of OA pensions. It is the logical consequence of keeping the entire OA pension system within the social security framework irrespective of the way of managing the contributions flowing through the system. Account values accumulated in both types of individual accounts will be transformed into annuities. The existing legislation does not, however, state exact rules for that transformation in the case of FDC individual accounts, and it does not precisely define the type of institution that will provide financial services needed for the functioning of the payout part of the system. The transformation of NDC accounts is much better legislated. However, existing regulations can be improved.

As to FDC accounts, two possible options are taken into account. First option: each cohort of retirees is served by a sole insurance firm that has the necessary capacity to provide the entire service. The firm would be selected in a tender. Second option: investment and insurance activities are separated. For investment a set of asset management firms is selected in a tender repeated for each consecutive turn of annuitisation of account values. So the managers just deal with the assets in a way defined by a sole insurance firm dealing with risk within the entire system. The second option looks more complicated and less "natural" but in fact it suits better the social goal at which the OA pension system aims. Additionally, if the second option is chosen then it will be logical to combine many activities needed for the annuitisation of both types of account. If the first one is chosen then the payout phase will substantially differ with respect to each of the two accounts. Eventually, it will probably be feasibility of implementation which will play a crucial role in choosing the option. The first option is easier from both financial market routines and public perception viewpoints. The most important goal is to avoid arrangements that do not fit the social nature of the entire universal OA pension system – even if these arrangements are rational in private voluntary schemes.

### The Law on Bridging Pensions

Applying the same rules to all participants is one of the key features of the new universal system. Bridging pensions are needed to supplement the universal pension system with arrangements needed for selected occupations that are performed in special conditions (for instant miners working below ground) or that have a special character (for instance pilots). The idea of



bridging pensions strongly differs from the early retirement widely used in the previous system. Early retirement is an arrangement within the mandatory pension system, which means that rules in the obligatory system are not universal, so in many cases early retirement schemes lead to unjust treatment of people. In general early retirement leads to retiring much below the statutory age.

Bridging pensions do not change the rules within the system. The rules stay unchanged irrespective of the particular occupation of a pension system participant in the course of his or her working career. If a particular occupation needs special pension arrangements they are provided on top of the universal system. The cost of the bridging pensions will be covered by those employers who employ workers in jobs that may affect their health status. However, the bridging pensions will not be available for ever. It is a temporary arrangement for those workers who have already worked for a long time under special conditions or in an occupation with a special character. Those who have not yet worked under these conditions or in these occupations for a long time, and new employees, will receive extensive assistance in preparation to switching to another occupation early enough to avoid any occupationally related health problems instead of the bridging pension.<sup>12</sup>

The problem leading to the political sensitivity of bridging pensions is the fact that their availability will be subject to health-related arguments only, while widespread early retirement is mostly related to the power of various groups of workers.

<sup>12</sup> Details on occupationally related health issues have been analysed by a work medicine expert commission. The report of the commission defines a list of cases that should be subject to bridging pensions.

### Concluding Remarks

In discussions on pension systems the adequacy of contributions is often neglected, while replacement rates are central. In many cases fears based on the expected reduction of replacement rates postpone decisions on starting pension reforms. In fact the replacement rate depends on the decision on the amount of the income of the working generation which is to be shared with the retired generation (contribution rate) and on demographic structure. The new Polish OA pension system aims at adequacy of benefits as well as adequacy of contributions. Protecting workers' income is as much a social goal as protecting pensioners' income.

It is worth noting that the pension reform in Poland is very similar to the reform implemented in Sweden. The two countries implemented the new systems on the same day. The two countries strongly differ, which matters much less than we could expect, however. New challenges, such as ageing, require designing new methods that will allow the achievement of social goals in the future, too. Using inefficient methods may lead us to give up the social goals one day.

The high burden put on the working generation (production factors) by an inefficient pension system weakens the growth of welfare of current and coming generations. Due to the implementation of the new system in Poland, OA pension expenditure will substantially drop from one of the highest levels now to one of the lowest in the OECD area in 2050. The low costs generated by the need to service the pension debt will let Poland grow more quickly than would be the case if Poland had to cover the costs at a level similar to the majority of other countries in the region.

Edward Palmer\*

## The Way Forward for European Pension Schemes

This paper argues that future pension systems must fulfil at least three requirements better than the pay-as-you-go national pension systems that emerged in the second half of the 20th century in Europe and

that to do this countries will move towards defined contribution pension systems. The reasons why this is

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<sup>1</sup> R. Holzmann: Toward a Reformed and Coordinated Pension System in Europe: Rationale and Potential Structure, in: R. Holzmann and E. Palmer (eds.): Non-Financial Defined Contribution (NDC) Pension Schemes: Concept, Issues, Implementation, Prospects, Washington DC 2005, The World Bank.

**Table 1**  
**Cost of Pay-As-You-Go Pension System**

No. of years of work	No. of years of retirement	Contribution rate with:	
		Replacement rate of 60%	Replacement rate of 70%
40	15	0.23	0.26
40	23	0.35	0.40

necessary are first, national pension systems should be fairer across generations than their predecessors of the past half century. Second, they should be neutral or supportive to labour mobility, because labour mobility will be important in the EU of the future. This is also argued in Holzmann,<sup>1</sup> who bases his argument in part on the fact that rigid wage adjustment will partially be offset by labour migration. Third, national pension systems should facilitate flexible labour force exit of older workers. With low fertility rates migration – within and to the EU – will also help to alleviate excess demand for labour. However, nations have all become interested in devising ways to encourage healthy older workers to remain in the labour force. The DC framework provides numerous possibilities to facilitate prolonged work careers – however perhaps combining work and pensions.

The conclusion is that, in order to fulfil these requirements, Europe will move in the direction of defined contribution. Some countries have already made this step, but for many it still has to be taken. For many countries this will also mean a new way of approaching distributive issues that arise within the framework of pension policy. We begin by discussing why post-war pension systems were not designed to last in order to set the stage for what is to come and then how DC systems better fulfil the requirements for the future.

#### **Why Post-war Pension Systems Could Not Last**

When national pension schemes first came into being over a century ago, first in Bismarckian Germany and shortly after the turn of the century in the United Kingdom, the immediate goal was to provide some protection from absolute poverty due to work incapacity brought about by injury, old age or the death of a breadwinning spouse. Pensions were meagre and with a pension age of 70 most men especially could not expect to live long enough to claim a benefit so that at best what remained was a survivor benefit for their spouses. This was the first phase in the development of national pension systems.

The second phase in the development of national pension systems emerged around a decade after the Second World War. Part of the story behind the emergence of pay-as-you-go schemes at this time was that, where they had existed prior to this, funded schemes had collapsed in the long period of economic disheaval preceding and during the war and many nations had no choice other than to start from scratch. More so, not only the financial but also the human capital of workers born in the 1910s and 1920s had been ruined by two World Wars and a deep economic depression. There was little hope that older workers could provide for their own retirement through individual saving or insurance schemes. It made sense, then, to create pension schemes that would transfer resources relatively quickly from workers to pensioners in the 1960s and 1970s with generous criteria for previous earnings and contribution histories. This was the world in which generous national pay-as-you-go systems emerged in Europe and elsewhere.

However, there were other forces at work, too. Employers had probably never been enthusiastic about retaining older workers, and were more than willing to let the public sector take over responsibility for the income support of the older workers they wanted to shed. Unions easily relinquished job protection of older workers for a longer financed period of retirement. By the mid-1970s generous national pay-as-you-go schemes provided benefits at much lower retirement ages than before the war, accommodating the interests of both employers and employees. What's more, with the introduction of generous national pay-as-you-go pension systems came the idea of the *life course model*, which embodied the view that there should be a period of paid leisure at the end of the working career.

Social policy experts and politicians lured themselves and the general public into thinking that the extremely generous systems established to provide adequate benefits for older workers retiring in the 1960s and 1970s could continue several generations

<sup>2</sup> The fundamental equation is contribution rate = (years in retirement x benefit)/(years of work x wage), where the ratio of the benefit to the wage is the replacement rate.

<sup>3</sup> Góra and Palmer discuss in greater depth how these differ in economic terms. Cf. Marek Góra and Edward Palmer: Shifting Perspectives in Pensions, IZA Discussion Paper No. 1369, 2004.

<sup>4</sup> Before Sweden legislated NDC in 1994, it was generally thought that NDC was an impossible construction. E. Palmer: What is NDC?, in: R. Holzmann and E. Palmer (eds.), op. cit., describes NDC in detail. R. Holzmann and E. Palmer (eds.), op. cit., is an anthology on the topic.

**Table 2**  
**Categories of Pension Schemes**

	Defined Benefit	Defined Contribution
Financial	FDB	FDC
Non-financial	NDB	NDC

forward to provide a subsidised period of leisure with exit from the labour force at a fixed low age. Pension ages of 55-60 emerged in many countries. Looking back it is now easy to say that it was all too easy to take the high growth environment created by the reconstruction of post-war Europe as a given for the future. Pay-as-you-go pension schemes as well as other public transfer schemes always fare much better in a high growth environment.

A basic fact of pension economics that came out of focus in discussions even through the 1980s in many countries is that rapidly increasing longevity means that the cost of a fixed pension age is forever increasing. With an increase in longevity of one year per ten calendar years of time that passes – which is about the rate at which longevity from age 60-65 has been increasing during the past century – a worker born in 1970 and entering the labour force around 1990 could expect to live about eight years longer from age 65 than a worker who had retired in the same year. With this rate of increase, increasing longevity alone leads to more than a fifty per cent increase in costs over these three generations of workers as is seen in Table 1, which is based on a fundamental equation of pension economics.<sup>2</sup> In other words, the idea that national pension schemes should provide a defined benefit at some fixed age for generation after generation of workers is in conflict with fundamental pension economics.

Pay-as-you-go schemes came to be called solidarity schemes because they imply a contract between generations. However, “contractual conditions” in line with the above example are simply not possible to fulfil in the long run. In fact, if one expands the definition of solidarity to mean that all generations are to pay the same per cent of their income in contributions, then, by definition, a defined benefit system that passes off the costs of later entrance into and early exit out of the labour force, combined with increasing longevity soon breaks with the spirit of solidarity. In other words, the

<sup>5</sup> In fact, it is often argued that an advantage of financial DB schemes is that benefits can be tailored by the employer to favour certain employees or employee categories.

philosophy behind defined benefit pay-as-you-go systems underlying systems that emerged in Europe in the period (roughly) 1950-1975 was very unfair to coming generations, displaying a low degree of solidarity with future generations of workers. This is a well-recognised fact and has been the major driving force behind the reform of national pay-as-you-go pension systems – the third phase in pension reform.

### Where Are Pension Systems Headed Then?

In thinking about the direction in which national pensions are developing it is useful to think in terms of four categories of pension schemes. These are identified using two dichotomies – defined contribution versus defined benefit and financial versus non-financial.<sup>3</sup> This gives the terms financial defined contribution (FDC), financial defined benefit (FDB), non-financial defined benefit (NDB) and non-financial, or notional defined contribution (NDC).<sup>4</sup> NDB and NDC are unfunded schemes and with the exception of possible demographic funding, their assets are claims on future contributions. FDC and FDB are funded schemes, but within the latter there may arise internal redistribution of contributions – a sort of internal tax-transfer system the overall dimension of which is seldom if ever clear to the participants.<sup>5</sup>

In order to create fairness across generations, be neutral with regard to or support labour mobility and provide a supportive framework to facilitate flexible labour force exit of older workers the claim made here and discussed in the following is that national pension systems must move in the direction of FDC and NDC. Where commitments of pay-as-you-go systems are large and the burden of introducing FDC is high, NDC will become the logical alternative, although mandatory FDC top-ups are likely to arise too. The move in this direction is already happening. First, we summarise what is happening in Europe, and, second, we discuss why it is happening.

Within the EU-12, Sweden and Italy began the move in the direction of NDC in the mid-1990s. Among new EU members, reforms in the 1990s led to the introduction of FDC schemes in a number of countries – e.g. Estonia, Hungary, Latvia, Lithuania and Poland – and to NDC in Latvia and Poland. In the UK the dominant

<sup>6</sup> Cf. for example Assar Lindbeck and Mats Persson: The Gains from Pension Reform, in: *Journal of Economic Literature*, Vol. XLI, March 2003, pp. 74-112.

<sup>7</sup> A-C. Ståhlberg: ATP-systemet från fördelningspolitisk synpunkt (Distributional aspects of the ATP system), *Expertrapport till Pensionsberedningen*, SOU 1990, p.78.

trend is from financial defined benefit schemes towards financial defined contribution, and Sweden has also introduced a mandatory FDC scheme on top of its NDC scheme.

### Financial and Notional Defined Contribution Pensions - What Is Their Attraction?

Why are NDC and FDC schemes emerging? To understand this, let us first review their essential characteristics. Both FDC and NDC schemes are insurance schemes in which contributions to accounts are defined in terms of a *fixed* contribution rate on individual earnings. A definition of fairness across generations applicable in the pension context is that the percentage of individual earnings transferred between generations is the same for individuals in all generations. By definition, the fixed contribution rate creates close if not precise intergenerational fairness.

In NDC and FDC schemes individuals pay contributions into the insurance system during the accumulation phase – prior to retirement – and receive an annuity at retirement. The annuity is based on their own account balances at retirement and the life expectancy of participants in the same birth cohort.

Financial accounts earn a financial rate of return. Just as in a financial system, NDC accounts can also be viewed as “earning” a rate of return. Unlike financial accounts, this rate is determined by the system’s “internal rate of return.” In principle, the internal rate of return is the mechanism that guarantees financial stability – or near stability, depending on exact design – with a fixed contribution rate. The internal rate of return is determined by what the system can afford to pay while keeping long-term balance between system liabilities and assets. It is determined by the average real wage of covered participants and the number of participants, together with parameters determining the timing of payments into and out of the system.

The rate of return constitutes an important distinction between NDC and FDC schemes. There is a welfare loss associated with NDC if the FDC rate of return is on average higher, which conventional wisdom says it will be.<sup>6</sup> However, as is well-known, conversion from

<sup>6</sup> It is still the case, however, that there is a welfare loss associated with NDC if the rate of return in FDC exceeds the rate of return in NDC. However, as is well-known, conversion from a pay-as-you-go to a financial framework creates a double payment burden on the transition generation, thereby making spontaneous conversion from given pay-as-you-go schemes undesirable. NDC affords a possibility to make a conversion that provides neutrality in terms of its effect on labour supply.

a pay-as-you-go to a financial framework creates a double payment burden on the transition generation, thereby making spontaneous conversion from pay-as-you-go schemes costly. In the European context, the existence of comprehensive pay-as-you-go commitments makes the introduction of FDC schemes where they do not already exist on a large scale expensive and thus less practical. For this reason FDC is less attractive than NDC in many country settings. Neither does NDC create pension saving as does FDC. On the other hand NDC may have an indirect effect on private saving since it sets a clear limit on the public commitment.

In DB schemes redistribution occurs within the system. Some participants are taxed and others are the recipients of these taxes. The result of this “taxation” is not always directly in line with the goals of social policy. For example, Ståhlberg<sup>7</sup> performed calculations that the pre-reform Swedish *folkpension*-ATP scheme was strongly regressive. As is well-known, DC schemes do not aspire to redistribute contributions among participants. In principle, NDC and FDC old age insurance schemes are just that, i.e. insurance schemes. They must be *complemented* with transparent and targeted distributional policy, which, as opposed to within the DB context, is formulated *explicitly*. It can be claimed that this is in fact an advantage over the DB scheme as a mechanism for distribution since the objectives of distribution are clearly identified when formulated explicitly – and not buried in a DB formula that requires expert analysis to understand the impact on individuals and groups of individuals.

### Social Policy in a DC World

What are the social-policy, distributional complements to DC schemes that can (and should) come into question? Foremost is to provide a minimum income level to safeguard against poverty in old age. This is done by establishing a minimum guarantee level as a complement to the DC scheme. The second objective of distributional policy is to finance non-earnings-related rights. Many policy-determined rights are conceivable. Two clear examples are rights earned during child care in the years immediately following childbirth (or time in military conscription etc.) and old-age rights for persons who have exited the labour force with disability benefits, for insured periods of sickness and unemployment.

<sup>7</sup> Cf. also E. Palmer: Is Swedish Pension Reform the Right Medicine for Aging Europe?, in: *Journal of Aging and Social Policy*, Vol. 14, No. 1, 2002, pp. 35-52; and R. Holzmann, op. cit.

Both the guarantee and non-earnings-related rights must be financed with revenues that are external to the defined contribution schemes – that is with general tax revenues – in order to maintain system financial balance in the DC insurance schemes. For non-earnings-related rights money is moved from general tax revenues into the NDC buffer fund and individual FDC accounts. This forces politicians to finance distributional reforms (including privileges for special groups if they so wish) at the same time they are legislated. The requirement is that deviations from the insurance principle (of an exact link between contributions and benefits) must be accompanied by finances. Politicians can no longer get away with dropping the whole price tag off on distant generations of workers.

### **Labour Supply and Mobility in a DC World**

With no redistribution among participants in DC schemes, in principle, there is no tax distortion on labour supply.<sup>8</sup> For this reason NDC, like FDC, provides neutrality in terms of its effect on labour supply. An account value can either be transferred to a new account system or maintained until claimed at retirement – without creating an impediment to move between places of employment, branches, sectors and countries.<sup>9</sup> Many DB schemes, especially occupational and branch schemes, tend to define benefits in terms of final salaries. This may create a barrier for older workers to change jobs, move between sectors etc. Furthermore, if the employee leaves a financial DB scheme in conjunction with a job change he (she) may even be excluded from that point from fund growth in an FDB scheme – which is not the case for NDC and FDC schemes. In other words, the conditions of many FDB schemes have the effect of locking employees into a place of work, whereas DC schemes permit free flow of labour without penalisation through the pension system.

As regards national NDC schemes, in a hypothetical Europe in which every country had such a scheme, people would have the same individual account scheme regardless of their country of residence, although it would still be a free choice for countries to provide social policy “extras”, including setting the guarantee level in their country, the level of child care credits etc.

Both NDC and FDC facilitate gradual exit from the labour force. It is easy to claim a part of one’s possible benefit – for example half – while continuing to work, but only part-time. In addition, the contributions on this work continue to enhance account values, and

remaining accounts continue to earn a rate of return. In essence any combination of retirement and pension withdrawal is possible – which provides optimal flexibility. A caveat is that tax systems must treat pensions and earned income on the same status. Another caveat is that persons whose own accounts do not bring them above the guarantee – which can only be claimed at a reasonably high age – will have no “pension” incentive to work longer, although they may choose to do so anyway.

What is also necessary is to set a minimum permissible retirement age that gives an acceptable benefit if people still choose to exit with a full benefit claim as soon as they are allowed to do so. Since both NDC and FDC annuities are created by allocating account values to expected life at the time of retirement – based on cohort estimates – too early retirement can yield too poor a benefit. In addition, in order to encourage longer working careers within this framework, it is important to offer the guarantee from a high age – at least 65 in the present European life-expectancy context – but one can easily argue for an even higher age.

Recall that countries have disability schemes to support persons who cannot work due to reasons of health or injury. In addition, it should not be the purpose of the public benefit to encourage early exit from the workforce. Instead, to the extent that specific occupations need this outlet, the cost of providing this option should be a part of the price of the service or good produced. This is an important role for occupational pension schemes to shoulder.

### **A Conclusion**

FDC and NDC schemes, supplemented by current-revenue financed social “extras” support intergenerational fairness – and solidarity – in the sense that costs are not pushed onto future generations. NDC and FDC schemes are neutral on labour supply decisions (no distortions due to rules); are neutral in terms of mobility between jobs, occupations, branches and countries; and provide a perfect mechanism to support flexible and partial exit from the labour force for older workers. On all these points they are superior to NDB and FDB schemes which embody the drawbacks that the DC framework eliminates. Therefore, the DC framework, supported by well-thought out social policy supplements financed with general revenues in current time appears now to be the way forward for pensions in the 21st century.