Advance Funding of Pensions

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Project information

This special issue on advance funding in pensions provision is part of the "International Reform Monitor" project of the Bertelsmann Foundation. Compact and up-to-date, the project provides information from an international perspective on current reforms in social policy, labour market policy and industrial relations. An integral part of the Reform Monitor is its international network of respected research and policy institutions from 15 countries.

For this special issue, experts from these institutions (see cover) have reported on the most important reforms concerning advance-funded elements in their countries' old-age pension systems. They have also addressed the fundamental questions of pension design. The responses are drawn from semi-standardised surveys, carried out by the Bertelsmann Foundation. The experts' statements draw on personal judgements and do not necessarily reflect the opinion of their institutions.

A detailed description of the reforms discussed here, as well as further information on pension research is available on the Internet under **www.reformmonitor.org**.

Editorial

The current reports from the "International Reform Monitor" project clearly demonstrate that industrialised countries are reforming their retirement systems in response to demographic trends.[1] An ever-increasing number of countries are introducing advance-funded elements to strengthen the financial security of their entire pension system. These advance funding reforms address the rising costs of pension provision, which are likely to occur with population ageing. Both the OECD and World Bank have voiced strong support for pension funding, while the ILO and ISSA have been more critical of such schemes.

This special issue, *Advance Funding of Pensions*, examines fundamental questions of pension financing. What degree of advance funding is desirable? Should contributions be mandatory? Should there be an obligation to annuitise pension savings? An overview of the current pension systems in 15 OECD countries is supplemented with the opinions of country experts on what *would be* the optimal level and design of pension funding in their coun-

1 The International Reform Monitor's reports can be viewed and downloaded from the project homepage. URL: *http://www.reformmonitor.org/index.php3?mode= reform*

tries. On many fundamental issues, there emerged a broad consensus among the experts surveyed.

Moreover, this special issue describes pension reform plans that have recently been implemented to increase advance funding in the various pillars of the retirement system. Although considerable reform activity has occurred in all countries, the experts agree that the legal framework could still be improved.

The reform proposals discussed here highlight many valuable approaches, which may be of particular interest to those countries planning further advance funding reforms. To obtain more detailed information, this issue contains a comprehensive list of references. Internet links to the 15 countries' relevant institutions are provided, as well as several background articles.

Johannes Leinert
Andreas Esche

1 Introduction to the issue: Can advance funding guarantee pension finances?

PAYG and advance funding schemes could both be adversely affected by demographic trends, but they …

Under a pay-as-you-go (PAYG) scheme, contributions of the current generation of workers support the benefit payments of current retirees. Thus, a PAYG scheme is directly affected by demographic developments which lead to fewer workers and more retirees. In contrast, workers, who make contributions to a partially or fully advance-funded system, are paying for a portion of their own future pensions by accumulating assets.[2] Since their benefits will be financed from the principal and interest of their pension fund, they are not directly affected by a decline in workforce. However, from a macro-economic perspective, the demographic trend might also affect funded schemes: The rate of return on pension fund assets depends on the labour force being productive enough to require additional capital to maintain a relatively high rate of return to investment. A smaller labour force could reduce the demand for capital, while pension funding increases the assets available for investment. In such a case, the return on these assets would fall. If

2 In this issue, the terms advance funding, (full) funding and pre-funding are synonymous.

PAYG and advance-funded pension schemes are both adversely affected by demographic changes, why worry about the advance funding of pensions?

... have inherently different risks

A mix of PAYG financing and advance funding can help diversify risks. Macroeconomic and demographic conditions, as well as political decisions, influence the finances of both types of pension systems. The rate of growth in the work force and in real wages determines the potential rate of return under PAYG. Central to advance funding is the rate of return on assets and overall economic growth. By combining the two financing methods, countries could better address these different economic and demographic risks. A country relying heavily on one mode of financing might want to increase its use of the other financing method.

... might have different influence on macro-economic growth

A larger share of funding could potentially lead to increased economic growth. The burden of an ageing population would then be eased by increases in future GDP. However, such growth requires that the advance funding of pensions generates additional net national savings and these new savings must lead to more investment. Possible feedback of additional savings on the rate of return must also be considered.

... show different effects caused by ageing in an open economy

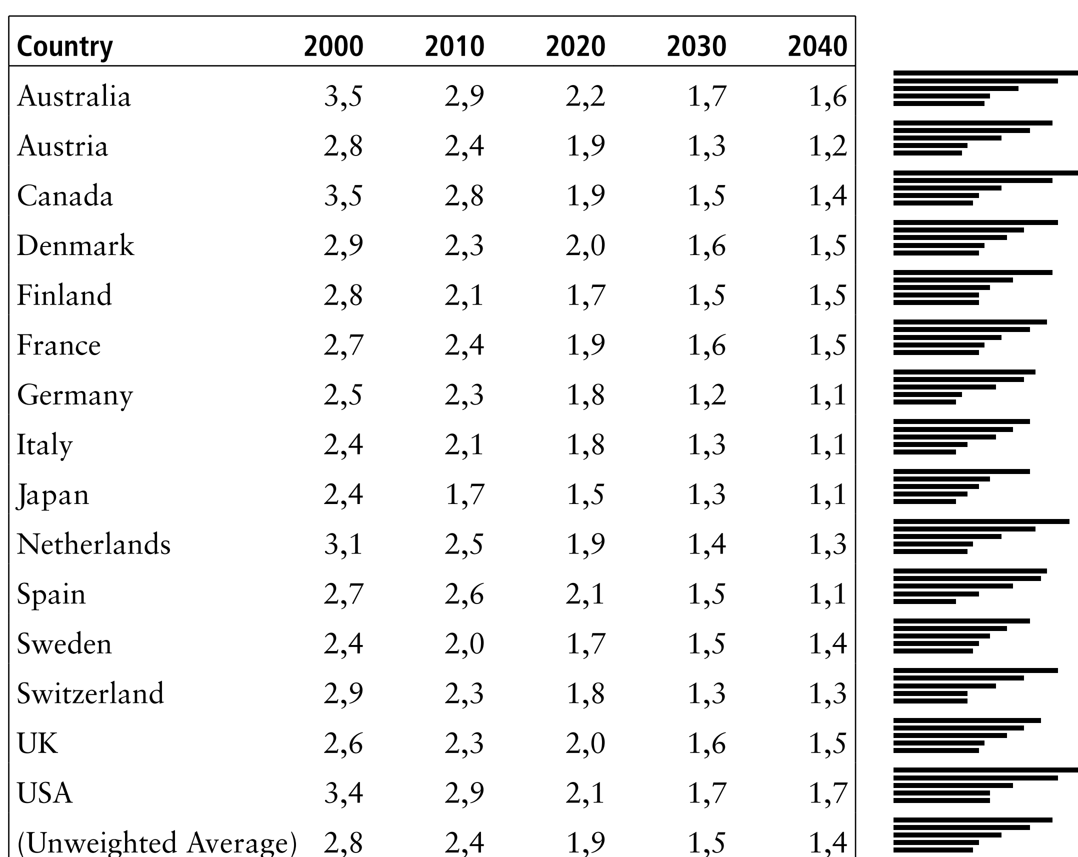
Finally, the impact of demographic change on PAYG and advance funding, discussed above, applies to a closed economy. However, in an open economy, i.e. an economy engaging in international trade, demographic change might affect advance-funded and PAYG schemes differently. This could be particularly important for industrialised countries. Since current workers pay the benefits of current retirees under PAYG, the population support ratio provides an indicator of the financial burdens placed on workers. The support ratio is the number of active workers per retiree. It is influenced by both a decline in the fertility rate and increasing life expectancy.

Table 1 shows that among industrialised countries, this ratio is projected to decline broadly over the next 40 years. Under these assumptions, Germany, Japan, Italy, and Spain could have approximately one labour market participant per retiree by 2040.

As the fertility rate drops, the growth of the labour force will slow, and in some cases, the size of the work force is even expected to decline. The ramifications for a PAYG system are obvious. If

there are fewer workers to contribute to the pension system, then the burden borne by each remaining worker increases. The financial solvency of an advance-funded scheme is not directly threatened by a reduction in the number of workers, since current workers fund their own benefits. Advance funding is therefore considered intergenerationally fair: Each generation saves for its own retirement.

Table 1: Population aged 20 to 59/
Population over 60 years old



Country	2000	2010	2020	2030	2040
Australia	3,5	2,9	2,2	1,7	1,6
Austria	2,8	2,4	1,9	1,3	1,2
Canada	3,5	2,8	1,9	1,5	1,4
Denmark	2,9	2,3	2,0	1,6	1,5
Finland	2,8	2,1	1,7	1,5	1,5
France	2,7	2,4	1,9	1,6	1,5
Germany	2,5	2,3	1,8	1,2	1,1
Italy	2,4	2,1	1,8	1,3	1,1
Japan	2,4	1,7	1,5	1,3	1,1
Netherlands	3,1	2,5	1,9	1,4	1,3
Spain	2,7	2,6	2,1	1,5	1,1
Sweden	2,4	2,0	1,7	1,5	1,4
Switzerland	2,9	2,3	1,8	1,3	1,3
UK	2,6	2,3	2,0	1,6	1,5
USA	3,4	2,9	2,1	1,7	1,7
(Unweighted Average)	2,8	2,4	1,9	1,5	1,4

Source: Eduard Bos and others: World Population Projections 1994–95. Johns Hopkins University Press, Baltimore, MD, 1994.

The effect of such demographic changes on advance-funded pensions will depend on whether this pension scheme occurs in an open or closed economy. In particular, declining labour force growth in a country could lead to reduced demand for capital investment. In a closed economy this could depress the rate of return

Funding: The chance to preserve asset returns in spite of low fertility rate at home by investing abroad ...

to assets.[3] However, if pension funds were invested in countries with a growing labour force, i.e., rising investment needs, higher asset returns could be preserved. In this way, the active population abroad would effectively provide support for retirees at home. The investment of pension funds abroad, however, does entail certain economic and political risks.

... but no possibility to address higher life expectancy

Rising life spans only compound the financial dilemma of pension systems. As retirees live longer, they can expect to receive benefits over a longer period, which raises the cost of the pension system – no matter whether the scheme is a PAYG or an advance-funded one.

However, benefit adjustments may be easier with funding ...

However, there might be a difference in the feasibility of reducing the cost resulting from higher life expectancies by reducing benefits. PAYG-financed public pension schemes usually guarantee a monthly pension benefit (defined benefit schemes). A highly unpopular benefit reduction which would require a political majority might not be feasible.

In contrast, advance-funded private schemes organised as "defined contribution schemes" might not encounter these difficulties. If paying out pension accounts as lump-sum payments at retirement age, they would by definition not be affected by increasing life spans. If pension accounts were annuitised on retirement, a worker whose generation is expected to live longer would receive a smaller monthly annuity. If this monthly benefit were granted in the form of flexible annuities, i.e. with pension benefits negatively linked to life expectancy, this built-in mechanism would in addition automatically reduce benefits if life expectancy increased after retirement age.

... although changes in PAYG benefit formula could also address the costs of longevity

The impact of rising life expectancy on pension systems could thus depend most on the method for calculating benefits rather than the mode of financing (PAYG vs. advance-funding). Changes in the benefit formula of public PAYG pension systems could address the rising costs of lengthening life spans without introducing funding. For instance, Sweden's system of "notional" defined-contribution accounts introduced recently maintains an inverse relationship be-

3 The possible reduction in the rate of return due to declining investment demand could be more significant if pension funding also increases net savings.

tween life expectancy and pension benefits. The United Kingdom has avoided the rising pension costs of an ageing population by applying a less generous indexing rule to pension benefits.[4]

Basic options: Contributions up or benefits down

Regardless of pension-system design, given the demographic trends, in the long-run only two basic solutions to pension financing exist: Increase contributions/taxes and/or decrease benefits. For example, an increase in the effective retirement age also represents a combination of these options. A longer working life means higher contributions/taxes, and delayed retirement reduces the total pension benefits received.

Expanded PAYG coverage provides only short-term solution

In the short-run, contribution rates and benefit levels can be maintained in a PAYG system, if more money is channelled into the system. This can be accomplished by including additional contributors, increasing labour-market participation rates, or expanding the scheme to groups of the labour market previously not covered. However, increased contributions from expanding the system's coverage do not provide a long-term solution to financial difficulties, since these newly covered workers also accrue future pension claims. The decision may be delayed, but eventually either contributions must be increased or benefit levels reduced.

Expanding advance-funding feasible ...

The introduction of advance-funded elements to the pension system may also require increased contributions. Compared to increases in PAYG contributions, new funding schemes are likely to enjoy certain political advantages. For instance, some countries favour increased private sector involvement in pension provision, which would be possible with funded schemes. Or there may be opposition to enlarging the public PAYG system. Moreover, pre-funded pension claims could be needed to reassure young workers of their retirement security. On the other hand, a reliance on individual, funded pension accounts may impede certain income redistribution goals, which are currently met in most public social security systems. It will also be crucial that the typically high

4 In the UK, pension benefits are indexed to inflation instead of wage growth. The difference between nominal wage increases and the inflation rate is projected to be more than enough to compensate for the cost of rising life spans. The benefit formula applied, however, is controversial: In September 2000, the Labour Party Conference voted against the advice of the leadership for the restoration of the link between average earnings and pensions.

administrative and marketing costs of such pension accounts are reduced. Even if a decision is made for advance funding, the choice between higher contributions or reduced benefits remains, although the implementation can utilise various methods, such as increasing the retirement age.

... although raising important transition issues

Any advance funding reforms must address the accrued liabilities of the current PAYG system. During the transition period, the working population has both to pay for their own retirement benefits, as well as those of current retirees. Thus issues of intergenerational cost distribution are central to pension reform. This issue highlights the pension reform process in 15 industrialised countries.

2 At the crossroads: Fundamental decisions

Pension reformers face one basic decision: Should the overall degree of pension advance funding be increased? And if so, what is the most appropriate system in which workers accumulate assets and retirees receive disbursements? There are also important questions of whether participation in these funded schemes and the annuitisation of resulting assets should be voluntary or mandatory.

How much advance funding is desirable?

Our estimates show a broad range of advance funding

In nearly half of the countries surveyed, more than 50 percent of contributions to all old-age pensions, including public, occupational, hybrid and private schemes, are devoted to pension fund accumulation. This group includes the United Kingdom, Australia, Switzerland, Canada, the United States, the Netherlands, and Denmark. Japan, Finland and Sweden report a share of funding between 40 and 50 percent. Only France, Austria, Germany, Italy,

and Spain maintain a low degree of advance funding (see Table 2).[5]

If private individual schemes are excluded from the calculations, the relative positions change little. Apart from Denmark, all "high-level countries" maintain pension funding of more than 50 percent.

When focusing on public pension schemes alone, only one-third of the countries reports significant contributions to fund accumulation. This group includes Australia[6], Canada, the Netherlands, Sweden and the United States. No capital reserves have been accumulated in the public pension scheme of the following eight countries: Austria, Denmark, Finland, France, Germany, Italy, Switzerland, United Kingdom. In Spain and Japan[7], only marginal funds have been accumulated.

Most experts support increased pension funding

The majority of experts surveyed, even those in countries with relatively high levels of pension funding, favour an increased level of advance funding. The proponents of more funding include Austria, Austrialia, Canada, Denmark, Finland, Germany, Italy, Japan, Spain, and the United States. In contrast, experts from France, the Netherlands and Switzerland view the current level of pension

5 The following method is used to calculate the degree of advance funding of pension provision in a country: Pension provision includes the public pension system; occupational pension plans; capital-accumulating, individual life insurance policies; and private, individual pension accounts. The survey collected information on the financial flows (including both employers' and employees' contributions as well as state subsidies) for each type of pension plan in the most recent year, for which data is available.

As a measure of funding, the percent of financial flows in a given year, which is devoted to pension fund accumulation, is calculated. (Please note that in the Japanese case, the assets accumulated within the public pension scheme are intended to serve as a reserve, rather than explicitly being set aside for "fund-based" pensions.) The percent of contributions used to pay current pension benefits is the degree of pay-as-you-go financing.

This method allows for a cross-country comparison of *current* pension fund accumulation. These calculations do not reflect pension liabilities, that have accrued in the *past*, nor do they include interest earnings or capital gains. The existing pension fund reserve plus the return on these assets could be much larger in countries, that have been accumulating pension reserves for several years.

Furthermore, this method could overstate the degree of advance funding in countries, which only recently began to accumulate pension fund assets. These calculations do not measure whether a pension system is fully funded relative to accrued liabilities.

6 The "Suparannuation Guarantee, pension scheme, a legally mandated, privately-run scheme is classified as a public scheme in this context.

7 The assets accumulated within the public pension scheme in Japan are intended to serve as a reserve, rather than explicitly being set aside for "fund-based" pensions.

funding as appropriate. The respondent from the United Kingdom supports a reduced emphasis on capital-funded elements in pension provision, and the Swedish expert believes that funding targets should reflect broader macroeconomic conditions, i. e., the desirability of a higher savings rate. In countries that currently have low to medium levels of funding, increased asset accumulation in the pension system is viewed as a means to diversify risks. Mainly respondents in countries, which already transfer very large percentages of annual contributions to pension fund reserves, would maintain or decrease the degree of funding in their retirement systems.

Table 2: Share of pre-funding in the sum of public, occupational, hybrid and private schemes (cf. Footnote 5)

Share of pre-funding	**Country**
High (> 50 percent)	United Kingdom Australia Switzerland Canada Netherlands United States Denmark
Medium (> 40 percent, > 50 percent)	Japan Sweden Finland
Low (< 40 percent)	Spain Italy Germany Austria France

Political reasons are a major argument in favour ...

The economic arguments given for increased funding include: Better risk diversification (D); a more even inter-generational distribution of pension costs by having current worker contribute to a capital reserves (FIN, J, D); and higher economic growth through the additional savings to ease financial burdens of an ageing

population (USA). Political motivations also play an important role in some countries' call for pension funding. For example, it is believed that capital-funded elements could bolster public confidence in the pension system and encourage old-age savings, especially among younger workers (AUS, CDN, J).

... but also against more advance funding

Those experts, who want to maintain or reduce the degree of funding, claim that the political conditions would not support more pre-funded schemes (F). Furthermore, PAYG public pensions may better serve the needs of certain types of workers, such as single parents, divorcees, and those with atypical career paths (UK).

Should contributions be mandatory?

As shown in Table 3 on page 22, few countries require contributions to advance-funded occupational or private pensions. The experts surveyed were evenly divided on this issue.

Mandated contributions address short-sightedness and free-rider behaviour

Those in favour of mandatory contributions cite the need for universal pension coverage (DK, AUS, D). Pension benefits provide an important safety net level of income, so contributions should be compulsory at least until basic needs have been secured (AUS, A). New capital-funded elements may also protect low-income, retired and disabled workers from improverishment (USA, CH). This is of particular concern if reforms decrease the replacement rate of public pensions (D). Compulsory contributions could be used to overcome workers' short-sighted savings behavior and help guarantee sufficient old-age savings. (D, NL). Furthermore, a voluntary pension scheme in a country with a means-tested income supports could lead to free-rider behavior (A, FIN, USA, D).

Flexibility and political conditions argue against mandatory contributions

Opponents of mandatory contributions counter that participation in funded occupational schemes should be the worker's choice (I, E). For instance, older workers in Spain, who face uncertain employment options, may prefer to hold their savings in more accessible forms than pension accounts. In a different line of argument, some experts stress that only pensions in the public, social security system should be mandatory and these should provide the core pension needs. Only if a country is unable to operate a well-

functioning public pension system, or if the public PAYG plans are partially replaced by private plans should participation in funded, private schemes be mandatory (S). The Japanese expert also expressed concerns over the maturity of the private pension industry (J). In some countries, mandatory contributions would not be politically feasible (CDN, F).

Should pension assets be annuitised?

Annuitisation of pension assets is mandated by law in nearly half the countries, as noted in Table 4 on page 24. Moreover, many countries provide workers with strong incentives to convert their retirment savings to life-long annuity payments. Among the surveyed experts, an overwhelming majority supported compulsory annuisation of at least part (AUS, A, CDN, DK, D, CH, USA, UK) or all (FIN, S) of a worker's pension assets.

Broad majority: (Partly) mandate annuities to keep elderly out of poverty

In terms of a pension's role as a social policy instrument, annuities are preferable to lump-sum distributions. Most importantly annuities provide a more stable source of annual income during retirement (I) and may reduce retirees' dependence on other forms of state support (S). Lump-sum distributions could even encourage some workers to transfer their pension savings to assets which are not subject to a means test, such as a house or to their heirs, and then claim means-tested income support. Pensioners, who do not have annuities to cover their basic retirement needs, could also be at risk of outliving their assets if they underestimate their own longevity (CH, A, D). By mandating annuities, the government can address short-sighted behaviour and potential free-rider problems. (For more detailed responses, see Box 1.)

Opponents: Allow for flexibility but set tax incentives

Opponents of mandatory annuitisation (J, E) argue that retirees can best allocate their pension assets. For some workers, annuitisation may be too inflexible, and making it compulsory could actually undermine the nascent support for private and complementary pension schemes (E). However, these experts recognised the financial benefits of annuities and support the use of tax incentive to encourage annuitisation.

Table 3: Are there statutorily mandated contributions to pre-funded occupational/private schemes?

Country	Obligation	Details
Australia	No (qualified)	Contributions to occupational and hybrid schemes, including schemes managed by retail superannuation and insurance firms and by employers for their employees, are voluntary. In general employees are not legally required to participate in these schemes, though for many jobs they are considered normal. Unless the employee make a particular objection, it is assumed that they want to participate and contributions will be deducted. In contrast, contributions to the earnings-related, privately managed "Superannuation Guarantee" pension scheme are mandatory. Due to its compulsory character and the absence of a state-run earnings-related scheme, the Superannuation Guarantee is commonly classified as a "public" pension scheme.
Austria	No	The government plans to introduce a second pillar of pension funds that will be mandatory.
Canada	No	There is no legislation making occupational schemes mandatory. Occupational pension plans cover only one-third of the labour force. Some plans are financed by employers and some by employers and employees. Membership in occupational pension plans is mandatory for some workers, if contributions are required by their employer. Employers are not required to provide occupational pension plans, and most do not.
Denmark	No (qualified)	There is no legislation making occupational schemes mandatory. However, such plans are mandatory for workers covered by collective agreements (80 percent of private sector employees and almost 90 percent of blue collar workers). This does not apply to workers under individual contract.
Finland	Yes	Practically all contributions to occupational pension schemes (which are partially funded) are statutory.
France	No	Private sector employees make mandatory contributions to occupational pension schemes.
Germany	No	The ministry responsible for pension reform (BMA) supported the introduction of mandatory and advance funded, supplementary pensions in its first propsal in spring 1999. The German public strongly rejected this plan, so the new supplementary schemes will be voluntary and state-subsidised.

Italy	No	
Nether-lands	Partly	For certain occupational groups among the self-employed, there is a legal obligation to make pension contributions. At the firm and industry levels, pensions are governed by collective agreements, backed by law, especially the "Pensioen- en Spaarfondsenwet".
Japan	No	Participation in occupational and private schemes is optional.
Spain	No	Mandatory schemes would be technically impossible to introduce, since it would require changing the entire concept and structure of the supplementary social provision system. Article 41 of the Spanish 1978 constitution states that complementary assistance and benefits are optional.
Sweden	No	There are mandatory contributions paid by the employers to collective pension schemes, but this obligation is based on collective agreements not legislation.
Switzer-land	Yes	All employees earning above a certain threshold are required to contribute to advance-funded occupational schemes: Earnings between 24,100 Swiss francs/€ 15,733 and 72,360/€ 47,238 Swiss Francs a year are subject to contributions of 7 to 18 percent, depending on age and gender.
United Kingdom	Yes (qualified)	Workers, who earn between £ 9,000 and £ 29,000 pounds per year, must contribute to either the public PAYG, second-tier pension or a capital-funded stakeholder scheme. If earnings exceed the threshold, participation in the second-tier is not required, since these workers have probably already left SERPS and are covered by either occupational or personal pensions. Before 1988, employers could make participation in an occupational plan compulsory; however, this is no longer the case.
United States	No	

Table 4: Is the annuitisation of private pension assets compulsory?

Country	**Annuity required**	**Details**
Australia	No	Lump-sum payments are even taxed more favourably than annuities. Annuities are subject to normal income tax rates, i.e., up to 47 percent, whereas lump-sum distributions are subject to a maximum rate of 30 percent.
Austria	No	
Canada	Yes	In general, benefits from occupational pension plans must be in the form of monthly payments. These payments are made directly from the pension fund, rather than as annuities. The following special circumstances may lead to a lump-sum disbursement: Pension claims with little accumulated value, division of pension assets during property settlements at divorce, or job switching by a worker vested in defined-benefit plan.
Denmark	Yes	Assets from occupational schemes must be converted to an annuity, unless it would result in an annuity of DKK 7,500/€ 1,005 or less.
Finland	No (qualified)	A lump-sum withdrawal is legally possible but tax treatment discourages such disbursements.
France		Not relevant in the French case.
Germany	Yes (proposed)	The bill requires annuitisation of the savings, which may be a combination of fixed term payment plans and life annuities. However, this element of the bill is under public discussion.
Italy	No (qualified)	There is no explicit obligation to convert pension savings to annuities. However, strong tax incentives encourage annuitisation of at least two-thirds of the accumulated assets.
Netherlands	Yes	A lump-sum withdrawal of accumulated pension claims is nearly impossible. It only occurs under special circumstances like emigration, and the amount of the payment is limited.

Japan	No	Corporations are not required to offer occupational pension schemes, and it is not mandatory for those employers with pension plans to pay benefits as annuities. Pensioners usually have a choice between lump-sum payments and annuities. In 1998, 83 percent of Employees' Pension Fund schemes, established by large corporations, and 96 percent of Tax (Exempt) Qualified Pension schemes, established by small and medium companies, offered workers such a choice.
Spain	No (qualified)	Annuitisation of assets from occupational pensions is not required, and workers can even withdraw their savings prior to retirement. However, there are incentives to annuitise. First it is more difficult to withdraw benefits as a lump-sum. In addition, the penalties on lump-sum payments are even higher before the normal retirement age.
Sweden	Yes	There is an obligation to annuitise in both the public and the collective system.
Switzer-land	Yes (qualified)	As a rule, pension assets must be converted to a life annuity. Lump-sum disbursements are possible if the value of the assets accumulated is very low, i.e. less than 10 percent of the minimum pension; if the pension fund offers the option and the disbursement occurs three years before the workers attains the retirement age; or if part of the lump-sum is used to purchase a house or pay off debts on a house. These lump-sum payments cannot lower old-age pension benefits by more than 50 percent.
United Kingdom	Yes	Up to 25 percent of personal pension assets can be received as a lump-sum payment at retirement. However, assets purchased with Department of Social Security minimum contributions (i.e. to contract out of SERPS), known as 'protected rights,' must be used to provide pension benefits. At age 75, the remaining money must be converted to an annuity. Under occupational pension plans, workers may opt for a lump-sum disbursement at retirement, usually 3/80 of final pay for each year of service.
United States	No	There is no requirement to convert pension savings into an annuity.

Box 1

The optimal amount of retirement savings to be annuitised is debatable. At one end of the spectrum, there is case for full annuitisation, since these retirement savings enjoyed implicit or explicit tax subsidies, and annuities will provide the most stable flow of retirement income (AUS). In contrast, mandatory conversion amounts could be minimized to preseve as much individual choice as possible (CH).

A general consesus emerged among the experts for conversion amounts based on a poverty-threshold. In particular, retirees would have an obligation to purchase annuities which guarantee monthly incomes in excess of the poverty-line or eligibiliy test for income supports (USA). Here monthly income could be defined broadly to include public and private pension benefits, as well as any capital wealth, and be adjusted according to retirement age (I). Such minimum conversion levels would still proside many workers with some flexibility and be relatively transparent (D). The source of pension assets could also be considered, for instance supplementary pension accounts could be exempted from mandatory annuitisation (A).

However, lump sum payouts may be appropriate if the administrative costs of monthly disbursement are high relative to the actual annuity payments, or if a retiree faces extreme financial hardship and/or a shortened life expectancy (CDN).

3 Recent reforms with respect to advance-funded components

Substantial reforms regarding the advance funding of pensions have occurred in all types of old-age pensions. PAYG, public pension schemes have instituted fund reserves, and tax incentives have been used to encourage worker participation in funded occupational pensions as well as individual retirement savings.

Public schemes

Five countries have recently introduced substantial reserve funds to their public pension scheme. The management of these funds typically remains with the social security administration. Yet Sweden now allows participants in the funded scheme to invest their accounts with private investment managers.

Canada – shift to partial funding

Canada is in the process of changing its earnings-related public pension plan, the Canada Pension Plan, from pay-as-you-go to a partially funded system. As the baby-boom generation nears retirement, the existing PAYG pension system faces increasing costs. The projected fiscal shortfall fueled fears, especially among young-

er Canadians that the plan was 'going broke' and would 'not be there for them when they retire.' The current reform's aim is to ensure both the fiscal security and political support of this important pension program.

The combined contribution rate for employers and employees is being increased from 5.6 percent of pensionable earnings in 1996 to 9.9 percent in 2003. These additional funds are being invested more broadly than the surpluses of the existing PAYG system, which are mainly lent to Canadian provinces. This more diversified portfolio of assets follows the practice of large employer pension funds in Canada and other countries.

Pension-financing reform required an agreement between the federal and provincial governments, that is, at least two-thirds of the provinces with two-thirds of the population had to support the reform. There was a broad public consensus behind securing the pension system's long-term viability. More rapid increases in contributions over a relatively short period to achieve partial funding (with contributions constant after 2003) were preferred to continued and ultimately larger contribution increases to sustain PAYG financing over the long term. Without current fund accumulation, increasing pension costs would have likely necessitated much higher contribution rates in the future. In addition, a decision was made to basically maintain the existing benefit formula and age eligibility. The minor adjustments that were made will not affect the benefits of current pensioners.

France –
new reserve fund lower than first proposed

In France, the Central Planning Commission's "Rapport Charpin" called for the establishment of a sizeable reserve fund in the PAYG-financed public pension system. However, it is unlikely that France will pass any significant pension reform legislation before the next general election in early 2002. In the meantime, the government has appointed a Strategic Pension Council (conseil d'orientation des retraites) to determine the changes needed to ensure the long-term financial solvency of the French pension system. As a first step toward increased funding, a small buffer fund for the pension system was created in 1999. Revenues from privatising state-owned firms are to be channelled to the fund.

In the Netherlands, the AOW Spaarfonds (savings fund) was introduced in 1998 to increase advance funding of public pensions.

Netherlands – reserve fund established

This reform was designed to guarantee adequate pension benefits in 2020 and beyond, as the post-World War II baby-boom generation retires. The savings fund has been financed by government tax revenues. The contributions in 1999 totalled guilders 4.6 billion/ € 2.09 billion.[8]

Spain – "Toledo agreement" introduces reserve fund

Spain established a reserve fund for the public pension system in 1997. The first allocation to this fund was made in 2000. Previously all social security pensions were financed by a PAYG scheme. The new fund is managed by the social security administration and financed from surplus contributions. The government expected an initial fund allocation of ESP 100 billion/€ 0.6 billion in 2000, which corresponds to the surplus realised in 1999. As of August 2000, however, the Government has only transferred € 0.24 billion; the rest has to be ratified soon. Additional details of the reserve fund's size and administration will be decided during the second negotiation round of the 1995 "Toledo Agreement" in the coming months.

The original agreement received near unanimous approval by the Plenary Session of the Congress of Deputies in April 1995. Separating the funding sources for the earnings-related and universal social security benefits was crucial to the establishment of a pension fund reserve. Before 1999 contributions made by employers and employees financed not only the contributory earnings-related pensions, but also part of the non-contributory universal social security benefits. Any shortfall in financing universal benefits was then paid by the government. Under the new arrangement, universal benefits are solely financed by government tax revenues. Thus at the current contribution rate, the earnings-related pension system is now accruing surpluses.

Sweden – new fully funded component privately managed

In Sweden, a fully funded component has been introduced to the public pension system. The 1994 Guidelines to Pension Reform included a fully funded component with an original contribution rate of 2 percent of pensionable income. The reform also included a shift from a defined-benefit to a defined-contribution formula

8 All currrency conversions in this issue were calculated on the basis of the European Central Bank's exchange rates on Friday, September 22, 2000.

in determining the size of the earnings-related benefits. This adaptation of a PAYG system has been called a "notional" defined contribution plan. At the time of implementation in 1998, the contribution rate to the funded elements was increased to 2,5 percent.

Fund accumulation began in 1995 with 1 percent of pensionable income. The national tax authority (RSV) collects contributions to both the PAYG and funded components of the pension system. The National Social Insurance Board (RFV) manages the PAYG contributions and the Premium Pension Authority (PPM) is responsible for the funded, individual accounts. The pension accounts of workers, who are entitled to disability benefits or are on unpaid parental leave, are credited with contributions at the PPM. The PPM also authorises private fund managers.

Participants are given control over the investment of their accounts and are allowed to frequently choose a new fund manager. Since the PPM aggregates the choices of all participants, the identity of individual workers is protected. This system will be fully implemented starting in September 2000.

Funding is not new to the Swedish pension system. The original PAYG, earnings-based pension system, "ATP" included funded elements at its initiation in 1960. These were designed as buffer funds, to compensate for short-term demographic fluctuations and to offset an expected decline in savings, when creating new benefits plans. These buffer funds have totalled more than 5 times annual benefit payments over the past two decades (and an even higher ratio before that). Under the new system, the state will still manage these buffer funds. However, a portion of the ATP's asset accumulation is being transferred to the general government budget, since the health insurance system will now provide the financing of the early-retirement (disability) pensions.

Occupational and hybrid schemes

Nearly all countries report reforms in their occupational schemes. Denmark has expanded their pension coverage to include private and public sector employees. France has proposed several new

schemes. In Britain and Germany, all employees can now convert wages into pension schemes, which are not controlled by their employer. Italy and Austria have developed schemes to direct severance pay to pension funds. Finland, Japan and Spain are concentrating on improved pension fund solvency. The Netherlands has shifted the financing of its occupation, early-retirement pensions from PAYG to advance funding. Finally Switzerland has relaxed investment regulations for pension funds as a means to higher returns and financial security.

Denmark – occupational schemes expanded to private sector

In Denmark, occupational pensions for public sector employees have existed since the late 1960s. Labour negotiations in 1991 negotiations (not legislation) expanded pension coverage to workers in the private sector. The private sector occupational schemes were implemented in 1993 with an initial contribution rate of 0.9 percent, which will increase to 9.0 percent by 2003. All earnings are subject to the contribution tax. Employers pay one-third of the contributions while employees pay two-thirds. The contribution rate for occupational pension schemes in the public sector is typically 12.0 percent. Experts consider it possible that the contribution rate in the private sector will eventually increase to a similar magnitude.

France – voluntary supplementary scheme not applicable, but new proposal

In March 1997, France passed legislation ("Loi Thomas") to create a supplementary retirement scheme for employees in the private sector. This new scheme ("plans d'épargne retraite") was to be organised at the firm level and fully funded. Employee contributions would be voluntary and employers could then add up to four times their employees' contributions. Both types of payments (under 5 percent of gross wages) would be tax-deductible. On retiring, workers would be required to annuitise at least 80 percent of their pension accumulation.

However, left-wing parties and trade unions strongly opposed the reform, arguing that it would financially undermine the existing PAYG supplementary schemes (ARRCO and AGIRC), in which participation is compulsory. After winning the general election in May 1997, the left-wing government decided not to implement the pension legislation. While the law is still valid, it cannot be applied without government support.

Recent government proposals favour employee savings at firm

level, in the form of profit-sharing plans and employees' share-ownership plans (ESOP). In addition to supplementary retirement income, these plans could finance other needs during a worker's career, for example, a sabbatical leave. Workers' representatives would be involved in the management of the plans. A bill will be presented to the Parliament in fall 2000.

Germany –
Legal right to convert wage into pension

To encourage the use of occupational pension schemes, the German federal government plans to give all employees the legal right to invest part of their wages in pension schemes, which are not controlled by their employer. This "transfer" does not require contributions from employers. In addition, employees enjoy certain tax incentives by contributing to occupational schemes.

UK –
claim to "stakeholder" scheme if no occupational scheme offered

With the introduction of "Stakeholder Pensions" in the United Kingdom, commission fees and administrative charges are limited to 1 percent of pension contributions per year. Additional fees, however, may be charged for financial advice. To cover the collection costs of the system, employers without occupational pension plans must choose a stakeholder pension scheme and then collect contributions (small employers are exempted). Employees will retain their pension claims, even if they change jobs. In addition, contributions up to £ 3.600/€ 5,937 per year will receive the same preferential tax treatment as those to existing occupational pension plans.

Italy –
strong incentives to transfer severance pay to pension fund

Italian regulations encourage the transfer of severance payments to pension funds. Legislation in 1993 first addressed this issue by trying to create tax incentives for the allocation of severance payments to a worker's pension fund. The original provisions have been subsequently modified several times. In 2000 the government more than doubled the tax-deductible contributions and introduced more flexibility into the system. A more favourable treatment of pension funds in general has been established. Though greater fiscal facilities granted while contributing to a pension fund are partly offset by higher taxation when benefits are distributed.

Before the reform, pension contributions from employers or employees separately could not exceed 2.5 percent of gross earnings and no more than 2.5 million lire/€ 1,291. Now the combined contribution of employers and employees is capped at 12 percent

of gross earnings and 10 million lire/€ 5,165 per year. Negotiations at the firm level determine the shares paid by employers and employees, which provides more flexibility for the firms. Preferential tax treatment is granted only if severance payments account for at least 50 percent of the total contributions from employees and employers. Previously, eligibility for tax concessions required that the transfers from severance pay had at least to equal the employees' contributions.

The reform has also removed existing fiscal disincentives to transfer severance pay into pension funds. Previously, incomes maturing in pension funds and re-valuations granted by employers on severance pay were taxed differently; now they are taxed in the same way.

Pension funds are taxed at a rate of 11 percent on the difference between the total value of the assets at the beginning and at the end of each year. Incomes deriving from their assets are not taxed at source. Up until now, pension funds were taxed with a lump-sum tax of 10 million lire and incomes deriving from their assets were taxed at source, with rates equal either to 12.5 percent or to 27 percent.

Austria –
plans to channel severance pay claims to pension funds

The Austrian federal government plans to develop a pension system with three pillars. Central to the second pillar is the reform of the mandatory severance payments. Under the new scheme, coverage would be expanded to more employees, and the claims on severance payments would be channelled into pension funds. Currently workers are entitled to severance payment only after they have been with the firm for more than three years. In addition, a worker must be released, retire, or leave the company in accordance with management in order to qualify. In the new system, companies will pay a monthly contribution directly to a pension fund, depending on the worker's payroll.

All employees will be entitled to severance payments after one year of work in a firm, regardless of their reasons for departure. These benefits will be payable at retirement. Workers who are laid off by their company will have the option to receive severance payments as in the old system.

In 1997, Finland changed the funding of its (mandatory) occupational pensions for employees under the Employees Pension Act

Finland – new solvency regulations, investment regulations relaxed

(TEL). The new funding rules allow for increased risk in portfolio allocation. In addition, new solvency rules set both minimum and target zones for solvency. Pension funds with riskier asset allocations must meet higher solvency targets. If an institution does not achieve its solvency target, the distribution of surplus yield to employers is limited. Pension providers that fulfil the solvency requirements can either use interest earnings in excess of 5.25 percent to further strengthen the finances of the pension plan or distribute the surpluses to employers.

Moreover, by severing the direct link between current contributions and the current fund yield, the financial solvency of pension insurance companies has improved. Prior to the reform, asset returns above the discount rate (determined by the TEL) were used on current pension benefits. Now pension providers often devote these returns to the advance funding of pension liabilities.

Labour market parties also agreed in 1997 to the introduction of buffer funds in the private pension system. These special funds are designed to dampen impacts of business cycles and equal about 2,5 percent of annual wages.

Japan – Introduction of defined contribution schemes

In Japan, firm pensions are basically fully funded. Some corporations, however, have not set aside enough funds to cover their future pension liabilities. After Japan's conversion to international accounting standards in 2001, corporations will be required to disclose their future pension liabilities and thereby forced to address any funding shortfalls.

The Japanese economy has experienced near-zero interest rates for some time, which has led to lower than expected asset accumulation. In addition, increases in life expectancy put financial pressure on defined-benefit, occupation pensions. A current government proposal calls for a new layer of private, defined-contribution pensions. Such schemes would provide an alternative to firms, which are already burdened by the accrued liabilities in their defined-benefit plans. In addition, defined-contribution pensions address employee demands for a pension that can be transferred to a different firm after changing jobs.

Two types of defined-contribution pension plans are being proposed. Under the first type, companies contribute to their employees' pension accounts. The other type is intended for the self-

employed and employees, whose firms do not offer defined-contribution pensions. A third party, in most cases a financial institution will administer these pension plans and the employees will pay the premiums. In both cases, participants have individual accounts and a minimum of three investment opportunities from which to choose. A choice between a lump-sum payment and a pension is offered. Lump-sum withdrawal before the age of 60 is not allowed, and a minimum of 10 years of participation is necessary to receive benefits. Pensions are transferable to another firm-based fund or to an individual account after at least three years of participation. Premiums can be deducted from taxable income, and benefits are tax-exempt up to a certain amount.

Spain –
External funding required

The Royal Decree in October 1999 finalised the regulation of auxiliary occupational pension plans. These occupational pensions, which are primary capital-funded, will supplement the public pension schemes. By January 1, 2001 companies must externalise their commitments on complementary pensions funds. This external holding of pension fund assets will protect employees' pensions in cases of firm insolvency.

Netherlands –
PAYG schemes replaced by advance-funded schemes

The financing of early-retirement occupational pensions is shifting from PAYG to capital funded. The new schemes are integrated in general pension schemes offering workers the choice to retire before they are eligible for their old-age retirement pension at the age of 65. During a transition period, workers, who had already attained age 50 at the time of the reform and therefore have insufficient time to accumulate an individual account, will still attain reasonable levels of entitlements. These benefits are higher than their premium payments alone would allow, but they are often somewhat less than previous entitlements under the old PAYG system. Early retirement pensions based on defined-contribution financing tend to be more neutral toward age of retirement than defined-benefit schemes. Thus individual workers have greater control over when they leave the workforce.

Some plans also include a premium for workers who delay retirement until the normal retirement age of 65.

Switzerland –
investment regulations relaxed

To facilitate higher returns on pension funds, the Swiss government now allows for more flexibility and independence in the investment decisions of fund assets. Previous regulations stipulated

that capital funds from pension plans must be invested so that adequate returns were obtained, risks were well diversified, and solvency was guaranteed. Investment returns on pension funds over the last few years have been poor due to these relatively restrictive investment regulations and the risk-averse behaviour of pension fund investment managers. This unsatisfactory performance has prompted the current reform.

Most importantly, the reform redefines measures of investment risk, which expands the investment possibilities of fund managers. Prior regulation limited the type of investment assets that could be held, as well as set maximum investment amounts for asset categories. Basically a fund must demonstrate that its future liabilities are fully funded and adopts the "prudent investor rule" common in the Anglo-Saxon countries. Pension fund managers can now utilise investment instruments which best serve their funds' needs. Reports must be submitted that outline the investment strategy of the fund and demonstrate its financial solvency.

Private individual schemes

The reform of private individual schemes is occurring mainly through new tax incentives. In most of the countries surveyed, these pension forms have received more favourable tax treatment, although the opposite was true in two countries. In Austria, the United Kingdom, Germany and the United States, legislation to grant contributors to private individual pensions new tax deductions is under discussion or has been implemented. In addition, in Germany and the United States, there are plans to directly subsidise retirement savings. In contrast, Italy has reduced the previously generous tax breaks for annuities, and Australia has levied additional taxes on certain types of private schemes.

Austria –
Plans for
deferred taxation

The Austrian government has proposed further tax incentives for private old-age benefits. However, the generosity of the new tax rules will depend on budgetary developments. Experts expect that pension contributions will be tax-deductible, while benefits will be taxed as income. The reform should be implemented during the current legislation period, i.e. within the next two or three years.

UK –
uniform tax concessions for all private schemes

In the United Kingdom, the tax treatment of stakeholder pensions, occupational and personal pension schemes is being consolidated into a single system. Tax concession would be applied to pension contributions up to £ 3.600/€ 5,937 per year, with the level subject to period review.

These contributions can be made to a mix of pension schemes. However, persons who make contributions in excess of the threshold must apply them toward a personal, rather than stakeholder, pension.

Germany –
contributions to be tax-preferred or directly subsidised

In spring of 1999, the German Federal Government proposed a reform plan for subsidising voluntary private savings to supplement old-age pensions. According to the latest proposal, old-age savings would be encouraged through the use of direct transfers and tax advantages. Beginning in 2001, employees will be allowed to transfer 0.5 percent of gross wages to their pension plans. The amount will increase each year by 0.5 percent until it reaches 4,0 percent in 2008.

As an incentive to individual savings, low and middle income earners would receive annual savings subsidies of DM 37,50/€ 19 in 2001; the amount would increase to DM 300/€ 153 DM in 2008. In addition, families would be entitled to a DM 360/€ 184 savings subsidy per child. High-income earners could deduct their savings from taxable income, instead of receiving direct transfers.

Increased private savings would provide an offset to the planned reductions in the statutory pensions. The replacement rate received by the "standard pensioner" will decline from 72 percent in 2000 to 61 percent in 2030 in effective terms.[9]

USA –
proposal to grant tax incentives and subsidies

In the United States' presidential contest, two general approaches to pension reform have been highlighted. Vice President Gore supports the creation of personal retirement savings accounts, which allow workers to save up to $2,000/€ 2250 per year. The federal government would use subsidies and favourable tax treatment to encourage participation, especially among low to middle income workers. In contrast, George W. Bush would allow

9 Formally, the ratio of the "standard pension", i.e., the pension into which someone has paid average contributions for 45 years, to average net wages is not to be lowered below 64 percent. However, due to a new statistical definition of "net wages", the replacement rate will be lowered to app. 61 percent in terms of today's definitions.

workers to divert a portion of the Social Security payroll taxes to private, individual accounts. The goal of such accounts is to raise the rate of return that workers receive on the pension contributions, and encourage asset accumulation for retirement. This proposal could also lead to a reduced government role in old-age pension provision.

Italy – favourable tax treatment limited to annuities

Italy has limited its generous tax treatment of life insurance products to those products that serve the goals of old-age pensions. In the past, holders of any type of life insurance contract received a tax credit equal to 19 percent of their premiums, up to a limit of 2.5 million lire/€ 1.291. Insurance contracts without an annuity component are now treated as pure financial contracts and are not eligible for any special tax subsidy. Insurance plans with life annuities, however, receive the same favourable tax treatment as pension funds: Premiums are deductible, before maturity yields are taxed at an 11 percent (i.e., they are not taxed at source), and annuity payments, less the amount previously taxed, are subject to personal income taxes.

Australia – favourable tax treatment reduced

In Australia, recent reforms have reduced the favourable tax treatment of earnings in superannuation funds. For example, the returns on super-fund assets, in which mainly high-income persons invest, are now subject to 15 percent tax surcharge.

4 Proposals for action

As noted in the previous chapter, the details of many advance funding reforms are still under debate. Program design will reflect a country's specific institutional background and prior experiences with pension funding. As the pension experts agree, it may also be necessary to improve the legal framework:

Lower costs, more transparency better management

One category of pension reform focuses on fine-tuning the existing pension schemes. According to the experts, it is crucial that the administrative costs of private individual schemes be contained (I, S, UK, D) and that the system is more transparent. (A, FIN, CH, D): Individuals need to be well-informed about the risks and performance of different funds (A, S) as well as the status of their personal claims (CH). Simplifying the pension system would also improve transparency (FIN). Furthermore, these experts demand high standards for fund managers in terms of professionalism and their overall investment strategy (JAP, CH, S).

More flexibility in strict regulations

The system must strike a balance between flexible investment options for participants, competition among fund managers, as well as protection against excessive financial loss when an employee changes their own pension fund investment (A, I, CH, D). And all this without making the system too costly. (S). Regulatory control is a paticular concern in countries, that have just begun pension reforms (A, D).

Tackle uncertainty of pension benefits

An additional issue for defined-benefit occupational pensions is the lack of full price (or wage) indexation of benefits and deferred

vested claims (CDN, CH). Defined-contribution pensions and individual savings accounts are also subject to uncertain fund accumulation and uncertain benefits. The high equity returns and slow wage growth in the recent past have inflated the returns of such funded accounts relative to traditional defined-benefit schemes and created unrealistic expectations about future benefits (CDN).

Re-design tax concessions

Another group of reformers proposes re-design tax incentives for private pension schemes. For example in Australia, the tax advantages available to superannuation earnings and the interplay with the use of lump sums by individuals and the means testing of the old-age pension must be resolved (AUS).

Favourable tax treatment of individual retirement savings and occupational pension plan contributions is further issue. Some countries, like Canada, provide income tax deductions for pension contributions, which reduces both federal and provincial income tax revenues. Such tax breaks are costly and often regressive, since they disproportionately benefit high-income taxpayers. Tax credits rather than deductions have been proposed as a more equitable alternative (CDN). While some countries have standardised the taxation of occupational schemes and private, life insurance (UK, D) some experts argue that tax advantages should be focused on retirement savings in pension funds, rather than individual savings schemes. Since the latter contain larger components of specific ad personam services, they could be less dependent on tax advantages (I).

Expand coverage for unemployed and low-income workers

Other experts argue in favour of expanding pension coverage to groups, who are not in the current system, for example, the unemployed or disabled (DK). Even among the employed the coverage needs to be increased. In the past low and middle income workers have been less apt to participate in individual, funded pensions (CDN).

As the estimation of experts indicates, there is still a lot to be done in terms of legal framework. There is still a requirement for reform, even in countries that have had more experience with advance-funded elements in their pension schemes. To use their experience, could be advantageous especially for policy-makers who are entering new territory in the implementation of advance-funded elements in their pension schemes. The American expert with his concept for pension reform has made a promising proposal of how a funded system could look like (see Box 2).

Box 2: Seven steps to pension reform

If the United States establishes a compulsory funded public pension system (or if it requires employers to provide a funded occupational pension that at a minimum duplicates the benefits of the compulsory national scheme for all workers), our USA-expert from the Brookings Institution argues there are several steps that would reduce the administrative costs and increase the worker protections of such a system.

- First, contributions should be collected centrally, preferably by the existing Social Security Administration. This minimises collection and enforcement costs compared with any system that relies on decentralised collection and record-keeping. The U.S. Social Security Administration is extremely efficient at tax collection, record keeping, and pension distribution. No private insurance or mutual fund company is even remotely close. What is more important, its contributions collection apparatus is already in place. Little modification is needed for it to collect and keep records on workers' pension contributions. More important still, every employer in the nation has already established the tax collection and earnings record keeping procedures needed to calculate and send contributions to the Social Security Administration. This is particularly important from the point of view of administrative costs, because most small employers would resist establishing the new contribution-collection capacity needed for a new, decentralised pension system.

- Second, the pension scheme should offer contributors a handful of alternative investment options, each designed to be appropriate for retirement saving. For example, each worker could choose among (1) Short-term marketable securities, such as US Treasury bills; (2) Long- and medium-term US Treasury bonds; (3) Mortgage-backed marketable securities; (4) Corporate bonds; (5) An index fund of U.S. corporate stocks; (6) An index fund of European and Asian corporate stocks; and (7) An index fund of stocks in corporations that meet certain social standards (no arms production, no alcohol or tobacco production, no genetically modified food, etc.). I include the seventh option to minimise political controversy around the first six options. The great advantage of offering workers investment choice is that each worker is permitted to select a retirement saving portfolio that corresponds with his/her preferences regarding financial market risk and return. The enormous advantage of offering only a handful of options is that it will be much easier to educate workers about the risk and return characteristics of each option. In fact, because there are so few investment options, it is certain that newspapers and

electronic media will perform the education function at least once a year (and possibly every day).

- The Social Security Administration or other government entity that is responsible for collecting contributions would also be responsible for collecting and maintaining records about workers' investment choices. Workers should be allowed to change their investment allocation once every year for free, but should be charged the full average cost for the privilege of altering their investment allocation more frequently. If the government is not informed of the worker's investment choice, the portfolio allocation should reflect an expert's assessment of the optimal allocation given the worker's age (for example, twenty-year-olds might be assigned an allocation of 80 percent U.S. corporate stocks, 10 percent European and Asian corporate stocks, and 10 percent corporate bonds; workers near retirement might be assigned an allocation that contains more short-term securities and mortgage-backed securities and less corporate equities).

- As soon as pension contributions are collected from employers or self-employed workers, they should be invested according to the allocation instructions of contributing workers. To be sure, funds will often come to the government before it has received investment allocation choices from all workers (especially newly hired workers). In a centralised system, this is not an important problem. If there are only seven investment options, funds flowing in from each company can be allocated according to historical percentages appropriate to the company's workers. The investment choices of individual workers have little effect on that percentage allocation. The advantage of this system is that contributions begin to earn appropriate investment returns immediately.

- Fifth, the U.S. Treasury should select private fund managers to handle asset accumulation under each of the investment options. Managing companies should be selected using a competitive process that appropriately weighs the qualifications of the bidding companies as well as the charges that they propose to charge for managing the assets. Private sector companies have become extremely efficient at managing investment funds and deciding how to vote corporate shares in their investment portfolios. It is hard to believe any entity of the U.S. government could perform these functions more effectively and at lower cost (though the U.S. Treasury could efficiently manage short- and long-term government debt portfolios that are restricted to U.S. Treasury securities). In addition to being efficient, the private management of fund accumulation offers an important political advantage. The

investments would not be directly under the control of a government entity (although the choice of investment assets is ultimately determined and regulated by Congress).

- Sixth, the Social Security Administration should handle the distribution of required annuity payments from the funded pension system. Compared with private companies, it enjoys huge economies and vast experience in performing this function. Equally important, because a single government entity would be charged with converting pension accumulations into annuities, it could offer actuarially fair annuities to all older Americans, something that private insurance companies cannot do because of the problem of adverse selection and the requirement that the insurance company earn a market rate of return on its operations. One additional advantage of using the Social Security Administration to convert pension savings into annuities is that it is in a much better position than a private firm to determine the minimum mandatory annuity conversion that a worker is obliged to accept. I would require that workers convert at least enough of their pension saving into an annuity to prevent them from becoming eligible for means-tested old-age benefits. The Social Security Administration is in the best position to determine how much annuity conversion is needed, because it has direct access to information about the worker's traditional Social Security pension. The last advantage of using a government entity for annuity conversion is that it then becomes feasible to require that retired workers purchase annuities indexed to changes in consumer prices. Private firms that offer such annuities might go bankrupt or alternatively charge such high prices for indexed annuities that retired workers are left with very meagre pensions.

- Finally, after pension savings have been converted to annuities by the Social Security Administration, the funds should be turned over to private fund managers. These fund managers should be selected in the same way as managers of the pension accumulation funds. However, in this case the basic portfolio allocation should be selected by an independent publicly appointed managing trustee. The selection and tenure of the trustee should be designed to provide insulation from political pressure and a reasonable degree of independence. (The United States has been quite successful in protecting the political independence and integrity of the Federal Reserve Board and its Chairman. Similar procedures could be used to select and protect trustees of the annuity reserve fund.) The purpose of the funds is to finance a stream of (indexed) annuity payments to an identifiable group of workers. The portfolio should not be selected by the individual workers, because they

do not bear the investment risk. Instead, the portfolio should be chosen by the government, which ultimately bears the risk of poor investment performance. Obviously, the portfolio should be selected to offer good investment returns while minimising the risk there will be insufficient funds to pay promised annuities. The actual funds can be managed by private investment fund managers, but the ultimate choice of appropriate investment allocations should be that of an independent expert trustee or board of trustees.

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