

Transition

Paying for a shift from pay-as-you-go financing to funded pensions

There is a widespread perception that public pension systems in richer countries are in crisis. As schemes mature and the population ages, the burden of financing pensions has grown and, on current policies, will rise much further. Developing countries are younger and pension systems relatively immature. But the transformation in demographics and pension benefits that took over a century in richer nations is forecast to take less than 30 years in developing economies.

Moving to the multi-pillar model

The World Bank has argued that a 'three-pillar' pension system can mitigate emerging problems in developing countries' public pension systems. The recommended system, set out in *Averting the Old Age Crisis* consists of 'a publicly managed system with mandatory participation and the limited goal of reducing poverty among the old; a privately managed mandatory savings system; and voluntary savings'.

However, transforming existing systems into a variant of this broad model typically has a short-term cost. This briefing note explains the transition problem in the move from pay-as-you-go to funded finance of retirement incomes. It looks at measures of the size of the transition cost and at how the design of pension reforms can be used to reduce the burden. It also looks at how countries undergoing fundamental pension reform have paid for it.

Pay-as-you-go and funding

The debate over the means of financing retirement-income systems has spawned a huge literature. 'Pay-as-you-go' means that workers' current contributions pay for pensioners' current benefits. The alternative means of financing retirement incomes is through funding, where workers' contributions are invested. Accumulated contributions and investment returns then pay for the pension.

Pay-as-you-go schemes have a number of attractions for governments.

First, it is possible to pay out full benefits straight away. Under funding, it is necessary to wait a generation or more until pensioners begin to get full benefits. And even where pre-funding was initially intended, politicians have often been impatient and run-down reserves to improve benefits.

Secondly, pay-as-you-go schemes make it easier to redistribute resources between generations. In the industrialized countries of the OECD, for example, governments often felt that people who had lived the hardships either of the great depression of the 1920s and 1930s or the Second World War (or both) deserved support from later generations.

Thirdly, pay-as-you-go finance is easy when populations are young and growing. When each

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generation is larger than the last, the burden of paying for pensioners is easier than when populations are stable or falling.

Funding becomes more attractive in an aging world. It might also have wider economic benefits, such as reducing distortions in labor markets and improving the allocation of capital. (These broader issues are covered in other Pension Reform Primer briefing notes.)

The transition double burden

Comparisons of funded and pay-as-you-go finance of retirement incomes cannot presume a blank slate. They must take account of existing systems, which are typically pay-as-you-go. (In some countries, benefits are partially pre-funded: there are pension reserves but they are worth less than the system's liabilities).

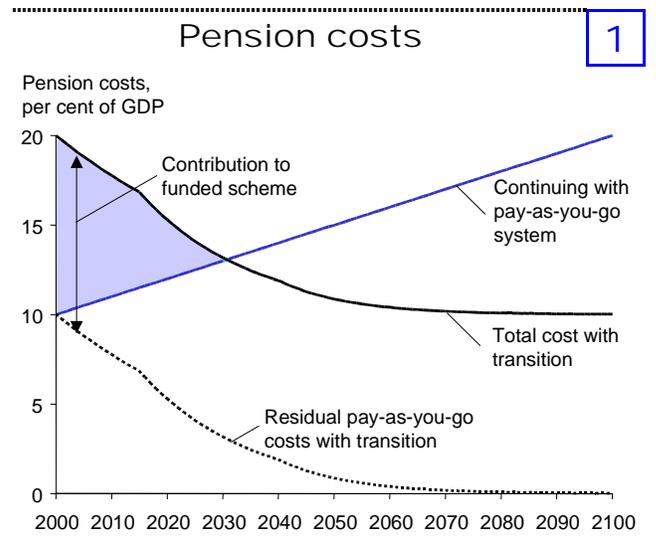
Moving from a pay-as-you-go to funding means that current workers pay twice: for both their own (funded) pensions and current retirees' (pay-as-you-go) pensions. This is often called the transition 'double burden'.

We illustrate this in a stylized way in the first chart, which shows pension costs as a proportion of gross domestic product in two different scenarios. The blue line shows the existing system. We have assumed that the population is aging, so that the cost of pay-as-you-go pensions would increase from 10 to 20 per cent of GDP over a century.

The dotted black line shows the cost of the remaining pay-as-you-go pensions under a transition to funding. All current workers are assumed in future to receive their entire pension from the funded scheme. Existing pension rights accrued in the old pay-as-you-go scheme are honored in full. The residual cost of the pay-as-you-go program declines slowly. Indeed, 70 years later the government is still paying out under this scheme.

There is a second cost in this transition scenario: the contributions that workers must pay into their own pension accounts. We have assumed that the same value of contributions — 10 per cent of GDP — is diverted into individual accounts. This

is shown by the double-headed arrow. Adding this to the residual cost of the pay-as-you-go scheme gives the full cost of pensions under the transition: the solid black line.



The shaded triangle shows the transition double burden. Although in the longer term the cost of the pension system is lower, it takes many years before the full benefit is felt.

This is obviously a highly stylized example. Economists dispute the size of the potential long-term gains from a shift to funding. And the size of the transition will depend on the starting point:

- How generous is the current pay-as-you-go pension promise?
- How mature is the pay-as-you-go pension system?
- What is the age structure of the population?

Nonetheless, the pattern of Figure 1 will generally hold. The transition from pay-as-you-go to funding creates a financing gap in the short-to-medium term.

Valuing pension promises

Like government bonds, pay-as-you-go pensions are a promise to pay certain amounts at certain times in the future. But, unlike government bonds, they are not measured in conventional public-sector accounts. Numerous studies have estimated the scale of these future pension liabilities. While precise results differ, the implicit

pension debt generally dwarfs conventional debt. Some experts argue for changes to this accounting.

Shifting to funding ends the process of rolling over the implicit pension debt to each upcoming generation. Some of the implicit pension debt therefore becomes explicit. The short-term transition cost adds to the government's explicit deficit (or reduces the surplus). With most governments battling hard to maintain fiscal

prudence, the transition burden looks difficult to surmount.

Yet, it is not necessary to support the changes to public-sector accounting outlined above to realize that the short-term transition cost could bring with it a long-term reduction in pension liabilities. This would improve the public sector's balance sheet. Indeed, the main companies that rate sovereign debt are beginning to take pension policies into account in assessing countries' credit-worthiness.

Valuing pension liabilities

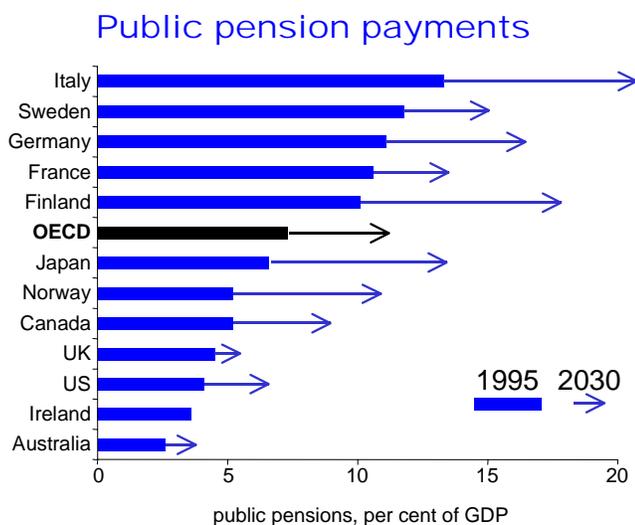
The total public pension liability is a 'stock' made up of a series of 'flows' of future pension payments. The chart shows public pension spending in 1995 and the OECD's projection for 2030 on current policies. Pensions already cost more than a tenth of GDP in seven OECD countries. They are forecast to increase everywhere bar Ireland. The simple average, currently around seven per cent of GDP, is expected to exceed 13 per cent in 35 years' time.

But this hides significant variation. Public pensions cost less than five per cent of GDP in a range of mainly English-speaking countries, less than a third of Italy's expenditure. And while the projections show an increase in Italy to more than a fifth of GDP, the proportion in the United States will reach only 6½ per cent in 2030.

Adding projected spending and discounting it gives the stock of pension liabilities. But future pension contribution revenues are like an 'asset' that can be subtracted to give net public pension liabilities. The results, assuming contribution rates do not change, show a similar pattern to the spending figures. For example, the OECD calculates net liabilities in the United Kingdom and United States of under a quarter of GDP, while in Sweden and France they exceed annual GDP. In three-quarters of OECD countries, including Canada, France, Germany and Japan, net pension liabilities are larger than conventional government debt.

The sheer size of future pension liabilities means they should not be ignored in fiscal policy analysis. But they cannot be treated as equivalent to conventional debt because pension policies can (and regularly do) change: contribution rates can be increased and benefits can be cut.

For example, Italy's 1992 reform, which included a pension age increase and less generous indexation, cut future pension benefits for an example worker by nearly 40 per cent, according to John McHale of Harvard University. Losses from reforms in the United Kingdom and the United States in the 1980s were put at around a quarter of the total benefit. Governments rarely default on conventional debt, but regularly renege on defined-benefit pension promises.



Paying for the transition

With contributions diverted into funded pension accounts, governments have four obvious options for financing existing pay-as-you-go liabilities:

- through increased taxation, which could either be levied on workers or through a more broadly based impost, such as income tax or a general consumption tax;
- through borrowing, that is by issuing conventional public-sector debt;
- by cutting public spending, either on pensions or more generally; and
- by 'swapping' pension liabilities with other government assets, for example, by using revenues from privatization or other divestment of public-sector assets.

The last of these has a particular attraction. Privatization proceeds are a 'one-off' receipt and the cost of a transition to funding is a one-off expense. Marrying the two seems sensible, particularly when some countries have got into fiscal problems by spending privatization proceeds on recurrent programs. However, the scale of revenues from asset sales has, in practice, proved sufficient to finance the transition cost with only in part or only for a relatively short period.

The choice between these financing mechanisms should, of course, be made in the general context of a sound fiscal policy. It will therefore depend on the particular circumstances of the reforming country. In practice, governments have tended to use a mix of mechanisms, as we will discuss below.

Policies to limit transition costs

Before we return to the financing of the transition, it is important to consider four policies that can affect the size of the transition burden in the short term:

- the speed of the transition to funding, which includes both the coverage of the new scheme and the rate at which contributions are diverted to funded accounts;
- the relative size of funded pensions relative to the new pay-as-you-go scheme;
- reduction of pay-as-you-go promises under the existing system; and
- allowing the government to share in any extra returns earned by the funded scheme.

The speed of transition

The shift from pay-as-you-go to funding can be implemented at a range of different speeds.

The most radical option would be to fund all pay-as-you-go liabilities, including the benefits of existing pensioners. The whole implicit pension debt is made explicit at one stroke. The government would have to make a huge, one-off transfer to pension funds of existing pensioners as well as workers.

At the other extreme, only new labor-market entrants would be covered by funded pensions. The transition cost with this minimal option would emerge over a number of years. Pay-as-you-go liabilities would remain the same for forty years or more, until the generation with funded pensions begins to retire. Pay-as-you-go contribution revenues would fall immediately, but initially not by much. Again, this cost would peak only after forty years or so. At this point, all workers have funded pensions and so pay-as-you-go revenues are zero. But all or most pensions are still pay-as-you-go. This problem disappears only in another twenty or thirty years, when most pensioners have funded benefits. So in this slow transition scenario, costs are spread over a number of decades.

Reforming governments have chosen transitions between these two extremes. Funded pensions are offered only to workers below a certain cut-off age or incentives are designed to ensure that older workers remain in the pay-s-you-go system. The most radical reforms in practice cover all current workers. But even in these cases, government guarantees will mean that older workers will tend to receive pay-as-you-go, public benefits.

Phasing in contributions

A second approach to spreading the transition cost is diverting only a small contribution to funded accounts initially and then gradually increasing the amount transferred. Examples of phased introduction of contributions to funded schemes include:

- Australia, which had a six per cent mandatory contribution rate initially that will rise to nine

per cent by 2002 (although this reform involved the addition of private funded plans to the system rather than a transition from pay-as-you-go).

- Hungary, which also initially transferred six per cent to individual accounts. This was originally due to reach eight per cent in 2000, but the increase has now been slowed.
- Latvia, which has an initial two per cent contribution to funded accounts that will increase slowly to eight per cent by 2010. The increase is concentrated in the later part of that period.

Phasing in contribution to funded systems obviously spreads the transition cost and allows for a larger revenue flow to meet existing pay-as-you-go liabilities. However, there are two dangers in this approach.

First, the value of contributions flowing into accounts will be small and, since the system has only just been established, fund balances will also be small. This has two consequences:

- The costs of administering the system might mean that only a small net amount reaches individuals' accounts; and
- Pension fund managers might have to sustain losses for a long period until fund balances can bear an administrative charge that meets their costs. This might limit the number of entrants into the pension fund management market, restricting competition and individual choice.

Secondly, governments might renege on the policy of increasing contributions to funded accounts. This is obviously much easier than reversing the whole reform, which would amount to appropriation of private property. In practice, however, the results can be similar. The delay in introducing the amount of contributions diverted to individual accounts in Hungary obviously reduces people's pensions from the funded component. But there has been no offsetting increase in people's residual pay-as-you-go entitlements. Moreover, people are unable to reverse their decision to switch to the funded component, even though the terms of the switch have been worsened retrospectively.

These two arguments support using coverage of the new funded pension plan to smooth transition costs rather than phasing in contributions.

The balance between the pillars

No reform involving a shift to funding entirely eliminates the role of publicly provided, pay-as-you-go benefits. Nor should it.

A public pay-as-you-go 'first pillar' is needed for redistribution. At the least, governments provide a social-assistance safety net for pensioners or a minimum pension guarantee. This objective is to ensure that all older people achieve an adequate minimum standard of living. (See the Pension reform Primer briefing note on basic pensions.)

Other governments have chosen to maintain a broader first-pillar, which pays a defined-benefit, earnings-related pension to all retirees. In this model, the public sector continues to carry out some of the insurance role of the pension system, that is, ensuring that older people have an adequate income relative to their earnings when they were working (the 'replacement rate'). In the previous case, this insurance role was moved entirely to the funded part of the system.

This second approach continues partial pay-as-you-go financing of retirement incomes. Thus, the government continues to roll over some of the implicit pension debt to upcoming generations, limiting the transition liabilities. However, this also limits the potential benefits from funding.

Parametric reforms

The transition to funding has, in most cases, accompanied reforms to reduce the cost of the existing pay-as-you-go system. These changes are often called 'parametric', because they involve changes to the parameters of the system rather than fundamental change. Examples include cutting early retirement benefits or changing indexation procedures (uprating benefits in line with prices, for example, is usually cheaper than earnings indexation).

Sharing the returns to funding

The final way of limiting new demands on the *fisc* involves the government securing some of the additional return generated by a funded system compared with pay-as-you-go. Say investment returns, net of additional administrative costs (the return on funded pensions), are two percentage points higher than aggregate wage bill growth (which is the sustainable return in a pay-as-you-go scheme). Then the funded pension after a full career would be two-thirds higher than the equilibrium pay-as-you-go pension from the same contribution. In other words, the contribution rate to the funded scheme need only be three-fifths of the pay-as-you-go contribution rate to build the same pension. If the difference between the two returns is three per cent, then the required contribution rate is less than half; with a four per cent differential, a little over a third.

This suggests two main ways in which governments can share in these extra returns to lower pension costs.

First, reducing the valuation of accrued rights in the old pay-as-you-go system for people with funded pensions.

By adjusting the valuation of accrued rights by age, Hungary saved around 15-20 per cent of the cost of pay-as-you-go pensions. However, these gains only appear well into the future when younger workers' pay-as-you-go pensions become due.

Secondly, a target pension benefit can be reached with a smaller contribution in the funded sector. So, total contributions could be maintained while diverting some revenues from the funded system to paying for existing pay-as-you-go commitments. And, as the previous paragraph showed, the savings from this strategy can be large, depending on investment returns relative to wage growth. Indeed, in some simple economic frameworks it would be possible to levy the same total contribution while diverting only a part of it to the funded scheme, paying for the whole of the transition cost with the excess and maintaining the same target benefit level.

The United Kingdom moved in 1996 to reduce the proportion of contributions diverted to people's personal pensions for younger workers. This policy has saved around one third of the total value of diverted contributions. In contrast with the first policy, the savings accrue to the budget immediately, which makes this a better policy for helping with transition costs.

Debt or budgetary financing?

We have explored a number of proposals that spread the cost of the transition by introducing the funded component of the pension gradually and others that reduce the total transition cost. But this will typically still leave a transition cost. The options we set out previously can be divided into two main ones: budgetary finance (tax cuts or spending increases) and debt finance (issuing government bonds). There are a number of arguments.

Issuing bonds passes the cost of the transition onto future generations, which are likely to gain from the shift to a funded system. The transition 'double burden' born by current workers is therefore reduced. Otherwise, they would lose from higher taxes or lower public spending.

Secondly, building up debt in the short term and repaying it later allows tax rates to be held relatively constant. This tax smoothing avoids short-term rises in tax rates, which would increase distortions in the economy.

However, financial markets might not welcome debt finance, demanding a higher interest rate to reflect greater risk arising from increased public sector debt. If the transition cost simply makes explicit what were previously implicit pension promises, then this is irrational. But, as argued above, governments can and frequently do renege on pension promises; debt defaults are more rare.

The second argument is that debt finance may slow the development of the financial sector and improvements in the allocation of capital.

Financing the transition in practice

The two boxes below discuss two cases of countries that have moved from pay-as-you-go to funded financing of part of their pension systems: Chile and the United Kingdom. Analysis of transition finance is complicated because we do not know the counter-factual: what would have happened to the public finances in the absence of pension reform. However, our tentative conclusion is that Chile financed much of its transition by general fiscal retrenchment (tax increases and spending cuts), cuts in pension promises and limited use of debt. The United Kingdom seems to have used a similar mix of instruments, but with greater reliance on deficit financing.

It is also interesting to note how countries deal with accrued rights for those who shift from one scheme to the other. In the case of Chile, 'recognition bonds' were issued to these workers based on a formula specified by the government. These bonds go into individual accounts to be redeemed upon retirement. In other countries, such as Argentina, a new pay-as-you-go promise was made that covered years in the old scheme.

Financing the transition: Chile

In 1981 Chile became the first country to shift from publicly provided pay-as-you-go pensions to a funded system. Facing a large pay-as-you-go pension debt – estimated at 100 per cent of GDP – the government chose to use a combination of debt financing and tax/expenditure reduction to manage the transition deficit. This was fundamental to the stated objective of increasing overall savings rates.

Parametric reforms of the old pension scheme included an increase in the retirement age. More importantly perhaps, the government had pursued a restrictive fiscal policy during this period, running significant budget surpluses. This public saving helped offset initial pension deficits caused by the loss of contribution revenues. In the early years however, a significant part of the financing gap was covered by issuing new government debt and selling it to the new pension funds. Their holdings of Treasury bonds rose from 2.2 to 864 million US dollars between 1981 and 1986.

During the subsequent five year period, privatization proceeds replaced debt as the major source of deficit financing. In parallel, pension funds were allowed to purchase shares in the newly privatized and listed firms.

In the end, the transition financing requirements were spread out over several decades by setting up incentives that led mostly younger workers to switch to the new scheme and issuing 'recognition bonds' in lieu of rights accrued under the old scheme.

Financing the transition: United Kingdom

The United Kingdom already had a large funded pension sector before reform. Employer-run schemes, mainly defined-benefit, covered around half of the workforce. From 1988, people could substitute privately managed defined-contribution plans for the public, pay-as-you-go scheme. Around 25 per cent of workers switched, mainly the young: the average age of people with the new funded pension was under 30.

The loss of contribution revenues to the pay-as-you-go system was around 0.5 per cent of GDP at first, though policy changes since then have cut this to around 0.3 per cent of GDP. There was no explicit strategy for financing this transition cost. But the loss of contribution revenue — added to the effects of a prolonged, deep recession in the early 1990s — meant that the social security budget moved into deficit. Employees' contributions were increased from nine to 10 per cent of earnings, raising around 0.2 per cent of GDP. The general government budget also moved into deficit because of the recession and rapid spending increases before the 1992 election.

Further reading

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Conclusions and recommendations

- ❑ Under pay-as-you-go financing, workers' current contributions go to pay for current pensioners' benefits
- ❑ Under funding, workers' contributions are paid into their own pension accounts and accumulated contributions and investment returns pay for their pensions
- ❑ So the transition from pay-as-you-go to funding raises the prospect of a 'double burden': workers have to pay for their own and their parents' pensions
- ❑ Transition costs can be controlled by a number of policies
- ❑ Limiting the coverage of the funded program to new labor-market entrants or younger workers spreads the transition cost over a longer period
- ❑ Scaling down existing pay-as-you-go liabilities is likely to play an important part in any fundamental pension reform
- ❑ Governments can share in any extra returns to the funded system and use them to help pay for the transition cost
- ❑ Countries have in practice used a mix of strategies
- ❑ The precise balance between debt and budgetary finance (spending cuts or tax increases) should be chosen in the general context of a country's fiscal policy

