

THE GREAT ESCAPE



Financing the Transition to Funded Pensions

by Eamonn Butler



**THE GREAT ESCAPE:
Financing the transition to
funded pensions**

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Adam Smith Institute

London

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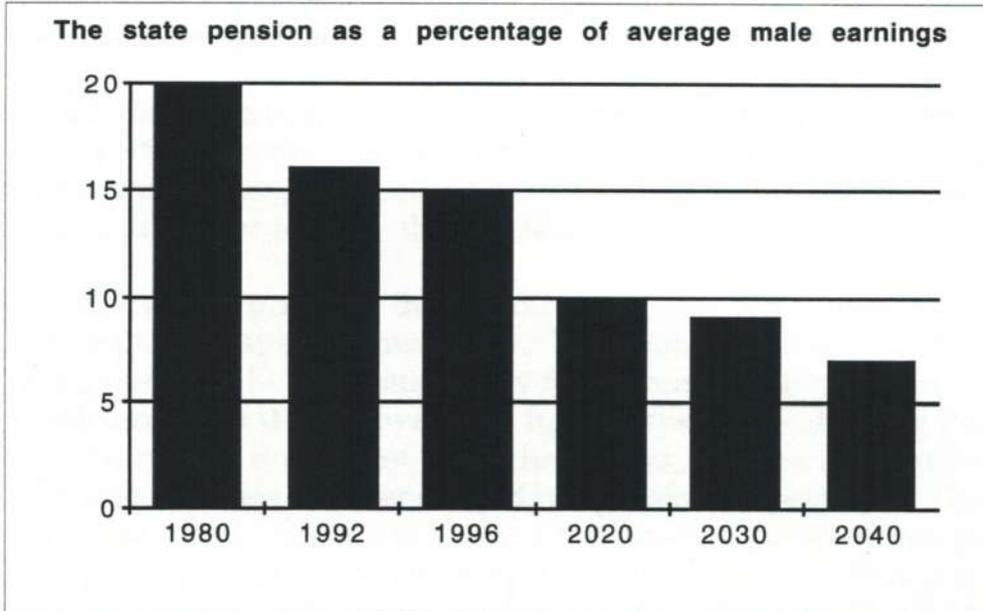
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1. The need for change

Turmoil in the present system

The future design and funding of our welfare state has become a matter of urgent public debate. People no longer accept that state benefits will protect them adequately, although the cost of the welfare state is already large and grows each year.

By far the largest element in the welfare state budget is the state basic and earning-related pension. Roughly 80% of what the nation's workers contribute to the national insurance system is immediately paid out again to pensioners. Yet the future prospects for pensioners are grim. The basic pension is already below the income support level, and it will continue to fall against lifetime earnings. Those who rely solely on the state pension face a retirement at the poverty line.



All this is despite the fact that the contributions levied to pay for the system are quite large. Including the element paid by the employer, a worker on average earnings pays out 17.2% of that salary in national insurance contributions (NICs). If we say that 80% of that goes towards pensions, then the average worker is giving up nearly one-seventh of his or her income for the doubtful pleasure of retiring in poverty.

Of course, that same worker is also paying a marginal income tax rate of 23%, taking the total marginal rate including NICs to over 40% — and that is on merely an *average* income. Not surprisingly, therefore, there has been some public resistance against adding to the burden. Proposals to add a new layer of compulsory contributions, however much they promise to secure and upgrade the state pension, have been roundly dismissed as simply a new tax.

The benefits of the funding alternative

Given the high contributions and low benefits in the present system, there is truth in that view. Much of what people are forced to pay for national insurance buys them nothing. If their money were properly invested, they could achieve the same benefits in retirement on the strength of far lower premiums. The difference between what they pay today and what they really need to pay is indeed a real tax.

This stark difference in value for money has convinced many observers that we do not need to increase compulsion still further in order to improve retirement benefits. We could improve pensions in the future simply by making today's compulsory contributions work harder — by investing them for growth, rather than spending them immediately on current benefits.

The transition question

Indeed, this long-term bonus of funding is now widely accepted in the UK, along with the many other advantages which it confers. But even those who accept the long-term case for funding still worry about how to make it work in the *short* term — the so-called *transition* problem.

The difficulty is precisely that in today's system, the money from contributions is spent immediately. Each pound that is collected each week goes straight out again to pay for current pensioners and beneficiaries. So if we moved to a funded system — allowing people to keep the money and invest it for themselves, or even if the state invested it for them — then how would today's pensioners get paid? The money which used to go directly to them will instead be diverted into savings funds for the benefit of the workers who are paying in. That may be good news for contributors, but it is bad news for politicians. The benefits of today's pensioners still have to be paid, but this diversion in the flow of money leaves a big gap in the public finances.

This transition problem looms so large that many people doubt the possibility of moving to a funded system, whatever benefits it might bring. To make such a transition, the argument runs, one generation would

have to "pay twice" — once to fund its own pensions, and once more to continue paying the benefits of current beneficiaries.

Superficially, this argument is a crucial obstacle to reform. It is not an argument against the long-term desirability or wisdom of moving to a funded system, but a matter of practicality alone. Why should anyone pay more today so that future generations can profit?

In reality we need not pay twice

The truth is that one generation does not have to pay twice. The unfunded state pension system is in fact such bad value for money that by properly investing the same contributions, this generation could earn enough to pay all its obligations to today's pensioners and still provide an even larger pension for itself.

As well as this extra capital growth, there is also a more general boon to the economy in moving to a funded system. First, NICs are largely a pure tax, and are seen as such. They raise the cost of labour, making employers less willing to create job opportunities and the public less willing to take them. So business is depressed.

Second, diverting NIC money into real savings makes a large new pool of investment funds available for UK businesses. That investment means new business development, higher productivity, more jobs and greater economic growth.

All in all, the evidence is mounting up that our present unfunded state pension and benefits system imposes such a severe drag on the economy, and performs so poorly against private savings, that we can make the transition to a funded system and still leave every person in every generation better off.

Putting numbers on the gains

The pathbreaking work on managing the transition to a funded system has been done in the United States, which has also had a national debate on how to reform an ailing government-run pension system. This analysis, often very detailed, indicates that very substantial long-run benefits are possible.

Thus Professor Martin Feldstein, former head of the Council of Economic Advisers and now at the Department of Economics in Harvard University, estimates that the gains from moving to a funded system would be as high as 5% of GDP each year, in perpetuity.¹

Using completely different methods, Professor Laurence Kotlikoff of the Department of Economics in Boston University has come to a very similar conclusion, estimating a welfare gain of 4.5% to future generations. Indeed, future generations would become so well off that they could easily compensate the present one for shouldering the burden of change, so that nobody need lose out at all.²

Towards a funded future for the UK

The Adam Smith Institute is no longer alone in proposing that we should indeed move from a pay-as-you-go state pension system to a properly funded system. Its Fortune Account concept would allow people to opt out of the national insurance system and open personal lifetime accounts that provided not just a savings fund for retirement, but private insurances against lifetime misfortunes as well.

However, the Institute is rather more unique in its assertion that the transition to a funded system can be achieved within a generation and without anyone being made worse off — let alone having to "pay twice". This is largely because most people in the UK are unfamiliar with the economic analysis that has been done in the United States, and have underestimated the economic drag and bad value for money of the present state system. It is so natural to believe that moving to a funded system involves "paying twice" that few commentators have even bothered to question the assumption.

Structure of the report

This report does question that assumption that one generation has to pay twice. Its conclusion is that even by paying less than once — that is, less than what we pay now in NICs — we could move to a funded system without anybody losing out at all.

The report does not aim to replicate, within the UK context, the very detailed analysis that has been done in the United States.³ Nor does it hope to provide precise figures on the economic drag of our pay-as-you-go pension system or the economic benefits of funding. At most, it will outline the arguments and provide some rough figures on how large the various effects might be. More detailed modelling work is in progress, which we hope will provide more precise answers later.

After looking at these economic effects, the report explores some different options that might help in reducing the size of the unfunded liabilities we have to cover, or in raising extra revenue to meet the transition cost.

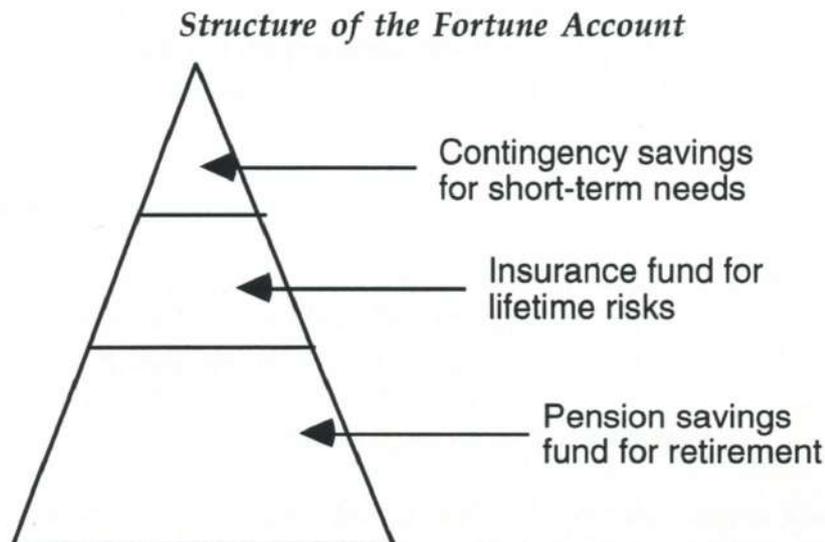
Before we begin that exploration, however, it may be useful to start by recounting some of the essential features of the Fortune Account proposal.

2. The Fortune Account proposal

The Fortune Account is a simple alternative to the National Insurance system. It is a personal, funded, lifetime account into which people save when they are young, fit and in work, in order to provide for themselves when old, sick or unemployed.⁴

The Fortune Account is designed to meet the *basic* retirement and lifetime needs of everyone, not to provide tax-free extras for the rich. It is for the millions, not the millionaires. It has three elements:

- long-term savings towards a *basic pension*, which can be used only after retirement;
- insurance for *lifetime risks*, such as incapacity to work;
- contingency savings for *short-term risks* such as temporary unemployment.



Ownership and control

In contrast to the monopoly state system which everyone has to join today, Fortune Accounts will be offered competitively by a range of approved

providers such as insurance companies, banks, unit trusts, and building societies. If people do not like the service or performance they get from one provider, they can move their Account to another.

Like a building-society account, a Fortune Account is the holder's property. The money saved in it can be willed and inherited. Politicians cannot raid it, nor gain from fiddling the benefit rules.

Building up and using a Fortune Account

Most people would have a simple choice: they could either stay with the state system, or open a Fortune Account.

If they chose the latter, then instead of paying national insurance contributions into the state scheme, they would pay a regular contribution into their Fortune Account, and watch it grow.

Those newly entering the workforce would be required to go into the new system. Thus when the last of that generation retires, the old-style "welfare state" retires with them.

People who leave the state system and take out a Fortune Account would receive recognition for the national insurance contributions they have made over past years. To avoid the whole cost coming at once, this can be done through a "recognition bond", with the relevant amount being paid into their Fortune Account when they retire.

A spouse, partner, relative or friend can pay in to a person's Fortune Account. This will help, in particular, non-working spouses who at present accrue limited state pension entitlement and are not allowed to build up a personal pension because they are not earning.

Simple regulation

The Fortune Account must be a simple package with low costs. Simple PEP-style tax treatment is preferable to today's complex pension rules. The present costly regulations on the selling of financial products are similarly inappropriate: the Fortune Account should be a basic but safe product which cannot be mis-sold because it is right for everyone.

To guarantee that security, product regulation would ensure that people's Fortune Account money is not invested in highly risky investments, and that providers maintain a reasonable spread between gilts, equities, property, and other investments.

To keep Inland Revenue and DSS tracking simple, individuals should have only one Fortune Account. To make things easy for customers, each

person's Fortune Account should be managed by a single provider — although behind that lead provider may well stand a consortium of insurers, fund managers, and customer service agencies.

The welfare function

The Fortune Account unbundles the welfare state, turning the strictly insurance and savings functions over to the competitive market, where customers can benefit from the forces of choice and competition. The state can then focus on its strictly welfare function of helping those who need support from the rest of the community. Indeed, welfare policy would become more rational and more effective because it was not being confused with other functions.

To achieve its welfare goals, however, the state does not need to duplicate the claims assessment and benefit payment mechanisms of Fortune Account providers. It can achieve the same more easily by topping up the Fortune Accounts of deserving individuals.

Incentives too would be more positive in this inclusive approach to welfare provision. The state would be encouraging people to work and to save, not penalizing them when they do. By giving people a stake in their own future security and prosperity, the Fortune Account replaces the pathology of dependence with the culture of betterment.

3. The benefits of change

How large are the unfunded liabilities?

The UK state pension system is a pay-as-you-go system. The money that is collected from today's contributors is not saved and invested to pay their pensions when they retire: instead, it goes out immediately to today's pensioners. The system is, in effect, a chain letter which depends on each new generation of workers paying in, in the hope that future generations will do the same when they have retired and are drawing their pensions out.

The ageing profile of the population makes this chain letter harder to sustain, because there are fewer people paying in to meet the benefits paid to each pensioner. Although the UK has done much to limit the burden on today's contributors, it is still instructive to be aware of the scale of the obligations which those contributors must meet.

It is hard to be precise about the size of our unfunded state pension obligations to current pensioners and those yet to retire. The true figure will depend on the particular mix of pensioners, how many of them are married, how long they live, how large or small are the entitlements they have built up during their lives, and so on.

Any accurate figure, therefore, is invariably hedged around with lots of assumptions about demographics and the economic environment. We undertook this complex exercise in *The End of the Welfare State*,⁵ but for the mere purposes of illustration here, we can estimate the figure much more crudely.

Existing pensioners. The total amount paid out to state pensioners in 1995-6 (the last year for which we have reliable national insurance income and expenditure data) was £32,225m. In that year the life expectancy of a 65-year-old man was a further 15.5 years, and for a woman it was 19.3 years. Forgetting all the details about different retirement ages and entitlements, multiplying the crude average of life expectancy by the annual expenditure gives us just over £560bn.

That, roughly and in today's prices, is the total amount which today's pensioners should expect to receive before the very last of them dies.

There is no money put by in the public accounts to pay this sum; it is an unfunded liability.

Future pensioners. Then, of course, there are all those who are not yet retired but who have paid in to the national insurance system for some time. They are entitled to at least some future benefit in retirement too.

Again, the exact amount will depend on how much they have actually contributed to date, their marital status and life expectancy, and how much the state will finally give them in return for their money. Precision is impossible, but analysis done for the Adam Smith Institute by Lombard Street Research puts the total figure at around £1000 billion.⁶

Total pensions obligation. In other words, the UK is carrying unfunded state pension liabilities of £1,560 billion. Put in more intelligible terms, this unfunded state pensions debt is equivalent to almost four-and-a-half times the national debt, nearly two-and-a-half times GNP, or more than £33,000 for every adult in the UK.

Clearly, these are very large numbers. How well or badly the state pension scheme works will therefore have a very significant effect on the national economy both now and in the future.

The losses from the present system

There is growing evidence that much of this very significant economic impact of the state pension system is in fact negative, and negative to a surprisingly large degree. Put bluntly, our state pension system imposes a very severe drag on the economy. That drag not only reduces our future prosperity, but makes it harder to afford the cost of state pensions (and everything else) today.

There are several sources of this loss.

Poor return on contributions. Firstly, people get a very poor implied rate of return on what they pay into national insurance. A generation of contributors would retire three times better off if they could take back the pensions element of their national insurance contributions and put it instead into a company or private pension fund.

Again, it is hard to measure with accuracy the scale of this bad value for money. NICs finance welfare and insurance programmes as well as the state pension, so separating out the pensions element is no easy task. Also, different people will do better or worse than the average, depending on their income, marital status, longevity and so on.

However, the figures produced some years ago by Save & Prosper actuaries for the Adam Smith Institute report *The Future of Pensions*⁷ may serve as a rough indicator:

Salary	Single man % pa	Married man % pa
² / ₃ national average	0.3	2.7
national average	-0.3	1.9
upper earnings limit	-0.7	1.4

According to these figures, a married man on average earnings would receive a positive return of less than 2% per annum on the money he contributed to the state pension scheme. If the same man earned more he would pay higher NICs for the same benefits, so his implied rate of return on contributions would be even lower.

For single men, benefits are lower — no widow's benefit is payable to a surviving spouse, for example — so the returns on contributions look even more miserable. Indeed, most single men would be better off putting their state pensions contributions under the mattress than surrendering them to the national insurance system.

National insurance is a tax. As the figures indicate, a large part of the national insurance contributions paid even by people on average earnings are a pure tax, which buy them no extra benefits. And because people get such a poor rate of return for their money, the difference between what they do get in the state scheme and what they could get in the commercial market is a pure tax too.

With most of that tax falling upon employers, the depressing effects on the labour market are obvious. Employers are less willing to create new job opportunities because of it. On the other side of the labour market, the tax burden within NICs makes it less worthwhile for unemployed persons to take a job, or for those in work to put in more hours or seek promotion. All of this is a loss to the economy.

Crowding out personal investment. Because people are forced to pay into the national insurance system, they have less money in their pockets to devote to genuine saving of their own. There is a smaller pool of savings on which UK businesses can call for their development needs. So interest rates are higher, and there is less investment in industry, resulting in lower productivity and smaller wages.

The capital loss of bad returns

In a pay-as-you-go state pensions system, as we have seen, the money that is collected each week from contributors goes straight out again to pay pensioners. By contrast, any money which people might pay into a private, funded pensions and insurance plan is invested in interest-

bearing assets, where it can grow. This makes a big difference in the amount of money that is available when people retire.

Limited growth of the state system. Like a chain letter, the pay-as-you-go state system relies on the future contributions of taxpayers to finance its future benefits. The size of those future benefits is always limited by the amount of tax that can be coaxed out of the working generation at the time. In the state system, benefits can increase only as fast as tax contributions can be made to increase.⁸

The rate-of-return figures in the table above show how what rates of return apply to people in different circumstances. However, we can use simpler methods to obtain a broad estimate of the returns which the state system delivers for the population as a whole.

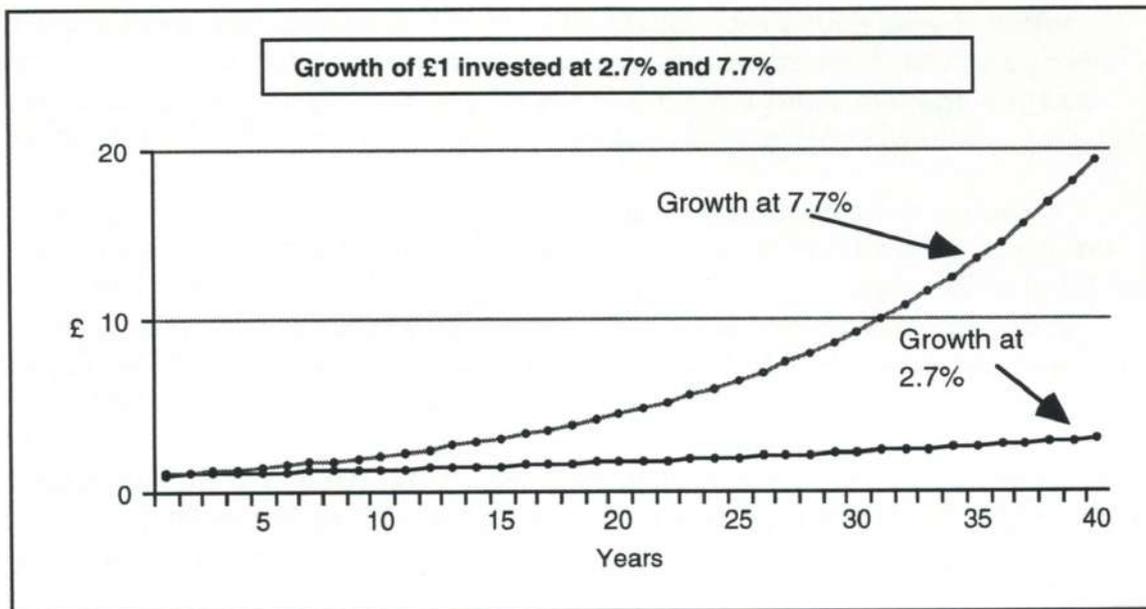
Generally speaking, the growth of taxes levied on income, including national insurance contributions, reflects the growth in real earnings. According to the *New Earnings Survey*, the growth of real earnings has averaged just over 2.7% per annum in real terms since 1970. So if that rate of growth continues, and there are no major changes in tax rates nor waves of immigration to swell the number of contributors, we can expect future tax revenues to rise at around 2.7%pa as well.⁹ That, as we have seen, sets the limit on how fast the benefits of our pay-as-you-go state pension scheme can be expanded.

This is a very poor return, but things are probably even worse. The changing demographic balance means that contributions will be stretched even more thinly, making benefit growth even slower.

Superior growth of a funded system. In a funded system, things are very different. The future benefits that any size of contribution will buy depend on how well that money is invested. Since it can go where return are highest, there are strong opportunities for the money to grow rapidly, with value accumulating year on year.

By way of illustration, the growth achieved by UK pension funds since 1980 has averaged 9.6% per annum, in real terms. The average growth from 1963 has been 11.7%.¹⁰ However, let us be ultra-conservative and take the even longer-term figure of 7.7% percent which the pension funds have averaged since 1950.

Even at this rate of 7.7%, investors would double their money within ten years. That stands in marked contrast to the 26 years which would be needed to double an investor's money in a scheme paying only 2.7%, like the state scheme.



The real tax element of contributions. Even if we make no allowance for the worsening demographics and look only at the averages, the difference between the 7.7% annual real return which an individual can get from the private pensions market and the 2.7% annual real rate of growth which the national insurance system offers is stark enough. That 5 percent difference is a hidden tax on all contributors.

Over the forty years or so of a working lifetime, compound interest turns that annual 5% difference into a very large capital loss indeed for the contributor. After 40 years at 7.7%, an original £1000 invested in a private pension fund would have grown to £19,437. After 40 years at a growth rate of 2.7%, the same £1000 contributed to the state pension scheme would yield benefits of only £2,937.

Size of the "wasted" NICs. We can estimate what this hidden tax actually means to people by looking at the same phenomenon from the other direction.

Over 40 years, a £1,000 contribution to the state scheme, assumed to grow at the same average 2.7%pa by which real earnings grow, will produce (as we have seen) benefits of £2,937.

What size of a contribution would be needed to produce the same benefits after 40 years, if it instead could be invested at the 7.7% return averaged by the private pension funds over the long term?

The answer is that a contribution of a mere £151 would be needed to produce the same benefits for which the state scheme charges £1000. That is, nearly 85% of the NICs paid by a young worker at the start of a forty-year career are "wasted". The same benefits could be bought for under one-sixth of the price, if the money were properly invested.

This is, of course, as bad as it gets. The capital loss which people suffer grows exponentially, the further they are from retirement, so the burden on young people is particularly large. But even a more average worker, halfway through a working life, is paying well over the odds too.

Thus on the basis of a 2.7% return, a worker with 25 years to go until retirement would see £1000 worth of contributions building up to a fund of £1,968 at the end of that period. With a 7.7% return, only £307 would be needed to build the same fund in the same time. So even in this case, 69.3% of the NICs paid are "wasted". The remainder is a pure tax which buys the contributor nothing.

Size of the tax on contributors. As a crude indicator of how big this tax is for contributors, let us look again at that typical worker with 25 years left to go before retirement.

On the basis of the NIC rates prevailing in our chosen year of 1995-6, which were a little lower than today's, then if that same worker were on an average earnings, a total of 17.2% of salary (including the employer's contribution) would be deducted in NICs. Of that, roughly 80% (ie 13.76% of salary) was destined to pay for the state pension. Of that, 69.3% (ie a total of 9.54% of salary) is "wasted".¹¹

This means that, with proper funding, the NICs paid by someone on average earnings and in mid-career could be reduced by well over half — from 17.2% of salary to just over 7.7% of salary.

Loss to the whole economy. Over the whole economy, these are big numbers, reflecting a very significant capital loss for contributors.

From the 1995-6 DSS figures we know that NICs totalled £40.032bn, of which almost exactly 80%, just over £32bn, was spent on the benefits of current pensioners. If the average "wastage rate" suffered by the economy as a whole was the same 69.3% suffered by that average earner in mid career, then the total loss would be just over £22.19bn.

Given a GDP figure of £705bn for 1995-6, that £22.19bn reflects a total loss of capital growth to the economy of just over 3.1% of GDP. This is not a one-off loss, but a loss each year, in perpetuity.

Of course, these rough calculations are simply a shorthand way of getting a rough grip on the magnitudes. While they are not necessarily very far out,¹² a much more intricate analysis, building up the total picture from the pixels of individual cases, would be needed for a more accurate view, and even that would be hedged around with actuarial assumptions. Even so, the sheer scale of the capital loss revealed by these rough estimates is surprising.

Indeed, the loss is slightly larger than the growth of real incomes. If we could change our unfunded pension system into a funded one, it seems that we could double our rate of economic growth.

The deadweight loss of labour-market distortions

What we have considered up to now is just the capital loss which comes from our NICs being spent immediately instead of being allowed to grow through long-term investment. A second source of loss comes from how national insurance distorts the labour market.

Taxes and the labour market. Taxes levied on wages inevitably distort the supply of labour and the way in which people are paid. When those in work are heavily taxed, it becomes less attractive for people out of work to seek a job, and less attractive for those in a job to work more hours. There is less point in people putting real effort into their work, or travelling further to get a better job. Workers are more inclined to take longer breaks and days off, and less worried about going back to unemployment. They prefer untaxed fringe benefits to highly taxed cash.

It is easy to see how effects like these gum up the labour market and therefore make the process of industry less efficient, resulting in an economic loss to us all.

How far is NI a tax? To judge how big such a loss caused by the imposition of national insurance contributions on wages might be, we must first establish just how far national insurance should be called a tax. After all, at least some of what people pay out during their working lives does come back to them in benefits later.

As we have seen, it is clear that a very large part of what people pay is indeed a pure tax, merely because of the investment returns which they forgo. Thus as we have seen, for the younger worker with forty years to go before retirement, some 85% of NICs paid are in this sense a tax, while in the more average case of someone with 25 years to go, about 70% is a tax, buying the contributor nothing.

Poor linkage. However, things are even worse than this, because of the poor linkage between contributions and benefits. As the table of implied rate of return data showed, some people do better than others in return for the same contributions — for example, a married man does much better than a single man.

Depending on circumstances, in other words, the same pound's worth of contribution will buy different people different amounts of pension benefit. Equally, the same pound will buy different amounts of benefit for the same person at different times.

If there were simply no correspondence at all between what people paid in and what they eventually got back in benefits, then the benefit-contributions linkage would be zero and national insurance would be a 100% pure tax. And this happens quite commonly. For example:

- people about 90% of the way through their working lives are already entitled to the full basic pension, and any further NICs they pay do nothing to change that;
- people on salaries above the average but below the earnings limit pay NICs on every extra pound they earn, but may get no extra benefits in return;
- at the other end of the scale, people who may have paid NICs, but have done so for less than a quarter of their working lives, are entitled to no state pension at all.

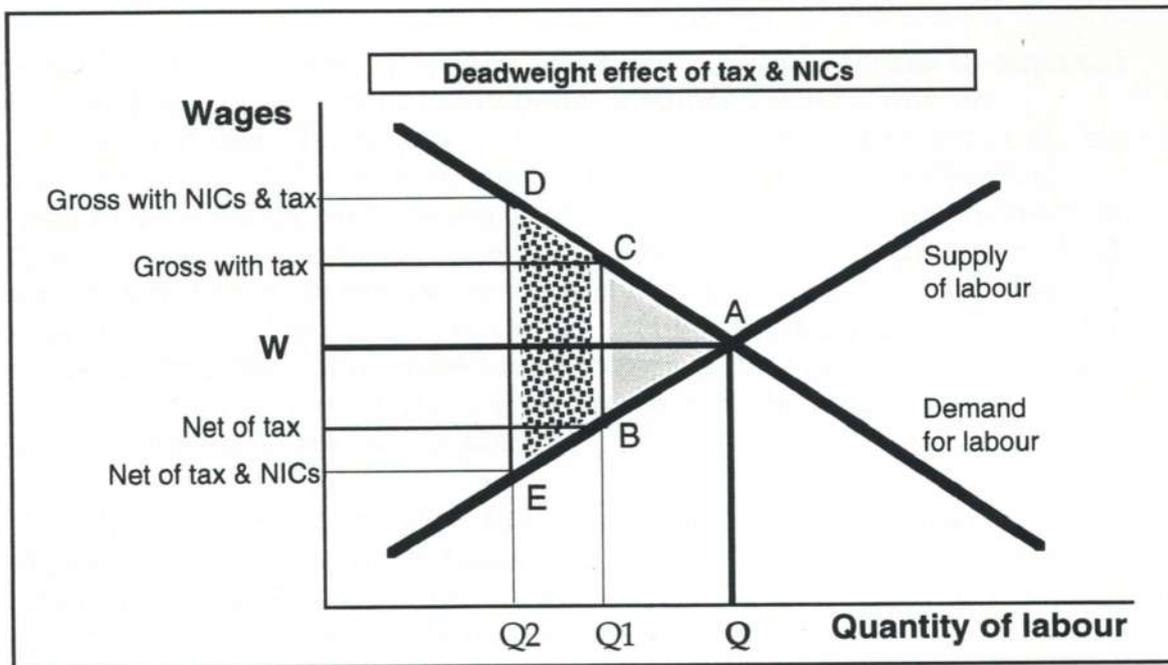
Of course, the contribution rules aim to ensure that there is at least some linkage between contributions and benefits, but it is by no means 100%. Furthermore, the important thing in terms of the effects on the labour market is not the reality of the link, but how people perceive it — which is much nearer to zero.

Employers, for example, perceive themselves getting no extra benefit at all from what they pay in employers' contributions. Most workers find the contribution rules opaque, and believe the state pension is the same for everyone, so they too expect no extra benefit for any extra NICs they pay. And there is indeed a big psychological difference between money put into a savings account in the holder's name (where the link between contributions and benefits is clearly 100%), and money deducted by the government along with zero-linkage items such as income tax.

It is impossible to put a precise figure on a psychological effect, but let us assume that people do indeed perceive the 69.3% of their NICs that are "wasted" by not being invested, as a pure tax. Of the roughly 30% remaining, three-quarters are paid by employers who probably regard them as a 100% tax. Let us be generous and say that, of the 7.5% then remaining, people expect roughly a two-thirds linkage, leaving us with 5% overall. The other 95% of NICs is best regarded as a pure tax.

Size of the deadweight. Furthermore, it is a tax directly levied on wages. As explained already, it will have a distorting effect on job creation, employment, working hours, conditions of work, fringe benefits, and other parts of the labour market, and so will depress economic growth.

Economists depict the deadweight loss of a tax in any market as a small triangle between the supply and demand curves. To take income tax as an example, the deadweight loss of that tax in the labour market is the triangle ABC in the sketch below.¹³



However, the effect of the pure tax element of NICs is to increase this deadweight loss by a surprisingly large amount. On average earnings of £19,100, income tax is levied at a marginal rate of 23%. The marginal NIC rate on the same income is 20%, making a combined marginal rate of 43%. The total amount paid in NICs, at £3560, is actually more than the income tax total of £3339.

The effect of this is to add to the "small triangle" of deadweight loss due to the income tax (ABC) a much larger trapezoid of deadweight loss due to the additional burden of national insurance (BCDE).

The precise size of this extra deadweight depends on the various elasticities involved — the supply of and demand for labour, and the elasticity of the tax base with respect to the tax share. However, there is every indication that it is very large. On the basis of the American figures, where state and federal taxes are a marginal 33%, Professor Feldstein calculates that the incremental deadweight loss, from just the 9.5% extra burden of "wasted" contributions alone, is about ten times the deadweight loss that would occur if the social security payroll tax were the only tax.

This translates to a deadweight loss of roughly one-fifth of the US social security tax revenue, or one percent of GDP, due to the "waste" of contributions not being properly invested. If a similar result were obtained in the UK, the comparable figure here would be around £7bn or £8bn

Lack-of-linkage deadweight. This, again, represents only the deadweight burden of the capital growth forgone because the system is unfunded. The

haphazard relationship between contributions and benefits increases the deadweight cost even further.

Some of the deadweight cost from that source could of course be removed by transforming our collective national insurance system into an individuated one. Without introducing any private investment at all, we could individuate the existing state scheme by opening an individual pension account for each person, crediting it with the pension element of each person's NICs, and imputing the average pay-as-you-go return of 2.7 percent per annum to the balance in each account. This would at least establish a 100% linkage between what people contribute and what they receive in benefits. They would tend to regard their contributions a little more as personal savings and a little less as taxation, making them more positive players in the labour market.

Nevertheless, individuation without the benefit of private investment still does not erase the much larger loss due to the abysmally low rate of return that prevails in the unfunded system. That loss could be stemmed only by moving to a properly funded alternative.

Crowding out private saving

The third big source of loss is the crowding-out of private saving due to the fact that having to pay NICs leaves people with less in their pockets to invest privately.

As we have already seen, the unfunded nature of the system causes a decline in national capital income and economic welfare. How large it is depends on how individual saving responds to the extra burden and what the government does to encourage private saving.

For example, if every pound that people paid in NICs were given back to them, and they decided to put every pound of this rebate into private saving, then the loss to capital growth caused by the imposition of NICs would be the whole 5% (compound) difference between what that money would purchase at the state's 2.7% growth, and what it would earn at the pension funds' 7.7%.

Of course, people are unlikely to act like this, if they have the choice. Some shortsighted people might not save any of their NIC rebates for retirement at all. Many people would calculate that investing the whole of their NICs at 7.7% would leave them well over-provided in retirement. So if NICs did not exist, it seems unlikely that people would choose to save as much in pension funds of their own.

How much people would save if there were no NICs and no state pensions is an empirical question. Feldstein makes a conservative guess, on the basis of the American figures, that perhaps 50% of what people gain from

the social security system would be replaced if they were given the opportunity to invest the money for themselves. This means that in the United States, the annual loss from the crowding out of private saving would be more than 5% of GDP.

However, in net present value terms, people in the United States get more out of the system than they put in, and that future gain must induce them to save rather less. In the UK, people get out less than they put in, and that future loss induces them to save more. Hence the financial assets held by US households nearing retirement is less than \$9,000, while UK households have £650bn invested in private pension funds, more than the rest of Europe put together.

So the loss to private saving caused by the presence of an unfunded state pension scheme may not be so large in the UK as the 5% of GDP estimated for America. Yet the fact that NICs are so high in this country undoubtedly leaves people with less in their pockets to devote to savings, or anything else for that matter.

Other factors

Investment risk. Some critics might object that the 5% per annum difference in the real average rates of return offered by the public and the private sectors is illusory because of the differences in risk.

Where an individual's funds are invested over a lifetime, there is always the possibility that the returns in some years may be low or even negative. In the worst imaginable case, a disastrous investment strategy may wipe out the fund completely. By contrast, it is argued, governments do not go bust, and though the implied rate of return they offer on contributions is low, at least it is certain.

This is, of course, false. Private pension funds manage and reduce their risk by spreading their investments, not just across different companies, but across different industries and even across different countries. By contrast, the finances of several world governments are looking shaky under the burden of their pension commitments.¹⁴ Governments do go bust, and even more commonly they re-write the pensions laws to give beneficiaries a poorer deal. State pension systems are by no means risk free.

The Adam Smith Institute's Fortune Account proposals envisage an investment strategy that errs deliberately on the side of security in order to provide a basic pension for everyone. A life-stage fund mechanism would direct people's savings into riskier assets such as equities at the beginning, shifting to less risky assets such as bonds when retirement approaches. Thus the volatility of the higher-yield assets could be smoothed out over

the first years, while lower yields would be compensated by greater security in the later years.

Windfall gain generation. Another factor that might temper our criticism of the pay-as-you-go system is that its earliest members received a windfall gain. Though they paid little or nothing into the system, they still received the state pension right up until their death. Obviously these windfall gains to certain generations must offset some of the losses that, as we have seen, exist more generally in the system.

David Thomson considers this windfall gain in his book *Selfish Generations*?¹⁵ A typical UK family born in 1930, the Earlies, would have shelled out 16 years' worth of average pay in all their taxes and contributions. In return they would have received health, education, housing, pension and other benefits worth 35 years' average pay — a gain of about 230%. By contrast the Lates, born in 1955, can expect to pay out 30-35 years' worth of taxes and contributions, which buy them only 20-25 years' worth of benefits — a loss of around 70%.

As time goes on, of course, the windfall gain to the first generation are nowhere near the total losses that are sustained by the second, third, fourth, fifth, and so on. Feldstein's US data indicate that in present value terms, the loss to subsequent generations is nearly three times the windfall benefit to the first. In other words, with a funded system later generations could have made the Earlies just as well off as they were, while still remaining much better off themselves.

Macroeconomic issues

Moving to a funded system could have many other effects on the economy, the effect of which is uncertain. We hope to estimate the size of these effects in a subsequent research project and publication.

Can markets cope? For example, switching to a system based on private investment would involve very large sums of money coming into the capital markets, and the question is what effect that might have on stock prices, interest rates, and so on.

Of course, it is always possible to smooth out the rate at which this new money comes into the markets. If one started the system gingerly with just new workers, the new saving would be less than £1bn, which is not too difficult to absorb. However, the figure rises cumulatively, year on year, until those new workers retire.

New saving, or asset rearrangement? Another issue is whether any additional saving that occurred through Fortune Accounts, or whatever individual vehicle replaced the collective state system, would really be

new saving, or whether people would simply cash in their PEPs, TESSAs, and private pension funds.

Wealth and spending patterns. Then there is a wealth effect. If people have savings designated as their own, they will feel wealthier and spend differently than if they are simply part of an undesignated state system over which they feel no rights of ownership. Again, it is not clear what the economic effects of this might be.

Investment overseas. Some economists also question what might be the effects on the markets, and on the public budget, if some of the new savings were invested in overseas markets rather than the UK. Typically, pension funds might invest up to thirty per cent of a young person's savings overseas. That would be a very large amount of money leaving the country, with significant effects on the exchange rate and other economic factors.

Economic demand. Another concern is the effect on demand of switching large amounts of money into new saving. More money going into saving means less is available for consumption, and that fall in demand could have serious consequences. On the other hand, if the government uses borrowing to pay today's pensioners, demand can stay high today and the burden spread to future generations.

Transition finance. This question of how we finance the transition to a funded system remains the most consequential. In principle, it is clearly possible to leave everyone much better off in the long run by virtue of moving to a funded system. The problem is how best to smooth out the losses and gains that will inevitably occur among the different generations and individuals who are alive while the transformation is in progress.

4. Financing the transition

Capturing the gains

By moving from a collective and unfunded pension system to one based on proper investment in individual accounts, we can expect a rise in economic efficiency. Employers and employees would perceive their contributions as savings rather than tax, work incentives would be heightened, saving would increase, there would be a greater supply of capital for business expansion, and the economy would grow.

On the basis of the American figures, Martin Feldstein estimates (on what he describes as "conservative assumptions") that such a reform would raise the well-being of future generations by an amount equal to 5% of the United States GDP each year, in perpetuity.¹⁶

It is not clear that reform in the UK could capture a gain as large as 5% of GDP, which would amount to £35bn each year — easily enough to cover existing pension obligations, and representing a net present value of well over £1,000bn.

Effects today and tomorrow. There is little doubt that reform will benefit future generations. The question is whether these future gains can be captured only by today's generation paying some price for them. The lower the future gains we are expecting, the less help can we expect future generations to give the present one in order to bear that transition cost.

The financial practicality of reform, therefore, will depend on factors such as the size of the future gains, how fast we make the transition, the tax structure, how far we compensate the transition generation for bearing the immediate cost of reform, how the government closes its budget gap (since taxation and borrowing will have quite different effects), and how large or small is the contributions-benefit linkage.

Simulations run by Kotlikoff on the US data suggest that even if future generations fully compensate the reform generation, they could still be left with a 4.5% welfare gain, in perpetuity. However, this depends on having started with a progressive income tax, the linkage being low, and the budget gap being plugged by consumption taxes. If things are otherwise — a flat-rate tax system, 100% linkage, and the budget gap plugged by raising

the income-tax rate, the reformers fully compensated — then those future gains can actually turn into losses.

The financing problem

In the UK, of course, we do start with a progressive tax system, and a very low contributions-benefit linkage. So the question of how we plug the budget gap is perhaps the main one.

Source of the gap. We are assuming that the general features of the proposed reform are these:

- each worker has an individual account into which regular periodic contributions are made from income;
- this money then invested in bonds, equities, or elsewhere;
- the government continues to pay benefits to today's pensioners, and pays at least some benefits to future pensioners in recognition of their past contributions to the state scheme.

It is this third element which opens up the financing gap. The transition government still has to pay its existing pensioners, but it no longer has the money which people in the reform generation are now saving for their own retirement, instead of paying over.

As today's pensioners die off and those coming up to retirement rely more and more on their own savings and less and less on their state entitlements, the gap gets smaller, but it is still quite a large gap and persists for a long time.

There are several ways of filling a budget gap — through borrowing, taxation, and privatization receipts, for example, or some mixture of the three. It might also be possible, if less honest, to reduce the gap by cutting back people's entitlements. There are other options too.

Borrowing to spread the burden

The obvious way of plugging the gap is through borrowing. Then the cash needed to plug the gap can be raised today, while it will be up to taxpayers in the future to repay the loan.

This strategy is not so selfish as it sounds. Future generations will be better able to repay those loans than we are able to afford the whole cost today. Their economy will be growing faster because of the higher efficiency of the new system, and the cost of paying state pensions will be smaller

because today's elderly will have died off, and tomorrow's be drawing less from the state, and more from their own savings.

Flow of funds. Nevertheless, the borrowing requirement is large. If everything now comes to the government in NICs were saved instead, then in the first year the government would have to borrow enough to cover the whole of that year's pensions bill — over £30bn. As time goes on, things would get slowly better, with the pensions bill falling and more and more new saving stimulating the economy.

Eventually our unfunded state pensions obligations fade out, no more has to be borrowed, and the new saving continues to swell people's pensions accounts at a compound rate. The reform generation's loans can be repaid, while future generations continue to gain.

Economic arguments. The markets might well react with surprise at the prospect of the public sector borrowing requirement doubling in a single year, with comparably large sums being added annually for some time. But in fact this is simply making explicit a debt which is presently hidden in the government's accounts — the £1,560bn or so of unfunded pensions liabilities.

Using capital from abroad. There is no reason why all capital needed to finance the transition should come from the domestic market, and the government may well be able to borrow more cheaply from abroad than it could at home.

Further than this, the World Bank has said that it is keen to help countries move to funded pension systems. Might this not also include the UK? A successful transition here — a large country with a fully mature pay-as-you-go state pension system — would certainly set an example for other countries, and make the World Bank's task in pension reform that much easier.

Using privatization proceeds

Chile and other countries have used the capital from state asset sales to help them build a funded pension system. Similar proposals have been introduced but not yet implemented in other countries, such as those developed by Sir Roger Douglas in New Zealand.

However, privatization would not make a significant contribution to the transition process here in the UK.

Although central and local government still have large holdings of land, buildings, and even some state enterprises, the easiest and largest privatizations have already been completed, and the potential income from future sales is limited. Moreover, the transition gap would dwarf

even the entire proceeds from privatization so far. Since 1979, the sale of the fifty largest state companies has raised £64bn, with up to £8bn more in plan for the next three years. That total would just about have paid two years' worth of state pension bills.

Taxation options

Another way of plugging the budget gap is to raise taxes. However, to raise the whole amount needed through extra taxation would re-impose much of the same drag on the economy that the new system is designed to remove. However, taxation may be used to supplement borrowing and other sources of capital.

Taxing the funds. Undoubtedly, politicians would see the new savings themselves as a potential tax-raising target. The very superior growth of private investment over the pay-as-you-go system leaves a large difference on which they could raise taxes while leaving everyone still better off than they were before.

However, taxing the funds — contributions, growth, or benefits — would be a misfortune, in that it would certainly discourage some new saving and would therefore choke off some of that new economic growth which is the mainspring of prosperity in the funded system.

Wider tax base. On the other hand, an untaxed funded system still gives people greater incentives to work and to save. Savings will rise, more funds will be generated for business investment, productivity will increase, and the economy will grow. That means the tax base grows too, releasing new tax revenues which could be directed squarely at easing the burden of the transition.

Income and consumption taxes. Kotlikoff makes the point that taxes on expenditure are more efficient in this respect than taxes on income. Fundamentally, retired people tend to save rather little, while younger people who are still in work save more. Higher income taxes do not bear on retired people very much; but they make work less attractive for younger people, and leave workers with less in their pockets, and so reduce saving and the long-term growth it brings. An expenditure tax, on the other hand, is borne by young and old alike, so its burden is not skewed onto the saving population. Indeed, since only spending is taxed, and not saving, it encourages saving.

How far do we protect ourselves?

If the government could reduce its obligations to present and future pensioners, then the budgetary gap would be smaller and that much easier to plug. This may be controversial, but it is not impossible. Indeed, there

have been many such changes over the years, most recently the move to less generous indexation and the rise in the female retirement age.

Radical measures. Even more radical proposals are being considered seriously on all sides, such as limiting pensions and other benefits to those below the income support level — which, in saving £20bn a year, would relieve us of around two-thirds of the transition cost.

Such a radical re-alignment of benefits raises both moral and political questions, though we should not underestimate the willingness of the public to make sacrifices today in order to preserve the long-run security of the basic pension system.

Future reductions. However, scaling down future benefits might be less controversial than reducing current ones. Thus we might continue to pay the full pension to those now retired and about to retire, but give others less than the full entitlement they have accrued through past contributions. Such a scaling down might be age-related, with the largest cutbacks borne by the young, who probably expect little benefit from their past contributions anyway.

Rational sacrifices. Paying everyone's expected entitlements in full makes reform harder economically, but easier politically because everyone knows they cannot lose. However, many people might well be prepared to give up even the whole of their past entitlements, in return for the opportunity of earning even more through the superior growth of their savings in the new system.

This would be a rational choice for more people than one might think. In *The End of the Welfare State* we calculated that even at the age of 47, a man would still retire better off by putting his NICs into private saving, even if he lost all the state pension entitlement he had accrued thus far. That is a measure of the poor value offered by the present system.

Simulating the transition

Kotlikoff has run a number of simulations on the transition from a pay-as-you-go to a funded pensions system in the United States. While the UK numbers would be different, his analysis at least reveals some of the factors that will shape the outcome of such a reform.

Base case. Kotlikoff starts with steady-state model with a 20% income tax, a 12% pensions tax, and a zero contributions-benefits linkage. The promised pensions are to everyone now retired and future benefits are phased out over a 45-year period. This results in a significant economic boost:

- the welfare of future generations is raised by 9.7%;
- the capital stock is 52% higher in the long run;
- output is nearly 16% higher;
- wages are 9.5% higher;
- interest rates fall by 24%;
- after an initial rise, income tax falls to 17.3%.

Unfortunately, that future welfare gain is possible only by making the present generation worse off.

Compensating the reformers. If future generations compensate the present one for its losses, then (under the same assumptions) they still enjoy a welfare increase, but at the much lower rate of 0.9%. Meanwhile:

- the capital stock become 8.5% higher;
- output is 8.1% higher;
- wages are 0.1% higher.

Although these benefits are much lower, we should remember that they are certainly not trivial.

With 100% linkage. The contributions-benefit linkage turns out to have a critical effect on these outcomes. If every dollar of tax bought exactly a dollar's worth of benefit, then future generations would still end up very much better off under the base case assumptions. But if the reform generation were compensated for its losses, then future generations would actually end up worse off. The 100% contributions-benefit linkage makes the reform not worth doing.

Using debt finance. If we go back to the base case but use borrowing instead of income tax to meet the burden of paying current pensions, some of the loss to the reform generation can be relieved, because the burden is pushed forward to future taxpayers. Indeed, borrowing for just five years relieves most of it, leaving future generations 7% better off. Borrowing for ten years overcompensates the present generation at the expense of future ones.

Using consumption taxes. Using consumption taxes to help finance the transition has generally positive effects. Welfare starts to grow straight away, and after 45 years (when the last benefits have been paid and the tax has fallen to zero) the welfare of future generations in Kotlikoff's simulation has risen by 2.1%

The securitization option

In *The End of the Welfare State*, Michael Bell suggested a completely different approach to the problem of transition finance. He pointed out that, along with the future unfunded liabilities of the state scheme,

governments have an asset in the future stream of national insurance contributions which people in work will pay.

In this respect the UK pension system is quite unlike the American one. In the United States, the net present value of people's future benefits is larger than the net present value of their social security taxes, making the system a net liability. In the UK, by contrast, people overall pay in more than they get out. So if we can package the future income and future benefits together, we have a net asset.

Prospects for private finance. Indeed, it is a saleable asset. Just like taking out a mortgage, the government could (in principle) get the financial markets to give it a large capital sum now in return for giving them the future stream of national insurance contributions. That gives it a large capital fund out of which future pension benefits have to be paid. The private sector is well used to that arrangement, and would willingly run it.

In more technical terms, we securitize the future contribution flows, sell them to the bond markets, and then offer the resulting package of capital fund plus pension liabilities to the private sector.

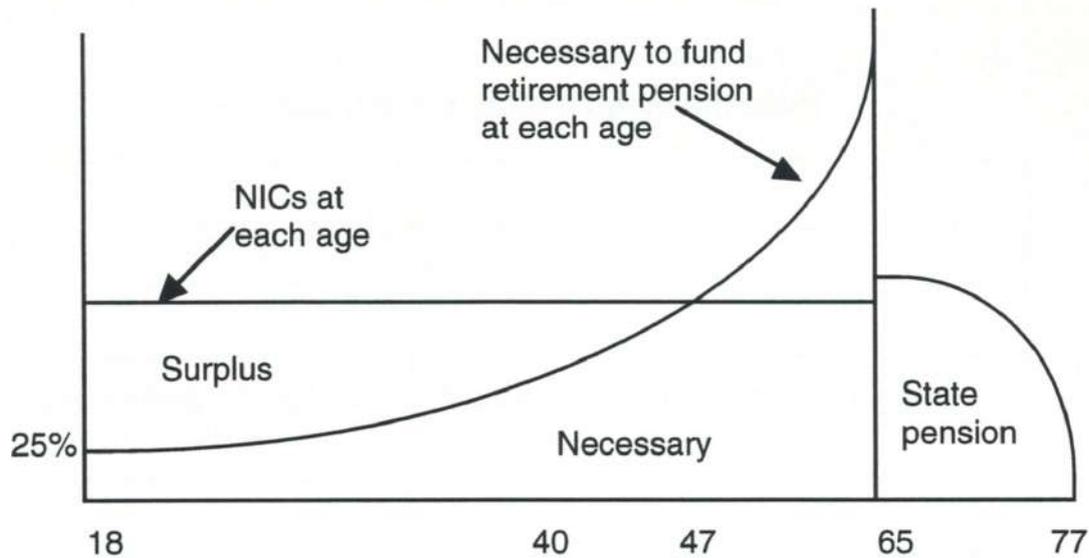
Size of the saleable asset. Clearly, whether individual contributors or beneficiaries are a net asset or liability within the system depends on their age and entitlements. For example:

- a single opted-in male at age 65 represents a liability, since he will contribute no further NICs and a large capital fund is needed to finance his pension;
- a single opted-in male of 40 on average earnings is an asset, since he will pay more in NICs over the next 25 years than is needed to fund his pension;
- a single opted-in male of 18 on average earnings is a large asset, since only about a quarter of what he pays in NICs is needed to fund his pension.

For men like these, the break-even age is a surprisingly high 47. Only then is everything that is collected in NICs strictly necessary in order to fund the pension. Each year before that, they were paying higher NICs than necessary, and the surplus was simply being wasted, as far as they were concerned.

The break-even age will vary for different people, depending on their sex and marital status, but in principle we can add up everyone's surpluses and liabilities and get a total for the overall system balance.

Necessary and surplus contributions (diagrammatic)



What is clear, though, is that there is a large volume of "surplus" contributions, which are not "necessary" to meet future liabilities. In principle, the overall surplus could be invested productively elsewhere. These factors suggest that privatization of the present system would be not only practicable, but also profitable for the taxpayer.

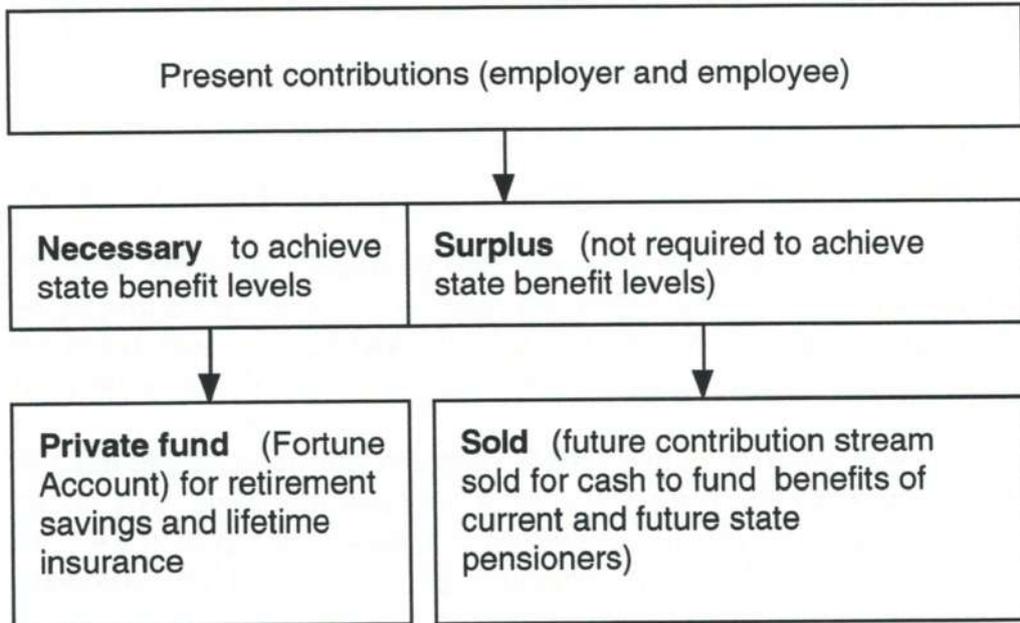
Mechanics of the transfer. There are many ways in which such a process could take place, and a very wide range of institutions and organizations that might wish to participate. For instance:

- existing company pension schemes could be invited to buy out the state contributions and pensions of their employees;
- individuals could be invited to buy-out their state pensions obligation for a capital sum, on condition that they provided themselves with equivalent benefits through the market;
- the "surplus" contribution streams could be separated from the "necessary" contribution streams and offered as pure financial assets, and the resulting capital sums offered with sections of the existing benefit liability, as funded pension schemes;
- financial institutions could bid for certain types of contributor or pensioner, since particular groups may bring added value as potential customers for other insurance or savings products.

Whatever route might be chosen, it is clear that the system has a large asset value which can be captured today in order to re-structure the system and make possible long-term reform. The same benefits from proper investment funding and professional management, with the increased

economic efficiency it brings, will produce the same welfare gains for future generations that we have already discussed.

The securitization option (diagrammatic)



5. Conclusion

We do not have to pay twice

There is growing agreement that our state pension system must be underpinned by proper funding. The only worry about such a reform is the belief that "one generation must pay twice" — once to pay what is due to today's elderly, and once more to build up funds for its own retirement.

But the lesson of recent research is that one generation does not have to pay twice. The economic gain from having a funded system is so large that — if we manage the transition properly — it can be achieved within a generation while still leaving everyone better off.

In a funded system we do not even have to pay as much as we do now in order to leave ourselves better off than today. In other words, far from having to "pay twice", we do not even have to "pay once".

Why we do not have to pay twice

When we move from a pay-as-you-go to a funded pension system, we lose a severe drag on the economy. This is because:

- The benefits paid by our present system can grow no faster than the growth of the economy and taxation. However, money that is properly invested can and does grow very much faster. In other words, *people are getting an extremely poor return on their state pension contributions.*
- Because of this, and the fact that there is no clear linkage between what people pay in to the system and what they can expect to get out, *people regard their contributions as a pure tax.* Indeed, it is a tax on wages, which makes employers less willing to create new jobs, and potential employees less willing to take them;
- The national insurance system *leaves people with less in their pockets for genuine saving.* Less saving means less capital is available for UK industrial investment, making interest rates higher, productivity poorer, and wages lower.

The enormity of the loss

The loss to capital growth due to poor returns in the current system is considerable. On a generous estimate, its benefits grow at about 2.7% per annum. On the most conservative figures, meanwhile, company pension achieve 7.7% growth. The 5% difference is a pure tax which buys the contributor no extra pension benefits. The overall burden of the tax is about 3% of GDP, each year, in perpetuity.

The depressive effects on employment, due to the fact contributions are seen as a tax on jobs, amount to perhaps another 1% of GDP. A worker on average income has a marginal tax rate of 24%, which rises to 43% when national insurance contributions are added. That rate makes it less worthwhile to create a job, or take one, or move to a better one. People take more time off, work less overtime, and prefer untaxed fringe benefits to highly-taxed wages. These distortions reduce productivity, reducing both output and wages.

The loss due to the fact that the system leaves people with less money in their pockets to save, so denying UK industry an important source of development capital, is more difficult to measure, but it could certainly approach 1% of GDP.

The gains from reform

The unfunded pay-as-you-go pension system, therefore, imposes a drag on the economy amounting to around 3%-5% of GDP, each year, in perpetuity. This is the potential gain that could be captured if we could move to a properly funded system.

This estimate of the potential gain is close to those of Professor Martin Feldstein and Professor Laurence Kotlikoff, who predict a long-run gain of 5% and 4.5% respectively achievable for the US.

Lower gains occur if the transition generation is fully compensated for its losses by succeeding generations, but even then the welfare gains due to reform are still considerable. The precise result depends on the shape of the unreformed system, but Kotlikoff's figures suggest that all future generations could enjoy a 2% welfare gain in a funded system, without the present generation losing out in the slightest.

The reform generation, in other words, does not have to pay twice. Indeed, by moving carefully to a funded system it can make its children, grandchildren and great-grandchildren very much better off, without suffering any loss at all.

Notes

- 1 See Martin Feldstein, "The Missing Piece in Policy Analysis: Social Security Reform". Richard T Ely Lecture to the American Economic Association, January 5, 1996. A shorter and updated version of this analysis can be found in Martin Feldstein, *Privatizing Social Security: the \$10 Trillion Opportunity* (Washington DC: Cato Institute, January 31 1997).
- 2 Laurence J Kotlikoff, "Privatization of Social Security: How It Works and Why It Matters" in J M Poterba (ed.) *Tax Policy and the Economy* (New York: National Bureau of Economic Research, 1996).
- 3 However, it does draw heavily on some of the general approaches in the work of Feldstein and Kotlikoff, cited above.
- 4 The concept is most fully developed in the Institute's 1997 report, *Beyond Pensions Plus*, and more briefly outlined in the Institute's 1995 report *The Fortune Account*. However, the idea has its origins more than a decade further back, in the Institute's 1984 *Omega Project Social Security Report* and the 1983 *The Future of Pensions* by Eamonn Butler and Madsen Pirie.
- 5 Michael Bell, "Privatizing Pensions" in *The End of the Welfare State* (London: Adam Smith Institute, 1994) pp30-39.
- 6 Eamonn Butler, Stewart Robertson and Gabriel Stein: publication in progress, under the working title *Shrinking the State*.
- 7 Eamonn Butler and Madsen Pirie, *The Future of Pensions* (London: Adam Smith Institute, 1983) p12.
- 8 This is the so-called "Samuelson result" — a mature unfunded pension system with a constant tax rate and no population growth provides a positive rate of return which, in equilibrium, is equal to the growth of the tax base on which it is built. See Paul Samuelson, "An Exact Consumption Loan Model of Interest With or Without the Social Contrivance of Money", *Journal of Political Economy*, 1958.
- 9 This is being very generous to the pay-as-you-go system. The Government Actuary, in his *Third Quinquennial Review* of the national insurance fund long-term financial estimates (London: HMSO, 31 January 1995), assumes a rate of only 1.5% and points out that the actual average growth in real earnings over the period since the immediate post-war years has been about 2%.
- 10 *Pension Fund Indicators* London: UBS Asset Management, PDFM) annual.
- 11 This is an interesting figure, because it is almost exactly the 9.5% of income that Professor Feldstein estimates to be "wasted" in the US, for the same reason that contributions are not invested in the American pay-as-you-go pension scheme.
- 12 As well as the concordance with Feldstein's US work, an interesting UK corroboration comes from calculations by Michael Armstrong of independent financial advisers R M Armstrong and Company, showing that the average contribution needed to fund a pension of two-thirds of final salary since World War II would have been around 23% of salary for a pay-as-you-go system, but only 7% using a standard gilts/equities investment portfolio — that is, only 30% of the pay-as-you-go requirement. This is remarkably close to the contribution of only 30.7% of NICs that we calculated was needed to match state benefits over a typical 25-year investment period.
- 13 The tax shifts consumption back to Q_1 , so that consumers lose welfare equal to the area ACQ_1Q_2 . But then less is produced, saving society BCQ_1Q_2 . The loss therefore exceeds the gain by the area ABC.
- 14 See Dr David Blake, *The Pensions Risk* (London: Adam Smith Institute, 1997)
- 15 David Thomson, *Selfish Generations? How Welfare States Grow Old* (Cambridge: White Horse Press, 1996) pp154-191.
- 16 Martin Feldstein, *Privatizing Social Security: The \$10 Trillion Opportunity* (Washington DC: Cato Institute, January 31, 1997). Professor Feldstein's title comes from the fact that the net present value of that 5% of GDP in the United States is around \$10,000-20,000 billion, depending on the discount rate assumption.