

Administrative charges for funded pensions: Measurement concepts and international comparison and assessment

By Edward Whitehouse*

Abstract

Pension fund charges reduce the rate of return on pension accounts in some countries by up to two percentage points. Do charges of this scale undermine the case for funded pension provision? How can governments hold back costs and charges? This paper looks at evidence from different countries, with policies ranging from complete liberalization of charge levels of structures to government imposed charge ceilings. The author stresses the trade-offs in limiting charges, especially in reduced competition and choice.

Zusammenfassung

Die Gebühren, die von Pensionsfonds erhoben werden, reduzieren die Rendite dieser Fonds um bis zu zwei Prozentpunkte. Damit stellt sich die Frage, ob die mit Pensionsfonds verbundenen Kosten diese Form der Altersvorsorge unattraktiv machen können. Weiterhin stellt sich die Frage, ob durch gesetzliche Regulierungen die Kosten begrenzt werden können. Auf Basis eines Mehrländervergleichs werden Möglichkeiten aufgezeigt, wobei sich zeigt, dass es einen Trade-off zwischen niedrigen Kosten einerseits sowie Wettbewerb und Wahlfreiheit andererseits gibt.

JEL Classification: G 18, G 23, H 55

The price of financial services is of great consequence for consumers. Mistakes due to misunderstandings or the expense of collecting information can be costly, especially with long-term contracts, such as pensions. Furthermore, private pensions will for most people be their most valuable asset or second most valuable after their home.

* The author is grateful to Estelle James, Robert Palacios and Roberto Rocha of the World Bank, Paul Johnson and Ros Bennett of the Financial Services Authority, (FSA), Costas Meghir of University College, London and the Institute for Fiscal Studies, Keith Chapman of the Australian Prudential Regulatory Authority, Richard Disney of Nottingham University and the Institute for Fiscal Studies, Juan Yermo of the Organisation for Economic Cooperation and Development and participants at a workshop on charging for financial services at the FSA, London in December 1999 for very useful comments and advice.

However, measuring the price of financial services is more difficult than other goods and services. Fees can take many different forms. Different kinds of charge interact and accumulate in complex ways, particularly with long-term products, such as pensions and life insurance. This often means that the price of financial services is not transparent.

Administrative charges are also of central interest to policy-makers, for whom adequacy of retirement incomes is an important goal. Whether adequacy is defined as a basic, minimum level of income or a minimum level of earnings replacement, charges on funded pensions will have an important effect. This is especially important when, as in many countries studied here, private pensions will provide a large part of current workers' retirement incomes.

The funded pensions discussed in this paper are 'mandatory' in an important sense. All workers must have a funded pension in three of the countries covered¹ while elsewhere, (at least some) people have a choice between remaining in a (reformed) public pension program or switching to the new pension funds.² Because of the mandate in these pension programs, governments have an implicit fiduciary duty to ensure participants get reasonable returns. This fiduciary duty is stronger than governments' responsibility for voluntary savings. In addition, with explicit public-sector guarantees of pension values or implicit guarantees through means-tested social-assistance programs, the government has a financial interest in ensuring that funds perform well. Finally, high charges might discourage participation and encourage evasion, as people treat contributions as a tax rather than savings. These arguments provide a case for potential government intervention to control charges for funded pensions.

With voluntary funded pension systems or those that will only provide a small part of retirement income, the case for intervention is weaker. Nevertheless, there may be equity concerns. High fixed elements to charges that could discourage lower-income workers from participation might justify some kind of regulatory action. Some governments also offer explicit guarantees of the size of funded pension benefits or implicit guarantees through means-tested social assistance programs.³ Low net returns can then affect government finances directly.

It is easy to lose sight of the essential policy objective – ensuring retirement-income adequacy – in the often complex, technical and involved issues in administrative charges. The main determinant of adequacy in defined-

¹ Bolivia, Kazakhstan, Mexico.

² See Disney, Palacios and Whitehouse (1999) and Palacios and Whitehouse (1998) for a discussion.

³ See Pennachi (1998) and Turner and Rajnes (2000).

contribution pensions – the net rate of return – depends on many different factors. Government regulations of pension fund managers' structure, performance and portfolios, for example, can have a powerful influence.⁴ Administrative charges are part of a broader set of policies that affect the net rate of return on pension contributions.

The remainder of the paper is structured as follows. The next section describes different countries' pension systems and their policies and approaches to administrative charges. Section 2 presents a formal analysis of measuring charges, setting out the characteristics of different charge measures used in the empirical evidence and their inter-relationship. This analysis shows that some measures can be very sensitive to changes in parameters such as the rate of return or the rate of individual earnings growth. Section 3 provides an empirical comparison of charges for Australia, Sweden and the United Kingdom which have a defined contribution element among the OECD.⁵

Section 4 assesses a range of policies to control charges. These include improving the transparency and disclosure of charges, restricting the structure of charges, imposing ceilings on charge levels and direct cross-subsidies to low-income workers' pension accounts. Section 5 looks at policy issues in controlling pension fund management costs.⁶ It examines alternative institutional arrangements to the individual-based schemes that operate in the majority of the countries discussed here. Two collective alternatives are assessed: employer-based schemes and centralized, public management of pension fund assets. Section 6 concludes.

1. Pension fund institutional structures and charges

The focus of this paper is on mandatory funded pension plans.⁷ The most familiar example internationally is Chile, which replaced its defined-benefit, public pay-as-you-go scheme with individual retirement-savings ac-

⁴ See Srinivas, Whitehouse and Yermo (2000).

⁵ Denmark, the Netherlands and Switzerland also have large mandatory or quasi-mandatory funded pension systems. Most plans in the Netherlands, however, have a defined-benefit formula.

⁶ I have tried to be consistent in the use of the term 'charges' to mean the fees individuals pay to managers and the terms 'costs' to mean the expenses of the fund management company.

⁷ Most countries' schemes are not strictly mandatory, in the sense that all workers must participate in the funded, defined contribution scheme. But most require employees to make some provision, often with a choice between continued participation in a public pay-as-you-go scheme or diverting some of their contribution to an individual pension account.

counts in 1981.⁸ Much of Latin America now has mandatory funded pension programs, although these differ substantially in structure, size and scope.⁹

There have also been many pension-reform initiatives in the former socialist countries. Hungary and Poland introduced new schemes in 1998 and 1999.¹⁰ Other countries – such as the Czech Republic – have opted for a mainly voluntary approach to private pensions initially. Policy-makers in other countries have seriously discussed fundamental reforms, but changes to the public scheme – such as changing pension ages, accrual structures, indexation procedures *etc.* – have been the focus of efforts so far.

Finally, OECD countries have also focused on reforming public programs. Australia, Sweden and the United Kingdom have introduced new systems of mandatory individual pension accounts.¹¹ Australia's scheme, known as the superannuation guarantee, originated in the mid-1980s as part of a national industrial-relations deal. The government, concerned about low savings rates and inflation, wanted to hold wage increases down. The unions agreed to a payment into pension accounts as a substitute for a wage rise. However, this agreement applied to (mainly) large employers covered by the centralized bargaining system. In 1992, the scheme was extended throughout the economy, with a mandatory superannuation contribution that will be phased in over a decade or so. The United Kingdom extended the framework for opting out of the public pension scheme to individual pension accounts in 1988. Sweden introduced its reform in 1999.

There are many differences in the structure of pension systems in these different countries. Those with a long history of funded provision – such as Australia, the United Kingdom, and the United States – have very diverse systems. Some funded pensions have a defined benefit formula, where the pension value depends on years of membership of the scheme and some measure of earnings. Most employer-provided pensions in the United Kingdom and around half in the United States are of this sort. Others schemes are defined contribution, where the pension depends on the accumulation of contributions and investment returns. These include a minority of employer-provided pensions in the United Kingdom (often called 'money purchase' schemes) and plans covering around half of members in the United

⁸ There is a large literature on the Chilean reform. Prominent examples include Arrau, Valdés-Prieto and Schmidt-Hebbel (1993), Diamond (1994), Arrau and Schmidt-Hebbel (1994) and Edwards (1999).

⁹ Queisser (1998) is a good survey.

¹⁰ See Palacios and Rocha (1998) and Chlon, Góra and Rutkowski (1999) respectively.

¹¹ See Bateman and Piggott (1997, 1999) on Australia; Whitehouse (1998) on the United Kingdom; and Scherman (1999), Sundén (1999) and Palmer (2000) on Sweden.

States (usually 401(k) plans, named after the relevant clause of the tax code). Defined-contribution provision has been growing at the expense of defined-benefit in both countries, although more rapidly in the United States. The superannuation guarantee (Australia) and stakeholder plans (United Kingdom) are also of this type. Individual plans, such as personal pensions in the United Kingdom and individual retirement accounts in the United States are also defined contribution vehicles.

In contrast, the new systems in Latin America and Eastern Europe are less diverse. They have just a single defined-contribution program, usually based on individual accounts with member choice of provider, along with a public scheme of varying size. These differences in pension-industry structure are likely to have important effects on the level of costs and charges.

Moreover, countries have taken very different approaches to charges. Table 1 tries to characterize these with a single, simple metric. The most liberal regimes (subjectively determined) are at the top, the most restrictive at the bottom.

The richer countries – Australia, Hong Kong, the United Kingdom and the United States – tend to have few, if any, restrictions on charges. This is explained in part by the fact that private pensions in the United States remain voluntary and the other countries built on pre-existing voluntary systems.

Other countries limit the charge structure. Only one or two types of charge are permitted from the possible menu (*e.g.*, fixed versus variable rate, contribution versus assets based charges *etc.*). Poland is slightly more restrictive, in that companies are limited to two charges, one of which is subject to a ceiling although the other can take any value. Sweden has a single charge up to a ceiling, but the limit varies with a complex formula to try to allow for pension fund managers with different costs. Finally, the United Kingdom, with its new stakeholder scheme will have a single charge with a low ceiling. This is also the regime in Kazakhstan.

Table 1 also shows some alternative approaches. Many of the restrictions in the countries listed above are designed to cross-subsidize lower paid workers. Without restrictions, pension funds might charge relatively high fixed charges to reflect their fixed costs. These would bear particularly heavily on low-paid workers, and, at the extreme, could even take up all of their contributions. Mexico takes a more transparent approach, subsidizing low-paid workers directly with a flat-rate government contribution paid on behalf of all workers. Australia and the United Kingdom exclude many lower-paid workers from their system.

Table 1

Possible approaches to pension industry structure and charges

<i>Strategy</i>	<i>Country examples</i>	
No restrictions	Australia (superannuation guarantee) Hong Kong United Kingdom (personal pensions) United States (401(k) plans)	more restrictive ▼
Cross-subsidies to low-paid workers	Mexico	
Limits on charge structure	Argentina Chile Hungary	
Limits on charge structure and partial ceiling	Poland	
Variable ceiling on charges	Sweden	
Competitive bidding, multiple portfolios	United States (thrift savings plan)	
Fixed charge ceiling	El Salvador Kazakhstan United Kingdom (stakeholder pensions)	
Competitive bidding, single portfolio	Bolivia	

The final generic approach to charges is to hold a competitive auction to manage pension assets in which charges play a prominent role in the selection process. The Thrift Saving Plan, a defined-contribution scheme for employees of the United States federal government, holds periodic auctions for the rights to manage a small number of portfolios for its members. Bolivia licensed just two managers for its funded pension system, after an international bidding process.

Before turning to the empirical analysis, it is useful to look at issues in the measurement of administrative fees.

2. Measuring charges

Charges on long-term financial products, including pensions, are levied in many different ways. Some are one-off fees, usually a fixed sum payable up-front, although some initial charges can be proportional to contributions in, say, the first year. Other one-off fees are payable at the end of the term: one example is the charge for exercising an open-market annuity option in a personal pension plan in the United Kingdom.

Others fees are ongoing. They can be a fixed fee per period, a percentage of contributions or a percentage of the assets in the fund.

The variety of different levies means that it is impossible to measure of costs at any point in time: the only meaningful calculation is over the life-time of pension membership.

2.1 A formal analysis of administrative charges

Summarizing the different charges in a single number raises a host of complex issues. This section, building on Diamond (1998, Appendix B), sets out a simple model to show the relationship between different summary measures of charges. This formal analysis is an important pre-requisite for choosing between different measures and understanding the implications.

Individual earnings are assumed to grow at a rate g . Earnings at a given period t in continuous time¹² can be written as a multiple of earnings in period 0, when the individual joins the pension fund

$$(1) \quad w_t = w_0 e^{gt}$$

Assume a pension contribution rate as a proportion of earnings of c . The first type of charge considered is one as a proportion of contributions, a_1 . The net inflow into the pension fund at time t net of this charge is

$$(2) \quad c(1 - a_1)w_0 e^{gt}$$

These contributions earn an annual investment return, r . However, an annual management charge, a_2 , is levied as a proportion of the fund's assets. So the net accumulation in the fund at the end of the term (time T) from contributions made at time t is

$$(3) \quad c(1 - a_1)w_0 e^{gt} e^{(r-a_2)(T-t)}$$

Integrating (3) from time 0, when the pension plan is started, to time T , when accumulated funds are withdrawn, gives the total fund as

$$(4) \quad c(1 - a_1)w_0 e^{(r-a_2)T} \frac{e^{(g+a_2-r)T} - 1}{g + a_2 - r}$$

Any one-off charge, payable up-front (a_0), would have earned an investment return up to pension withdrawal. The pension benefit is therefore reduced by

¹² Bateman, Doyle and Piggott (1999) present a similar model in discrete time.

$$(5) \quad a_0 e^{(r-a_2)T}$$

A proportional exit charge, a_3 , can be deducted from the final accumulation in (4). Allowing for all these charges gives the total net accumulation as

$$(6) \quad \left(c(1 - a_1)w_0 e^{(r-a_2)T} \frac{e^{(g+a_2-r)T} - 1}{g + a_2 - r} - a_0 e^{(r-a_2)T} \right) (1 - a_3)$$

Finally, to evaluate the impact of charges, it is useful to show the pension benefit that would accumulate in the absence of any levies (*i.e.*, setting all the a terms to zero)

$$(7) \quad cw_0 e^{rT} \frac{e^{(g-r)T} - 1}{g - r}$$

To summarize, the equations above give lifetime pension contributions plus the investment returns they earn less four different types of charges: a fixed, up-front fee (a_0); a levy on contributions (a_1); an annual charge on the assets of the fund (a_2); and an exit charge as a proportion of the accumulated balance (a_3).

2.2 Alternative measures of charges

There are four main potential measures of charges.¹³

- The *reduction in yield* shows the effect of charges on the rate of return, given a set of assumptions about the rate of return, the time profile of contributions and the term of the plan. So, if the gross return assumed were 5 per cent a year and the reduction in yield 1.5 per cent, then the net return would be 3.5 per cent a year. In essence, equation (6) is calculated as it stands, and then solved for the value of a_2 that gives the same total accumulation assuming that the up-front charge (a_0), contribution-related fee (a_1) and exit charge (a_3) are all zero.
- The *reduction in premium* shows the charge as a proportion of contributions, again for a set of assumptions about investment returns *etc.* All of the other charges are in this case subsumed into a_1 in equation (6), rather than a_2 in the reduction-in-yield case.

¹³ The first three are suggested in the Financial Services Authority's (1999) consultation paper on league tables, itself based on the detailed analysis by Bacon and Woodrow (1999). The charge ratio was proposed by Diamond (1998).

- The third measure, called *MP1*, was developed within the Financial Services Authority [FSA] (James, 2000). *MP1* is the price of a *managed portfolio* that yields the market return, excluding charges, on £1.
- A final measure is the *charge ratio*. This is defined as one minus the ratio of the accumulation net of charges to the accumulation without charges, *i.e.*, one minus the ratio of equation (6) to equation (7).

These different measures are closely related. For example, the charge ratio is exactly the same as the charge measured as a proportion of contributions (the reduction in premium). To see this, write the accumulation, net of just a charge on contributions, a_1

$$(8) \quad c(1 - a_1)w_0e^{rT} \frac{e^{(g-r)T} - 1}{g - r}$$

The charge ratio is one minus equation (8) divided by equation (7), which is simply a_1 , the charge on contributions.

There seems to be some confusion about the inter-relationship between these different measures. Murthi, Orszag and Orszag (1999) argue: ‘An alternative but fundamentally equivalent, approach [to the charge ratio] is to compute an “annual charge equivalent” that captures all costs and expresses them on an annualized basis’. They cite Rea and Reid’s (1998) study of charges on mutual funds in the United States as an example of this approach, which is the reduction-in-yield method. But the two measures can give different answers over relative charges when assumptions are constant, and move in different directions when assumptions change. The two measures, then, are not ‘fundamentally equivalent’.

2.3 Empirical comparisons

The different measures can be compared in practice by calculating equation (6) for a variety of charges. The baseline assumptions are that individual earnings grow by 3 per cent a year and annual investment returns are 5 per cent. Contributions are paid for a 40-year term.

Figure 1 compares the first two measures – reduction in yield and the charge ratio (or reduction in premium) – given a single charge as a percentage of assets. The horizontal axis varies this charge between zero and 3 per cent. The vertical axis shows the effect this charge would have on the final pension value (the charge ratio). As discussed previously, a charge on contributions of this rate would have exactly the same effect on the final pension value. The Figure shows that quite low charges on assets build up over the

long period of a pension investment to reduce the pension value substantially. A levy of one per cent of assets, for example, adds up to nearly 20 per cent of the final pension value (or, equivalently, is 20 per cent of contributions).

The relationship between the two measures is non-linear, but the deviation from linearity is not large. The choice of either measure would not make much difference in comparing either individual plans or countries' systems with different levels of charges for a given level of earnings growth and real returns. (These important conditions are discussed in the following sub-sections.) For example, the doubling in asset management charges from 0.5 to 1 per cent a year increases the charge ratio by nearly 90 per cent. So the comparison of reduction in yield gives very similar results to the comparison of charge ratios.

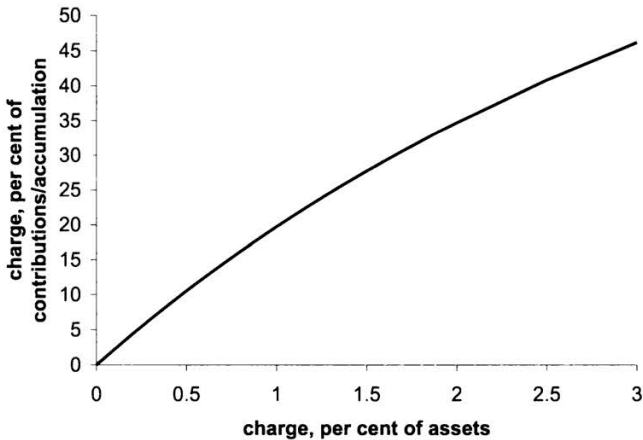


Figure 1: The relation between asset charge and charge ratio

2.4 Robustness of charge measures to changes in assumptions: rate of return

The different measures exhibit different degrees of sensitivity to changes in assumptions. The first comparison varies the rate of return where charges are simply one per cent of assets. The reduction in yield measure is insensitive to changes: it is simply one per cent for all investment returns.

The reduction in premium or charge ratio, in contrast, is sensitive to the rate of return. Figure 2 holds all other variables constant (including the actual charge of one per cent of assets). This measure of fees increases by about one percentage point for each one-point increase in the rate-of-return assumption.

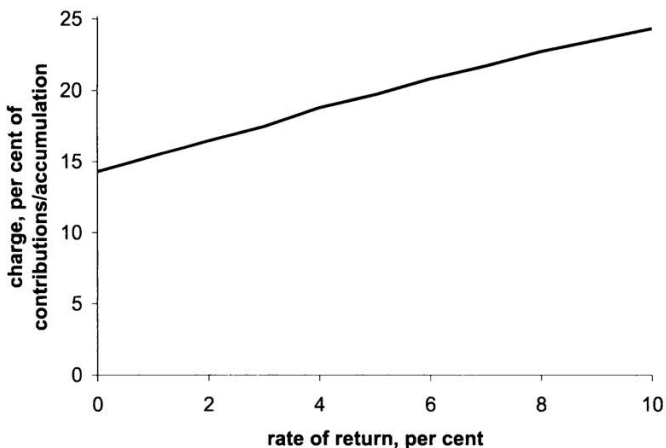


Figure 2: Charge ratio under different rate of return assumptions (charge of one per cent of assets)

Is it desirable that the measure of charges should vary with the rate of return? Figure 3 illustrates the issue. It shows the value of the pension before charges and net of charges (again assumed to be one per cent of assets) for different rates of return. The gray area in between is the absolute value of the charges. Total fees paid increase more rapidly than the gross accumulated pension: the gray area gets wider as the rate of return increases. This favors a charge measure, such as the charge ratio or reduction in premium, which varies with the rate of return.

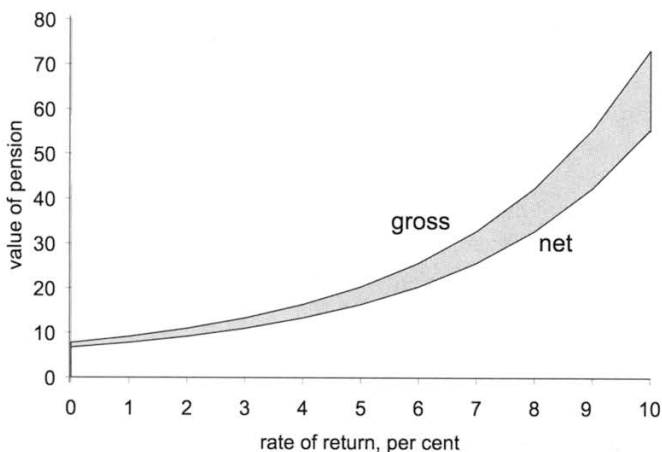


Figure 3: Gross and net pension under different rate of return assumptions (charge of one per cent of assets)

However, the increased rate of return obviously increases both gross and net pension. An increase from the baseline assumption of five per cent rate investment returns to six per cent would raise the gross pension by 26 per cent and the net pension by $24\frac{1}{2}$ per cent. The extra pension from the higher return is more than the whole of the charge ratio. Yet the charge ratio increases by one percentage point as the rate of return increases by one point. And a higher charge ratio, of course, implies that the pension member is worse off, when in fact they are substantially better off. This is a significant disadvantage of the charge ratio (or reduction in premium) as a measure of the price of financial services.

2.5 Robustness of charge measures to changes in assumptions: earnings

The second economic assumption is the path of individual earnings. This is important because contributions are assumed to be a constant fraction of pay, so the age-earnings profile determines the relative weight of contributions early and late in the working life. This feeds through to the overall charge burden. Contribution-based charges are 'front-loaded'; that is, they are relatively heavy in early years. Asset-based charges are 'back-loaded', because the accumulated fund is much larger closer to retirement.

Studies of the impact of administrative charges have usually implicitly or explicitly based their computations on an estimate of average, economy-wide earnings growth.¹⁴ However, a typical worker's pay profile is unlikely to coincide with economy-wide earnings growth. Professional workers, for example, tend to have steeply rising earnings, especially when young, while manual workers' pay is relatively flat across the lifecycle. Disney and Whitehouse (1991) find that professional and managerial pay in the United Kingdom rises by 6 per cent a year and manual workers', by around 2 per cent a year. (Based on hourly wage rates using Family Expenditure Survey data for 1978–86.) The more complex pseudo-cohort analysis of Meghir and Whitehouse (1996) confirms this earlier result using an eighteen-year time series of data. Wage differentials have been increasing recently, suggesting that the difference between manual and professional earnings profiles is now probably larger.¹⁵ Economy-wide earnings growth averages across a range of cohorts of different sizes. So there is no reason why the mean of

¹⁴ For example, Murthi, Orszag and Orszag (1999) take their assumption of 2 per cent annual real earnings growth in the United Kingdom from the rules of the Faculty and Institute of Actuaries. This growth rate is specified for the calculation of liabilities in defined-benefit occupational pension schemes under the Minimum Funding Requirement of Pensions Act 1995. This is used, in their words, to 'document the lifetime costs on an individual account for a typical worker'.

¹⁵ See Meghir and Whitehouse (1996) on the United Kingdom.

any given cohort's lifecycle pay should coincide with aggregate changes in wages across the same period. The actuaries' assumptions, applied to defined-benefit plans, also average across a range of different cohorts. Their assumption is appropriate for this purpose, but not for computing an individual's pay profile.

Age-earnings profiles vary between countries as well as between occupational groups. For example, cross-section data show a sharp decline in earnings at older ages in Australia, Canada and the United Kingdom. In France, Germany and Italy, the older workers tend to be paid the same or more than people of prime age are.¹⁶

Figure 4 shows how the charge ratio measure varies with the assumed rate of earnings growth. Each one-point increase in earnings growth reduces the charge ratio by around one percentage point (when fees are one per cent of assets). With two-per-cent pay increases, the charge ratio is 20 per cent, but only 16 per cent with increases of six per cent a year. This higher growth rate, I argued, is more typical of workers in white-collar jobs.

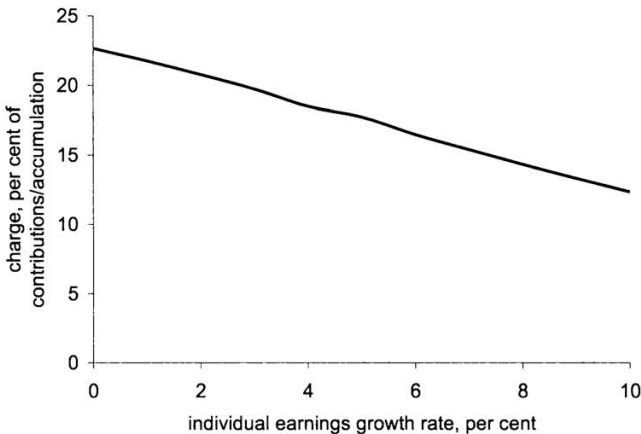


Figure 4: Charge ratio under different earnings growth assumptions (charge of one per cent of assets)

2.6 Robustness of reduction in yield measure with contribution-based levies

Asset based charges are a common form of charge for many financial products. As section 2 illustrated, however, the managers of mandatory funded

¹⁶ See OECD (1998b) and Disney and Whitehouse (1999), section 8.2.2 for detailed data.

pensions in Latin America tend to levy fees on contributions. With asset-based charges, the reduction in yield is, by definition, unaffected by model assumptions, such as rate of return and individual earnings growth. The charge ratio or reduction in premium is, in contrast, sensitive to changes in these variables.

With contribution based levies, the reverse is true. Since the charge ratio is equal to the levy as a proportion of contributions, this is by definition constant as other variables are changed. The reduction in yield, however, is not. Figure 5 begins by looking at the effect on this charge measure of varying the rate of return, assuming that the levy is ten per cent of contributions. (This chart can be compared with Figure 2.) A higher rate of return reduces the reduction in yield measure, even though total charges paid remain the same. The absolute magnitude of the effect of a one-point change in the return is broadly similar to the impact on the charge ratio when levies are based on assets, although the effect is in the opposite direction.

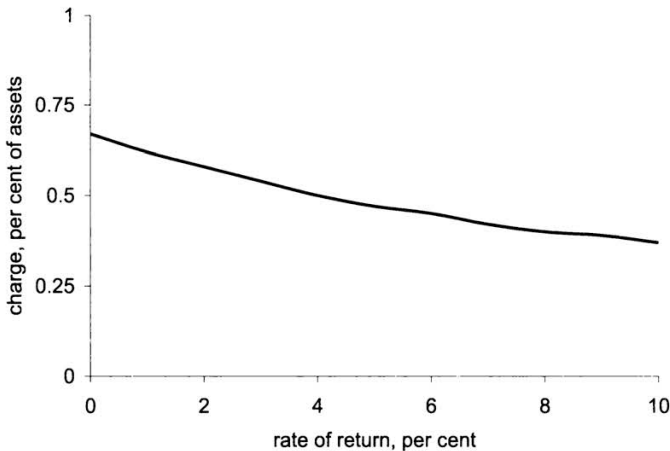


Figure 5: Reduction in yield under different rate of return assumptions (charge of 10 per cent of contributions)

Figure 6 shows a similar result for variations in the assumption of individual earnings growth. Again, the magnitude of the change in the measure is similar but the direction different from the effect of changes in earnings growth on the charge ratio with an asset-based levy.

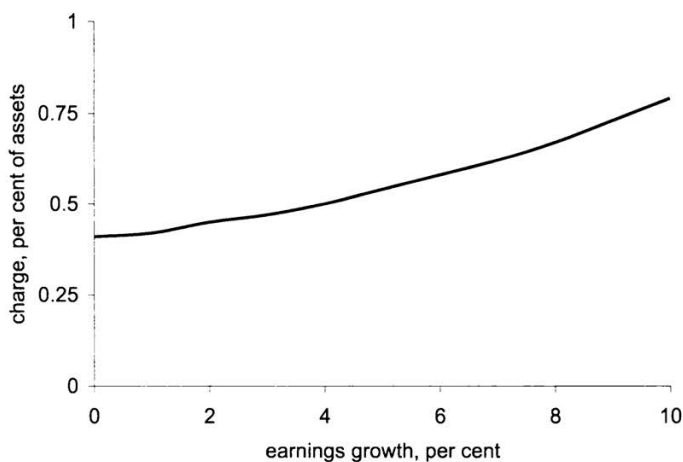


Figure 6: Reduction in yield under different earnings growth assumptions (charge of 10 per cent of contributions)

2.7 Charge measures and duration of the pension policy

The analysis so far has assumed a full 40 years of contributions to the pension plan. Yet many people do not have such a consistent contribution profile. Many of the issues raised in measuring charges when policy terms vary will be considered in more detail in section 4, which looks at which types of charge are optimal.

Figures 7 and 8 look at the impact on charges of a shorter period of contributions, assuming that the individual withdraws the benefit when contributions cease. This can be thought of as the cost of taking out a pension for someone already in the labor market (or, perhaps, someone who will retire early). As before, the reduction in premium measure is unaffected if charges (in practice) are levied on contributions and the reduction in yield is insensitive to the policy term if charges are asset-based.

Figure 7 shows the charge-ratio or reduction-in-premium measure for a range of durations of pension membership, assuming that the charge in practice is one per cent of assets. The reduction in yield measure is, of course, constant, while the charge ratio increases linearly with the length of investments by 0.5 percentage points for each extra year. This is because a one-year policy is charged just once, while the first year's contributions for a two-year policy are in effect charged twice. For short-term policies, much of the pension benefit is made up solely of the contributions, while investment returns have a relatively small effect. When a pension is held for a long

period, most of the accumulated value comes from the investment returns rather than the nominal value of contributions.

The relationship between net and gross pension for different policy periods and the charge ratio is very similar to the relationship with the rate of return illustrated in Figures 2 and 3. A pension held for a long period is larger because of the impact of compound interest. So the charge ratio increases, but by much less than the increase in the net pension. This is an undesirable feature, because pensions are supposed to be long-term investments. By showing that shorter-term pensions are ‘cheaper’, this is not only counter-intuitive but also, if used by consumers or their advisors, could be misleading.

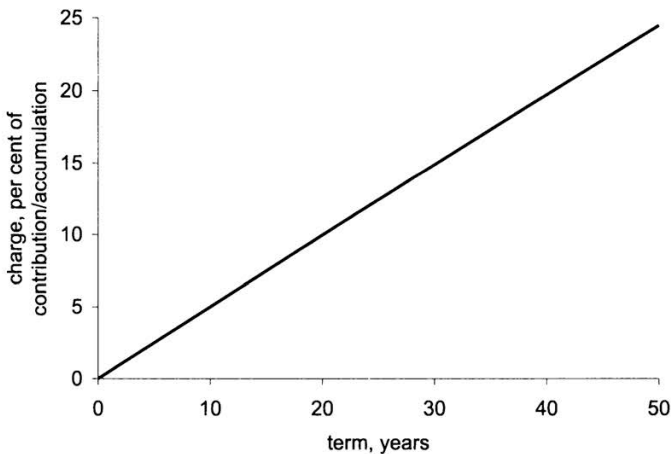


Figure 7: Pension policy duration and the charge ratio (charge of one per cent of assets)

Figure 8 shows the opposite case to Figure 7. It shows the effect on the reduction in yield of differing policy terms when the charge in practice is ten per cent of contributions. The relationship is now in the opposite direction, with longer-term policies appearing to be cheaper. It is also non-linear. This is simply the inverse of the effect explaining the pattern in Figure 7. Contribution-based charges are spread over many more years as duration lengthens, reducing their impact when measured against assets. This might also be construed as a misleading picture of pension costs. The absolute value of charges paid increases with a longer term and, in this simulation, the charge as a percentage of contribution is constant while the reduction in yield shows a decline.

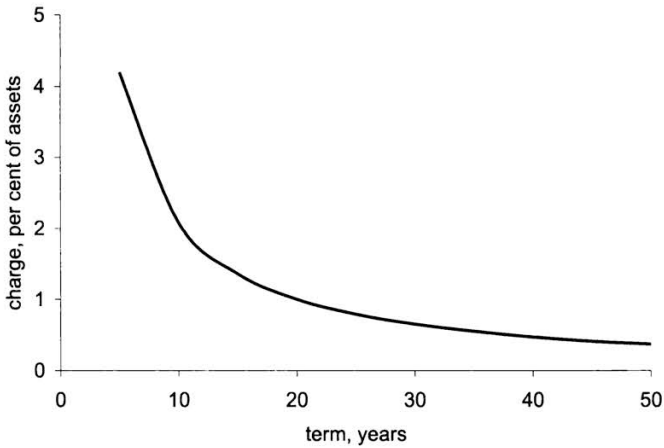


Figure 8: Pension policy duration and the reduction in yield (charge of 10 per cent of contributions)

2.8 Gaps in contribution profiles

The previous section showed the effect of a shorter period of contributions than the 40-year baseline assumption, but still one that terminated with the withdrawal of funds. People’s contribution profiles in practice are likely to be a good deal more complicated, with gaps arising from periods of unemployment, working in the informal sector of the economy, caring for relatives *etc.*

During a gap in contributions, charges on the assets in the fund continue to be levied, but contribution-based fees are obviously zero. For simplicity, assume that the worker contributes for an initial period (0...N) and then stops contributing, but the funds remain invested as before to time T (when the pension is withdrawn).

At the point when contributions are stopped, the accumulated fund, net of contribution and asset based levies (a_1 and a_2 respectively) is given by equation 4, substituting N for T

$$(9) \quad c(1 - a_1)w_0e^{(r-a_2)N} \frac{e^{(g+a_2-r)N} - 1}{g + a_2 - r}$$

After N, when contributions are stopped, the fund continues to grow by the rate of return, net of charges, giving the total accumulation as

$$(10) \quad c(1 - a_1)w_0e^{(r-a_2)T} \frac{e^{(g+a_2-r)N} - 1}{g + a_2 - r}$$

Figure 9 shows how contribution gaps affect charges as a percentage of contributions or the total pension fund accumulation. At 40 years, the result is the same as for a full lifetime contribution: the charge ratio is around 20 per cent. At the midpoint of the curve, the worker is assumed to contribute for 20 years, and then leave the fund for another 20 years. With the rate of return invested by the fund reduced by the assets-based charge over this period, the charge ratio is now 26 per cent.

In these cases, the reduction in yield measure is no longer simply equal to the asset-based charge. With 20 years of contributions and 20 years without, the reduction in yield is around 1.4 per cent. The effect on this measure of varying the period without contributions is very similar to the impact on the charge ratio.

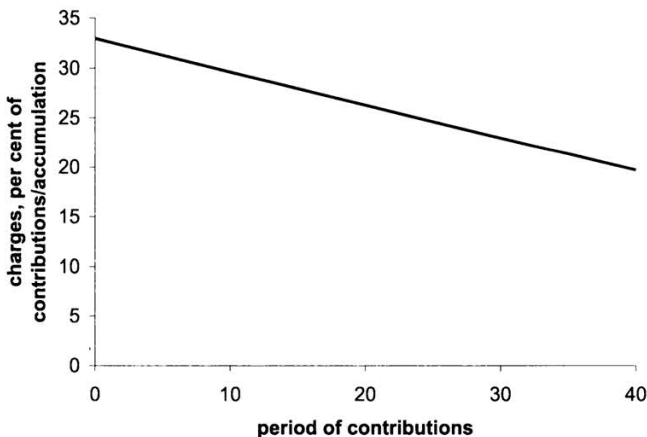


Figure 9: Gaps in pension contributions and the charge ratio (charge of one per cent of assets)

2.9 Conclusion: which is the appropriate measure of charges?

No measure of charges can summarize simply and accurately the many different kinds of fees that are levied on financial products. Our concern should therefore be to minimize the loss of precision in this process of simplification.

All measures – reduction in premium, reduction in yield, MP1 – deliver sensible answers much of the time. An increase in a levy of any possible type increases the measure and, in general, the measured increase is proportionate. MP1 has the drawback that it is not mathematically robust when net returns are negative zero or even small and positive.

Murthi, Orszag and Orszag (1999) contend: 'Although expressing fees in terms of annual basis points may be most familiar to investors, that form is not necessarily the most insightful'. However, the sensitivity of both charge ratio and reduction in yield to assumptions about the rate of return and individual earnings growth means that *any* single measure could be misleading. A first preference must be for both measures, along with an analysis of the sensitivity of the results to the underlying economic assumptions.

If a single measure of charges is required, the analysis above shows that the most appropriate choice depends on the type of levies used in practice and their relative importance. If, for example, most of the cost of a typical policy is due to levies on assets, then the reduction in yield measure gives the most robust results. Similarly, if charges on contributions (or exit charges) are a more important burden on the pension fund, then the reduction in premium will be more robust.

In the United Kingdom, for example, around 70 per cent of the total charge (on either measure) derives from the annual asset-management fee of 0.9 per cent. The remainder comes mainly from the contribution-based levy. The annual management charge would only be significant for a very small absolute value of contributions. This suggests that the reduction in yield would be a less distortionary measure of the impact of fees than the reduction in premium or charge ratio. It is more robust to changes in assumptions of the term the pension policy is held, the rate of return and the rate of earnings growth. The reverse is true in most of Latin America, where contribution-based levies predominate. There, the charge ratio would be a more robust measure.

When comparing funds or systems which rely on different types of charge, reliance on a single measure can be misleading, and the best approach is to use both the charge ratio and the charge as a proportion of assets.

3. International comparison of charge levels

This section presents estimates of charges, drawn from a variety of sources, in three OECD countries.¹⁷

¹⁷ Note that the paper deliberately avoids discussion of the United States for three reasons. First, because a good deal has been written elsewhere; secondly, because the United States does not currently have a mandatory funded pension system; and finally, because the reform debate has become extremely heated. With social security reform already an important issue in the presidential election campaign, the issue of charges has become a particular contention. The NBER will shortly publish the proceedings of a conference on administrative costs (Shoven, 2000). The Employee Benefits Research Institute (Olsen, 1998; Olsen and Salisbury, 1998) and the General Accounting Office (1999a,b) have also produced relatively balanced analyses.

3.1 Australia

Australia's superannuation-guarantee system was established in 1992. In 2002, the phased increase in contribution rate will be complete, and employers will then be required to contribute 9 per cent of employees' pay. Low-income workers – earning less than A\$5,400 a year – are specifically excluded on the grounds that fees would eat up their contributions.

Charges for superannuation funds are typically a combination of a fund-management fee as a percentage of assets plus flat-rate administrative fees per account and/or a charge as a percentage of contributions. Neither the structure nor the level of charges is regulated.¹⁸ Moreover, although fees must be set out in a 'key-features' statement before purchase, it is often difficult to work out how much has been paid until an annual benefits statement arrives.

The superannuation mandate encompasses a wide range of different funds. In practice, most workers are members either of collective schemes known as industry funds or so-called master trusts, which are individual pension accounts. There are over 100 industry funds and 350 master trusts.¹⁹ Table 2 shows typical charges for these two types of plan.

Table 2
Pension charges in Australia by fund type

	<i>Industry fund (collective plan)</i>	<i>Master trust (individual plan)</i>
Flat-rate	A\$45 per annum	A\$70 per annum
Proportion of contributions	–	4.5 %
Proportion of assets	0.45 %	1.3 % (administration) 0.6 % (fund management) less bonus for large fund
Reduction in yield	0.51 %	1.9 %
Charge ratio	11.2 %	35.5 %

Source: Bateman and Valdés-Prieto (1999). See also Bateman, Doyle and Piggott (1999).

Note: assumes 9 per cent contribution rate, real return of 5 per cent a year and earnings growth of 1 per cent a year. Industry funds are not required to disclose asset-management fees (usually paid to a subcontractor): anecdotal evidence suggests 0.4–0.5 per cent is typical. Data are for 1999.

The last two rows of Table 2 show how these fees translate into the standard measures of charges. The difference between the two types of plan is

¹⁸ The only exception is the protection of small accounts: charges are not permitted to reduce the account balance below A\$1,000.

¹⁹ See Australian Prudential Regulatory Authority (1999).

now stark. Investment in an industry fund reduces the return by 0.5 per cent a year, compared with 1.9 per cent a year for master trusts.

It is easy to see from Table 2 why the government chose to exclude low-income workers. In a master trust, the fixed fee and the contribution-based levy would total over 19 per cent of contributions for a worker earning the A\$5,400 minimum. This would translate into a total charge ratio of 46 per cent. Indeed, the government is considering making contributions optional for employees earning between A\$5,400 and A\$10,800.

The large difference in charges between the two types of scheme – by a factor of three or more – could have many potential explanations. Bateman, Doyle and Piggott (1999) propose ‘a combination of differences in governance, historical ethos, institutional practices and industry structure’. Industry funds were established as part of a national industrial-relations agreement. Trades unions pushed for a low-cost form of pension provision. These funds have a mutual structure, with trustees drawn from participating employers and employees. They have essentially a captive membership, so there is little need for marketing and no need for a sales network.

Master trusts, in contrast, are offered by traditional (generally profit-making) financial-services companies. Although the board that runs the schemes includes some independent trustees, the latter have no direct relationship with the plan’s members. There is a substantial degree of marketing and a broad sales and distribution network. Service levels, including communication, information and choice of portfolio, tend to be better than in the industry-fund sector. Master trusts are also often sold as part of a complete package of financial services by financial conglomerates and they offer tailored insurance options that are not available from industry schemes.

The government introduced a new instrument in July 1997, known as retirement savings accounts (RSAs). These accounts, provided by banks, building societies and other financial institutions, are designed to be a simple, low-cost, low-risk way of saving small amounts for retirement. The funds are invested in deposits and taxed in the same way as superannuation. Investors are warned that they should graduate to more diversified investments once their assets exceed A\$10,000. RSAs therefore remain a small part of the Australian pension sector, with just 1½ per cent of total pension assets.²⁰

²⁰ See Australian Prudential Regulatory Authority (1998c).

3.2 Sweden

The issue of charges is particularly important in Sweden because the contribution rate to pension funds – $2\frac{1}{2}$ per cent of earnings – is lower than in any other country with mandatory funded pensions.²¹ The Swedish government therefore took a number of steps to avoid charges eating up all the contributions.

Rather than establishing separate pension funds, the new regime builds on the existing infrastructure of collective investment institutions. All mutual funds can participate, subject to levying fees set by the public pension agency. There is a complicated formula to determine charges, which depends on the price charged for voluntary savings in the mutual fund, the value of mandatory contributions attracted and the total value of mandatory pension assets managed. The marginal fee as a proportion of assets, for example, is given by

$$(11) \quad \alpha_s + \beta_s(v - \alpha_s)$$

where α and β are parameters set by the agency that depend on the size class of the fund (s) and v is the charge levied in the voluntary sector. Table 3 shows the schedule.

Table 3

Regulated marginal charges as a percentage of assets for mandatory funded pensions by fund size class in Sweden

<i>Value of assets (US\$ million)</i>	α	β	<i>Full formula for charge (per cent of assets)</i>
0–10	0.40	0.75	$0.4 + 0.75(v - 0.4)$
10–40	0.35	0.35	$0.35 + 0.35(v - 0.35)$
40–60	0.30	0.15	$0.3 + 0.15(v - 0.3)$
60–350	0.25	0.05	$0.25 + 0.05(v - 0.25)$
250–850	0.15	0.05	$0.15 + 0.05(v - 0.15)$
850–	0.12	0.04	$0.12 + 0.04(v - 0.12)$

Source: Swedish public pension agency. See also James, Smalhout and Vittas (1999).

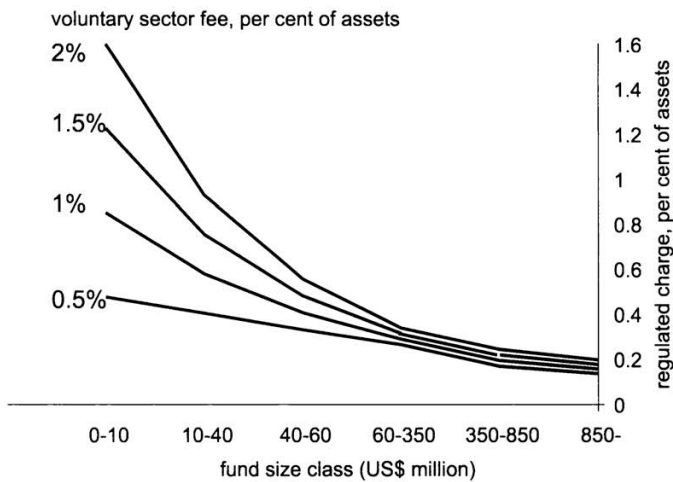
Note: translations to US\$ from SKr rounded for clarity. Limits of the bands (in millions) are SKr70, 300, 500, 3000 and 7000 respectively.

The implication of this schedule for the ceiling on fees is shown in Figure 10. With a one-per-cent charge on assets in the voluntary sector, the funds

²¹ The guaranteed minimum contribution (the mandatory minimum) in the United Kingdom is less than $2\frac{1}{2}$ per cent for workers under 30. But it currently averages around $4\frac{1}{2}$ per cent across all ages: workers now in their 20s will make a higher mandatory minimum as they get older. See Whitehouse (1998) for an explanation.

in the smallest class of assets of mandatory members can charge 0.85 per cent at the margin, while the largest funds can charge just 0.15 per cent.

The Figure covers the range of charges in the voluntary sector: Dahlquist, Engström and Söderlind (1999) find fees vary between 0.4 and 2 per cent of assets, with an average of 1.5 per cent. The net result is that the most popular funds will be able to charge less than 0.2 per cent at the margin and 0.2–0.3 per cent on average, somewhat less than the lowest fees in the voluntary sector. On top, 0.2 per cent of assets or so can be levied to cover trading commissions *etc.* The public pension agency will also charge for contribution collection and record keeping. The agency will spread the fixed costs of establishing the new system over a 15-year period. The charge for these services will be around 0.3 per cent of assets. So the total fee for investment in a large fund will be about 0.75 per cent, about half the average in the mutual-fund market.



Source: calculated from data in Table 3.

Figure 10: Regulated marginal charges by size class of fund and by voluntary sector charge in Sweden

The reasoning behind this complexity is as follows. First, the ceiling should be low enough to discourage excessive marketing. Secondly, the ceiling should allow firms to recover their marginal costs, but provide at maximum a small subsidy to their fixed costs. Thirdly, the regime should not rule out particular portfolios. Emerging markets, smaller companies funds *etc.* imply higher costs. By relating the ceiling to the fund's charge in the voluntary sector, the government does not rule out these more expensive invest-

ments. But they are subject to some price limitation that, at the same time, does not allow leeway for cheaper funds (*e.g.*, those investing domestically in large-capitalization equities) to charge excessive prices. Finally, the variation with fund size is designed to ensure that any benefits from economies of scale accrue to members rather than providers. Funds that do not attract much of the flow of mandatory contributions will be cushioned. This reduces the risk for funds deciding whether to enter the new market or not.

The low level of these mandatory fees will leave little if any room for marketing expenditures. The public pension agency will collect contributions and keep records of them. Indeed, the agency will aggregate individuals' contributions and make a single transfer to each fund. The funds will not keep records of individual contributions and will not even know who their contributors are. This is designed to reduce marketing opportunities still further.

Sweden also has a system of occupational pension schemes.²² The four main programs together cover 90 per cent of employees. Recent reforms have shifted the benefits in the scheme for blue-collar workers in the private sector from a defined benefit formula to a defined contribution scheme. Employers contribute 2 per cent of employees' salaries up to a ceiling to the new SAF-LO scheme, which accounts for 35 per cent of total occupational pension coverage. The smaller ITP scheme for white-collar workers is more complex. Since 1999, it has been a combination of defined benefit and defined contribution elements. This division of mandatory pension contributions into three different programs – the public, pay-as-you-go pension scheme, individual accounts and occupational plans – is unlikely to result in efficient administration.

3.3 United Kingdom

The United Kingdom has a variety of pension options. Employees can comply with the mandate for a second pension beyond the flat-rate basic state pension in many different ways. These include a personal pension (provided on an individual or a group basis), a defined-benefit occupational scheme, a defined-contribution occupational plan or the state earnings-related pension scheme, known by its acronym, Serps. Reforms to the system, announced at the end of 1998 (Department of Social Security, 1998), will introduce another option, called a 'stakeholder' pension. This new plan is described in more detail below.

Analysis of personal-pension charges is complicated by the bewildering array of different types of levy.²³

²² See Whitehouse (2000d).

²³ These data are from Walford (1998).

- *Policy, plan or administration fees* are a regular flat-rate charge, usually payable monthly or annually. A typical levy is £30 a year, usually uprated in line with average economy-wide earnings or prices
- *Bid-offer spreads* act as an entry and/or exit charge from the fund. Units in the pension fund are sold at a higher price than the fund will pay to buy them back. This usually adds up to a charge of 5 per cent or so, and acts as a levy on contributions
- *Unit allocations* work in a similar way. The provider credits the personal pension account with only a proportion of the units bought. Unallocated units are usually up to 10 per cent, and often depend on the number of years spent in the scheme. Again, this operates as a levy on contributions. Often the allocation rate depends on a range of variables, such as the size and frequency of contributions (with discounts for larger and less frequent payments) and the term to retirement (higher charges for shorter terms)
- *Fund-management charges*, as a percentage of assets, are the most familiar kind of levy. The range of typical charges is 0.5 to 1.0 per cent
- *Initial charges* and *capital levies* are one-off, up-front charges payable in the first one or two years. They tend either to be a fixed fee (£60, for example) or a percentage of contributions (5 per cent)

The middle column of Table 4 shows the ‘average’ charging structure used by the Government Actuary to advise on the adjustment to the social security contribution rebate to compensate for average fees paid. These levies translates into a charge ratio (reduction in premium) of around 25 per cent and an equivalent charge as a proportion of assets of 1.3 per cent (the reduction in yield).²⁴

Table 4
Personal pension charges in the United Kingdom

<i>Levy</i>	<i>Government Actuary</i>	<i>Money Management</i>
Flat-rate	£30 a year	£12 a year
On contributions	8 %	6 %
On assets	0.9 %	0.9 %
Charge ratio	25	23
Reduction in yield	1.3	1.2

Source: Government Actuary (1999), Walford (1998).

²⁴ Murthi, Orszag and Orszag (1999) also report a charge ratio of 25 per cent.

Analysis of detailed charging data – the final column of Table 4 – reveals lower charges than the Government Actuary's figures.²⁵ The charge ratio, for example, is 2 percentage points lower, equivalent to a reduction in yield of 1.2 per cent. Furthermore, nine companies offer 'level-commission' plans, with a charge ratio 1.4 percentage points lower on average than full commission schemes. Commission-free plans, available from seven firms, have a charge ratio over 8 percentage points lower on average. The overall (unweighted) mean charge ratio including all these plan types is 22 per cent, which is three percentage points lower than the results of Murthi, Orszag and Orszag (1999) and the Government Actuary's assumptions.

This average charge disguises a very broad distribution. Table 5 summarizes the charges levied at three different points of the pension contract. More than two out of five funds levy no fixed fee while more than one in ten levies in excess of £30 a year. The most common levy on contributions is 5 per cent, but a few funds make no charge while some extract more than 10 per cent. Charges on assets are typically either 0.75 or 1 per cent a year, but the range is 0.36 to 1.5 per cent.

Table 5

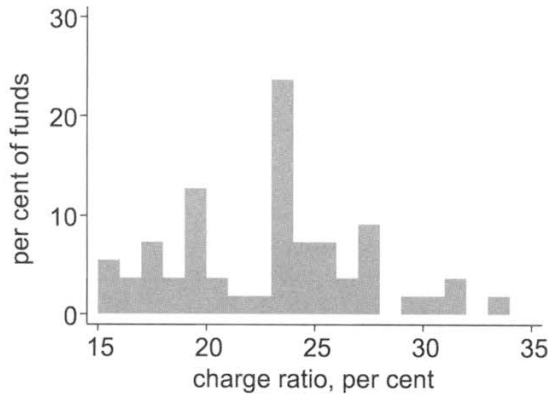
Frequency distribution of personal pension charges in the United Kingdom

Fixed annual fee		Charges on contributions		Charge on assets	
charge, £	per cent of funds	charge, per cent	per cent of funds	charge, per cent	per cent of funds
zero	42	0	4	< 0.5	2
1–5	4	1	0	0.5	7
6–10	9	2	2	0.51–0.74	4
11–15	20	3	2	0.75	27
16–20	4	4	2	0.76–0.99	5
21–25	5	5	51	1.0	32
26–30	5	6	9	1.0	9
31–35	4	7	5	1.26–1.5	12
> 35	7	8	9		
		9	7		
		10	9		
		11	0		
		12	2		

Source: author's calculations based on Walford (1998).

²⁵ Data from Walford (1998). This ignores some complications. A small proportion of firms (15 per cent) levy one-off, up-front fees, but averaging across all plans (including the zeros) gives just £8. Three-quarters of firms also offer 'loyalty' bonuses. These can be a proportion of the fund at retirement, a reduction in the charge or an increase in unit allocations once a minimum number of years' contributions have been made. These bonuses could reduce the overall charge ratio by about 10 percentage points, but the information on eligibility conditions is insufficient to make a firm estimate of the impact on charges.

The distributions in Table 5 translate into a very broad range of charge ratios, as illustrated in Figure 11, because there is no clear trade-off between the level of charges at different points. The lowest charge ratio is 15 per cent, the highest 33 per cent, with a mean of 23 per cent. This translates into a reduction in yield of between 0.72 and 1.87 per cent, averaging 1.2 per cent.



Source: author's calculations based on Walford (1998).

Note: excludes level-commission and commission-free plans, which have lower average charges: see text.

Figure 11: Distribution of pension charge ratios in the United Kingdom

There appears to be no systematic relationship between charges and the size of the pension fund manager (measured either by assets under management, by contribution income or by number of policies). The weighted average charge ratio is just 0.13 percentage points below the unweighted mean. The only difference of any magnitude is between mutual and proprietary managers. (Around a third of pension firms were mutually owned at the time of the survey, though many of these have either 'demutualised' or been taken over by shareholder-owned firms since.) Mutual providers' charges average 21.6 per cent, compared with 23.7 per cent for proprietary providers. (This difference is significant at 8.6 per cent.)²⁶

There is evidence of a decline in charges since the early 1990s. Table 6 gives the mean charge ratio since the late 1980s. Since a peak in 1992, the average levy has fallen by one sixth, from 28½ to 24 per cent of pension accumulation. Analysis of different firms' charges shows that this is mainly

²⁶ Born *et al.* (1995) report some interesting results on the relationship between charges and organizational form in the United States.

due to cuts in some of the very highest charges. The charge ratio of the lowest quartile of funds has fallen by only one percentage point, while the upper quartile has declined by more than five points.

Table 6
Average pension charge ratio in the United Kingdom, 1989–98
per cent of accumulated fund

1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
27.6	27.9	28.0	28.5	27.5	27.3	25.9	24.8	24.3	23.7

Source: author's calculations based on *Money Management* magazine's surveys.

People can and frequently do shift between the different types of second pensions in the United Kingdom. For example, occupational pensions are required by law to accept transfers into the scheme and to provide transfers out. It is also possible to change between different personal plans or different occupational schemes. This complicates the measurement of personal-pension charges.²⁷ Moreover, transfers of funds within the personal pensions sector are more complex than in Latin American countries, for example. In the latter, any transfer involves both accumulated funds with the original provider and any new contributions. But in the United Kingdom, people are able to leave their accumulated fund with the original provider and pay only new contributions to the new provider.

The Personal Investment Authority (1999) collects data on the length of time people continue contributing to a personal pension after taking out the contract. The PIA data show that two out of five personal pension policies bought directly from a pension provider lapse within four years of the contract. However, persistency rates are 12 percentage points higher for pensions bought through an independent financial advisor and 17 points higher for FSAVC or transfer contracts. For single-premium pensions, usually bought with the transfer value from another kind of pension, the lapse rate over four years is close to zero.

Unfortunately, these data are inappropriate for analyzing pension transfers and their effect on the burden of charges.²⁸ First, the data only include personal pensions that receive contributions in addition to the mandatory

²⁷ A more detailed analysis of the impact of pension transfers on the burden of charges can be found in Whitehouse (2000e).

²⁸ The data were collected for a different purpose: low short-term persistency rates are an indicator of poor selling practices that is easy for regulators to collect. Note that the PIA has now been subsumed into the Financial Services Authority, the new unified regulator.

minimum, that is only 45 per cent of the $5\frac{1}{2}$ million personal pensions used to contract out of Serps.²⁹ Secondly, voluntary personal pensions – mainly taken out by the self-employed or to top-up occupational pension benefits – account for around half of the $101\frac{1}{2}$ million personal pensions. So the types of personal pension relevant to this paper account for only a third of the data. Thirdly, the data only cover the first four years of a pension contract. Finally, the data treat a policy as lapsed even for people who stop contributing temporarily and subsequently re-start.

Murthi, Orszag and Orszag (1999) extrapolate from the four years of PIA data (for regular-premium policies bought from a pensioner provider) to a full-career 40 years. The result of the extrapolation is that people would typically join five or six different personal pensions in a career. The precise effect on the burden of charges depends on whether people leave existing contributions in the old personal pension or transfer them to a new scheme. Murthi, Orszag and Orszag estimate that charges are between 17 and 32 per cent higher for someone transferring a personal pension than for someone who remained with a single scheme for a full career. However, this substantially overstates the average charge burden resulting from transfers.

First, a complementary data source on pension scheme tenures – the British Household Panel Survey, BHPS – shows a very different pattern. Unlike the PIA analysis, these data are not truncated at four years, they include rebate-only personal pensions and they can be used to identify transfers from gaps in contributions. The four-year persistency rate in the BHPS is 88 per cent, compared with less than 60 per cent in the PIA data. The 25-year persistency rate is 29 per cent, compared with 7 per cent in the extrapolation of the PIA data.

Secondly, the BHPS indicates that switching between different personal pensions is very rare. There are only 60 or so instances in the dataset, accounting for just 2 per cent of personal pensions taken out. Furthermore, the majority of these switches are from plans taken out before 1988. Many are likely to be people exchanging an old pension policy for a new-style personal pension that they could use to contract out of Serps. This is therefore a one-off effect reflecting the institutional change. Only 25 people switched a post-1988 personal pension for another policy. Indeed, this is confirmed by the PIA's result that just one per cent of single-premium lapse within four years.

The new stakeholder pension schemes, announced in 1998, aim to fix many of the problems of personal pensions. In particular, there are four main strategies to control the level of costs and charges.

²⁹ Inland Revenue (1999).

First, all employers who do not offer an occupational pension plan or a group personal pension will have to 'identify a stakeholder pension scheme and facilitate access to it'.³⁰ Since there are fewer employers than employees, this should reduce marketing expenses. Also, employers should have greater bargaining power than individual employees, allowing them to secure a better deal. (Assuming, of course, that they have their employees' interests at heart.) Collective provision might also reduce the cost of supplying information and advice. The government has said: 'We see scope for schemes to make arrangements to offer general advice to members and potential members . . . by having advisors visit the workplace' (Department of Social Security, 1998).

The comparison between master trusts and industry schemes within Australia's superannuation-guarantee system shows how collective schemes can have lower costs than individual-based plans. The reductions that 28 personal-pension providers offer for group schemes in the United Kingdom are a second illustration. The most common concessions are lower charges (18 firms), reduced minimum premia (seven) and free life insurance (five).³¹ Stakeholder schemes are designed to reap the same cost advantages as group personal pensions.

Secondly, some aspects of the regulatory regime will be simplified. The most important change is the streamlining of the taxation rules, which should reduce compliance costs substantially.³²

Thirdly, stakeholder pension providers will be restricted to just one type of charge – a percentage of fund assets – rather than the multiplicity used now. This will facilitate comparison of charges between different providers. It will also eliminate costs, such as fixed management charges, that bear particularly heavy on low contributions.

A related government initiative is the consumer-education remit enshrined in the legislation establishing the new unified regulator, the Financial Services Authority (FSA). This, along with league tables of providers' costs *etc.*, should increase the transparency of charges and empower consumers to shop around for lower-cost providers.³³

However, the government does not appear to believe that transparency of charges (compared with the Byzantine schedules of personal pensions) will

³⁰ Department of Social Security (1999b). See Axia Economics (1999b) for detailed comments. Note, however, that employees need not necessarily join the plan offered by their employer.

³¹ Data from Walford (1998).

³² Department of Social Security (1999c).

³³ Consumers are least confident when buying pensions out of any of eight different financial products according to the National Consumer Council (1994). See also Whitehouse (2000a), section 4.11.

alone be enough to facilitate competitive pressure to reduce administrative costs. It has also proposed final a ceiling on charges of one per cent of fund assets.³⁴ This is equivalent to a charge ratio of 19.7 per cent. It compares with an average of 1.2 per cent of assets and a charge ratio of 23 per cent for someone who remains in a personal pension throughout their career. Of course, the main benefit from stakeholder schemes will accrue to people who stop and start contributing at different points in their career. The reduction in charges will be larger than the saving for a full-career pension contributor.

The charge limit could also feed through to lower costs. The government argues: 'The reassurance provided by minimum standards will reduce the need for detailed financial advice when people join schemes'. Since the one-per-cent ceiling is rather lower than the median personal-pension charge, it will also tend to reduce the very high variance in charges observed now. Ernst & Young, the accountants, agree with the government – 'In theory, this could make tied salesmen and independent financial advisors redundant and strip out most up-front, advice-related costs' – as does the Institute for Fiscal Studies.³⁵

It is also worth mentioning briefly the rather different approach to administrative costs embodied in the previous, Conservative government's proposals for pension reform. Under basic pension plus, as the plan was called, the government would continue to collect social-security contributions under the same schedule.³⁶ At the end of each year, the government would transfer £470 plus five per cent of earnings between the contribution floor and ceiling into individuals' pension accounts. This payment would be made even if it exceeded the social-security-contribution liability, so the transfer would be greater than employee contributions for people earning less than £11,400.

These proposals were, in part, aimed at the problem of administrative charges and the low-income workers. First, the fixed part of the contribution would ensure that all workers, including low earners, would have an adequate flow of contributions into their fund. Secondly, unlike personal pensions, the scheme would be compulsory for all new labor-market entrants. This would obviate the need for promotional expenses to persuade people to take out basic-pension-plus plans. This marks a different ap-

³⁴ Department of Social Security (1999a). See Whitehouse (2000a) and Axia Economics (1999a) for an assessment.

³⁵ Financial Times (1999a) and Disney, Emmerson and Tanner (1999).

³⁶ See Whitehouse and Wolf (1997), Department of Social Security (1997) and Whitehouse (1998), section VI for a detailed discussion of the basic-pension-plus proposal.

proach to the problem of administrative charges in personal pensions from the Labour government's regulatory strategy.

4. Strategies to control charges in funded pension systems

Measuring the impact of administrative charges for pension funds is very complex. So it is essential, at the minimum, that governments set out a standard presentation of charges to ensure that consumers can make reasonably accurate comparisons between different providers. Unfortunately, transparency alone may not be enough to ensure healthy competitive pressures to keep charges low, as illustrated by the example of the United Kingdom.

Supervisory agencies tightened the so-called 'disclosure' requirements in the mid-1990s, so that charges have to be presented in a standardized way, illustrating, for example, the cost of stopping contributions prematurely.³⁷ There is a standard assumption of investment returns, but the impact of charges has to be shown for the individual customer's characteristics, such as age and expected retirement age. However, these data are a part of the final quotation, so obtaining comparable information from a number of providers could be time consuming. League tables of charges published in the media tend only to cover one or two example individual. Given the huge variety of charging structures in the United Kingdom, fees depend critically on individual characteristics and so the examples may not be relevant.

Many consumers turn to an independent financial advisor to make comparisons for them. This saves time but can be costly. Moreover, the independence of 'independent' financial advisors is moot: in the terminology of economics, there is an agency problem. The majority of advisors' income comes from commission on selling financial products. It is reasonable to conjecture that pension providers levy higher charges to cover at least some of a higher commission paid to the recommending advisor. Advisors' and consumers' incentives do not coincide and the government has admitted that advice given at the moment 'is of variable quality'.³⁸

The IFA Association, the collective voice of independent financial advisors naturally disputes this analysis. The association argues: 'The commission paid by providers to this sector [tied agents] is generally *at a higher level* than would be paid on the same business if introduced by an IFA. This

³⁷ See, for example, Personal Investment Authority (1995) and Office of Fair Trading (1992).

³⁸ Department of Social Security (1998). See also Whitehouse (2000a), section 4.4, National Consumer Council (1994) and Office of Fair Trading (1999).

increase can be as high as 25 per cent.³⁹ Despite this defense of commissions, the IFA Association has proposed a move to fee-based charging to underline their independence.⁴⁰ Currently, only one third of the sector will do *any* business on a fee basis, and the share of advice given in this way is much smaller.

4.1 Improving transparency

One way of ensuring the transparency of charges, in addition to their structure, is to levy charges on top of rather than out of mandatory contributions. This brings charges very clearly to consumers' attention because they reduce current net income rather than future pension income.

4.2 Restricting charge structures

A common solution to the lack of transparency of charges in complex fee structures is to limit the types of charges that can be levied.⁴¹ If only one type of fee is allowed, then there is a single 'price' for taking out a pension that consumers can easily compare. It also removes many of the complexities of the variability of charges with different consumer characteristics. A single, proportional charge – on assets or contributions, for example – would not vary with the level of earnings or contributions. There are four important features of these two types potential charges.

First, a contribution-based charge is 'front-loaded': fees are heavier in earlier years than an asset-based charge, as illustrated in Figure 12. The higher early revenue flow to providers allows funds to recover their up-front costs of entering the pension market more quickly than under an asset-based levy. Quicker cost recovery might boost competition by encouraging more entrants when the system is established.

Empirical evidence demonstrates that even contribution-based charges require a number of years of losses before companies can recover their set-up costs. Figure 13 looks at the experience during the first five years of the new Argentine system. Overall, costs have fallen sharply over time. This was due to initial over-estimates in the cost of disability insurance by 40 per cent. Nevertheless, over five years, administrative costs have fallen by half

³⁹ Original emphasis. IFA Association (1998). The Personal Investment Authority (1995) found an average differential in commissions between IFAs and tied agents of 23 per cent.

⁴⁰ Financial Times (1999b).

⁴¹ Evidence on the impact of changing regulated charge structures in the United States is also interesting: see Chance and Ferris (1991).

and sales and marketing expenses by a third. System costs fell below revenues for the first time in the fifth year of the new regime. It is unsurprising that administrative charges have yet to decline. Now that the funds are profitable at the operating level, we might expect price competition to emerge in the next few years as the fund managers recover the cost of their initial capital.

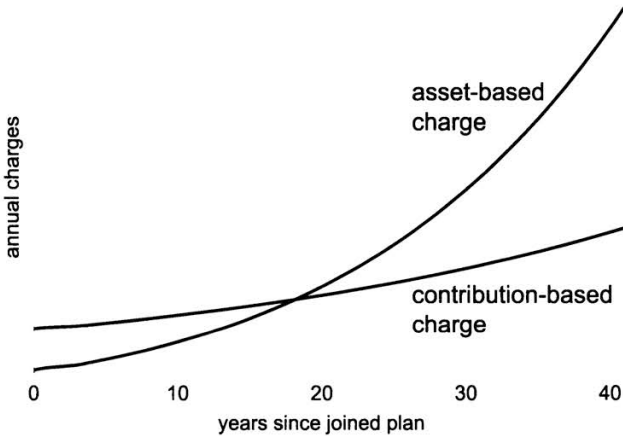
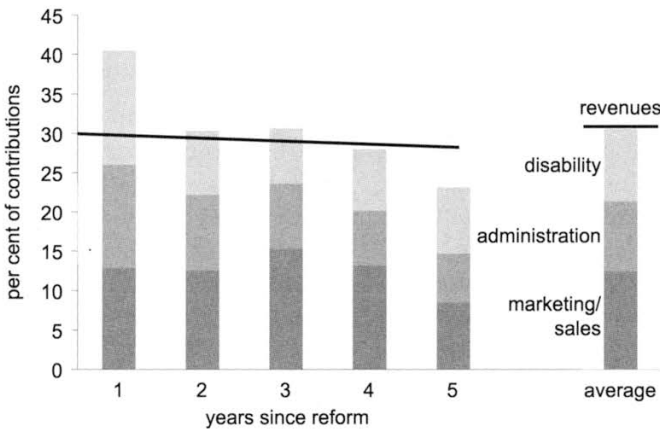


Figure 12: Time profile of payments of different types of charge



Source: SAFJP.

Figure 13: Costs and revenues in the Argentine funded pension system, 1994 – 99

Returning to the comparison of contribution- and asset-based charges, a second issue is the different incidence of levies. In the presence of fixed costs per member, an asset-based charge redistributes from people with large funds to people with small funds. So older workers, who will tend to have larger funds, will cross-subsidize younger, for example. Contribution-based levies redistribute from people with large contributions to people with small contributions.

Indeed, revenues would be zero for people who suspended contributions. People might lose their job, withdraw from the labor market because of caring responsibilities or work in the informal sector of the economy. Providers would receive no revenues from these people, but would still bear the cost of administering their fund. Asset-based fees ensure a revenue flow even from inactive accounts, but, of course, it means that these fees bear more heavily on people who withdraw from work early.

Finally, there is the issue of fund managers' incentives. A charge on fund value encourages managers to maximize assets, both by attracting funds from other providers and, more importantly, by maximizing investment returns. Contribution-based levies, in contrast, have no direct link between revenues and investment returns. Fund managers' basic maximand is obviously the value of contributions.

The choice between the two is finely balanced, and countries have taken different routes. Many governments in Latin America have opted primarily for contribution-based levies. The United Kingdom chose asset-based fees for the new stakeholder pensions, which the great majority of responses to its consultation supported.⁴² The government's main arguments were funds' incentive to maximize investment returns and the fact that people who suspend contributions do not impose an excessive burden on other scheme members. This last argument is more significant in the United Kingdom than elsewhere: multiple choices of mandatory pension options mean that many people switch between funds, leaving inactive accounts.

4.3 Restricting charge levels

Restricting charge levels is a surprisingly rare approach. Table 1 showed that only Kazakhstan, Poland, Sweden and the United Kingdom (with its new stakeholder schemes) have restricted the level of fees. The obvious risk with this approach is that the government sets the 'wrong' ceiling on charges. This may not be too much of a problem in well-developed capital markets, because the government can observe the costs and charges of pro-

⁴² Department of Social Security (1999a), paragraph 23.

viders of very similar financial products. Governments of emerging economies, however, often have little to go on domestically. Even in this case, however, international evidence, of the sort presented in this paper, can be useful information.

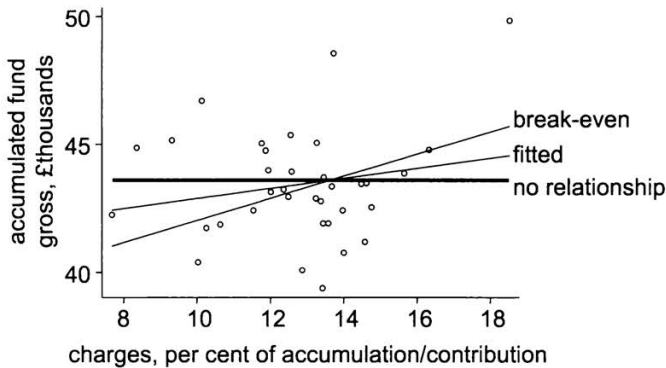
Still, charges might be set at a 'wrong' level, either too high or too low. Too low and providers might be unable to cover their costs. This will substantially reduce the number of entrants to the pension market, restricting individual choice of provider and competition between different providers. It may even be low enough to result in failure of a pension fund manager, which will undermine public confidence in the pension system. There is also evidence that charge ceilings can become *de facto* charge minima as well. In Poland, for example, virtually all funds will charge the 0.61-per-cent-per-annum maximum on assets. This implies that price competition, beyond reaching the regulatory standard, might be limited, at least in the short term. In the longer-term, price competition might become more intense, as firms compete to attract relatively large amounts of assets that have built up in people's funds.

A low charge ceiling might restrict consumer choice in a number of ways. There may be fewer providers. Analysts expect stakeholder pensions to lead to a radical restructuring of the pensions industry in the United Kingdom. Ernst & Young, the accountants, have said: 'Most UK life assurance companies will be unable to make money from stakeholder pensions without radically changing their current business model. Their expense base is too high to support the proposed charges.' Only around a fifth of providers are below the proposed charge ceiling. OSI, a management consultancy, expects 'a tidal wave of mergers' in the industry. The firm estimates a minimum of 500,000 contributors is necessary to reach the cost target.⁴³ This would imply just five-to-ten providers in the medium-term, compared with roughly 90 currently offering personal pensions. The effect, then, will be to limit choice of pension provider substantially.

Providers might also be forced to offer a very limited choice of investments to keep costs low, further reducing individual choice of portfolio (see below). Nevertheless, consumers might be willing to pay more, for example, for better information or service. But the ceiling prevents firms from offering these broader choices. There is also some evidence of a relationship between personal-pension charges and investment performance in the United Kingdom. For a sample of companies, Figure 14 plots the charge-ratio measure against the gross accumulated value of a standard pension product. If there were no relationship, the fitted curve would be flat. In fact, the fitted curve shows a positive relationship between charges and performance,

⁴³ Timmins (1999) and Brown-Humes (1999).

although the extra return from a higher-charging fund is not sufficient to offset the effect of the charge on net returns. The other curve on the Figure shows the break-even relationship. However, the coefficient on the charge in the performance equation is not significantly different from zero.



Source: authors' calculations based on Walford (1998).

Note: comparison based on a regular premium of £2400 a year over 10 years. Fitted relationship: $gross\ return = 40900 (2190) + 195 (169) \times charge\ ratio$ (standard errors in parentheses). Sample of 38 providers.

Figure 14: Personal pension charges and performance over ten years

Most Western economies had eliminated the majority of price regulation by the end of the 1980s, and even regulation of prices in transition economies is now rare. Should pensions be treated any differently?

Most of the arguments for regulating pension charges in fact suggest less Draconian solutions. For example, lack of transparency can be dealt with by having a simple, easily comparable charging structure, strict regulation on the disclosure of charges to potential consumers, supply of comparative information from an official source and a program to promote consumer understanding of financial services. The only argument of substance is that participation in the pension system is compulsory, and the government has a responsibility to ensure that charges do not wholly or largely take up people's contributions.

4.4 Cross-subsidies to low-income workers

Again, however, there are more appropriate, less restrictive policies to achieve this goal. A common approach is to exempt low-income workers from participation in the funded pension system. Australia, for example,

excludes the lowest-paid workers from its superannuation guarantee. This applies to people earning less than A\$5,400 a year, around 15 per cent of the average. (This is the same level as the starting point for paying income tax.) In addition, there are plans to make participation voluntary for people earning between 15 and 30 per cent of average pay.

All countries provide either a social-assistance income in retirement, a minimum pension guarantee or a universal flat-rate pension. People with persistently low earnings are unlikely to generate a pension above the *de facto* minimum inherent in any of these three programs. This is equally true of most public defined-benefit pension systems as it is of defined-contribution plans.⁴⁴ It is better that safety-net programs provide pensioners for persistent low earners than any defined-contribution or earnings-related defined-benefit scheme.

A second method is to cross-subsidize lower-income workers through the charging structure. Many of the costs of operating pension accounts are fixed. Collecting contributions and transferring them to accounts, for example, has the same cost regardless of the size of the contribution. Other activities, such as providing statements to members, also have fixed costs. So any regulations that prohibit fixed charges or allow only variable charges (on assets or contributions) imply a cross-subsidy from higher-income to lower-income members.

A third approach is to cross-subsidize low-income workers' pensions directly. The Mexican government, for example, ensures a minimum contribution of 5 per cent of the minimum wage to pension accounts, coincidentally equal to one peso per day. Mexico also has a tax-credit system to boost incomes of low-paid workers, similar to the earned income tax credit in the United States and the new working families tax credit in the United Kingdom. Both of these policies encourage lower-income workers into the formal sector.

A similar policy to Mexico's in spirit was the previous Conservative government's basic-pension-plus proposal in the United Kingdom. This government would have paid £9 a week into all workers' pension accounts.

There are two key advantages of the direct-subsidy approach. First, the cross-subsidy is transparent. If firms can only charge proportional fees, then the revenues will be insufficient to cover costs for lower-paid workers and will exceed costs for higher paid. A direct subsidy from the government makes this redistribution clear. Secondly, as noted in the Mexican case, this can encourage low-income workers into the formal system.

⁴⁴ For example, see Disney, Emmerson and Tanner (1999) on the long-run impact of the new minimum income guarantee in the United Kingdom.

5. Strategies to control costs of funded pension systems

The previous section explored four different approaches to regulating the charges in pension systems. This section looks, first, at the costs of alternative institutional structures to the systems considered above. Most of the countries discussed in this paper have what are called in American parlance 'individual accounts'. These regimes are decentralized, with a number of competing fund managers and worker choice between the different funds.

5.1 Alternative institutional arrangements for funded pension systems

An alternative to this model is to move to some kind of collective provision. Proponents point to the low charges in Australia's industry funds as an example of the cost savings that are possible. The United States' 401(k) plan has a similar structure. These schemes, which have spread very rapidly over the past two decades, are, however, not mandatory. The new stakeholder plans in the United Kingdom try to control costs in a similar way, by requiring employers to nominate a scheme rather than having employees choose.

Some analysts have gone further than this model of collective but decentralized provision and have proposed public management of pension fund assets. Their rationale is in a large part to reduce administrative costs, but also because they believe that defined-benefit pension formulae are in some way superior to defined-contribution schemes.⁴⁵ Heller (1998) concludes that 'the principal source of old age support should derive from a well-formulated, public DB [defined-benefit] pillar, with a significant amount of pre-funding'.⁴⁶ And Orszag and Stiglitz (1999) argue for 'a more expansive view of the optimal second pillar – which should incorporate well-designed, public defined-benefit plans.'

Others are skeptical of this solution, because public management of pension funds has, in practice, delivered poor returns. James (1998) concludes: 'publicly managed pension reserves fare poorly and in many cases lost money because public managers were required to invest in government securities or loans to failing state enterprises at low nominal interest rates

⁴⁵ This issue has spawned a large literature, which mainly concludes that the purported advantages of defined-benefit plans are illusory. See Bodie, Marcus and Merton (1988) and the comments on their paper by Kotlikoff. Other studies include Disney and Whitehouse (1994, 1996) and Samwick and Skinner (1993).

⁴⁶ Heller has two main concerns with defined contribution pension provision. First, the possibility of contingent or conjectural public-sector liabilities in the event that pension funds perform poorly because of systemic long-term declines in asset prices or short-term market turmoil. Secondly, the potential for complicating fiscal-policy management. For example, he worries that comparisons of relative tax burdens or public spending ratios between countries 'may be increasingly problematic'.

that became negative real rates during inflationary periods'. This argument is confirmed by the detailed analysis of 22 countries' public pension funds in Iglesias and Palacios (2000).

Heller (1998) ignores the problems inherent in having governments as fund managers entirely in his argument for a public, partially pre-funded defined-benefit plan. Orszag and Stiglitz (1999) do address the issue. They are sanguine about the prospects for public management.

First, they argue: 'If capital markets were perfect, then it would simply not be possible for funds to be badly invested ... as long as the portfolio is sufficiently diversified'. Returns on different assets in this world of perfect markets are merely commensurate with their risk, and so risk-adjusted returns are the same for all investments. Empirical studies, however, find evidence of excess returns on equities over less risky assets (such as bonds and deposits), even adjusting for the difference in risk.⁴⁷ Capital markets, then, are not perfect and Orszag and Stiglitz (1999) concede that 'the assumption of perfect capital markets is not entirely convincing, especially in many developing countries.'

Secondly, Orszag and Stiglitz (1999) argue that 'how the government invests its trust funds is irrelevant' if 'individuals can "undo" the public fund portfolio by adjusting their own portfolio'. Again, this is well established in theory,⁴⁸ but in practice most workers, even in richer countries, have few assets and are unable to borrow enough to reverse the effects of public financial policy.⁴⁹

5.2 Economies of scale: some evidence

Proponents of public management of pension funds base their arguments mainly on grounds of costs. For example, Murthi, Orszag and Orszag (1999) favor a 'centralized' approach that 'would aggressively take account of potential economies of scale through centralized provision'.

Here is a sample of different studies' conclusions about economies of scale in financial markets.⁵⁰

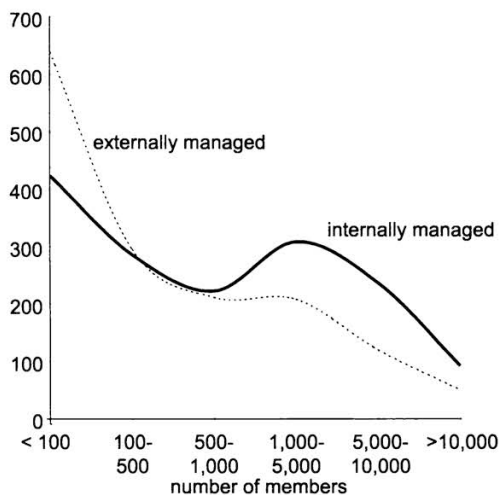
⁴⁷ The classic paper is Mehra and Prescott (1985). The literature attempting to explain the 'equity premium puzzle' is large. Constantinides, Donaldson and Mehra (1998), for example, suggest that liquidity constraints prevent younger workers from investing as much as they should in equities. Other relevant papers include Blanchard (1993) and Kotcherlakota (1996) and Jagannathan and Kotcherlakota. (1996).

⁴⁸ Stiglitz (1983, 1988).

⁴⁹ Banks and Tanner (1999), for example, find that median financial wealth in the United Kingdom is just £750.

⁵⁰ Indro *et al.* (1999) provide some interesting evidence that there are diseconomies of scale in active management of funds in the United States. Funds perform more poorly once they reach a certain size.

- The evidence showed no significant relationship in Latin America or the United Kingdom between *charges* and the size of funds, though that, of course, does not preclude a relationship between *costs* and fund size
- Turner and Beller's (1989) study of pension funds in the United States found economies of scale until funds reach \$75 million in assets; thereafter, administrative costs as a proportion of assets remain constant
- James, Vittas and Smalhout (1999) look at mutual funds in the United States. Their regression analysis suggests that the fall in costs comes to a halt between \$20 billion and \$40 billion of assets under management. Collins and Mack (1997), in contrast, find a rather lower minimum efficient size
- Dermine and Roller (1992) suggest a minimum efficient size in the French mutual fund market of only \$0.5 billion
- OSI, the management consultants, concluded that 0.5 million members would be sufficient to achieve available scale economies in the provision of stakeholder pensions in the United Kingdom (Timmins, 1999). With 10^{1/2} million personal pensions in the United Kingdom, even a minimum efficient size of 0.5 million members leaves room for a dozen or so providers.
- The Australian Prudential Regulatory Authority (1998b) finds evidence of economies of scale in the administration of the superannuation guarantee. Figure 15 shows that this effect is stronger for funds using external



Source: Australian Prudential Regulatory Authority (1998b), Figure 3.

Figure 15: Annual administrative expenses per member by external or internal management, Australia, 1996-97

rather than in-house investment managers. External administration costs about $1\frac{1}{2}$ times per member for the smallest funds, but is markedly cheaper for funds with more than 1,000 members. This is surprising, because external managers can achieve economies of scale even by pooling together several small firms' funds. Perhaps this result reflects greater competition among external managers for larger accounts.

The evidence on economies of scale is therefore inconclusive if not conflicting. Given its significance for the optimum structure of the funded pension industry, this is an important area for future research.

5.3 Constraining portfolios

Public management and collective provision share the characteristic that they restrict individual portfolio choice. In Bolivia, for example, people are currently allocated to a fund, and when choice is introduced, it will initially only be between the two present funds. Sweden restricts choice indirectly, by encouraging people to move to cheaper funds in its complex system of cross-subsidies.

The new stakeholder schemes in the United Kingdom are also likely to restrict member choice of investments to reduce costs within the government's charge ceiling. The government has said: 'We expect some schemes to offer individual members no separate choice in the way their money is invested ... In general, we do not expect members will want to make complex investment choices'.⁵¹

In defined-contribution schemes, it is prudent for people to shift from a riskier (but higher return), equity-dominated portfolio when young to less risky investments when they near retirement. (Similar arguments apply if they choose to draw down their fund rather than convert to an annuity during retirement.) Such a strategy is both standard investment advice and shown to be optimal by a range of economic studies.⁵² However, this sensible shift in investments with age would not be possible with a 'one-size-fits-all' investment fund.

Individuals might well wish to avoid complex investment choices, but they can be expected to make simple choices from a short menu of investment options with different risk-return properties (e.g. equity or bond-dominated or balanced funds). This would enable people to reduce the volatility of the value of their pension fund as they neared retirement.

⁵¹ Department of Social Security (1999a). See Shah (1999) for a general discussion of individual choice of pension portfolios.

⁵² See, *inter alia*, Jagannathan and Kotcherlakota (1996) and Samuelson (1989a,b) and King and Dicks-Mireaux (1982).

The main counter-argument is one of cost and complexity. Dividing individual pension contributions between different funds and transferring investments between funds on members' request adds to the administrative burden. Providing information on different investment options and educating people about their investment choices would also be costly. There is also the risk that workers make the 'wrong' choices, investing either too riskily or too prudently (dubbed 'reckless conservatism').

Experience with defined-contribution plans offered by employers in the United States, mainly 401(k)s, is useful evidence. In 1978, only 16 per cent of plans offered members a choice of investments, but now 94 per cent have more than one fund, and 58 per cent have five or more.⁵³ Surveys of members' investment choices in defined-contribution plans in the United States show little sign of recklessness, of the prudent or imprudent sort.⁵⁴ They take advantage of the flexibility schemes offer to adjust portfolios to suit individual circumstances, most importantly, how close they are to retirement.

Australia is also moving in the direction of greater member direction of investments. Over half of superannuation guarantee members had some kind of investment choice by 1996–97.⁵⁵

6. Conclusions

It is easy to lose sight of the important issues in pensions policy in the detail of the analysis of administrative charges, which is necessarily complex and involved. The most important issues in pension reform relate to financial markets. How large is the equity premium? How volatile are long-term equity investments? Are stock-markets currently over-valued? Compared with these questions, administrative charges are a second-order, purely operational issue.

This paper has tried to set out the options and the arguments in controlling the size of administrative charges and costs. The spectrum of policies is very broad. At the minimum, regulations allow any charge level or structure, but impose some disclosure requirements. Some countries have chosen to regulate charge structures. Simpler fee schedules make it easier to com-

⁵³ Regulations protect plans and sponsoring employers from fiduciary responsibilities if members are allowed a sufficiently broad choice of investments with different risk and return characteristics. The vast majority of plans intend to comply with these regulations, allowing members to choose investments (94 per cent of schemes covering 92 per cent of members according to survey data: KPMG Peat Marwick, 1998).

⁵⁴ See, for example, VanDerhei *et al.* (1999). Whitehouse (2000b) surveys this and other studies.

⁵⁵ Australian Prudential Regulatory Authority (1998a).

pare different managers' charges. A smaller group of countries has gone further and imposed ceilings on charge levels. Another approach to is to use alternative institutional structures, including competitive bidding to manage a small number of portfolios or even public management of a single fund.

Some analysts treat lowering administrative charges as the only goal of designing a pension system. I have tried to spell out the important trade-offs involved. Lower administrative charges can involve substantial constraints on individual choice of pension provider and of pension-fund portfolio and limits on competition. This conflicts with other goals of pension reforms and might adversely affect pension funds' net rate of return.

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