OECD

Organisation for Economic Co-operation and Development

INSURANCE AND PRIVATE PENSIONS COMPENDIUM FOR EMERGING ECONOMIES

Book 2
Part 1:6)b

ADMINISTRATIVE CHARGES FOR FUNDED PENSIONS: COMPARISON AND ASSESSMENT OF 13 COUNTRIES

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2001

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Introduction

The price of financial services is of great consequence for consumers. Misunderstandings of the impact of charges and collecting information can be costly. Furthermore, private pensions will for most people be their most valuable asset or second most valuable after their home.

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.[1] Whether one defines adequacy as a minimum, basic 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 covered[2] while elsewhere, some or all have a choice between remaining in a (reformed) public pension programme or switching to the new pension funds.[3] Because of the mandate in these pension programmes, 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 programmes, 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 programmes.[4] 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 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

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[1] This paper does not attempt to compare administrative costs with other types of pension systems because of the complex methodological questions raised and the difficulty of obtaining comparable data. Mitchell (1998) provides data on pay-as-you-go, public schemes.

[2] Bolivia, Kazakhstan, Mexico.

[3] See Disney, Palacios and Whitehouse (1999) and Palacios and Whitehouse (1998) for a discussion.

[4] See Pennachi (1998) and Turner and Rajnes (2000).

have a powerful influence.[5] 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 thirteen countries whose pension systems have a defined contribution element. These consist of five OECD members: Australia, Mexico, Poland, Sweden and the United Kingdom. Mexico, however, is discussed with seven other Latin American countries. The final country covered is Kazakhstan.[6]

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.[7] It examines alternative institutional arrangements to the individual-based schemes that operate in the majority of the countries discussed here. There are two main collective structures: employer-based schemes and centralised, public management of pension fund assets. Section 6 concludes.

1.   Pension fund institutional structures and charges

The focus of this paper is on charges for mandatory funded pension plans.[8] The paper looks only at the 'accumulation phase' when contributions and investment returns are accruing in pension accounts. Charges during the 'withdrawal phase' — for purchasing an annuity *etc.* — are not covered.[9]

The most familiar example of a mandatory funded pension plan internationally is probably Chile, which replaced its defined benefit, public pay-as-you-go scheme with individual retirement-savings accounts in

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[5].   See Srinivas, Whitehouse and Yermo (2000).

[6].   Denmark, the Netherlands and Switzerland also have large mandatory or quasi-mandatory funded pension systems (although most Dutch plans are defined benefit). Hong Kong has recently made its employer-based defined contribution plans mandatory. Many other countries are close to introducing mandatory defined contribution pensions.

[7].   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.

[8].   Most countries' schemes are not strictly mandatory, in the sense that all workers must participate in the defined contribution scheme. But most require employees to make some pension 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.

[9].   See Brown, Mitchell and Poterba (2000) on the United States, Finkelstien and Poterba (1999) on the United Kingdom and James and Vittas (1999) on a range of countries.

1981.[10] Much of Latin America now has mandatory funded pension programmes, although these differ substantially in structure, size and scope.[11]

There have also been many pension-reform initiatives in the former socialist countries. Hungary and Poland introduced new schemes in 1998 and 1999.[12] 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 concentrated on reforming their public programmes: what have been termed 'parametric' reforms (as opposed to systemic changes).[13] However, Australia, Sweden and the United Kingdom have introduced new systems of mandatory individual pension accounts.[14] 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 down wage increases. Trades unions agreed to a payment into pension accounts as a substitute for a pay rise. However, this agreement applied to (mainly) large employers covered by the centralised bargaining system. The government extended the scheme throughout the economy in 1992, phasing in a mandatory superannuation contribution 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 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.[15] 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 programme, 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.

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[10]   There is a large literature on the Chilean reform. Prominent examples include Diamond (1994), Arrau and Schmidt-Hebbel (1994) and Edwards (1999).

[11]   Queisser (1998) is a good survey.

[12]   See Palacios and Rocha (1998) and Chlon, Góra and Rutkowski (1999) respectively.

[13]   See Disney (1999), McHale (1999) and Kalisch and Aman (1998).

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

[15]   See, for example, Disney (1995), Disney and Stears (1996) and Betson (1999) on the United Kingdom and Gustman and Steinmeier (1992) on the United States.

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Moreover, countries have taken very different approaches to charges. Table 1 tries to characterise these with a single, simple metric. The most liberal régimes (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. An important explanation is that private pensions in the United States remain voluntary and that 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 régime in Kazakhstan.

The Table also shows some alternative approaches. One objective of many of the restrictions in the countries listed above is to cross-subsidise 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, subsidising 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 systems.

The final generic approach to charges is to hold a competitive auction to manage pension assets in which charges play a prominent 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. This discussion is inevitably rather mathematical: readers who are put off by equations are invited to leap straight to section 3.

Table 1

Possible approaches to pension industry structure and charges

Strategy	Country examples	
No restrictions	Australia (superannuation guarantee)	
	Hong Kong	
	United Kingdom (personal pensions)	
	United States (401(k) plans)	
Cross-subsidies to low-paid workers	Mexico	
Limits on charge structure	Argentina	
	Chile	more
	Hungary	restrictive
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	

2.   Measuring charges

There are many different ways — both in theory and in practice — of levying charges on long-term financial products, including pensions. 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 costs at any point in time: the only meaningful calculation is over the lifetime of pension membership.

2.1   A formal analysis of administrative charges

Summarising 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 time[16] can be written as a multiple of earnings in period 0, when the individual joins the pension fund

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

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

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

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

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

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

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

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

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

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

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

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)

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

To summarise, the equations above give lifetime pension contributions plus the investment returns they earn less four different types of charges. These are: 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).

[16.] Bateman, Doyle and Piggott (1999) and Bateman, Kingston and Piggott (2001) present a similar model in discrete time.

2.2 Alternative measures of charges

There are four main potential measures of charges:

- 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. Thus, if the gross return assumed were five 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.

- The third measure, called **MP1**, was developed within the Financial Services Authority (James, 2000). MP1 is the price of a *m*anaged *p*ortfolio that yields the market return, excluding charges, on £*1*.

A final measure is the **charge ratio**. The formal definition is 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

$$c(1-a_1)w_0 e^{rT} \frac{e^{(g-r)T}-1}{g-r} \qquad (8)$$

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 in the literature. The following sections show that they are closely related but that they give very different results when assumptions change.

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 three per cent a year and annual investment returns are five per cent. The pension plan has 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 three 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. (The following sub-sections discuss these important conditions.) For example, the doubling in asset management charges from 0.5 to one per cent a year increases the charge ratio by nearly 90 per cent. Thus, 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**
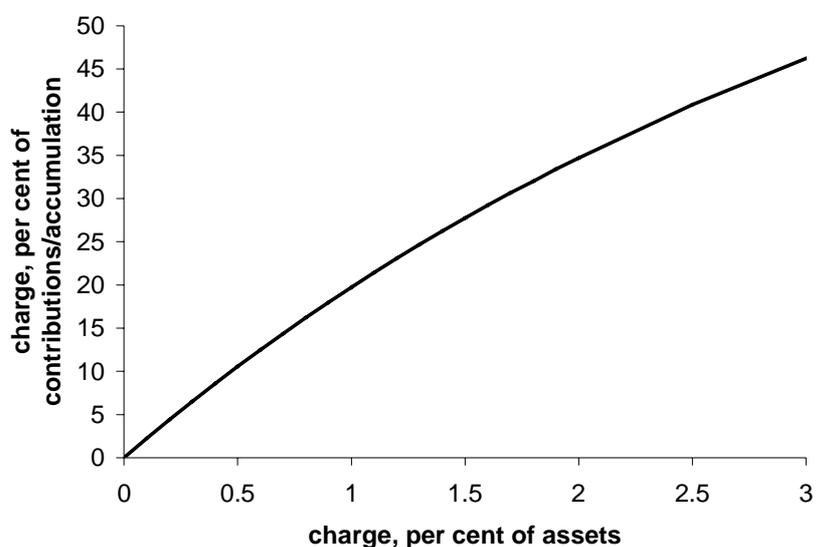
2.4 *Robustness of charge measures to changes in assumptions: rate of return*

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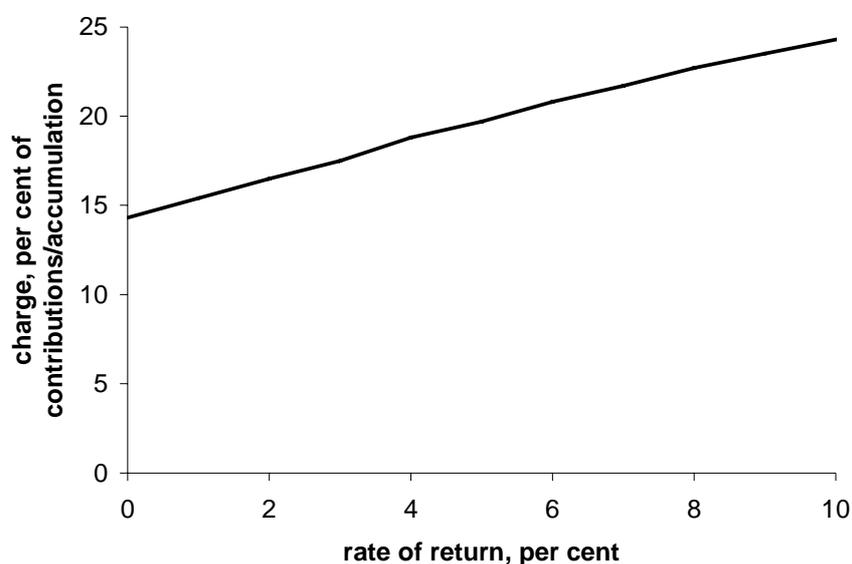
Is it desirable that the measure of charges should vary with the rate of return? Figure 3 illustrates the issue. It shows the value of the pension before charges and net of charges (again assumed to be one per cent of assets) for different rates of return. The grey area in between is the absolute value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

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 24½ 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.

Figure 3.
Gross and net pension under different rate of return assumptions
(charge of one per cent of assets)
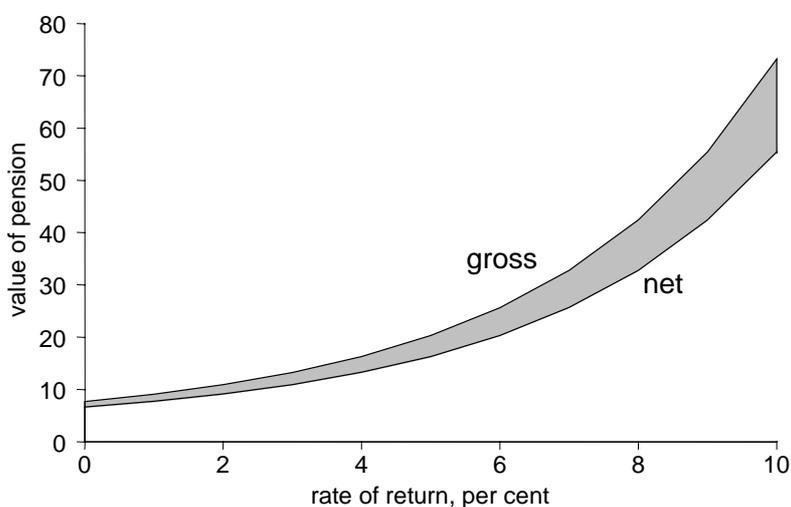
2.5   *Robustness of charge measures to changes in assumptions: earnings*

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.[17] 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)[18] find that professional and managerial pay in the United Kingdom rises by six per cent a year and manual workers', by around two per cent a year. 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. A measure of economy-wide earnings growth averages across a range of cohorts of different sizes. So there is no reason why the mean of 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, which is appropriate for their purpose, but not for computing an individual's pay profile.

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[17].   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'.

[18].   Based on hourly wage rates using Family Expenditure Survey data for 1978-86.

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, older workers tend pay tends to be paid the same as or more than that of prime age workers.[19]

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 the ratio is only 16 per cent with earnings 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)
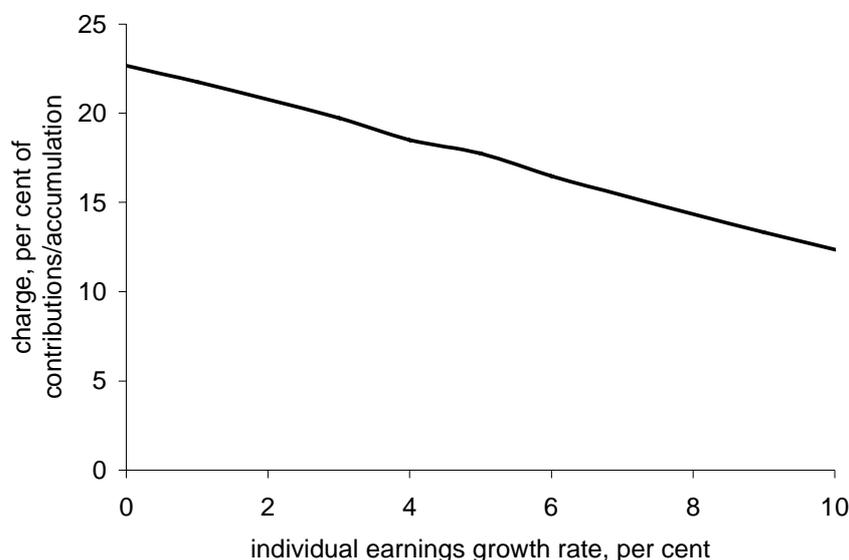
2.6   *Robustness of reduction in yield measure with contribution-based levies*

Asset based charges are a common form of charge for many financial products. But the managers of mandatory funded 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. (Compare this chart with Figure 2.) A higher rate of return reduces the reduction in yield measure, although 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.

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

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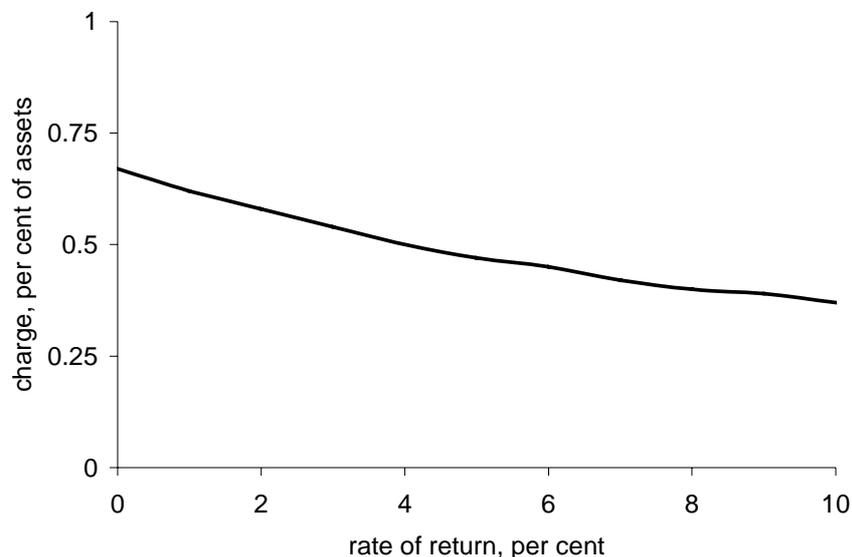

Figure 6 shows a similar result for variations in the assumption of individual earnings growth. Again, the magnitude of the change in the measure is similar but the direction is different from the effect on the charge ratio of different earnings growth assumptions with an asset-based levy.

Figure 6. **Reduction in yield under different earnings growth assumptions** (charge of 10 per cent of contributions)
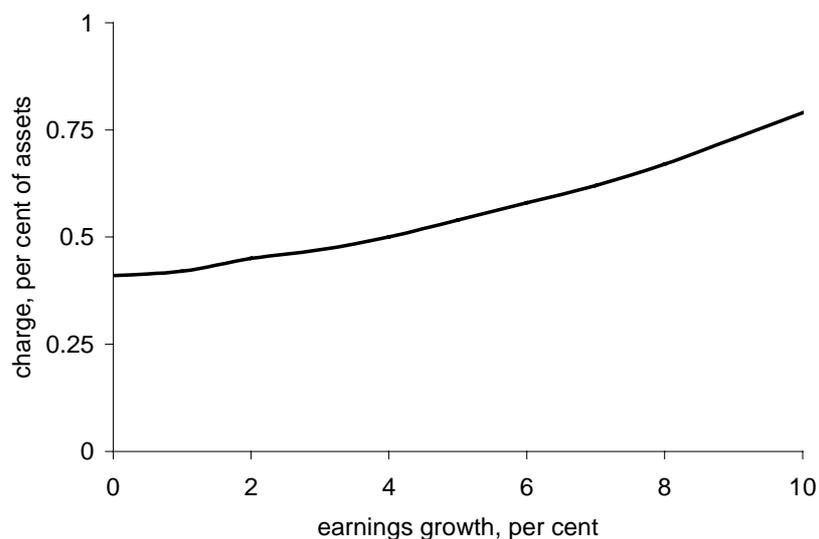
2.7   *Charge measures and duration of the pension policy*

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. Section 4 — which looks at which types of charge are optimal — considers in more detail many of the issues raised in measuring charges when policy terms vary will.

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 labour 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 derives solely from 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.

Figure 7. **Pension policy duration and the charge ratio**
(charge of one per cent of assets)
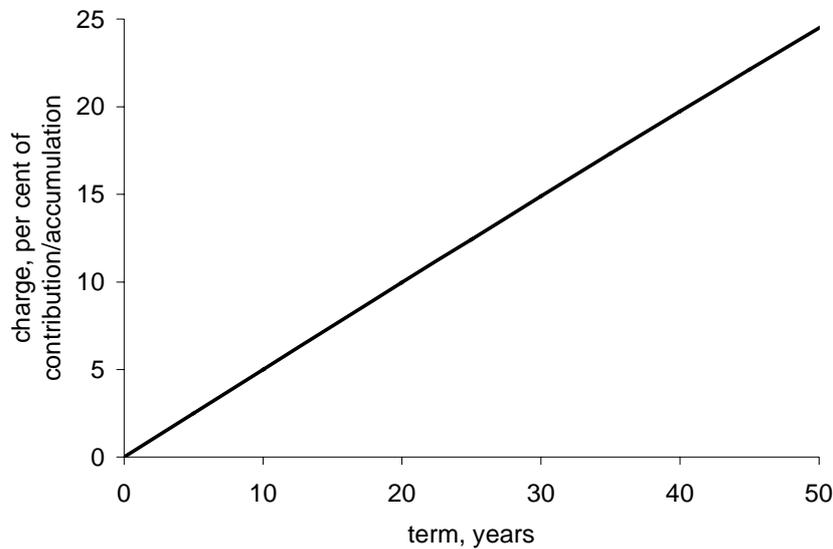
The relationship between net and gross pension for different policy periods and the charge ratio is very similar to the relationship with the rate of return illustrated in Figures 2 and 3. A pension held for a long period is larger because of the impact of compound interest. Thus, the charge ratio increases, 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 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)
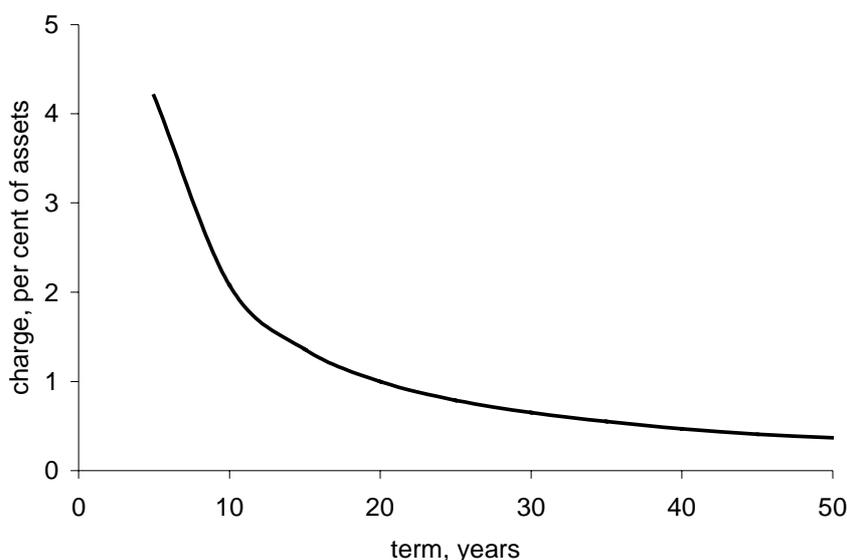
2.8   *Gaps in contribution profiles*

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 $(0\ldots N)$ 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

$$c(1-a_1)w_0 e^{(r-a_2)N} \frac{e^{(g+a_2-r)N}-1}{g+a_2-r} \qquad (9)$$

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

$$c(1-a_1)w_0 e^{(r-a_2)T} \frac{e^{(g+a_2-r)N}-1}{g+a_2-r} \qquad (10)$$

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)
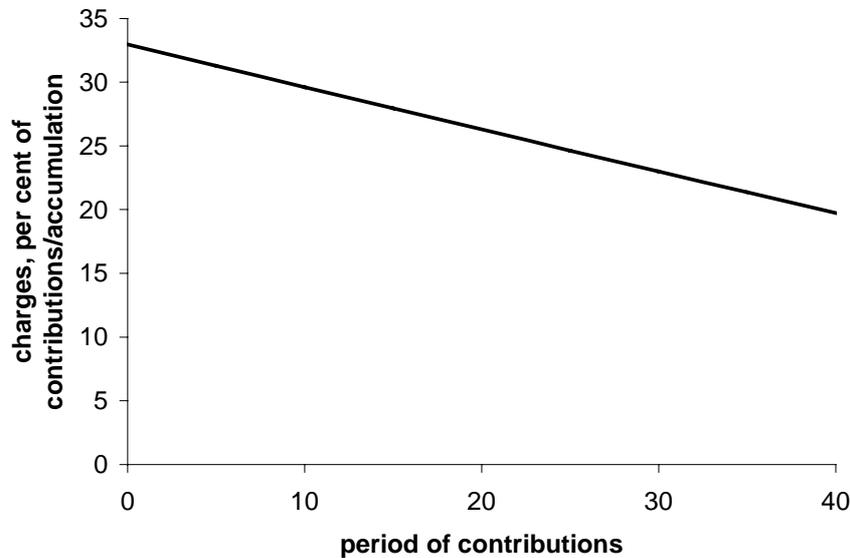
2.9 *Conclusion: which is the appropriate measure of charges?*

No measure of charges can summarise simply and accurately the many different kinds of fees that are levied on financial products. Our concern should therefore be to minimise 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

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increase is proportionate. MP1 has the drawback that it is not mathematically robust when net returns are negative zero or even small and positive.

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 is 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 thirteen different countries.[20] It begins with four OECD members, followed by eight Latin American countries (including Mexico, an OECD member) and ends with Kazakhstan.

3.1 OECD countries

3.1.1 Australia

Australia established its superannuation-guarantee system in 1992. In 2002, the phased increase in contribution rate will be complete, and employers will then be required to contribute nine per cent of employees' pay. The mandate specifically excludes low-income workers — people earning less than A$5,400 a year — on the grounds that fees would eat up their contributions.

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[20]. 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 social-security reform debate has become extremely heated and the issue of charges has particularly contentious. The National Bureau of Economic Research (Shoven, 2000), the Employee Benefits Research Institute (Olsen, 1998; Olsen and Salisbury, 1998) and the General Accounting Office (1999*a,b*) have produced relatively balanced analyses.

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.[21] 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 of either industry funds or master trusts. Both are collective schemes and the employer is responsible both for paying the contributions and for choosing the funds. There are over 100 industry funds and 350 master trusts.[22] Table 2 shows typical charges for these two types of plan.

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 quite stark. Investment in an industry fund reduces the return by 0.37 to 0.77 per cent a year, compared with 0.96 to 1.81 per cent a year for master trusts.

Table 2. **Pension charges in Australia by fund type**

	Industry fund (collective plan)	*Master trust (individual plan)*	
Flat-rate	A$48 per annum	A$42-A$71 per annum	
Proportion of contributions	—	up to 4.5%	
Proportion of assets	0.3%-0.7%	up to 0.95% 0.4%-1.1%	(administration) (fund management)
Reduction in yield	0.37%-0.77%	0.96%-1.81%	
Charge ratio	8.1%-16.1%	19.6-33.4%	

Source: Bateman, Kingston and Piggott (2001)
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

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 could reach nearly one fifth of contributions for a worker earning the A$5,400 minimum. This would translate into a total charge ratio of as much as 50 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.

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

[22] See Australian Prudential Regulatory Authority (1999).

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 substantial 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.

A final potential explanation is an 'agency' problem. The government mandates employers to make a nine per cent contribution gross of charges. Charges are not borne by the employer but by the employees' pension accounts. Employers may not have their employees' best interests at heart and have little incentive to shop around to get the best deal. They might just want to comply with the mandate at minimum cost to themselves.

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.[23]

3.1.2   Poland

Poland will allow both contribution and asset-based fees, but not flat-rate charges. The asset-based charge will be limited to 0.05 per cent per month (0.61 per cent of assets *per annum* at a five-per-cent return). The charge must be set out in the articles of association of the fund, and almost all levy the maximum. There is no ceiling on the levy on contributions, but providers are not allowed to discriminate (for example, by level of contribution) except on the length of participation in the fund. The aim of this last provision is to minimise the excessive 'churning' characteristic of many Latin American systems. The typical levy is seven-to-nine per cent of contributions initially, usually falling to five per cent after two year's participation. Table 3 summarises the impact of these charges on the standard measures using the baseline assumptions. The majority of the overall charge comes from the levy on assets (around 70 per cent after a full lifecycle of contributions).

Table 3. **Pension charges in Poland**

Asset-based fee	Contribution-based fee	Charge ratio	Reduction in yield
0.61	9	20.5	1.05
0.61	7	18.8	0.95
0.61	7 then 5	17.1	0.85

Source: Chlon, Góra and Rutkowski (1999)
Note: Data for typical fund in 1999. Assumes 40 year contribution period, 5 per cent real return and 3 per cent real individual earnings growth

Some 11 million Poles have now chosen one of 21 licensed pension funds. Chlon (2000) reports the results of two surveys asking people why they chose the particular pension fund they did. In the first study, charges were the ninth most important issue out of 14, behind the size of the pension fund, the experience of its shareholders, information provision and service. Just four per cent mentioned fees to the

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[23]   See Australian Prudential Regulatory Authority (1998*c*).

second survey, behind 11 other factors. Polish consumers appear rarely to choose between competing pension funds on price.

3.1.3   Sweden

The issue of charges is particularly important in Sweden because the contribution rate to pension funds — 2½ per cent of earnings — is lower than in any other country with mandatory funded pensions.[24] 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 régime 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

$$\alpha_s + \beta_s(v - \alpha_s) \tag{11}$$

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 4 shows the schedule.

Table 4. **Regulated marginal charges as a percentage of assets for mandatory funded pensions by fund size class in Sweden**

Value of assets (US$ million)	α	β	Full formula for charge (per cent of assets)
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 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 two 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

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[24]   The guaranteed minimum contribution (the mandatory minimum) in the United Kingdom is less than 2½ per cent for workers under 30. But it currently averages around 4½ 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.

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.

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

voluntary sector fee, per cent of assets
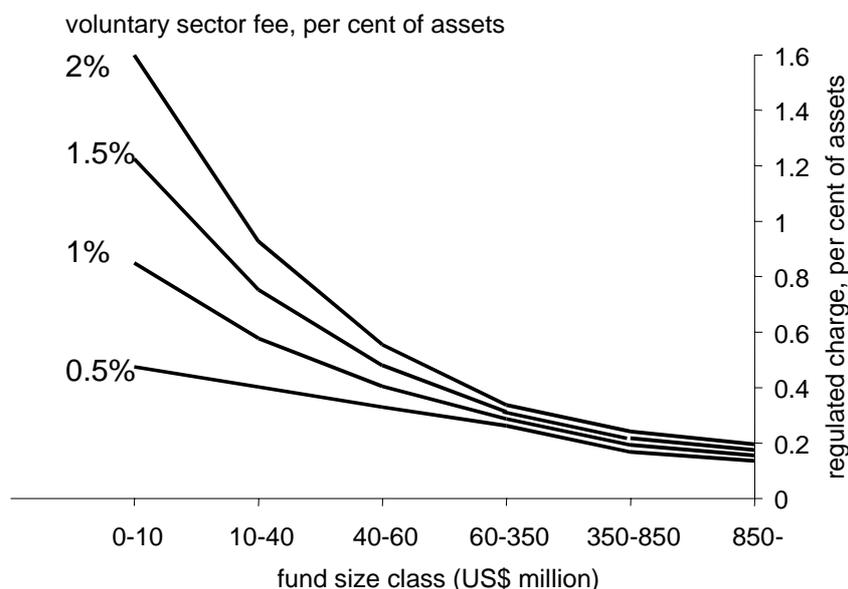
Source: calculated from data in Table 4

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 most) a small subsidy to their fixed costs. Thirdly, the régime should not rule out particular portfolios. Emerging markets, smaller companies funds *etc.* imply higher asset-management costs. By relating the ceiling to the fund's charge in the voluntary sector, the government does not rule out these more expensive investments. 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-capitalisation 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.[25] The four main programmes 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 two 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

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25.   See Whitehouse (2000*b*).

elements. This division of mandatory pension contributions into three different programmes — the public, pay-as-you-go pension scheme, individual accounts and occupational plans — is unlikely to result in efficient administration.

3.1.4   United Kingdom[26]

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:[27]

- **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 five 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 0.5-1.0 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 (five per cent).

The middle column of Table 5 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).

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26.   Whitehouse (2000*c*) provides a much more extensive discussion of charges in the United Kingdom.

27.   Data from Walford (1998).

Table 5. **Personal pension charges in the United Kingdom**

Levy	Government Actuary	Money Management
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). See also Chapman (1998)

Analysis of detailed charging data — the final column of Table 5 — reveals lower charges than the Government Actuary's figures.[28] The charge ratio, for example, is two 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 Government Actuary's assumptions and the results of Murthi, Orszag and Orszag (1999).

The average charge disguises a very broad distribution. Table 6 summarises 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 five 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 one per cent a year, but the range is 0.36 to 1.5 per cent.

[28.] 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.

## Table 6. **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	1.01-1.25	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)

The distributions in Table 6 translate into a very broad range of charge ratios, as illustrated in Figure 11. 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.

There is 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 firms. (This difference is significant at 8.6 per cent.)[29]

Figure 11.
Distribution of pension charge ratios in the United Kingdom
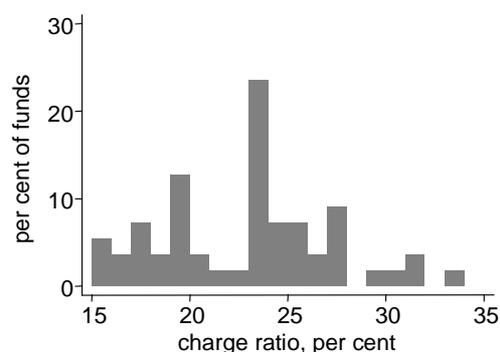
Source: author's calculations based on Walford (1998)

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[29]   Born *et al.* (1995) report some interesting results on the relationship between charges and organisational form in the United States.

There is evidence of a decline in charges since the early 1990s (Table 7). Since a peak in 1992, the average levy has fallen by one sixth, from 28½ to 24 per cent of pension accumulation. Analysis of individual firms' charges over time shows that this is due to cuts in some of the very highest charges. For example, the lowest quartile of the charge ratio has fallen by only one percentage point, while the upper quartile has declined by more than five points.

Table 7. **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. See Chapman (1998)

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, to and from both other occupational schemes and personal pensions. It is also possible to change between different personal plans. This complicates the measurement of personal-pension charges. Moreover, transfers of funds within the personal pensions sector are more complex than in Latin America or Eastern Europe, for example. In these systems, 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 analysing pension transfers and their effect on the burden of charges.[30] First, the data only include personal pensions that receive contributions in addition to the mandatory minimum, that is only 45 per cent of the 5½ million personal pensions used to contract out of Serps.[31] Secondly, voluntary personal pensions — mainly taken out by the self-employed or to top-up occupational pension benefits — account for around half of the 10½ million personal pensions. Thus, 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. 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

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[30] 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.

[31] Inland Revenue (1999).

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 two 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.

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'.[32] Since there are fewer employers than employees, this should reduce marketing expenses. In addition, 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 reductions that 28 personal-pension providers offer for group schemes in the United Kingdom illustrates the potential savings from collective provision. The most common concessions for group personal pensions are lower charges (18 firms), reduced minimum premia (seven) and free life insurance (five).[33] Stakeholder schemes are designed to reap the same cost advantages as group personal pensions.

Secondly, some aspects of the regulatory régime will be simplified. The most important change is the streamlining of the taxation rules, which should reduce compliance costs substantially.[34]

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.

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[32]   Department of Social Security (1999*b*). See Axia Economics (1999*b*) for a detailed commentary. Note, however, that employees need not necessarily join the plan offered by their employer.

[33]   Data from Walford (1998).

[34]   Department of Social Security (1999*c*).

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.[35]

However, the government does not appear to believe that transparency of charges (compared with the Byzantine schedules of personal pensions) will alone be enough to facilitate competitive pressure to reduce administrative costs. It has also proposed a ceiling on charges of one per cent of fund assets.[36] 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.[37]

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.[38] 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 government would make this payment even if its value exceeded the social-security-contribution liability, so the transfer would be greater than employee contributions for people earning less than £11,400.

One objective of these proposals was to address the problem of administrative charges and 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 labour-market entrants. This would obviate the need for promotional expenses to persuade people to join basic pension plus. This marks a different approach to pension administrative charges from the Labour government's regulatory strategy.

3.2 *Latin America*

Excluding Bolivia, which is discussed separately below, there are three basic structures of charges in Latin American countries.

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[35] 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 (2000*a*), section 4.11.

[36] Department of Social Security (1999*a*). See Whitehouse (2000*a*) and Axia Economics (1999*a*) for an assessment.

[37] Financial Times (1999*a*) and Disney, Emmerson and Tanner (1999).

[38] 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.

First, pension funds in four countries — Colombia, El Salvador, Peru and Uruguay — levy a charge only on contributions. Secondly, in Argentina and Chile, funds levy a mix of a fixed administrative fee and a charge on contributions. In Argentina, five funds do not levy a fixed fee, while the other eight levy an average of $3.85 a month. In Chile, all but one of the funds have a fixed charge, averaging just $1 a month. Finally, Mexico's charges are the most complex in Latin America. Three funds levy a fee just on contributions. Nine firms make charges both on contributions and on the value of assets in the fund and one company levies a fee only on the investment returns. Eight firms also offer discounts to long-term members of their funds.

There are two complications with comparing charges between these seven Latin American countries. First, in four countries — Chile, Colombia, El Salvador and Peru — charges are levied on top of the mandatory contribution. In Chile, for example, the compulsory contribution is 10 per cent of pay. With the average charge level on top, the total contribution is 11.6 per cent. Elsewhere, the charge is taken out of the gross contribution. In Argentina, for example, the compulsory contribution is also 10 per cent of earnings, but a charge averaging 2.3 per cent is deducted from this, giving a net inflow to pension funds of 7.7 per cent of pay.

Secondly, all of these systems also include mandatory private disability insurance. The insurance premia are collected as part of the charge, even though pension managers usually pass this straight on to separate insurance companies. The disability premium has been deducted from charges.

Table 8 shows the results. There is considerable variation in the mean level of charges, ranging from a charge ratio of 13.5 per cent in Colombia to 26 per cent in Mexico. These are equivalent to reductions in yield of 0.65 and 1.4 per cent respectively.

There are also large differences between countries in the variability of charges. The relatively small number of funds in Peru, El Salvador and Uruguay levy very similar fees. In Mexico and Argentina, in contrast, there is much greater variation. In the former, for example, three funds charge the equivalent of 19 per cent of contributions while four funds levy 30 per cent or more.

Table 8. **Pension charges in Latin America**

per cent		Unweighted mean charge		Weighted mean charge		Range of charges	
	Number of funds	Reduction in yield	Charge ratio	By assets	By members	Lowest	Highest
Colombia	8	0.65	13.5	14.0	14.1	11.9	16.7
Uruguay	6	0.72	14.7	14.4	14.6	13.2	15.8
El Salvador	5	0.85	17.1	17.0	17.0	16.1	18.4
Chile	8	0.88	17.7	16.2	16.1	14.5	20.4
Peru	5	0.96	19.1	19.0	19.1	18.6	20.0
Argentina	13	1.20	23.1	24.4	24.6	17.4	27.9
Mexico	13	1.39	26.0	24.5	26.2	19.3	35.4

Source: author's calculations based on Federación Internacional de Administradoras de Fondos de Pensiones (2000). Data for December 1999

The columns showing the weighted mean charge provide some evidence on the relationship between fund size and the level of charges. One might expect a negative correlation between these two variables. First, if fees reflect costs and there are economies of scale in managing pension funds, then larger funds would levy lower charges. Secondly, if consumers shop around for lower charges, then cheaper funds would attract more members.

If there were a negative relationship between charges and fund size, then the weighted mean charge would be below the unweighted mean. This is rarely the case in practice. In Argentina, for example, the weighted mean charge ratio is 1 to 1.5 percentage points higher than the unweighted average. There is a *positive* rather than a negative correlation between charges and fund size: the correlation coefficients are 0.54 and 0.62 (weighted by value of assets and number of members respectively). Note that this does not rule out a negative relationship in practice because the measure of charges is based on an example worker. High earners will be attracted to funds with relatively high fixed charges and low variable charges. If this 'streaming' of workers into different funds operates in practice, actual charges will be lower than measured. Unfortunately, the micro data necessary to examine this effect are not available.

In Chile, the reverse relationship to Argentina holds, with a weighted mean charge ratio 1.5 percentage points lower than its unweighted value. The correlation coefficients are –0.95 and –0.82 respectively. This suggests that larger funds are cheaper. Among the other countries, Colombia exhibits a fairly strong positive relationship between charges and fund size, with similar correlation coefficients to Argentina. In El Salvador, Peru and Uruguay, there is a weak negative relationship. In Mexico, the results are more complex. There is no relationship between the charge level and the number of members in a fund, but there is a positive correlation between charges and the value of assets under management. There are two potential explanations for this pattern. First, there are economies of scale with respect to assets under managed and not to the number of members. But this is unlikely given that many administrative costs are fixed. Secondly, members with larger funds are more responsive to price. Both of these explanations are, of course, speculative.

A related study, mainly of Argentina (FIEL, 1999), looked at the relationship between charges and the inflow and outflow of members in particular pension funds. The authors regressed (using 1994-97 data) the numbers moving into a fund, the numbers moving out and the net overall flow on charges, loyalty bonuses awarded by the funds and relative fund performance. There appeared to be no effect of charges on flows of new members into funds in either direction, but higher charges are associated with a larger loss of existing members. The relationship with marketing, sales and advertising expenditure was the other way round. Higher promotional spending seemed to result in higher inflows, but had no significant effect on outflows. Considering these two effects together, the authors conclude that it pays more to increase spending on advertising *etc.*, even if this means higher charges. This is because the elasticity of net flows of members relative to marketing spending is approximately twice as large as the elasticity relative to charges. However, the paper also finds that the competitive effect of charges has grown over time.

3.2.1   *Charges over time*

The results in Table 8 rely on the very strong assumption that charges remain unchanged throughout the lifetime of the pension contract. But the schemes differ in their maturity: El Salvador's was introduced in 1998, Mexico's in 1997, Uruguay's in 1996, Argentina and Colombia's in 1994 and Peru's in 1993. Chile's funded pension system has been operating the longest: since 1981. This offers an opportunity to look at the development of charges as the pension system matures. Table 9 shows how the structure evolved in the late 1980s and early 1990s.

Three different types of charges were permitted initially: a monthly lump-sum payment, an additional payment as a percentage of salary and an annual levy of a percentage of the outstanding balance in the fund. In 1988, the last of these charges was prohibited.

Table 9. **Pension charges in Chile**

	Fixed charge (US$ per year)	Variable charge (per cent of earnings)	Annual charge (per cent of fund)	Charge ratio (per cent)
1987	10	3.4	0.33	30.3
1988	11	3.6	—	26.4
1989	8	3.3	—	24.8
1990	6	3.0	—	23.1
1992	4	2.9	—	22.5

Source: author's calculations based on Valdés-Prieto (1994)

The most striking feature of the charging structure in Chile is the declining importance of the fixed monthly payment. Since 1988, this has fallen by two-thirds, while the average overall charge has fallen by a quarter. The short-term response to the prohibition of asset-based fees was a rise in the other charges. But within two years, the pension fund managers themselves had absorbed the loss of revenues, and both fixed and contribution-based levies were below their 1987 level.

This suggests caution is required in comparing charges between countries. All measures of charges are based on the strong assumption that their value does not vary over time, which the Chilean experience refutes.

3.2.2   Bolivia

Bolivia's system is very different from the other Latin American countries. The government chose to auction the rights to manage two pension funds internationally. Of the 73 companies expressing an initial interest, twelve applied. These were whittled down to short list of nine. Regulations and guarantees were then specified, which resulted in only three applicants at the final stage. The government picked two firms based mainly on their asset-management fee.[39]

The successful bidders have a five-year guarantee of their duopoly, and a guarantee of initial market share. People will be assigned at random to the two funds, and will be only permitted to transfer from 2000, three years after the new régime was introduced. New firms can enter the market after 2002.

This process has kept charges low: five per cent of contributions and 0.23 per cent of assets. This translates into a charge ratio of 9.8 per cent and a reduction in yield of 0.46 per cent.

In part, this results from the structure of the market. With just 300,000 pension members, contributing under $100 million a year, having only two managers allows them to take advantage of (limited) economies of scale. The initial guarantee of market share allows the companies to spread their set-up costs over a period and the absence of member choice limits the need for marketing. However, the successful firms were also given $1.7 billion of privatisation proceeds to manage, equivalent to 15 or more years of contributions to the mandatory pension system.[40] There is likely to be a significant cross-subsidy from the fee paid to manage these assets to the charges on pension accounts.

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[39]   See Von Gersdorff (1997) for a discussion.

[40]   These assets will finance the 'Bonosol/Bolivida' programme, which will pay a flat-rate benefit to all Bolivians over 65 separately from the funded scheme.

3.3   *Kazakhstan*

Kazakhstan took the most ambitious approach to pension reform of the countries assessed here. All new retirement income rights for all workers will accrue in individual pension accounts. The contribution rate to the new system is ten per cent, with a 15 per cent payroll tax used to finance existing pay-as-you-go pension liabilities. This tax will be phased out as pay-as-you-go liabilities decline.[41]

People can choose from one of eleven private pension companies and a state pension manager, which also operates as the default for workers who make no nomination. These companies contract out investment to an asset management company, of which there are just three: ABN-Amro, the Dutch investment bank, Zhetisu and Narodny Bank, the largest Kazakh bank.[42]

Regulations require that fees cannot exceed one per cent of contributions plus ten per cent of the investment returns of the fund. The latter levy, for a given rate of return, works like a charge on assets (the charge is 0.5 per cent of assets with a five-per-cent real return).

Of the total charge, the asset-management company receives 0.15 per cent of contributions and five per cent of investment income. The rest goes to the pension manager, who is responsible for collecting contributions, record keeping and marketing the fund to potential members.

These charges are low compared with most other countries: a charge ratio of 11.45 and a reduction in yield of 0.55 per cent at the baseline assumptions. There has been an intense debate between the government, pension funds and others about the level of the limits on fees. The funds indicate that they need 100,000-150,000 members to break even, and only one (Narodny Bank) has so far reached that level.

3.4   *Summary*

Figure 12 summarises the empirical analysis of charges in different countries. In most cases, the grey bars show the mean charge while the black dots show the range of charges. In Sweden, however, the grey bar shows the minimum of the range of permitted charges, which depends *inter alia* on the size of the fund. Most people are expected to pay charges close to this minimum level. The grey diamond shows the theoretical maximum charge. The data for stakeholder pensions in the United Kingdom are the maximum: some providers have already announced lower charges than this level. In addition, the main beneficial effect of stakeholder schemes on the burden of charges relative to personal pensions — flexibility in stopping, starting and varying contributions — is not captured in this picture.

The mean burden of charges in different countries varies over a substantial range. It is also interesting to note that the countries with the highest average level of charges — Australia (master trusts), Mexico, Argentina and the United Kingdom — also exhibit the greatest variability by a significant margin.

The results in the chart are somewhat sensitive to changes in assumptions. The charge ratio measure does not vary with the rate of return if fees are levied on contributions. But pension managers in all the countries outside Latin America — Australia, Kazakhstan, Poland, Sweden, and the United Kingdom — and in some in Latin America levy some or all of their charges on assets. The charge ratio measure in these cases is higher with a higher rate of return. However, the distribution of charging levels in Figure 12 is broad enough to ensure that re-rankings with varying assumed returns are limited to two places.

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[41]   Data are from Andrews (2000).

[42]   Another fund had its license suspended following an inspection by the supervisory authority.

Figure 12. **Charge ratio in funded pension schemes in thirteen countries**
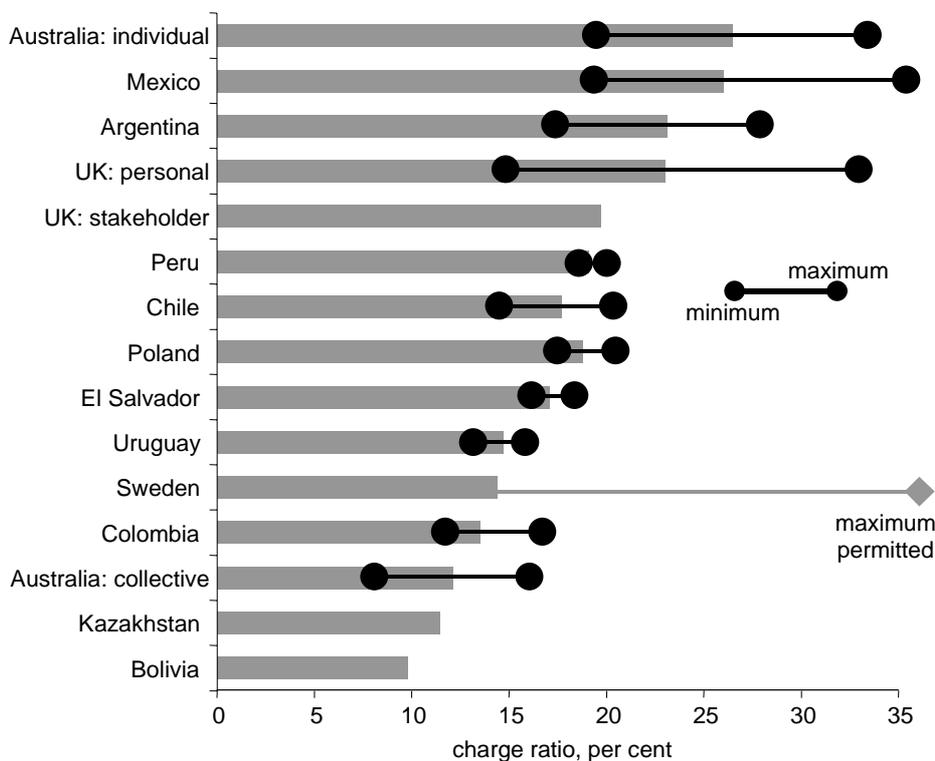
Source: see discussion in previous sections

4.   Policies on charges: assessing the alternatives

Measuring the impact of administrative charges for pension funds is very complex, as the previous sections have shown. It is therefore essential, at the minimum, that governments or regulators set out a standard presentation of charges to ensure that consumers can compare different. Unfortunately, transparency alone may not be enough to ensure competitive pressures 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 standardised way, illustrating, for example, the cost of stopping contributions prematurely.[43]   There is a standard investment-return assumption, but the impact of charges has to be calculated 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 is time consuming. League tables of charges published in the media tend only to cover one or two example individuals. Given the huge variety of charging structures in the United Kingdom, fees depend critically on individual characteristics and so published 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

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[43].   See Personal Investment Authority (1995) and Office of Fair Trading (1992).

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 concluded that advice 'is of variable quality'.[44]

The IFA Association, the collective voice of independent financial advisors naturally disagrees. 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 increase can be as high as 25 per cent.'[45] Despite this defence of commissions, the IFA Association has proposed a move to fee-based charging to underline their independence.[46] 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 making charges more transparent is to levy charges on top of rather than out of mandatory contributions. This brings charges clearly to consumers' attention because they reduce current net income rather than cutting future pension benefits. Chile, Colombia, El Salvador and Peru all levy charges on top of the mandatory contribution, while in other countries charges are deducted from mandatory contributions.

The policy of having a mandatory contribution net of rather than gross of charges seems particularly relevant when the mandate applies to employers (as in Australia) rather than to employees (as in most of the other countries surveyed). Employers have no direct incentive to seek low charges when the charge just reduces the value of employees' pensions. If, in contrast, the mandate were for a contribution net of charges, the burden would fall directly on employers, presumably with a much more powerful effect on firms' incentives to seek a good deal.

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. If only one type of fee is allowed, then there is a single 'price' for taking out a pension that consumers can readily compare. It also removes many of the complexities arising from the variation of charges with consumer characteristics, the level of earnings or the amount of contributions.

There are two basic options for a single, proportional charge (or 'price' of pensions): a levy on assets or contributions. There are four important features of these two types of potential charges that bear on the choice between them.

First, a contribution-based charge is 'front-loaded': fees are heavier in earlier years than an asset-based charge, as illustrated in Figure 13. 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.

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

[45] 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.

[46] Financial Times (1999*b*).

Figure 13. **Time profile of payments of different types of charge**
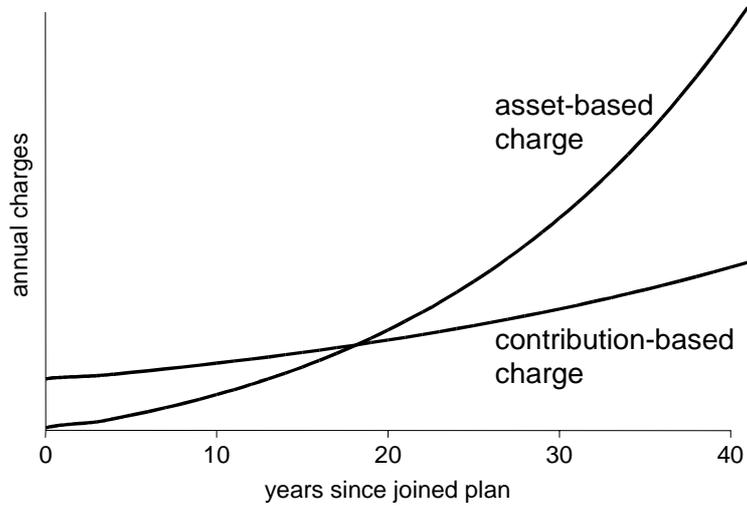
Empirical evidence demonstrates that even contribution-based charges require a number of years of losses before companies can recover their set-up costs. Figure 14 looks at the experience during the first five years of the new Argentine system. Overall, costs have fallen sharply over time. This was due to initial over-estimates in the cost of disability insurance by 40 per cent. Nevertheless, over five years, administrative costs have fallen by half and sales and marketing expenses by a third. System costs fell below revenues for the first time in the fifth year of the new régime. 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 fund managers will have recovered the cost of their initial capital. The pattern in Hungary was more marked than Argentina. Fund charges have averaged about 8 per cent of contributions in the first year of the new system, while costs have averaged 24 per cent.

Figure 14. **Costs and revenues in the Argentine funded pension system,** 1994-99
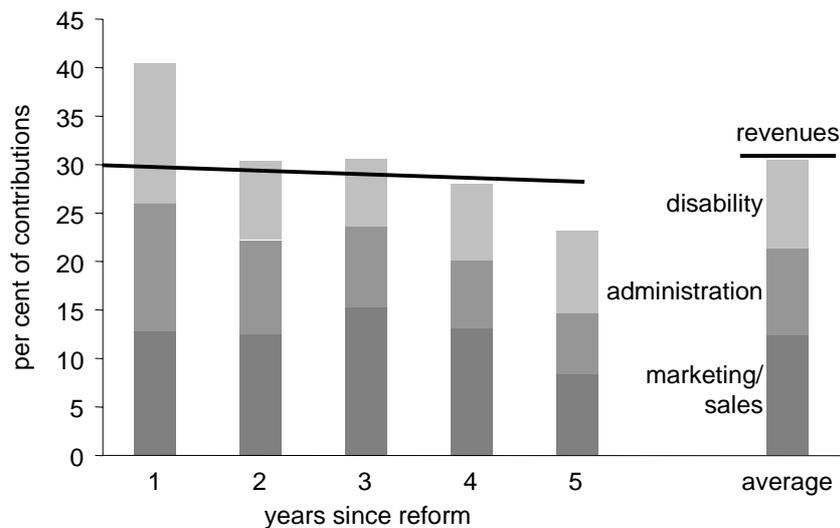
Source: SAFJP

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-subsidise 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 or withdraw from the labour market because of caring responsibilities. 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 they 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 maximise assets, both by attracting funds from other providers and, more importantly, by maximising investment returns. Contribution-based levies, in contrast, have no direct link between revenues and investment returns.

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.[47] The government's main arguments were funds' incentive to maximise investment returns and the fact that people who suspend contributions do not impose an excessive burden on other scheme members. Note that this last argument is more significant in the United Kingdom than elsewhere: multiple options for mandatory pensions mean that many people switch funds, leaving inactive accounts.

4.3   *Restricting charge levels*

Restricting charge levels is a 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 providers of very similar financial products. Governments of emerging economies, however, often have little to go on domestically although international evidence, of the sort presented in this paper, can be useful.

Charges might still 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, thereby undermining public confidence in the system. There is also evidence that charge ceilings can become *de facto* charge minima as well. In Poland, for example, virtually all funds 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.[48]

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[47].   Department of Social Security (1999*a*), paragraph 23.

[48].   In the longer-term, price competition might become more intense as balances in accounts increase. Firms are likely to compete more aggressively for these larger pools of assets.

A low charge ceiling might restrict consumer choice in a number of ways. There may be fewer providers. For example, 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.' 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.[49] 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 some evidence of a relationship between personal-pension charges and investment performance in the United Kingdom. Figure 15 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 (although the coefficient is not significantly different from zero). It is also possible to calculate a break-even point: the size of additional return needed to offset the effect of higher charges. This relationship is also plotted in Figure 15. The extra investment return earned by a higher-charging fund is not on average sufficient to offset the effect of the charge on net returns.

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?

Figure 15.
Personal pension charges and performance over ten years
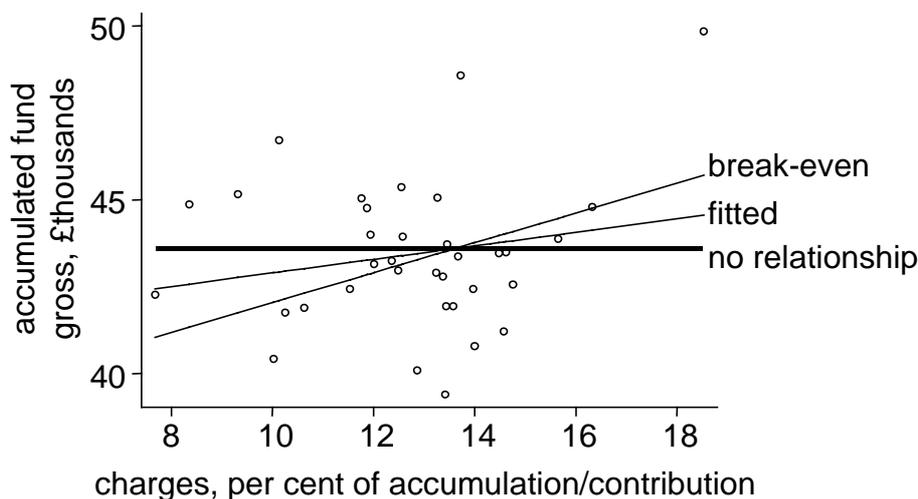
Source: authors' calculations based on Walford (1998)
Note: comparison based on a regular premium of £2400 a year over 10 years. Fitted relationship: *gross return* = 40900 (2190) + 195 (169) x *charge ratio* (standard errors in parentheses). Sample of 38 providers

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[49]   Timmins (1999) and Brown-Humes (1999).

Most of the arguments for regulating pension charges in fact suggest less Draconian solutions. Lack of transparency can be addressed by:

- 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 programme to promote consumer understanding of financial services.

The only argument of substance for stricter regulation is that participation in the pension system is compulsory, which in turn means that the government has a responsibility to ensure that charges do not wholly or largely consume people's contributions.

4.4 *Cross-subsidies to low-income workers*

The burden of charges can bear particularly heavily on the low-paid when charges have a fixed element. There are many options for addressing this problem.

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 programmes. This is equally true of most public defined benefit pension systems as it is of defined contribution plans.[50] It is better that safety-net programmes provide pensions for persistent low earners than any defined contribution or earnings-related defined benefit scheme.

A second method is to cross-subsidise 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-subsidise low-income workers' pensions directly. The Mexican government, for example, ensures a minimum contribution of 5½ 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.

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

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 advantages to this 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.

5.   Strategies to control costs of funded pension systems

The previous section explored four different approaches to regulating the charges in pension systems. Most of the countries discussed so far have systems of (in American parlance) 'individual accounts'. These régimes are decentralised, with a number of competing fund managers and worker choice between the different funds. There are, however, other options for organising funded pension systems that have implications for administrative costs.

5.1   Alternative institutional arrangements for funded pension systems

One alternative 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. (However, master trusts are also collective schemes, but have much higher charges.) The United States' 401(k) plan has a similar structure. These schemes, which have spread very rapidly over the past two decades (but they are 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 decentralised provision and have proposed public management of pension fund assets. Their rationale is in large part to reduce administrative costs, but also because they believe that defined benefit pension formulae are in some way superior to defined contribution.[51] 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'.[52] 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 sceptical 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 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).

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[51]   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).

[52]   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'.

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.[53] 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, they 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[54], but in practice most workers, even in rich countries, have few assets and are unable to borrow enough to reverse the effects of public financial policy.[55]

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) favour a 'centralised' approach that 'would aggressively take account of potential economies of scale through centralised provision'.

Here is a sample of different studies' conclusions about economies of scale in financial markets:[56]

- The evidence above 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 $0.5 billion

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[53]   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).

[54]   Stiglitz (1983, 1988).

[55]   For example, Banks and Tanner (1999) report median financial wealth in the United Kingdom of just £750. This argument also removes a substantial part of the case for funding if workers can simply borrow and unwind the forced savings element. Orszag and Stiglitz ignore this implication.

[56]   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.

- 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 10½ 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 (1998*b*) finds evidence of economies of scale in the administration of the superannuation guarantee.[57] Figure 16 shows that this effect is stronger for funds using external rather than in-house investment managers. External administration costs about 1½ 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.

Figure 16. **Annual administrative expenses per member by external or internal management, Australia, 1996-97**
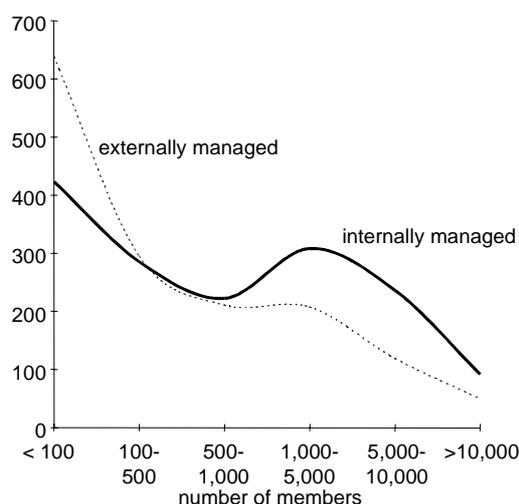
Source: Australian Prudential Regulatory Authority (1998*b*), Figure 3

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 many types of 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

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57.   See also Bateman, Kingston and Piggott (2001).

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'.[58]

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.[59] 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.

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.[60] Surveys of members' investment choices in defined contribution plans in the United States show little sign of recklessness, of the prudent or imprudent sort.[61] They take advantage of the flexibility schemes offered 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.[62]

6.   Conclusions

Charges for pensions and other financial services have a major impact on the net returns to saving. Even a seemingly innocuous charge of one per cent of assets reduces the pension benefit by 20 per cent.[63]

Public policy towards such charges — both in theory and practice — covers a broad spectrum, from complete freedom for providers to set both the structure and level of fees through regulatory limits on fees to alternative institutional structures.

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[58]   Department of Social Security (1999*a*).

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

[60]   Regulations protect plans and sponsoring employers from fiduciary responsibilities if members have a sufficiently broad choice of investments with different risk and return characteristics.

[61]   See, for example, VanDerhei *et al.* (1999).

[62]   Australian Prudential Regulatory Authority (1998*a*).

[63]   On reasonable assumptions about investment returns *etc.*

Even the most liberal regimes impose minimum disclosure requirements: providers must tell potential consumers the impact of charges on their investments in a standard form. However, there is little evidence that consumers shop around and compare different providers' disclosed fees. Also, the complexity of charge structures mean that the burden of fees can vary with age, planned age of retirement, value of contributions, value of the fund *etc.* 'League tables' of charges, which are based on example consumers, do not give results that are relevant for all.

This problem makes quite a persuasive case for restrictions in the structure of charges, a policy followed in some Latin American countries, such as Argentina and Chile. In both of these countries the importance of fixed charges has declined. The system now offers something very close to a single price that consumers can use to compare different providers what varies little with the amount contributed. The consumer benefit from increased transparency very probably outweighs providers' costs in terms of loss of flexibility.

A second step to bring charges to consumers' attention is to levy charges on top of (rather than out of) mandatory contributions, as adopted in four Latin American countries. This encourages shopping around because charges reduce current net income rather than future pension benefits. It is particularly relevant when the mandate to contribute falls on the employer.

Returning to the policy of a limit on charge structure, the important policy option is the type of charge to be permitted. There are three features of the two charges important in making this choice.

First, the time profile of charge revenues. Fees on contributions generate more up-front revenues than fees on assets. This allows providers to cover their start-up costs more quickly. It might boost competition by encouraging more entrants to the pension market when the system is established.

Secondly, the incidence of the levies across different types of consumer. If there are fixed costs per member — and the evidence suggests that these are sizeable — then levies on assets redistribute from people with large funds to people with fewer assets in their plan. Older workers, with larger funds on average, would cross-subsidise younger workers, for example. Contribution-based charges redistribute from people with high levels of contributions (typically higher earners) to people with low levels of contributions. Indeed, there would be no revenues from people who do not contribute. This might be because they have lost their job, withdrawn from the labour force or moved into the informal sector of the economy. But pension providers would still have to bear the cost of administering these people's funds. Asset-based fees ensure a continuing flow of revenues from non-contributors, but this means that the fees bear more heavily on people who withdraw from work early.

Finally, a charge on fund value encourages providers to maximise assets, both by attracting funds from other providers and, more importantly, by maximising investment returns.

The choice between the asset-based and contribution-based approach is finely balanced. Unsurprisingly, different countries have taken different options. Levies on contributions are the norm in Latin America, while the United Kingdom has opted for asset-based fees. The government's main arguments were fund managers' performance incentives and the continuing revenue stream from members suspending contributions.

The next step along the spectrum of policy on fees for pensions is to set quantitative restrictions on the amount providers can charge. Only Kazakhstan, Poland, Sweden and the United Kingdom (in the new stakeholder plans) have such limits. The risk with this policy is that governments set the 'wrong' ceiling. Too high a limit would be ineffectual. Too low a ceiling might prevent fund managers from covering their costs. This will restrict competition and choice. It could even lead to the failure of weaker providers, undermining public confidence in the system. Ceilings all too often become a de facto minimum charge as

well as the legal maximum. Price competition, beyond meeting the regulatory requirement, might be curtailed.

The availability of data to help setting an appropriate ceiling will vary. If capital markets are well developed, governments can see the costs and charges for similar financial services and make an informed choice of limit. But in emerging economies, there might not be an appropriate domestic yardstick, although international experience can be a guide.

Evidence from Argentina shows that pension providers attract more new members with extra spending on advertising rather than reducing their charges. In Poland, charges came well down the list of reasons members gave for their choice of fund. In a whole range of countries, there is no correlation between pension fund fees and the number of members attracted. Also, huge differences in charge levels between different providers have in some cases persisted for many years. These findings suggest that consumers are insufficiently informed about the large impact that charges can have on the value of their pension fund. This might be used to support a charge ceiling: at the very least, it justifies a major public education programme to inform consumers of the importance of charges.

The empirical evidence shows very different charge levels between countries with relatively similar systems, namely those based on individual accounts with individual (or, in some cases employer) choice of provider. The average charge varies from less than 15 per cent to more than 30 per cent. The countries with the most liberal policies on charges do seem to have relatively high mean charge levels, but the evidence is far from clear cut.

The paper also discussed alternative institutional approaches to charges, exemplified in practice by Bolivia. Instead of individual choice of provider, the government auctioned off two licences to manage pension assets. It is difficult, however, to extrapolate from Bolivia's experience because of the cross-subsidy coming from managing a large amount of privatisation proceeds. Nevertheless, countries with a small population and small, poorly developed domestic capital markets may find this approach efficient. The performance of other institutional approaches to managing funded pension systems is generally negative. Publicly managed funds have generated poor returns. Even with good management, the state as a large shareholder raises corporate governance concerns that are very difficult to resolve.

I have avoided discussion of administrative costs of public, pay-as-you-go schemes. While some papers have compared the two directly, this can be very misleading. For example, funded pension providers are required to provide annual (or sometimes even more frequent) statements of the value of investments and projections of eventual pension benefits. No public pay-as-you-go scheme provides such a service (as far as I am aware).

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. 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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