COSTS OF SAVING FOR RETIREMENT

OPTIONS FOR SOUTH AFRICA

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ABSTRACT

How much are South Africans paying for their retirement funding? Whether in occupational plans or private supplementary arrangements, workers pay for the opportunity to save for retirement through a variety of charges that erode the prosperity of the retirement years. I analyse the administrative charges paid by South Africans saving for retirement in the areas of occupational retirement funds, individual life products and unit trust arrangements, using a model designed to evaluate the lifetime impact of these charges.

My analysis suggests that retirement funds are cheapest, followed by unit trusts and then individual life products. These results are consistent with the flexibility of the more costly products. Overall, however, charges appear to be high. I carry out a comparison with international benchmarks that confirms these concerns. In order to put this comparison into context, I provide an extensive survey of national retirement systems around the world.

South Africa is in need of new pension fund legislation and initial thinking on the framework has begun. I end the paper with thoughts on the implications of this research for policymakers.

"They're a good bunch," he reflected as he climbed into his car, "considering they're just seeing off an old man like me." Memories of the past mixed with thoughts of the future as he set off for home. "So this is what it feels like to retire," he thought, wondering what he would do the next day.

Jacob was a sensible sort, an accountant in fact. He'd worked for the same organisation for 38 years, a rare feat in today's working environment. And all that time, he'd put aside into the pension fund his six percent of salary. His employer doubled that, which he considered quite generous, so he didn't mind the unusual conditions stipulating that members carry the administrative cost. And now that he had reached the end of his working days, he had no reason to complain about his pension. He'd purchased a good annuity that would see him and his wife safely through to their last days.

But he did wonder if he could have done better. Some bright spark had mentioned that a third or more of your retirement savings are consumed by charges during your working years. "Perhaps I should have been in unit trusts. They quote fees all the time, so they must be competitive, surely? Or a life policy – greater flexibility, greater freedom to change, and surely those policy charges don't add up to that much?"

His gut feel was that he couldn't have done any better than stay in the fund, but he wondered how many people didn't even think about administration charges. As he approached home, he mulled over it. "A third of my retirement fund! What if I'd been able to halve those costs…?"

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1 INTRODUCTION

> *Policymakers seeking to design efficient and smoothly-functioning pension systems for their aging workforces are beginning to acknowledge the key importance of administrative expenses when formulating rules for pension plan structure and fee disclosure requirements. (Mitchell & Bateman, 2003:abstract)*

How much are South Africans paying for their retirement funding? Whether in occupational plans or private supplementary arrangements, workers pay for the opportunity to save for retirement through a variety of charges that erode the prosperity of their later years. I measure the financial impact of these charges on retirement savings, across all available saving mechanisms within the formal employment sector.

Why is this study relevant? Most countries provide a strong public sector element to retirement saving. South African citizens in contrast depend strongly on the private sector in the form of occupational retirement funds and a variety of additional voluntary savings options. It would be helpful to understand:

- what types of products are the most expensive and why
- which groups of savers are most affected by charges
- how well these charges compare with international experience

This research contributes to understanding the issues that need to be addressed as the regulatory authorities apply themselves to the task of rewriting the legislation governing retirement funding.

I start the paper with two sections placing the South African old age system, unique in many ways, in the context of its global peers. Section 2 sets out the background to the variety of national pension systems currently in existence and the significant changes taking place in this arena. Section 3 paints a picture illustrating the main characteristics of pension systems in different regions, describing a number of national systems in the process.

The remainder of the paper is devoted to the analysis of retirement funding costs and the context of this analysis. Section 4 describes the options available for putting values to these costs and section 5 discusses the evidence from other countries to provide international context to the South African study. Section 6 sets out the analysis of South African retirement charges, describing the methodology, discussing the results and drawing conclusions.

In section 7, I consider the implications of this research for the financial services industry and, more specifically, for policymaking in the retirement fund arena. Finally, I comment on potentially fruitful areas for further research.

Readers interested only in the South African analysis should read section 6, referring to section 4 for more information on methodology and section 5 for the international comparison. For a synopsis of key results, read sections 6.4 and 6.5.

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2 INTERNATIONAL CONTEXT

In which a framework is developed within which to understand the variety of national old age pension systems in existence around the world. Some of the reasons for the intensity of debate are discussed.

In order to carry out a meaningful study of the South African pension system, we need to understand how the retirement environment in this country compares with the landscape in other parts of the world. This is particularly important when we benchmark our analysis of South African retirement administration costs against those of other countries. This section and the next cover the international context, first in background form and then in more detailed region by region descriptions of some of the systems currently in operation.

More specifically, the purposes of these sections are:

- to provide background to the development of national pension systems and the issues with which policymakers and academics around the world are grappling
- to discuss the drivers influencing pension system design
- to provide a survey of national systems, investigating their variability
- to demonstrate the attention being focused on old age welfare and the unprecedented number of countries reconsidering existing systems
- to put the description of the South African old age environment, discussed in the last part of section 3, in the context of the large range of existing international systems, both in developed and developing nations

Much of the discussion is focused on mandatory retirement savings systems, whether or not contributions are required from participating individuals. This contrasts to the South African retirement saving environment, which is largely voluntary in nature. I discuss the manner in which various voluntary systems fit with the underlying mandatory structure and also refer to the "safety net" social security structure that nearly all countries, including South Africa, have in place to care for the poverty-stricken aged.

In section 5, I build on the background of these two sections by providing a review of studies examining the costs of retirement systems. In all cases management or administration is carried out in the private sector and it is the impact of these management costs on retirement savings that is considered. This review provides the means to compare administrative costs in South Africa with those in other countries.

2.1 Historical Development

The concept of a retirement of leisure is a feature of modern times. Not until the 20th century had nations and individuals focused significant attention on the years following active working life. This is understandable: the 20th century brought both the life span that necessitated such planning and the financial institutions in sufficient numbers and strength to bring it about. That century also brought a government focus on the need to prepare for citizens' years of old age, a time of dependence beyond the productive years.

This was achieved through establishing national schemes to provide income to the aged and giving incentives to the private sector to act similarly. Germany was the first to establish a national old age insurance scheme in 1889. While the motives may not have been the purest – Chancellor von Bismarck saw an opportunity to lure the electorate from the socialists by giving the people a stake in government (World Bank, 1994) – it certainly set the stage for much discussion.[1]

In 1908, the United Kingdom introduced a means-tested old age income program and extended this in 1925 to a mandatory old age social insurance program (Sass, 2004). Many other countries chose either to establish low-level means-tested social security for the aged or more comprehensive social insurance in the form of national contributory schemes, or both. By the start of World War II such schemes were common in Europe and other parts of what was fast becoming the developed world. Universally, the schemes were intended to provide a minimum level of income to the poverty-stricken and only low levels of income replacement to the majority of citizens.

The Beveridge Report in the United Kingdom, 1942, called for a substantial increase in the role of the state in providing publicly financed pensions as part of a strong social welfare system and the Labour government extended the existing social insurance program in 1946. Many other countries dramatically expanded their pension systems, but these systems were largely unfunded.[2] These countries were taking advantage of rapid population growth and high post-war economic growth to make promises with long-term consequences that had probably had not been properly considered, or were regarded simply as a problem to be solved sometime in the future.

Countries of the developing world largely followed suit. Some of them, Argentina, Brazil, Chile and Uruguay, for example, have provided comprehensive contributory funds since

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[1] This is not to say that government was the only provider of old age income. Pension plans were provided by large employers like the railroad and utility firms, and government itself, as early as the nineteenth century, but covering only five percent of British workers by the end of that century (Sass, 2004). Employer provision also grew rapidly over the course of the twentieth century.

[2] Under this approach, also referred to as pay-as-you-go, benefits are paid out of current revenues. Under the alternative funded approach, some part or all of the contribution income is set aside to match future benefit expenditure.

before the Second World War that were at least intended to be funded (World Bank, 1994). By later in the century, most countries had some sort of contributory social security, the majority of which was defined benefit in nature[3] and at best partly funded.

While these arrangements may have existed in nearly all countries, they didn't necessarily improve the livelihood of all citizens, as coverage was often limited. In large parts of Africa and Asia, so-called national plans really only benefited those in the civil service, and the only support available to the elderly was gained through the traditional structures of the extended family.

Pension system design and policymaking as a subject received a shot in the arm in the early 1980's when a small Latin American country introduced a completely different approach to retirement funding. The impending collapse of the Chilean system, mainly due to economic factors but also as a result of growing demographic pressure, resulted in the implementation of dramatic change.

> *In 1980, Chile passed a revolutionary pension reform. This reform created a new system based on prefunded, mandatory contributions in personal accounts and on private management of the funds. Also, the new pension system gives those workers covered by the scheme the right to choose between different pension providers and between different forms of payout after their retirement. (Acuña & Iglesias, 2001:4)*

Chile's reform appeared to be completely successful. This proved to be the catalyst to a period of intensive change in a number of countries, discussed in more detail in section 3.

2.2 Drivers of Old Age System Design

A full discussion of the determinants of system design would cover areas as diverse as social science and political studies, but some of the most important drivers are:

- ***Historic initiatives***. Undoubtedly, economic and cultural history plays a part. This influence is evident in nearly all countries, from the heavily overburdened unfunded national system of continental Western Europe, through the collapsed command-type centralised systems of the former communist states, to the remnants of occupational and civil servant funds in many English-speaking African states.
- ***National prosperity***. The resources available play a significant part in the choices facing a country. There is a strong correlation between per-capita GDP and the comprehensiveness of the national old age system, which may be measured in a number of ways, for example generosity of benefits, percentage of population covered or variety of means to provide for the aged. See Palacios & Pallarès-Miralles (2000) for more details.

[3] *Exceptions include the provident fund arrangements of many of the British colonies of South Asia like Singapore, India and parts of Africa.*

- ***Political and cultural context***. The characteristics of the retirement system are inextricably linked to the nature of the political system, itself affected by issues as diverse as the degree of central control exerted by government and the changing fabric of family structure. Changes to systems have often resulted from political change, as seen across Eastern Europe and the former Soviet republics.
- ***Economic influences***. Change has often been driven as well by shorter-term economic fluctuations. Much of the development in Latin America (and the need for development in sub-Saharan Africa) has resulted from the financial failure of existing systems, itself often linked to a more general economic malaise.

This list could be extended indefinitely, citing influences as varied as the level of confidence in the private sector, the strength and development of capital markets, the need to stimulate a culture of national saving, employment levels and the strength of the informal employment sector. One additional driver, however, needs particular attention:

- ***Demographics***. While academics and policy-makers cannot seem to agree on the relative merits of funded and unfunded systems[4], they do agree that nations are ageing, though not at the same rate in all countries. Changing demographics are a key driver of change in unfunded European systems with extremely high levels of implicit debt. Demographics are of at least moderate influence to policymakers in South-East Asia and they will be significant in one or two generations even in the youngest of countries in Africa.

Figure 1 gives a sense of the way in which the populations of different regions are ageing. What is noteworthy is that countries that have not yet been significantly affected by population ageing will find that the change, when it comes, is more rapid than it has been for countries already grappling with the issue.[5]

Standard and Poor's gives an indication of the significance of this issue on the finances of a country in the absence of appropriate intervention.

> *Almost all countries will face a very significant deterioration of public finances over the next half-century as a result of demographic change if no countervailing fiscal adjustment is put into place or if social security systems are not reformed. Initially, the pressure from age-related spending will remain very moderate. But starting around 2015 the burden will gradually increase, leading to deteriorating fiscal indicators. A typical country's deficits would rise to more than 4% of GDP by the mid 2020s. The interest cost of the additional borrowing will exacerbate the spending pressure, and deficits would rise inexorably to close to 8% in 2040*

[4] *See World Bank (1994), Holzmann (1999), Orszag & Stiglitz (1999) and Barr (2000) for a fascinating cross-section of the debate.*

[5] *Americans are concerned about the impact of the "retiring baby boomers" in the United States. Munnell (2004) points out that the baby boom was actually an interruption of a very long term trend of falling fertility that, together with steadily increasing life expectancy, has resulted in population ageing that is expected to continue well into the future.*

and to more than 10% by the middle of the century. While the general government debt burden will initially decline moderately until the late 2010s, it will start to rise slowly thereafter, accelerating sharply from the late 2020s. By 2035 the debt burden will still be a manageable 73% of GDP, but will reach 139% of GDP by 2050. (Standard and Poor's, 2004:1)

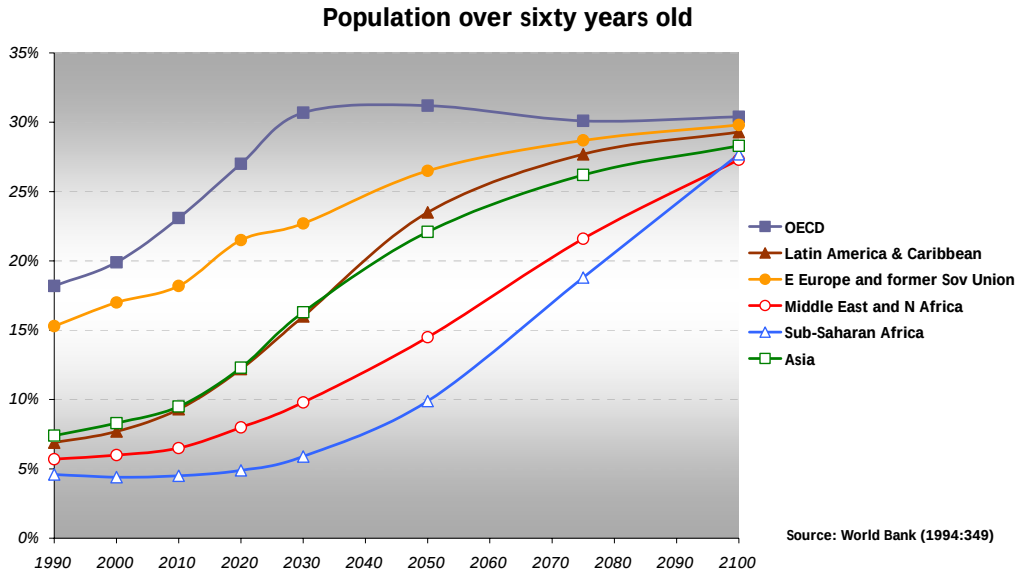

Figure 1

Population ageing has forced change on a significant proportion of national unfunded or partially funded defined benefit systems. Urgent attention has been given, or needs to be given, to plan parameters like retirement age, early retirement conditions and adjustments, and the definition of benefits. Contribution rates require significant and urgent increases.

But in many cases, authorities have recognised that modifications to parameters and contribution rates will not be sufficient in a system that is simply unsustainable. More far-reaching changes have been contemplated and in many cases implemented.

2.3 Range of Available Options

Before describing a number of national systems in more detail, I consider the range of options available to mandatory systems from a more theoretical perspective. This aids understanding of the reasons for the variations that exist in practice.

The characteristics of a retirement system may be summarised into three points.

- Does the system define the benefits or the contributions, or, put another way, where does the risk lie, with the sponsor or the members?
- Is the system unfunded, also referred to as pay-as-you-go, or funded?
- Is the system publicly or privately managed?

If we consider each of these dimensions in terms of a simple two-answer possibility (defined benefits or defined contributions, funded or unfunded, private or public) we find that the only combinations that do not occur in practice are

- fully funded defined benefit publicly managed systems, and
- unfunded defined contribution systems managed by the private sector

All other combinations exist in some form in at least one country. However, while all mandatory systems may be defined by establishing the answers to these three questions, there are a number of variations that make description, and hence categorisation, difficult. The reality is that systems fall onto a continuum. Over-simplification can lead to misunderstanding of the nature of the system and should be avoided.

Defined benefit or defined contribution. Holzmann & Palacios (2001) point out that division of national systems into just a few categories is misleading and that a myriad of theoretical possibilities exist. They demonstrate the range of possible outcomes on the defined benefit – defined contribution continuum:

> *A typical polar case of a DC system provides the accumulated contribution payments plus accrued interest at retirement, which may be then transformed into an annuity. However, if we consider a DB system based on life-time earnings (such as the German and the French point system) and compare it with an unfunded individual account system or 'notional defined contribution' (such as in Latvia, Poland and Sweden[6]), the two kinds of benefit schedules are not very different at all. (Holzmann & Palacios, 2001:2)*

They go on to point out that, if the definition of defined benefit or defined contribution depends on who takes the risk, again there is a range of possible outcomes that either undermines the apparent security of the defined benefit system or diminishes the apparent risks under the defined contribution approach.

Funded or pay-as-you-go. Iglesias & Palacios (2000) point out that a large proportion of national defined benefit systems are at least partially funded. Again, a continuum exists. The financing debate is complex, touching on issues as diverse as intergenerational transfers, labour market distortions and the impact on savings and growth. The literature presents a variety of viewpoints.[7] It is sufficient for the purposes of this report to note that a system may be completely pay-as-you-go, completely funded, or somewhere in between.

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[6] See section 3.1 for a description of Sweden's notional defined contribution system and refer to Williamson & Williams (2003) for a full discussion of the advantages and disadvantages of this system.

[7] See World Bank (1994), for example, for a straightforward explanation, or Orszag & Stiglitz (1999) and Barr (2000) for more thorough discussion criticising oversimplified interpretations of the World Bank approach.

Public or private management. Describing a system as publicly or privately managed is simplistic. All governments that have authorised private management of mandatory pension saving exert a degree of control on this management through the regulatory structure. This structure places these systems somewhere between public and private management. The same may apply to a government monopoly that outsources to the private sector some aspects of the organization of the system, whether administration or investment management.

Iglesias & Palacios (2000) very usefully portray the range of options on a clock-face with extremes at hours 3 and 9. The decentralised privately managed system with minimal regulation, for example in Australia, is on the right. To the left is the monopolistic government managed system. The authors quote Uganda as an example of such a system. The intermediate steps are characterised either by stricter government control through regulation, at the bottom of the clock, for example in Uruguay[8], or by greater government involvement in managing funds, though still with market-based criteria, at 12 o'clock. The example quoted for the latter is the new CPP regime in Canada[9].

For the purposes of understanding the range of mandatory systems, it remains useful to consider systems in the light of benefit type, financing mechanism and management responsibility, but we must remember that significant variations are possible that may better help to meet the system objectives.

2.4 Meeting Objectives: the World Bank Point of View

Before describing actual pensions systems, I consider the primary objectives of any national old age system, savings and redistribution, and I go on to describe how the World Bank view on retirement system design meets these objectives.

From his fundamentally economic viewpoint, Barr (2000) points out that all pensions systems, private or public, represent a claim on future production. An individual puts this into effect either by saving money in order to claim the production of others when older (the funded approach) or by obtaining a promise, from children or government, that goods produced by others would be provided to him or her after a certain age (the unfunded approach). The promise is backed up by a share of current production, in taxes or direct contribution, and is thus a form of saving, whether money is set aside or not.

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[8] *This is not to say that there aren't often very good reasons for these regulations, most often imposed in a country with weak financial market, but they do have the effect of creating at best a quasi-privately managed system. The expectation is that countries starting at 6 o'clock gradually reduce restrictions allowing the system to move towards 3 o'clock, as we see happening in Chile and Argentina.*

[9] *CPP (Canada Pension Plan) is a comprehensive national pension plan with disability and survivor benefits as well as a retirement pension. Refer to www.sdc.gc.ca/en/isp/cpp/cpptoc.shtml, part of Social Development Canada, for more information.*

Nevertheless, for a variety of reasons (see the quotation below, for example), one of the objectives of a national retirement system is to encourage explicit saving.

Pension systems often have another objective, redistribution. Expressed in simple terms, not everybody that benefits has contributed and few receive benefits exactly in line with contributions. The system itself operates as a mechanism of transfer towards the poor, who receive more than they contributed, from the wealthy, who receive less.

The trade-off between saving and redistribution is a crucial determinant of the characteristics of a system. The World Bank (1994) explains the difference between a focus on savings or on redistribution as follows:

> *A system that emphasises saving has several advantages. By making benefits directly contingent on contributions according to market principles, it discourages evasion, labour disincentive effects, and political pressure for design features that lead to inefficient, inequitable outcomes. But it has one major disadvantage: It fails to alleviate poverty among old people who do not have sufficient resources to save or reliable financial institutions in which to place their savings. (World Bank, 1994:76)*

Holzmann (1999), in his expanded explanation of the World Bank position[10], suggests that the four primary concerns that must be addressed in retirement system design are

- short-term financing and long-term financial viability
- effect on economic growth
- adequacy of provision and other redistributive issues
- political risk and sustainability

It is worth describing the World Bank approach, not least because it has had substantial impact on the policies that countries have chosen to adopt. The Bank recognises the importance of public pension plans, occupational pension plans and personal savings plans, and sets out in its landmark *Averting the Old Age Crisis* (1994) a three-pillar approach to retirement policy.

The ***first pillar*** is intended to match the objective of redistribution. It is a government-run old age social security program in the form of a flat or means-tested benefit or a minimum pension guarantee. It is designed to lay the foundation for old age provision, as far as possible eliminating poverty in the aged.

[10] *At the time of writing, the author was the Director of Social Protection in the Human Development Network at the World Bank and in charge of strategic and conceptual issues in the areas of social insurance, labour markets and social safety nets.*

The ***second pillar*** mandates saving. It does so either through personal savings plans, typically defined contribution and fully funded, or through a structure of occupational schemes, defined benefit or defined contribution but also, typically, fully funded.

The ***third pillar*** provides further motivation to save for old age. Contributions are voluntary but attract tax incentives. The system is typically a defined contribution funded system of individual accounts with a wide choice of investments and often some choice concerning the form in which benefits are taken.

It is beyond the scope of this paper to describe the storm of controversy around the World Bank approach. Three observations may be useful. The first is that many commentators appear to have simplified the intended World Bank model, breaking it down into an unfunded, public first pillar; a mandatory, defined contribution, individual account, privately-managed second pillar; and a similar voluntary third pillar. What these critics appear to have failed to do is recognise the scope for variation allowed for by the World Bank description.

The second observation is that issues are seldom as straightforward as they first appear. I would argue that even the discussion in the famous *Averting the Old Age Crisis* (World Bank, 1994) verges on the simplistic. Orszag & Stiglitz (1999) provide an outstanding critique of some of the fundamental assumptions behind the three-pillar approach and some of the dogma that has followed it. I highly recommend this paper to the reader interested in old age funding policy.

The third point to make is that, if adequacy of provision were measured by the level of coverage provided by the system, then there is little evidence that multi-pillar systems are working. Holzmann himself comments on this issue:

> *Many countries in the world have started or are contemplating a move toward a multi-pillar pension system, but evidence so far suggests that such a move has done little to increase coverage of the workforce and perhaps may have even contributed to a decline in coverage in some countries. (Holzmann, Packard & Cuesta, 2000:1)*

This is a serious indictment of the system and it is receiving substantial attention from policymakers and academics around the world.

In defence of the Bank, I see no evidence of a rigid set of rules on pensions policy. The organisation has set out the many benefits of a flexible multi-pillar approach. Vittas (2002) provides a good summary of the impact of World Bank policy on reform programs:

> *Except for their multi-pillar structure and contrary to some claims (Orszag and Stiglitz 2001)*[11]*, the reform programs of different countries are far from identical. They exhibit many differences*

[11] *This is essentially the same as my 1999 reference. I have referred to the conference paper, Vittas to the book published after the conference.*

> *in the relative importance of different pillars, in the way in which the public and private pillars are organized, and in the way the transition is structured and financed. There are, however, a few basic features that the reform programs share in common. They all involve: a restructuring and downsizing of traditional social security systems that operate as unfunded (or partially funded) public pillars; an expansion in the role of funded private pillars; a willingness to allow large foreign financial institutions to play a central part in the management of accumulated assets, often in joint ventures with large local groups; and creation of a more robust and effective regulatory and supervisory framework. (Vittas, 2002:1)*[12]

When all is said and done, it must be acknowledged that, applied with flexibility and due regard to local circumstances, the World Bank approach includes many excellent characteristics and that it should be taken seriously.

[12] *Vittas has many years of experience as a senior member of the research team at the World Bank. Perhaps for this reason, he stressed that views in his paper were his, not necessarily reflecting those of his employer.*

3 SURVEY OF NATIONAL SYSTEMS

In which old age pension systems are arranged in broad regional groupings and the characteristics of each grouping enlarged upon.

Having described the history and broad context of national pension systems, in this section I examine national systems around the world, classifying countries according to broad economic and regional differences[13]. In each case, I describe the features generic to the region or grouping of countries, and pick out a few examples of national systems that demonstrate these features in more detail or show the latest developments taking place.

3.1 High-income OECD countries[14]

This group of countries is characterised by:

- a high level of prosperity, which has translated over time into comprehensive national pension systems providing extensive coverage to a high proportion of the population
- high dependency levels[15] as a result of many years of improving longevity and falling rates of fertility
- high pensions expenditure as a proportion of GDP, not only as a result of the generosity and comprehensiveness of benefits, but also due to the rapidly ageing population

Figure 2

Wealthy OECD countries: thumbnail

Coverage: Very high. Ratio of contributors to labour force exceeds 90% in most of these countries.

Pension expenditure: High, with variation. Most countries spend more than 10% of GDP on pensions. Extremes are Australia, less than 5%, and Italy 15%. Growing rapidly in most countries.

Estimated implicit system debt: OECD estimates for 1994 range from Ireland's 107% of GDP to Finland's 384%. Nearly all countries are above 200%.

Dependency ratios: Generally very high. Ratio of 60+ to age group 20–59 ranges from 27.2% in Australia to 41.6% in Sweden.

Palacios & Pallarès-Miralles (2000)

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[13] *The classification is the same as followed by a number of authors and institutions.*

[14] *The Organisation for Economic Co-operation and Development is a 29-state grouping of advanced or rapidly developing countries. I have included in this discussion the European countries, Australia, New Zealand, Japan, Canada and the United States. Others, like Hungary, Turkey, Korea and Mexico have been considered as part of the regional blocs.*

[15] *The ratio of dependents to providers, in this case the number of pensioners relative to working population (usually referred to as system dependency ratio) or the number of elderly relative to the working age population (referred to often as the old-age or demographic dependency ratio).*

- on the whole, an inability to respond appropriately and with sufficient speed to the problems brought about by the unfunded, intergenerational transfer in the context of rapid demographic change, leaving many countries in serious difficulty, particularly in Western Europe

Pension reform is frequently in the news in these countries.

> *Non-wage labour costs [in Germany], such as pension contributions and health-insurance payments, are hobbling the economy. They amount to 42% of the average German salary, among the highest in the world, and keep companies from investing in the country. … Economists warn that if Germany allowed pension contributions to rise from the current 19.5% to 20.3%, as had been considered, it would cost the country 100,000 jobs.*
>
> *France: In the face of a series of summer strikes, Prime Minister Jean Pierre Raffarin's government increased from 37.5 to 40 the number of years state employees must work to qualify for a full pension. The figure will rise to 42 years by 2020. Yet the measures still fill less than half the €43 billion financial hole predicted for state pensions between now and then, raising the specter of higher contributions in the future.*
>
> *Italy: Last week, the country's three major unions led a half-day general strike, and more than a million marched in protest at Prime Minister Silvio Berlusconi's plans to increase from 35 to 40 the number of years state employees must work to get a full state pension. Berlusconi also wants to raise minimum retirement ages from 57 to 65 for men and 60 for women. Unions call the proposals "immoral" and vow further disturbances until the government backs down.*
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> *(Time Magazine, 3 November 2003:44,45)*
>
> *The Italian centre right government has presented a new version of its proposed pensions reform in an effort to soften the opposition of trade unions. Yet, it hopes to preserve the principle of cutting state expenditure. The new proposals were drawn up after weeks of bargaining inside the ruling four-party coalition. … The government regards pensions reform as a vital element of its economic programme and is aware that the International Monetary Fund and European Commission are pressing for action. (Pensionswire 22 March 2004, at www. pensionsnet.com)*
>
> *The European Commission says Germany's Agenda 2010 reform plans may not be enough to offset the impact of ageing. "Although such reform steps are welcomed, the expected effects may not suffice to offset the long-term demographic impact on pension and health care expenditures," the Commission said in a review of Germany's updated stability programme. (Investment & Pensions Europe, i8 February 2004, www.ipe.com)*

Most high-income OECD countries face serious challenges if they are to provide the benefits that have been promised to the generation that has been contributing to national schemes all their lives. I describe four examples of approaches used thus far to meet these challenges.

United Kingdom: strong private-sector involvement from the beginning

The United Kingdom (UK) has a three-pillar system of pension provision.

The first pillar, called the Basic State Pension, is run by the government. It provides a flat rate pay-as-you-go benefit that is financed by part of the National Insurance Contribution (NIC) payroll tax. Benefits are not indexed to wage, but to prices, and the first pillar is projected to replace a declining share of earnings (Sass, 2004).

The second pillar is provided partly through the State Earnings-Related Pension Scheme (SERPS). This is also a pay-as-you-go system and also financed by NIC payroll tax, but pays benefits that are related to earnings, not flat rate. Workers may opt out of SERPS, either through individual accounts called Personal Pensions or through defined benefit or defined contribution occupational schemes. This effort to privatise part of the national scheme has proved, in one sense at least, very successful: only around one quarter of workers are not contracted out. One quarter have contracted out through individual accounts and half have contracted out through occupational pensions (Murthi *et al*, 1999).

The UK has a long history of occupational schemes. By 1956, a third of the work force was covered by an employer plan. Today, the country has over 10 million members in approximately 105 000 schemes, both private and public sector (Government Actuary of the UK, 2003). With few exceptions, accrued retirement benefits must be preserved until retirement. Occupational schemes thus form part of the mandatory second pillar of retirement savings.

The third pillar is voluntary further saving for retirement. This takes place mainly through personal pensions, individual policies attracting tax relief and through the system of additional voluntary contributions to occupational funds. Within the last few years, a new personal pension product has been launched, called a Stakeholder pension. Charges under this product are limited by regulation to 1% of assets under management.[16]

As a result of these initiatives, and probably also because the UK has a long history of strong occupational pension schemes, the country has less of a problem with its pension system than many of its Western European counterparts. Despite experiencing one of the highest old age dependency ratios in the region[17], the UK has among the lowest levels of

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[16] *The authorities have recently announced their intention to allow higher charges over the first few years of the contract. This will allow providers to recoup initial costs more easily but has little impact on overall cost to the saver, if contributions continue over a long period of time.*

[17] *In the United Kingdom, the ratio of the population aged 60 or over to those aged 20 to 59 is 38.4%, compared with 37.0% in France and 35.7% in Germany (figures apply to the mid-1990's; Palacios & Pallarès-Miralles, 2000)*

implicit pensions debt in the OECD and is significantly below its Western Europe counterparts in the level of pension spending as a proportion of GDP[18].

This has not come about without significant problems, notably the mis-selling scandal and the high costs of administration. All of the experts remind us that, with increased private sector involvement comes increased need for regulation and supervisory powers. The UK authorities paid heed to this warning and established an extensive supervisory framework. Despite the highly regulated environment in which the UK government launched personal pensions, the scale of the mis-selling has been remarkable, mostly as a result of commission-hungry sales forces convincing employed individuals to opt out of not only their SERPS benefit but also their occupational scheme in order to take out a private policy. The total amount of compensation expected to be paid to investors as a result of the mis-selling is estimated at £12 billion (Herbertsson & Orszag, 2001).

The United Kingdom has also become a study in high administration costs. There may be a number of reasons for this and I examine these in section 5.1. The extent of the regulations has itself been a contributory factor.

Sweden: innovative approach

Sweden is among those countries in Europe (and the world) with the oldest populations.[19] The previous system, like that of the UK, combined a flat-rate pension with an earnings-related supplement, both pay-as-you-go and together replacing around 60% of final salary (Von Bahr, 2002). The system was becoming not only financially unsustainable[20] but lacking in credibility, particularly among young workers (Palmer, 2000).

The revised Swedish system could be described as a three-pillar system, but it is dominated by the first, a notional defined contribution (NDC) system.[21] The NDC system is based on a defined contribution, 16% of earnings, but is not funded. In many ways it is a hybrid of defined contribution and defined benefit, providing the benefits of both. Contributions are attributed to workers in individual accounts and the accumulated individual accounts represent a claim on the future pension for each worker. But the contributions are actually used to finance current benefits, like a pay-as-you-go system. The individual account is credited with "interest" equal to the rate of growth of the

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[18] The 1995 figure for the UK was 10.2%, compared to 13.3% in France and 12.0% in Germany (Palacios & Pallarès-Miralles, 2000)

[19] The ratio of the population aged 60 or over to those aged 20 to 59 is 41.6% (the figure applies to the mid-1990's, source: Palacios & Pallarès-Miralles, 2000)

[20] Von Bahr (2002) quotes a required economic growth rate of 2% simply to sustain the viability of the system and points out that this rate was not achieved over the 1990's. He doesn't specify whether the required rate of 2% is expressed in nominal or real terms.

[21] Refer to Williamson & Williams (2003) for a full discussion of the NDC system.

aggregate earnings of the members of the system, giving a type of wage indexation, but in a manner that protects the sustainability of the system.

> *In the NDC PAYGO system, the effect of changing demography is not shouldered by any specific individual, as it is not the result of individual action. Instead, it is shared among all workers, as it is factored into the indexation of notional capital. (Fox & Palmer, 1999a:28)*

The accumulated fund is converted to an annuity at an age selected by the worker (from age 61 without upper limit) at the life expectancy then applicable. In Sweden's case, the annuity is calculated at a real rate of return of 1.6% but the amount of the annuity is not fixed, as it depends on changes to CPI growth and also on the difference between the real earnings growth experienced and the assumed 1.6% growth rate.

> *This is equivalent to giving the capital in the account a real rate of return for a specified time, determined by life expectancy. This front-loading gives people a share of real economic growth in advance, and provides a higher initial benefit than they would have been entitled to under a straightforward application of the NDC system with wage indexation of benefits. (Palmer, 2000:5)*

The second pillar consists of fully funded individual accounts with a contribution rate of 2.5%. Workers choose their fund provider, but contributions are collected centrally and forwarded in bulk to the providers, who don't know which workers' contributions they are managing. Workers may select up to five funds and monitor balances by telephone or through the internet. They also receive an annual benefit statement. Fund switches are free and managed centrally. The system of centralised contribution collection and information management is one of the ways in which costs are controlled[22]. Sweden also has extensive coverage through occupational schemes, the four largest schemes covering more than 90% of all workers (Whitehouse, 2000).

The third pillar provides scope for further saving on a voluntary basis.

A government guarantee provides a safety net for individuals that fail to achieve a certain level of retirement fund by age 65, taking into account the accumulated savings in both first and second pillars.

The Swedish reform demonstrates innovation in a number of ways:

- The NDC model automatically spreads risk among participants without imposing additional or last-resort costs on any stakeholder.
- It is relatively transparent in its workings and not subject to the fluctuations to which systems with direct exposure to capital markets are vulnerable.

[22] *See section 5.1 for a brief analysis of the costs under Sweden's system.*

- It provides incentives to workers to prolong their working lives and take responsibility for the consequences of early retirement without adversely affecting the system or other participants.
- The second tier provides freedom of choice but demonstrates a number of initiatives to control costs.

Subsequent to the Swedish reform, the NDC model has been adopted in countries as diverse as Italy, Latvia and Mongolia.

Switzerland: planning perfection

The Swiss provide perhaps the best example of an integrated multi-pillar approach to national retirement funding. Like all European states the population of this country is exposed to the impacts of demographic change[23], but the Swiss model is better equipped than most to face the problem.

Switzerland has a highly redistributive unfunded first pillar with virtually universal coverage and a low dispersion of benefits, but no ceiling on contributions (Queisser & Vittas, 2000).

The mandatory second pillar provides private-sector coverage in a trust-based environment. Coverage is extremely high at around 90% of eligible workers. The self-employed, unemployed and disabled are not required to participate. Contribution rates are based on "co-ordinated earnings" designed to start at the benefit ceiling of the first pillar, which results in excellent integration of public and private system benefits. Trustees are free to determine their own conditions and plans may be defined benefit or defined contribution. The level of contribution is set at the discretion of the trustees, but employers must at least match employee contributions and benefits must exceed a prescribed scale.

The third pillar allows for further retirement saving on a voluntary basis and is, as in many other countries, a relatively undeveloped part of the industry.

> *Many of the positive features of the Swiss pension system are not due to some grand original design but are rather the result of periodic revisions. In large part, they reflect the collective common sense of the Swiss people in voting for stable and fiscally prudent social benefits. (Queisser & Vittas, 2000:abstract)*[24]

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[23] *Population aged 60 or older is 33.3% of the population aged between 20 and 59 (Palacios & Pallarès-Miralles, 2000).*

[24] *The paper is aptly sub-titled "The triumph of common sense?"*

Australia: faith in the private sector

> *Only two countries in the OECD rely extensively on mandatory advance-funded individual financial accounts for retirement: Australia and Switzerland. (Fox & Palmer, 1999a:7)*

Australia stands out among OECD countries for its decision to depend most strongly on the private sector for retirement provision. The extent of its dependence is in some ways greater than that of Switzerland, and will grow as the first pillar phases out.

Part of the reason for the dominance of defined contribution private sector retirement plans is Australia's history of low coverage both in traditional defined benefit plans and state social security: in 1974, only 32% of the Australian work force was covered by retirement plans and, before 1992, Australia had no employment-related retirement income plan, almost unique among developed countries (Gordon, 2003). Changes since this time have been well planned and well implemented.

The first pillar is a means-tested pay-as-you-go system, called the Age Pension, designed both as a safety net and as guarantee to the second pillar. It is highly successful in the target market. In 1998, approximately 83% of eligible retired received at least a partial pension through this system. Benefit levels are 25% of average male earnings, equivalent to a replacement rate of 37% allowing for the impact of the tax rebate, high among advanced countries for a safety net system. Nevertheless, because benefits are means tested and the second pillar is growing rapidly, the role of the Age Pension is expected to reduce over time, contributing very little to post-retirement income in the long term (Bateman & Piggott, 2001).

The second pillar is founded on the Superannuation Guarantee, requiring employers to contribute 9% of workers' income on their behalf to a fund of the worker's choice. The system is defined contribution and privately managed. Contributions are tax deductible while fund income and benefits are taxed, but at concessionary rates.[25] Preservation until age 55 is compulsory. Benefits at retirement may be taken as a lump sum or an annuity, but incentives are in place to encourage the latter. The system is characterised as well by extremely low levels of regulation and high diversity of plan designs. This successful industry has funds under management, as at June 2003, of A$510 billion[26], excluding amounts held in annuities (Chant West, 2003).

The third pillar is a voluntary, fully funded, defined contribution system that, unlike many other systems, has proved highly successful in attracting retirement savings. This may result from the relatively low contribution to the mandatory pillar or the ease with which additional contributions may be made into the same type of savings vehicle.

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[25] *Since the system is mandatory, it is not as important to attract contributions through full tax concessions as it would be for a voluntary system.*

3.2 Latin America

It is tempting to see the pension reform that has swept through Latin America as evidence of regional homogeneity. This conclusion would be an oversimplification of the reality. While there are many areas of commonality it is important to note the differences.

Figure 3

Latin America: thumbnail

Coverage: Considerable variation, from Uruguay's 82% of labour force and Chile's 70%, to 20% and less in Peru and Bolivia.

Pension expenditure: Highest for the Southern Cone countries, like Uruguay at 15%, and Cuba, but very low in other countries. Mexico spends only 0.4% of GDP on pensions.

Estimated implicit system debt: Varies from over 300% of GDP in Argentina to well below 50% in the northern countries with immature systems.

Dependency ratios: High in Uruguay and Argentina, relatively low elsewhere. Ratio of 60+ to age group 20–59 ranges from 12.9% in Mexico to 34.5% in Uruguay.

Palacios & Pallarès-Miralles (2000)

- National prosperity varies significantly. GNI per capita[27] varies from $10,980 in Argentina and $8,840 in Chile through $4,470 in Peru to $2,240 in Bolivia.
- The history of pension provision differs. The Southern Cone countries of Argentina, Uruguay and Chile, together with Brazil, have a long background of old age social security. Others have a much shorter history of centralised pension provision and correspondingly lower levels of financial difficulty in the system.
- The demographics are surprisingly diverse, from the Europe-like older societies in the south to the younger northern countries.

Nevertheless, many countries understood the need to reform systems that were almost universally in difficulty. Devesa-Carpio & Vidal-Meliá (2002) list a number of the reasons for change. These include financial drivers such as economic problems, design flaws[28], administrative difficulties and high administrative costs, but they also include social drivers such as low levels of coverage and a general lack of trust in political leadership. This range of problems suggests that the objectives of the reformed systems were wider than increasing retirement saving or the size of the covered population. They included greater participation by the private sector and development of capital markets as well.

Whatever the concerns of each country, the apparent miracle of Chile's system in the early 1980's led many others to embark on significant reforms that have changed the face of retirement funding across the region.

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[26] *Approximately R2 570 billion at the time.*

[27] *Adjusted for purchasing power parity and expressed in 2001 US dollars (Population Reference Bureau, 2003). Compare with $10,910 for South Africa quoted by the same source. GNI is not explained in the reference. I assume it refers to Gross National Income.*

[28] *Together with the economic problems, flaws in the pay-as-you-go system became evident when very high inflation rates came down. High inflation had eroded the value of real benefits in payment*

Chile: leading the way

I have referred to Chile's reform in section 2.1 as ground breaking. Chile was the first country in the world to adopt a completely privatised, fully funded approach to retirement saving. In 1981 the state pay-as-you-go scheme was abolished in favour of the revised system of mandatory individual savings accounts.

The accounts are administered by private management firms, known as *Administradoras de Fondos de Pensiones*, which compete for members in the open market. Contributions at the rate of 10% of earnings are used to save for retirement and an additional 3% is required to cover compulsory disability and life insurance, as well as the costs of the administrator, a type of commission or expense fee.

The retirement age is legislated at 65 for men and 60 for women. Participants may choose to use their accumulated funds to purchase an annuity from a life insurance company or to leave the account with the administrator and draw down the balance. They may take early retirement, but only once their account is large enough to provide an income of 50% of their salary at the time.

The government provides a guarantee in the form of a minimum pension to members with at least 20 years' contribution history but insufficient funding in their account to provide an annuity at least in line with the specified minimum.

Most observers would agree that the first twenty years of Chile's new system have proved highly successful.

> *Ignoring the great inequalities existing between different groups, the replacement rate under the old system stood at around 50%, whereas currently it is almost 80% while maintaining long term sustainability. (Devesa-Carpio & Vidal-Meliá, 2002: 9-10)*

The system now forms a very significant part of national finances. Accumulated funds in the accounts reached a level of well over 40% of GDP by the end of 1997 (Quiesser, 1998). Context is important, however. The apparent success of this system needs to be seen in the light of the significant economic growth experienced during the period, the

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and benefits themselves, often based on an average of the last 3 – 5 years of salary, were lower. As inflation slowed down deficits in the systems emerged. (Fox & Palmer, 1999a)

generous treatment of existing pension commitments[29] and the unusually high returns earned by workers in the early years[30].

Observers also agree that there are still a number of problems with the Chilean system. Commentators have suggested that fiscal costs have been higher than expected and that the development of capital markets and growth in national savings has been disappointing (Uthoff, 2001), but the most important problems concern coverage and administration costs.

Coverage has been disappointing. Uthoff (2001) points out that, while the total number of affiliates, participants in the system, has been increasing steadily, the number of affiliates contributing has fallen recently in actual number terms, and since 1983 as a proportion of affiliates. Only 44% of affiliates contributed to their plans during 1999. Holzmann, Packard & Cuesta (2000), in the description of a proposed microeconomic study covering Chile and Argentina, hypothesise that

> *… the working poor and self-employed continue to have a specific and strong rationale for avoiding participation in the multi-pillar pension system… (Holzmann, Packard & Cuesta, 2000: abstract)*

Administration costs have also been noted as problematic. The research into administration costs is examined in more detail later[31] but it is worth noting at this stage that Chile has experienced significant costs resulting from the marketing efforts of providers' efforts to attract affiliates from one provider to another. This has proved a disadvantage of the free-market private sector system, though efforts to make switching more difficult appear to have had a positive impact on the situation.

Argentina: variations on the model

After a surprisingly long period of time[32], a number of Latin American countries followed Chile's example and significantly reformed their ailing systems. No two implementations have been the same. The reformed Argentine system was launched in 1994.

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[29] Accrued rights under the previous system were converted to recognition bonds, placed in the custody of the worker's AFP and redeemable at retirement or earlier death. Recognition bonds were calculated on a generous basis (see Quiesser, 1998:49 for further detail) and the real annual return payable on the bonds is 4%.

[30] High returns were gained, ironically, on compulsory investment in government debt. In 1983 and 1984, furthermore, the financial system was subsidised by the state to stave off financial disaster. (Devesa-Carpio & Vidal-Meliá, 2002)

[31] See section 5.2 for a description of costs in various Latin American countries.

[32] I haven't found any commentators who explain why it was more than ten years after Chile's transition that other Latin American countries began to reform their pension systems.

Unlike the Chilean model, which does away completely with the pay-as-you-go scheme, the Argentine system is a true multi-pillar structure. Argentina was in fact forced to retain the pay-as-you-go pillar because poor fiscal circumstances and the size of the implicit debt in the existing system meant that the country could not afford to phase it out completely. All workers thus contribute to both pillars.

The first pillar is the pay-as-you-go system that provides a Universal Basic Benefit of approximately 27.5% of average wage to all workers with a contribution history of 30 years or more[33] (Queisser, 1998). This represents a tightening of existing requirements in an effort to control ongoing costs. The contribution rate is fixed at 16% and is payable by employers. The retirement age is 65 for men and 60 for women.

Rights under the old system are transferred through a compensatory pension, payable from retirement. Existing pensions in payment continue to be paid by the public system.

The second pillar is rather more complex than in most countries. The employee-paid contribution of 11% of income is payable either to the National Social Security Administration, which runs a defined benefit pay-as-you-go scheme, or to one of the private firms providing management of fully funded individual accounts, a defined contribution system. Workers may choose which system to belong to, but may not move back into the pay-as-you-go system once they have elected the funded alternative.

Problems in the Argentine system are more difficult to identify than in the Chilean case, as the system is much younger. Early indications are that similar issues need to be addressed, for example, poor levels of coverage, high administrative costs exacerbated by frequent switching between providers, and financial problems in the first pillar. Errors in implementation of indexation rules have not made the situation any easier (Rofman, 2000).

Mexico: partial reform

The Mexican state pension system had many problems in common with other Latin American pre-reform systems, financial difficulty, for example, evasion by workers and employers, and diversion of assets by the government to meet its own objectives.[34]

Mexico failed in an initial attempt to launch a second pillar, in 1992, which made a successful transition at the second attempt more important. The first reform failed as a result of both conceptual flaws and operational failure, contributed to by poor regulatory and supervisory structures.

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[33] And increased by one per cent for each year of contributions above 30 and up to 45.

[34] The intention had been that the system would be partly funded, but this was never the case as the government used reserves to finance other social insurance activities (Grandolini & Cerda, 1998).

As in Chile, Mexico's first pillar has been closed to new entrants. In contrast, however, members of the existing scheme do not receive recognition bonds as in Chile, or compensatory pension as in Argentina. They have the opportunity to exercise a "lifetime switch", being able to choose, at retirement, to take the accrued benefits from the pay-as-you-go system or the accumulated fund in the second pillar, whichever pays a better benefit. This approach is the least generous and, not surprisingly, the least expensive of the Latin American transition arrangements. Grandolini & Cerda (1998) point out that the first pillar acts as a safety net:

> *Fundamentally, the reformed scheme consists of a publicly managed first pillar with a redistributive objective providing a guaranteed minimum pension equal to the indexed minimum wage for low-income workers, a fully-funded second pillar with mandatory individual savings accounts and competitive, but exclusive and specialized, mutual fund management, and a third pillar consisting of voluntary savings. (Grandolini & Cerda, 1998:11)*

The second and third pillars, mandatory and voluntary respectively, work in much the same way as the corresponding arrangements in the rest of Latin America. An interesting feature of the Mexican system is the government co-contribution to worker accounts. This is fixed at 5.5% of the minimum wage, roughly equivalent to 2.2% of the average wage, and provides a means of supporting lower income workers, an effective redistributive mechanism. (See section 2.4 for a discussion of system objectives.)

Like all Latin American countries, Mexico is anxious to find ways to improve coverage of the system, as is discussed in Licona's paper (2001) on the policy options available to achieve this end.

Bolivia: small country innovation[35]

Bolivia's previous framework was based on a pay-as-you-go defined benefit system aiming to replace around 30% of final earnings. Coverage was very poor and dominated by public sector employees. Only approximately 12% of the economically active population was affiliated to the system (Quiesser, 1998). Certain worker classes were excluded and Bolivia's informally employed were not participating. Added to this was widespread evasion by employers. The financial situation, while not as bad as in some of Bolivia's neighbours, was poor and deteriorating.

The country had to consider its reform options differently to most. Bolivia is among the poorest countries in South America, so contributions to a system could not be expected to be high. The small population and large informal sector made cost containment under the new system very important.

[35] *Most of the material in this section is drawn from Von Gersdorff (1997).*

Bolivia could not have successfully implemented change without reforming a much wider set of institutions simultaneously. The law passed in 1996 enabled a number of steps to be taken:

- The previous pension system was closed and existing members moved into the new system, where they are to receive a compensatory pension on retirement.
- A new system was established on a defined contribution individual account basis.
- A new social relief program called Bonosol was established to provide old-age relief to all Bolivians. Bonosol is an untargeted benefit designed to alleviate poverty rather than provide significant income. The current level of the benefit is a little below one-third of national per capita income and 11% of the average wage.[36]
- Financing took place largely through privatisation of a wide variety of state assets.

Bolivia thus provides a safety net non-contributory first pillar and a defined contribution second pillar through individual accounts. Contribution rates to the second pillar are at a similar level to those in Chile: 10% towards retirement, 2% towards total disability or death from common causes, 0.5% to administrator costs and an additional 2% covering insurance for disability or death from work-related causes.

While the co-ordinated approach demonstrates clear thinking, the real innovation lies in the selection of administrators. The Bolivian authorities decided that no more than two managers would be allowed to provide second-pillar services and that those selected would have a five-year monopoly, after which other players would be permitted to enter the market. Workers were initially assigned to a manager by geographical location. Half way through the five-year period, workers were granted the right to switch to the other manager.

Managers were selected on the basis of quoted fees. Firms were incentivised to enter by being given the right also to manage the privatisation proceeds as well. This helped to overcome the very slow build up of assets that would be expected of a new system in a small country with low per-capita income.

The reform has not been without difficulty. A recent study, Gill *et al* (2003), points out that fiscal cost has been much higher than expected. Von Gersdorff's projection of the 2002 fiscal cost five years earlier was around 2% of GDP. The cash flow gap related to the transition has actually risen from 4% in 1998 to 5% in 2002 (Gill *et al*, 2003: page 4 of the summary).

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[36] *Von Gersdorff (1997) points out that, despite the low level of income, the system provides an extremely valuable benefit, "replacing 85% of the income of the extreme poor and 50% of the income of the poor" (Von Gersdorff, 1997:13). Similar comments are made by a wide variety of observers concerning South Africa's old-age pension, discussed later in this report.*

3.3 Eastern Europe and the former Soviet Republics

Like most Latin American states, a number of the countries from what used to be the Soviet Bloc have been forced to reconsider existing old age arrangements. The reviews in this region have been more urgent, precipitated by dramatic political change as command economies collapsed. Countries were forced to grapple with the issue of how to provide for old age within the context of a fragile democracy and difficult economic conditions.

Figure 4

Former Soviet Bloc: thumbnail

Coverage: Has dropped rapidly since the collapse of communism. Contributors over labour force is mostly between 60% and 80%, though higher in the Czech Republic and Slovenia.

Pension expenditure: Around 10% of GDP in more prosperous countries; significantly below that elsewhere, for example, 1.5% in Georgia.

Dependency ratios: Very high in places. Ratio of 60+ to age group 20–59 exceeds 30% in the majority of countries, but is below 20% in poorer states, particularly in Central Asia.

Palacios & Pallarès-Miralles (2000)
Implicit system debt not available

In most cases, the heritage of the previous system made the situation more difficult. Typically, central systems had been badly affected by overly generous benefit structures, administrative mismanagement and ad hoc efforts to deal with economic problems. Early retirement without reduction of benefit became a common way of dealing with rising unemployment, to the detriment of defined benefit retirement mechanisms (Palacios & Pallarès-Miralles, 2000). The proportion of workers in the informal sector was high and growing (Fox & Palmer, 1999a), leading to fewer contributing workers worsening dependency ratios.

Unfortunately for these countries, demographic changes make the situation even more difficult. Measuring the demographic pressure on a pension system as the proportion of the population above 60 years of age, figure 1 in section 2.2 demonstrates that this region is currently second only to the wealthy OECD states. But it has far fewer resources to manage it.

Some countries have found the resources and determination to ride the wave of change and to continue to provide sound benefits, while others have not:

> *The data suggest two broad groups of country experiences. The first were those countries able to maintain a significant contributor base and covered wage bill. In these countries, which include the Czech Republic, Latvia, Slovakia, Slovenia and Poland, replacement rates were largely maintained during the transition and spending levels remained high. In the second group, the tax base was decimated and benefit levels were cut. (Palacios & Pallarès-Miralles, 2000:59)*

Focusing on the strategic alternatives to the first pillar, three different approaches to reform may be observed in the region.

- ***Convert to notional defined contribution (NDC)***: Latvia and Poland have elected the NDC approach to the first pillar. Both countries also have a mandatory second

pillar, with a centralised contribution collection system, and both encourage voluntary contributions to a third pillar. The case of Poland is considered more closely below.

- ***Close the first pillar***: Kazakhstan has decided to close the existing pay-as-you-go system, following the example of Chile, and to rely solely on the individual account second pillar.
- ***Retain an unfunded defined benefit system***: Croatia, Hungary and the Czech Republic have all chosen perhaps the most conventional approach, of tightening the rules under the pay-as-you-go system, but retaining its defined benefit characteristics, and then adding further funding to that through additional saving mechanisms. Croatia and Hungary have introduced mandatory second-pillar benefits. The Czech Republic has elected not to make additional savings mandatory, but has encouraged the development of a strong voluntary pillar. This system is described in more detail below.

Russia has also embarked on reform, intending to add mandatory occupational pensions to a combination of a funded defined contribution system and a notional defined contribution system, together with a basic pension, a rather more complex structure than exists elsewhere. The reform, though well underway, has recently been delayed by administrative difficulties (Stott, 2003). Investment & Pensions Europe reports on a more recent study suggesting that further review of the system is required.[37]

Other countries in the region that have shifted to individual accounts or that are working on it include Estonia, Macedonia, Romania and the Ukraine (Holzmann & Palacios, 2001). Macedonia has recently announced that it will award licences to private sector administrators to manage individual account pension funds to complement the existing system. In view of the limited capital market, the authorities have chosen to limit the number of providers to two for a period of ten years, following the successful Bolivian model.[38]

Poland: Notional Defined Contribution first pillar

After many years of discussion concerning the available strategic alternatives, Poland elected to follow the multi-pillar model in preference to the Chilean approach of completely privatising retirement saving. Chlon *et al* (1999) suggest that the reasons for this were, firstly, recognition that the multi-pillar approach diversifies risk better[39], and secondly, that the cost of transition where the pay-as-you-go system is to be closed down would be prohibitively high in Poland's case.

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[37] *Source: Investment & Pensions Europe, 15 June 2004, www.ipe.com, quoting Elsa Fornero, director of the Center for Research and Welfare Studies based in Turin. Her study had not yet been published at the time of writing.*

[38] *Source: Investment & Pensions Europe, 29 April 2004, www.ipe.com.*

The previous unfunded defined benefit system suffered difficulties common to much of the region. The system dependency ratio rose rapidly as the contribution base reduced, eroded by rising unemployment, and as administrative indiscipline led to a falling effective retirement age.[40] The contribution rate rose from 25% in 1981 to 38% by the late 1980s and 45% in 1990. Government expenditure on retirement and disability rose to more than 15% by 1994, higher than the European Union average (Chlon *et al*, 1999).

The first pillar now consists of a notional defined contribution system funded by a contribution rate of 12.2%, shared by the employer and employee. Accounts are credited with returns equal to 75% of the growth of the covered wage bill, instead of the more usual 100%. The remaining 25% has been held back from participants to allow scope in future to reduce the contribution rate. This approach is effectively a partially funded NDC system. The minimum pension age is 65 for males and 60 for females and the pension is based on current life expectancy at retirement age using unisex rates. Benefits in payment increase at a rate at least equal to the rate of price inflation plus 20% of real wage growth. Existing pay-as-you-go members have an initial capital amount added to their notional account and terms are fairly generous.

The second pillar is based on a defined contribution rate of 7.3% and individual accounts managed by a range of pension providers. Participants allocate their contributions to a provider of their choice. Costs are reduced by utilising a central collection point and all contributions are diverted from the central system to the chosen managing company. The accumulated funds in participant individual accounts must be converted at retirement to an annuity provided by a specialised annuity company.

The intention is to balance over time the contributions being allocated to the first and second pillars, closer to fifty-fifty than is presently the case. But the system also provides a pension guarantee at the same level as the previous system, a safety net for those unable to save sufficiently for retirement.

The voluntary third pillar is well established, consisting mainly of occupational pension schemes, but also flexible individual savings plans. Costs are tax-deductible for employers, but employees are taxed as a benefit in kind. Roll-up is tax-free and benefits are received free of tax.[41]

Latvia, with a population of less than 3 million, has also chosen also to adopt the notional defined contribution approach to the first pillar. This country has elected to start second pillar contributions at only 2%, increasing to 7% by 2010 in order to avoid using debt

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[39] *This is entrenched in the motto to the Polish reform: "Security through Diversity".*

[40] *Restrictions on early retirement were frequently waived.*

[41] *This is not a particularly generous treatment. While less of a burden on government resources, this approach would seem to compromise the desire to encourage the growth of this sector.*

financing in the transition to the new system. Latvia has taken the centralised contribution collection one step further: the country has adopted the Swedish clearing-house model, under which the State Social Insurance Agency acts as a pension fund and asset management is contracted out (Fox & Palmer, 1999b). Unfortunately, Latvia also provides an example of a poorly launched pension reform, dogged by administrative difficulty and political compromise.

Kazakhstan: bold dependence on second pillar

Kazakhstan is the world's ninth largest country, straddling central Asia south of Russia. It is sparsely populated with only 17 million inhabitants, a nation rich in raw materials (Times Atlas, 1996), but not wealthy by world standards.[42]

The problems of the previous system, common to the entire Soviet bloc, are very well demonstrated in the case of Kazakhstan. The old age dependency ratio, the ratio of elderly population to working age population, is 18%. In contrast, the system dependency ratio, that is pensioners as a proportion of contributors, under the previous system was 56% (Andrews, 2001).[43] Not surprisingly, the system was unsustainable and needed, as Andrews refers to it in the title of her paper, "An Ambitious Pension Reform", particularly in the light of early failed attempts to reform the pay-as-you-go system.

Despite the risks involved, Kazakhstan has decided to follow the Chilean model under which accrual to the defined benefit pay-as-you-go system terminates. From 1 January 1998, all contributions have been channelled to fully funded defined contribution individual accounts, which are mandated for all workers. Benefits accrued under the previous system are retained. The state also provides a safety net to grant minimum levels of retirement and death benefits.

The contribution rate to the new system is 10% of income. A number of competing accumulation funds have been set up and Kazakhstan also uses a central clearing-house approach for the collection and distribution of contributions. An unusual feature of the Kazakh system is that an additional accumulation fund has been established by the state and is one of the choices available to workers. This reflects recognition that the private sector is not completely trusted by the population. Andrews reports that shifts towards the privately managed funds are nevertheless taking place. Barr (2000) suggests that the pressure to move out of the government fund is considerable.

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[42] Kazakhstan's GNI per capita (purchasing power parity, 2001 US dollars) of $6,150 compares with $10,910 for South Africa, $8,240 for Mexico, $5,940 for Iran and $3,950 for China (Population Reference Bureau, 2003).

[43] Contrast these figures to the corresponding ratios for the United States, which has an old age dependency ratio of 30% and a system dependency ratio of 31% (Andrews, 2001).

Meanwhile, consolidation of the private firms is expected as a result of the remarkably restrictive charging limits imposed on the accumulation funds by legislation. These limits are discussed later in the paper, in section 5.3.

Kazakhstan was badly affected by the Russian financial crisis of the late 1990s and is economically fragile as a result. Despite this, there is optimism at this early stage that the system will serve its intended purpose of providing adequate levels of benefits in old age.

The Czech Republic: voluntary preferred to mandatory

Each of Hungary, Croatia and the Czech Republic have elected to address the problems of the ailing defined benefit system in two ways: by tightening the pay-as-you-go system itself and by mandating or encouraging further saving. Hungary (see Rocha & Vittas, 2001) and more recently Croatia (Anusic *et al*, 2003) have introduced individual savings accounts with mandatory contributions. The contrasting system adopted by the Czech Republic, with voluntary contributions only, is interesting for the purposes of this study because it probably most closely resembles our own system in South Africa.

The Czech Republic may be the only one of the fairly economically advanced former communist countries that has not (yet) adopted a substantial change to existing systems. Holzmann & Palacios (2001) point out that wholesale change is not always necessary:

> *The attempt to reform a public pension scheme is typically triggered by short-term financial disequilibria which are further reinforced by concerns for long term population aging, perceived distortionary incentives of the current scheme, and unequal treatment between occupational groups, gender and generation. In principle, all of these concerns can be addressed by a comprehensive but nevertheless parametric reform of the unfunded DB system. (Holzmann & Palacios, 2001:4)*

The Czech Republic's pay-as-you-go system has suffered consistent deterioration of its system dependency ratio for some time and has modified the existing parameters in order to arrest the increasing ratio of dependents to contributors. Among the changes made during the 1990s were (Lasagabaster *et al*, 2002):

- the removal of special privileges to members of certain occupations
- a gradual increase in system retirement age
- longer contribution periods required for the calculation of pensions
- a more restricted set of criteria for the purpose of disability benefits
- revision of the rules concerning indexation of benefits
- tightening the assessment of concessionary non-contributory periods for students

Modelling has shown that these rule changes are insufficient to arrest increasing costs, even in the short term. Further tightening of indexation rules, increases to retirement age, a scrapping of the service credit for students and a complete freeze on the flat pension

(currently increased to wage growth) would appear to be sufficient to stabilise the system in the long term. But this assumes that fertility rates arrest their long slide downwards and begin to increase again after 2030.

An alternative being considered by the Czech authorities is the notional defined contribution system.

The Czech Republic has also sought to stimulate the voluntary sector, the so-called third pillar. Success has been mixed. By the end of the year 2000, some 2.3 million workers had joined the voluntary sector, 50% of the workforce[44], but the average contribution to these savings vehicles was only 3% of wages (Lasagabaster *et al*, 2002).

> *Despite some positive features, the Czech third pillar remains deficient in many aspects—especially low participation of younger workers, disappointing rates of return and slow asset growth, and deficient regulation—and there are doubts about its capacity to become a significant and reliable source of supplementary retirement income. (Lasagabaster et al, 2002:18)*

A number of initiatives to encourage further saving in the voluntary sector have been considered, among them the stimulation of occupational retirement funds.

The authorities must question whether there is likely to be sufficient expansion of coverage without some form of compulsion. The establishment of a mandatory second pillar must be considered, even if at the expense of the diversion of some part of the first pillar contributions into the second. Heated discussion is taking place at the highest levels:

> *"We have failed to reach a compromise. We have only started a way towards it," Czech PM Vladimir Spidla told journalists after the meeting, adding: "There is consensus that the pension system needs to be reformed because of the country's aging population and low birth rate." … Spidla and the ruling Social Democrats (CSSD) would like to maintain the pay-as-you-go system as the cornerstone of any future scheme. On the other hand, the right-wing opposition party ODS calls for a cut in contributions to the state-run system and setting up mandatory private pension insurance. (Investment & Pensions Europe, 23 March 2004, www.ipe.com)*

South Africa's retirement system is similar to that of the Czech Republic, except that the first pillar in South Africa's case is not extensive, acting primarily as a mechanism to lift the aged out of poverty, and the third pillar is very well established and essentially sound.[45] There nevertheless appears to be a significant gap in the middle for the "working poor" or those with interrupted working lives. This is discussed in more detail in section 3.7.

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[44] This grew to 2.81 million by the end of June 2004, according to the Czech Finance Ministry (Investment & Pensions Europe, 13 August 2004, www.ipe.com).

3.4 South & East Asia

This region is dominated by (1) the long-standing centrally managed defined contribution funds in some countries, and (2) various forms of coverage with poor population penetration in others. This generalisation is not far off the mark, but hides a number of significant variations.

Figure 5

South & East Asia: thumbnail

Coverage: Generally very low, with exceptions. Below 5% in Pakistan and Bangladesh, above 50% in Korea and over 70% in Singapore.

Pension expenditure: Below 3% of GDP throughout, although provident funds have been excluded because they pay lump sum benefits.

Dependency ratios: Generally low. Ratio of 60+ to age group 20–59 between 10% and 20% throughout, highest in Singapore at 17.9%.

Palacios & Pallarès-Miralles (2000)
Implicit system debt not available

A wide variety of pension systems exist, as demonstrated later, and coverage, while generally poor, varies significantly from country to country.

In many ways, demographics and sociology play key roles. Few countries are under significant demographic pressure now, but the region will soon experience a significant increase in the elderly proportion of the population, probably greater than has been seen in developed countries. The social trend of urbanisation is another significant driver of pension policy.

> *The structure of the labor market relates directly to coverage rates under mandatory private sector schemes. In countries with large agricultural and urban informal sectors (China, Indonesia, Philippines, etc) coverage tends to be limited to the formal urban sector. In China, for example, there are currently no formal provisions for most of the rural population, which accounts for around 70% of the total. (Palacios & Pallarès-Miralles 2000:74)*

> *Overall, three out of four Chinese workers have no pension. … Even in the cities, China's public pension system leaves nearly half of the workforce uncovered. (Jackson & Howe 2004:13)*

Urbanisation has also gone hand-in-hand with a gradual breakdown of the traditional multi-generational family structure, undermining an important source of care and financial support for the aged.

Rather than considering examples, I discuss countries in blocks where pension systems have similar characteristics, together with some comment on the most important changes needed in these blocks.[46]

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[45] *Some might regard South Africa's mature occupational system as second pillar provision, but extensive unemployment and the absence of compulsory preservation of pension savings until retirement suggests that the system is more third pillar than second.*

[46] *Much of the material in this section draws on the comprehensive reporting of Holzmann, Mac Arthur and Sin (2000). This paper is recommended for a more detailed study of the region, though my opinion is that the recommendations are slightly inflexible in favour of the official World Bank view. Detailed country-by-country descriptions are also available in the paper.*

National provident fund systems

A number of countries[47] have publicly managed, fully funded, defined contribution systems, some of them established many years ago, that generally provide lump sums on retirement.

The most significant problem with these systems appears to be the excessive government control. Investment options are limited and, in some cases, government appears to regard these funds as available for public sector needs. Returns to participants have been generally weak and the funds have done little to encourage the development of financial markets. Coverage is poor and safety nets generally do not exist.

Improvements to governance structures, easing of investment limitations and improved systems of regulation would go a long way to resolving these difficulties. Financial market development would also assist the process.

Hong Kong recently launched a mandatory privately managed second-pillar system, becoming the first East Asian state to do so, alongside a first pillar essentially providing benefits at a "safety net" level.

Defined benefit social security systems

A few countries[48] have pay-as-you-go defined benefit systems, some of them with an extensive history. Though not clearly evident at this stage, the sustainability of existing systems is likely to prove problematic. The systems are currently immature[49], but implicit debt is rising rapidly and the authorities in these countries should consider tightening existing benefit rules and evaluating their options concerning either mandatory or voluntary retirement savings systems.

Where funds have reserves, management is often subject to political pressure to invest in government projects. Governance should be improved and existing investment restrictions should be relieved. Consideration may also be given to outsourcing asset management to the private sector.

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[47] Brunei, Hong Kong, Indonesia, Malaysia, Papua New Guinea and Singapore (Holzmann, Mac Arthur & Sin, 2000) as well as India and Sri Lanka (Palacios & Pallarès-Miralles, 2000)

[48] Korea, the Philippines and Thailand

[49] The participating population is relatively young and the ratio of beneficiaries to contributors fairly low.

Social security arrangements in transition countries

Countries experiencing the transition to democratic economy[50] have problems stemming from their central control past and also from the early years of the transition.

As in the former Soviet republics, coverage of the workforce in most of these countries was extensive and benefits generous, but the system was unfunded and depended on the co-operation of employers for the collection of contributions. As the central control structure reduced its authority, government subsidies were cut, administrative deficiencies were exposed, and early retirement was commonly used as a way of managing falling employment levels.

These countries need to re-establish administrative control and to put into place and enforce clear rules concerning membership eligibility, contribution collection and benefit payment. Redesign of the system should be considered. These countries need as well to establish the financial infrastructure that would give them the option for conversion to private sector funded systems, even if the opportunity to launch these systems lies still some time in the future.

Jackson & Howe (2004) suggest that China, which, owing to its one-child policy, has substantial demographic problems approaching, is beginning to respond to the challenges facing it:

> *Starting in the late 1990s, it began to expand coverage under the basic pension system to include the urban private sector. At the same time, it is implementing a plan to transition from a purely pay-as-you-go system to a new system consisting of scaled-back pay-as-you-go benefits and personal retirement accounts. (Jackson & Howe 2004:20)*

Mongolia has recently taken the bold step of launching a notional defined contribution system.

[50] *Included in this list are China, Cambodia, Laos, Mongolia, Myanmar and Vietnam.*

3.5 The Middle East & North Africa

Very little information appears to be available regarding pension systems in the region.

Fox and Palmer (1999a) suggest that partially funded pay-as-you-go defined benefit schemes predominate. They also mention that the central role of the state in pension provision is not questioned, so a cultural or social push for change doesn't exist as it did in Latin America.

Coverage is weighted towards civil service and parastatal schemes and few of these schemes are under financial pressure from worsening demographics.

Figure 6

Middle East & North Africa: thumbnail

Coverage: Below 50%, with the exception of Israel where over 80% of the workforce are paying contributions. (OPEC countries unavailable due to migrant labour distortions.)

Pension expenditure: Below 4% except in the older states of Cyprus, Malta and Israel, which spend between 5% and 7% of GDP.

Dependency ratios: Generally low. Ratio of 60+ to age group 20–59 between 10% and 15% except for Israel (21.7%) and Cyprus (29.0%).

Palacios & Pallarès-Miralles (2000)
Implicit system debt not available

The same authors point out that, outside of the covered population, there still exists a fairly strong dependence on informal old-age systems, within families or extended families.

3.6 Sub-Saharan Africa

Sub-Saharan Africa is a large and heterogeneous region to describe and generalisations are unavoidable. Nevertheless, it is possible to pick out a number of characteristics that assist with understanding the broad issues that need to be addressed.[51]

Palacios & Pallarès-Miralles (2000) give a good summary of the bleak situation in many countries in the region:

> *Many countries in sub-Saharan Africa experienced negative per capita growth in the 1980s and have been obliged to undertake structural adjustment programs, which have often included measures to reduce public sector employment. This had consequences for unemployment and growth in the informal sector. Coverage has always been low but it declined even further during the crisis. Some of the countries in the region do not have a pension system beyond those covering public employees. (Palacios & Pallarès-Miralles, 2000:67)*

Fox and Palmer point out that national-scale pension systems in the region are in their infancy with low levels of coverage and low old-age dependency ratios. Most of these countries have a large proportion of the workforce in the agricultural sector, where they

[51] *As South Africa is described in the section that follows, discussion in this section is not applicable to the South African environment. The statistics provided by the Palacios & Pallarès-Miralles paper, sparse for this region, do not include South Africa.*

are not covered by the pension system. And many countries have more pressing problems to address.

The informal employment sector plays a very large part in the economies of these countries. In the formal sector pension schemes are often dominated by public sector arrangements, many of them dating back to the colonial era.

For many years the countries of the region have depended on the solidarity in society to provide for the aged through traditional means, particularly the extended family, but there are signs that traditional societies are crumbling and support through this means falling (Barbone & Sanchez, 1999).

The same authors provide a good survey of the types of systems in existence in the region:

Figure 7

Sub-Saharan Africa: thumbnail

Coverage: Generally very low. Of 26 countries listed, only Cameroon, Djibouti, Kenya and Zambia have in excess of 10% of the labour force paying contributions.

Pension expenditure: Very low. Djibouti spends 3.1% of GDP and Mauritius just under 2%. None of the other 22 countries listed spends more than 1% of GDP on pensions.

Dependency ratios: Consistently low. All countries listed have a ratio of 60+ to 20–59 of between 10% and 16% and growth rates in the next two or three decades are expected to be low.

Palacios & Pallarès-Miralles (2000)
Implicit system debt not available

- ***Social security***: usually defined benefit systems funded by payroll taxes and often with high rates of contribution, these systems are widespread, but more common in Francophone countries.
- ***Provident funds***: common in English-speaking countries, these are commonly defined contribution systems paying a lump sum on retirement. Ironically, considering the global wave of change to defined contribution, many of these funds have been converted over the last twenty years to defined benefit arrangements in an effort to improve the security of benefits.
- ***Public pensions***: arrangements for civil servants are widespread, often with more than one scheme in a country.
- ***Universal pensions***: these are not very common and Mauritius has by far the most comprehensive universal pension system.[52]
- ***Private sector arrangements***: fairly common and well developed in some countries, but limited to the formal employment sector. The authors suggest that these arrangements appear to be encouraged by low contribution rates to the public fund, a system of incentives in the tax treatment of contributions and income, and a financial sector that not only works but has a tradition of managing pension accounts.

[52] *South Africa provides a means-tested universal pension that I consider in more detail below. Namibia also provides a non-contributory universal pension (Ferreira, 1999).*

The authors comment on the need to recognise Africa's problems and potential solutions in the light of the continent's environment and broader challenges rather than simply applying formulae that may have worked elsewhere:

> *Expansion of formal institutions to the rest of the population does not appear a feasible strategy … The alternative is the development of different institutions, which build on a culture of cooperation and existing community or extended family arrangements … The challenge for social policy is how to introduce designs that improve on the voluntary agreements that develop naturally … A consensus seems to be emerging that the government must operate through the development of regulatory frameworks that facilitate the operation of community organizations that provide social protection. (Barbone & Sanchez, 1999:32-34)*

Mauritius: a rare example of comprehensive cover

The island-state of Mauritius stands out, not only in the African context, but in the world, as having a pensions system that appears to work well, virtually unchanged since 1978.

Consideration of the system should take into account the fact that the country has enjoyed a thriving economy for a number of years which has contributed to the well being of its pension system. The economy has recently diversified from its strong dependence on sugar and is now an important manufacturing centre with growing revenue from tourism and financial services (Times Atlas, 1996). The country has experienced strong and persistent growth since 1980 (Willmore, 2003) and, according to the Population Reference Bureau (2003), has the second highest purchasing power adjusted GNI in Africa, trailing only South Africa.[53]

The universal pension has been in place since the 1950's. Pensions are paid to all residents[54] aged 60 or more at a level starting at 18% of the per-capita GDP. Additional amounts are paid to residents aged 90 or more and to those that are totally blind or suffering total paralysis. Recipients also receive a bonus at the end of every year. Though means-testing has been used in the past, there is none at present, and the payments are taxed as ordinary income in the hands of those still working. Costs are likely to increase significantly, as the population is expected to age fairly rapidly over the next few decades. As a consequence, one might expect the retirement age to be pushed back or for wage indexing of benefit levels to be scaled downward in due course.

Mauritius also has a contributory pension system, launched in 1978. Contributions of 9% of wages, of which two-thirds is covered by the employer, purchase points which in turn are exchanged for a pension at retirement. The value of points grows at the average

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[53] GNI per capita adjusted for purchasing power parity in 2001 US Dollars, $9,860, compared with South Africa's $10,910.

[54] Subject to a relatively light residency requirement of 12 years since age 18 for citizens and 15 years since age 40 for non-citizens

earnings growth rate. The system is thus very similar to the notional defined contribution systems that are being established in a number of countries of Europe and the former Soviet Union.

The government subsidises early generations in the scheme by providing a minimum pension in addition to the universal pension. The fund itself subsidises members by awarding bonus benefits to the first full generation of members to compensate for the fact that they have not been able to accumulate a lifetime of savings.

The fund is in deficit partly as a result of the bonus system, but also because it has been used to help with the payment of the universal pension. Some observers would describe this as a legitimate cross-subsidy of one system by the other, while others would suggest that the assets of the contributory pension should be ring-fenced and invested more prudently. Quite possibly, the strong economic growth that the country has experienced over the last two decades has muted the argument.

Zambia: fragmented and accessible to very few

Queisser, Bailey & Woodall (1997) discuss the state of retirement systems in Zambia. The majority of the population has no access to social protection. Some means-tested benefit is provided to the very poor in the form of nutritional support.

On the face of it, Zambia appears to have comprehensive coverage for the employed. The Zambia National Provident Fund, a defined contribution fund, is mandatory for all workers in the formal sector. The number of actively contributing members is 350 000, approximately 70% of private sector workers. But evasion by employers is high: over 30% of employers at the time of the study by Queisser and her colleagues were more than seven months in arrears. Administration is weak and inefficient. Investment returns are very low, primarily due to government restrictions on available asset classes, but exacerbated by the economic difficulties in the 1980s. Revenue has fallen owing to higher unemployment and the fact that the contribution ceiling has not been lifted despite periods of very high inflation.

Civil servants belong to defined benefit arrangements, either the Civil Service Pension Fund or the Local Authorities Superannuation Fund. These arrangements are dogged by similar problems, poor administration and very poor returns, and are in serious deficit.

Provision by employers for their workers has been better as investment of fund assets is usually in more successful asset classes like treasury bills and property, but progress has been slow due to lack of appropriate regulation.

The authors summarise as follows:

> *The design of new pension systems in African countries requires choices between defined benefit and defined contribution schemes, between funding or pay-as-you-go schemes, and*

> *between public and private management. But those choices are less important than the basic challenges of improving macroeconomic stability, regulatory capabilities and the ability to extend coverage to more citizens. (Queisser et al, 1997: cover page)*

3.7 The South African Pension Environment

South Africa has among the oldest populations in Africa. The ratio of people aged 60 or more to those between 20 and 59 is 13.5%, exceeded only by some of the smaller central African countries and Indian Ocean island states (Palacios & Pallarès-Miralles, 2000). Kinsella & Ferreira (1997) point out that there are significant variations across racial groupings, with a country-wide proportion of those aged 60 and over of 6.8% compared with 5.6% for black South Africans and 14.3% for white South Africans. The impact of the AIDS epidemic makes projection uncertain, but South Africa can still expect a rapid increase in its aged population over the next few decades.

South Africa's retirement landscape is characterised by two pension systems and a large "uncovered gap" in between. The country has an advanced formal pensions sector under which individuals are given various incentives to save for retirement, and a means-tested social security system for the aged, regarded universally as very successful (South African Government, 2002; Ferreira, 1997). What is not clear is how many South Africans miss out completely, benefiting neither from the social security system nor from any of the formal pension saving mechanisms.

Formal sector

The absence of comprehensive social security benefits for the middle-class and affluent sectors has surely contributed to the development of South Africa's successful insurance and pensions saving environment.

> *By almost any measure, the South African retirement fund industry is remarkably successful even by First World standards. (South African Government, Smith Report, 1995)*

> *South Africa's private pension and insurance sectors are estimated to be the largest in the world relative to gross national product. (South African Government, Taylor Report, 2002)*

South Africans receive tax incentives to save for retirement through occupational pension funds and through individual savings arrangements, either unit trusts or life policies, in a retirement annuity wrapper. Taylor (South African Government, 2002) records that pension fund contributions were recently reported at R54.3 billion per year[55], 14% of total personal remuneration, that a further R8 billion was paid into retirement annuity funds, and that a large proportion of the R27 billion paid into regular premium life assurance is also intended to provide benefits payable at retirement. HelpAge International (2003)

quotes the Katz Commission estimate that tax incentives to the formal sector cost the South African Treasury 1.7% of GDP annually.

The efficiency of the formal sector retirement system and the resulting impacts on the benefits that it provides to its beneficiaries stand at the core of this research project.

Social security grants

At the other end of the scale is an extensive system of social grants to the elderly. This is a non-contributory means-tested flat-rate system that, in the late 1990s paid R520 per month (Ferreira, 1999), just over 2.5 times the per capita income of black South Africans at the time. Increases to grants are *ad hoc*, based on affordability, but have been rapid in recent years. An article published in *www.southafrica.info* quotes figures provided to Parliament in February 2004: monthly grants increased twice in 2002 and again in April 2003 to R700.[56] It is financed by government from general revenues and costs approximately 1.4% of GDP (HelpAge International, 2003).

The report of the Taylor Commission quotes a figure of just under two million beneficiaries from the system and points out that *the important redistribute* [sic] *impact of this programme has been recognised by Government, labour and academia* (South African Government, 2002:58). The February 2004 briefing to Parliament puts the 2003 figure at over two million beneficiaries. A number of commentators have lauded the system, suggesting that in many of South Africa's poorest communities, the old-age grant supports not just the aged but many of their dependants as well.

> *The generosity and universality of South Africa's pension system are unique by developing country standards…. The system is probably the most effective programme in targeting and reaching economically vulnerable groups. Its benefits reach deep into poverty-stricken communities. It has been shown that pensions help substantially to reduce rural poverty. Of course, the system also plays a major role in maintaining a standard of living for the majority of older South Africans. For the present, the government appears to view it as contributing to family welfare, human capital formation and poverty alleviation… (Ferreira, 1997:55, 56)*

The South African system in the international context

How does this system – a formal sector plus a system of social security grants – fit within the three-pillar structure described in this report and commonly implemented in some form around the world?

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[55] *The latest figure available from the Financial Services Board is R61.1 billion in 2001.*

[56] *"Social grants double since 2000" by David Masango on www.southafrica.info, 10 February 2004, citing Buanews Online.*

In terms of the alternatives set out in section 2.3, South Africa has three systems:

- an unfunded, publicly managed social security system with benefits that are not defined in advance – they consist of what can be afforded by the country at the time – with widespread coverage at a relatively low level
- a well-established and extensive, funded, privately managed retirement system covering the majority of employed individuals, but not on the basis of legislated contribution
- a variety of tax-efficient top-up options for individuals to add to their retirement saving

This looks very much like a three-part system. We should not be deceived: South Africa does not have a retirement savings environment consistent with the World Bank's definition of a three-pillar system. I would suggest two important differences.

- The social security system is pitched at a level that fends off poverty rather than providing substantially for old age.
- The occupational system is not mandatory and preservation of savings until old age is not required.[57] Recent statutory developments have been aimed at ensuring fair treatment of individuals leaving a job early rather than ensuring adequate coverage at retirement.

According to the (current) conventional theory described in section 2.4, South Africa's retirement savings system is patchy: pillar one is inadequate; pillar two really doesn't exist; pillar three is extensive and successful, but cannot be relied upon to provide security of retirement benefits. Preservation of retirement savings is not compulsory and poor security of job tenure is likely to ensure that the status quo remains for some time to come. The danger is not that the "lifetime employed" retire with inadequate retirement savings, but that the "occasionally employed" arrive at old age having saved nothing.

The Smith enquiry (South African Government, 1995) refers to the disappointing levels of lump sum and pension benefits being received by fund members. Taylor (South African Government, 2002) refers to concerns regarding the impact on post-retirement prosperity of the current rules allowing withdrawal of pension fund accumulations prior to retirement. Both of these investigations urge consideration of special arrangements for the informal sector and poor working class.

South Africa has a successful formal savings environment and highly lauded social security safety net, but this doesn't mean that the system as a whole can be described as successful. The Taylor commission points out that, despite these systems, 60% of South Africa's poor receive no social security transfers (South African Government 2002:16).

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[57] *If these conditions were met and if employment rates were higher, the South African occupational retirement fund system would fulfil the requirements of the second pillar, as set out in the World Bank's Averting the Old Age Crisis (1994).*

4 MODELLING AND MEASURING CHARGES

In which the framework for assessing lifetime charges is presented and discussed.

In this part of the paper, I discuss the types of charges that need to be considered and the options available for modelling these charge types to produce summary statistics and to enable meaningful comparison across product lines.

Are we interested in charges or in costs? The former concerns the actual levies, administration fees, or policy deductions that reduce the retirement savings of an individual over their lifetime. The latter refers to the expenses incurred by the provider of the administration or investment service. For any given saver, charges and costs are unlikely to be the same. Over time, however, charges in aggregate are likely to match actual costs reasonably well, assuming that competition drives down profit to roughly equivalent levels amongst providers.

Regardless of these arguments, since the objective of the research is to determine the impact of these expenses on the retirement savings of the individual, measuring charges is more important than determining the costs incurred in provision of the services. The focus of this study, for this reason, is on the actual charges levied for services offered.

4.1 Types of charges

Charges may be imposed in a number of ways. To provide standardised summary figures, we need to recognise the variety of charges and their impact on total cost.

> *Charges on long-term financial products, including pensions, are levied in many different ways. Some are one-off fees, usually a fixed sum payable up-front, although some initial charges can be proportional to contributions in, say, the first year. Other one-off fees are payable at the end of the term … [other] fees are ongoing. They can be a fixed fee per period, a percentage of contributions or a percentage of the assets in the fund. (Whitehouse 2000:10)*

In the same paper Whitehouse goes on to derive the impact of a variety of charges on the future value of a fund build-up. Interested readers are referred to the mathematical derivation in his paper.

The most common types of charges experienced in our analysis are:

- for life office products: a fixed monthly deduction, a percentage of each contribution[58] and an annual percentage of the assets[59], though a fixed inception fee also occurs
- for unit trust products: a percentage of each contribution and an annual percentage of the assets[59]
- for retirement funds: an annual percentage of the assets[59] for asset management and regular annual costs for administration that are expressed as a percentage of assets, a percentage of contribution or a percentage of the salary payroll on which the contribution calculation is based

Comparison across these channels is difficult. In section 6 of this paper, I first analyse the charges within each channel using the model described in this section. Then I summarise the results showing how overall costs depend on the selected channel.

4.2 Scope of Measurement

Charges in financial services are complex. Not only are there a large variety of charges, but also some of them are explicit and some are implicit. An explicit charge is one that is clearly levied and generally easily measurable, R6.00 per month policy fee, for example, or 1.25% of the value of the assets per year. Implicit charges are absorbed into the asset pricing and are indirectly paid for by the policyholder, but measurement is difficult or impossible.

All equity trading, for example, results in costs, but these costs are seldom explicit, reflected instead in a reduction to portfolio value or a reduction in the price of units of a unit trust account. Generally speaking, higher levels of trading result in higher implicit charges, but these are seldom notified to the end user and their impact goes unknown and unnoticed.

Though this study is not intended to measure implicit charges, some of these are:

- Trading costs, which include broker fees, stamp duty and the bid-offer spreads common to securities exchange shares.[60]
- Alteration costs, the charges resulting from interrupted or altered patterns of saving. The complexity of dealing with a variety of product types and channels is challenge enough. Attempting to model changes to the savings pattern introduces too much

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[58] The relevant percentage is seldom the same for all purchasers of a particular product, varying sometimes by the term of the policy or the level of the contribution.

[59] Commonly deducted monthly.

[60] These are captured to an extent in the so-called statutory fee of 0.70% annual management charge that reflects these costs, but this fee is nearly the same for all accounts and represents an allowable deduction, not a clear reflection of actual costs.

difficulty and the potential for misrepresentation. I have not tried to model the cost of alterations.[61]

- Costs arising from what I call protection against anti-selection, for example annuity purchases. Typically, the mortality calculations of the insurer for pricing the annuity allow for some degree of anti-selection by the purchasers. Those responsible for pricing assume that there is a natural bias and that individuals with longer life expectancy are more likely to purchase annuities. Insurers are conservative in their estimates and annuitants lose out as a result.[62]

The study is also not intended to cover the annuitisation process or the period after retirement. The main reason for this is that there are a large variety of options available to South African retirement savers on reaching retirement age. Most of these options are open to all channels of saving. Not only does this add further complexity to the analysis, but it also smudges the distinction between the three major savings channels, the pension fund, the individual life policy and the unit trust arrangement.

As pointed out by Murthi *et al* (1999), this is consistent with the approach adopted by most investigations, but that does not mean that it is ideal. Their paper appears to stand out in its efforts to quantify the great variety of costs to which retirement savers are exposed and is discussed in more detail in the literature review of charges investigations, in section 5.1.

4.3 Options for Measurement

Whitehouse (2000) and others[63] consider the options for measuring charges. In this section, I present three of the most useful measures and discuss the advantages and disadvantages of each. I have not carried out sensitivity testing on financial assumptions because the difficulty of comparison across savings channel renders this testing spuriously accurate. See Whitehouse (2000) for more details. However, for each part of the analysis of South African products, sensitivity testing has been carried out and is discussed in section 6.

Reduction in yield

The reduction in yield is the percentage point reduction in annual return over the period of saving that is equivalent in overall impact to the erosion of value due to all charges.

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[61] Refer to Murthi et al (1999) for a study of the potential impact of these costs in the United Kingdom environment. The authors estimate conservatively that at least 15% of value is lost in alterations over a lifetime of retirement saving.

[62] Murthi et al (1999) estimate this effect to cost annuitants in the region of 10% of value. This includes an allowance for the charges levied at the point of conversion to an annuity.

[63] Interested readers are referred to Murthi et al (1999), James et al (2001), Devesa-Carpio et al (2003) and Diamond (1999).

A few examples of the impact of various charges on the reduction in yield may help with understanding.

- Percentage of assets: charges calculated as a percentage of assets are equivalent to the reduction in yield. For a contract with no other charge types, the reduction in yield is the same as the percentage of assets charge, regardless of other assumptions like investment return and contribution growth rate.
- Percentage of contributions: the relationship between a percentage of contributions charge and the reduction in yield is more complex and depends on the other assumptions used. The most important determinant of the relationship between the charge and the reduction in yield is the term of the policy: the longer the term the lower the reduction in yield for a fixed percentage of contributions.[64,65] Impacts are also not directly proportional. With all other assumptions unchanged, for example, a 10% contribution charge results in a 0.69% reduction in yield over a 30-year term, while a 20% contribution charge is equivalent to a 1.48% reduction in yield.[66]
- A fixed policy fee impacts the reduction in yield in proportion to the premium size and it operates in the same way as a percentage of contributions deduction, unless there are periods of interruption of contributions.[67]
- Fixed initial and final charges have more complex impact on the reduction in yield. I have seen only one example of a fixed initial cost. Final costs are more common, often in the form of a cost recovery on early termination, but are outside of the scope of this research.

The reduction in yield measure has reasonable intuitive merit, as many people understand expected annual growth and would also understand the corresponding effective reduction to this growth. However, quoted alone it tends to put charges in a positive light as these reductions appear to be swamped by high expected investment returns. Behavioural finance suggests as well that consumers tend to be over-optimistic about future investment returns, which serves further to put asset-related deductions in a less negative light. The expense measure may also be criticised for hiding the real impact of charges over an extended period of saving (refer to footnote 68 for further details).

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[64] This is because the reduction in yield "operates" on a pool of assets that, as a multiple of the annual contribution, grows over the term of the saving.

[65] Other assumptions have much lower impact. Reducing the expected investment return increases the reduction in yield for a fixed percentage of contribution charge because the reduction in yield operates on a pool of assets that doesn't grow as rapidly, but the impact is small. The reverse applies to a reduced rate of increase in contributions (often a fixed percentage of salary) because, while the asset base grows more slowly, charges deducted are impacted to a greater extent by the lower contribution growth rate. Again, the impact is much smaller than changes to policy term.

[66] Other relevant assumptions for these calculations: contribution growth 7% pa and investment return 10% pa.

[67] The assumed rate of increase of fixed policy fees will also have a small impact if it is not identical to the assumed rate of growth of the contributions themselves.

Reduction in premium

The reduction in premium is the percentage reduction to each premium over the lifetime of the saving that is equivalent in overall impact to the erosion of value due to all charges.

Again, it may help to consider the impact of actual charge levels on the reduction in premium measure:

- Percentage of contribution: the relationship is simple and direct. A contract with charges expressed only as a percentage of contribution will have the same reduction in premium.
- Fixed regular deductions: where contributions are payable throughout the period of saving and inflation of fixed costs is in line with contribution increases, the relationship is simple and depends on the fixed cost relative to the contribution.
- Percentage of assets: here the relationship is the inverse of the impact of percentage of contribution charges on the reduction in yield. The higher the charge, the higher the reduction in premium, though the proportional impact on the reduction in premium decreases with increasing charge.[68] Most significant is the impact of the saving term: the longer the term, the greater the impact of the charge as measured by the reduction in premium.

Reduction in premium is in many ways more intuitively powerful than reduction in yield because consumers are better able to relate to an immediate deduction from their contribution as opposed to an ongoing reduction in the effective annual return. This approach also better reflects the impact of annual deductions from a growing asset base.[69]

One situation in which the reduction in premium approach might lose its intuitive attraction is in the scenario of discontinuous contributions, common in the South African retirement environment where employment is often interrupted. The intuition of an equivalent percentage of contributions fails where charges continue during the periods of no contribution, as they usually do. The resulting reduction in premium percentage is higher than it would otherwise have been.

Charge ratio

The third charges measurement considered is called by many the charge ratio, but it could just as easily have been called reduction in maturity value.

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[68] A 1% of assets annual management fee is equivalent to 14.13% of every premium over a 30-year policy and a 2% fee equivalent to 25.90%, assuming contribution growth of 7% pa and investment return 10% pa. The corresponding figures over a 40-year policy are respectively 18.94% and 33.70%.

[69] This charge can hardly be described as a hidden cost, but few savers consider the rand-cent impact of a percent of assets charge and, as pointed out before, most would consider it in the context of the expected or actual growth in asset value for the same period.

Whitehouse describes it as:

> *… one minus the ratio of the accumulation net of charges to the accumulation without charges… (Whitehouse, 2000:13)*

It reflects the impact on the maturity value. This also has intuitive sense about it because it demonstrates to the saver how much their retirement lump sum or resulting annuity is affected by the charges.[70]

The charge ratio is in fact the same as the reduction in premium approach and therefore shares the advantages and disadvantages of the reduction in premium method. Perhaps intuitively it brings a different slant, but for the purpose of our analysis is no different.

What to use?

Researchers tend to use the measure most closely resembling the actual structure of charges dominating in reality. Latin American analysis, for example, will usually quote reduction in premium, or charge ratio, because the majority of providers are restricted to, or choose to restrict themselves to premium-related charges. Unit trust analysis usually quotes annual charges based on assets, again because the industry operates in this way. The annual management charge ceiling on the newly launched Stakeholder system in the United Kingdom suggests measurement consistent with this approach.

The two classes of charges are not equivalent and are sensitive to assumptions, particularly the term of the saving and the level of contribution. Comparison of very different types of contract must acknowledge this sensitivity and in my analysis both sets of charges are calculated and quoted in any situation, seeking to ensure consistency of underlying assumptions. As shall be seen, making comparison between the charges of very differently structured products is not easy.

This approach is consistent with the methodology adopted by Whitehouse (2000) in his wide-ranging comparison of the charges in thirteen different countries. He suggests that the robustness of the measure is the most important criterion and that using both measures to gain a clear picture is often unavoidable.

> *Murthi, Orszag and Orszag (1999) contend: 'Although expressing fees in terms of annual basis points may be most familiar to investors, that form is not necessarily the most insightful'. …*
>
> *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. (Whitehouse, 2000:25,26)*

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[70] *Note however that the process of converting the retirement accumulation to an annuity or purchasing an alternative product is not included in the analysis. The charge ratio effectively considers the impact on the accumulated savings the instant prior to their maturity.*

4.4 Description of Model

I have developed a relatively straightforward model to summarise the impact of charges. It is more appropriate in this context than the formula method used in Whitehouse (2000) and repeated in Devesa-Carpio *et al* (2003), as it is more flexible and allows better calculation of the impact of the variety of charges that I have encountered, particularly under individual life policies.[71] The spreadsheet has been checked for accuracy by an actuary.[72]

Figure 8 shows the inputs page of the spreadsheet. The model is in essence a straightforward monthly cash flow projection. It has two types of underlying assumptions and a set of charges.

- The *Individual assumptions* set parameters specific to the saver, the term of saving, and the level of contribution, through the salary and contribution rate mechanism. The model also allows for a lump sum at the beginning of the term.
- The *Model assumptions* cover economic parameters, the choice of which is discussed in section 4.5.
- The *Charges assumptions* are designed to cover the range of charges that might occur. Some of these charges have not been encountered in the range of products studied.

The scenario below depicts a ten-year policy with monthly contributions starting at R200.00 and growing at 7% per year. Policy fees are charged every month of R6.00 and an additional 3.5% of the contribution and 2% annually of the accumulated fund are added as charges. The fixed charges are assumed to grow at 7% annually.

The model is run with two complete sets of charges and two corresponding projections of benefits. The *actual* set is used to store the charges being analysed. The *shadow* set is reset to zero before each calculation and then the required measurement factor is varied to equate the maturity values given by the *actual* and *shadow* charge sets.

In this case, the charges described above are equivalent, given the other assumptions, to a 3.45% reduction in yield only. Both sets of charges project a maturity benefit of R45 974 at ten years.

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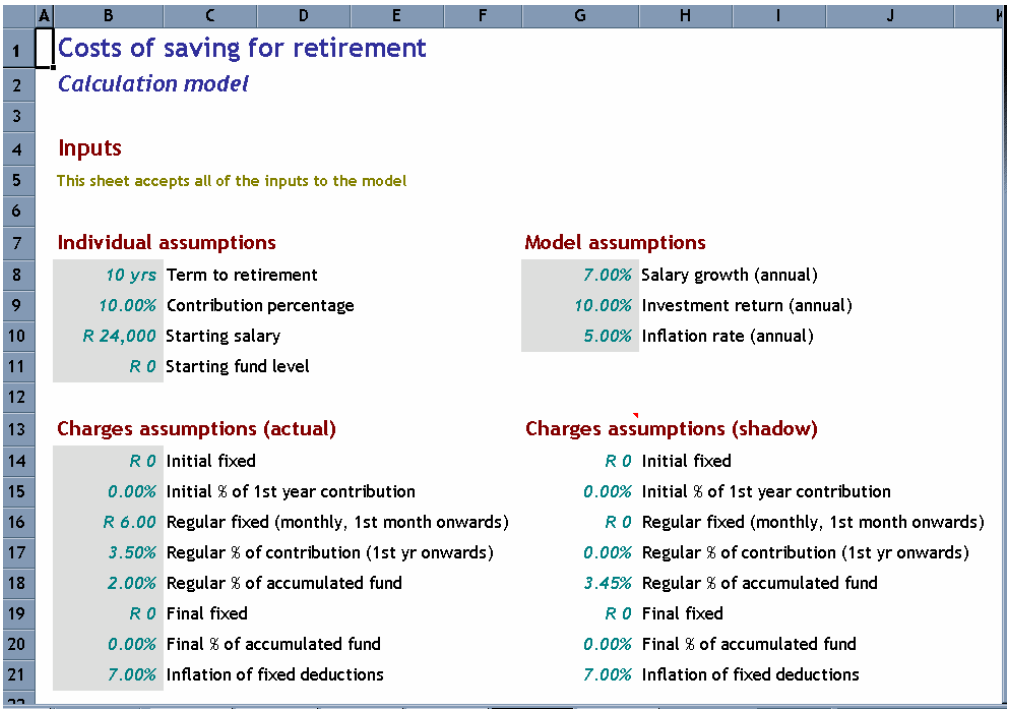
[71] For example, most policies impose a monthly rand deduction called a policy fee. This is a relatively small amount, but is rarely fixed for the duration of the policy. Inflationary increases to the policy fee are more easily modelled through the spreadsheet than through a formula.

[72] My thanks to Carel Wandrag for his assistance in this regard.



Costs of saving for retirement

Calculation model

Inputs

This sheet accepts all of the inputs to the model

Individual assumptions		Model assumptions	
10 yrs	Term to retirement	*7.00%*	Salary growth (annual)
10.00%	Contribution percentage	*10.00%*	Investment return (annual)
R 24,000	Starting salary	*5.00%*	Inflation rate (annual)
R 0	Starting fund level		

Charges assumptions (actual)		Charges assumptions (shadow)	
R 0	Initial fixed	*R 0*	Initial fixed
0.00%	Initial % of 1st year contribution	*0.00%*	Initial % of 1st year contribution
R 6.00	Regular fixed (monthly, 1st month onwards)	*R 0*	Regular fixed (monthly, 1st month onwards)
3.50%	Regular % of contribution (1st yr onwards)	*0.00%*	Regular % of contribution (1st yr onwards)
2.00%	Regular % of accumulated fund	*3.45%*	Regular % of accumulated fund
R 0	Final fixed	*R 0*	Final fixed
0.00%	Final % of accumulated fund	*0.00%*	Final % of accumulated fund
7.00%	Inflation of fixed deductions	*7.00%*	Inflation of fixed deductions

Figure 8: Input screen of the calculation model

4.5 Choice of parameters

Neither of the charge measures are particularly sensitive to the choice of financial parameters, but it makes sense nevertheless to select parameters that are sensible and likely to remain appropriate for some time to come. The choice of parameters has been guided by the following criteria:

- Parameters need to be appropriate to the long term, because saving for retirement is a long term process, but without being inappropriate to the current environment.
- The differences between parameters are more important than the nominal values.
- Parameters must be reasonable in the context of the South African saving environment but should be, as far as possible, consistent with the corresponding parameters used by other researchers, to make possible a fair comparison of results.

The following financial parameters have been used in all of my calculations:

Table 1: Model parameters

	Annual rates
Inflation rate	5 %
Salary growth	7 %
Investment return	10 %

The inflation rate takes into account South Africa's existing inflation targeting policy and the environment of lower inflation rates globally. Real salary growth of 2% and a real investment return for an equity-rich balanced portfolio of 5% take into account the margins experienced in the past and expected in future.

Murthi *et al* (1999) use the basis for the Minimum Funding Requirements, which specifies an inflation rate of 4%, equity returns of 9% nominal and wage growth 6% nominal. Real returns and salary growth are the same for my model. This shows up my approach as perhaps a little ambitious on the investment returns side, since I am assuming a balanced portfolio.

James *et al* (2001) use assumptions in line with these sets. In real terms, they use annual wage growth of 2% and annual interest rates of 5%.

Some may suggest that mortality should form part of the analysis, particularly as it is likely to affect life policies more than other types of arrangement. Quite apart from the fact that mortality significantly complicates analysis, I have assumed that its impact is roughly neutral and that benefits paid on death are approximately to the fund accumulated at that time in whatever vehicle is used by the saver.

If mortality were to be built in to the modelling, then similar arguments may be used to extend the modelling to include voluntary withdrawals and surrenders. Again, the simplifying assumptions are that most arrangements pay an amount reasonably in line with the accumulated fund net of charges and that the effect of charges at the point of interruption is unlikely to be significantly different from the corresponding effect over an uninterrupted period of saving.

5 LIFETIME CHARGES: INTERNATIONAL REVIEW

In which the literature covering the administration costs of retirement saving around the world is summarised, completing the platform for the analysis of charges in South Africa.

> *The U.S. Advisory Council on Social Security estimates that, under plausible assumptions, the additional administrative costs of a decentralized system absorb about 20 percent of a pension accumulation over a 40-year career (Orszag, 1999, page 33). (Barr, 2000:26)*[73]

Clearly, cost is influenced by design, voluntary or mandatory, centralised or decentralised. The purpose of this section is to develop a picture of the range of charges experienced by retirement fund savers across a variety of systems. The number of studies focusing on charges and expenses is not large, so data is scanty, though it is growing.

One consequence of the sparse data is that not all practitioners calculate both reduction in yield and charge ratio. As a point of reference, the often-quoted comparison of the two is that, over a 40-year savings period, a 1% annual reduction in yield is approximately equal to a 20% charge ratio, or a one-fifth loss of retirement savings.[74]

Researchers also use various financial assumptions for their calculations. As I have pointed out already, the ratios are not very sensitive to variations in financial assumptions, which in turn I have found to be relatively small. Unfortunately, it is not always clear what assumptions researchers have used to calculate the quoted ratios and this prevents a more rigorous analytical approach to the comparison of results across countries.

After summarising the research on a number of countries, I present some of the suggestions put forward by writers regarding the ways in which charges and expenses might be managed or reduced.

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[73] *The emphasis is in the original. The full reference in the Barr paper is*

Orszag, Peter, 1999, Individual Accounts and Social Security: Does Social Security Really Provide a Lower Rate of Return? (Washington: Center on Budget and Policy Priorities). Available via the Internet: http://www.cbpp.org

[74] *On the standard assumptions used in my model (10% investment return and 7% contribution growth), I calculate a charge ratio of 18.94% for a 1% annual percentage of assets charge.*

5.1 High-income OECD countries

I start by considering the results of a number of research projects referring to five OECD countries, the United Kingdom, Australia, the United States, Sweden and Italy.

United Kingdom

Analysis of the voluntary individual accounts sector in the United Kingdom (UK), the Personal Pension environment, suggests a charge ratio of approximately 25% or a reduction in yield of between 1.2% and 1.4%.

The most comprehensive assessment of the UK environment appears to have been carried out by Murthi *et al* (1999). They estimate a charge ratio in 1998 of 25% and suggest that this has been falling from close to 30% over the previous six years.

They go on to suggest that total costs, implicit and explicit, erode around 43% of workers' benefits. As discussed in section 4.2, their analysis comprehensively considers all factors that may reduce benefits, including transfers and conservatism of annuity pricing. I have not seen another study that carries out analysis in this way, leaving this figure interesting but not particularly useful for comparison with other environments.

The authors suggest that asset management provides relatively good value, accounting for around 15% of total costs, and that business acquisition costs, particularly commission, are key drivers of total charges to consumers.

The analysis of Murthi and her colleagues is confirmed by a number of independent studies in the United Kingdom. Whitehouse (2000) quotes Government Actuary research giving an overall cost ratio of 25% and reduction in yield of 1.3% and Money Management surveys giving a cost ratio of 23% and a reduction in yield of 1.2%, though the surveys show a considerable range of costs.[75] Devesa-Carpio *et al* (2003) quote a cost ratio of 25% and reduction in yield of 1.33%.[76]

Murthi *et al* (1999) report on the initial outputs of a study into the occupational pension scheme environment in the United Kingdom. They find that occupational schemes are unexpectedly expensive to run and that overall cost ratios are in the region of 20%, not much lower than for personal pensions, even though investment management fees to this sector are significantly lower. They point out that there are significant economies of scale, because of the high level of fixed costs, and that members of smaller schemes consequently experience cost ratios closer to the 25% in the personal pensions environment.

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[75] *Whitehouse (2000) shows a distribution of pension charge ratios of 15% to 33%.*

[76] *Compare this with the maximum annual charge on assets under Stakeholder of 1%.*

Australia

As set out in section 3.1, Australia depends on the private sector for management of the thriving mandatory retirement savings of its citizens, but it has successfully developed an extensive voluntary system in addition.

In many ways Australia provides the ideal measurement environment, thanks to relaxed regulations and the wide variety of vehicles available to retirement savers. Mitchell & Bateman (2003) have carried out multivariate analysis on the full range of providers to determine the impact of a number of factors. They quote a mean cost of 1.08% of assets but stress the large range, some savers paying up to 4% of assets annually.

Perhaps the most useful result of their analysis is presented in a table summarising the rough impact of charges on a cost ratio basis, according to their calculations.

Table 2: Charge ratios in Australia

Plan size	Employer-sponsored defined contribution	Employer-sponsored defined benefit	Retail
Small	15 %	21 %	28 %
Medium	12 %	16 %	22 %
Large	5 %	7 %	-

Mitchell & Bateman (2003:9-10)

Most workers in Australia are members of collective schemes known as industry funds, or of master trusts, which are individual pension accounts, what Mitchell & Bateman refer to above as "retail". Whitehouse (2000) provides insight into the impact these two different arrangements have on retirement savings. His analysis shows a charge ratio of 11.2% and reduction in yield of 0.51% for industry funds, but for master trusts, corresponding figures of 35.5% and 1.91% respectively.[77] He points out that the industry funds are cheaper not only because of the way in which they are arranged, often closed to new members and with zero marketing costs, but also because they offer a lower level of administrative support and a more restricted range of ancillary products.

Chant West (2003) also demonstrates significant differences in fees across fund types. The calculation methodology used in this study may be slightly different but indications are that the ranges suggested in the Whitehouse study are still appropriate. The study quotes annual fees, roughly equivalent to reduction in yield, of between

- 0.5% and 0.6% for the largest industry funds, with over 100 000 members each

[77] *Devesa-Carpio et al (2003) compute a charge ratio of 35.5% and reduction in yield of 2.09% for the master trust savings mechanism.*

- 0.8% and 1.0% for large employer-sponsored master trusts
- 1.2% and 1.9% for smaller employer-sponsored master trusts, depending on the size of the fund overall and average account balances, with commission adding typically 0.3% to 0.5% where it is paid[78]

United States

A detailed study of the cost experience in the United States (US) has not been carried out, but a few references to various aspects of the US savings environment are useful.

James *et al* (2001) use the US retail mutual fund environment as a benchmark to understand the significance of costs elsewhere. They point out the difference between reported expense ratios, covering investment, distribution and professional service costs, and total investor costs, which include actual trading costs and brokerage fees.[79] Unweighted industry averages for these costs are an annual 1.28% of assets for reported expense ratios and 1.85% for total investor costs.[80] The authors point out that significant economy of scale exists. This is demonstrated by the corresponding expense figures weighted by assets under management, which are 0.91% and 1.43% respectively.

James and her co-authors quote institutional fund charges at around one-half of those in the retail market. They go on to quote fees in passive funds at approximately one-third of actively managed funds, but point out that these may be kept artificially low by providers who know that cost is a significant issue to purchasers of passively-managed mutual funds. Typically, these providers inflate the charge levels of funds not sensitive to price in order to subsidise price-sensitive funds.

In their analysis of the industry, the authors point out that 43% of all costs are allocated to marketing budgets and question the usefulness of this allocation to the consumer.

> *We hypothesize that competition through marketing rather than through price cuts may be a consequence of high volatility and the resulting high noise-to-signal ratio that makes it difficult for investors to distinguish between random luck versus systematic skill and low costs until many years of observations have elapsed. … [Mutual funds] spend on marketing, pointing to their lucky returns, rather than cutting costs and price. (James et al, 2001:19)*

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[78] *The study suggests that costs for retail personal funds may be as high as 3% annually, but comparison is difficult because the calculation covers a shorter period of five or ten years, increasing the impact of up-front costs. Commission contributes between 1% and 1.5% of the 3% total cost.*

[79] *Trading costs are an example of hidden costs of investment referred to earlier in this paper, section 4.2. They may be seen as absorbed by unit holders and netted out of funds' gross returns.*

[80] *Diamond (1999) quotes somewhat higher figures of 1.49% of assets, excluding brokerage, also for 1997. He points out that charges have fallen from a level of 2.25% in 1980, which suggests either or both of greater investor awareness of charges and economies of scale.*

The need to find ways to reduce marketing costs is a theme that echoes through the literature.

Fornero *et al* (2004), writing on the charges in the Italian system, refer to the United States as a benchmark measure. They quote an annual equivalent charge of between 1% and 1.5% for an actively-managed voluntary pension investment.[81]

The federal Thrift Savings Plan (TSP) available to public sector employees, offers an interesting example of a system with very low costs through simple design. Only five investment funds are available to savers. The right to manage the portfolios for each fund are auctioned every two to four years and the auction works on the basis of price, that is, management fee. Furthermore, this system is exceedingly large with 2.3 million participants and $65 billion in assets by 1998 (James *et al*, 2001), which allows very low costs.

Record-keeping and communication costs under this system are fairly consistent at $20 per year per member and investment costs are no more than a few basis points, giving a total cost to members in 1998 of 0.11% of assets.

Clearly this system has features that cannot be replicated elsewhere, notably its sheer size. Unquestionably, however, design contributes to low costs, hence reduced erosion of retirement savings. The limited choice may be widened in due course without significant increase in cost.

Sweden

Planners of the Swedish reform took considerable care to protect the retirement assets of workers saving in the mandatory individual account pillar, bearing in mind that economy of scale would be difficult to achieve with a contribution rate of only 2.5% of earnings.

They achieved this protection both through a set of maximum charges and through centralised administration:

- Asset managers may charge up to a maximum that is defined by a fairly complex formula that takes into account the size of the fund and the charge levied in the voluntary sector. The system allows additional costs for more complex or specialised funds so that these options are not ruled out for investors who wish to invest in them, but it significantly reduces the scope for marketing. It also ensures that the benefits of gaining assets under management are passed back to the consumer, not maintained by the manager.[82]

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[81] The authors appear to refer to an open pension plan structure. This would offer access to individuals but at broadly wholesale cost efficiency. Refer to Fornero et al (2004) pages 3 and 15.

[82] See Whitehouse (2000) and Palmer (2000) for a full description and justification of the approach.

- A clearing-house approach is used. Contributions to be managed by a given manager are bundled centrally and passed on to the manager without reference to the individuals that have selected that manager for their investment.

Whitehouse (2000) suggests a fee in the region of 0.75% of assets for large managers, around half of the equivalent costs in the mutual fund market. James *et al* (2001) give results that are consistent with Whitehouse's, but express them in another way, postulating a saving of between 0.70% and 1.00% of assets per year.

Italy

Fornero *et al* (2004) have reported on a study of costs in Italy's third pillar savings environment.

Italy's third pillar was launched early in this decade as part of the reforms of the 1990's, with the intention of stimulating voluntary saving to supplement the (unsatisfactory) social security system. The third pillar has two main components: a number of open pension funds offering defined contribution savings; and a range of products called personal insurance policies, akin to South Africa's retirement annuity concept.

Following the convention of other researchers, the authors calculate a charge ratio and an annual reduction in yield, but because these products are taxed in the accumulation phase under Italian laws, they adjust their figures to make them internationally comparable. They quote an equivalent loading and an equivalent annual charge.

Table 3: Costs in Italy's third pillar system

Average (standard deviation in brackets)	**Equivalent loading**	**Equivalent annual charge**
Open pension funds	28.4% (4.3%)	1.46% (0.26%)
Personal insurance policies	42.7% (8.8%)	2.47% (0.67%)

Fornero et al (2004:4)

The analysis suggests a remarkable dichotomy between these two product lines, with the open pension funds coming in much cheaper and with less variation. The authors point out that differences in regulatory structure make comparison difficult and that the industry is very young, but express themselves as unable to explain the scale of the differences. They provide three possible explanations.

- Insurers may have been particularly risk-averse in their pricing in a young market.
- Insurers provide more choice and flexibility to policyholders than is available in open pension plans.

- Charges in the open plans are more homogeneous, allowing straightforward comparison *and a gradual convergence and an overall reduction in fees* (Fornero *et al*, 2004:20).

While South Africa doesn't have open defined contribution funds, the study provides a number of interesting parallels to the South African situation.

5.2 Latin America

The recently emerged Latin American systems have enjoyed a great deal of attention from researchers interested in the behaviour of charges in a free market individual account environment.

Chile

Chile's groundbreaking retirement system is described in section 3.2. Their approach is rare in its almost complete dependence on individual accounts managed by the private sector for the prosperity of its citizens in old age. As a result, overall cost-effectiveness is very important to the participants in the system.

Chilean funds are permitted to charge a combination of a percentage of contributions and a fixed regular fee. All of the funds except one have a fixed charge, but this is set at a low level, averaging US$1 a month (Whitehouse, 2000).

The charges levied by Chilean funds have changed over time. Not only has the system matured, providing growing assets under management and reducing concerns about financing initial costs, but policy interventions have changed the landscape. In 1988, for example, the annual management charge levied as a percentage of assets was abolished. Fixed and percentage of contribution charges were raised by providers in response, but subsequently dropped again under competitive pressure. Chile has experienced a steady reduction in charges. James *et al* (2001) quote a fall from 9% of assets in 1982 to 1.36% in 1998. These charges are now roughly on par with US mutual funds and well below the corresponding charges in the Chilean voluntary mutual fund sector.

Whitehouse (2000) calculates a reduction in yield of 0.88%, or equivalent charge ratio of 17.7%, using figures at the end of 1999. These figures might seem reasonably competitive but this is a mature system with accumulated funds of more than 40% of GDP (Queisser, 1998). Uthoff (2001) describes the level of charges as one of the key problems that needs to be addressed. He suggests that high levels of regulation have resulted in low product differentiation and consequently low elasticity of demand to price. This in turn has led to

Table 4: Charge comparison Latin America (1)

	Number of funds	Reduction in yield	Charge ratio (CR)	CR lowest	CR highest
Argentina	13	1.20%	23.1%	17.4%	27.9%
Chile	8	0.88%	17.7%	14.5%	20.4%
Colombia	8	0.65%	13.5%	11.9%	16.7%
El Salvador	5	0.85%	17.1%	16.1%	18.4%
Mexico	13	1.39%	26.0%	19.3%	35.4%
Peru	5	0.96%	19.1%	18.6%	20.0%
Uruguay	6	0.72%	14.7%	13.2%	15.8%

Whitehouse (2000:28)

Note: Aggregate figures are unweighted

high marketing costs as managers compete to attract affiliates.[83] Furthermore, because charges increase with contribution, competition is highest for the highly paid. Switching between providers reached a peak in 1997. In that year the authorities capped the allowable frequency of switches, resulting in a falling number of sales agents and a reducing switching activity.

Other Latin American countries

Whitehouse (2000) also provides a comparison of the charges in Chile with those in other Latin American countries (see table 4). He makes a number of observations concerning his analysis of Latin American charges.

- Increasing the number of providers does not appear to lead to lower charges. Argentina and Mexico top the charges rankings despite having the highest number of managers.
- The ranges in countries differ considerably, though these ranges are generally greater where there are more managers.
- There appears to be little evidence of economies of scale. Comparison of unweighted figures with the same figures weighted by assets under management (not shown in the above table) would provide such evidence were it present.

He warns against direct comparison of the corresponding charges in these countries because of differences in their rules and environments. Mexico, for example, is the only

[83] *[The] breakdown of costs among AFPs shows that over 45% of total expenditures were used for marketing costs, especially sales commissions … the number would probably exceed 50% if we included staff salaries involved in marketing. (James et al, 2001:12)*

country with freedom of charging structure (Grandolini & Cerda, 1998). The level of maturity of the systems is also different.

Bolivia is not listed with the other countries, because its features are sufficiently distinct to make comparison unhelpful. See section 3.2 for more detail on this system. Thanks to the country's very restricted system of only two managers, an initial monopoly on affiliates, the auction process and the privatisation, costs to affiliates are extremely low. Workers pay 5% of contributions and just under 0.23% on assets, equivalent to a charge ratio of 9.8% or reduction in yield of 0.46% (Whitehouse, 2000). Devesa-Carpio *et al* (2003) quote a charge ratio of 9.5%.

Table 5: Latin American charges (2)

	Charge ratio
Argentina	21.2%
Chile	15.3%
Colombia	14.1%
El Salvador	15.1%
Mexico	17.4%
Peru	23.0%
Uruguay	13.8%

Devesa-Carpio et al (2003:24)

As if to confirm the difficulty of measuring charges, or their propensity to change over time, Devesa-Carpio *et al* (2003) list somewhat different charge ratios to Whitehouse, effective 30 June 2001. See table 5.

5.3 Eastern Europe and the former Soviet Republics

The information available concerning the new mandatory systems in this region is scanty. On the whole, though, it appears as if charges will prove to be fairly low relative to many other parts of the world. In many cases, charges are restricted by statute or regulation, in either form or magnitude. This may reflect concern emanating from the experiences in Chile that some type of control is necessary in order to protect the mandatory savings of workers. A few countries are discussed below.

Poland

Poland allows fees based on contribution and on assets, but no flat charges. Asset fees are limited to 0.05% per month[84]. Contribution charges are not limited, but providers are not permitted to discriminate between applicants in order to attract more affluent savers, though they are allowed to offer incentives to stay with a provider for long periods, through long service discounts.

Levies are in the region of 7% to 9% of contribution and are expected to fall to around 5% in the future (Whitehouse, 2000; Chlon *et al*, 1999). Based on the conservative assumption of 9% of contribution, the charge ratio calculated by Whitehouse is 20.5% and

[84] *This is equivalent to 0.62% per year.*

the reduction in yield 1.05%.[85] At the optimistic end of the scale, with charges starting at 7% of contribution and falling to 5%, the corresponding results are a 17.1% charge ratio and a 0.85% annual reduction in yield.

The Czech Republic

Lasagabaster *et al* (2002) quote operating costs in the Czech Republic of between 14% and 18% of contributions in the voluntary third pillar system, depending on whether the State co-contribution is included or not. I calculate the equivalent reduction in yield at between 0.71% and 0.94% on terms giving similar results to those calculated by Whitehouse.[86] The government co-contribution should probably be excluded as it dampens the impact of charges, which means that the higher charge of each pair is more useful for purposes of comparison with figures for other countries.

Croatia

The authorities in Croatia limit the allowable charges to 0.8% of contributions, 0.8% of assets and a fixed success fee of 25% of real returns (Anusic *et al*, 2003).[87] If administrators do charge at or close to the maximum, these are high charges, equivalent to a 1.4% annual reduction in yield or 15% of contributions in 2015, rising to 20% in 2033. Furthermore, these figures do not include the fees levied by REGOS, the clearinghouse system, that is expected to push these figures to 2% reduction in yield in the long term and as high as 2.5% initially.[88]

Anusic *et al* (2003) go on to point out that, even if the asset fees are revised downwards to 0.4%, half of their current level, Croatia's charges are likely to be high by international standards.

Hungary

Analysis of charges in Hungary's young system is difficult, but Rocha & Vittas (2001) suggest figures of between 7.5% and 11% of contributions. This is lower than in Latin

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[85] Devesa-Carpio et al (2003) calculate a 20.5% charge ratio and 1.06% reduction in yield.

[86] I use the same standard set of assumptions as Whitehouse does – 10% investment return, 7% salary and contribution growth, 5% inflation – and a 40-year savings period. My results are consistently a little higher, by just a few basis points, than those produced by Whitehouse.

[87] The asset maximum will be revised in future and is likely to be reduced as the system matures. The success fee is not negotiable and is designed to encourage performance competition. Fund managers may also levy switching and exit fees.

[88] Equivalence is difficult to establish from the figures provided by Anusic et al (2003), but 2% of assets is roughly equivalent to 34% of contributions for a 40-year saving term, assuming 10% investment return and 7% salary growth. For purposes of comparison with other countries in the next section, I have assumed that not all providers charge at the maximum.

America and they postulate additional charges for asset management and external administration of between 0.5% and 1% of assets per year. On my calculations, this is equivalent to between 16.8% and 27.9% of contributions, or between 0.87% and 1.57% of assets.

The authors suggest that marketing and commission costs have been lower than elsewhere and that sponsors may have absorbed a proportion of costs by providing premises or staff time without charging.[89]

Kazakhstan

The authorities in Kazakhstan have demonstrated their commitment to bold reform, not only by terminating the defined benefit pay-as-you-go system, but also by imposing very tight charging limits on the administrators.

The types of charges allowed are also innovative. Fees are limited to 1% of contributions and 10% of the actual investment return (Andrews, 2001; Whitehouse, 2000).[90] Whitehouse calculates the resulting charge ratio as 11.45% and equivalent reduction in yield as 0.55% and Devesa-Carpio *et al* (2003) agree with these figures.[91] A number of commentators have suggested that these limits are likely to prove too low to be sustainable (Andrews, 2001). Funds have indicated that breakeven membership numbers are likely to be between 100 000 and 150 000. Only one fund has achieved this to date (Whitehouse, 2000).

5.4 Summary

I start by attempting to summarise the figures quoted in this section in order to put into context the research carried out for the South African environment. Thereafter, I list very briefly some of the suggestions made by researchers for controlling costs.

Note that the vast majority of the research refers to mandatory individual account systems, since this is where much of the literature is focused. This makes comparison with South African unit trust and defined contribution funds appropriate, but perhaps stretches

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[89] *This occurs in the South Africa occupational environment as well and complicates my own analysis.*

[90] *An investment return in any year of 10% allows a fee of 1% of assets, for example, and a return of 5% allows a fee of 0.5%. The authors give no detail concerning the treatment of years of negative performance.*

[91] *On the other hand, I don't agree with the figures. I can only replicate the asset related figure by assuming annual returns of 5%, but see no evidence that the charge is based on the real return only. I cannot find a way to duplicate the charge ratio and in all cases, my figures are higher. On my standard set of assumptions, I calculate the equivalent charge ratio and reduction in yield as 19.75% and 1.05% respectively. In my summary table, I have quoted a range of figures.*

the appropriateness of direct comparison to individual life arrangements, on the one extreme and defined benefit occupational systems on the other.[92]

The table below (table 6) is not a scientific summary of all of the information presented above, but a rough indication of the charges in various countries. Figures are rounded to remove the impression of accuracy and they apply to different dates, though all information is as recent as possible. Where researchers have provided a range of figures, I have quoted these, but I have not tried to extend this practice to all countries. Though the figures below are inadequate for purposes of accurate comparison, they are an attempt to provide a reasonably coherent overall picture.

Examination of the table will show that system design is likely to influence charges more than external factors like national prosperity or sophistication of markets. Perhaps contrary to expectation, competition alone does not drive down costs.

> *Competition… only precludes excess rents; it does not ensure low costs. Instead, the structure of the accounts determines how high the costs are. Furthermore, centralized approaches – under which choices are constrained and economies of scale are captured – appear to have substantially lower costs than decentralized approaches. Low administrative costs thus may be possible under an idealized set of accounts – one that involves a centralized approach – but not under a decentralized approach. (Orszag & Stiglitz, 1999)*

This has been confirmed by the experience in the United Kingdom and in Chile.

Techniques for reducing costs

A number of researchers have suggested ways in which the overall costs to savers might be reduced and these are discussed briefly below:

- **Centralising elements of administration** is one way of reducing costs. It introduces economies of scale and allows co-ordination with existing systems, for example, tax collection systems. The clearing-house approach adopted in Sweden and other countries takes this further because fund managers have only one customer. Fox & Palmer (1999a) suggest that, in comparison with overall benefit reduction (equivalent to a charge ratio) of around 25% under the Latin American decentralised administration model, the clearing-house approach reduces total benefits by around

[92] *Some researchers would suggest that comparison to a voluntary unit trust environment is not appropriate. The argument is based on the premise that assets under management in a voluntary environment are generally lower than in the equivalent mandatory landscape, and costs correspondingly higher. This as a fair point. I discuss it in my analysis of results in section 6.*

Table 6: Consolidated summary of charges analysis

	Reduction in yield	Charge ratio	Notes
Mandatory Systems			
Bolivia	0.5%	9% - 10%	*Duopoly subsidised by privatisation*
Australia (industrial)	0.5%	11%	*Equivalent to a group product*
Kazakhstan	0.6% - 1.1%	11% - 20%	
Colombia	0.7%	13% - 14%	
Uruguay	0.7%	14% - 15%	
Sweden	0.8%	15%	*Higher for smaller funds*
El Salvador	0.9%	15% - 17%	
Chile	0.9%	15% - 18%	*Mature system*
Poland	0.8% - 1.1%	17% - 21%	
Hungary	0.9% - 1.6%	17% - 28%	
Peru	1.0%	19% - 23%	
Australia (all)	1.1%	21%	
Argentina	1.2%	21% - 23%	
Mexico	1.4%	17% - 26%	
Croatia	1.5% - 2.5%	27% - 40%	*Based on generous limits*
Australia (master trust)	1.9%	35%	*Wide range of choices offered*
Voluntary systems			
US TSP	0.1%	2%	*Exists in unusual circumstances*
Czech Republic	0.7% - 0.9%	14% - 18%	
Italy (open funds)	1.2% - 1.7%	24% - 33%	*Immature system*
UK personal pensions	1.2% - 1.4%	23% - 25%	*With a very large range (not shown)*
Italy (personal policies)	1.8% - 3.1%	34% - 51%	*Immature system*
US mutual funds	1.8% - 2.0%	31% - 34%	*Total investor costs, unweighted*

Sources: Anusic (2003), Andrews (2001), Chlon et al (1999), Devesa-Carpio et al (2003), Diamond (1999), Fornero et al (2004), James et al (2001), Lasagabaster (2002), Mitchell & Bateman (2003), Murthi et al (1999), Rocha & Vittas (2001), Whitehouse (2000) and my own calculations and approximations.

only 5%, a considerable saving.[93]

- **Developing economies of scale** helps to reduce processing and fund management costs. James *et al* (2001) suggest finding ways to pool accounts and derive the benefit of institutional, as opposed to retail, markets. Whitehouse (2000), on the other hand, points out that there appear to be some limits to the effectiveness of economies of scale,[94] which suggests that they should not be pursued to the exclusion of other objectives.
- **Allowable charges may be limited** by regulation, either to certain types or by putting ceilings on each type of charge. Limiting charges to certain types may make comparison of products easier for consumers. This will not necessarily result in acceptably low costs, as pointed out by Orszag & Stiglitz (1999, see quotation two pages back). Charge ceilings have a direct impact, but are risky as they may be set at levels too high to be effective[95] or too low to allow development of the market[96]. Sweden appears to be the best example of careful charge limitations, but these are complex and complexity alone doesn't guarantee effectiveness. In any case, improved transparency of charges should be sought as a policy objective.
- **Marketing costs may be limited**. From the perspective of the national system, switching between providers is a wasteful activity. To curb this, limits may be placed on marketing spending or, perhaps more effectively, switching may be limited or made more difficult.
- **Limit portfolio freedom**. Constraining portfolio choice and flexibility almost certainly has positive impacts on cost, but it is not necessarily in the best interest of savers. Whether or not this is an appropriate option depends on the characteristics of the market and priorities of the supervisory authorities.
- **Shift costs away from the focus area**. This can be achieved in a number of ways. In the context of a mandatory savings environment, costs may be shifted to the voluntary sector, so that those who can afford to save additional amounts cross-subsidise those who cannot or will not. System set up costs can also be spread over a long period of time, shifting costs to later generations.
- **Cross-subsidies to low-income workers** can be used to shift the burden of charges away from those who can least afford it. This can take place in a number of ways, for

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[93] A detailed discussion of the advantages and disadvantages of the model is not within the scope of this paper. There are drawbacks, one of which is that it takes a long time for funds to find their way to the manager, resulting in a significant period during which market-related returns are not earned on savings.

[94] He refers to studies carried out in Latin America, Australia and the United States that show a variety of results concerning the existence of economies of scale.

[95] Croatia appears to be a case in point

[96] Kazakhstan appears to run this risk, though market development has proceeded fairly well so far. The authorities in the United Kingdom have recently announced plans to raise charge limits on the Stakeholder products launched a few years ago.

example, limiting the structure of charges to exclude fixed fees, or through co-contribution by government without charges on this portion of the total contribution. This could be taken further: Mitchell suggests subsidising the administrative cost or commission of the low-income saver (Mitchell, 1999:31).

Whitehouse (2000), at the end of an excellent examination of charges across a number of countries, makes the point that reducing charges should not be seen as the most important goal of system design. Single-minded pursuit of this goal is likely to compromise some of the other important objectives of the system, public or private, voluntary or mandatory. This point is revisited in section 7 after discussing the analysis of the South African experience.

Though the objective of this paper is to examine charges and their impacts on savings, this should always be seen in the context of other policy-making objectives.

6 ANALYSIS OF CHARGES IN SOUTH AFRICA

In which the lifetime charges of the three channels for retirement saving in South Africa are computed from a variety of sources. Charges for the channels are assessed against one another and against international benchmarks and conclusions are drawn regarding the cost effectiveness of the retirement savings environment for South Africans.

This is the key part of the paper. Having painted a comprehensive background of the variety of national pensions systems and the information available on retirement costs in these systems, I turn now to an analysis of charges in South Africa. The objective is to build as clear a picture as possible of what it costs South Africans to save for retirement.

Three channels, or broad product types, are available to South Africans, all offering tax deductions on contributions. These are:

- occupational retirement funds
- individual retirement annuity policies issued by life offices
- individual retirement unit trust products issued by collective investment companies

Tax complicates the comparison. In all cases, qualifying contributions are exempt from tax at the full marginal rate, though there are differences between channels in the ceilings to the exempted amounts. Assets under management during the accumulation phase are taxed and this may impact the three channels in different ways. Rules concerning the way in which these assets may be invested also differ.[97]

I have not attempted to incorporate these differences into my analysis. This paper is not intended to provide a detailed comparison of the savings channels, but a reasonably comprehensive analysis of the cost features of each.

[97] *Trustees of occupational retirement funds are limited to investing 75% of the assets of the fund in equities, for example.*

6.1 Occupational Retirement Funds

The South African retirement fund environment is complex.

> *Retirement funds in South Africa consist of defined benefit and defined contribution funds (broadly known as pension and provident funds), retirement annuity, umbrella and preservation funds. (Registrar of Pension Funds, 2002:4)*

There is a large variety of arrangements that don't all fall under the regulatory responsibility of the Financial Services Board.

Retirement funds supervised under the Pension Funds Act[98] include the following:

- Those whose head office, or the head office of the sponsor employer, is based outside of South Africa. These funds are exempt from certain provisions of the Act.
- Funds that operate entirely under a policy of insurance issued by a South African insurer. There are nearly 12 000 such funds. There are a number of large funds in this category, but mostly funds in this group are small. The average over all funds for this group is 425 members. Assets per fund average only R16m. In general, actuarial valuations are not required of these funds.
- Self-administered funds, "*that invest their assets with bodies and institutions in the public and private sectors of the economy on their own behalf and to which the provisions of the Act apply*" (Registrar of Pension Funds, 2002:4). The average membership is nearly 900 and assets per fund R116m. There are a little over 3 000 self-administered funds in South Africa. Generally speaking, these funds are required to undertake actuarial valuations.

A number of funds are not supervised under the Act:

- funds for employees of the State and certain parastatals, established by special laws
- the funds of Transet, Telkom SA Limited and the Post Office Pension Fund, all established by separate Acts
- funds that have been established by collective agreements administered by the Department of Labour

The focus of this research is on the so-called self-administered funds, which can be regarded more generally as occupational defined benefit or defined contribution funds. Self-administered funds form the largest pool of occupational retirement funds. This is where the Registrar also puts the weight of his analytical effort. These funds are a natural area for analysis impacting the choices faced by South Africans saving for retirement.

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[98] *Act 24 of 1956, currently being considered for complete revision, adding to the importance of this research.*

Difficulties of analysis

Paucity of information is a problem generic to the retirement fund environment and analysis has proved difficult to undertake.[99] It has not been possible to obtain and analyse data covering every component of the industry. As a result, conclusions are based on evidence gathered from as wide a variety of sources as possible. I am able, at best, to draw tentative conclusions regarding the industry based on this scattering of data.

There are a number of reasons for the difficulties of analysis:

- ***Undisclosed costs***: It appears that not all fees and costs incurred by retirement funds are disclosed, either in fund accounts or in actuarial valuation reports. For example, asset managers sometimes provide performance figures net of fees for the purposes of fund accounts. In these instances, trustees do not publish fund management fees in fund reports or accounts. Perhaps these fees are not regarded as a cost but as a deduction from performance.
- ***Sponsor subsidy***: Costs incurred by the sponsoring employer in support of the retirement fund arrangement, for example management time and human resources administration, are often not passed on to the fund or reported as part of fund accounts, but considered part of the responsibility of the employer. Should these costs be included in this analysis? As they are unlikely to be passed on to members, some would argue that they should not be considered. On the other hand, they may form part of the employer's decision regarding whether to offer a fund and how to split the contribution between sponsor and members. For this reason, it should be acknowledged that these costs exist even if it is difficult to determine what they are. I return to this point in my summary of the analysis.
- ***Information sources***: The Financial Services Board has chosen not to supply detailed information as reported by the funds. A number of consulting firms have suggested that information held by them on behalf of their clients is confidential and others have declined to participate in the study. It would be impractical to attempt to source the information directly from over 3 000 funds and probably subject to significant reporting error. I have attempted to build a coherent picture by analysing information from a variety of sources, like the providers themselves.
- ***Appropriate tools of measurement***: There is no uniform way in which retirement fund costs are described, hence measured. Asset management fees are usually billed as a proportion of assets, sometimes with a performance incentive, while fund administration expenses are frequently expressed as a percentage of payrolls. Smaller costs are often absorbed as fixed rand amounts. As retirement funds are

[99] *Even the Registrar has difficulty publishing clear analysis of the self-administered funds. Of the 3 198 self-administered funds registered under the Act at the end of 2001, for a variety of reasons only 2 528 are included in the statistical information provided with the report.*

heterogeneous, with widely differing characteristics of financial flows, contribution rates and size of membership, it is not easy to summarise this variety into a single acceptable measure.

I trust that this research can be taken further in future, with a complete data set enabling sound conclusions.

Registrar of Pension Funds

The Registrar publishes information concerning fund expenses in his annual report. Table 7 summarises the statistics for self-administered funds published in the 2002 report.

Table 7: Aggregate administration expenses reported by South African self-administered funds (Rm)

Investment advisors fees	1 096
Administration fees	1 091
Consultancy fees	97
Salaries and wages	76
Auditors fees	53
Valuators fees	48
Rent and office expenses	44
Secretarial fees	27
All other fees	372
Total	**2 904**

Registrar of Pension Funds (2003:12)

Note: retirement fund tax is excluded from this analysis.

The total cost is equivalent to 13.1% of total annual contributions or, alternatively, 0.799% of total assets.[100]

Breaking this down, investment advisors fees are equivalent to 4.9% of contributions or 0.302% of total assets. Administration fees and consultancy fees are equivalent to 5.4% of contributions or 0.327% of assets.[101] I refer back to these figures after carrying out more detailed analysis of these costs.

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[100] *Figures provided by the Registrar for self-administered funds are: contributions received R22 178 million (Registrar of Pension Funds 2003:11) and total assets R363 470 million (Registrar of Pension Funds 2003:10).*

[101] *I have combined these figures for convenience: in my analysis of fund accounts, I found that these figures were frequently reported together, making separate analysis impractical.*

The information depicted in table 7 has a number of drawbacks:

- It does not include undisclosed expenses incurred by sponsoring employers, which means that it understates total administration costs incurred in self-administered retirement funds. Anecdotal evidence suggests that this impact could be significant – a number of employers cover their retirement fund expenses completely.
- The information applies only to funds that submitted financial returns. As noted earlier (see footnote 99), a significant proportion of the funds registered under the Act were excluded from the 2001 analysis. The similarity of 2001 and 2002 figures suggests that an equivalent proportion of the data is missing in each case.[102]
- We cannot assume reliability of the breakdown of the total amount into the relevant categories because of the potential for misreporting by funds.[103]

Despite these difficulties, this information represents at worst a useful starting point.

Allowing for administration costs carried by employers and not reported in fund accounts, total administration costs in 2002 are likely to have exceeded 13% of contributions or 0.80% per year of assets.

As consolidated information on retirement fund costs is very difficult to obtain, I have set out to analyse the major components of these costs separately, starting with asset management and following that with administration. Thereafter, I construct a consolidated picture of lifetime savings cost for occupational retirement funds.

Asset management: description of process and data

As already noted, information on asset management costs can be difficult to obtain from the accounts of retirement funds because they are sometimes not disclosed, having been deducted from gross investment performance in the income figures. Asset management fees have been analysed instead using an Alexander Forbes survey of fees quoted by the asset managers themselves. [104,105]

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[102] *Two of the largest self-administered funds are definitely excluded from the 2002 analysis as they changed their year-end dates to dates in 2003 (Registrar of Pension Funds, 2003:5).*

[103] *For example, the Financial Services Board has made it clear to me that the term "investment advisor's fees" covers both independent advice concerning assets and the fees charged by investment managers themselves. This may not be clear to those providing the data and individual funds may report figures differently.*

[104] *The effective date of the survey is 31 December 2001.*

[105] *So called "guaranteed funds", offering smoothed returns, have not been included in the analysis of asset management fees. It can be difficult to separate asset management fees from the charge for the guarantee. Guaranteed funds are also excluded from the analysis of individual life policy charges.*

Table 8 shows a typical set of charges for a South African asset manager.

Table 8: Typical charge levels of South African managers of institutional assets

Amount invested	Annual charge as % of assets
Domestic assets	
Up to R25m	0.65%
On the next R25m	0.55%
On the next R50m	0.50%
On the next R150m	0.45%
On the next R250m	0.40%
On the next R500m	0.38%
Thereafter	0.35%
International assets	1.00%

Note: this is only an example of typical industry practice. The figures are fictitious.

Some managers charge a flat percentage of assets under management irrespective of investment size. More frequently, managers use a stepwise scale of charges that depends on the amount invested and reduces with increasing investment amount, as shown in the example. Some managers charge separately for international assets, while others prefer to build the cost of offshore management into the standard table of charges.

For each manager and, in steps of R10m up to R1bn, I have calculated the effective charge as a percentage of assets. I assume that 15% would be invested in international assets[106] and the balance invested locally at the quoted rates. Table 9 shows, for example, the effective rates at selected asset levels given by the fictitious rates in table 8.

Where managers offer multiple portfolios at different rates, these have all been captured and analysis completed firstly across all available portfolios and secondly, averaged for each manager,[107] to avoid giving a higher weighting to managers with more portfolios.

[106] *This is slightly conservative because 15% is the current legal maximum for international holdings and is not the level at which all South African retirement funds choose to invest overseas. Using 15% is at least consistent. Reducing the international proportion from 15% to 10% would pull down the asset charge for R300m quoted in table 9 from 0.565% to 0.535%, a difference of only 0.03%.*

[107] *The rates for the manager are based on an unweighted average of the rates in their portfolios.*

Table 9: Asset management charges resulting from fee rates in table 8

Amount invested (Rm, total)	Effective annual charge as % of assets
30	0.70%
100	0.63%
300	0.57%
1 000	0.51%

Note: this is only an example of typical industry practice. The calculations are based on fictitious figures.

I considered weighting managers by assets under management and discarded this approach for two main reasons:

- It is possible to obtain figures like assets under management, but more difficult to correctly ascribe these to the relevant portfolios currently open to business. One would also need to decide how to treat closed portfolios.
- It is not clear to me that asset-weighted figures are appropriate to this research. We are looking to gain some sort of sense of the type and range of costs that retirement fund members are exposed to. This is more important than narrowing down the analysis to the single average cost across the industry.

Of 49 portfolios available from 23 different managers, 42 have been included in the analysis. These portfolios were provided by 21 different managers. Only one manager of passively managed portfolios is included in the Alexander Forbes survey and I have discarded these figures. Three portfolios have low basic fees and performance incentives on top of this: I have discarded these portfolios from the sample rather than try to build in assumed fund performance. Three portfolios use an unspecified sliding scale at the large end of the size spectrum and these I had to discard. One manager uses a similar sliding scale at the small end of the size spectrum and I have included it using appropriate estimates of the missing figures.[108]

Analysis has been carried out by portfolio and for each manager, separately for pooled and segregated portfolios[109] and separately for multi-manager and single manager portfolios.[110]

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[108] *Because the missing data applies only to a relatively small first part of the assets under management, errors in the estimates have very small impacts on calculated figures.*

[109] *A pooled portfolio is shared by a pension fund with a number of other funds. Costs are supposedly lower, but flexibility of investment objectives is lost. A segregated portfolio is set up specifically for one client and the trustees of the fund concerned have greater freedom to set constraints and objectives in line with their requirements and to measure the manager against these requirements.*

This analysis may slightly overstate actual costs for large funds, because managers are frequently willing to overrule their own fee schedule and reduce their price by a few basis points to secure the business. I have not made explicit allowance for this, but where the fee schedule states that charges above a given level are negotiable, I have assumed that the actual charge at this level is 5 basis points below the next best charge.[111] I have also limited my analysis to amounts of R1bn and lower because of the uncertainty of costs for very large funds.

Most managers quote a minimum fund size.[112] No attempt has been made to exclude managers at the small end of the scale where the amount invested would be below this threshold. Selective exclusion of managers would distort the analysis because not all managers would be included at each level of assets.

Asset management: results

Table 10 shows, for selected asset size, the industry mean and standard deviation for the 21 managers included in the sample, where the results for each manager are determined as the unweighted mean of the corresponding figures from their respective portfolios.

Table 10: Institutional asset management costs in South Africa, equal-weighted managers

Amount invested (Rm)	Mean annual charge as % of assets	Standard deviation
30	0.69%	0.13%
100	0.63%	0.11%
300	0.56%	0.09%
1 000	0.51%	0.09%

Source: Alexander Forbes and author calculations.

Figure 9 depicts these figures, covering fund sizes up to R1 bn. The graph illustrates the consistent downward curve of charges as assets under management increase. The mean charge falls from approximately 0.70% of assets per year to 0.50%. Around one-sixth of

[110] *A multi-manager invests not in securities but in the funds of other managers. This is referred to also as a "fund of funds" arrangement. Single managers invest directly in marketable securities and property, but not in the funds of other asset managers. This situation is replicated in the retail asset management space.*

[111] *To clarify, I have assumed for example that a manager quoting 0.45% up to R500m and "negotiable" thereafter actually charges 0.40% for all amounts above R500m.*

[112] *Minimum investment amounts vary and are different for segregated and pooled portfolios.*

managers in the survey charge more than 0.10% above the median and a similar proportion undercharge the median by 0.10% or more.[113]

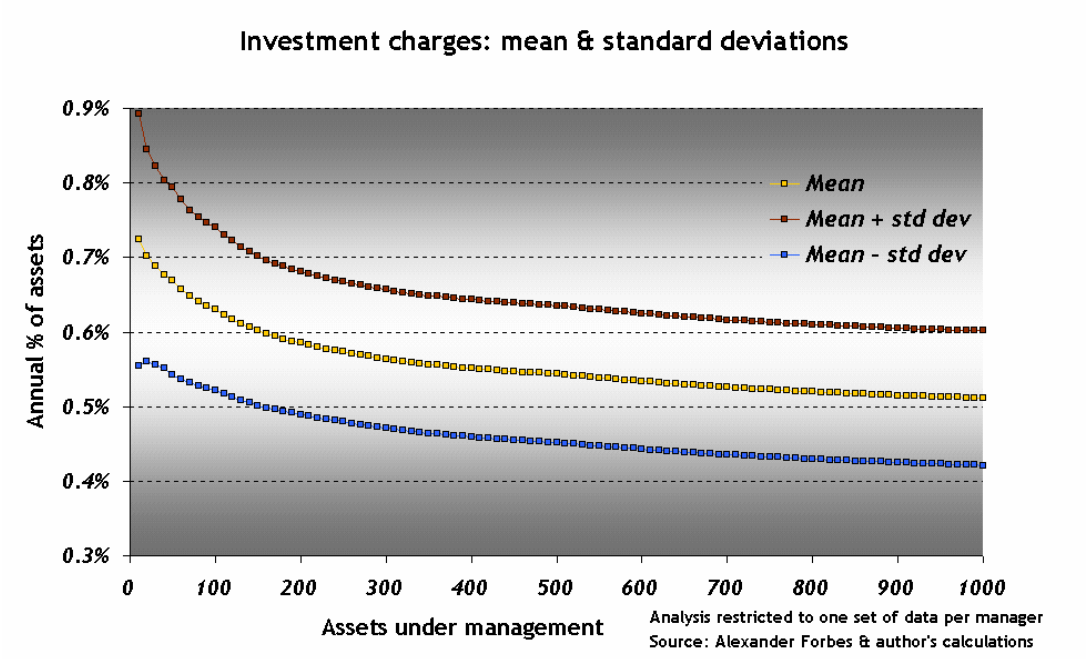

Figure 9 [114]

A number of factors influence asset management fees and table A1 in the appendix illustrates the impact of these factors. The figures in that table illustrate that:

- The difference between equal weighted portfolios and equal weighted managers is insignificant, except for small amounts invested.
- Analysis of the differences between pooled and segregated funds is confused by the fact that many managers offer only one portfolio at the same rates, or have not indicated whether a portfolio is intended for pooled or segregated administration. These portfolios appear in the analysis of both pooled and segregated funds. Despite the overlapping data sets, it is perhaps surprising that the difference between pooled and segregated portfolios is very small. Segregated portfolios are slightly more expensive for small funds[115]. The reverse applies for larger funds, which is slightly anomalous, but may indicate an incentive to funds to move into segregated management arrangements.

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[113] *More detailed analysis of the percentiles shows some evidence of a charging floor of around 0.40% and strengthening price competition for large funds. The gap between the 25th percentile and the 10th percentile narrows with increasing fund size over the range R500m and R1bn of invested assets.*

[114] *Assets under management are expressed in millions of rands.*

[115] *Recall that no attempt has been made to remove portfolios on the basis of minimum investment amount. Nevertheless, where portfolios are clearly identified as intended for segregated funds, costs are higher at the low end of the size scale.*

- There are significant differences between the charges of multi-managers in comparison with the single managers, though these reduce as the size of the portfolio increases.[116]

A final point of analysis to note is that, where managers offer multiple portfolios that differ with respect to their asset mix, there are clear differences in the charges. This analysis has not been formally reported because the data is poor, but is consistent with the patterns observed in the unit trust analysis, where charges are strongly dependent on the mix of assets.

Asset management: summary

The calculated mean institutional asset management cost decreases with increasing fund assets, running from approximately 0.70% of assets per year down to around 0.50%. The standard deviation of charges is around 0.10%, meaning that approximately two-thirds of portfolios have fees within 0.10% of the median for the particular level of assets. Multi-managers charge fees of up to 0.10% more than single managers.

For a self-administered fund of average size of approximately R150 million[117], asset management charges average around 0.60% and most funds of this size can expect to pay between 0.50% and 0.70% per year. Smaller funds might expect to pay up to 0.15 percentage points more and larger funds around 0.10 less.

These figures are considerably higher than the approximately 0.30% reported by the Registrar. Two possibilities exist:

- The Registrar's figures, which are quoted for the industry as a whole, are dominated by very large funds, whose ability to negotiate much lower fees brings down the average for the industry. This is possible, but the reference fund with approximately R150m in assets that I have used to draw my conclusions is the same as the mean fund size in the Registrar's statistics.
- Figures provided to the Registrar significantly under-report investment costs. My scrutiny of fund accounts for the purposes of identifying administration costs (see the next section) suggests that a number of asset managers report investment performance net of costs to their clients rather than providing gross performance and actual charges. The result is that asset management costs go unreported.

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[116] The costs resulting from the additional layer should be offset to an extent by the ability of the multi-manager to negotiate reduced fees from the single managers in which it is invested. This analysis, however, has shown somewhat limited scope for cost reduction through economies of scale. In theory, the manager selection process of the multi-manager also delivers higher investment returns.

[117] The mean size of fund included in the Registrar's statistics on self-administered funds is R149.7 million (Registrar of Pension Funds, 2003:3,10).

There appears to be evidence that the Registrar's figures are significantly impacted by under-reporting. From the analysis in this section, it seems that asset management costs are at least 0.50% of assets, and that allowing also for an advice component would suggest that the total provided by the Registrar, 0.30%, should be approximately doubled to 0.60% of assets, or R2bn. This equates to around 10% of annual contributions.

Administration: description of process and data

Fees for administration are typically charged on the basis of a percentage of the total pensionable salary of members, say 1%.[118] In order to compare appropriately with other products, we need more suitable measures such as percent of contribution or percent of assets. Calculating the former from quoted administration charges would require a contribution rate that, as a percentage of salary, is reasonably uniform across the industry, or at least for those funds employing a particular administrator. And determining such a contribution rate would be difficult.

Instead of attempting these calculations, I have chosen to sample a number of retirement funds, on the basis that the direct approach requires no estimation or assumptions. The heterogeneity of results, discussed later on, confirms the difficulty of estimation using alternative approaches that depend on a number of assumptions to determine cost ratios.

I obtained data from four different consulting firms, covering 242 funds and a total of 127 450 members.[119] I asked providers to give me information directly from the fund accounts on the quoted administration costs for the most recent reporting period. In some cases, actuarial costs had been included with administration costs, so for consistency I requested these costs to be included at all times.

Total costs in rand, costs per member and cost as a percentage of salary are not useful measures, particularly in the context of this broad-based study comparing different product types and different countries. I asked therefore for the total contribution paid into the fund, employer and member, net of the contribution payable to risk benefits[120] and

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[118] *It is worth asking whether this is a fair approach. Are administrator costs related to the size of the client's payroll? Is it right to penalise members of funds paying low contribution rates with disproportionately higher administration charges?*

[119] *I would have liked more data than this, but a number of consulting firms turned down my request for information owing to lack of resources or concerns regarding the confidentiality of the data. The FSB were unable to assist and I felt that the time involved approaching funds directly would not produce the best outcome.*

[120] *The purpose of this exclusion is also to obtain consistency of approach across product types and countries.*

used as my primary measure the ratio of total administration costs (including actuarial fees) to total contributions (net of risk benefit costs).[121]

One of the disadvantages of measuring fees as a proportion of contribution rate is that obfuscation may result from the corresponding relationship between the fees and the contribution rate itself. If the fees were based on payroll, then we would not expect to find a charge ratio that is constant for varying contribution levels. I ran a separate study on the relationship between the charge ratio and the level of contribution and I am satisfied that this relationship, if it exists, is very weak, affecting only the funds with very low rates of contribution.

The data obtained cannot be described as a sample representative of the industry as a whole and figures emerging should be regarded as "anecdotal evidence" rather than "industry analysis". The results are nevertheless useful to compare with the Registrar's statistics on the industry as a whole. In the section that follows, I focus on two areas: the average level of the cost ratio and the relationship of this ratio to the number of members in the fund.

Administration: results

Table 11 summarises the results for funds from each of the data providers, focusing on the cost ratio rather than its relationship to other factors in the fund, like size of membership.

The differences between the data sets are significant. This is explained partly by the funds' different characteristics – three sets of defined contribution funds and two defined benefit – but also by the membership. The funds from Provider A have a mean membership of just below 450. Provider B's funds have on average 672 members in the defined contribution category and 194 in the defined benefit group and the corresponding figures from Provider C are 263 and 212 respectively. I caution against reading too much into the detail of the statistics quoted in table 11.

The available data suggests median ratios of 8% of contributions for defined contribution arrangements. The corresponding analysis for defined benefit funds is unreliable owing to a general shortage of data, the larger data set suggesting a median of around 11% and the smaller set 5%. In all cases, there are considerable ranges around the medians. These figures, with the exception of the small defined benefit set, are significantly higher than the mean industry ratio for self-administered funds of 5.4%. This sample has smaller funds than the set of self-administered funds as a whole, which may help to explain the difference.

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[121] *During initial analysis, I also considered administration costs as a percentage of total payroll and of fund assets. I discarded these approaches not only because they provided less useful results, but because the ratios were significantly less stable across funds.*

Table 11: Retirement fund cost ratios for participating actuarial valuation providers

Provider	DB or DC[122]	Mean ratio (unweighted)	Mean ratio (weighted)	Percentiles 75th	50th	25th
A	DC	8.9%	5.1%	10.8%	8.2%	4.8%
B	DC	11.5%	5.9%	13.0%	8.1%	4.2%
B	DB	16.0%	12.3%	20.3%	11.0%	6.7%
C	DC	9.0%	5.8%	11.5%	7.6%	5.6%
C	DB †	9.8%	4.4%	9.4%	4.5%	3.4%

Note: The cost ratio used is the total reported administration cost, including actuarial fees, for the most recent reporting period, divided by the total employer and member contributions, net of risk benefit contribution costs. Weighted ratios are weighted by membership. Number of funds with each provider withheld for confidentiality of data sources.

† The number of observations in this group is low and the results are unreliable.

Source: Participating actuarial consultants and author calculations.

The fourth provider sent me data for a fairly large set of defined contribution funds. Unfortunately, the data item for risk benefit premiums was missing and I could not include this data with the other analysis. My comparison with the results that would have emerged from the three other providers had I not adjusted for risk benefit costs shows pleasing consistency. The average ratio for this set of defined contribution funds lies within the bounds of the corresponding average ratio, after adjustment, from these three providers.

The figures summarised in the table also provide significant evidence of a size effect: the unweighted means are significantly higher than the medians, which are in turn much higher than the means weighted by membership. Except for the two defined benefit groups, the weighted means are in line with the Registrar's figures.

Table 12 sets out the analysis of the impact of membership numbers on the cost ratios of the fund. As already shown in table 11, the average costs in each group differ significantly. Table 12 also shows substantial differences across groups with respect to the statistical significance of the relationship between cost and membership. Again, I caution against over-analysis. In the case of the defined benefit funds under providers B and C, there are likely to be a greater number of extraneous factors affecting the validity of the statistics. Some of the funds are likely to be closed to new membership, for example, distorting the analysis, and provider C's defined benefit set is unreliably small.

[122] *DB and DC refer to defined benefit and defined contribution, respectively. Hybrids have been excluded as they don't fit comfortably into one category or the other, and there are not enough of them to create a separate category. The very few funds with ten members or fewer have also been excluded.*

Table 12: Regression statistics for retirement fund cost ratios versus $\log_e$(membership) for participating actuarial valuation providers

Provider	DB or DC	R-square statistic	Slope co-efficient	P-value	Regression ratios 500 members	100 members	40 members
A	DC	0.3945	-0.0234	0.0040	6.6%	10.3%	12.5%
B	DC	0.0767	-0.0307	0.0223	9.6%	14.6%	17.4%
B	DB	0.0428	-0.0246	0.2125	12.0%	16.0%	18.2%
C	DC	0.2491	-0.0254	0.0000	5.8%	9.9%	12.2%
C	DB †	0.4882	-0.0650	0.0228	-0.1% †	10.4%	16.4%

Note: The cost ratio used is the total reported administration cost, including actuarial fees, for the most recent reporting period, divided by the total employer and member contributions, net of risk benefit contribution costs. "Regression ratios" show the points on the regression line for each membership specified. The p-value provides a measure of the significance of the overall fit and of the slope t-statistic.

† The number of observations in this group is low and the results are unreliable. The lowest cost ratio in the set is 2.1%.

Source: Participating actuarial consultants and author calculations.

Overall, there is clear evidence of a negative relationship between fund size and administration costs as a proportion of contributions. This is certainly the case for the three samples of defined contribution funds. These show not only a statistically significant relationship (p-value) but also a strong impact (slope coefficient). In each case the regressed ratio for a fund with 40 members is more than twice the corresponding ratio for a fund with 700 members. The two defined benefit groups give different results regarding the impact of size.

The strong size effect, if it exists across the industry, would be a high price to pay for working for a small firm. It also supports moves towards some form of aggregation of administration for smaller companies, as is the case under the so-called "umbrella arrangements" for which I unfortunately do not have the corresponding statistics.

I have also been given information on a much larger set of defined contribution funds that are not subject to valuation. Because this forms a single sample, I prefer not to report on it in detail, both because it may not be representative of the industry and because it may divulge commercially sensitive information. A cursory description of some of the analysis is nevertheless useful.

This rich information set provides strong evidence of a size effect. There is sufficient data to break the funds into bands by fund membership with a large number of funds in each. With only one exception the median ratio in each size band is lower than the corresponding ratio in the previous size band. These medians range from approximately 6.0% for funds of more than 1 000 members to over 22.0% for funds of 20 members or fewer. Regression

analysis confirms a very clear size effect.[123] Figures are, on the whole, higher than those quoted in the tables above. This may be due partly to the distortion of analysing a group with significantly lower average fund membership, but it provides the strongest evidence yet that the average of just over 5% suggested by the Registrar's figures is an understatement, even for large funds.

Earlier in this section, I referred to the difficulty of estimating total costs incurred by large employers. The only way in which these costs might be estimated would be to request the information from employers themselves. Even then, the data may not be readily available, as costs related to the retirement fund are often wrapped into the human resources budget. Furthermore, obtaining explicit costs does not cover the productivity cost of management time expended on the retirement fund. Rather than attempting to estimate these figures, I prefer to exclude them with the acknowledgement that total administration costs are understated, probably for all firms, and significantly for larger companies, because they undertake more in-house administration.

Administration: conclusions

Pulling together a variety of figures to produce firm conclusions is not easy and my approach is to seek reasonable results rather than scientific conclusions. The Registrar's figures for 2002 give administration fees plus consulting costs equivalent to just less than 5.5% of total contributions, averaged for all self-administered funds. The available evidence suggests that, though some funds fall below this ratio, median figures are likely to be significantly higher than this, in the range of 8 – 11%, and that extreme figures are much higher than this, consistently above 20% for smaller funds.

I suggest that a range of 6 – 12% of contributions captures an acceptable proportion of all funds, but ratios as low as 4% and as high as 22% provide reasonable estimates of the more extreme circumstances of some funds, without including all cases. Using the Registrar's figures for industry contributions and assets, these ratios are equivalent to a "core range" of 0.37% - 0.73% of assets and an "outside range" of 0.24% - 1.34%.

Figures above 22% are frequent in the data sets available. Except for very small funds, however, these are likely to indicate unusual conditions. As we are interested in understanding lifetime costs, unsustainable ratios need not be considered. We discuss in section 6.4 the difficulty of assessing possible lifetime costs across different product channels and different types of measurement.

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[123] The p-value for the (negative) slope of regression line is below 10^{-13}!

Other costs

I have not gathered fund-specific information covering the other costs incurred by retirement funds.[124] According to the Registrar's report (2003), other costs over the course of 2002 averaged over all available self-administered funds totalled R620 million, equivalent to 2.8% of contributions or 0.171% of assets.

As both administration and asset management costs appear to have been understated in the Registrar's report, it is tempting to modify in a similar manner the figures covering other elements of retirement fund costs. As I have no basis on which to do this, I prefer to use the figures as provided by the Registrar and caution that they may be an understatement of the actual position.

Summary of analysis

Retirement fund costs are extremely varied. There is a clear relationship between fund size and cost incurred. But there is also a considerable element of variation apart from the size relationship. In the consolidation of figures that follows, I aim to capture the "size effect" in my overall figures but do not attempt to include all funds in some type of "spread effect". This is broadly consistent with the reports of international researchers, which comment on mean and range without trying to capture the full diversity of cases.

The Registrar (2003) reports total expenses across the industry of self-administered funds equivalent to 13% of contributions or 0.80% of assets. There appears to be substantial evidence that this underestimates true costs. As set out in these pages, the available figures suggest that:

- Asset management fees average around 0.60% of assets for medium-sized funds, approximately 0.50% for large funds and 0.75% for small funds. An additional 0.10% either side of these figures includes two thirds of funds, but excludes outliers.
- Administration and consulting cost funds between 6% and 12% of contributions, considering the majority of funds, but as low as 4% and as high as 22% including a wider range of funds.
- All other costs together average around 2.8% of contributions.

Combining these figures (and converting ratios to ensure consistency of measurement) gives **a "core range" of between 17.0% and 27.1% of contributions, equivalent to a range of 1.04% to 1.65% of assets per year.** An "outside range" of between 13.4% and 38.7% of contributions is sufficient to encompass mean costs within any subdivision

[124] *Funds are subject to a bewildering array of costs, some of which are listed in table 7 on page 73. Expenses included in the item "all other fees" range from Financial Service Board levies to trustee training costs.*

by size, but not outliers. As a percentage of assets, these figures are equivalent 0.81% to 2.36% of assets per year.

The outside ranges are wide. This reflects the reality of the data that I have observed and is by no means an exaggerated estimate of cost ratios currently being experienced by funds. But for purposes of comparison with international benchmarks, this range is too wide and it is probably not sustainable over long periods of time, particularly at the high end. The narrow range provides a more sensible and meaningful summary of the position among retirement funds at present, for international comparison.

6.2 Individual Policies

According to conventional business wisdom, life assurance policyholders are not particularly sensitive to cost.

> *… it is not administration capacity that will drive consolidation in life assurance, as industry relatively price insensitive for many of its client offerings. Value is added as much through investment performance and effective client advice as it is through price competitiveness. (Garth Griffin, actuary, Sage Group CEO, Business Day, 13 July 2004)*

This makes analysis of charges in this industry sector perhaps more important than in others.

Individual policies typically have a more complex set of charges than either occupational retirement funds or unit trust arrangements, which makes computation more involved. On the other hand, they best lend themselves to the analysis of long-term costs because they are designed to be long-term in nature.

In contrast, retirement funds give us at best a snapshot on the current environment, leaving us the task of extrapolating across an entire working life. Unit trust contracts provide a clear set of charges, but investor behaviour is seldom constant over a long period of time: though what we measure is clear, what is experienced is not. Life policies, particularly retirement annuity contracts, are designed to be held for a long time and life offices compel policyholders to recognise the long-term nature of the agreement.

Methodology

The model described in section 4 is well suited to analysis of total expenses over the contract term and to conversion to an appropriate measure. As described in that section, I project to the maturity date the actual impact of all charges and I calculate the single figure deduction giving the same overall impact.

The analysis has been carried out for two different contribution levels and for policy terms of 10, 20, 30 and 40 years[125]. I have calculated both reduction in yield and overall charge ratio figures in each instance. I have also attempted to break down overall charge ratios into the components of commission, asset management and administration, where this data is available. The firm-by-firm results are presented after the discussion of the broad charging levels.

Assumptions

The financial assumptions are set out in section 4 and are unchanged in this analysis: 10% per year investment return and 7% annual salary growth. The salary growth is used to set increments to contribution levels, which take place monthly at an effective rate of 7% annually. This is also used to set the increases to fixed policy costs, quoted in rand per month.[126]

The two model policyholders are assumed to be earning annual salaries of R24 000 and R120 000 respectively at the start date of the calculation. They are assumed to be contributing 10% of gross income to their retirement savings, equating to monthly premiums of R200 and R1 000 respectively. Average policy size figures are competitively sensitive and I have not been able to obtain this information from all participating offices. One firm provided average policy size for the retirement annuity and equivalent individual life provident fund. The average contribution in each case lies within the range of R200 to R1 000 per month without approaching either extreme too closely, supporting the choice of model points.

Data set and reliability of data

I have received full charging details from four firms covering six policies, both retirement annuity and individual life provident fund.[127] This is a small number of contracts, but few firms focus on long-term savings arrangements and two firms have declined to participate

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[125] The focus is on the longer-term results because they allow easier comparison with international benchmarks and because, ideally, saving for retirement occurs over a long period of time. Full results are included in the appendix.

[126] Some may suggest that this is a penal approach to fixed cost inflation, which would benefit from reductions to technology costs. Experience suggests that this optimistic viewpoint is fallacious and that few industries, least of all the life industry, have seen significant reduction in unit costs due to technology. Capital investment costs still impact policy fees. Wage levels are likely to continue to be key drivers of administration costs for some time to come. The impact of this slightly above inflation assumption on overall results is extremely small.

[127] A retirement annuity is an endowment policy attracting tax relief during policy term and maturing at a retirement date chosen by the policyholder. A number of firms also make available what they call provident fund products designed for small groups or individuals as an alternative to occupational retirement funds and intended to be available at lower cost. The results show that they seem to achieve this objective.

in the study.[128] The sample includes the largest firms in the country and a significant proportion of the total individual life retirement savings market, some suggest as high as 80%. As discussed below, these six contracts show a number of characteristic differences and a significant range of overall charges.

Commission scales are fairly complex and I have used a model provided by one of the firms to convert commission to ongoing charges. Commission is typically paid as a percentage of the first year's premium, the longer the term the higher the percentage, and at a reduced rate on the second year. Total commission costs are then spread over the term of the policy, using an appropriate factor to reflect the time value of money, and are expressed as a percentage of each contribution.[129] The equivalent percentage depends on the term of the policy, making calculation a little more laborious.[130]

Other fee types analysed, though they are not all charged for all products, include:

- ***Other up-front charges***. These take the form of an explicit bid-offer spread or an administration charge expressed as a proportion or multiple of the commission cost. In some cases the up-front charges are expressed as an allocation percentage that already takes commission into account.[131] One provider loads all premium-related costs into the first year, giving a significantly different results signature, which I discuss below.
- ***Policy fees***, small rand amounts charged monthly or yearly, which I have assumed to increase over the term of the policy. One office also charges a fixed rand amount up front, which obviously affects low-premium policies more than high-premium cases.
- ***Annual asset management charges***, expressed as a percentage of the value of assets.
- ***Service fees*** covering sundry costs, expressed as a percentage of the value of assets.

Providers usually charge also for investment switches, for policy changes and for early termination, but I have ignored these under the simplifying assumption that saving is uninterrupted over the period until retirement.

Asset management charges depend on the type of investment selected by the policyholder. I have chosen to analyse costs across the range of such charges and at the mid-point. This

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[128] *My thanks to a number of individuals at Metropolitan Life, Momentum, Old Mutual and Sanlam (in alphabetical order), for their ready assistance with data and answers to questions.*

[129] *Assumptions regarding premium growth may be inconsistent between the provided model and my own calculations, but the impact of this is very small. Over the longer-term policies in particular, commission does not contribute a significantly to total policy costs.*

[130] *One of the firms provided a spreadsheet of the impacts of commission on policy and premium over the policy term, rather than setting out the commission formula itself.*

[131] *The allocation percentage typically lies between 95% and 100% and reflects the proportion of each contribution actually used to benefit the policyholder, the balance going to policy costs.*

complicates analysis but provides a more complete picture of the range of charges to which individual retirement savers are exposed. I have not included the guarantee charges associated with so-called smoothed bonus arrangements[132] on the basis that this charge is related to a particular type of arrangement and is a type of insurance premium on the investment choice rather than an administration charge.

Example calculation

A monthly starting contribution of R200, growing at 7% per year and earning 10% annually would compound in thirty years to a nominal maturity value of R848 032.

This projected maturity value is reduced to R631 956 by up-front charges of 3% of each contribution, a monthly policy fee of R7.00 growing at 7% per year and annual management charges of 1.5% of the value of assets. This is a reduction of 25.5% on the charge-free maturity value. This is the charge ratio. The equivalent reduction in yield for this set of assumptions and policy term is 1.96%. This is the rate that, if deducted from the assumed annual investment return of 10%, would result in the same projected maturity value in the absence of all other charges.

The reduction in yield of 1.96% in this example is clearly dominated by the annual management charge of 1.5%, leaving under 0.5% for all other charges.

Results are discussed in two stages. First, I consider the overall level and range of charges for long-term policies.

More detailed analysis of the data reveals how different charging structures affect policies of varying terms. I show this by discussing each product in turn and by presenting what I call a charge signature for each product, breaking the charges into their component parts and showing how they vary by policy term. This is the second part of the results.

Discussion of results: overall charge levels

Table 13 shows the reduction in yield and charge ratio for a long-term saving in each policy, for two levels of saving.[133]

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[132] These are related to the with-profit arrangements of the past, but tend to track the market more closely, providing smoothed investment returns rather than returns reflecting a share of the office's profit. They are provided typically at an additional annual charge for the call on capital of a little over 1% of assets.

[133] More detailed results are available in the appendix, tables A2, A3 and A4.

Table 13: South African life policy cost ratios for 40-year saving period at average asset management fee

	Reduction in yield	Charge ratio
R200 starting premium		
Firm A retirement annuity	2.82%	43.38%
Firm A provident fund	1.49%	26.58%
Firm B retirement annuity	2.01%	33.78%
Firm C retirement annuity	2.89%	44.13%
Firm D retirement annuity	2.81%	43.30%
Firm D provident fund	2.55%	40.37%
R1 000 starting premium		
Firm A retirement annuity	2.60%	41.01%
Firm A provident fund	1.37%	24.76%
Firm B retirement annuity	1.79%	30.83%
Firm C retirement annuity	2.64%	41.45%
Firm D retirement annuity	2.67%	41.74%
Firm D provident fund	2.40%	38.65%

Source: Participating life offices and author's calculations. Assumed 10% annual rate of return on assets and 7% annual rate contribution growth.

Scrutiny of these results shows the following:

- ***Charges are high***: The mean unweighted reduction in yield across all six contracts for policies with contributions starting at R200 per month is 2.43% per year and the equivalent charge ratio 38.6%. This means that, over a 40-year period, nearly two-fifths of the policy value is lost to charges.
- ***Charges are higher for small policies***: Not surprisingly, owing to the fixed component of the policy fee, ratios are higher for low-contribution policies. The equivalent average reduction in yield for policies starting at R1 000pm is 2.24% and the charge ratio is a little above 36%.[134] All contracts show this effect to some extent, depending on the relationship between fixed and variable costs.[135]

[134] *The differences between the corresponding ratios are not substantial, indicating that fixed fees form a relatively small part of the total policy charge.*

[135] *The minimum-cost choice amongst the retirement annuity products of firms A, C and D, for example, depends on the size of the contribution.*

- ***The provident fund arrangements are cheaper than their retirement annuity counterparts***: The firms that offer both retirement annuities and provident funds have succeeded in providing a cheaper alternative to the retirement annuity, though the difference is greater in the case of firm A.[136] The average cost for the two provident funds is also lower than the corresponding average for the four retirement annuity products.
- ***Three of the retirement annuity products have very similar charges***: Firm B offers by far the best value for money in a retirement annuity. The other three retirement annuities are remarkably close in their charging levels, despite having very different charging structures. Differences are greater at shorter policy terms, as is evident from the detailed tables in the appendix.
- ***The range of costs is high***: The difference between the cheapest and the most expensive might be regarded as unacceptably high, particularly as the impact of cost is unlikely to loom large in the mind of most prospective policyholders. On a reduction in yield basis, the most expensive contract is nearly twice as costly as the cheapest.

Cost component analysis: description

In this section, I analyse fees firm by firm, demonstrating the wide variation in charges by type. The analysis that follows suggests that there is no uniform set of drivers affecting charging strategy. The mix of fees varies considerably rather than being closely related to the respective sources of costs.

The process of breaking down charges into their component parts is complex. Where the data is available, it is not difficult to allocate all charge types into commission, asset management and administration, the balancing item. The model easily allows separate calculation of reduction in yields and charge ratios for any set of charges. What is challenging is reconciling the two results: owing to the complexity of the compounding effects over the policy term, the sum of the parts is not equal to the whole.[137] Almost without exception, the reduction in yield figures behave rather better, giving results closer to the overall charge result than the charge ratios.[138]

In order to arrive at a result that is both reasonably accurate and not unnecessarily complex to calculate, I have:

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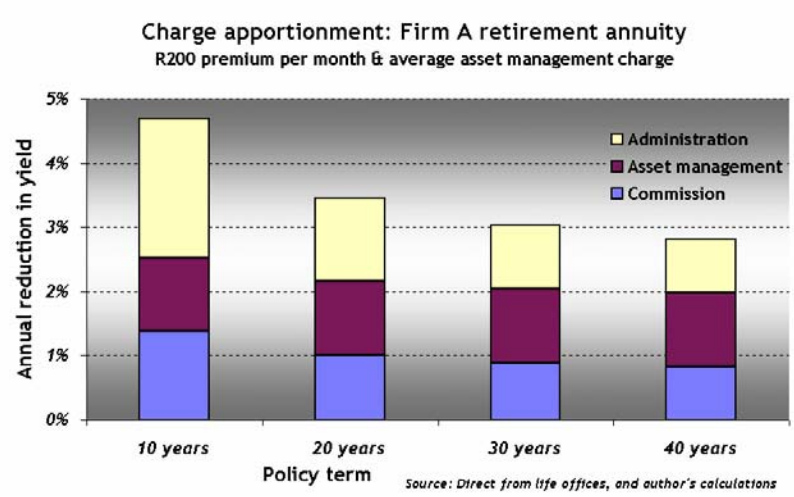
[136] As I do not have a breakdown of fees for these products, I am not able to comment on how the life offices have reduced the charges. Administration expenses and asset management costs may be lower if policy options are more limited. Commission scales may be lower for these products.

[137] A simple arithmetic sum is not expected, under any circumstances, to give the same result because of the compounding impacts of the various charges over the term of the contract. Compounding component charges also doesn't give the same result as the overall impact of all charges.

- calculated the reduction in yield separately for each of commission, asset management and administration, as if, in each case, it were the only charge under the policy
- adjusted each of these figures proportionately to ensure that the sum of the three reduction in yield figures is the same as the reduction in yield for the sum of all charges

Cost component analysis: Firm A



Firm A's retirement annuity charges administration fees as a proportion of each premium and on a fixed monthly basis. Asset management charges are lower than for any other provider.[139] Commission, termed an advice levy, is payable throughout the policy term and is determined as a percentage of premium and as a (small) percentage of assets.

The resulting signature shows a set of charges with high commission costs, but correspondingly low asset management costs. Administration costs form a relatively large proportion of the total, but are slightly lower than for other contracts analysed.

This arrangement provides an incentive to the intermediary to continue servicing the policyholder, but one must wonder whether this servicing is worth the nearly 1% annual reduction in yield given up by the policyholder.[140] The result is a contract close to the most expensive in the market.

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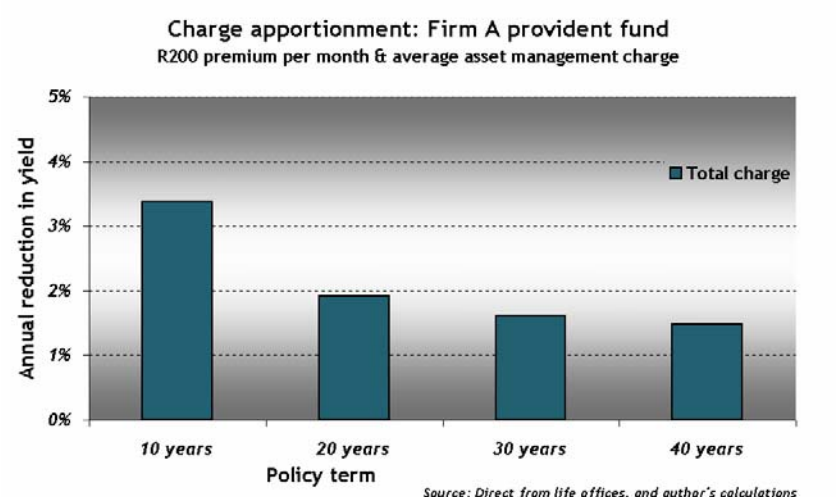
[138] *This is intuitively comfortable. The reduction in yield ratio operates throughout the term of the policy, though weighted towards the end. The charge ratio is based on the maturity value, so the compounding effects, and hence distortions of the charge types, are expected to be greater.*

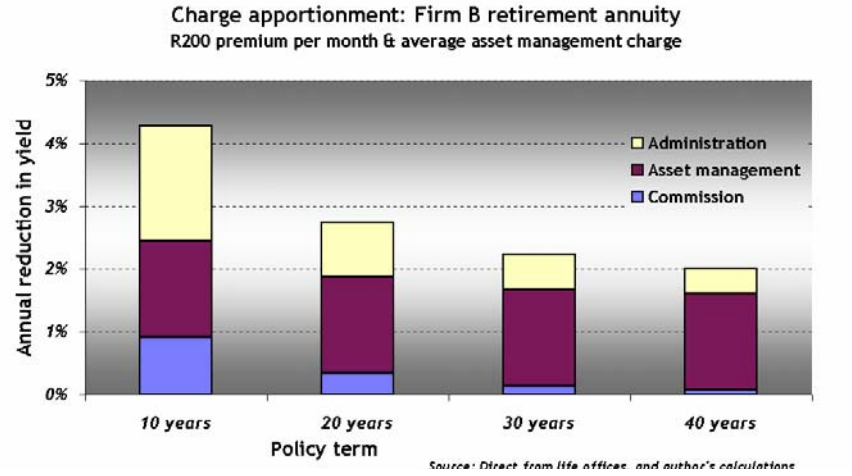
[139] *Costs and charges do not necessarily correspond. This is particularly so in the case of the asset management charge, which might better be referred to as the annual asset-based charge because it need not correspond to the cost of managing the assets.*

[140] *This is equivalent to more than 10% of the total maturity value of the policy.*



In contrast, Firm A's provident fund product is by far the cheapest in the market. It is the only product that loads all premium-related costs into the first year of the policy, but it also has the lowest fixed monthly deduction. The contract has only one asset management fee[141] and this is set at a competitive rate. No commission charges have been provided, but the contract clearly serves the purposes of the policyholder. Low fixed charges also make this policy very valuable to low-income savers.

Cost component analysis: Firm B



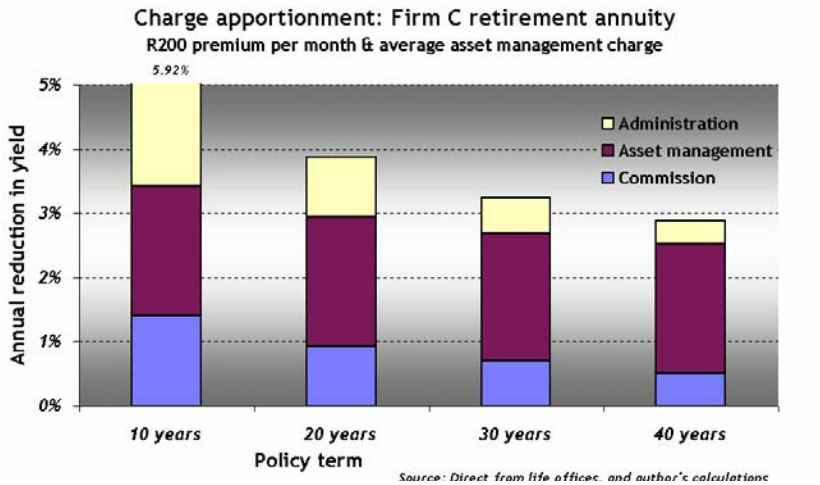
Firm B's product is the cheapest retirement annuity included in the survey and is second overall only to Firm A's provident fund product. Commission is paid on fairly conventional terms, mostly in the first year of the policy with a reduced amount paid in the second year, but spread over the term of the policy. The life office also charges a percentage of each contribution for administration and a bid-offer spread. The policy fee under this policy is

[141] *Except for guaranteed fund arrangements.*

higher than for any other office, but does not appear to have significant adverse effect on the overall charge figures, as its total cost impact is still low relative to other charges.

Commission and administration charges reduce rapidly with increasing policy term, but asset management costs remain constant. While the asset management fees are reasonably competitive, they are significantly higher than in the institutional market.

Cost component analysis: Firm C



Firm C is the only company to levy a fixed initial charge. This affects low-premium more than high-premium policies and it affects short-term policies significantly. This would not be of great concern if retirement saving were always long-term and consistent, but we know that this is rarely the case.

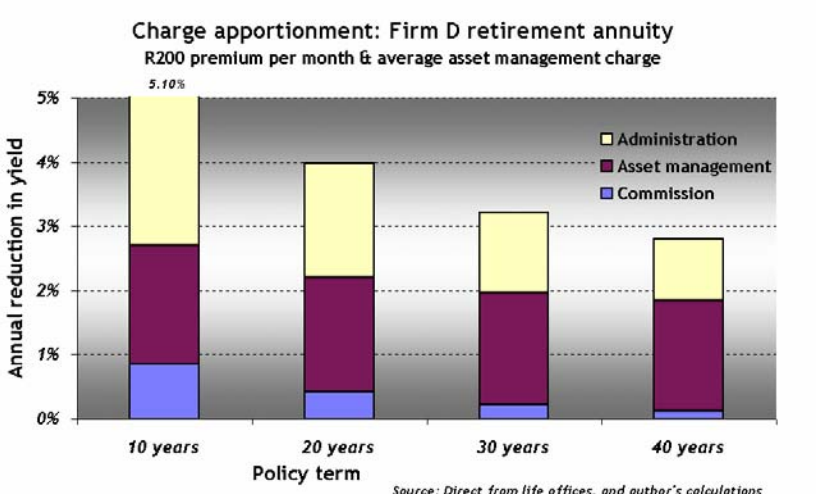
The commission structure is complex and was expressed to me as a series of deductions depending on the policy term. The result is a commission level somewhere between the as-and-when commission of firm A and the up-front model of firms B and D. This is presumably designed to encourage ongoing policyholder servicing at reasonable cost.

Asset management charges are particularly high under this contract, with no option for reduced fees through portfolio choice.[142] As for firm B, these charges may be considered penal for a long-term contract. Fees are well in excess of their corresponding levels in the institutional market.

[142] *The company offers only a guaranteed fund option. The firm has provided me information concerning the guarantee charge and I have excluded this charge from the calculations for consistency.*

Fixed costs make this policy the most expensive for short-term contracts and the high asset management charges are what put this policy among the most expensive even over a 40-year term.

Cost component analysis: Firm D



Firm D's retirement annuity pays front-loaded commission but charges the policyholder over the term of the contract. Contribution-related administration fees are charged in proportion to the commission charge, the proportion itself increasing with policy term. The policy fee is comparatively reasonable. Asset management charges vary significantly depending on the choice of investments,[143] and are high at the top end, significantly over 2% annually.[144]

Overall, despite the low commission for 40-year contracts, the policy is among the most expensive in the sample. This is largely as a result of the administration portion being higher than any other contract.

The provident fund from firm D achieves the objective of offering better value than the retirement annuity from the same provider. The fee structure is more straightforward. Commission terms were not disclosed to me and the premium-related charge is expressed as an allocation percentage. The allocation is reduced by 1% for small short-term contracts. This affects the 10-year contract at a starting premium of R200 per month. A market-average policy fee is also levied.

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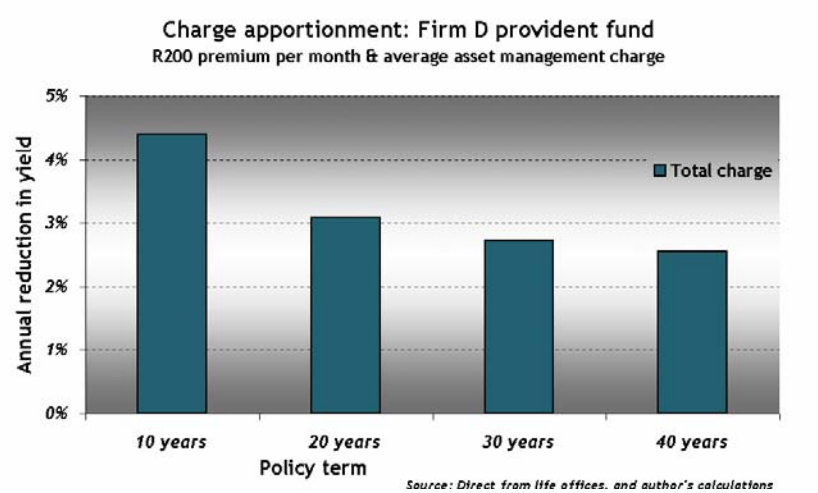
[143] *The tables in the appendix show charges at the extremes of the range of charges for asset management as well as at the mid-point.*

[144] *Though the impact is small, this is the only contract that explicitly loads for the so-called statutory charge of 0.7% of premium rather than absorbing it into the asset management cost. Refer to the discussion of unit trust charges a few pages on for more information on this charge.*



Asset management fees fall within a range, reflecting a degree of choice, but these charges appear high. This is the main reason this contract is uncompetitive against its counterpart offered by firm A.

Sensitivity testing

Changing the underlying financial assumptions produces only small changes in the results, as demonstrated by the scenarios described below. The firm A retirement annuity starting at a monthly premium of R200 has an annual reduction in yield of 2.82% for a 40-year policy term under the standard assumptions and average asset management charge. The corresponding charge ratio is 43.4%.

- An increase to the assumed investment return from 10% to 11% per year results in a corresponding reduction in yield of 2.79%, a change of 0.03%. The corresponding charge ratio increases to 44.5%.
- Reducing annual premium increases from 7% to 5% gives a reduction in yield of 2.85% and charge ratio of 47.1%. These are not substantial increases but hint at the impact on the ratios for policyholders that choose not to increase the premium paid over the lifetime of the policy.
- Reducing the rate of inflation of fixed charges from 7% to 5% results in a reduction in yield of 2.75% and charge ratio of 42.6%.

These impacts result in similar magnitudes of change in all policies included in the sample. There is little to suggest that the analysis could be invalidated by the financial assumptions used.

Summary

The life industry product of today offers flexibility of choice with respect to investment of accumulating assets and to rate of saving. It allows pauses in saving, the injection of lump

sums and the addition of various forms of protection to savings. In many ways it is a flexible and convenient way to save for retirement.

But this analysis suggests that it is also an expensive way to save for retirement.

Taking all of the results into account, a broad range of 1.5% to 2.8% annual reduction in yield, equivalent to a cost ratio of 26.7% to 43.2%, would cover most policies.

Over a long and consistent savings period, a significant proportion of the total benefit is likely to be lost to a variety of charges. This is a high price to pay.

Except in the case of the policy paying commission through the term of the contract, intermediary costs do not form a significant proportion of total charges.

The main surprise emerging from this analysis is the magnitude of asset management fees. Over a long period of saving, these charges seem high, perhaps unjustifiably so. As mentioned before, these should be referred to as annual asset-based charges, for while they are termed asset management charges and vary according to the portfolio selected, the 1% to 2% deduction has little to do with the cost of asset management. The fee that life offices pay their asset managers is a small fraction of this charge. The so-called asset management charge appears to be a convenient way to recoup a variety of costs.[145]

A valid concern is that the main cause of these high charges is a lack of transparency and a lack of competition. While the link between transparency and cost is an often studied field, not always with conclusive results, it is difficult to argue against the benefit of clear charge information to the consumer.

6.3 Unit Trust Products

> *South African unit trusts are likely to play a leading role in retirement funding, says Di Turpin, executive vice-chairman of the Association of Collective Investments. … "Because of their simplicity, transparency, flexibility and* ***cost effectiveness****, unit trusts are being used increasingly as a fundamental building block of virtually any investment and retirement vehicle today." (Business Day 26 Nov 2003: 20, emphasis mine)*

A unit trust, like the United States equivalent, the mutual fund, is owned by its investors. Investors are allocated units in return for contributions. Payouts to investors require the realisation of units and the amount paid out depends on the number of units held and the corresponding price of those units. The unit price in turn reflects the value of the underlying asset portfolio, fluctuating with investment performance. A firm is paid by the unit holder to administer the account and invest the assets.

[145] *At least, in absolute rand terms, it impacts the wealthy more than the poor.*

Types of charges

Unit trust charges are relatively straightforward, consisting only of

- up-front fees, charged as a percentage of each contribution or unit purchase
- annual management or service fees, charged as a percentage of the value of the accumulated fund of the unit holder

No fixed rand policy deductions are made.[146] This means that there is no need to consider the sensitivity of results to the size of the contribution.[147]

Unfortunately, building a complete understanding of unit trust charges is difficult, because it should include analysis of implicit charges as well. Trading by the asset manager results in costs. These are not translated into explicit fees, but the costs are incurred and absorbed by the fund manager and reflected in the unit price, hence borne by the unit holder.

> *Brokerage fees paid by the fund for securities transactions are also excluded from the expense ratio but are costs to shareholders, netted out of the fund's reported gross returns. (James et al, 2001:13,14; James refers to unit holders as 'shareholders' because they are the owners of the mutual fund.)*

The earlier section commenting on United States analysis demonstrates the impact of these additional costs[148], but similar data is very difficult to obtain in South Africa and would depend on detailed analysis of the trading statements of each asset manager.[149]

For these reasons, I have not attempted to include implicit costs in my analysis of the unit trust industry. Implicit costs are not included in the international research described in section 5. Furthermore, it is reasonable to expect similar implicit costs to affect the investment management of assets in the retirement fund and individual life industries. Excluding implicit costs in all channels is the fairest and most consistent approach.

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[146] *Fixed costs, where they exist, affect low-contribution contracts more than high-contribution contracts.*

[147] *This also means that economies of scale are not available to savers putting away large amounts to their unit trust retirement saving arrangement.*

[148] *In section 5.1 I quote the research of James et al (2001), which states an average reported expense ratio of 1.28% of assets and total investor costs of 1.85%. The difference between these figures corresponds to the implicit charges mentioned in this discussion.*

[149] *Fitzrovia carries out a similar service in the United Kingdom. Virtually all of their data capturing resources are occupied with the analysis of financial statements necessary to understand implicit costs. See www.fitzrovia.com for more detail.*

Two types of up-front charges need to be considered:[150]

- initial charges, which are typically used to cover bid-offer spread, commission and up-front administration charges
- a so-called compulsory charge, which includes stamp duty, Marketable Securities Tax[151] and broker costs

Initial charges range from zero, for the majority of money market funds, through 1.14% (one percent plus VAT at 14%) for most bond funds to usually 5.7% (five percent plus VAT) for equity or balanced funds.

The compulsory charge is typically 0.7% and never higher, though a number of managers appear not to charge it at all.[152]

The treatment of the so-called "funds of funds", which invest not in marketable assets but in other unit trusts, is not very clear.[153] I have used their data as provided, but note again that this covers explicit charges only. If analysis of implicit charges is difficult for most unit trusts, it is probably impossible in the case of funds of funds, whose unit holders incur the hidden costs of the underlying managers as reflected in the unit prices of these managers, but with a changing mix of managers. Analysis of this problem is beyond the scope of this research, but my understanding is that there is no reason to expect systematically higher implicit charges from fund of fund investments than from investments with fund managers trading directly in the market.[154]

Annual management charges and service fees range from around 0.4% for money market funds, through 1.14% to 1.71% for most equity and balanced funds, to 2% and over for some specialist funds, particularly funds specialising in international holdings.

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[150] Please note that this discussion has been superseded by the passing of the Collective Investment Schemes Act, which does away with the compulsory charge. As data is not yet available concerning the new set of charges, the analysis in this paper necessarily includes this type of charge.

[151] Since replaced by Uncertified Securities Tax.

[152] It is not always clear whether the compulsory charge should be added to the initial charge or whether it is already included. In some cases, it is clear that it has not been included in the initial charge and in others the asset manager has responded to the compulsory charge field with a dash "-", indicating possibly that it has already been included, or that it is zero. Dash entries have been regarded as zero's and the initial and compulsory charge summed. The impact of a 0.7% initial fee is very low, around 3 basis points on a reduction in yield basis over 40 years.

[153] The majority of these funds quote no compulsory charge, which is correct because the charge is incurred by the funds in which they invest, but it doesn't mean that the investor escapes the effect. I have assumed after discussion with industry players, that the fees provided correctly reflect the charges incurred by unit holders in these funds, regardless of the complexity of underlying structure.

[154] The possibility of higher explicit charges as a result of the additional layer is often offset by the negotiating power of the fund of fund house. Implicit charges are probably a weighted average of the corresponding implicit charges of the respective funds rather than a more complex and higher total cost.

Source and reliability of data

Data has been provided by I-NET Bridge in association with MoneyMate and is the most recent information available prior to the passing of the Collective Investments Act, so covers the period 2002 – 2003.[155]

The source must be regarded as one of the most reliable in the country.[156] I-Net Bridge is a well known provider of business information in this country. MoneyMate is an international leader in the collection and provision of mutual fund data, based in Ireland and covering the mutual funds of most of Europe, in addition to those in South Africa.

The data itself was provided on the fact sheets completed by the managers. Of the 457 funds on the MoneyMate database[157], 369 are included in the charges database. Thirty-four of these have been discarded from my analysis. The reasons for dropping them include charges expressed as a range or as a weighted average of domestic and international holdings, performance-based charges, initial charges that depend on the size of the investment and a few cases of zero charges throughout. This leaves 335 funds with complete and reliable initial and annual charges.

The relevance of the data in the new unit trust environment

Is it worth analysing a set of charges that no longer exists? The compulsory fee has been modified and the whole charging basis has been de-regulated so analysis of past charges may not be relevant to understand future costs.

It is an imperfect situation, but it is probably fair to assume that there is little change to the costs incurred by the managers and that administrators and fund managers are likely still to charge on a basis that covers costs and allows as much profit as possible. Assuming that the new system encourages a more transparent comparison of costs[158], there may be some pressure to reduce charges, but it is difficult to estimate this change. This would partly be offset in any case by the industry costs of transition to the new system.

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[155] Thanks are extended to Norah Barnes at I-Net Bridge for her assistance with the provision and understanding of the data set.

[156] I hasten to add that it is not the only reliable source of information on the unit trust industry. Professor Hugo Lambrechts puts out an outstanding quarterly survey called the Unit Trusts Survey, which includes comprehensive information on charges (see www.unittrustsurvey.co.za). Profile (2004) publishes a book with a full set of performance and charge figures, together with commentary on each investment management firm. I discovered this information only late in my research and have not attempted to analyse it as well as the I-Net Bridge information.

[157] Mark Lapedus, head of retail marketing at Investment Solutions, quotes 474 funds for the industry as a whole. (Business Day 26 Nov 2003:20)

[158] There are indications that this is indeed the case as the industry looks to separate performance and charges in the figures provided to investors.

Imperfect as it may be, for the purposes of this study, analysis of charges in the recent past is the best available manner in which the impact of potential future charges may be understood.

The relevance of the data to retirement saving

Is the data set helpful in understanding the costs of saving for retirement? Funds attracting tax relief for retirement must be identified as such. They are effectively separate products.

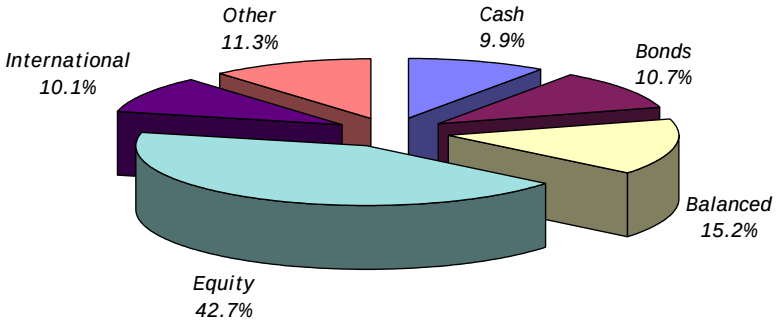
I have not been able to establish whether or not there are funds in the database that are earmarked for retirement or whether managers simply set up duplicates for the retirement saving environment. I make the simplifying assumption that there is no reason to expect the charging profile of retirement unit trusts to be systematically different to that of other unit trusts.

Should we then exclude money market and bond funds? One argument goes that individuals saving for retirement are more likely to appreciate the long-term potential of pure equity or equity rich funds. The counter to this is that individuals of all ages are saving for retirement and that there may be many who prefer the low risk money market and bond funds to protect their capital as their retirement date approaches. My approach is not to exclude these funds.

Another way to determine whether funds might need to be excluded is to analyse the asset mix implied by the portfolio of all funds. As clearly as possible from the names of funds their investment leaning has been identified and the chart (figure 10) shows the mix of funds analysed, unweighted for fund size. The implied asset mix is perhaps a little heavily weighted towards equities and slightly under-weighted on bonds for the purposes of this study, though other categories also contribute some fixed interest weighting. In the results I provide charge ratios and reduction in yield separately for each category. Overall, the mix is acceptable for purposes of comparing charges on an unweighted basis.

In conclusion, all funds available and with clean data have been included, but without weighting for assets under management.

Investment Categorisation of SA Unit Trust Funds Analysed



Source: I-NET Bridge in association with MoneyMate, and author's calculations

Figure 10

Analysis

For each of the 335 funds available for analysis, the model described earlier (see section 4.4) has been used to determine the equivalent reduction in yield and charge ratio under the standard assumptions[159]. These measures have been calculated for investment terms of 10 years, 20 years, 30 years and 40 years and a full set of results for each category of funds is provided in tables A5 and A6 in the appendix.

Discussion of results

Table 14 provides the reduction in yield and charge ratio for each category over a 40-year investment period.[160] Sensitivity to changes in assumptions is discussed briefly in the next section.

The analysis shows an intuitive relationship between the charges for each class of assets, despite the slightly unscientific manner in which funds were allocated to classes. Cash funds are cheapest, followed by bond funds and those that describe themselves as "income funds". Balanced, equity, international and all other funds are fairly closely bunched, with the exception of funds that could be identified as passively managed, which have overall charge levels closer to the cash and bond funds.[161]

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[159] *Annual return on investments 10% and annual growth in contributions 7%.*

[160] *This period is surely unrealistically long for a savings vehicle as flexible as the unit trust, but it provides the basis for comparison with other products and with the results of international studies. Corresponding figures for other investment periods are in the appendix.*

[161] *Closer analysis of the passively managed funds shows that they are more expensive than bond funds at short terms and cheaper at long terms. This reflects their higher average initial charge than the bond funds and lower average annual charge. The trends are evident in table A5 in the appendix.*

Table 14: South African mean unit trust cost ratios for 40-year saving period (standard deviation in brackets)

	Reduction in yield	Charge ratio
Cash	0.74% (0.37%)	14.14% (6.22%)
Income	0.93% (0.27%)	17.70% (4.51%)
Bonds	0.97% (0.28%)	18.25% (5.03%)
Balanced	1.73% (0.28%)	29.92% (3.98%)
Equity	1.80% (0.34%)	30.83% (4.56%)
Equity passive	0.94% (0.27%)	17.64% (4.60%)
International	1.87% (0.42%)	31.65% (5.64%)
Other	1.77% (0.31%)	30.42% (4.41%)
All funds	**1.58% (0.37%)**	**27.43% (5.11%)**

Assumed annual rate of return on assets 10% and annual rate of growth of contribution 7%.

Source: I-NET Bridge in association with MoneyMate, and author's calculations.

The average reduction in yield without weighting for assets under management is 1.58% per year, equivalent to a charge ratio of just under 27.5%. Standard deviations across all unit trusts are 0.37% and 5.1% for the reduction in yield and charge ratios respectively.[162]

Sensitivity testing

I point out in section 4, where I describe the model and discuss the choice of assumptions, that results are fairly insensitive to changes in the underlying financial assumptions. This is relevant to the analysis presented in this section, in which I assume the same underlying investment return for all asset classes, an unrealistic assumption.

Assuming a return on cash, for example, of 7% rather than 10% gives rise to only small changes in results. The reduction in yield increases by just under 0.01 percentage points and the charge ratio experiences a somewhat more significant drop, around 1.5 percentage points.

[162] *I don't have comparable figures for the standard deviation from international studies, but this feels intuitively like a significant spread. It suggests that only two-thirds of funds have reduction in yields over the 40-year term inside the range 1.21% - 1.95%. Of course, some of this variation is due to differences in asset types. Table A6 in the appendix shows that, even within each asset class, the spread is significant, in most cases only slightly more narrow than the overall spread.*

Equivalently, assuming a return on equities of 11% rather than 10% would give a small decrease in the reduction in yield, just over 0.01 percentage points and a small decrease in the charge ratio, approximately 0.9 percentage points.[163]

These figures suggest that carrying out the analysis using different assumptions for each asset class would be unnecessarily complex as alternative assumptions result in only very small changes to the reduction in yield.

Concluding comments

This analysis suggests that, as claimed[164], the unit trust industry offers fair value for money to retirement savers.

A reduction in yield range of 1.20% to 1.95% captures a substantial proportion of South African unit trust funds and there is little reason to suggest that funds earmarked for retirement are significantly cheaper or more expensive. These figures are equivalent to charge ratios, costs divided by contributions, of 22.3% to 32.5%.

Charging levels appear to compare reasonably well to those in the United States and very well to those in other developing countries. Specialist equity funds are more expensive, as expected, but not by significant margins, with a range for local equity funds of 1.45% to 2.15% and for international funds of 1.45% to 2.30% likely to include more than two thirds of these funds.

6.4 Comparing South African Alternatives

Table 15 summarises the discussion of the previous three sections.

Very broadly, retirement funds provide the cheapest means of saving for retirement, followed by unit trust arrangements, though a significant proportion of retirement funds provide saving opportunities to their members at greater overall cost than the unit trust alternative. Individual policies appear to be the most expensive, but even here a blanket statement is dangerous and misleading.

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[163] *Rather than recalculating values for the entire set of funds, in each case I selected the fund most closely matching the results of the entire asset class and tested the impact of changes in assumptions on the charge figures for that fund.*

[164] *Refer to the quotation on page 97.*

Table 15: Summary comparison of South African savings channels

	Charge ratio		Reduction in yield	
Channel	**Low**	**High**	**Low**	**High**
Retirement funds (narrow range)	17.0%	27.1%	1.04%	1.65%
Retirement funds (wide range)	13.4%	38.4%	0.81%	2.36%
Individual policies	26.7%	43.2%	1.50%	2.80%
Unit trust products	22.3%	32.5%	1.20%	1.95%

Note: These figures are not designed to be directly comparable. Definitions of ranges, in particular, have been determined in different ways and are intended to give a reasonable impression of the spread of results.

Source: Various sources as disclosed in sections 6.1, 6.2 and 6.3.

There are a number of reasons that these figures should not be regarded as directly comparable:

- ***Methodology:*** Different approaches have been used to arrive at these conclusions. The individual policy and unit trust information uses a model with a number of assumptions that tries to replicate a lifetime savings pattern.[165] The retirement fund approach is a snap shot of today's circumstances and results are particularly dependent on the appropriateness of the numerators of each ratio, contributions and assets respectively.[166]
- ***Data:*** Different data sets have been employed. The unit trust analysis, for example, can be regarded as pretty much complete: nearly all products were included in the information, and the set of data is accurate and reliable. In the cases of both retirement funds and individual policies, I am forced to rely on a variety of data sources and base my analysis on incomplete data.
- ***Source of payment***: The employer often covers some or all of the costs of administration under the retirement fund. This is very difficult to factor in explicitly and I have tried to estimate these costs under the assumption that they form part of the decision of the employer to make available this savings option to its employees.

[165] *Results here are based on a policy term of 40 years, perhaps unrealistically long. As can be seen in the section describing life policies (and the appendices), using a shorter term results in a lower charge ratio, but a higher annual reduction in yield. For life policies, the corresponding figures for a 30-year term are 21.7% to 35.8% charge ratios and 1.62% to 3.20% annual reductions in yield. The three savings channels still appear in the same ranking of costs.*

[166] *The relationship between the charge ratio and annual reduction in yield is reasonable, lying somewhere between the corresponding modelled ratios for a 30 year and a 40 year term. This is more by accident than design: while the assets in the retirement fund industry have been built up by active members with well under 30 years of service, they also include funds held for pensioners who contributed for a full career.*

- ***Efficiency and flexibility of offering:*** **It must be acknowledged that a comparison across channels is inherently unfair.** The products are very different in what they offer. Retirement funds benefit from economies of scale, but generally offer less flexibility and choice to their members than unit trusts and life policies. Unit trusts offer investment and timing flexibility but no additional benefits. Life policies typically offer a wide range of additional insurance products and significant flexibility of contribution level. These products are (hopefully) also sold under the umbrella of sound, holistic advice in the best interests of the policyholder, the cost of which is covered by the mechanism of commission.

Despite these concerns, useful conclusions can be drawn. First, charge information is very difficult to obtain and accurate comparison of options within and across channels almost out of reach. The unit trust industry stands apart from this generalisation. Second, the cost differences between channels appear to be substantial, with occupational pension funds on average the cheapest, followed by the retail options of unit trusts and then individual life policies. Third, within each savings channel, there is substantial variation in cost. All consumers and trustees should be made more aware of these variations, enabling them to make decisions that are more informed. Charges are not automatically wrong, but the corresponding service must be appropriate to the needs of the customer.

6.5 Comparison with International Benchmarks

As noted earlier, the South African system is almost unique.

- Social security benefits are widespread and effective but pitched at a level to stave off poverty rather than to provide an adequate level of income in old age.
- The extensive voluntary retirement system covers only the employed and leaves significant scope for poverty in retirement for the working poor by not requiring minimum levels of saving and not preventing workers from accessing pension savings prior to their retirement.

Only the old age system in the Czech Republic, with an absent second pillar of mandatory retirement saving, is directly comparable to the South African environment. Nevertheless, the only way to determine whether the costs incurred by South African retirement funds and their tax-efficient alternatives are reasonable, is to compare them with international alternatives.

I focus my attention on the retirement fund sector, most closely aligned with the largely mandatory systems described in the literature review. Later on, I ask how cost effective the South African life insurance and unit trust products appear to be, against available international benchmarks.

Retirement funds

Figure 11 summarises the analysis set out in this paper, drawing on the summary table in section 5.4 and the discussion over the last few pages. As not all comparisons to the statistics from other countries are equally valid, I discuss the South African analysis within the international context from a number of perspectives.

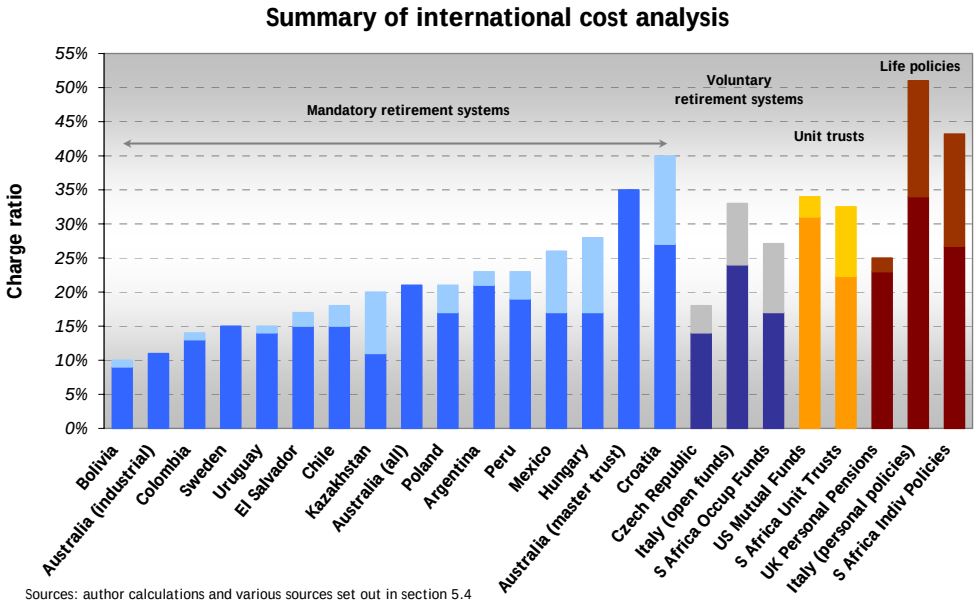

Figure 11

South Africa's retirement funds compare poorly with the international mandatory systems, less costly only than Croatia and Australia's master trust, which provides a particularly flexible offering to a narrow part of the market. And some of the international systems are significantly cheaper.

The comparison needs to be made with care, however, because the environments differ. We might expect the mandatory systems to provide savings at lower cost:

- Mandatory systems have a far larger ready market and should be able to generate significant economies of scale.
- Mandatory systems are set up following an extensive review of the available options and are regarded as being the most efficient manner in which to stimulate retirement saving, and one assumes therefore are expected to be reasonably cost-effective.
- Many of the mandatory systems include a mechanism for price comparison.

On the other hand:

- Mandatory systems are usually based on individual choice. The group nature of occupational retirement funds should allow for economies of a different type.
- A number of the mandatory systems allow freedom of movement between providers, introducing significant additional costs.

- South Africa's occupational retirement fund system has been in existence far longer than any of the mandatory systems described in this paper. We might expect lower costs from the more mature system.

Two voluntary systems are included in the available data set: the Czech retirement system and the newly launched open pension funds in Italy. In section 5.3, I suggest that the upper limit of the charge ratio range of 14% to 18% is appropriate for international comparison of the Czech system as it excludes the government co-contribution. The figure of 18% falls within the "narrow" range computed for South African retirement funds (see section 6.1 for details) but, like the mandatory systems, suggests that South African funds are on the whole more expensive than international counterparts.

The Italian system is more expensive than the South African, but these costs are likely to fall as this system was established only in the last few years and will develop economies of scale over time.

Murthi *et al* (1999) describe the results of some initial analysis of the costs of administration in Britain's occupational scheme environment. Overall cost ratios are in the region of 20%, with figures closer to 25% for smaller schemes. They note that these ratios are close to those experienced by individuals in the personal pensions environment. Against these figures, the 17% - 27% range that I have postulated for South African funds appears reasonably competitive.

I refer finally to the analysis carried out by Mitchell & Bateman (2003), which sets out charge ratios for different sizes of groups in Australia. As described in section 5.1, charge ratios for defined contribution arrangements vary from 5% to 15% and the corresponding charges for defined benefit schemes from 7% to 21%. Accurate calculation of the corresponding figures for the South African industry is difficult, but the evidence discussed in the retirement funds analysis, section 6.1, suggests that few large South African funds experience charge ratios of less than 8%[167]. At the small end of the scale as well, few funds can compete with the corresponding Australian figures.[168]

With scanty data, clear conclusions are hard to come to, but it appears that South African retirement funds are, in comparison with most countries, expensive to run. The exceptions include the UK occupational scheme environment, one or two of the newly-established national systems and the sophisticated sectors of the Australian environment. On the

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[167] *I assume 4% for asset management (equivalent to a charge of around 30 basis points), 2-3% for administration and consulting, which appears to be about the lowest in the data and 1-2% for all other charges.*

[168] *Adding together the results of the regression analysis for smaller funds to the estimates of asset management costs, also for smaller funds, we obtain figures well above 20%, even before allowing for estimates of other costs incurred by these funds.*

whole, though, concerns that the occupational retirement fund industry in South Africa might be running at high cost are supported by this analysis.

Individual policies

In this study, I have focused largely on retirement systems. As a consequence, I have a shortage of data regarding international life policies.

Two useful sources of information have been identified: the United Kingdom and Australia.[169] In the UK personal pension system, charge ratios appear to run in the low 20's (percent of contribution) as computed by a number of researchers, though some have pointed out the very large variability of experience. Concern over costs in the United Kingdom has extended far beyond academic research and the industry is adjusting to the one percent annual charge limit on Stakeholder pensions.[170] Charges on other products have fallen as a result of the increased consumer awareness regarding fees.

Corresponding ratios in Australia appear to be somewhat higher than in the UK. Mitchell & Bateman (2003) quote charge ratios of between 22% and 28% at the retail end of the market. Whitehouse (2000) calculates an average as high as 35% and this is corroborated by Devesa-Carpio *et al* (2003). These suggest that the South African figures are very high in comparison with the United Kingdom and parts of Australia, but reasonably competitive against the master trust analysis in Australia.

Of course, we need to be careful when comparing the international figures to the results for South African policies described in this paper, because the assumptions under which other researches' calculations have been carried out are not always clear. Whitehouse appears to use a full 40 year contribution term and a similar set of assumptions regarding investment returns and salary growth, which means that his figures are directly comparable. The approach used by Devesa-Carpio and his colleagues is based on the Whitehouse approach.

Comparison is made a little more difficult by differences in the levels of saving. Economies of scale may be more difficult to achieve in a developing country where saving levels are likely to be lower. The counter-argument to this is that costs should be lower as well.

Overall, I would suggest that we have reason for serious concern regarding the analysis of costs to individual life savers, but that we would not be alone in this concern: parts of the Australian system appear expensive as well.

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[169] The new Italian system has also been discussed, an included in the chart. As noted by Fornero (2004) costs are extremely high, though this is partly due to system immaturity. It is not appropriate to use this system for purposes of international comparison.

[170] The regulator has recently announced that this charge limit is to be raised, but only for the first few years of the contract. Refer to the discussion on Stakeholder in section 7.1.

Unit trusts

The South African average annual reduction in yield across all product providers, without weighting for assets under management, is 1.58%. This compares reasonably well with the United States equivalent of 1.28% quoted by James *et al* (2001) and the alternative figure of 1.49% quoted by Diamond (1999). Higher costs might be expected in South Africa than in the United States, not only because economies of scale are less likely in the smaller South African market[171], but also because the US market has been more conscious of costs for a long time and the market has a greater proportion of no-load funds and other low cost alternatives.

Are these comparisons really like for like? Diamond (1999) quotes from a 1998 study by Rea and Reid[172] and makes it clear that the figure includes annual charges and annualised initial charges, but not brokerage. The approach described by James *et al* (2001) also includes annualised initial charges and uses a similar methodology. These comments suggest that the comparison is fair.

Detailed analysis of similar costs in other markets is beyond the scope of this research, but evidence from Chile (James *et al*, 2001) indicates that equivalent costs in that country are far higher than those in South Africa.

The available analysis suggests that, in contrast to the occupational pension fund environment and the range of products for individual retirement saving, the unit trust industry provides a retirement saving mechanism at costs that are reasonably competitive by international standards.

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[171] *Some would suggest that a market size of R250bn (to be exact, R249.6bn, Business Day, 14 July 2004) is sufficiently large for economies of scale to be fully realised.*

[172] *Full reference:* Rea, J & Reid, K (1998) *Trends in the Ownership Cost of Equity Mutual Funds*, Washington: Investment Company Institute Perspective.

7 IMPLICATIONS FOR POLICY & FURTHER RESEARCH

In which some thoughts regarding policymaking and options for further research are set out.

7.1 Policymaking in a Complex Environment

> *Financial regulators and supervisors are confronted with an increasingly complex global environment in which the traditional distinctions between financial institutions and between banking and other types of financial activity are blurred. The complexity of the financial environment is increased by the speed with which portfolios can change, and by the globalisation of the operations of major financial institutions and markets outpacing the national accounting, legal and supervisory systems on which safety and soundness of individual institutions and financial systems rely. (Gill Marcus, FSB Chairperson, Financial Services Board 2002:2)*

I have analysed the level and spread of charges eroding South African retirement savings. The research indicates that, while there is a range of experience across and within savings channels, there is cause for concern overall regarding these charges.

This section examines how the evidence presented in this paper might shape the future of policymaking for pension saving in a complex environment. This debate is intricate and far-reaching. It is neither possible nor desirable to propose options across the entire policymaking spectrum based on this research and I do not attempt to do so. I present instead a series of thoughts that arise from my study of the international literature and from insights gained during the analysis process. I stress that these are presented not as conclusions but as a set of possibilities.

Closure of channels

The results do not persuade me that any of the channels should be closed. When an individual chooses between financial products or channels, expected administration charge is just one aspect of the decision-making process. Closure of any of the three channels investigated on the basis of cost alone would be inappropriate. The results discussed in the previous section give much cause for concern, but each channel plays an important role in providing appropriate vehicles for retirement saving. Also there are many sound reasons for the cost differences between channels. Flexibility and individualised design come at a price.

Recommendation: Do not close existing channels on the basis of cost alone.

Consistent disclosure of costs

Costs are opaque. This is particularly so in the life insurance and retirement funds environments. My difficulties gathering data suggest that industry consumers would find it very challenging to compare providers on the basis of cost.

The **life insurance industry** may find some defence in the policy value projections that are provided to all prospective policyholders. Assuming that all costs are taken into account in these calculations, consumers have the ability to compare providers, because the investment returns used in these projections are prescribed.

However, these figures are presented as rand amounts. Most policies also provide life cover, confusing the issue. The projections do not equip the consumer to determine the financial impact of these costs, let alone translate these into meaningful measures.[173] Simple summary figures, with straightforward explanations, would assist the investor (1) to understand the real impact of charges, (2) to compare intelligently across products and (3) to make informed decisions regarding the savings channel appropriate to their needs.

The **unit trust industry** appears to be more transparent, helped by the fact that the range of charges is limited. Still, information could be improved by providing consistently calculated summary ratios, again with clear definition of terminology.

In both the life insurance and unit trust industry, if contracts allow for changes to charge levels and types, it is reasonable to require providers to make this clear and to provide appropriate information every time charges are modified.

The issue is perhaps more complex in the **retirement fund industry**. A proportion of the charges may be passed on explicitly by the fund to the members. More commonly, however, trustees regard the charges levied by providers as the cost of running the fund. In these cases, the costs are often carried by the employer, who may take these into account when choosing whether to provide the fund as part of its employment policy. One crucial exception to this concerns investment fees in a defined contribution fund, where these are not explicitly notified but are deducted from the gross investment return. These fees very clearly affect retirement savings and a case may be made for notifying members of them.

Regardless of these issues, cost monitoring and cost control should fall within the fiduciary responsibility of the Board of Trustees, because cost has at least indirect impact on members' benefits. Consequently, the trustees should gather all the information required

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[173] *Measures like charge ratio or annual reduction in yield are not necessarily meaningful either and thought would need to be given to the development of measures that can be understood by consumers. The Financial Services Authority in the UK hosts a website for comparing charges. The site*

to ensure that the costs incurred by the fund are reasonable. Initiatives that would accelerate this process include:

- clear reporting requirements from the Financial Services Board [174]
- industry analysis to enable trustees to measure fund expenses against appropriate benchmarks [175]
- a requirement that asset management charges be disclosed separately from gross investment performance
- industry initiatives increasing the awareness of the impact of costs and recommending minimum disclosure to members, including discussion of the impact of costs on member benefits

The Canadian Joint Forum of Capital Market Regulators has published a set of guidelines for those defined contribution pension products in which members may choose between two or more investment options. These guidelines suggest that the sponsor should provide members…

> *… with the description and amount of all fees, expenses and penalties relating to the plan that are borne by the members. (Canadian Joint Forum of Financial Market Regulators, 2004:10)*

The guidelines go on to list details of charges to be provided to members. I recommend such a list for consideration by South African policymakers.

A longer term objective might be the development of cost ratios common to the entire retirement savings industry that would allow savers to make all retirement planning decisions more confidently. The Financial Services Board has the reach to co-ordinate such an initiative, but should consider the potential for unintended consequences as a result of the greater emphasis on charges: the key question to ask is whether the quality of decision-making would improve.

<u>Recommendation</u>: Establish a consistent methodology for measuring costs and a set of minimum disclosure requirements for all retirement savings channels.

provides the total charge payable over the policy lifetime. Whatever figures are used, they must be sensible for comparative purposes.

[174] I refer to requirements concerning the content of annual reports. I am not suggesting that these should be so detailed as to be onerous to trustees, but they should present the handful of data items required to enable the calculation of, for example, the charge ratio and annual reduction in yield.

[175] A minimum goal might be for the Registrar of Pension Funds to devote a page of the annual report to the provision of statistics derived from annual reports of occupational funds.

Cost limitations

The impact of centrally-imposed charge limitations on the retirement savings industry is difficult to assess. Some would suggest that any limitations that reduce maximum costs are of benefit to consumers. Others point out that industry players who might otherwise aim to be competitive would tend to migrate towards the newly-imposed ceiling, which over time becomes the *de facto* default charge. An analysis of the economic theories around such regulatory prescription is well outside the scope of this paper.

A number of regulators around the world have elected to impose maximum charges on market players, but with great care to avoid unintended consequences. If the ceiling is set too low, market players are driven out of business, reducing the existing competition. If the ceiling is set too high, aggregate costs may rise as providers drift towards the ceiling, leaving the consumers in a poorer position overall.

The Swedish system of maximum asset management charges is a complex model, probably not appropriate to all environments. The United Kingdom limitation on the Stakeholder range of personal pension products is remarkably straightforward, one percent of assets only. Despite voices of concern from the industry and suggestions that only a handful of providers would be able to operate in the Stakeholder environment, the firm resolve of the regulator appears to have spawned a thriving industry.[176,177] There is strong evidence that charges for other products have also fallen as a result of this initiative and the resulting publicity (Murthi *et al*, 2000).[178]

In the complex South African environment, cost ceilings would be difficult to apply. A consistent measure of pricing would need to be developed and careful analysis undertaken regarding the level of a proposed ceiling. The consequences of the ceiling would need to be considered as carefully as possible before implementation, and measured as well as possible thereafter. Regular review of the system would be required.

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[176] *Comparative tables provided by the Financial Services Association show 38 products provided by 28 different providers (www.fsa.gov.uk/tables, as at 5 June 2004). Investment and Pensions Europe quotes sales of 1.9 million Stakeholder pensions (www.ipe.com, 18 June 2004).*

[177] *Following intensive lobbying by the industry, news is emerging that the authorities plan to relax the charge limitations, allowing an annual charge of 1.5% of assets for the first ten years. The modification allows providers to recoup initial expenses more quickly but has little impact on overall cost if contributions are paid over the full term of a long-term contract. The annual reduction in yield for a 40-year contract is 1.04% and for a 30-year contract 1.06%.*

[178] *It should be noted that a great many initiatives were launched almost simultaneously. The Financial Services Authority has launched a web site with comparative tables that provide to consumers an interactive, personalized medium for selecting the product offering them the best value, specifically by targeting low charges.*

Cost ceilings may be more appropriate in the environment of a newly-created class of products like Stakeholder in the United Kingdom.

Recommendation: Consider the implications of imposing maximum charge systems on part or all of the industry.

New class of products

The high-profile launch of the Stakeholder range of pensions saving products in the UK makes an equivalent in South Africa an attractive option. Consideration of the success of the Stakeholder launch is beyond the scope of this paper, but detractors have pointed out that it is being used largely by the middle-and upper-class saver. It was intended for the lower-income worker who needed a cost-effective and straightforward mechanism to plug the gap between state-provided and employer-provided retirement savings.

But Stakeholder is just one option: a privately-managed, funded, voluntary system. Another option might be a national provident fund, in line with many of the defined contribution arrangements in South Africa, but centrally managed to ensure economies of scale. If a new class of products were to be set up, whatever form it took, it should at least be straightforward to understand and implement, inexpensive to run, and designed for the benefit of the savers. It should also dovetail with existing arrangements, reducing the potential for unintended consequences like lower saving in other areas.

Recommendation: Assess the need for a new class of products to stimulate cost-effective retirement saving.

Lessons from overseas

Many of the benefits to be gained from observation of experience outside of South Africa can only be applied to a mandatory system, or at least a voluntary system with considerable national reach. For completeness, however, I list these lessons as a reminder of the policy steps that might bring benefit to the South African environment[179]:

- Centralise elements of retirement savings administration.
- Look for ways to develop economies of scale.
- Restrict the set of allowable charges.
- Find ways to impose limits on marketing costs.
- Establish limitations on portfolio freedom that reduce costs without unduly restricting investment choice.

[179] *More detail on these recommendations is available in section 5.4.*

- Shift costs to other areas, by postponing them to later generations or by moving them to other parts of the economy.
- Find ways to cross-subsidise the low-income earners.

7.2 Suggestions for Further Research

I am aware of a number of shortcomings in the analysis presented in this report. In this section, I suggest ways in which this research could be taken further. All of these focus either on the breadth of the numerical research, or on the potential for this research to be translated more actively into policy. The suggestions below are listed in increasing order of complexity, probably also in increasing order of importance.

Better data

The most obvious shortcoming of this study is a lack of quality data, particularly in the areas of individual life products and occupational retirement funds. I recommend that improvements be made to the data set.

In the case of individual products, a broader spread of providers would be useful, together with some indication of the penetration of each of these providers into the retirement savings market. More detailed comparison with the other products of each provider would provide greater insights into the nature of the charges experienced specifically by retirement savers. I understand that the Life Offices Association have been working on a similar study.

Occupational retirement funds are subject to a more complex range of charges and analysis should take place from a number of perspectives. Comprehensive surveys of a number of different players would assist and the following data sources may be useful:

- annual reports of retirement funds, supplemented by more detailed discussion with trustees
- information held by fund advisers
- charge schedules from product and service providers such as administrators, asset managers and consultants
- consolidated industry information from the Financial Services Board and other industry bodies like the Institute of Retirement Funds

Deeper analysis

I would like to have been able to spend more time analysing the numbers to understand (1) the underlying drivers of administration cost and (2) the variability of charges experienced by market players. This would require more data because detailed analysis on scanty data would create illusions of accuracy. But it also requires better focus. A study as

broad as this is not ideal for developing a detailed understanding of particular parts of the savings environment.

I have not been able to explore the impact of issues like

- investment switching
- contribution interruptions
- guaranteed charges
- trading costs, brokerage and other hidden costs
- options around purchasing annuities

I would also encourage greater focus on those savers affected most by high charges. An environment with high fixed cost and no cross-subsidisation of charges penalises the low-income savers. Better understanding of the dynamics would improve assessment of the problem. Financial support for those most affected by charges is possible through a variety of mechanisms, but these would be effective only after accurate analysis of the impact of charges on all savers.

Better comparisons

I would be interested to see further research permitting more confident comparison of the three South African channels against one another and against international counterparts. The comparison should take into account differences in the design and objectives of the alternatives and analyse in more detail the apparently large differences in charges across channels.

A more detailed literature review of international systems would help. My efforts have been focused on understanding the old age system as a whole and my description of charges overseas is biased towards national mandatory systems. I would like to see further research into the three channels, analysing how South Africa's retirement funds, individual life products and unit trust arrangements compare with international counterparts.

A more detailed consideration of the link between charges and policy

I would like to see research that translates a study such as this one into concrete policy impacts more clearly than I have been able. As demonstrated by my literature review, a very large number of papers have been written that describe national retirement systems. A smaller number can be found that put forward clear recommendations for the future of these systems. But very few demonstrate steps towards a desired future that takes into consideration all of the objectives of a social security system.

The price that a consumer pays to be able to save for retirement is clearly of key concern to policymakers. But how to determine what price is appropriate and how to spread total

cost across a system are complex questions with difficult answers. We need to find ways to understand better the link between cost and ultimate benefit. And for this we need a better grasp of the range of system objectives that could be considered.

Lifetime savings patterns

My analysis has required a number of simplifying assumptions, an uninterrupted period of saving, for example, with gradually increasing contributions. This helps to develop a clear picture of product charges, but fails to understand total system cost and the resulting financial status of savers in retirement. Savers do not behave in easily predictable ways, even when they recognise that a steady period of saving is the best way to protect against financial distress after their retirement.

A more helpful approach would be to spend time understanding the financial wellbeing of a wide variety of savers, both before and after retirement. Through longitudinal study or a thorough and broad snapshot, we must aim to gain a better picture of the financial health of our aged. For those that have been fully or partly employed during their working years, how much have they been able to save, what have been the most effective savings mechanisms and how well-off will they be during their retirement? This could be extended: for those without savings who depend on social security, how well does the grants system meet their needs and how would they be able to apply increases to these grants?

Engen *et al* (2004) analyses the adequacy of retirement wealth accumulation in the United States in the light of recent stock market fluctuations. If studies such as this were to be carried out in South Africa, a better picture of overall post-retirement financial security would be developed.

7.3 Final thoughts on policy issues

A large variety of options exist, and there is vigorous debate among academics and policymakers regarding the advantages and disadvantages of each of these options. Funded or unfunded, centrally or privately managed, defined benefit or defined contribution, there are no obvious solutions.[180]

And the key question for policymakers is whether savings should be voluntary, like life office retirement annuities and UK personal pensions, or mandatory, like the majority of the international systems described in this paper. Considered from the perspectives of cost and coverage, a mandatory system appears to be better, but this fails to recognise the difficulty that such a system would impose on individuals with interrupted employment

[180] *I recommend again, for readers interested in the range of views, World Bank (1994), Holzmann (1999), Orszag & Stiglitz (1999) and Barr (2000). These represent just a few of the writers that have set out to understand the complex impacts of the available alternatives.*

histories. The approach taken thus far by policymakers in South Africa is that mandatory retirement saving, even compulsory preservation of any retirement savings already made, is not within reach in this country.

The Taylor Report (South African Government, 2002) sets out to review all of the issues affecting South Africa's social security and private pensions industry and it is not my intention to comment on their recommendations. But the report and its recommendations exist and there is a growing urgency for South Africa to put together a comprehensive long-term approach to retirement funding issues that addresses in some way the wide variety of needs in this country.

> *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. (Whitehouse, 2000:60)*

I trust that this report sheds some light on the costs of saving for retirement. But these costs are only one piece in a complex puzzle affecting the prosperity of South Africa's citizens in their golden years.

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APPENDIX DETAILED DATA TABLES

Occupational retirement funds: asset management charges

Table A1: Analysis of institutional asset management costs in South Africa

(Mean annual charge as % of assets)

Invest-ment (Rm)	Equal weighted portfolios			Equal weighted managers		
	All	Pooled	Segregated	All	Multi-managers	Single manager
30	0.66%	0.66%	0.68%	0.69%	0.82%	0.66%
100	0.62%	0.62%	0.63%	0.63%	0.75%	0.60%
300	0.56%	0.56%	0.56%	0.56%	0.64%	0.55%
1 000	0.52%	0.53%	0.51%	0.51%	0.57%	0.50%
Count	***42***	***35***	***28***	***21***	***4***	***17***

Note that pooled and segregated portfolios overlap in those cases in which the manager levies the same charges for both products.

Source: Alexander Forbes and author's calculations.

Individual Policies

Table A2: South African life policy cost ratios for different periods of saving

At mid-point of asset management fee range

	Reduction in yield				Charge ratio			
	10 yrs	**20 yrs**	**30 yrs**	**40 yrs**	**10 yrs**	**20 yrs**	**30 yrs**	**40 yrs**
R200 starting premium								
Firm A								
Retirement annuity	4.69%	3.45%	3.03%	2.82%	19.61%	28.06%	36.00%	43.38%
Provident fund	3.37%	1.92%	1.61%	1.49%	14.56%	17.01%	21.56%	26.58%
Firm B								
Retirement annuity	4.28%	2.74%	2.23%	2.01%	18.09%	23.19%	28.31%	33.78%
Firm C								
Retirement annuity	5.92%	3.88%	3.24%	2.89%	23.98%	30.87%	37.88%	44.13%
Firm D								
Retirement annuity	5.10%	3.98%	3.21%	2.81%	21.08%	31.47%	37.62%	43.30%
Provident fund	4.39%	3.08%	2.73%	2.55%	18.48%	25.59%	33.21%	40.37%
R1 000 starting premium								
Firm A								
Retirement annuity	3.80%	3.00%	2.74%	2.60%	16.24%	25.05%	33.31%	41.01%
Provident fund	2.64%	1.63%	1.44%	1.37%	11.63%	14.71%	19.55%	24.76%
Firm B								
Retirement annuity	3.31%	2.27%	1.93%	1.79%	14.34%	19.71%	25.10%	30.83%
Firm C								
Retirement annuity	4.25%	3.26%	2.88%	2.64%	17.94%	26.83%	34.68%	41.45%
Firm D								
Retirement annuity	4.50%	3.67%	3.02%	2.67%	18.89%	29.51%	35.87%	41.74%
Provident fund	3.53%	2.78%	2.52%	2.40%	15.19%	23.44%	31.28%	38.65%

Assumed annual rate of return on assets 10% and annual rate of growth of contribution 7%.

Source: Participating life offices and author's calculations.

Table A3: South African life policy cost ratios for different periods of saving

Minimum asset management charges

	Reduction in yield				Charge ratio			
	10 yrs	**20 yrs**	**30 yrs**	**40 yrs**	**10 yrs**	**20 yrs**	**30 yrs**	**40 yrs**
R200 starting premium								
Firm A								
Retirement annuity	4.31%	3.06%	2.64%	2.44%	18.20%	25.45%	32.43%	39.07%
Provident fund	3.37%	1.92%	1.61%	1.49%	14.56%	17.01%	21.56%	26.58%
Firm B								
Retirement annuity	4.03%	2.48%	1.97%	1.75%	17.13%	21.32%	25.61%	30.35%
Firm C								
Retirement annuity	5.92%	3.88%	3.24%	2.89%	23.98%	30.87%	37.88%	44.13%
Firm D								
Retirement annuity	4.54%	3.40%	2.64%	2.25%	19.03%	27.79%	32.43%	36.80%
Provident fund	4.19%	2.88%	2.53%	2.35%	17.73%	24.20%	31.29%	38.04%
R1 000 starting premium								
Firm A								
Retirement annuity	3.42%	2.62%	2.36%	2.22%	14.77%	22.33%	29.59%	36.51%
Provident fund	2.64%	1.63%	1.44%	1.37%	11.63%	14.71%	19.55%	24.76%
Firm B								
Retirement annuity	3.06%	2.02%	1.67%	1.53%	13.33%	17.75%	22.27%	27.24%
Firm C								
Retirement annuity	4.25%	3.26%	2.88%	2.64%	17.94%	26.83%	34.68%	41.45%
Firm D								
Retirement annuity	3.94%	3.10%	2.45%	2.11%	16.79%	25.72%	30.53%	35.06%
Provident fund	3.33%	2.58%	2.33%	2.20%	14.42%	22.01%	29.31%	36.25%

Assumed annual rate of return on assets 10% and annual rate of growth of contribution 7%.

Source: Participating life offices and author's calculations.

Table A4: South African life policy cost ratios for different periods of saving

Maximum asset management charges (excluding guarantee charges)

	Reduction in yield				Charge ratio			
	10 yrs	**20 yrs**	**30 yrs**	**40 yrs**	**10 yrs**	**20 yrs**	**30 yrs**	**40 yrs**
R200 starting premium								
Firm A								
Retirement annuity	5.07%	3.83%	3.42%	3.21%	21.00%	30.56%	39.34%	47.32%
Provident fund	3.37%	1.92%	1.61%	1.49%	14.56%	17.01%	21.56%	26.58%
Firm B								
Retirement annuity	4.54%	3.00%	2.49%	2.26%	19.04%	25.00%	30.89%	37.00%
Firm C								
Retirement annuity	5.92%	3.88%	3.24%	2.89%	23.98%	30.87%	37.88%	44.13%
Firm D								
Retirement annuity	5.66%	4.55%	3.79%	3.38%	23.07%	34.93%	42.33%	48.99%
Provident fund	4.58%	3.28%	2.93%	2.75%	19.21%	26.95%	35.06%	42.59%
R1 000 starting premium								
Firm A								
Retirement annuity	4.18%	3.38%	3.12%	2.99%	17.69%	27.65%	36.79%	45.11%
Provident fund	2.64%	1.63%	1.44%	1.37%	11.63%	14.71%	19.55%	24.76%
Firm B								
Retirement annuity	3.57%	2.52%	2.18%	2.04%	15.33%	21.61%	27.80%	34.20%
Firm C								
Retirement annuity	4.25%	3.26%	2.88%	2.64%	17.94%	26.83%	34.68%	41.45%
Firm D								
Retirement annuity	5.06%	4.24%	3.58%	3.24%	20.94%	33.07%	40.72%	47.59%
Provident fund	3.73%	2.97%	2.72%	2.60%	15.96%	24.84%	33.18%	40.94%

Assumed annual rate of return on assets 10% and annual rate of growth of contribution 7%.

Source: Participating life offices and author's calculations.

Unit Trusts

Table A5: South African unit trust cost ratios for different periods of saving: means

		Reduction in yield				Charge ratio			
	Count	10 yrs	20 yrs	30 yrs	40 yrs	10 yrs	20 yrs	30 yrs	40 yrs
Cash	33	0.83%	0.77%	0.75%	0.74%	3.80%	7.17%	10.63%	14.14%
Income	14	1.13%	1.00%	0.96%	0.93%	5.16%	9.28%	13.47%	17.70%
Bonds	22	1.25%	1.06%	1.00%	0.97%	5.69%	9.82%	14.02%	18.25%
Balanced	51	2.66%	2.04%	1.83%	1.73%	11.70%	17.89%	23.99%	29.92%
Equity	136	2.81%	2.13%	1.91%	1.80%	12.29%	18.62%	24.82%	30.83%
Equity passive	7	1.27%	1.04%	0.97%	0.94%	5.74%	9.65%	13.63%	17.64%
International	34	2.84%	2.19%	1.97%	1.87%	12.42%	19.03%	25.45%	31.65%
Other	38	2.63%	2.05%	1.86%	1.77%	11.55%	17.99%	24.30%	30.42%
All funds	**335**	**2.37%**	**1.84%**	**1.67%**	**1.58%**	**10.42%**	**16.20%**	**21.88%**	**27.43%**

Assumed annual rate of return on assets 10% and annual rate of growth of contribution 7%.

Source: I-NET Bridge in association with MoneyMate, and author's calculations.

Table A6: S African unit trust cost ratios for different periods of saving: standard deviations

		Reduction in yield				Charge ratio			
	Count	10 yrs	20 yrs	30 yrs	40 yrs	10 yrs	20 yrs	30 yrs	40 yrs
Cash	33	0.53%	0.42%	0.39%	0.37%	2.34%	3.68%	4.98%	6.22%
Income	14	0.28%	0.27%	0.27%	0.27%	1.24%	2.38%	3.48%	4.51%
Bonds	22	0.42%	0.32%	0.29%	0.28%	1.84%	2.83%	3.92%	5.03%
Balanced	51	0.37%	0.30%	0.29%	0.28%	1.51%	2.37%	3.22%	3.98%
Equity	136	0.36%	0.34%	0.34%	0.34%	1.47%	2.61%	3.65%	4.56%
Equity passive	7	0.62%	0.40%	0.27%	0.27%	2.35%	2.70%	3.55%	4.60%
International	34	0.41%	0.41%	0.42%	0.42%	1.65%	3.17%	4.50%	5.64%
Other	38	0.48%	0.36%	0.33%	0.31%	2.02%	2.84%	3.66%	4.41%
All funds	**335**	**0.46%**	**0.39%**	**0.38%**	**0.37%**	**1.92%**	**3.06%**	**4.15%**	**5.11%**

Assumed annual rate of return on assets 10% and annual rate of growth of contribution 7%.

Source: I-NET Bridge in association with MoneyMate, and author's calculations.