



Social Protection Discussion Paper Series

Managing Public Pension Reserves Part II: Lessons from Five Recent OECD Initiatives

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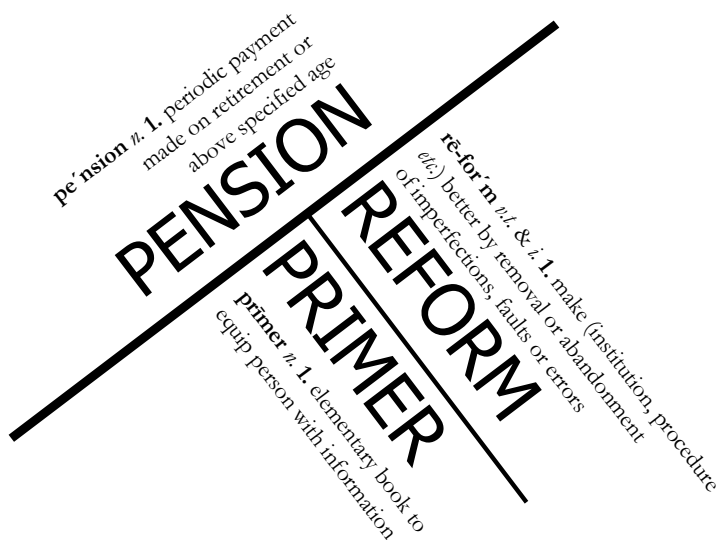
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Abstract

A large number of public pension schemes around the world have accumulated significant reserves. Prefunding might reduce the risk that future governments will not be able to meet pension obligations. The management of these funds therefore, has a direct effect on financial sustainability and potential benefit levels. It also has important indirect effects on the overall economy, especially when the funds are large relative to domestic capital markets. In the past, most public pension funds have not been invested effectively, largely because of political interference. This paper reviews strategies for limiting risks that arise when a public entity is entrusted with managing national pension savings. In particular, an attempt is made to draw lessons from recent reforms in five OECD countries.

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Introduction

There are several reasons to be interested in the way public pension reserves around the world are managed. To begin with, dozens of countries have adopted a strategy of partial prefunding of public, defined benefit schemes. As a result, the sustainability of pension finances for millions of workers in countries as diverse as Sweden and China depends to some extent on how these funds are administered.

Another motivation is related to the continuing debate about reforming public pension systems. No longer is the focus of this debate over whether or not to increase the level of prefunding; rather, it is now about the best way to do so. The trend towards prefunding is partly due to growing awareness of the implications of large unfunded pension liabilities. Despite the fact that the ‘implicit pension debt’ is not reported on the government’s balance sheet, it does impose an intertemporal fiscal constraint and financial markets will punish sovereigns that let it get out of control. The increased attention is also partly due to the fact that younger workers who will bear the brunt of the intergenerational transfer that implied by this liability are starting to protest.

There are several ways of increasing the ‘funding ratio’, defined as the size of reserves relative to the liability. It can be achieved by reducing the liability (i.e., cutting benefits), increasing earmarked revenues (usually, raising payroll taxes) or improving the investment returns of an existing fund. In many cases, the reform package may include two or even all three elements. But politically, increasing investment returns is likely to be the most popular.

Opponents of this strategy suggest that this approach to funding is less likely to succeed than the alternative of privately-managed pensions. Their proposal is to divert all or part of the mandated contributions into individual accounts managed by competing private entities. Prefunding in this way, they argue, would be more likely to produce reasonable returns because incentives for asset managers to perform would be stronger and the risks of political interference in the investment process would be lower. Some two dozen countries have opted to introduce this type of arrangement, mostly in Latin America and Eastern Europe.

To date, the record of public pension fund managers supports the second approach.¹ Around the world, reserves in partially funded, public schemes have been used to subsidize housing, state enterprises and various types of economically targeted investments (ETIs). They have been used to prop up stock markets. And as a captive source of credit, they have probably allowed governments to run larger deficits than would have otherwise been the case. The evidence suggests that conflicting objectives of government or parastatal officials responsible for determining asset allocation has resulted in poor performance measured by most reasonable standards. These decisions typically occur in a regulatory vacuum and there is typically little public accountability or transparency.

¹ For a review of the evidence from many countries, see Iglesias and Palacios (1999).

On the other hand, private management in a decentralized and competitive system does not guarantee good results. Private fund managers must be supervised closely, especially when contributions are mandated, thus raising the implicit (or sometimes explicit) liability of the state vis a vis their performance. Conversely, the regulatory climate and in particular, investment rules and restrictions imposed on private managers, can ultimately obviate the advantages of better incentives through competition. Finally, the cost of administration may be higher in a decentralized system.

Proponents of centralized management recognize the failings of the past, but argue that performance can be improved by changes to governance and investment policy and that insulation from political interference is feasible. The attempt to do this in some countries involves adopting, the standards and practices of well-developed private pension sectors to the extent possible. Most reforms also envision an increased reliance on private asset managers. Nevertheless, decisions are ultimately made by trustees appointed by government and exempted from the regulatory oversight that would apply in the private sector.

This debate extends beyond the impact on the pension system. In many countries, public pension funds are large relative to domestic capital markets, the government's budget and the national economy. Proponents of private, decentralized management point out the inherent conflicts that could arise if the government were to own shares in private firms that it was simultaneously regulating and taxing. They also cite the risk of political pressure to divest holdings in companies engaged in certain types of activities or in certain countries or to intervene via their position as shareholders.

Are there ways to shield public pension funds from the kind of political interference that has plagued them in the past? Is there a way to ensure appropriate incentives for trustees to make prudent investment decisions without the discipline of competition and independent supervision? This paper reviews some of the key design issues and policy alternatives that would have to be addressed in order to answer these questions in the affirmative. It also describes recent initiatives in five OECD countries – Canada, Ireland, Japan, New Zealand and Sweden – where new models of public pension fund management have been introduced. The experiences to date are summarized in a preliminary attempt to arrive at practical recommendations for good practice. Clearly, the limitations of such an exercise must be kept in mind however. This study looks at a very small and unrepresentative sample of countries at the very beginning of their public pension fund experiments. Moreover, we argue that much of what can be done depends on country-specific circumstances.

The next section lays out some of the generic policy and design issues that must be addressed with special reference to those managed by government or parastatal monopolies. Section 3 presents the five country case studies. The fourth section extends the discussion to the rest of the world and reflects on the conditions that make success more likely. The last section concludes.

Key policy choices and design issues

Many of the issues raised in public pension fund management are similar or even identical to those that apply to private pension funds. In fact, several of the reforms described in the next section borrow directly or rely heavily on the rules developed for the private pension sector. But the analogy is far from perfect. None of the public funds examined here is governed by the statutes that apply to their private sector analogues. Nor are they under the jurisdiction of the same supervisor.² This is due to the fact that there are considerations specific to public funds ranging from their funding objectives to the liability of decision-makers that distinguish them from private funds. The rest of this section attempts to organize some of the key policy choices highlighting along the way some of the limitations that apply in the case of public funds.

Governance

In the broadest sense, governance refers to the

“...processes and structures used to direct and manage the affairs of the pension plan, in accordance with the best interests of the plan participants. The processes and structures define the division of power and establish mechanisms for ensuring accountability.”
(‘Governance of Pension Plans’, Association of Canadian Pension Plan Management)

General governance parameters are usually set out in legislation, while detailed rules may be internal to the scheme in question. Public pension funds are usually subject to specific laws that are distinct from those that apply to the private sector.

Responsibility is normally vested in a Board of Directors or Trustees. Many public funds use representative rather than professional boards. Representative boards are often ‘tripartite’, namely consisting of labor, employer and government representatives. This usually means that there are few if any board members with expertise in finance or investment. Professional boards in contrast, would normally include this expertise.

In addition to determining the composition of the board and its manner of selection (and dismissal), their specific duties should be clearly specified, especially as distinguished from management. In order to ensure that the incentives to perform these duties are robust, it is normally recommended that those making decisions also bear a risk related to the outcome. This is one of the more difficult policies to apply to public funds, partly because potential board members are unable to insure against the risk of political interference that might significantly affect their ability to perform their duties.³ In fact, government representatives may be the source of the risk due to inherent conflicts of interest.

² Although not discussed in this paper, an interesting exception to this rule is found in Costa Rica where the Superintendency of Pensions regulates both fully funded, private pensions and a partially-funded, public scheme. However, its role is still not clearly defined with respect to the latter.

³ In the United States, the Thrift Savings Plan (TSP), a defined contribution scheme for Federal civil servants, provides an example of this problem. Passage of the legislation creating the TSP was

There is significant scope for defining the role of management within the pension scheme. In some cases, internal management is limited to managing external service providers. Outsourcing has been increasingly popular in the private sector defined benefit plans, but most public funds perform most or all functions internally. Whether internal or external, the responsibilities of managers should be clearly defined and the criteria for hiring and compensating them should result in the appropriate skill mix. A practical problem for many public funds is that human resource policies and salary scales used in the public sector may reduce the potential pool of qualified candidates for positions that are often highly remunerated in the private sector.

Perhaps the most important challenge in designing public pension fund governance is conflicts of interest. Rules regarding personal gain at the expense of members can be made explicit through codes of conduct. It is more difficult however, to avoid inherent institutional conflicts that often arise when public officials make decisions that may have collateral public policy impact. A typical example is the Finance Minister making decisions over asset allocation that may affect capital markets or government borrowing constraints.

Finally, well-defined information flows between board, management and members are essential to ensure that duties can be performed effectively and for the sake of accountability. The required frequency and type of information required should be clearly documented. In the case of information to members, it could be argued that standards should be higher for pension funds that receive mandatory contributions, including public pension funds.

Objectives of prefunding

Perhaps the most obvious difference between public and private funds is the extent to which they must match assets and liabilities. Minimum funding requirements are applied to private defined benefit schemes in many countries and are increasingly being introduced in some form in others that have recognized the dangers of relying exclusively on the solvency of the sponsor. While definitions vary, countries with minimum funding standards typically aim to have sufficient funds on hand to meet accrued obligations at any given point in time.

This is not the case with public DB schemes. Most were created with significant unfunded liabilities, partly due to transfers made to early cohorts as well as to the choice to begin with lower contribution rates than what would have been required to achieve full funding. After all, with the government as sponsor, tax revenues could always be increased to meet these obligations. Most public schemes did build reserves during their early years however, and many made it explicit policy to partially fund future benefits in order to avoid a drastic increase in future payroll taxes.⁴

significantly delayed due to reluctance of potential trustees to assume liability. Ultimately, Congress granted exemptions (Schreitmuller (1987)).

⁴ In the 1960s and 70s, many developing countries in Latin America and Africa adopted the scaled premium approach where partial funding was aimed at maintaining target long-term contribution rates.

Funding ratios for public fund managers must therefore be defined according to some public policy criteria. These will differ across countries (as seen in the next section) and over time. The important point is that the funding ratio should be explicit and well defined if it is to serve as a barometer for performance and guide investment policy.

Investment policy

The Board is responsible for setting the overall investment policy and this should be explicit and in written form. It should be reviewed periodically and typically will differentiate between the strategic, long term plan and the annual plan. The Board may receive advice through external consultants or from a permanent advisory council.

The investment policy is where targets are set for long run investment performance, risk tolerance, and the overall asset allocation strategy with a clear approach to portfolio diversification. Often, exposure to specific firms, markets, issuers or sectors will be limited explicitly. The exposure to specific firms may also be limited for other purposes related to corporate governance. The investment policy should also make explicit the Board's position on shareholder activism, social investment and economically targeted investments.

Some public funds are very large relative to domestic capital markets or the public budget. In addition to the need to diversify, the potential for a conflict between the long term goals of the pension fund and other public policy objectives may recommend safeguards beyond those found in private sector regulations. For example, limitations on the amount of domestic government debt that could be held by the public fund might be considered a prudent way to avoid the temptation to relax fiscal constraints through coerced borrowing from the pension fund.

Most public pension funds around the world do not have this kind of investment policy. Instead, they tend to be plagued by mandates and restrictions that preclude a sound investment policy. Most importantly, public funds rarely state as their fundamental objective that the fund should be invested in the sole interests of plan members. In other words, most public funds encourage investments made with other public policy objectives in mind.⁵

Investment process

Management is responsible for developing a plan for purchasing and selling assets, in accordance with the stated investment policy, and for monitoring the results. These results are then reported to the Board and through them, to the members of the scheme. Other things constant, there are no obvious differences between public and private funds with regard to the implementation of a given investment policy. If anything, however, the standards of transparency within the process should be higher in a public fund that receives mandatory contributions from members.

The investment policy will have laid out the general approaches with regard to passive versus active investment, external versus internal asset management, hedging strategy etc. The

⁵ For a variety of real world examples, see Iglesias and Palacios (1999).

details of the process for implementing this strategy should be left to professional managers who in turn, may use external managers, brokers, custodians and brokers. The method for selecting these external parties and evaluating their performance is an important part of defining the investment process and should be based on well-defined, objective criteria. These may include for example, level of fees, experience, and expertise within certain sector or with certain types of financial instruments. Systematic records should be maintained as to the considerations and arguments for selection. Likewise, investment decisions within the scope of the overall asset allocation plan should be based on objective criteria in line with the risk and return targets associated with individual asset classes.

An objective and quantifiable methodology for assessing performance over reasonable periods of time should be made explicit. Measuring performance is a two step process that begins with an accurate measurement of results. This in turn requires the application of accepted accounting and valuation standards that allow for reasonable comparison with prescribed benchmarks. The second step is to compare these results to an objective predetermined benchmark. The assessment should focus on the net value added by internal or external managers taking into account risk. Independent and external performance valuation should be considered especially where the resources available internally are scarce. The consequences of the assessment in terms of retention of managers and performance-related compensation should be explicitly described in the documentation of the investment process.

Reporting and disclosure

It is crucial to provide information to those who will hold the fund governance accountable and to ensure that the information is reliable. Key elements of the management of the fund such as the investment policy should be available to the public. Performance in terms of cost of administration, compliance with the law governing the fund, and investment returns should be regularly provided to the public through annual and perhaps quarterly reports. The information should be audited regularly by an independent auditor. If anything, the standards for transparency for a public fund, where the liability of the Board is usually circumscribed, should probably be higher than those that apply in the private sector.

Interdependence of policy choices

Effective policies in any of the five areas described above are not enough to ensure a positive outcome. The clearest example of the interdependence of these choices is the relationship between governance structure and investment policy. The legislation governing many public pension schemes precludes the formulation of a good investment policy even by the most qualified and motivated trustees. Conversely, if the Board is given more latitude, a weak governance structure has been shown to influence investment policy.⁶ Although most studies find that performance is mostly determined by overall asset

⁶ Useem and Hess (1999) and Mitchell and Hsin (1997) present empirical evidence of the influence of governance structure on asset allocation in US public pension plans at the state level.

allocation⁷ an otherwise sound investment policy may be undermined by weak investment processes.

While reporting and disclosure provide an important source of discipline for private pension funds, it is arguably of greater importance for public funds. This assertion is based on at least two limitations regarding accountability exclusive to public schemes. The first is personal liability of trustees. Even in countries with a strong tradition in trust law, it has thus far proven impossible to hold trustees of public pension funds to the same standards as their private sector counterparts. This violates one of the basic tenets of good governance, namely matching consequences with decisions.

The second limitation is more fundamental. Almost without exception, public funds are not monitored by a supervisor with the objective of ensuring that the interests of members are being served through the enforcement of regulations. Unlike members of private schemes, those forced to pay into public schemes do not receive protection from an agent with sufficient expertise and access to information. Public pension funds are therefore, to a large extent, self-regulated monopolies.

This leaves only two avenues for accountability – representation of members on the Board and ultimately, the ballot box (where this option is available). It would seem difficult to devise an effective mechanism for selecting a representative for members of a national scheme (as opposed for example, to a scheme for civil servants or some other clearly differentiated group). Some options could result in populist policies that undermined the original objectives of prefunding and in practice, experience with representative Boards in many countries has not been positive. The second avenue for accountability – the electoral process itself – raises much broader questions of governance.

Given these limitations, the best and perhaps only source of discipline for public pension fund managers is a public that is well informed and educated enough on the subject to assess at the most basic level whether or not their money is being invested prudently. Achieving this level of public consciousness can be facilitated by civil society, academia, and the media, but only if accurate reporting and disclosure are forthcoming.

Summary

This section has described five policy issues that must be addressed if public pension fund management is to be effective. The list is similar for public and private funds, but there are some important differences in the feasible set of policy alternatives available. In most cases, the analogy is strong and there are many ways that public funds could emulate successful practices observed in certain private pension sectors. There may also be ways to get around some of the more practical problems – such as the size of the funds involved – given sufficient political will. However, there are limitations as to how far best practice for private funds can be adopted by public funds, even in principle. These limits stem from the fundamental question of who is accountable for decisions made by public fund managers

⁷ Brinson et. al., (1991).

that are not personally liable for poor results, have been selected by government officials and are not subject to independent supervision.

The next section reviews five recent initiatives towards improving public pension fund governance that attempt to address each of the issues described above. Where possible, the evolution of the proposal and the rationale for the ultimate design of the schemes is discussed. Some key features are then compared across the five countries.

Recent initiatives in five OECD countries

Overview

Since 1997, five OECD countries have substantially altered their strategy for prefunding public pension obligations.⁸ Three of them – Canada (1998), Japan (2001), and Sweden (2001) – reformed existing prefunding arrangements that had not performed well over the last several decades. The other two – New Zealand (2000) and Ireland (2000) – launched initiatives for building pension reserves designed to offset the projected rising costs in their flat pension schemes due to population ageing.

Table 1 below provides some background on the five countries. Sweden and Japan have older populations while Ireland and New Zealand have the youngest demographic structures. Japan and Sweden have more generous public pension schemes than the other three. These two factors explain the observed differences in public pension spending to GDP ratios in the second column. Meanwhile, at the time of the initiatives, Japan and Sweden had already amassed large public pension reserves, Canada had accumulated a significant amount and Ireland and New Zealand had none. Ireland and Canada had the most developed private pension fund industry measured in terms of assets.

Table 1 Background statistics for five countries with public pension fund initiatives

Country (year of implementation)	Percent of population over 60 ¹	Public pension spending as share of GDP ²	Public pension fund assets as share of GDP ³	Private pension fund assets as share of GDP ⁴
Canada (1998)	16.5	5.4	10	48
Japan (2001)	23.1	6.9	34	19
Ireland (2000)	15.5	4.6	None	45
New Zealand (2001)	15.5	6.5	None	n.a.
Sweden (2001)	22.1	11.1	33	3

1/World Bank estimates for 2000.

2/OECD Social Expenditure database figures for 1997.

3/Country sources. Figures for Canada for 1998, while figures for Japan and Sweden are for 2000.

4/OECD Institutional Investors Yearbook, 2000. Figures are for 1998.

Sources: OECD (1996); OECD (2000); World Bank population database;

⁸ Another interesting example is the Norwegian Petroleum Fund. While not a pension fund per se, the assets have been designated as a means for dealing with the impact of population aging.

Canada's CPP Investment Board

Following the 1995 actuarial assessment of the Canada Pension Plan (CPP), a debate ensued over how to ensure the long term finances of the scheme that had been set up three decades earlier. The idea of privatizing and moving to fully funded individuals accounts was rejected in favor of improving long term finances of the existing scheme. The package of measures to reform the CPP sought to smooth the increases in contribution rates forecast by the government's actuaries. This would be accomplished in two ways: First, the current contribution rate would be increased from 6 to 9.9% by the year 2003. Second, the CPP reserves would be invested in the stock market beginning in 1999. This would require a shift away from the previous policy of automatically purchasing provincial government bonds that had prevailed over the last three decades. Yields on these bonds were below market rates leading to relative low long-run returns for the CPP. There was also some evidence that the captive source of credit available to the provinces led to higher government consumption.⁹

The proposed Act would phase out these purchases. According to the "Briefing Book" for the final CPP Legislation,

"The option of governments intervening in CPP investment policy to meet regional or economic goals was widely rejected during public consultations as being incompatible with the interests of plan members. Accordingly the Board and its responsibility to invest in the sole interests of plan members are foundations of the new investment policy."
(Government of Canada 1998).

In keeping with this approach, the new investment regime would exclude social investments explicitly. The focus would be to increase equity holdings since most of the portfolio would remain in government bonds for years to come. Initially, it was decided that investment in domestic equities must "substantially replicate the composition of one or more widely recognized broad market indexes of securities traded on a public exchange located in Canada." This method was preferred because it reduced discretion of the fund managers and because passive indexation was considered less costly. Foreign equity exposure was initially limited to 20 percent to be raised later to 30 percent. This is in line with restrictions on private pension funds.

But the real insulation from politicians would hinge on the new and independent Investment Board. In consultation with provincial governments, the Finance Minister would appoint the twelve members of the board. The briefing book describes the process as follows:

"A nominating committee will recommend qualified candidates for the board of directors to federal and provincial governments. Government employees are not eligible to be directors. The Board will be subjected to close public scrutiny. It will make investment policies public, release quarterly financial statements and an annual report and hold public meetings every two years in each participating province...This agency would be subject to "fiduciary duty to invest CPP funds in the sole interests of contributors and beneficiaries - that is, to maximize returns without undue risk of loss."¹⁰

⁹ von Furstenberg (1979).

¹⁰ Government of Canada (1998).

The board's members would be appointed for staggered three-year terms and would fulfill a set of criteria spelled out in late 1998.¹¹ These criteria included:

“...sound judgment; analytical, problem-solving and decision-making skills; a genuine interest in, and dedication to, the CPP; the capacity to quickly become familiar with specific concepts relevant to pension fund management; adaptability, including the ability to work co-operatively with others (possibly witnessed in prior service on a board, association or committee); high motivation, with the time and dedication required to prepare for and attend Board meetings; ethical character and a commitment to serving the public, preferably with a sensitivity to the public environment in which the CPP operates; and strong communications skills.”¹²

Regarding the desirable qualifications of the financial experts, these would include:

“...experience in a senior capacity in the financial industry; broad investment knowledge (e.g., securities and financial markets); experience as a chief financial officer or treasurer of a large corporation or government entity; consulting experience in the pension area; and generally recognized accreditation as an investment professional (e.g., CFA, MBA, training in economics or finance).”¹³

If the objective was to increase returns, the method of achieving this was to try to impose private sector portfolio criteria on the public fund and to place the professional Board at arms' length from the government. Regarding the investment rules, the government noted that “most of these are drawn from the Pension Benefits Standards Act...”. In other words, the existing regulatory framework for a well-developed private pension sector was the basis for the rules of the Investment Board. On the other hand, due to its special nature, regulator standards applied to private pension funds could not simply be imposed on the CPPIB.

Perhaps, the most controversial of the private pension rules adopted for the CPP was the foreign investment limit which allowed for up to 20 percent (rising to 30 percent in 2001) of the portfolio to be invested in foreign assets. Labour party politicians argued that the entire pool of CPP investments should remain in Canada to stimulate economic development. But reformers eventually succeeded in obtaining the same portfolio limits on foreign investment as applied to the private sector.

Investing in the market index was considered as another way of avoiding political discussions over investment choices or potential conflicts of interest. If stock picking was not allowed, there would be no scope for political priorities to find their way into investment policy. At the same time, it was recognized that the size of the fund combined with a lack of flexibility might distort the market as other players were able to anticipate CPP investments. Also, it was pointed out that tracking the index could involve higher turnover than a buy and hold strategy as the index weightings changed even over short periods of time. Ultimately, the wording in the regulations allowed space for active management.

¹¹ “Gender” representation was included among the criteria.

¹² Government of Canada (1998).

¹³ Ibid

These measures were intended to result in CPP investment policies that approximated what was found in the private sector. This was possible because there was a significant private pension sector with a long track record to use as a benchmark. The existence of a large contractual savings sector, including close to 40 percent of GDP in pension assets alone, was an important consideration for the reform. At its peak, the CPP reserves would still be smaller than those held in private pension funds.

Another consideration was the absorption capacity of the capital markets. The government noted that, “Canada’s capital markets are well developed and should be able to absorb the increase in CPP investments.” Analysts found that the projected flows of new CPP funds into equities would not overwhelm the supply of new issues, especially if the foreign investment option was available.

Finally, there was the issue of corporate governance. Potentially, the CPP Board would be in a position to exercise its shareholder voting power in Canada’s leading corporations. One option was to abstain from using this power. Instead, the government chose to retain voting privileges in order to be able to take advantage of its “voice” as an investor in the same way as other institutional investors in Canada.

This was the background for the ultimate passage of the Canada Pension Plan Investment Board Act that came into force in 1998. A Board of Directors was appointed and a new Corporation was launched in October 1998. The Act clearly states its objectives:

“The objects of the Board are

- (a) to manage any amounts that are transferred to it under section 111 of the Canada Pension Plan in the best interests of the contributors and beneficiaries under that Act; and
- (b) to invest its assets with a view to achieving a maximum rate of return, without undue risk of loss, having regard to the factors that may affect the funding of the Canada Pension Plan and the ability of the Canada Pension Plan to meet its financial obligations.”

The process of nomination and appointment of the Board deserves special attention. Ministers of Finance from each of the nine participating provinces and the federal government select individuals (public and private sector) who are responsible for the nomination process. Next, this nominating committee recommends individuals that meet the criteria for Board members as laid out in the Act. The Minister of Finance of Canada then appoints the Board, consisting of 12 members, from the persons on this list. This unique arrangement has the advantage of adding distance from the Minister of Finance and the Board.

Terms are staggered with half of the directors serving two year terms and the remainder serving three year terms. Each can be reappointed for another three year term with a maximum of three terms or nine years. The Chair can serve a fourth term. The members must agree to uphold a code of conduct and must disclose any potential conflicts of interest.

The investment policy flows from the stated objectives of the CPPIB to increase the funding ratio for the CPP from 8 to 20 percent by 2017. It also has made clear the target long term rate of return of four percent in real terms. In order to achieve these targets and in light of the large bond holdings that are held by the CPP based on historical investment in provincial

bonds, the CPPIB determined to invest almost exclusively in equities. All asset management is done through external managers.¹⁴

Initially, domestic equity holdings were concentrated in index funds replicating the Toronto Stock Exchange index. Foreign equity holdings similarly focused on S&P 500 and MSCI EAFE index funds. By 2002 however, the Board had shifted its asset mix in favor of private equity funds.¹⁵ The Investment Statement from April 2002 includes minimum and maximum asset class exposures as shown below:

Table 2 Canada Pension Plan Investment Board, permitted investments

Investment activity	Minimum	Maximum
Public equities of which		
- Canada	45%	75%
- US	5%	25%
- Other	5%	25%
- Total	75%	100%
Private equities	0%	10%
Total equities	85%	100%
Real Assets*	0	5%
Nominal fixed income/cash	0	10%
Foreign currency	10%	35%

Source: Adapted from CPPIB Investment Statement, April, 2002

* includes (i) real estate, (ii) natural resources and (iii) real return bonds.

Reporting requirements include, (i) an annual independent audit¹⁶, (ii) annual report (iii) quarterly financial statements (iv) and public meetings in each province at least once every two years. In addition, the Finance Minister is required to initiate a special examination of management practices at least once every six years.

By the first quarter of 2002, the fund had accumulated around 14 billion Canadian dollars or about 1.3 percent of GDP. First year returns were tremendous, driven by passive equity investments during a period of rapid equity appreciation both in Canada and abroad. Regulations allowed for some active equity investment in 2000. The Board determined to reduce its exposure to one particular firm with what was perceived to be an excessively high weight in the overall Canadian equity portfolio. This policy allowed the CPPIB to outperform the index, as this particular stock declined precipitously by March 2001.¹⁷ After 40 percent returns in 2000, the decline in global equity markets in 2001 led to a negative return of about 9 percent for a cumulative annualized return of 14.8 percent. Administrative costs fell from 31 to 11 basis points between 2000 and 2001.

¹⁴ Other services such as custody, performance measurement and investment accounting services are also provided externally, by State Street Trust.

¹⁵ On a commitment basis, these represented about 17 percent of total assets of the fund, but only three percent on the basis of actual investment.

¹⁶ The external auditor reviews internal controls every six months, although this is not required.

¹⁷ CPPIB Annual Report (2001).

Ireland's National Pension Reserve

In May 1998, the Irish Pensions Board issued a major pension policy report (IPB 1998). This report was the result of discussions with the social partners and represented a consensus document. It recommended expanding voluntary private pension coverage through increased incentives and an increase in the flat benefit which constituted Ireland's first pillar and which had fallen over time relative to average incomes. In order to control future contribution rates as the country began to age and to reduce intergenerational transfers, the report recommended partial funding of the flat benefit. The projections suggested that the contribution rate with partial funding would have to increase from 4.84 to 6.24 per cent while the no funding scenario would require an increase to 9.25 per cent. The option of mandating private pension coverage towards the same objective was debated, but ultimately rejected.

The new fund would be managed by a new, independent body and would have statutory responsibility for investing solely for the purpose of maximizing returns. Social investments would be explicitly disallowed. In this regard, the report stated, "that there should not be any constraints on commercial investment and in particular, that there should be no mixing of financial and social objectives." In addition, the governing board would not be allowed to invest in domestic government bonds in order to avoid the temptation of increasing government consumption using a captive source of credit.

Concerns over the size of the fund were explicitly addressed in the report,

"The absolute size of the proposed fund would not present threats of distortions of Irish capital markets, if the proposed investment parameters apply. For example, the fund is expected to grow to 26 per cent of GNP by 2026 if the maximum Exchequer contribution is 3.8 per cent of GNP in any year. At end 1997, the combined capital value of the Irish equity and gilt markets was equal to 135 per cent of GNP and the current value of Irish pension funds was equal to almost 66 per cent of GNP."¹⁸

On July 23, 1999 the Minister of Finance, Charlie McCreevy announced that the Government had approved a new prefunding strategy covering not only the main public pension scheme, but also public employees' pensions. The proposal would create a Social Welfare Pension Reserve Fund and a Public Service Pension Fund into which budget surpluses totaling one percent of GDP would be deposited annually through 2055. This contribution would not be discretionary and funding levels would be assessed periodically in actuarial reviews.

The Minister launched the National Pension Reserve Fund in April 2001 and by the end of the year, the fund held approximately 7.5 billion Euros or about 5.3 percent of GDP.¹⁹ The fund is controlled by a seven-member Commission that is independent of Government and has a commercial investment mandate to maximize returns subject to a prudent level of risk.

¹⁸ IPB (1998).

¹⁹ Most of this consisted of proceeds from a Telecom privatization earmarked for this purpose.

The National Treasury Management Agency was designated as manager for the first ten years. They in turn contract out to private asset managers. The initial investment policy adopted by the Commission was produced with the assistance of international consultants and is reported below in Table 3. As noted, domestic bond investments are not permitted.

Table 3 Asset allocation strategy for 2001, Irish National Pension Reserve Fund

Major asset classes	Overall allocation	Share passively managed	Share actively Managed
Equities of which	80.0%		
- Eurozone	- 40.0%	27.9%	12.1%
- Global ex Eurozone	- 40.0%	14.2%	25.8%
Bonds	20.0%	14.8%	5.2%
Total	100%	56.9%	43.1%

Source: Maher (2001).

Within this framework, asset managers were to be contracted by the NTMA which was to become a manager of managers on behalf of the Commission. The Commission did decide however, to delegate the NTMA itself as the manager of the passive bond portfolio of the fund. External managers therefore manage about 85 percent of the total assets of the fund. The selection criteria were embedded in a tender process that was subject to certain EU directives. In this two step process, 600 applications were received from 200 investment managers with 93 percent coming from outside of Ireland. External managers were appointed in April 2002.²⁰

The NTMA is responsible for monitoring these asset managers against a predefined set of benchmark indices. They report to the Commission regularly on the results and the Commission is responsible for providing detailed annual reports to the Irish Houses of Parliament and the Committee of Public Accounts. These reports are available to the public.

Japan's National Pension Fund

At their inception in 1942, the flat national pension and the earnings related employee pension insurance programs were designed to be fully funded. Benefits were subsequently raised and the funding ratio gradually declined, despite increased contribution rates. Even after major reforms in 1995 and 2000 which reduced the future benefit levels, Japan's rapid demographic aging and reliance on public pensions implied one of the largest unfunded pension liabilities in the world. It also has one of the largest public pension reserves in the world and improving its returns in order to help sustain the faltering pension system was one of the objectives of pension legislation passed by the Diet in March 2000. The new arrangement became effective in April 2001.

The law also included measures to reduce liabilities including a reduction in the accrual rate, an increased normal retirement age and a shift from wage to price indexation. Proposals by

²⁰ National Treasury Management Agency Press Release, April 18, 2002.
http://www.ntma.ie/PensionFund/PressRelPhase3_19042002.pdf

representatives of the private sector employers to privatize the earnings-related part of the system were rejected in favor of these measures.²¹

The reform also included changes to the way public pension reserves are managed. In the past, a substantial portion of pension reserves in the main public pension schemes in Japan is borrowed by the central government in the form of non-marketable government bonds. These were used by government to finance public works projects and social investments (e.g., medical infrastructure, loans to members) with a relatively small share invested in the capital markets. A small portion was invested abroad.

The magnitudes involved are large. By March 2000, total assets of the NP and EP totaled 170 trillion yen or about 34 percent of GDP. On the other hand, the liability to current workers and pensioners was estimated to be 160 percent of GDP yielding a funding ratio of about 22 percent.²²

Roughly one fifth of pension reserves was invested in capital markets through the 'Pension Welfare Service Public Corporation' (PWSBC). A large portion of the reserves, (along with post office savings) were used to finance projects and directed credit based on market failure rationale. Most could be categorized as economically targeted investments. There is a mandatory transfer from the pension funds to the Fiscal Investment and Loan Program (FILP) which in turn makes loans to public agencies, municipal and central government. This allocation is determined during the formulation of the annual government budget.

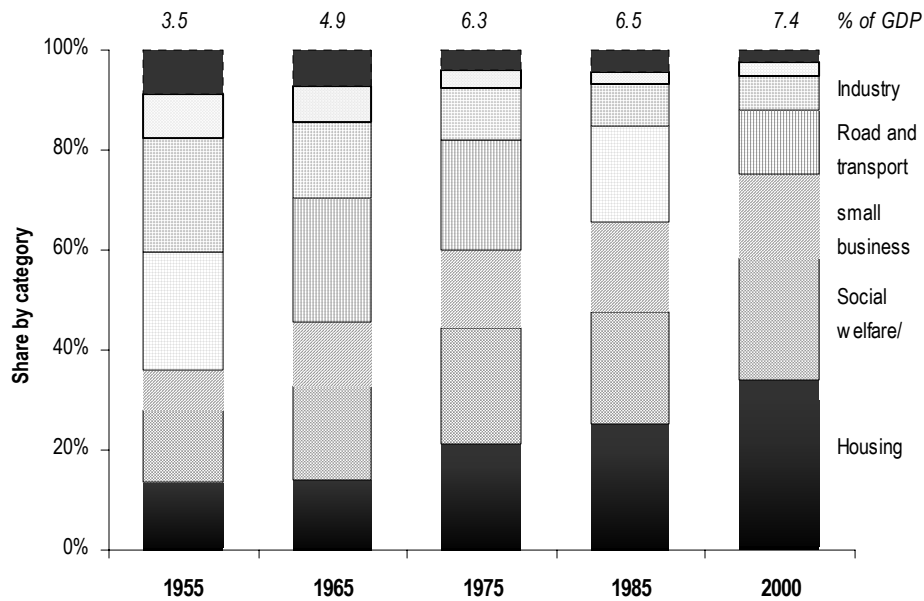
Figure 1 below shows the evolution of FILP investment since 1955. By the year 2000, the accumulated loan portfolio was more than 80 percent of GDP of which around one quarter came from the pension system. Over time, and as the funds grew relative to the economy, the proportion allocated to supporting industry and providing infrastructure was reduced in favor of housing and social welfare spending, including loans for education. Subsidies to small and medium sized enterprises also increased over the period and represented almost one fifth of FILP investments in 2000. Clearly, pension savings have been used as a way to achieve other public policy objectives throughout the history of the system, although the emphasis has shifted towards supplementing social spending.

Changes in the way pension reserves were invested were introduced after 1986. The first change allowed the PWSPC to use trust banks and insurance companies to manage assets. Between 1986 and 1995, the proportion of total pension reserves invested in something other than government loans, rose from 1 to 20 percent.

²¹ Sakamoto (2001).

²² Ibid.

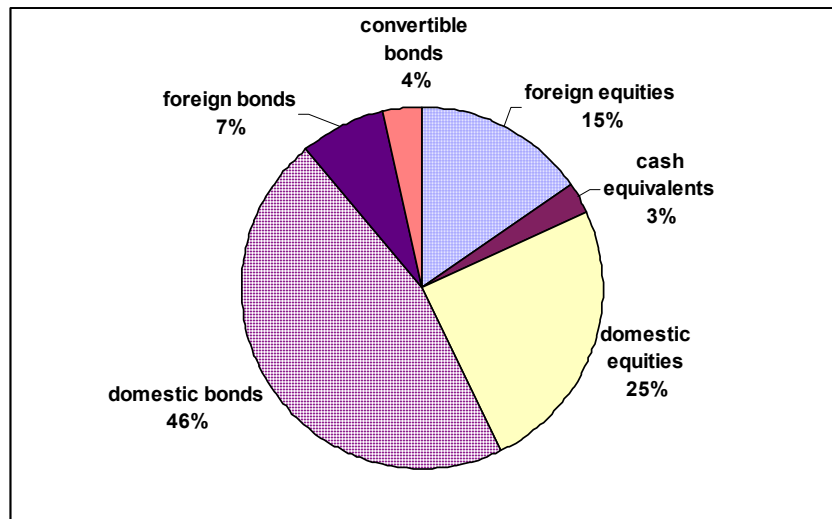
Figure 1 Allocation of FILP loans by function, 1955-2000



Source: Finance Bureau, Ministry of Finance (2000)

Figure 2 shows how this 20 percent was allocated in March 1998. About half is lent back to the government through the purchase of bonds. About 40 percent is held in equities and almost a quarter is held in foreign securities. The corresponding figures expressed as a share of the total assets of the public pension scheme are about 8 percent in equities and four percent in foreign securities. In total, around 90 percent of pension reserves are borrowed back by the government and used to finance public works projects and other programs.

Figure 2 Portfolio of Pension Welfare Service Public Corporation, 1998



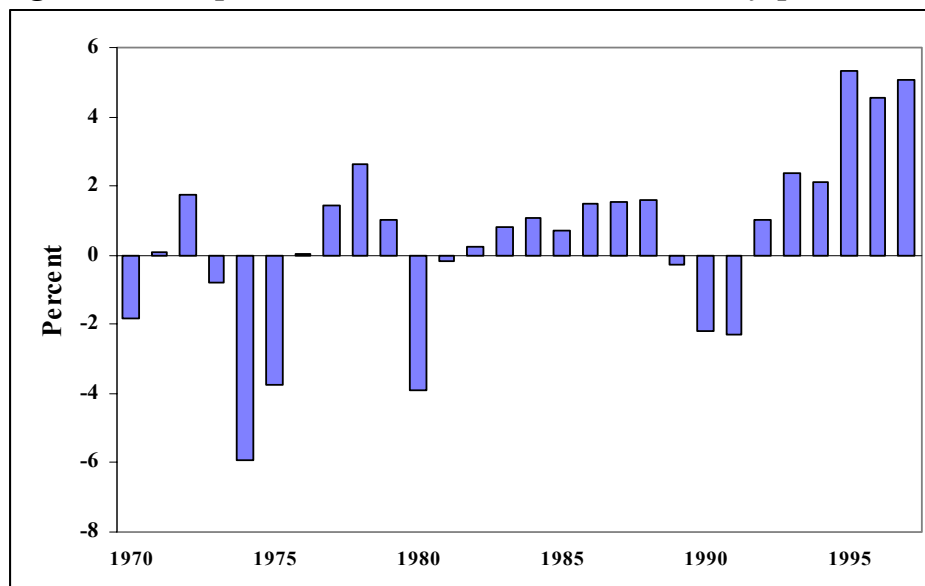
Source: Pension Welfare Service Public Corporation (1999).

Historical rates of return were quite low. Between 1970 and 1997, the return was slightly higher than the yield on one year treasury bills and almost two percentage points lower than the growth of income per capita.²³ Since pension liabilities grew along with wages, the latter differential alone would account for significant erosion in the funding ratio. Demographic changes and increased benefits (without corresponding increases in contribution rates) explain the rest of the growth of the unfunded liability.

The purpose of investing in private securities was to raise returns. At first glance, the strategy appears to have been successful. As shown in Figure 3 returns relative to t-bill rates rose in the 1990s. But in fact, returns on investments between 1986-1997 yielded the same compound return as the government loan portion of the portfolio only with a much higher level of volatility. This is due to the stagnation of the domestic equity market during the 1990s coupled with limited international diversification. The apparent improvement at the end of the period is due to the recent collapse in short term interest rates, a temporary effect reflecting the policy of holding bonds to redemption.²⁴

Poor historical performance was one motivation for moving away from the old investment regime. In addition to poor returns, Japanese economists have complained that the public projects financed by pension and other savings have been wasteful and unproductive. The erosion of the bureaucratic dominance of the Ministry of Finance in the wake of the East Asian financial crisis in the late 1990s may have also created space for a shift in control of the massive fund. So while improving investment performance was a stated objective, especially in light of the difficult choices facing the government on the liability side, the nature of the final reform suggest that there were other factors at work.

Figure 3 Gross pension fund returns minus t-bill rates, Japan 1970-97



Source: Pension Welfare Service Public Corporation (1999); IMF IFS statistics.

²³ Iglesias and Palacios (2000).

²⁴ Usuki (2002) points out that the returns between 1995 and 2000 were slightly better than comparable market indices.

Since its inception, the Ministry of Finance effectively controlled the public pension reserves in Japan. This changed in April 2001, when the Minister of Health Labor and Welfare (MOHLW) became responsible for these funds. At the same time, a new governance arrangement was created whereby the MOHLW determined asset allocation in consultation with experts from a Subcommittee for Fund Management, themselves appointed by the same Minister. The management of the fund is delegated to a three-person board incorporated as the Government Pension Investment Fund or GIPF.²⁵ The Chairperson is appointed by the MOHLW who selects the two other Board members, subject to the approval of the MOHLW.

The Minister sets the overall asset allocation. As part of the process of formulating investment policy, several restrictions and transition arrangements have been adopted. First, holdings of domestic bonds must be greater than foreign bonds. Second, foreign equities must represent less than two-thirds of domestic equity investments. Third, holdings in foreign stocks must be greater than foreign bonds. During a transition period of seven years, the old loans made through the FILP will be repaid to the pension reserves.²⁶

The investment process is implemented by the GPIF whose Board may consult with a special committee of investment experts in setting its detailed investment plans. The Board is responsible for selecting custodians and asset managers and monitoring the performance of external firms based on stated and objective criteria. Contracts with external agents are reviewed every five years. All investments other than domestic bonds are managed externally. The GPIF also sets the explicit guidelines for internal management of the domestic bond portfolio. All shareholder voting rights are transferred to the external managers.

The GPIF Board must present independently audited investment results to the MOHLW who in turn must disclose this to the Social Security Council, the Diet and the general public as part of its supervisory function. Independently audited financial statements and the auditor's report must be published annually.

New Zealand's Superannuation Fund

New Zealand is the only OECD country that does not force workers to contribute to a publicly-mandated pension scheme. Instead, public policy in this area takes the form of a general revenue financed, universal flat benefit that is provided to every citizen with 10 years of residency since age 20 upon reaching age 65.²⁷ The Government projected that pension spending would rise from the current 4 percent of GDP to 9 percent in the next fifty years due to population aging.

The Government proposed prefunding the pension scheme by setting aside funds for a 40-year period starting in 2001. The Ministry of Finance stated the issue clearly:

²⁵ This terminology is taken from Usuki (2001). Sakamoto (2001) refers to this as the Investment Fund of Social Security Reserves or (IFSSR).

²⁶ In the future, bonds will be issued by FILP to support public projects.

²⁷ The idea of introducing a mandatory, funded retirement savings scheme was rejected in a recent referendum by what could fairly be termed a consensus of 97 percent of voters.

“New Zealand’s population is ageing. We need to start preparing now for the impending bulge in the cost of New Zealand Superannuation (NZS) that will accompany this trend. By setting aside some Crown resources toward retirement income now, while we can afford it, we will be able to smooth out the cost over time.”²⁸

There was resistance to the proposal from the two main opposition parties, the Greens and New Zealand First or National party. The Nationals favored tax cuts in the short run and insisted on keeping open the option of moving to a system of individual funded accounts. The Government opposed individual accounts, arguing that lower income workers and those with partial careers would not benefit equally and that costs of administration would be high. The Green party held that the scheme was affordable on a pay-as-you-go basis because expenditures on children would be lower in light of population trends. It was also concerned about investment policy and argued that criteria include social or ethical investment. Some Parliamentarians argued that it did not make sense to prefund pensions rather than reduce the size of the national debt.²⁹

After a heated debate, the Superannuation Act was passed in October 2001 with a some minor compromises, including the inclusion of an investment criteria to deal with ethical investment³⁰ and a provision allowing for future consideration of the conversion of the Superannuation fund into individual accounts. Despite this, the opposition parties did not support Part II of the Superannuation Act of 2001 establishing the new Superannuation Fund which was passed into law in October 2001.

The New Zealand Superannuation Fund has several unique and innovative features. The first relates to the partial funding target. This is specified indirectly through a formula that determines the annual contribution from the budget as follows:

$A/100 \times \text{GPDt} - b$, where

“... b is the percentage of that year’s GDP that, if the same percentage of the GDP is projected for each of the next 40 years were contributed...each year for the next 40 years, would be just sufficient, taking into account the Fund balance at the start of that year and projected Fund investment income over the next 40 years, to enable the Fund to meet the expected net cost of the New Zealand superannuation entitlements payable out of the Fund over the next 40 years

GDP is the projected annual gross domestic product of New Zealand
b is the expected net cost of New Zealand superannuation entitlements net of any tax deduction made or required to be made under the PAYE rules in the Income Tax Act 1994
Next 40 years means the financial year for which the required annual capital contribution is being calculated plus each of the following 39 financial years.”

In other words, the annual contribution is a function of revised estimates of liabilities and asset accumulation in such a way as to ensure that the fund would be able to meet the costs

²⁸ Government of New Zealand (2000).

²⁹ Cullen (2000).

³⁰ The specific wording was that investments should be made “(c) avoiding prejudice to New Zealand’s reputation as a responsible member of the world community.”

to be paid from it for pensions over the next 40 years. Moreover, withdrawals from the Fund are expressly forbidden until 2020.³¹ According to one study, the baseline scenario is for the Superannuation Fund to grow to around six percent of GDP by the year 2020.³²

Governance of the NZSF is entrusted to a public corporation known as the ‘Guardians of New Zealand Superannuation Fund’. It is run by a Board responsible for investing the Fund “on a prudent, commercial basis...”. Moreover, they are held to three standards:

- (a) “best practice portfolio management
- (b) maximizing return without undue risk to the Fund as a whole; and
- (c) avoiding prejudice to New Zealand’s reputation as a responsible member of the world community.”

The 5-7 members of the Board are first nominated by a committee.³³ This nominating committee is established by the Minister of Finance and must include at least four persons with “proven skills or relevant work experience that will enable them to identify candidates for appointment to the Board who are suitably qualified.” The nominations are then considered by the Minister who must then consult with political parties in Parliament before he finally recommends to the Governor-General that the appointments be made.

Once the appointments are made, the term of each Board member is limited to 5 years unless he or she is reappointed. However, the Minister may remove a member from office at any time and for any reason that the Minister deems appropriate. Members must adhere to codes of conduct and must generally behave in an honest and ethical manner. He or she must report any conflicts of interest as soon as possible. Liability of members as regards civil lawsuits and successfully defended criminal actions is indemnified and such costs fall on the Budget. For the purposes of the indemnification, members are never personally held liable provided the member ‘acted in good faith in pursuance or intended pursuance of the functions or powers of the entity.’

The Minister is further empowered to ‘give directions’ to the Guardians in writing. This document is presented to the House of Representatives and published in the official gazette. The Guardians are obliged to take it under advisement and tell the Minister how they propose to respond. This response must eventually be documented in the Annual report. The Board lays out an investment policy and reviews it annually. The Act does not set maxima or minima or impose any other limits or mandates. The Board may appoint one or more external agents to manage the investments, as well as a custodian. Performance reviews are required as soon as possible after July 2003 and then again at a maximum of 5-year intervals. These reviews are performed by an independent firm or person appointed by the Minister. Following the review, the Minister presents a report to the House of Representatives as soon as possible.

³¹ The Government determined that transfers to the Fund would total 600 million NZ\$ in 2001/02, 1,200 million in 2002/03 and 1,800 million in 2003/04. However, until the Fund is fully established and operating in 2002, it will earn the interest rate on short-term bank deposits.

³² McCulloch and Frances (2001).

³³ This committee, comprising five investment professionals was appointed by Minister of Finance, Michael Cullen, in April 2001.

The nominating committee was appointed by the Minister of Finance in October 2001. The members included the Chief Executive of the Investment Savings and Insurance Association, the Chairman of the First State Property Trust, a chartered accountant, a member of the Securities Commission and the Executive Director of New Zealand Businesses for Social Responsibility. A public information campaign designed to inform the public about the new Superannuation Fund is planned and a firm was chosen in February 2002. The “Guardians” had been named by July 2002.

Sweden’s National Pension Fund

Much has been written about the Swedish pension reform of 1999, and in particular, the introduction of ‘notional accounts’, an unfunded individual account where contributions equivalent to 16 percent of wage are credited to members and accumulated with interest until retirement.³⁴ The notional interest rate is set equivalent to the average growth of incomes and the notional balance is finally converted into an indexed annuity, although during low or negative growth periods, real benefits may be reduced. The concept has since been adopted in several other countries including Latvia, Poland and Italy.

There has also been interest in the design of a new funded component of the Swedish pension system. The contribution to this ‘second pillar’ or Premium Savings Fund is 2.5 percent. It is privately-managed by asset managers selected by members from among dozens of mutual fund options. In order to control costs, recordkeeping and information flows are centralized and transactions are executed in blocks rather than at the retail level. There are also complicated caps on fees charged by the mutual funds.

The third major change to the old ATP system – the reform of management of public pension reserves – has received the least attention. Yet, the long run rate of return on a very substantial ‘buffer fund’ is crucial for the success of the new notional account scheme and therefore of the entire reform. In fact, through an automatic ‘balancing mechanism’, poor performance can translate directly into less generous benefit indexation.

This third prong of the reform entailed the conversion of five existing AP funds into four new entities with different governance rules and investment policies.³⁵ After a transfer from the old reserves back to the central government, the remaining stock of reserves to be distributed between the four funds was 134 billion SEK per fund. The total for the four funds was equivalent to around 23 percent of GDP.

Prior to the reform, different statutory restrictions on investments applied to individual funds. These limits prohibited investment in equities in the first three funds and limited foreign securities to less than 10 percent of assets in all five funds. Actual domestic and foreign equity holdings represented 23 and 9 percent of total assets, respectively. Fixed income instruments, including government bonds, mortgage and other bonds represented 60

³⁴ See for example, Disney (1999) and Valdes-Prieto (1999).

³⁵ The new system also includes two more public funds. The first is a residual scheme from the old system that invests in small and medium sized enterprises in Sweden. The second is the default fund for individuals who do not express their choice of private fund manager for their fully-funded, “Premium” pensions.

percent of the portfolio. The rest was in real estate, direct loans and cash. The average annual compounded return between 1961 and 1995 was 2.1 percent compared to 0.9 and 2.5 percent on short-term bank deposits and income per capita growth respectively.³⁶

The reform created four funds of equal size. Each fund has a board consisting of nine members appointed by the Government. Two of these are nominated by employers and two by employee organizations. Criteria for appointment exist, but are fairly vague and would appear to allow for much flexibility. The law states that "... members should be appointed on the basis of their competence to promote the management of the fund". The new funds began operating on January 1, 2001.

Investment restrictions are significantly less onerous than those in the old regime. The objective was stated in terms of maximizing return subject to stated risk tolerances in the best interest of members. The two most important constraints on investment policy were a 30 percent minimum required allocation to fixed income instruments with high ratings (low credit risk) and a 40 percent foreign currency exposure rule for investments outside Sweden. This limit did not apply to investments where currency risk was hedged. Finally, up to five percent of the fund can be invested in unlisted securities.

The law states clearly that "there shall be no industrial or economic policy goals in the management of the funds." However, it also says that the investment policy should state how environmental and ethical considerations were taken into account albeit "...without relinquishing the overall goal of high return on capital."³⁷ In order to "prevent the buffer funds from becoming excessively large players and owners on the Swedish stock market...", a maximum of 2 percent of the market value of a Swedish firm can be held by any of the four funds. In addition, voting rights are limited to 10 percent in listed companies and 30 percent in unlisted venture capital firms. Table 4 below shows the most recent comparative data on their 'reference portfolios'. The last row shows their returns in 2001.

**Table 4 Reference portfolios, returns and costs
for Swedish AP Funds 1-4, 2001**

	AP1	AP2	AP3	AP4
	<i>Percentage of total assets</i>			
Swedish shares	12	20	16.3	22.5
Foreign shares – o/w hedged	45	40	32.6	40
Fixed income	30	10		
Real Estate	40	40	44	32.5
Return 2001 (%)	3	n.a.	7	0
Costs (bp)	-4.1	-3.7	-4.2	-5.0
	8	20	8	13

Source: Adapted based on the annual reports for each of the funds.

³⁶ Iglesias and Palacios (2000).

³⁷ Sammanfattning, English summary.

With regard to the investment process, the new law demands measurable targets with clear time limits for the purpose of monitoring performance. It also required that a minimum of 10 percent of assets be managed externally. AP 2 contracted out management of 75 percent of the portfolio, but intended to reduce this significantly. AP 3 contracted out about 25 percent of its asset management activities.

The funds produce annual and semi annual reports that are audited and available to the public. As public agencies they are subject to Sweden’s ‘open government policy act’ which demands a high level of transparency. The Ministry of Finance sends a letter to the parliament every year with a performance evaluation produced with the help of international investment consultants.

Finally, it is interesting to note the explicit attention given to the impact on the Swedish economy anticipated from these changes and the provisions made to mitigate them. In particular, the Government recognized concerns over the shift out of government bonds in terms of public finance as well as the potential impact on capital markets through the potential increase in demand for Swedish shares. Phasing in higher limits on foreign securities – starting at 5 percent and increasing steadily to 40 percent for unhedged investments – was justified by concerns about pressure on the exchange rate.

Comparing the five initiatives³⁸

Among the five countries, three have long experiences with prefunding of their public pension systems and their reforms aim to improve upon past performance. Two of the three – Japan and Sweden – with very high levels of unfunded pension liabilities relative to national income. Both also had very large reserves before the reform while Canada had moderate level. Ireland and New Zealand did not have public pension reserves before these initiatives. Table 5 presents the key indicators based on the latest information available.

Table 5 Basic indicators of the five new public pension funds

	Canada	Ireland	Japan	New Zealand	Sweden
Assets in US\$ (billions)	9.0	6.8	207.5	0.25	48.4
Assets as share of GDP as of 2001	1.3%	5.3%	5.4%	0.5%	22.9%
Funding ratio	8	n.a.	22	n.a.	
Costs/assets	0.11		0.16	n.a.	8-20

Source: own elaboration based on country sources.

³⁸ The relevant legislation for the three anglophone countries can be found at the following web addresses:

Ireland: http://www.ntma.ie/Publications/Pen_Res_Fund_Act_2000.pdf

New Zealand: <http://www.treasury.govt.nz/release/super/#15October>

Canada: <http://www.cppib.ca/>

The table shows a large variation in the magnitudes involved in both absolute and relative terms. Relative to the size of its economy, the combined assets of the four funds managing public pension funds in Sweden are by far the largest among the five countries. The smallest fund by this measure is the incipient Superannuation fund in New Zealand. In absolute terms, the initially small proportion of the massive reserves in Japan that are subject to the new management system are by far the largest at more than US\$200 billion. These are projected to reach US\$1.2 trillion by 2008. The Swedish funds hold almost \$50 billion US dollars, followed by Canada and Ireland at 9 and 7 billion respectively. New Zealand's initial contribution to the fund in 2001 comes only to about 250 million US dollars. The costs of administering the funds ranges from about 11 to 20 basis points in the four countries where data are available.

Tables 6 and 7 below summarize key features of the five cases with respect to governance and investment policy. Some important similarities and differences can be observed. With the exception of Japan, there was an attempt to create some distance between government bureaucrats or line ministries and the pension fund. In Canada, this was done by appointing a nominating committee that is not under the direct supervision of the Minister of Finance who ultimately appoints the board of directors.

Table 6 Comparison of governance and transparency

	Canada	Ireland	Japan	New Zealand	Sweden
Who acts as the fiduciary?	Professional board	Professional Board	Minister	Professional board	Hybrid board
How are these individuals appointed?	Finance Minister selects from short list of nominees	Finance Minister appoints	Minister of Health and Labor designated by law	Governor-general selects based on list of nominees	Government appoints 5 and selects 2 each from employer/ee nominees
Are annual external audits required?	Yes	Yes	Yes	Yes	Yes
What share of portfolio is managed externally?	All	85 percent	Roughly one third	All	At least 10 percent
Are manager selection and monitoring criteria explicit and objective?	Yes	Yes	Yes	Yes	Yes

Source: Own elaboration based on country-specific sources.

The situation is similar in New Zealand, where a nominating committee that is made up of private sector and professionals with relevant background submits candidates to the Governor-general. No such buffer exists in the case of Ireland, although board members must have the requisite professional background for the position. In Sweden, the Government must choose 4 of the 9 board members from among the individuals nominated by employer and employee organizations. Again, there is a requirement that the individuals

chosen should have relevant experience and background. Not included in the table is the fact that the Swedish system incorporates a unique feature of limited competition by distributing reserves among four separate funds.

The investment policy options available to each Board (and in Japan, to the MOHW), are subject to quantitative restrictions in each country except for New Zealand. The Irish reserve fund cannot be invested in domestic government bonds while thirty percent of the portfolio in Sweden’s AP funds must be in government bonds. Canada’s main restriction is on foreign securities that cannot be more than thirty percent of the portfolio. It should be noted however, that this rule applies as well to private pension funds. The limits in Japan focus on the ratio of domestic to foreign securities and are more restrictive than the other countries in this regard. They are not statutory, but rather have been determined by the Minister in the process of determining the long-term investment policy. Sweden also restricts foreign, unhedged investments to 40 percent.

Transition arrangements were necessary in the three countries that already had funds invested. Canada allowed a gradual weaning of the provinces off the automatic demand that the CPP reserves had provided while Japan gave the FILP seven years to unwind the old loan program that had financed public works for many years. The GPIF is required however, to continue underwriting FILP bonds, the change may be somewhat illusory. Sweden included measures that would make the shift out of mortgage bonds more gradual and limited foreign securities in the initial years after the reform in order to avoid pressure on their currency.

Table 7 Comparison of investment policy in five public pension funds

	Canada	Ireland	Japan	New Zealand	Sweden
Commercial investment mandate	Yes	Yes	Unclear	Yes	Yes
Statutory asset class restrictions	Yes, 30 percent limit on foreign securities	Yes, prohibition on holding domestic govt. bonds	Set by Minister, not in law	No	Yes, 40 percent limit on unhedged foreign securities
Statutory mandates (social/ETIs)	No	No	No	No	No
Minimum for government bonds	No	No	Yes, de facto	No	Yes, 30 percent
Shareholder voice policy	allowed	Allowed, but limited by foreign investment	delegated to manager with conditions	Allowed, limited by foreign investment	Allowed, but Limits on individual firm shares

Source: Own elaboration based on country-specific sources.

The feasibility of successful centralized prefunding

In each of the five countries covered in the last section, the ultimate decision to establish or reform existing public pension funds was preceded by a debate over national pension policy. In that context, the option to mandate private, funded pensions as part of the overall system was rejected in favor of centralized prefunding. Another alternative, namely operating on a strictly pay-as-you-go basis, was also rejected. The underlying premise of the policy choice was that with the right safeguards in place, public pension funds could avoid the pitfalls of political pressure and perform at least as well as private funds.

The question of whether public funds can be managed effectively is of importance to many countries. We estimate that there are more than 60 countries with public pension reserves equivalent to more than one percent of national income. Globally, pension assets under public management are estimated at more than one quarter of world GDP, although this impressive figure is driven primarily by the US and Japanese reserves.

The figure is likely to grow in the coming decades. In addition to the five initiatives already discussed, several European countries have recently introduced new reserve funds or are planning to do so. The Netherlands AOW Spaarfonds (savings fund) was introduced in 1998 and is financed by general tax revenues. Spain established a reserve fund in 1997 although the first allocation was made only in 2000. A small reserve fund was created in France in 1999 using privatization revenues and a Central Planning Commission report recommended a much larger fund be created.³⁹

In many developing countries, the public pension fund is already the largest institutional investor in the country. There is increasing recognition that this source of long term savings has not been well utilized and that pension system sustainability has been compromised. This has led to heightened interest in reforming governance structures at existing public pension funds. At the same time, many countries facing imminent demographic transitions are considering whether or not they should create or expand reserves in order to cope with mounting pension obligations. China is an important example given its size and projected rapid ageing process. In 2001, the Chinese government established a national social security fund with the intention of partially prefunding its growing pension liability.

In this section, we discuss at the risks of this strategy and what mechanisms are available, as partially illustrated in the five cases described in the last section, to mitigate them. Next we highlight the limitations imposed by country-specific factors? Finally, we revisit the debate over the two basic alternatives for pension funding.

Risks and mitigation strategies

As state monopolies, one obvious risk is that members of public pension fund Boards and/or managers will not be faced with the type of incentives that would lead to good performance. Government pay scales may not attract good professionals. A lack of

³⁹ See Leinert and Esche (2000).

competition not only reduces pressure for higher productivity, it also eliminates a set of benchmarks with which performance can be measured. These problems are not unique to public pension funds and policies designed to align incentives for those running state monopolies have been tested with varying degrees of success in different countries.⁴⁰ In addition, there are at least four more specific risks associated with centralized prefunding.⁴¹

The first is that government access to credit from the pension fund may allow it to spend more than it would otherwise. The tendency for increased government consumption, although difficult to prove empirically, is based on the plausible idea that the availability of these funds will lead to higher outlays. This is especially true when there is direct or even automatic access to borrowing from the fund combined with a budgetary process that takes these resources into account when determining deficit targets.⁴² In the case of Japan, for example, the FILP program is sometimes referred to as the ‘second budget’ and it has clearly been a way to channel funds to social purposes such as housing and education. This is the situation in many countries and is reinforced by fiscal accounting standards that produce a lower net government debt figure when public pension funds purchase government bonds. To the extent that this occurs, the purpose of prefunding may be completely undermined.

A second and related concern involves pressures to invest pension funds in socially desirable or economically targeted projects. Mandates to invest in certain favored areas have been observed widely across many countries with a predictable negative impact on investment performance. In addition, there is the danger that certain investments would be excluded for reasons unrelated to maximizing risk-adjusted returns. Examples include investments in companies that produce tobacco or companies operating abroad that have labor standards that are unacceptable to unions.

Where funds represent a large share of the potential investment pool, there is also the danger that investment policy will lead to distortions. This is especially true where volumes traded are low and the market is illiquid. Small changes in the allocation of funds could move markets creating the potential for intervention for example, for the purpose of boosting stock markets or for supporting particular firms.

Another danger of public funds investing in private securities arises from their role as shareholders. Corporate governance could be compromised where a manager, influenced by other public policy priorities, exercised his power in a way that did not promote the interests of the firm or its shareholders. As the regulator of these firms, there is significant risk that the best interest of the members of the fund and other public policy priorities may not be aligned.

The initiatives described in the last section included a number of safeguards designed to mitigate some of the specific risks associated with pension funds. The most basic ones – the investment mandate and the governance arrangement – should also help to address the question of competence and performance incentives. All five of the schemes have a fairly

⁴⁰ World Bank (1995).

⁴¹ See Angelis (1998) for a good discussion of these points in the US context.

⁴² See Buchanan (1990) for a discussion in the context of the US Social Security Trust Fund.

clear commercial investment mandate that make them exceptional relative to the vast majority of public pension funds around the world. In addition, three – Canada, Ireland and New Zealand – have what can be termed professional, arms’ length boards while Sweden has a hybrid arrangement with somewhat weaker professional criteria for membership. In Japan, decisions continue to be made by a government official, albeit under the tutelage of an expert advisory council. All five countries require high standards of reporting and disclosure and except perhaps for Japan appear to be proactive in their efforts to increase public awareness. On the other hand, no country has been able to make those individuals responsible for key decisions personally liable. Nor are any of the five subject to the same supervisory regime as the private sector.

With respect to the potential impact on government consumption, the Irish fund goes furthest by prohibiting investment in domestic government bonds.⁴³ In the case of Canada, its portfolio was heavily weighted towards provincial bonds. As a result, the CPPIB was allowed to concentrate almost exclusively on equities. The commercial investment mandate combined with the arms’ length governance structure in all except Japan, should provide some protection against pressures to finance deficits, although the Swedish 30 percent minimum rule runs counter to this objective. The Japanese fund seems the most susceptible to this problem because of its governance arrangement combined with its investment restrictions. According to its reference portfolio, it would hold a portfolio of around 70 percent in government bonds, compared to the current 90 percent for the overall reserve.

While common around the world, all five funds avoided mandates for targeted investments and adhere to a commercial investment policy in principle. However, as noted, there was some opposition to this in New Zealand and, along with Sweden, there are some conditions related to ethical investment included in the legislation. The situation is less clear in Japan, where there appears to be some discretion in this area left to the responsible Minister.

The danger that the funds will be used in a way that distorts capital markets is mitigated in Ireland and New Zealand through large foreign investment shares. In Sweden, limits on shares in individual firms along with relatively high ceilings on foreign investment would seem to provide good protection, especially if the four funds truly operate independently of one another. Again, in all of the countries except Japan, the arms’ length Board arrangement combined with the commercial investment mandate is an important safeguard against a government that wants to prop up its market or direct investments to favored firms or instruments. Once again, the Japanese case is the most troubling in this regard. The size of the fund and its direct control by a government official have already led to concerns that it could be used for intervention in financial markets.

While in each of the five countries the funds employ passive investment techniques for a substantial proportion of the equity portfolio, the idea of completely avoiding the danger that specific stocks would be favored or eschewed for political reasons by applying a pure index fund strategy was not adopted in any of the five countries. The CPPIB began with a

⁴³ Already in the first year of its operation, the possibility that the government may have to borrow in order to finance its mandated contribution to the fund has brought criticism. A similar critique has been levied against New Zealand’s finance minister even before the fund begins to operate.

pure index fund approach but moved to active management, partly to avoid overexposure to a specific firm, but also due to their decision to move into private equities.

One way around some of the potential problems involved in domestic investing, be it in private or public securities, is to invest abroad. Despite sound financial arguments for diversification, even low levels of foreign investment can be especially difficult for public pension funds however, as political pressures to ‘keep the capital at home’ arise frequently. This was the case in Canada where union pressure against foreign investment by the CPPIB was strong. It does not seem to have been an issue in Ireland or New Zealand where investing abroad is an accepted practice. In Ireland for example, more than two thirds of Irish private pension fund assets are invested abroad. The relatively high proportion of Swedish investments allowed to go abroad deviated significantly from past policy.

Japan’ foreign exposure would remain quite limited under the proposal – 15 percent according to the reference portfolio. Given the size of the fund, this target will make it more difficult to avoid distortionary influence over fiscal policy or the capital markets or both. More importantly perhaps, it increases the exposure of the pension fund to Japanese country risk and reduces potential diversification gains.

In order to summarize this discussion, Table 8 provides a qualitative (and subjective) assessment of how well each of the five countries addresses the specific challenges for political insulation. The last column also lists some measures that can help mitigate these risks. Based on previous studies, it seems safe to say that most countries with public pension funds have not implemented these safeguards.

Table 8 Subjective assessment of safeguards against political interference

	Canada	Ireland	Japan	New Zealand	Sweden	Mitigation strategies
<i>Safeguards in system against:</i>						
Increased government borrowing	High	High	Low	High	Moderate	CIM, P-AL-B, Prohibition on public bonds
Social mandates And ETIs	High	High	Moderate	High	High	CIM, P-AL-B, Prohibition on ETIs
Capital market distortions	Moderate	High	Low	High	Moderate	CIM, P-AL-B, foreign investment
Corporate governance conflict	Moderate	High	Moderate	High	Moderate	CIM, P-AL-B, foreign investment

Note: CIM = commercial investment mandate.
P-AL-B = Professional, arms-length board

The influence of country-specific conditions

Time will tell whether these five initiatives will succeed. In addition to the governance arrangement, the investment policy and process, the disclosure and reporting rules and other elements of design codified in the laws, success will be influenced by the environment in which the public pension scheme operates. These country-specific conditions include the relative size of the capital market and its liquidity, the state of the asset management industry and related services available in the country, access to foreign exchange and, most importantly, the overall governance situation in terms of accountability of government, corruption and the rule of law. The five countries covered in this paper represent a very skewed sample. They are rich, relatively well-governed countries with certain favorable conditions for implementing key elements of a successful policy. Table 9 below quantifies some of these factors.

Table 9 Indicators of country-specific conditions for public pension management

	Canada	Ireland	Japan	New Zealand	Sweden
Stock market cap. (% GDP in 1995)	64	43	72	56	78
Value traded (% GDP in 1995)	32	22	24	15	41
Foreign exchange restrictions	None	None	None	None	None
Accountability ranking (out of 173)	18	9	35	7	4
Rule of Law ranking (out of 166)	10	18	15	8	11

Source: See Appendix Table 1.

The conditions in most of the countries with significant public pension reserves are less conducive to success, especially poor and middle income countries. For example, among the 60 plus countries listed in the Appendix, we estimate that 36 have reserves that are greater than the value traded on their stock markets. A large proportion do not have functioning bond markets or do not issue government debt. While the supply of debt and equities can be increased through parallel policy measures such as privatization, for most countries, the need to invest abroad in order to avoid the problems of capital market distortion and shareholder conflict of interest is more urgent. For many developing countries with serious foreign exchange restrictions, this option may be limited.

Table 9 does not capture the presence of domestic or foreign asset managers. Most public pension funds manage all of their investments in-house and with local staff. In contrast with the five OECD countries, where actuarial and investment experts are relatively abundant due to a well developed private industry, these are scarce in most developing countries. This makes it more important to adjust pay scales in order to attract these individuals and/or to hire foreign managers. However, the magnitudes involved in many of small, poor countries are too small to attract much competition from providers. About one third of the public funds have less than US \$100 million.

There may be creative ways to deal with some of these issues. Some experts have suggested asset swaps to deal with foreign exchange constraints in some countries.⁴⁴ The risk premium that would be involved in such a transaction could make the idea unattractive in many countries however, and it remains to be attempted by any public pension fund. Regional initiatives, for example among the Francophone countries of the CFA franc zone might achieve economies of scale in several areas including asset management and custodianship. Among other things, this could help lower costs. These would be complex arrangements and would require further study.

Another area worthy of more investigation are innovative solutions to the problem of weak domestic capital markets. Clearly, parallel reforms that increase the supply and depth of these markets should be encouraged and may even be promoted by pension reform in certain situations⁴⁵. Some of the problems may be addressed through regional efforts that expanded the universe of possible investments and provided some diversification from country-specific risks.

There may also be scope for second or third best solutions in the interim that involve a private equity approach. This would require establishing an objective mechanism based on sound criteria that assessed the prospects of local ventures, perhaps in conjunction with foreign strategic investors. Ensuring objectivity and competence in such an arrangement would be difficult, but preferable to other forms of domestic investments in non-traded securities that relied purely on the discretion of management. A second obvious limitation of this approach is that it does nothing to diversify away from country-specific risk. The reality however, is that many countries will find it difficult to invest all or even most of their pension funds overseas.

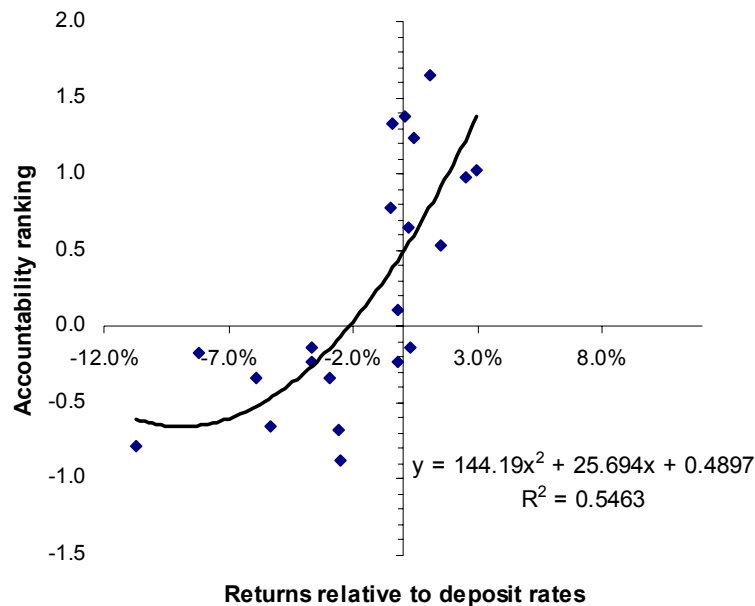
Finally, there is the overarching question of governance. Here we refer not to the Board of the public pension fund, its policies and processes, but rather to the broader question of accountability and transparency of government. In practice, even a well-designed system can be compromised by extralegal action. Moreover, the only discipline for public pension fund boards that are not subject to any regulatory authority and that have limited personal liability is the public accounting that must be made at the broad political level.

There is already some international evidence of the relationship between good governance and public pension fund performance. Figure 4 below plots long term compounded rates of return for 20 public pension funds relative to bank deposit rates against a measure of 'voice and accountability' from the World Bank's database on governance indicators. The figure shows that with only one exception (Malaysia), those countries with a negative ranking produced long run returns that were lower than what could have been achieved if the money had been held in a bank deposit in the same country during the same period.

⁴⁴ See Bodie and Merton (2002).

⁴⁵ See Walker et. al. (2001).

Figure 4 Accountability of government and public pension fund returns



Source: Adapted from Iglesias and Palacios (2000) and Kaufmann et. al. (2002)

To place this result in context, the accountability ranking is also included for the countries listed in Appendix Table 1. Roughly half of the countries with public pension reserves and about three-quarters of developing countries in the table have negative rankings. In the global sample, the only non-OECD country among the top 20 (out of 173 countries in the original sample) is Mauritius.

Implications for the privatization debate

The main alternative to centralized prefunding of defined benefit plans is to introduce privately-managed defined contribution plans. Critics of the centralized approach are skeptical about the potential for shielding large public funds from government interventions:

“...it is politically infeasible to have a public program that is funded to a substantial degree. Large-scale funding seems to be sustainable only in the context of privatized (though possibly publicly-mandated) social security.” Barro (1998).

Yet many of the challenges for public funds apply in the case of private funds as well. This includes the general quality of governance. Only a public entity can supervise private funds and the task requires a certain level of competence and transparency. Also, in its role as supervisor and regulator, governments can impose investment restrictions that lead to the same distortionary consequences as might have prevailed under direct public management. Finally, decentralization and competition implies additional costs that may reduce the net investment returns perceived by the members.

The privatization option does, however, appear to require a lower threshold of governance to operate and introduces a number of disciplining features that are absent from the best centralized model. First, moving from defined benefit to defined contribution creates a powerful incentive for members of the scheme to actively search out good management and reward or punish those making the investment decisions. In an open fund arrangement (where individuals have a choice of provider), this is achieved mostly through competition as individuals vote with their feet. Malfeasance can be sanctioned by a supervisor entrusted with appropriate powers and/or the courts through the assessment of liability. This applies not only to the investment function, but also to recordkeeping and other services.

A second advantage is the creation of well-defined property rights through individual accounts. In a partially-funded, defined benefit scheme, the claims of members are to a large extent on future taxpayers, some of whom are not yet alive. This muddles the importance of the funding ratio since returns are not as important as the political lobbying needed to ensure that future fiscal priorities respect pension promises made earlier.

In addition, the problems associated with the government's conflict of interest as shareholder and institutional investor are largely avoided through decentralization. There is still potential for governments to use their regulatory powers to force private players to invest in certain ways⁴⁶ but it seems clear that this is at least more difficult to do if control of the funds is not in the hands of someone appointed by the government itself. The 'arms-length' board strategy can only partially replicate this form of insulation and creates new challenges to ensure accountability of this independent entity.

Cost pressures are likely to be higher in private, DC schemes, although in many countries public monopolies are massively overstuffed and inefficient. Marketing expenses can represent as much as half of the charges levied on members in decentralized schemes and much of this is unproductive for the economy as a whole. On the other hand, more efficient allocation of capital in the economy is a potentially large externality, difficult to replicate with a centralized model. There may even be a positive role for the private funds in corporate governance under certain conditions. Finally, what matters to the member of the scheme is the net investment return which is only partly determined by commissions.⁴⁷

While both involve major design and implementation challenges, it is probably more feasible in most countries to succeed in prefunding through a private, competitive model than through centralized public management. One possible compromise solution would involve a centralized, low-cost, default scheme with an opt-out provision that allowed for the use of private funds. This would impose some market discipline on the public fund while putting pressure on private managers not to pass along large marketing bills to participants. In countries with small memberships and/or assets, the private options could be limited and the firms selected through a tendering process.⁴⁸ A key feature of this approach obviously, is the shift away from partial funding towards full funding with individual accounts.

⁴⁶ The most dramatic example was the intervention by the Minister of Finance in Argentina in the investment decisions of the private pension funds during the onset of the financial crisis in 2001.

⁴⁷ See Whitehouse (2000).

⁴⁸ The Bolivian reform of 1997 provides one such example.

Summary and conclusions

Many countries have adopted a pension financing strategy that involves prefunding, public DB promises. In addition to the normal challenges of pension fund governance, public funds face additional obstacles arising from the tendency of governments to interfere in the investment process. In the last few years, five countries passed legislation designed to mitigate these risks. Reviewing these cases, a number of ‘good practices’, not commonly observed in most public funds were highlighted. These include, (i) explicit funding targets and mechanisms to trigger action in the case of deviation from this objective (ii) commercial investment policies flowing from these targets and explicitly aimed at maximizing risk-adjusted returns for members; (iii) professional boards selected through a process that maintains an ‘arms-length’ relationship with government officials; (iv) prohibition on social investment criteria or ETIs; (v) significant share of investment done through external managers selected and retained by explicit and objective criteria; (vi) avoidance of strict portfolio limits, especially on foreign investments and (vii) high standards of reporting and disclosure including annual, independent audits, performance reviews, and codes of conduct for Board members, all available to the public.

It is likely that by adopting these practices, public funds around the world would improve their performance, thus increasing the sustainability of their pension schemes and removing distortions caused by current policies. For example, a partial or complete shift away from representative boards could be considered in favor of a higher proportion of professional board members or at least a requisite amount of training. Even with the best design however, country-specific conditions would pose formidable challenges and certain problems would require difficult policy choices. The most obvious is the need to invest a high proportion of assets abroad. The most important constraint is likely to be the broader conditions of governance that prevail in many low income countries. Prefunding pension obligations through privately-managed, DC schemes is probably more likely to succeed. But at some point, without a certain amount of accountability, no system that involves investing other people’s money for long periods of time can work.

Appendix Table 1 Public pension reserves in selected countries

	Year	Reserves as percent of:		Reserves in US dollars <i>millions</i>	Board composition	Voice and accountability
		GDP	traded shares			
SWITZERLAND	1998	5.7%	5.9%	15000	Tripartite	1.73
FINLAND	2000	7.3%	48.0%	9400	Tripartite	1.69
SWEDEN	2001	22.9%	56.1%	48000	Tripartite	1.65
NETHERLANDS	2000	31.0%	49.4%		Tripartite	1.61
DENMARK	2000	18.8%	124.0%	30483	Tripartite	1.60
NEW ZEALAND	2001	0.5%	3.5%	252	Professional	1.59
IRELAND	2001	5.3%	24.4%	6600	Professional	1.57
COSTA RICA	2001	8.2%		1326	Tripartite	1.37
CANADA	2001	1.3%	4.1%	9032	Professional	1.33
MAURITIUS	2000	17.5%	971.4%	686	Tripartite	1.27
UNITED STATES	2000	9.4%	12.8%	931000	Government	1.24
SOUTH AFRICA	2000	19.2%	153.0%	27573	Tripartite	1.17
JAPAN	2000	5.4%	24.0%	1670224	Government	1.03
KOREA, SOUTH	2000	12.0%	29.5%	54866	Tripartite	0.98
GUYANA	2000	10.7%				0.94
CAPE VERDE	2000	10.0%		58	Government	0.92
BOTSWANA	2001					0.80
JAMAICA	1999	5.7%	74.0%	392	Tripartite	0.78
PANAMA	2000					0.77
INDIA	1998	4.1%	97.6%	17515	Tripartite	0.66
TRINIDAD AND TOBAGO	1999	11.1%	427.0%	762		0.61
PHILIPPINES	1998	11.2%	56.3%	7324	Tripartite	0.53
BENIN	2000		none		Tripartite	0.47
THAILAND	2000	2.8%	8.2%	3000	Tripartite	0.37
NAMIBIA	2000	37.5%		1254	Tripartite	0.32
MALI	2000		none		Tripartite	0.32
MADAGASCAR	2000		none		Tripartite	0.28
SENEGAL	1998	1.3%	none	59	Tripartite	0.12
MEXICO	2000	n.a.				0.12
SINGAPORE	2000	55.6%	77.0%	51411	Government	0.11
NIGER	2000	n.a.	none		Tripartite	0.11
JORDAN	1996	16.9%	164.1%	1186		0.10
GHANA	1995	9.4%	3142.2%	371	Tripartite	0.02
PAPUA NEW GUINEA	2000	6.9%		263		-0.03
HONDURAS	1994	3.4%	104.2%	118		-0.04
NEPAL	1997	4.7%	1169.8%	226	Government	-0.06
NICARAGUA	1996	3.2%	none	61		-0.06
TANZANIA	1995	0.9%		37	Tripartite	-0.07
MALAYSIA	2000	54.4%	60.4%	48591	Tripartite	-0.13
SRI LANKA	1998	15.8%	930.3%	2498	Tripartite	-0.23
MOROCCO	1999	9.6%	367.7%	3347	Tripartite	-0.23
LEBANON	2000	7.2%		1000	Government	-0.32
GUATEMALA	1995	1.7%		249		-0.33
INDONESIA	2000	2.8%	38.4%	3690		-0.40
COLOMBIA	2000	3.6%	225.0%	2932	Tripartite	-0.41
NIGERIA	1998	1.2%	1233.0%	160	Tripartite	-0.44
TUNISIA	2000	5.7%	154.6%	1114	Tripartite	-0.61
YEMEN	1999	1.0%	none			-0.63
EGYPT	1998	33.1%	2364.3%	27361		-0.65
KENYA	1995	12.1%	1732.8%	929	Tripartite	-0.68
GAMBIA	1995	11.1%		38	Tripartite	-0.73
UGANDA	2000	1.0%		27	Tripartite	-0.79
MALDIVES	1999	1.5%	none			-0.81
CAMEROON	2000				Tripartite	-0.82
ETHIOPIA	1997	1.4%		98	Government	-0.85
CHAD	1999	0.3%	none	4	Tripartite	-0.88
ZIMBABWE	1999	1.8%	none	85	Tripartite	-0.90
SWAZILAND	1995	6.6%	none	70	Tripartite	-0.93
SAUDI ARABIA	2000	135.2%	none	234000	Government	-1.07
CHINA	2001	2.0%	27.6%	21135	Government	-1.11
COTE D'IVOIRE	2000				Tripartite	-1.19
BHUTAN	1999	9.0%	none	39	Government	-1.27
PAKISTAN	2000	1.4%	26.4%	776	Tripartite	-1.43
BELIZE	2000	28.2%		65	Tripartite	n.a.

Note: For Canada, Japan, and Sweden, reserve figure is only for new scheme.

Sources: World Development Indicators; Kaufmann et. al. (2002); ISSA 1997; country sources.

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