

**MOVING TO A 'FIDUCIARY'
CPP INVESTMENT POLICY:
TWO POSSIBLE PATHS**

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(with a Foreword dated June 1997)

This paper was prepared for the federal-provincial
Working Group on CPP Investment Policy.

AUTHOR FOREWORD

I acted as an advisor to the federal-provincial Working Group on CPP Investment Policy during the first six months of 1996. In that capacity, I was asked to write a report on the major issues related to the creation and implementation of an investment policy for a Canada Pension Plan with substantial assets backing the accrued and accruing pension obligations under the Plan. This June 1996 Study was the result.

The Study was prepared without knowledge as to how subsequent negotiations between the federal and provincial governments would unfold, and what ultimate agreement would be reached. On February 14, 1997, a federal-provincial agreement was announced and draft legislation released. The target implementation date is January 1, 1998.

There are six key features of the agreement which relate to the CPP's new investment policy and its implementation. They are:

- The mandate of the CPP Investment Board will be to manage new CPP funds in the best interests of CPP stakeholders (ie. contributors and beneficiaries). This was a critical assumption in the Study.
- The 'Independent Governance Model' (IGM) was adopted. The IGM was the preferred of two viable pension fund governance models described in detail in the Study.
- The Board will be governed by 12 trustees with the necessary skills and independence. The selection process will be inclusive and transparent, reflecting the needs of CPP stakeholders. The Study stressed the importance of these types of trustee and selection process characteristics.
- The Board will be subject to the same investment rules facing other Canadian employment-based pension funds. The Study argues for a 'same rules' regime.
- A number of transition mechanisms were negotiated. Equity investments are to be passive for the first three years. The provinces have the option to (a) roll over the existing \$35 billion of provincial bonds in the 'old' CPP Fund once, and (b) access new funds on a limited basis. However, any future transactions will be done at market rates. The Study recognizes the need for 'win-win' old to new transition arrangements.
- The projected size of the CPP Fund has been scaled down from the numbers used in the Study. It has been reported that the February 14, 1997 agreement would result in a fund of about \$100 billion by 2006, about one-third smaller than assumed in the Study. While we argue in the Study that 'big is not bad', this scaledown of the projected size of the CPP Fund will be of comfort to those who worry about the impact large asset pools may have on Canada's financial markets.

In conclusion, the announced agreement on the CPP's new investment policy and how it is to be implemented aligns closely with the conclusions reached in this Study.

The challenge now is to successfully manage the transition from 'saying to doing'.

Keith Ambachtsheer
June 1997

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This study was prepared for the federal-provincial Working Group on CPP Investment Policy. It benefited greatly from a meeting held with the Working Group on January 12, 1996, and from subsequent discussions with members of the Working Group. However, the opinions expressed in this paper are strictly the author's, and not those of the Working Group or any of its members.

Keith Ambachtsheer
June 1996

STUDY SUMMARY AND CONCLUSIONS

1. A number of options are under consideration to deal with the 'troubled tomorrows' facing the CPP. One option involves an accelerated funding strategy which would build up a large asset pool. This paper assumes the accelerated funding option is chosen.
2. We assume that such a choice would be motivated by the following four perceived benefits: (1) create intergenerational fairness, (2) raise the financial credibility of the CPP, (3) reduce the long term cost of the plan by earning a higher rate of return on the plan assets, and (4) possibly raise the long term savings and growth rates of the Canadian economy. These motivations suggest serious consideration should be given to adopting a 'fiduciary', market-oriented, diversified investment policy for CPP assets.
3. We treat the CPP as a defined benefit pension plan. This also implies serious consideration should be given to adopting a 'fiduciary' approach to investing CPP assets through a market-oriented, diversified investment policy. All employment-based pension plans in Canada are required by law to adopt this approach.
4. The issue of whether pension funds should be assigned investment goals beyond serving the financial needs of plan beneficiaries is controversial. A CPP Investment Fund would contribute to Canadian economic development and job creation by simply investing assets in the best interests of CPP pensioners and contributors.
5. If the CPP adopted a 'fiduciary' investment approach, the current policy of lending CPP funds to the provinces at the federal government's cost of long term funds would have to be revised. The simplest transition to a new fiduciary regime would be to let the outstanding provincial bonds mature according to schedule. Any refinancing required would be done at competitive rates through the financial markets.
6. A 'fiduciary' investment approach for the CPP could be implemented under one of two types of governance regimes.
7. Under the Legislated Governance Model (LGM), the Fed-Prov Ministers would be accountable to CPP stakeholders for CPP Fund performance. CPP Fund asset mix policy and how it is to be implemented would be encoded in the CPP Act, and reviewed every five years. A CPP Investment Policy Implementation Unit would implement the policy. Both the Ministers and the Unit would be advised by a committee of experts.
8. Under the Independent Governance Model (IGM), the Fed-Prov Ministers would create the CPP Investment Board Act. This Act would set out the investment goals of the CPP Fund. It would also set out the responsibilities, authorities, and accountabilities of the CPP Board of Trustees, as well as its required composite characteristics in terms of skills,

experience, and representativeness. The Act would also set out the necessary appointment processes. The Board of Trustees are accountable to CPP stakeholders. The Board of Trustees selects and monitors a management team to operate the Investment Board as an independent investment institution.

9. A long term real return of 5% is a realistic expectation today on a market-oriented, diversified investment fund. However, there are three caveats. The first is that the future unfolds free of major political and economic dislocations. The second is that a CPP Investment Fund's investment policy is not restricted in any material way. The third is that what is realistic today may not be realistic in the future. Even long term return expectations must be updated periodically.
10. The CPP Investment Board would be a very significant Canadian financial institution within a 10 year period. In today's terms, it could have an asset value of about \$85 billion. However, the Caisse de dépôt et placement du Quebec would not be that much smaller at \$64 billion if the QPP made a similar change to its funding policy. Both institutions would be major participants in Canada's bond and stock markets. By comparison, ManuLife Financial and the Ontario Teachers Pension Board have about \$50 and \$40 billion in assets. However, the Royal Bank of Canada would still be much larger at \$200 billion.
11. There is no clear evidence either inside Canada or abroad that 'big is bad'. However, there is evidence when 'big' is combined with legislated restrictions in terms of governance and asset mix, the result may be 'bad'. Holland's \$200 billion Algemeen Burgelijk Pensioenfonds (ABP), after operating as a government agency with highly restrictive asset mix constraints for 30 years, has just been converted to an independent investment institution, with all investment restrictions lifted by the Dutch Government.
12. In 10 years time, C/QPP net cashflow could be equal to 20% of the supply of investment funds in Canada, in relation to an actual -1% in 1994. Non-residents supplied 27% of investment funds in 1994. These relationships (together with a declining need for funds by Canadian governments) suggest choosing the accelerated funding option could significantly lower Canadian interest rate spreads against U.S. and other foreign bonds in the future.
13. Reality tests suggest both the LGM and IGM governance models are implementable in a Canadian context.
14. The choice between the LGM and IGM boils down to one of assessing systemic risk and reward. The LGM appears to carry with it lower apparent risks in terms of possible organizational dysfunction, but also fewer potential rewards.
15. The potential rewards for choosing the independent CPP Investment Board (IGM) option are considerable. They include higher perceived legitimacy by CPP stakeholders, greater opportunities to build organizational excellence, enhanced informational and operational efficiency of Canada's stock and bond markets, enhanced long term return potential, and greater flexibility to respond to new economic and capital market circumstances.

SECTION I THE GOALS OF THIS PAPER

'Troubled Tomorrows' For The CPP And Possible Solutions

The CPP in its current form faces 'troubled tomorrows' [1]. Various paths to corrective action are currently under discussion inside and outside government circles. These paths range all the way from severely curtailing CPP benefits, to winding down the current arrangements altogether and replacing them with a compulsory 'Super RRSP' scheme [2].

A possible middle path involves an accelerated funding strategy for the CPP, which would lead to the accumulation of an asset pool much larger than the current approximate \$40 billion. Goals of such an accelerated funding strategy would include (a) create intergeneration fairness in the sense that future generations of CPP contributors would be expected, using realistic economic and actuarial assumptions, to pay no more than current contributors, (b) re-establish the financial credibility of the CPP in the eyes of the public, and (c) reduce the ultimate long term cost of financing the plans [3]. Such a new funding strategy could also reasonably be expected to contribute to higher long term savings and growth rates for the Canadian economy [4].

In this context, it is important to clarify that the CPP is an employment-based defined benefit pension plan for all Canadians. Thus it is logical to invest all excess funds solely for the benefit of plan beneficiaries. All registered employment-based pension plans in Canada are required to do so.

Three Fundamental Issues Raised By An Accelerated Funding Strategy For The CPP

Projections suggest that under reasonable assumptions the new funding strategy could grow the CPP asset pool from its current \$40 billion value to a value in the \$150 billion area over a 10 year period. Such a potential development raises three fundamental questions:

1. What investment goal(s) and investment policies should such a large asset pool pursue?
2. What asset pool governance structure is most likely to lead to the achievement of the investment goal(s)?
3. What special considerations are raised by the very large projected size of such an asset pool?

This paper addresses each of these three questions in turn.

SECTION II RE-EXAMINING INVESTMENT GOALS FOR THE CANADA PENSION PLAN

Investment Goals For The CPP

The investment goals for CPP assets and those of the Québec Pension Plan (QPP) differed right at the inception of the CPP and QPP. On the one hand, the Caisse de dépôt et placement du Québec was established to implement a market-based diversified investment programme for the QPP fund. The focus was to earn the highest possible return subject to diversification constraints to control investment risk. On the other hand, it was decided to lend CPP net cashflow to the other nine Provinces at the Federal Government's long term cost of funds. Thus the original focus for the CPP Fund was neither return maximization nor portfolio diversification.

A re-examination of the original investment goals of the CPP Investment Fund would focus on three considerations:

1. What kind of investment goals do the stated reasons for pursuing an accelerated CPP funding strategy (i.e. intergenerational fairness, increased public confidence, and lower long term plan costs) suggest?
2. How has the philosophy of the nine Provinces dealing with their own public sector pension plan finances changed over the last 30 years?
3. If the CPP Fund were to move towards a diversified, market-oriented investment policy, what happens to its current \$33 billion in provincial non-marketable bond investments?

Moving Towards A 'Fiduciary' Investment Goal

If the reasons for pursuing an accelerated CPP funding strategy are intergenerational fairness, increased public confidence in the plans, and reducing long term costs through earning a high return on the assets, then it would seem that it is important to reflect these reasons in the choice of investment policy. All three reasons argue in favour of considering a market-oriented, diversified investment policy for CPP assets.

The QPP already has such a policy. By the CPP adopting the same policy, it would end the cross-subsidization currently implicit in the CPP investment policy (i.e. lending CPP contributor money at below their own market cost of funds rates to the provinces). Ending such a practice would be consistent with treating the CPP as a true pension plan. The move would enhance intergenerational fairness, increase public confidence in CPP finances, and also increase the CPP Fund's prospective rate of return, which in turn would reduce the long term cost of the plan [5].

The direction the provinces have taken with their own public sector pension finance and investment practices is clear. It has been unambiguously towards higher levels of funding and more diversified, market-oriented investment policies. Pressure in this direction has come from two sources. First, pension legislation has become increasingly clear about setting standards for financial and investment practices related to the pension plans of private and public sector employers. Second, pension plan members have been increasingly critical about the historical practice where a provincial treasury would have direct access to the net cashflow of the public sector pension plans under their jurisdiction [6]. Thus by the CPP adopting a diversified, market-oriented, investment policy, it would simply be falling into line with a practice the provinces themselves have already adopted.

We conclude that a decision to pursue an accelerated CPP funding policy should lead to serious consideration being given to adopt a market-oriented, CPP Fund investment policy.

What About Secondary Investment Goals?

There are ongoing debates as to whether pension funds should have goals in addition to strictly serving the financial needs of their stakeholders. Sometimes such goals are couched in language such as "contribute to economic development and local job creation". In the U.S.A., the debate has taken place under the rubric of 'economically targeted investments' or ETIs.

When stripped of their rhetoric, these debates usually boil down to issues more of perception than reality. Simply by supplying retirement savings to issuers of stocks and bonds, pension funds contribute to economic development and job creation. If pension funds should somehow be doing more than this, what is that 'more'? Secondary investment goal advocates usually respond with examples such as putting more money into the housing market, or building more infrastructure, or investing in venture capital in geographically specified areas.

These responses in turn raise further questions. Why is there a perceived shortage of funds in certain sectors and areas? Is a given sector and/or area currently simply unattractive from an investment perspective? Or is there a systematic market failure problem? If there is, should the beneficiaries of the CPP Fund be forced to solve such a problem? One wonders if there is any real merit in trying to resolve these difficult questions in the process of creating a CPP Investment Fund.

None of the above denies that the creation of a large new investment institution in Canada could not end up positively impacting such sectors as housing, infrastructure and venture capital. As we note later in this report, it likely would. However, this would naturally come about by a CPP Investment Fund serving the financial needs of CPP participants, and not because it was assigned potentially conflicting investment objectives.

What About The \$33 Billion In Special Provincial Bonds Still Outstanding?

Naturally, the question of what to do with the \$33 billion of special provincial bonds still outstanding under the historical arrangement has to be dealt with. The current average term of the portfolio is about 8 years. In moving towards a market-oriented CPP investment policy, the simplest transition solution would be to let the bonds still outstanding mature on schedule

over the course of the next 17 years, with the provinces refinancing in the financial markets any debt as necessary [7]. The annual runoff in maturities would be in the \$1 to \$3 billion range over the next 17 years. It should be noted that a growing diversified, market-oriented CPP Fund would likely be wanting to invest a portion of its total assets in provincial bonds. For example, Canadian trustee pension funds had an average 20% of their assets in provincial bonds in 1993. However, with its new fiduciary orientation, the CPP Fund would acquire such bonds at market-determined yields. We show later in this report that such yields would likely be nudged lower if the accelerated CPP funding strategy is pursued [8].

SECTION III TWO POSSIBLE GOVERNANCE MODELS

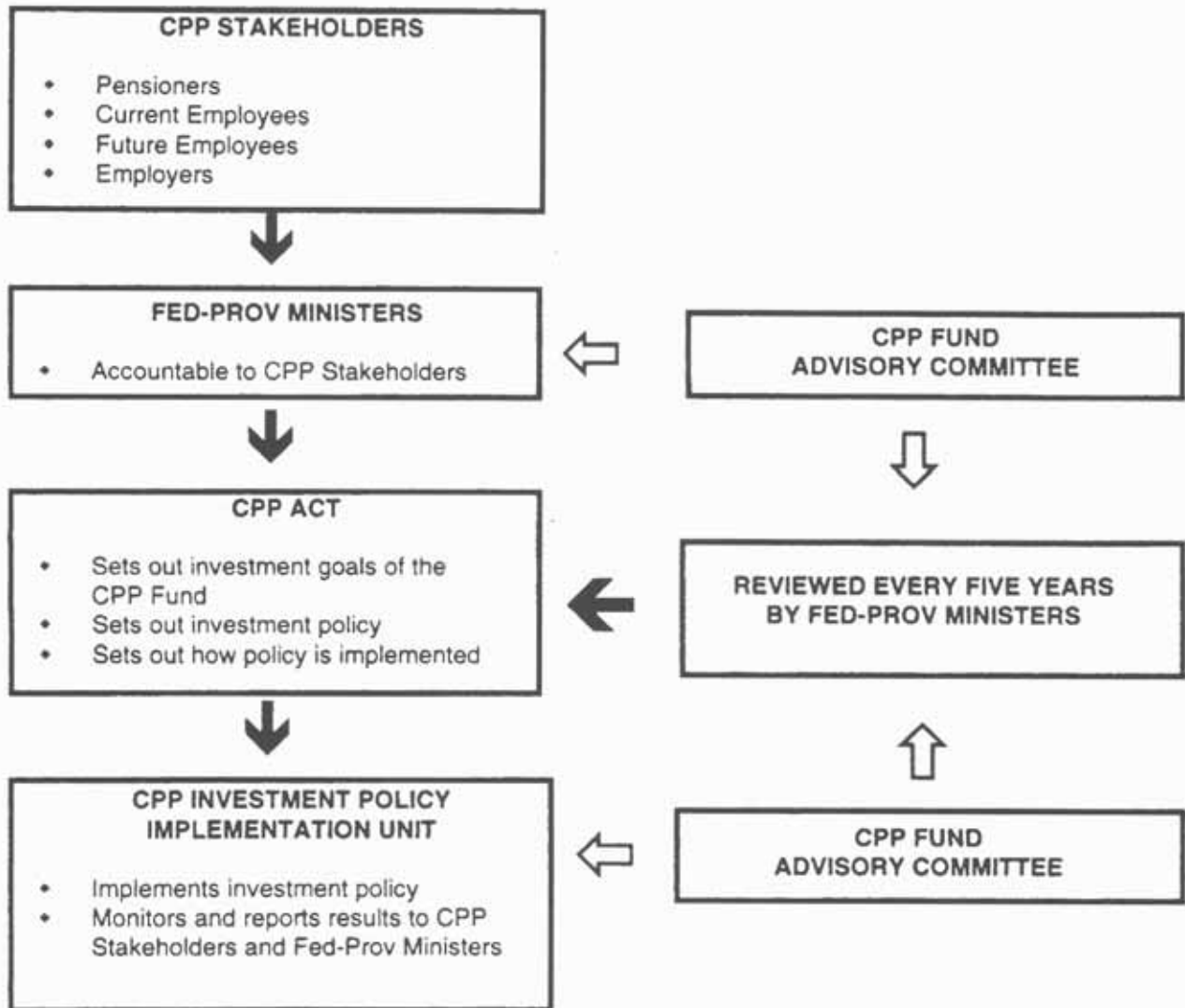
On The Importance Of Governance

The ultimate financial success (i.e. in terms of cost reduction) of a decision to move to accelerated CPP funding will depend at least in part on the effectiveness of the governance structure put in place to oversee and monitor the process. To do the job, the governance structure will need the following four key characteristics:

1. A clear, enforceable legal requirement to invest CPP assets solely in the best interests of CPP stakeholders. These stakeholders are CPP pensioners, and present and future employee and employer contributors.
2. A clear chain of accountability through the CPP governance structure to the CPP's stakeholders.
3. A perception by the CPP's stakeholders that the CPP governance structure is there to look after their best interests.
4. Clear, unfettered paths to accessing the best strategic and tactical investment thinking and expertise available to set and implement the CPP Fund's investment policy.
5. Flexibility in being able to anticipate and respond to new circumstances in an ever-dynamic world.

We now go on to lay out two possible governance models, and test their likely effectiveness against the five key characteristics test set out above. For both models, we immediately assume success characteristic #1. That is, the legal foundation of both governance models is a requirement to invest CPP assets in the best interests of CPP stakeholders. The difference in the models lies in how that goal is accomplished. We call one the "Legislated Governance Model" (LGM); the other the "Independent Governance Model" (IGM). In the LGM, it is the federal-provincial ministers who are directly accountable to CPP stakeholders for the investment results of the CPP Fund. In the IGM, the ministers delegate responsibility to an independent CPP Fund Board Of Trustees.

**FIGURE I
THE LEGISLATED GOVERNANCE MODEL**

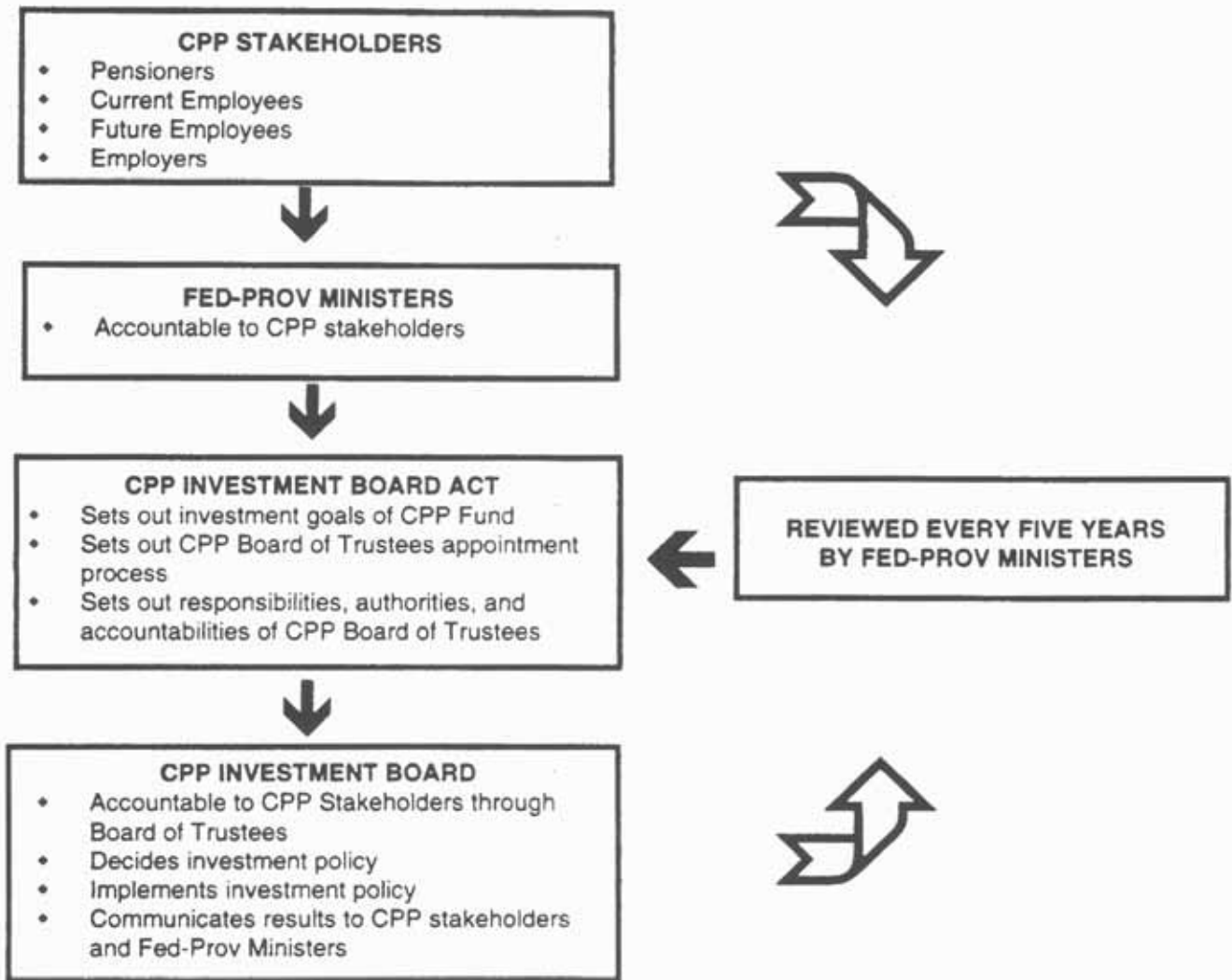


The Legislated Governance Model

Thus with the LGM, investment policy and how it is to be implemented is set out in legislation. As is currently the case under the CPP Act, this legislation could be reviewed every five years, with its specifics updated, based on economic and actuarial experience. An expert CPP Fund Advisory Committee would have to be established to advise the Ministers on striking an appropriate asset mix policy for the CPP Fund. The Advisory Committee would also advise on the best way to implement the recommended policy.

FIGURE I summarizes the organizational implications of the LGM, and the responsibilities and accountabilities of the various parties. Note there is a permanent CPP Investment Policy

**FIGURE II
THE INDEPENDENT GOVERNANCE MODEL**



Implementation Unit in this governance model. The Implementation Unit is responsible for actually implementing the asset mix policy decision made by the Ministers, and monitoring and reporting results [9]. Note the Advisory Committee also advises the Implementation Unit on such issues as external manager selection and monitoring, custody, and management information systems. The effectiveness of the LGM is reviewed every five years.

The Independent Governance Model

The IGM operates very differently. Under this model, legislation creates an autonomous CPP Investment Board governed by a group of Trustees. The Trustees would be legally charged to establish and operate an investment process in the best interests of CPP stakeholders. The selection process for the Trustees is critical to the success of the IGM. This process too would have to be encoded in legislation, and should touch on at least three key Board of Trustees characteristics: legitimacy, competence, and size.

Legitimacy requires that Board of Trustees are seen to represent the interests of the various classes of CPP stakeholders right across Canada. The Board of Trustees as a whole should also have certain collective strategic skill and experience sets relevant to the establishment, implementation, and oversight of investment policies for large asset pools. It should be small enough (i.e. a number like 9 rather than 24 members) to be an active board, rather than a passive ceremonial board.

One possible process to create such a body follows. First, the key CPP stakeholder groups are identified. A possible three category scheme would be: pensioners, contributing plan members and employers. A certain number of the Trustees could be appointed by organizations which could reasonably be seen to represent the interests of these constituencies [10]. The Fed-Prov Ministers also appoint a certain number of Trustees. These appointed Trustees could in turn strike a Nominating Committee which would be charged with nominating the remaining Trustees required so that the entire Board meets the criteria set out in legislation. The by-laws of NAV Canada offer an interesting model of this kind of process [11].

FIGURE II summarizes the organizational implications of the IGM. Note that it is now the Trustees who decide on CPP Fund asset mix policy using fiduciary standards, and also decide on the best organizational structure to implement it. In order to discharge their ultimate accountability, the Fed-Prov Ministers review the effectiveness of the IGM every five years [12].

Getting 'A Feel' For How The Governance Models Would Operate In Practice

It is important for the readers of this report to get 'a feel' for how the two models would actually operate in practice, and what kind of policy and implementation decisions might end up being made. However, to do that realistically, the investment returns and asset pool size issues must be addressed first. After analyzing some of the important investment return and size considerations, the report considers (a) how the two models would operate in practice, (b) the kind of policy and operating decisions the two models might produce, (c) how the issues of return prospects and size might impact on these decisions, and (d) how those decisions might in turn impact the Canadian psyche, economy, and capital markets.

SECTION IV INVESTMENT RETURNS AND ASSET MIX

Four Key Questions

Pension fund organizations should address the asset mix issue through a four-question process:

1. What is the projected payment pattern and inflation sensitivity of the pension benefits to be paid?

2. What can an asset portfolio with these characteristics be expected to earn?
3. Should investment risk be undertaken to attempt to increase the prospective rate of return?
4. At what frequency should the above three questions be reviewed?

Under the LGM, these questions would be studied by the CPP Fund Advisory Committee and recommendations made to the Fed-Prov Ministers. Under the IGM, the questions would be studied by CPP Investment Board staff (possibly assisted by external advisors), and recommendations made to the Board of Trustees.

How The Questions Might Be Answered

The projected payment pattern for CPP liabilities already accrued stretches from tomorrow to 50 years from now, and beyond. Demographics have created a 'bulge' in the 2010-2040 timeframe. At present, CPP liabilities are 100% inflation-sensitive. Pre-retirement benefits accrue in line with wages. Post-retirement, they are indexed to the CPI.

A 'risk-free' asset pool which would secure these obligations would have no default risk, would be inflation-indexed, and would also stretch from tomorrow to 50 years from now, and beyond. While such an asset pool could not be constructed literally, it could be approximated with a portfolio of short bonds and long real return bonds issued by the Government of Canada. We estimate such a portfolio would have a prospective real return of about 4% today [13].

Additional returns can be earned from two sources. 'Active management' is one source. It requires the assumption that a portfolio can be managed to take advantage of the mispricing of securities in the capital markets. However, active management is a 'zero sum game'. The gains in successfully managed portfolios are offset by the losses in the unsuccessfully managed portfolios. The question of whether pension fund trustees can successfully identify portfolio managers who will be successful in the future is a controversial issue [14].

The other source of additional returns is compensation for taking on non-diversifiable risk. Such compensation shows up as a 'default premium' in marketable debt securities such as corporate and provincial bonds. It shows up as an 'equity risk premium' in publicly traded common stocks. There is typically a further 'illiquidity premium' built into the returns of investments for which there is no ready market. Real estate and venture capital investments are examples. Compensation for taking on the types of risks described above can range from as low as 0.25% to 5% and higher.

A typical Canadian pension fund asset mix today is 50% stocks, 45% bonds, and 5% in direct investments such as real estate and venture capital. Such a mix should earn a minimum long term risk premium of 1% over the 'risk free' asset pool described above [15]. As prospective risk premiums are not constant in the financial markets, they need to be monitored and re-assessed on a regular basis. It is our view that annual re-assessments of long term prospects are appropriate in most situations.

Assessing Investment Risk, Uncertainty, And Foreign Investing

Economists make an important distinction between risk and uncertainty. With risk, we are dealing with known probabilities. With uncertainty, we are not. So for long term investment funds, it is not so much risk which is an issue, but uncertainty. Specifically, the question is whether promised risk premiums will become realized risk premiums. In free markets-oriented societies, such an outcome cannot be guaranteed. There are two kinds of systematic uncertainties: political and economic. Economic uncertainties in turn are also typically of two kinds: the rate at which real output and incomes grow, and the degree to which prices of goods and services are stable. All this implies an important caveat for our above assertion that "such a mix should earn a long term risk premium of 1%". The assertion is conditional on continued reasonable political, economic growth and price stability in the developed and developing world well into the 21st century.

This is an appropriate place to observe that pension fund managers everywhere (including Canada) have been stepping up their global diversification programmes [16]. The reasons appear to be two-fold. First, there is overwhelming evidence that international diversification reduces investment risk. Second, there is a growing realization among professional investment managers that there are major 21st century growth opportunities in such developing regions as Latin America, Southeast Asia, China, and former Soviet Union and its satellite states. As long term investors, pension funds are well-suited to exploit these unfolding opportunities.

SECTION V THE SIZE ISSUE

Developing Perspective On The Size Issue

For purposes of discussing the size issue, we assume a CPP Fund which moves from a \$40 billion non-marketable government bond portfolio (5.5% of GDP) in 1996, to a \$150 billion diversified, market-oriented portfolio (12% of GDP) in 2006. The CPP Fund continues to grow as a proportion of GDP, until it stabilizes at about 24% by 2030. Assuming a similar change in funding philosophy for the QPP, the QPP Fund's size characteristics are one-third the size of the CPP's. Thus, for example, it would grow from \$13 billion (2% of GDP) today to \$50 billion (4% of GDP) in 2006, and stabilize at 8% of GDP by 2030.

In order to develop perspective on numbers of this magnitude, it is useful to convert the projected future Fund values back into today's context. For example, if the CPP and QPP Fund values were at the projected (2006) 12% and 4% of GDP today, how large would they be in relation to other Canadian financial institutions today? What about at the projected (2030) sizes of 24% and 8% of GDP? TABLE I provides the answers.

At proportions of 12% and 24% of GDP today, the CPP Fund values today would be \$85 billion and \$170 billion respectively. This compares to aggregate asset values for Canada's major financial sectors today of \$600 billion (banking), \$350 billion (trusteed pensions), \$200 billion (insurance), and \$160 billion (investment funds). Within those four sectors, the assets of the largest providers are \$200 billion (Royal Bank), \$40 billion (Ontario Teachers Pension Board), \$50 billion (ManuLife Financial), and \$20 billion (Investors Group).

We include the Caisse de dépôt et placements du Québec with its \$50 billion in assets as a special 'case'. It sees itself as a third party asset manager for a number of Québec 'clients', including the current QPP Fund of \$13 billion. Note that with an expanded QPP, the 1996-equivalent assets of the Caisse would be \$63 billion (with the 2006 GDP proportion) and \$89 billion respectively (with the 2030 GDP proportion) [17].

TABLE I
CANADA'S 1996 FINANCIAL ASSETS DISTRIBUTION

INDUSTRY	\$ BILLIONS	LARGEST FIRM	\$BILLIONS
Banking	\$600	Royal Bank	\$200
Trusteed Pension Funds	\$350	Ontario Teachers'	\$40
Insurance	\$200	ManuLife Financial	\$50
Investment Funds	\$160	Investors Group	\$20
Special Investment Agencies	\$50	Caisse de dépôt	\$50
CPP Fund - 1996 (5.5% of GDP)	\$40	CPP Fund - 1996	\$40
CPP Fund - 2006 (12% of GDP)	\$85	CPP Fund - 2006	\$85
CPP Fund - 2030 (24% of GDP)	\$170	CPP Fund - 2030	\$170
QPP Fund - 1996 (2% of GDP)	\$13	Caisse de dépôt - 1996	\$50
QPP Fund - 2006 (4% of GDP)	\$26	Caisse de dépôt - 2006	\$63
QPP Fund - 2030 (8% of GDP)	\$52	Caisse de dépôt - 2030	\$89

Source: Bank of Canada Review, The 1995 Financial Post Top 500 Companies

We conclude from TABLE I that a market-oriented, diversified CPP Fund would be a very significant new Canadian financial institution within a 10 year period. In 1996 terms, its \$85 billion - equivalent market value would rank it still well below the big banks, but already ahead of the largest trustee pension fund and insurance company in the country. Interestingly, assuming a similar accelerated funding strategy for the QPP, the Caisse's \$64 billion asset value (2006) is not far behind the CPP Fund's \$85 billion. By the year 2030, the CPP Fund's \$170 billion (in 1996 terms) is almost twice the Caisse's \$92 billion. By then, the CPP Fund asset value would rank up with those of Canada's largest chartered banks.

Another Size Perspective

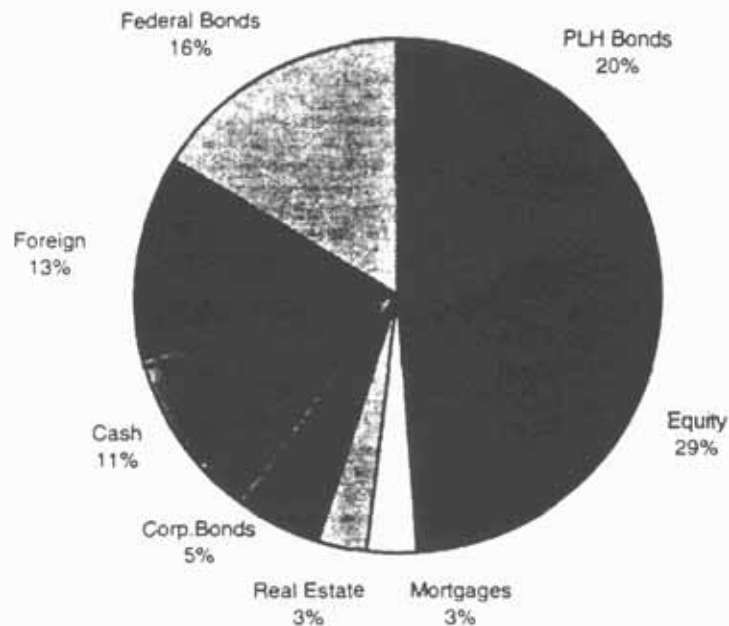
Estimating how a CPP Fund would participate in Canada's financial markets provides another perspective on the size issue. FIGURE III is an illustration of a diversified market portfolio based on the average 1993 asset mix of public and private sector trustee pension funds [18]. Based on the illustrative portfolio and reasonable projections of securities markets growth by the year 2016, a CPP Fund invested in the securities markets would hold:

- About 8% of the Canadian money market.
- Approximately 25% of outstanding Canadian government bonds.

- About 3% of outstanding Canadian corporate bonds
- Approximately 15% of the traded Canadian equity market (TSE 300 "float").

In 1996-equivalent terms, the market value of the CPP Fund would be about \$125B at that time. Clearly, it would be a major presence in the Canadian stock and bond markets if it had the weights of the illustrative diversified market portfolio.

**FIGURE III
ILLUSTRATIVE DIVERSIFIED MARKET PORTFOLIO**



Source: Statistics Canada Catalogue 74-201 Trusteed Pension Funds

Large Investment Fund Behavior In Canada Today

To gauge the potential impact of single asset pool size on how financial markets and corporate governance function in Canada, having a closer look at how the C\$50 billion Caisse de dépôt et placement du Québec and C\$40 billion Ontario Teachers' Pension Board currently operate is instructive. While they are by no means clones, these two Canadian investment institutions do have a lot in common. Both have:

- The Independent Governance Model (IGM), with professional managements reporting to Boards of Trustees appointed by agency stakeholders, and accountable to them.
- Asset mix policies established by assessing capital markets prospects and stakeholders' risk tolerance.
- Policy implementation strategies which blend internal/external and active/passive approaches to managing stock and bond portfolios. The focus is professionalism and cost-effectiveness.
- Increased emphasis on global investing.
- Increased use of derivative-based strategies to manage stock, bond and currency exposures.
- Major direct investment programmes in the real estate and merchant banking areas.
- Increased activism in the Canadian corporate governance arena in order to encourage the boards of directors of investee corporations to focus on shareholder value maximization.

A number of differences between the two institutions should also be noted:

- The Caisse is a pure investment agency with a number of provincial 'clients'. Teachers' is a full service agency managing the pension plan of Ontario teachers, including benefit administration.
- Teachers' is limited by the 20% Foreign Property Rule in investing outside Canada. Caisse has just requested and received an increase in their foreign investment ceiling to 30% from the Assemblée Nationale.
- Thus far, the Caisse has devoted more resources to venture capital investing than Teachers'.
- Teachers' has a pure 'in the best interests of the beneficiaries' investment goal. Caisse has, in addition, a secondary economic development goal. It claims there is no conflict between its primary and secondary goals.

Large Funds In Other Countries

The largest pension fund in the world (C\$300 billion) is Japan's Pension Welfare Service Corporation (PWSC). However, not much can be learned from its experience for two reasons. Japan's Ministry of Finance has long dictated both asset mix and how it is to be implemented to all Japanese pension funds. The 5:3:3:2 rule requires at least 50% of assets in government bonds, no more than 30% in stocks, no more than 30% in foreign investments, and no more than 20% in real estate. Maybe more importantly, all of the money must be managed externally by 15 eligible Japanese trust banks and insurance companies. These same institutions also manage the country's C\$1 trillion of other pension assets. Very little information is available on the investment performance of Japanese banks and insurance companies as virtually all public disclosure continues to be on a 'return on book value' basis [19].

The California Public Employees Retirement System (CalPERS), at C\$140 billion, is the largest U.S. pension fund. It is managed according to the 'Independent Governance Model' (IGM) described in this paper, and has a diversified, market-oriented investment portfolio. It employs both internal and external managers. CalPERS has been a leader in the development of more assertive corporate governance monitoring practices by institutional investors in the U.S. Its investment results are considered to have been competitive. From the perspective of relative size, CalPERS is not particularly large, with its holdings constituting only 1-2% of total U.S. stock and bond markets.

Probably the most instructive foreign fund case study is Holland's C\$200B Algemeen Burgelijk Pensioenfonds (ABP)[20]. Note it is already larger than the projected size of the CPP Fund in 2030, in 1996-equivalent terms. More importantly, the Dutch economy and capital market is only about half the size of Canada's. Thus, on a relative basis, the ABP is already twice the size in relation to the Dutch economy and financial markets as we project the CPP Fund to be in 35 years from now.

The ABP Story

The ABP was founded in 1922 as a Dutch government agency to look after the administration, funding and investment of the pension plans of all Dutch civil servants and teachers. Today it is fully funded, looks after 2 million plan members, and has 3,000 employees, 450 of who are in the investment division. Over the course of its existence, it developed a reputation for being a top-heavy, inefficient bureaucracy. Its investment results lagged those of other Dutch pension funds for two reasons. First it was constrained by law to be 90% in debt-oriented investments. Second, the performance on the 10% which was invested in stocks and real estate was unsatisfactory.

The resulting increases in contributions into the pension plans began to cause political problems in the 1980s and early 1990s. The McKinsey consulting firm was brought in to study the perceived problems. In 1994 legislation was introduced with the following goals:

- Turn ABP into an autonomous financial institution owned and operated by its stakeholders, starting January 1, 1996.
- Give ABP a five year contract as of January 1, 1996 to manage all of the pension plans it have been managing prior to that date. However, after January 1, 2001, member plans are free to leave the ABP if they so desire.
- All investment restrictions on the ABP would be lifted as of January 1, 1996.

Since the legislation was passed, a new Board of Trustees has been selected, and new, more dynamic management has been hired. Mr. Neervens, the new CEO has already made the following announcements:

- By the year 2000, ABP will reduce debt investments to 60% of the total fund. Domestic stocks will rise to 10%. Foreign stocks will rise to 20%. Real estate will rise to 10%.
- ABP will step up small company investing inside Holland.

- ABP will become a more vocal advocate of shareholder rights, and holding boards of directors of Dutch investee corporations accountable for creating shareholder value.
- ABP will develop a customer-oriented culture which focuses on serving the financial needs of clients.

What a change!

The Size Issue From A Cashflow Perspective

Comparing relative asset values among financial sectors and individual financial institutions and estimating the proportions of outstanding bonds and stocks held are not the only ways to develop perspective on the 'size' issue. Studying the financial flows through the Canadian economy, and the impact accelerated C/QPP funding might have on those financial flows is also important. TABLE II offers this perspective [21].

**TABLE II
USERS AND SUPPLIERS OF CANADIAN INVESTMENT FLOWS**

USERS	1994 \$ BILLIONS	PROPORTION (PERCENTAGE)
Governments	\$49	45%
Businesses	\$30	28%
Individuals	\$29	27%
TOTAL	\$108	100%
SUPPLIERS		
Bank And Related	\$43	39%
Non-Residents	\$30	27%
Pensions And Insurance	\$18	17%
Investment Funds	\$9	8%
Bank of Canada	\$2	2%
C/QPP -1994	\$-1	-1%
Residual	\$8	7%
TOTAL	\$108	100%
C/QPP - 2006	\$23	21%
C/QPP - 2030	\$23	21%

Source: Bank of Canada Review

The table reports the actual investment flows for 1994. Note that governments were the biggest users and that banks and related deposit-taking institutions were the biggest suppliers. An

accelerated C/QPP funding strategy would create a major new Canadian supplier of long term investment capital. By the time the 'steady state' funding rate is reached in 10 years, C/QPP funding could well be approaching the relative magnitude of Non-Residents funding today. This would certainly be true with declining demand for loanable funds from Canada's government sector.

The combination of rising C/QPP funding and declining demand for funds from the Canadian government sector could significantly lower the interest rate spread on Canadian government debt in relation to U.S. and other foreign government debt securities over the course of the next 10 years [22].

So Is 'Big' Bad or Good?

The key findings from our analysis of the 'size' issue could be summarized thus far:

- More rapid CPP funding (especially when combined with decreasing government deficits) could eliminate Canada's dependence on foreign sources of investment capital within ten years.
- By 2006, a CPP Fund would be one among a number of major participants in Canada's stock and bond markets. By 2016 the Fund would be moving into a size league of its own.
- Current major participants such as the Caisse de dépôt et Placement du Québec and the Ontario Teachers' Pension Plan Board appear to be doing more 'good' than 'bad'. They have brought high quality, low cost, disciplined management to Canada's financial markets.
- As their holdings of Canadian stocks and bonds have grown, the two funds have increased their interest in foreign stock investing, domestic direct investing, and effective corporate governance.
- After many years of legislated governance and investment policies, Holland's government has moved the ABP to an unrestricted Independent Governance Model. The ABP is already twice as large in relation to the Dutch financial markets as the CPP Fund is projected to become by the year 2030. Clearly, based on many years of experience, the Dutch government now believes unrestricted is better than restricted.

There is nothing in any of the above which argues strongly in favour of placing any kind of size-related investment restrictions on a CPP Investment Fund at this time. As the Fund's positions in Canadian stocks and bonds grow, there will be increased urgency to be able to invest globally. Under the IGM model, Fund management will also become increasingly interested in domestic direct investing in real estate and venture capital, and in promoting effective corporate governance in investee corporations. However, it will be important to carefully review size-related issues as part of the regular five year Fed-Prov Ministers CPP review process. If problems begin to surface, solutions will have to be found.

SECTION VI IMPLEMENTATION UNDER THE TWO GOVERNANCE MODELS: POSSIBLE SCENARIOS

Making It Happen

It is useful to visualize how, once one of the governance models was chosen, the implementation process might proceed. FIGURE IV lays out a possible implementation process for the Legislated Governance Model. FIGURE V does the same for the Independent

**FIGURE IV
IMPLEMENTING THE LEGISLATED GOVERNANCE MODEL: A POSSIBLE SCENARIO**

Step 1	Fed-Prov Ministers create expert CPP Fund Advisory Committee (CPPFAC)
Step 2	CPPFAC studies alternative ways to set a policy asset mix. It decides the most neutral, non-controversial way of doing this is to simply mirror the average policy asset mix (ex direct investments) of the 10 largest pension funds in the country.
Step 3	CPPFAC studies alternative ways of implementing the required policy asset mix. It decides the most neutral, non-controversial way of doing this is to create passive investment management mandates for external investment managers. These mandates would include the exercise of shareholders rights in the best interest of CPP Stakeholders.
Step 4	Fed-Prov Ministers accept CPPFAC recommendations and reflect them in an amended CPP Act.
Step 5	Fed-Prov Ministers designate Finance Canada as the CPP Fund investment policy implementor.
Step 6	CPPFAC recommends organizational structure for CPP Investment Policy Implementation Unit to Finance Canada.
Step 7	Finance Canada creates Unit and is accountable for its performance to the Fed-Prov Ministers.
Step 8	The Unit, with expert advice, creates mandates for investment management, custody, information, and other necessary services from outside suppliers.
Step 9	The Unit, with expert advice, puts implementation structure in place.
Step 10	The CPP Fund investment programme is activated. Cashflow is allocated to passive managers. The investment managers and other suppliers are monitored. Investment results and operating cost information is widely disseminated.

FIGURE V
IMPLEMENTING THE INDEPENDENT GOVERNANCE MODEL: A POSSIBLE SCENARIO

Step 1	Fed-Prov Ministers create CPP Investment Board Act. This Act sets out investment goals for the CPP Fund. It sets out responsibilities, authorities, and accountabilities of the CPP Board of Trustees. It sets out the rules/processes through which both are created.
Step 2	A Board of Trustees is appointed.
Step 3	The Board of Trustees, with expert advice, decides on the broad policy and operating philosophies of the CPP Investment Board.
Step 4	The Board of Trustees hires a CEO. The CEO hires the senior operating team with Board 'advice and consent'.
Step 5	The CEO and his/her team create a five year CPP Fund plan which includes a target policy asset mix and an implementation strategy. It covers such investment dimensions as internal/external and active/passive management, foreign investments, the use of derivatives, approach to corporate governance, and small business investing. The plan also covers how performance should be measured and how it relates to compensation. Finally, the plan covers how the Fund will communicate clearly and regularly with its stakeholders and Fed-Prov Ministers.
Step 6	After considerable debate, discussion, and deliberation the Board of Trustees accepts the plan.
Step 7	The operating team puts the recommended structure in place.
Step 8	The CPP Fund investment programme is activated. Cashflow is allocated according to plan. Investment and operating cost results are monitored and widely disseminated.

Governance Model. The simulated decisions described in the two scenarios may well not be the exact ones which might actually be taken in practice. Technically, we believe that either model could be put in place in relatively short order once the choice had been made. Nothing new needs to be invented. The necessary expertise and technology is readily available in Canada [23].

Organizationally, both models would, to some degree, be breaking new ground. For example, we are not aware of any large investment pools anywhere on the globe which operate under the complete 'auto-pilot' approach envisioned for the LGM. However, we see no reason why it would not operate as intended. Nevertheless, new approaches do sometimes have unforeseen consequences. Thus it is important to build a mechanism for making course corrections, if needed, into the LGM. For example, the CPP Fund Advisory Board could recommend changes to the LGM approach prior to the regular five year review cycle if they believed circumstances warranted it.

Turning to the IGM, we are not aware of a Board of Trustees chosen exactly as proposed in the paper. However, the process is not all that different from the one employed with success at the Ontario Teachers Pension Board. There, the plan members nominate Board of Trustee candidates through their federations, the employer nominates its own candidates, and both come together to select a chairperson. The challenge in a CPP context will be to identify the right mix of responsible, legitimate federations and associations, which, through their boards, can contribute to a truly skilled, responsible, representative, and effective CPP Board of Trustees. We have no doubt that it can be done [24].

SECTION VII IMPLEMENTING THE MODELS: POSSIBLE PERCEPTIONS AND REALITIES

Selling The 'Accelerated CPP Funding' Strategy

Current speculative press coverage related to a possible accelerated funding strategy for the CPP describes it unflatteringly as a "higher cost, lower benefit" strategy. The resulting asset pool has been darkly described as likely "government controlled and managed". All this highlights the public relations challenge associated with selling the benefits of the accelerated funding strategy to a skeptical public. The direct benefits of the strategy (intergenerational equity, increased financial integrity, reduced long term cost), and the possible indirect benefits (increased long term growth and lower interest rates) will have to be carefully explained.

The two CPP Fund governance models laid out in this paper should go a long way towards lowering fears that the resulting large asset pool would be "government controlled and managed". Both models have been carefully designed so that government control would not be the case in perception or reality. But the two possible approaches to achieving this goal are very different. One is a low key LGM 'auto pilot' mode, which effectively depends on the actively governed and managed component of Canada's trustee pension fund sector for its asset mix policy direction, and on all active participants in Canada's stock and bond markets to ensure their informational and operational efficiencies. In the much higher profile and visible IGM mode, the CPP Investment Board becomes a new large, active, independent participant in Canada's capital markets.

Which Governance Model Is "Best"?

Back on page 6 we identified five key criteria for judging the likelihood that a specific governance model be successful. The first was the 'in the sole interest of the CPP stakeholders' test. We endowed both governance models with this characteristic. The other four criteria were:

1. A clear chain of accountability through the CPP governance structure to the CPP's stakeholders.

2. A perception by the CPP's stakeholders that the CPP governance structure is there to look after their best interests.
3. Clear, unfettered paths to accessing the best strategic and tactical investment thinking and expertise available to set and implement the CPP Fund's investment policy.
4. Flexibility in being able to anticipate and respond to new circumstances in an ever-dynamic world.

We believe that both the LGM and the IGM have clear chains of accountability to the CPP's ultimate stakeholders. The IGM probably has the perception edge in terms of being most clearly seen to represent their best interests by the CPP stakeholders themselves. In terms of an ongoing ability to access new ideas and talent, the IGM has a clear edge, as it does in terms of having the flexibility to anticipate and respond to new circumstances [25]. The potential disadvantages of the IGM lie largely in the risks that (a) its Board of Trustees is ineffective, or worse, dysfunctional, and (b) that the active components of its investment approach lead to lost, rather than added value for the Fund.

Thus the choice between the two governance models is effectively an issue of risk and reward. The LGM appears to carry with it lower risks, but it also offers fewer potential rewards in terms of perceived legitimacy, opportunities for organizational excellence, contributions to informational and operational efficiency of Canada's stock and bond markets, contributions to small business investing in Canada, enhanced portfolio returns and other spin-off benefits resulting from introducing a new, large, independent professional investor into Canada's capital markets. To garner those rewards, a CPP Investment Board at arms length from partisan political pressure would have to be established [26].

SECTION VIII END NOTES

SECTION I: THE GOALS OF THIS PAPER

- [1] See, for example, 'Troubled Tomorrows' (1995) published by the Canadian Institute of Actuaries, 'Reforming Canada's Retirement Income System' (1995) by David Slater, published in *Canadian Business Economics*, and 'Putting Some Gold in the Golden Years' (1996) by William Robson, published by the C.D. Howe Institute.
- [2] University of Waterloo-based actuary Robert Brown has published extensively on the benefits cutting/income age raising approach. See, for example, 'Achieving Stability and Equity with Pay-Go Funding' (1995), published in *Policy Options*. William Robson (op. cit.) explores the Super-RRSP option, as does a draft policy paper by the Reform Party.
- [3] See 'An Information Paper for Consultations on the Canada Pension Plan' (1996) published jointly by the Federal, Provincial and Territorial Governments of Canada.
- [4] See 'The Economics of Canada Pension Plan Reform' (1995), Working Paper 95-9 published by the Fiscal Policy and Economic Analysis Branch of Finance Canada.

SECTION II: RE-EXAMINING THE INVESTMENT GOALS FOR THE CANADA PENSION PLAN

- [5] An actuarial rule of thumb is that a 1% increase in the long term asset return in a fully funded pension plan with a typical liability structure reduces the contribution cost of the plan by 20%.
- [6] The most dramatic example of the move towards treating public pension plans as autonomous financial institutions took place in Ontario in 1990, with the establishment of the Ontario Public Service Pension Board and the Ontario Teachers' Pension Board.
- [7] This is how Ontario and its public sector pension funds dealt with this issue in 1990.
- [8] At C\$150 billion market value for the CPP Fund, a 20% weighting in provincial bonds works out to C\$30 billion, not a lot lower than the current C\$33 billion outstanding.

SECTION III: TWO POSSIBLE GOVERNANCE MODELS

- [9] The CPP Investment Policy Implementation Unit could be set up in any one of a number of ways. One would be to make Finance Canada the accountable organization. In this case, the Unit would operate as a branch of Finance Canada.
- [10] Organizations like the Canadian Federation of Retired Persons, the Canadian Labour Congress, and the Canadian Chamber of Commerce come to mind.

- [11] NAV CANADA resulted from the privatization of Canada's air traffic control system. Its by-laws set out its objectives, its classes of members, and the responsibilities, qualifications, and appointment processes for its directors and officers.
- [12] The review processes for either governance model should include a standard number of issues which would be addressed. These would include the investment performance, cost of operation, and capital market impact of the CPP Fund.
- [13] See, for example, the three *Ambachtsheer Letter* series 'Investment Returns at the End of History', 'Investment Risk and Uncertainty at the End of History', and 'Investment Policy at the End of History' published in January-February 1996.
- [14] Research suggests that the degree of success a pension organization has in creating 'value' is tied closely to its organizational design. See for example the research report 'Excellence Shortfall in Pension Fund Management: Anatomy Of A Problem' authored by Keith Ambachtsheer, Craig Boice, Don Ezra and John McLaughlin and sponsored by Boice Dunham Group, Cost Effectiveness Measurement Inc. and Frank Russell Company.
- [15] Op.cit.[14].
- [16] See, for example, 'Canada's 20% Foreign Property Rule: Why and How it should be Eliminated', Keith P. Ambachtsheer, September 1995 for details.

SECTION V: THE SIZE ISSUE

- [17] The Government of Québec has announced that they are considering accelerated funding for the Québec Pension Plan as well. In projecting the growth of the Caisse's non-QPP assets, we conservatively assumed they would grow in line with GDP.
- [18] Statistics Canada Catalogue 74-201: Trusteed Pension Funds
- [19] For further details, see 'The Impact of Market Access and Investment Restrictions on Japanese Pension Funds' (1994), published by the Employee Benefits Research Institute, Washington, DC There is movement afoot in Japan towards deregulation of the financial system, including pensions. As one of its first steps, organizations such as PWSC are permitted to begin using a small number of investment managers other than the approved Japanese trust banks and insurance companies. A decision to move to a mark-to-market reporting philosophy has also been taken.
- [20] Most of the cited information on ABP came from 'Vrijbaan voor het ABP' (1996), a recent in-depth article by Marcus Polman, published by the Dutch business magazine Elsevier. English language articles have recently appeared in the trade publications *Pensions and Investments* (April 15, 1996) and *Institutional Investor, International Edition*, (May 1996).

[21] We assume here that the CPP and QPP adopt similar funding strategies.

[22] It is difficult to be precise about impacts of this nature. For example, a C\$23 billion incremental cashflow going through the C/QPP Funds ten years from now will be offset to some degree by decreases in other domestic investment funds supplier sectors such as Pensions and Insurance, and Investment Funds. However, we believe the offset would be considerably less than 1:1.

SECTION VI: IMPLEMENTATION UNDER THE TWO GOVERNANCE MODELS

[23] There is good data on Canadian pension fund asset mix behavior. Passive management techniques have benefited from capital markets research and applied technological developments. These techniques and developments have been commercialized and are widely used.

[24] In the case of the Ontario Teachers' Pension Board, research into its organizational structure began with the Rowan Taskforce over the 1987-1988 period. Negotiations between the relevant parties and the facilitating legislation were completed in 1989. The Board began operations on January 1, 1990. It has operated as anticipated ever since.

SECTION VII: IMPLEMENTING THE MODELS: POSSIBLE PERCEPTIONS AND REALITIES

[25] Two examples of what this kind of thinking and flexibility might lead to are the areas of foreign investing and small business investing in Canada.

Canada's professional pension and investment fund management community is on record as favoring the gradual removal of the 20% restriction in foreign investing by registered pension funds and RRSPs still embedded in the Income Tax Act. See Op. cit. [16]. The federal government will either respond favorably to this professional view, or it will not. In the IGM mode, it is reasonable to assume that an independent CPP Investment Board would add its voice to those of its fellow pension fund managements. As an outsized participant in the Canadian capital markets, it would likely feel a special urgency, if it is to act in the best interests of CPP stakeholders, to be able to invest a larger than 20% proportion of its total assets in the global securities portfolio. An added benefit of having this option is that it would allay fears in some quarters that the CPP Investment Board might exercise too heavy a hand in the Canadian corporate control arena.

Small business investing in Canada is another natural area of interest to a CPP Investment Board. While the area is currently dominated by the labour-sponsored venture funds, the more level tax playing field announced in the March 1996 Budget will bring greater interest in this area from Canadian pension funds. As Canada's largest pension fund, such an increased interest would be naturally lead by the CPP Investment Board. It would have the critical organizational mass to be a serious long term player in this area.

[26] For a specific example of the kind of benefits the Independent Governance Model can create when it is implemented properly, see the 1995 Annual Report of the Ontario Teachers' Pension Plan Board.

SECTION IX ABOUT THE AUTHOR

Keith Ambachtsheer studied economics and finance at the Royal Military College of Canada, the University of Western Ontario, and McGill University. He was an investment analyst with *Sun Life Assurance Company* from 1969 to 1972, and a partner and research director of *Canavest House*, a brokerage firm specializing in investment technology services for institutional investors, from 1972 until 1981. From 1981 until 1984 he was a partner and senior consultant with *Pension Finance Associates*, a firm offering advisory and information services to pension plan sponsors. He founded his own advisory firm, *Keith P. Ambachtsheer & Associates Inc.* in 1984.

A respected author and commentator on pensions and investment topics, his articles have appeared regularly in the *Financial Analysts Journal*, the *Journal of Portfolio Management*, and other professional journals. He has won Graham and Dodd Awards in 1979, 1985, 1987, and 1994, Roger Murray Awards in 1983 and 1994, and the TSFA Prize (1987). These awards are for best papers; the first four in the *Financial Analysts Journal*, the next two for the *Institute for Quantitative Research in Finance*, a U.S.-based organization funded by corporations and institutional investors, and the final one for the *Toronto Society of Financial Analysts*.

He has contributed chapters to four widely-read investment texts: *The Investment Managers' Handbook*, Dow Jones-Irwin 1980, *Managing Investment Portfolios*, Warren Gorham & Lamont 1983 and 1990, *Asset Allocation*, Probus 1988 and *Pension Fund Investment Management*, Probus 1990. His own book, *Pension Funds And The Bottom Line*, was published in 1986 by Dow Jones-Irwin. It went through a second printing in 1992. The book was published in Japanese by the *KINZAI Institute For Financial Affairs, Inc.* in Fall, 1991. Mr. Ambachtsheer is chairman of the *Financial Research Foundation* of Canada and trustee of *The Fraser Institute*. He is on the advisory boards of two U.S. investment management firms, is a member of the Editorial Board of the *Financial Analysts Journal*, and is a member of the *Association for Investment Management and Research* Education and Research Committee. In Canada, he founded the *Canadian Investment Review* in 1988, and continues on its Advisory Board.

Mr. Ambachtsheer provides strategic advice on pension governance, finance and investment matters to governments, industry associations, pension plan sponsors, and organizations providing services to pension plan sponsors. The primary outlet for this advice is *The Ambachtsheer Letter* which regularly reaches over 165 corporate, public sector, investment and consulting firm clients in North America and overseas. He is the co-founder of *Cost Effectiveness Measurement Inc.*, which monitors the organizational performance of 275 of the developed world's largest pension funds, aggregating to over \$2 trillion.