

Case Study

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Executive Summary

This document describes an investment process that allows an organization to better manage its funds. The process is split into three phases. These phases are:

Phase One: Determining the organization's expected cash needs based on earnings and

liabilities forecasts and expected economic conditions.

Phase Two: Designing a portfolio and investment strategy to meet these needs and expectations.

Phase Three: Monitoring and rebalancing the strategy when needed.

This analysis has uncovered a number of concerns which should be addressed.

- **The possibility that the organization will be unable to meet its targeted spending rate using its present asset allocation strategy.**
- **Construction of a bond portfolio which more appropriately meets the organization's liability profile.**
- **Augmenting its mandate by including ethical and community focused strategies in its investment policy.**
- **Improving the cost effectiveness in the management of the portfolio by implementing a more appropriate passive/active management policy.**

This document is to be viewed as a working paper only, and is not to be considered a proposal. More information is required for a complete recommendation.

The vision of this document can be summarized in the following statement:

Strategies may change, but the process should always be in place.

Introduction

Background

This section documents the historical reason for the existence of the organization.

Organization's Mission:

An explicit statement of the organization's goals and mission are documented here. This puts front and center the goals and objectives that will govern the management of the organization's investment portfolio.

Due to the nature of the Fund, the organization must take an integrated approach to investment and spending policies. Policies must consider the inherent variability of investment returns from year-to-year, future grants and expenses, as well as future contributions. In setting these policies, the organization must strike a balance between funding beneficiaries today, versus growing the principal to fund future beneficiaries. To date, this balance has been maintained through the adoption of an Income-Only Policy, whereby income is available for disbursement, with automatic reinvestment of capital gains.

With the changing nature of the capital markets, the organization has found that its present investment policies and strategies must adapt to these new circumstances. This document outlines an investment process for the organization which will allow it to assess the best policies and strategies to meet these changes.

This process is practiced by some of the world's largest investment managers. It lays out a framework for the proper management of investment decisions, and focuses attention on the activities which add the most to investment success. By identifying where and how to add value, the investor will inevitably improve their long term performance.

The objective is to develop and implement an investment procedure which is congruent with the 'Best Practices' of the major global investment institutions.

The Organization's Investment Process

Phase One

Asset Liability Exposures

As a perpetual endowment fund, the organization must balance the trade-off between capital appreciation and maintaining spending. It must balance two conflicting goals:

- 1. The preservation of the purchasing power of assets throughout time.**
- 2. Providing a substantial, stable flow of funds to beneficiaries.**

(For a more detailed discussion of the issues of endowment asset/liability management, please see Appendix A - Endowment Management)

In balancing these two goals, the organization must manage its asset/liability exposures by addressing the following issues:

The organization as a steward of permanent endowment funds:

- **Spending Policy**
- **Spending Rate**

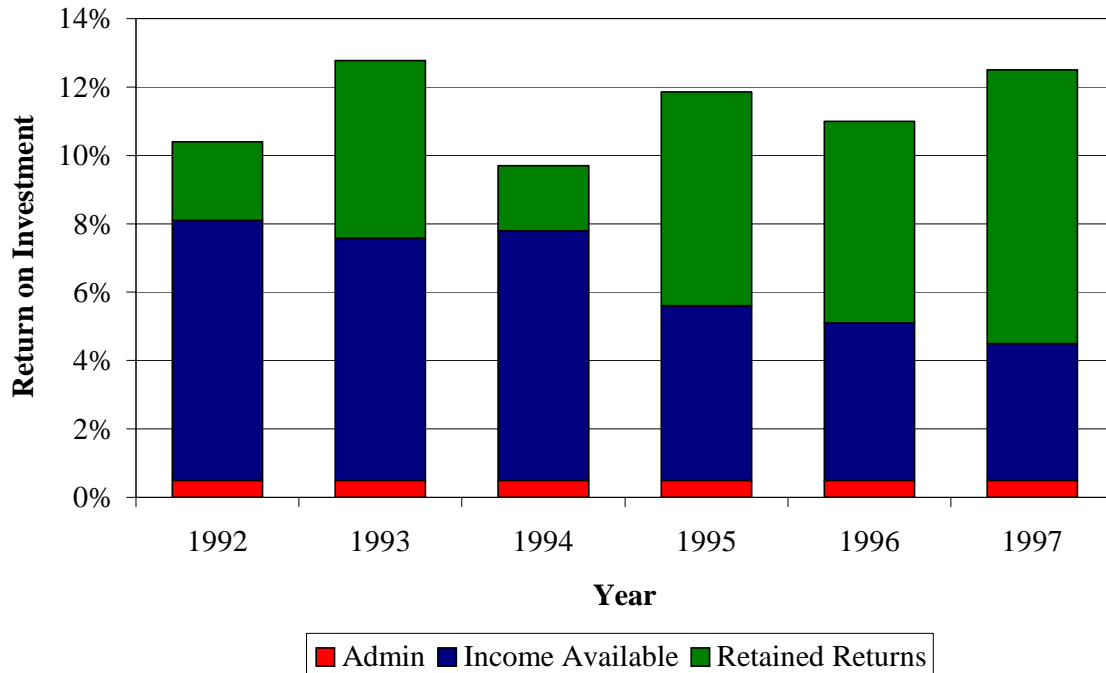
The organization's mandate to help meet community needs:

- **Ethical Issues**

Spending Policy

At present, the organization uses an income-only spending policy. This policy involves permitting only interest and dividend income to be made available for distributions. This policy has created a number of problems recently. Bond yields have been falling since 1982, and in 1997 finally fell below levels which could finance distributions. In addition, corporations in Canada and the United States have adopted lower dividend policies, putting more of their earnings towards share buybacks and mergers. These low dividend yields have exasperated the distribution problem faced by the Organization. The following chart describes the organization's earnings, and their breakdown, for the past six years.

Retained Returns and Distributions



As can be seen, while total returns on investment have remained in the 10 to 12 percent range, returns classified as income have fallen from 8 percent, to less than 5 percent¹.

In order to address this issue, the organization is considering a change to its mandate so it can use a total return policy. Such a policy will allow the organization to adopt a more flexible asset/liability management strategy, thereby more effectively meeting its goals. The disadvantage is that such a policy requires more sophisticated strategies and risk control. These difficulties arise in setting and maintaining a correct spending rate, and in the asset allocation of the Organization's investment portfolio.

Our analysis assumes that the spending policy has been changed to a total-return policy. It will not discuss strategies using an income-only policy, nor will it discuss a transition strategy from an income-only to a total-return policy. Recommendations for these strategies will be made available to the Organization upon request. In the event that the transition has not occurred, it is highly recommended that the Organization have these strategies place.

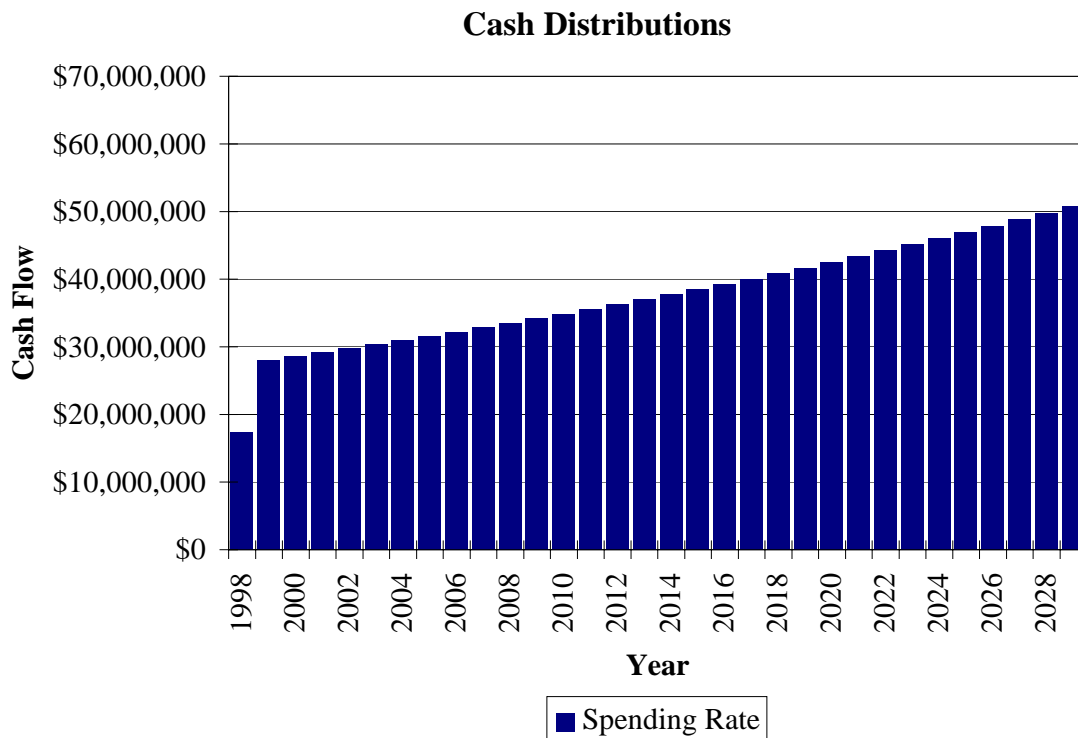
Spending Rate

Determining the spending policies is one of an endowment organization's most important decisions. The dynamics between the spending and investment policies can be quite

¹ These numbers are calculated using accounting principles as opposed to accepted portfolio performance analysis methods, and therefore show a deceptively low level return volatility.

complex and subtle. The organization’s Board has targeted a spending rate “of 5.5%, based on the market value of units averaged over the last 12 quarters”². The Board has stated that this level will not encroach on the organization’s capital.

Some of the issues concerning setting a spending rate based on a portfolio’s market value are discussed in Appendix A. In this analysis, we will set as a minimum, the goal of a perpetual spending rate of 5.5%, based on present asset levels and maintaining purchasing power parity. Assuming an inflation rate of 2% over the coming years, the following graph describes the annual amounts to be distributed to beneficiaries.



This means that at an inflation rate of 2% per annum, a \$27.5 million distribution in 1998 is equivalent to a \$50 million distribution in 2028 (Note, the 1998 distribution is less than \$27.5 million, because our analysis start date is May 15, 1998). This graph should be viewed as a minimum long term cash flow which maintains a constant spending level on an inflation adjusted basis.

The investment policy should be set such that, as a minimum, it is able to meet this cash flow into perpetuity using only the present asset base and growth through investments.

² Ibid.

Higher cash flows may occur due to out performance and investment returns from future gifts.

Other Issues

The Organization's spending policies are designed to support the community. While the primary purpose of investment policy is to generate sufficient returns to support spending policies, the types of securities in which the Organization invests can also support (or undermine) its spending policies. While this is not a major asset / liability issue, it should be considered when structuring a policy.

There is one issue which should be addressed:

- **Ethical Issues**

Ethical Issues

The Organization would be undermining its mandate if it were to invest in companies which harmed the same communities which the Organization is attempting to support. Some of the Organizations beneficiaries are in the health and environmental sectors. Companies which damage people's health, such as tobacco or alcohol, and those which damage the environment, polluters etc., should be avoided. The organization should have a policy in place to address this issue, while not undermining its primary investment mandate. (For a broader discussion and analysis of this subject, see Appendix B - Ethical Investing).

Economic Forecast

Since the organization's investment horizon can be measured in years, what is happening in the economy on a month to month basis is not as important as the results of general economic trends. The U.S. economy has an enormous impact on the Canadian economy, therefore, the first place to start is to evaluate the long term trends in the United States.

As can be seen in the table below, the U.S. economy is presently in its sixth phase since the end of the 1920's. The latest phase, called "degearing", started in 1991, and is characterized by a steady decline in government deficits. In early 1998, the U.S. became an exporter of capital to the world. This has resulted in steady GDP growth and low inflation. The disinflation from the late 1980's has continued on into the 1990's, maintaining high real bond yields and prolonging a strong equity market. However, the U.S. economy is now moving into a phase more in line with the "Pax Americana" period, with some differences due to its smaller share of the global economy and the rapid growth of the technology sector. This previous period was characterized by moderate stock returns and poor T-Bill and bond performances. It is likely that this trend will become more pronounced in the next few years.

Summary of Historical Capital Market Experience

Item	Depression / Deflation (1928-40)	Wartime Controls (1941-51)	Pax Americana (1952-65)	Inflation (1966-81)	Disinflation (1982-90)	Degearing (1991-?)
Real GDP Growth	0.8	5.1	1.4	2.8	2.8	?
Inflation	-1.6	5.8	1.4	6.9	4.1	?
Stock Return	-2.0	13.7	14.5	5.9	16.1	?
Real	-0.4	7.9	13.1	-1.0	12.0	?
Bond Return	5.6	0.7	1.2	1.3	16.0	?
Real	7.2	-5.1	-0.2	-5.6	12.1	?
T-Bill Return	1.4	0.7	2.7	7.3	8.4	?
Real	3.0	-5.1	1.3	0.4	4.3	?

(Source: KPA Advisory Services 1994)

The Canadian capital market is being impacted by many of the same forces affecting the U.S. market. One of these forces is that governments are reducing deficits and running surpluses, causing the need for borrowing to drop rapidly. In addition to eliminating its need for new borrowing the Canadian Government is also restructuring its debt portfolio to more floating rate as opposed to fixed rate debt. This trend is likely to continue, placing downward pressure on long term government bond yields (prices go up).

Another force is that Canadians have become net exporters of capital, rather than importers. This additional savings by Canadians and subsequent increase in wealth will result in an increase in demand for long term bonds (especially by pension funds). Demographic trends will also gradually contribute towards this increase in savings over the next twenty years. The combination of decreasing supply of Canada bonds and

increased demand is a potent combination and will place additional downward pressure on long bond yields.

The Bank of Canada has been maintaining a low inflation policy for some time and it is likely to continue. In the late 1980s, the Bank adopted an excessively tight monetary policy in an attempt to counter the government's loose fiscal policy, the resulting deflation in the early 1990s generated the "made in Canada recession". This aggressive stance towards inflation by the Bank is expected to continue in the future, meaning mid and long term bond yields are expected to remain low, and probably fall further, while short term interest rates are likely to rise.

The dramatic collapse of many Asian economies has also contributed enormously towards reducing inflationary pressures. The fall in many of these currencies has made many products from Asia extremely cheap, and has caused deflation in the manufactured goods sector. The inflationary effect of the strong growth of the U.S. economy, and its tight labor market, has been partially offset by the Asian collapse as well as the productivity increases which have occurred in the U.S. in the past decade.

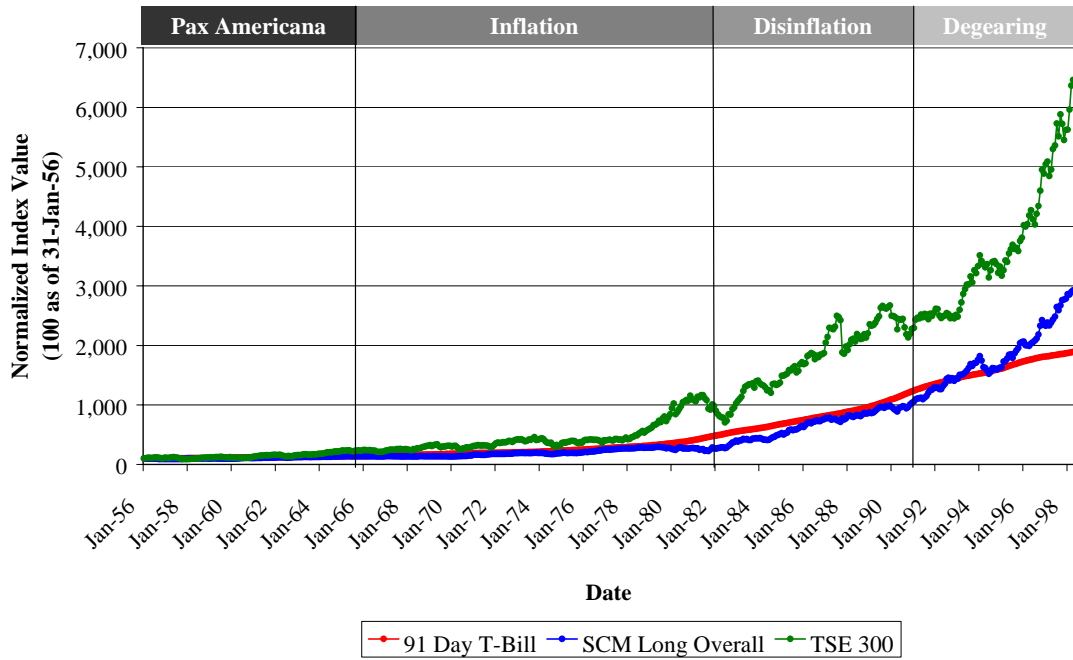
The Canadian economy has not performed as well as its neighbor to the south. U.S. productivity growth has outpaced Canada and taxes south of the border are substantially lower. While both countries have turned their deficits into surpluses, the U.S. accomplished this through increased productivity, while Canada used increased taxes (through bracket creep). This has resulted in a weakening Canadian dollar.

No matter how effectively the federal government mismanages economic policy, Canada's economic performance is still highly dependent upon the United States. This results in the Canadian economic phases to resemble those south of the border. The following table and graphs have divided Canada's economic phases into the same periods as the United States.

Summary of Historical Capital Market Experience (Canada)

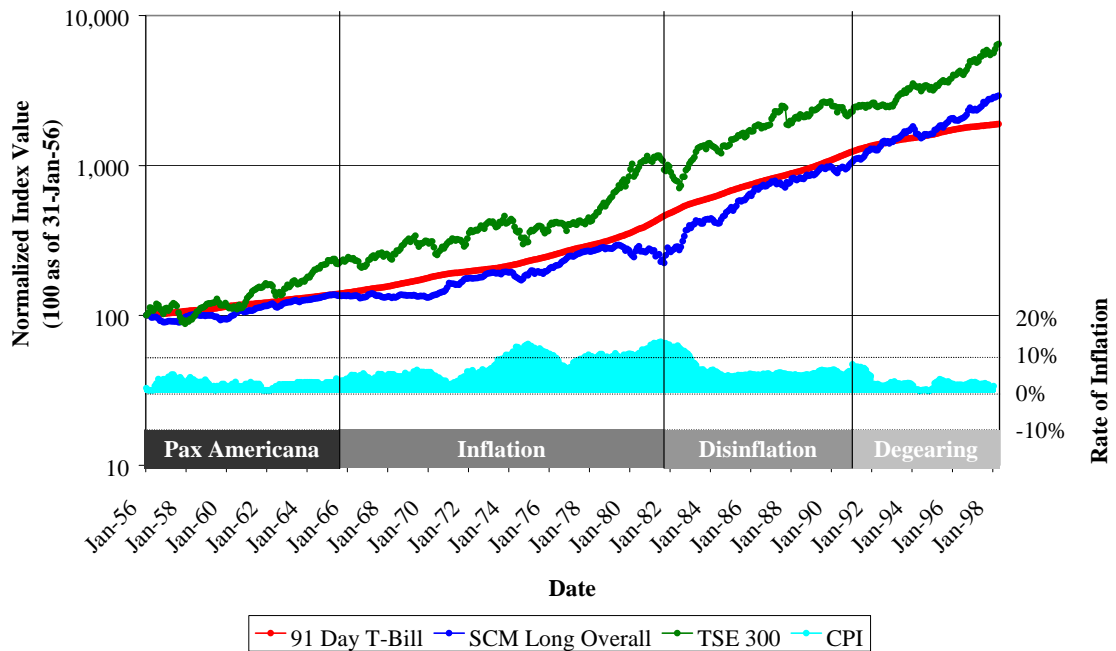
Item	Pax Americana (1957-65)	Inflation (1966-81)	Disinflation (1982-90)	Degearing (1991-Present)
Inflation	1.78	7.16	4.92	1.79
Stock Return	8.68	9.37	9.76	15.28
Real	6.78	2.07	4.61	13.26
Bond Return	4.55	4.51	15.90	15.28
Real	2.72	-2.47	10.46	13.26
T-Bill Return	3.63	7.90	11.03	6.08
Real	1.82	0.70	5.83	4.22

Total Return Indices (Jan-56 to Apr-98)



The following graph has set returns on a logarithmic scale.

Total Return Indices (Jan-56 to Apr-98)



As in the United States, Canada is entering the late stages of the degearing phase. The federal government continues to dodge the fiscal surplus debate, but will eventually have to reduce taxes. (A massive increase in spending would have severe negative repercussions on long term productivity, and the Canadian dollar.)

While equity and bond markets have demonstrated stellar performance over the past 15 years, this is not likely to continue for much longer. As in the United States, Canada will eventually leave the degearing phase and enter a period with market returns similar to the “Pax Americana” period. As can be seen in the previous chart, real returns on Canadian bonds are likely to be much lower over the coming years. A real return on the long bond is likely to average 3.5% over the next decade, with equity real returns in the 7% to 9% range.

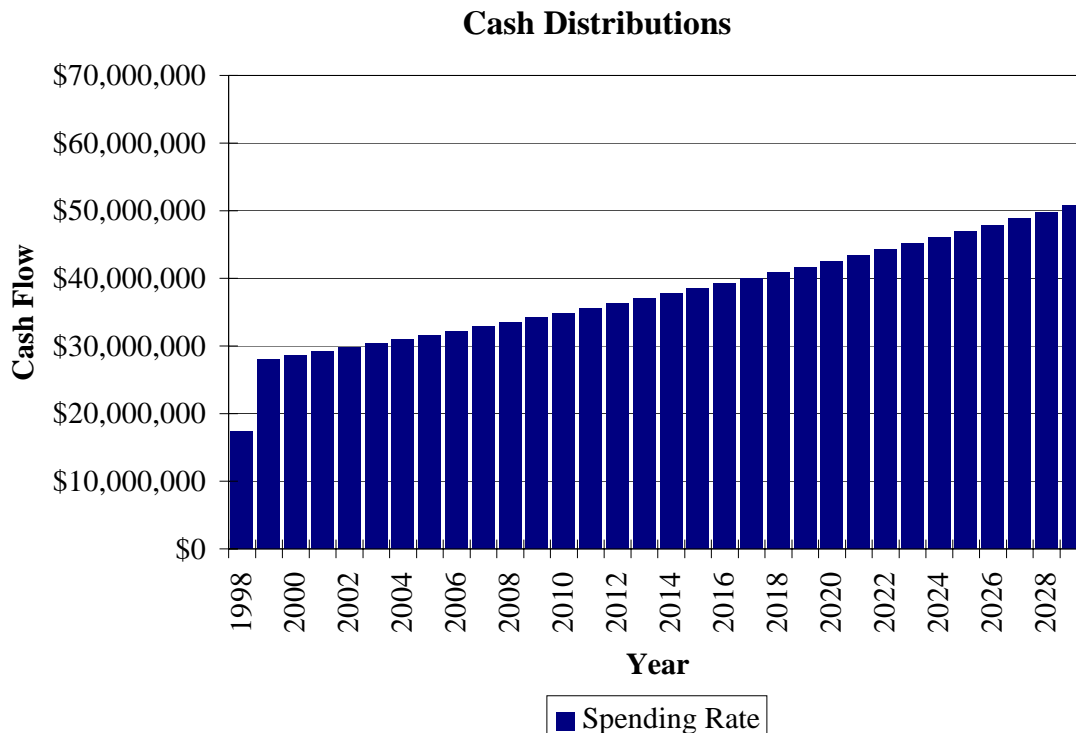
Risks, Returns, Costs & Constraints

The organization's risk, return, cost and constraint profile is quite complex. It is dominated by the risk facing the Organization due to cash flow volatilities, in particular, the possibility of not maintaining a long term distribution of 5.5% per year.

Spending Rate & Asset Allocation

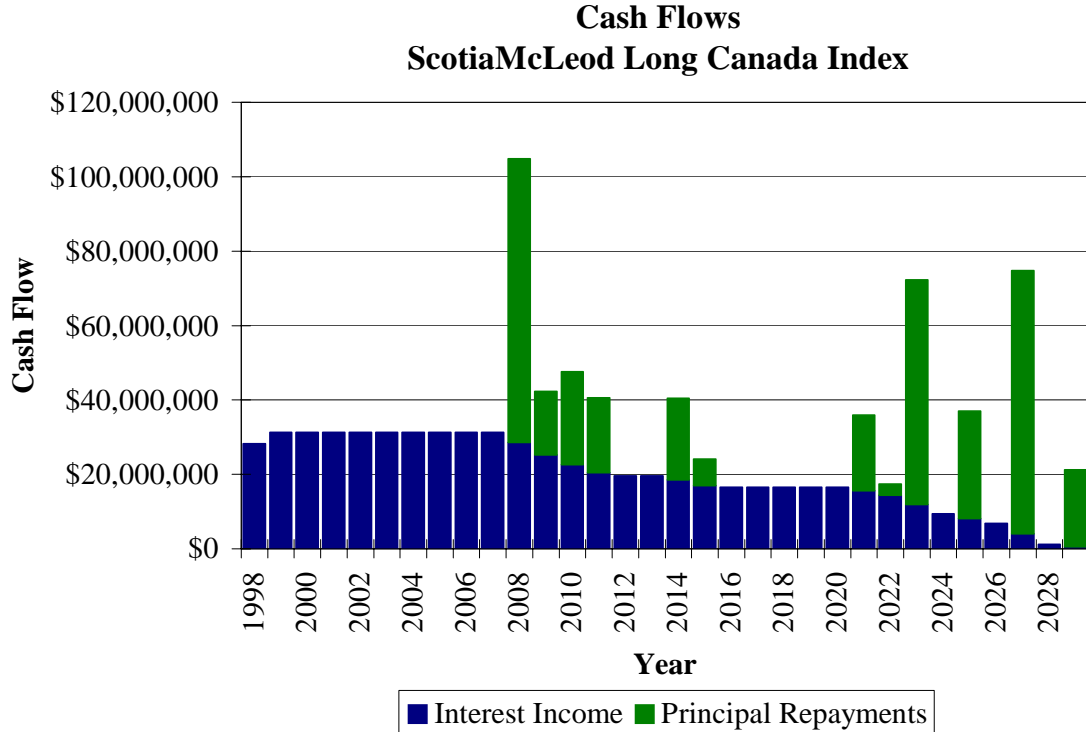
In analyzing the profile, we begin by determining the lowest risk portfolio which meets all key requirements.

The primary requirement is to meet the following cash distributions into perpetuity.



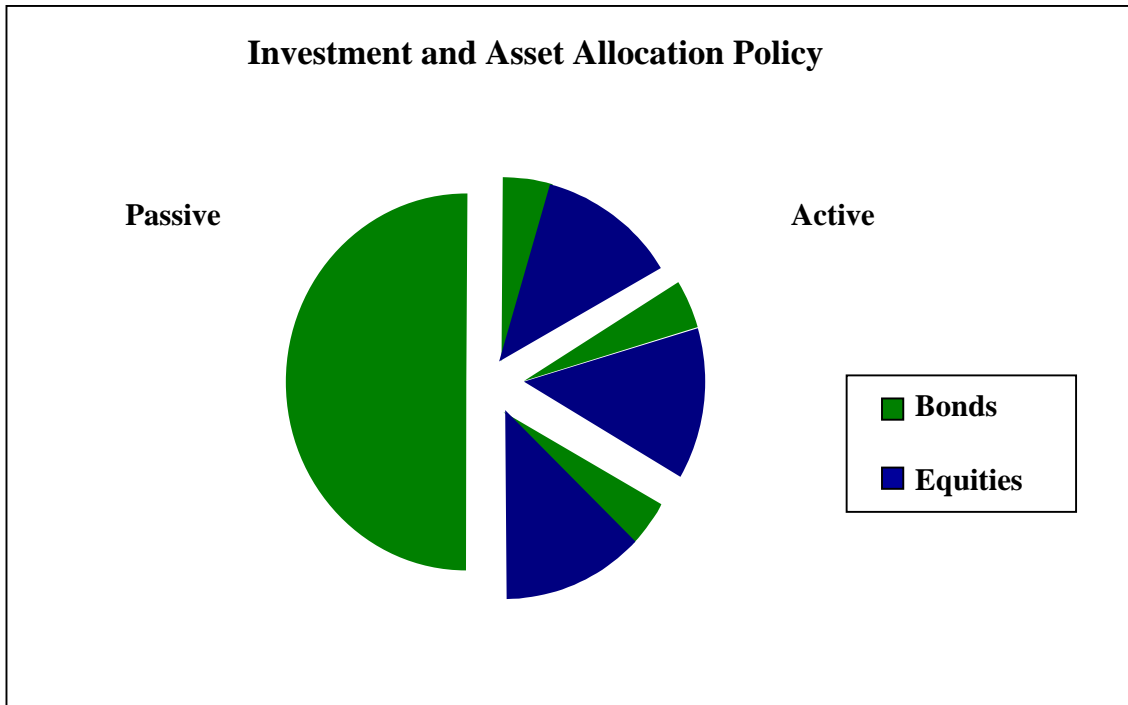
When building a strategy, we initially attempt to construct a portfolio with the lowest risk which will meet this cash distribution. We begin with a portfolio containing only Government of Canada bonds. The following graph describes the cash flows from the

ScotiaMcLeod Long Canada Index.



As can be seen, a portfolio which is 100% invested in the ScotiaMcLeod Long Canada Index generates sufficient cash flows in the first decade, but is incapable of meeting the long term cash flow requirements of the Organization's spending rate. This is because the yield on the Government of Canada long bond is around 5.5%. The organization's spending rate is set at 5.5% plus inflation, so with a forecasted 2% long term rate of inflation, the Organization requires a minimum rate of return of 7.5% on its investment portfolio. Therefore, it must hold other assets, which generate higher long term returns.

The organization's present asset mix is 62.5% bonds (ScotiaMcLeod Universe) and 37.5% equity.



The yield on the bond component of the present portfolio is approximately 5.5% (as of May 29, 1998, the ScotiaMcLeod Universe Index yield was 5.43%). With a 62.5%/37.5% bond/equity allocation, the equity portfolio must generate an average rate of return of 10.8% over the long run in order for the organization to meet its spending rate target of 7.5% nominal (5.5% real).

From our economic analysis, an ongoing 10.8% return on equity is equivalent to an 8.8% real return. This is at the upper end of our 7% to 9% real return forecast. Since The organization's main risk is a shortfall in the spending rate, the present asset allocation is a risky strategy, since it is dependent upon the equity market maintaining a return at the upper end of its forecasted band.

A less risky strategy in the long run is a portfolio with higher equity content. This portfolio will have higher short term volatility, but it will have a higher likelihood of maintaining the Organization's purchasing power and spending rate.

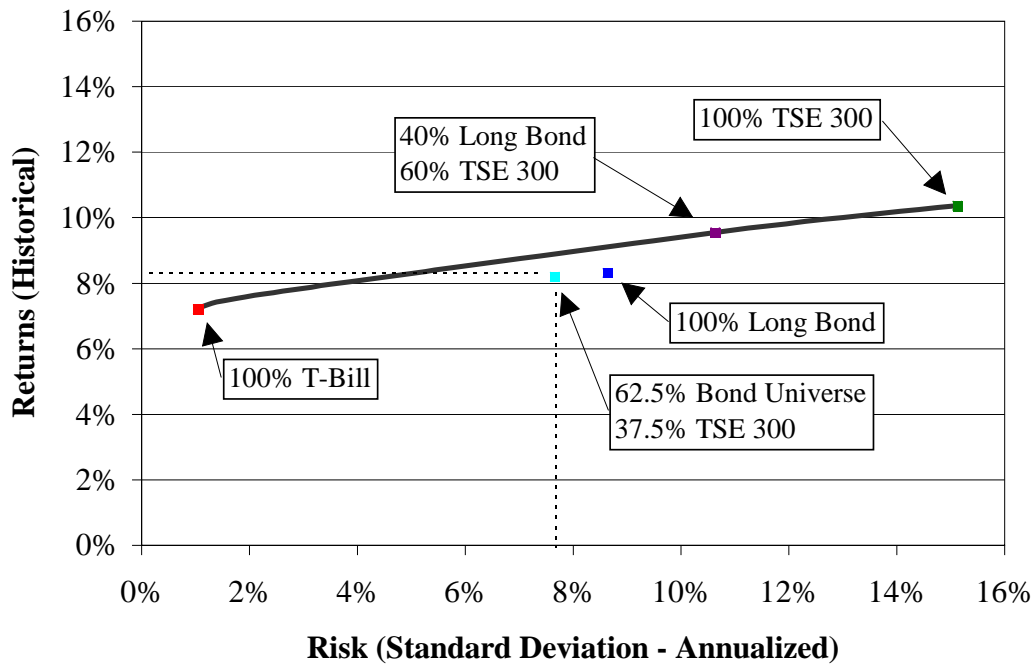
Using a conservative long term real return on equities of 7.5% and a 3.5% real return for the long bond, the following chart gives the real (and nominal) returns using a number of different asset mixes.

	Present Mix 62.5% Bonds 37.5% Equities	Scenario 1 50% Bonds 50% Equities	Scenario 2 40% Bonds 60% Equities	Scenario 3 30% Bonds 70% Equities
Real Returns	5%	5.5%	5.9%	6.3%
Nominal Returns	7%	7.5%	7.9%	8.3%

Using our forecasts, an equity/bond mix of 60%/40% would yield a long term real return of 5.9% which would be sufficient to meet the organization's long term spending rate. While this is a substantial deviation from the organization's present asset mix, it is more in line with the asset allocation of U.S. endowment funds. The equity ratio for endowment funds in the United States has ranged between 53% and 60% ^{3,4}.

This higher equity weighting will also increase the volatility of the Organization's returns. The following are two efficient frontiers which calculate the organization's historical risk levels based on its present asset mix, and with the higher mix. (See Appendix C - Asset Allocation, for a broader discussion of the Canadian efficient frontiers.)

Canadian Efficient Frontier (1956 to Apr-98)



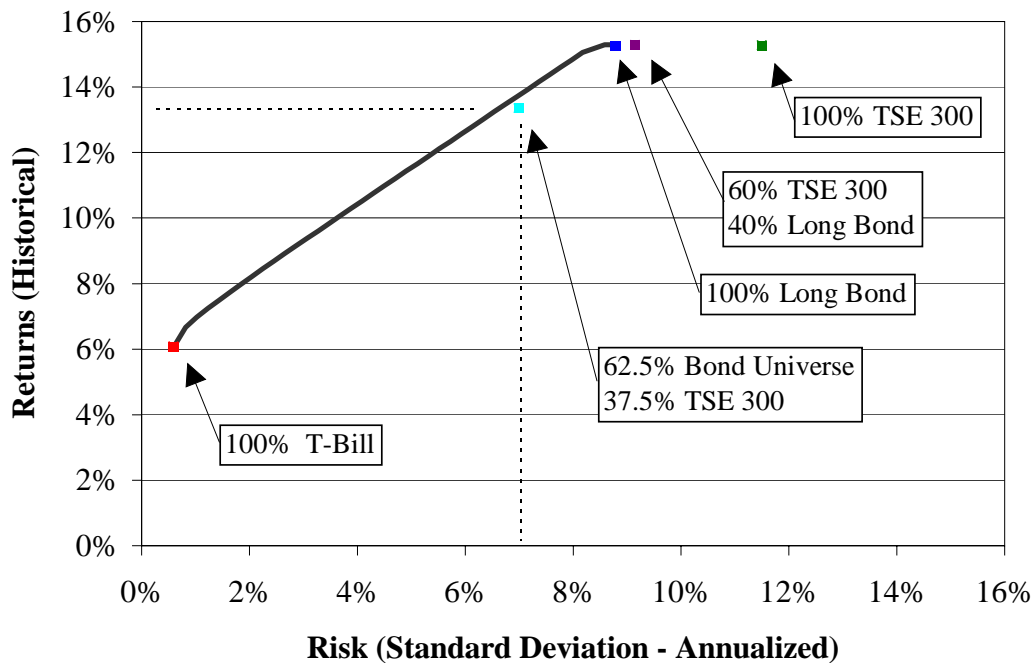
Canadian Efficient Frontier (1956 to Apr-98)

³ Williamson, J. Peter, "Funds for the Future", CT: The Common Fund, 1993.

⁴ NACUBO, 1993 NACUBO Endowment Study, 1988 National Association of College and University Business Officers (Washington D.C., Cambridge Associates Inc.).

Portfolio Mix	Return	Risk
40% Long Bond 60% TSE 300	9.55%	10.64%
62.5% Bond Universe 37.5% TSE 300	8.20%	7.66%
100% T-Bill	7.21%	1.04%
100% Long Bond	8.32%	8.64%
100% TSE 300	10.37%	15.12%

Canadian Efficient Frontier (1991 to Apr-98)



Canadian Efficient Frontier (1991 to Apr-98)

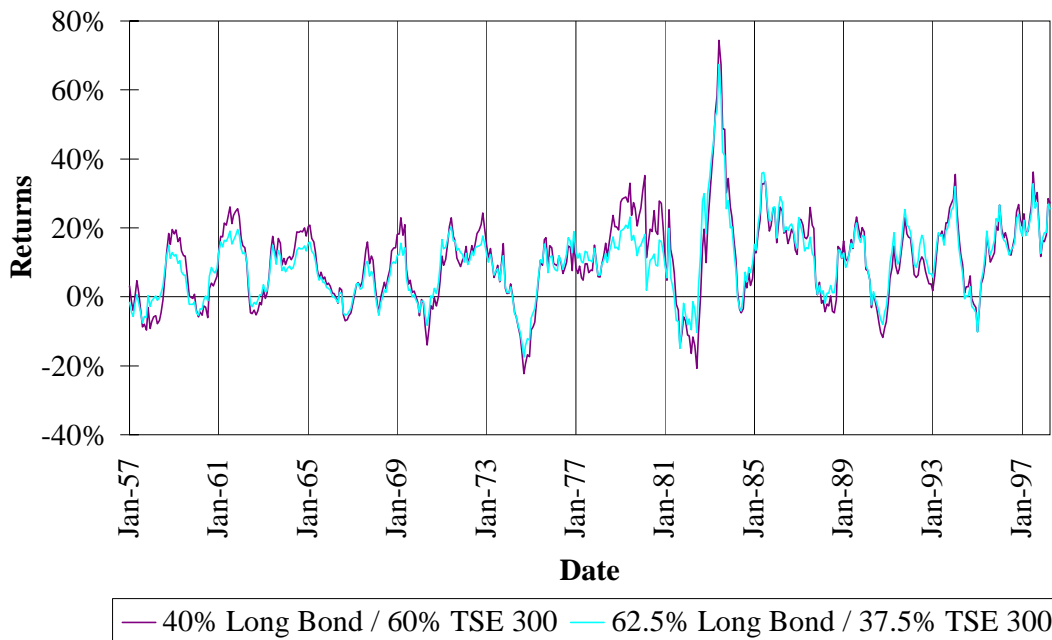
Portfolio Mix	Return	Risk
40% Long Bond 60% TSE 300	15.28%	9.15%
62.5% Bond Universe 37.5% TSE 300	13.36%	6.99%
100% T-Bill	6.08%	0.61%
100% Long Bond	15.29%	8.79%
100% TSE 300	15.28%	11.50%

With its present portfolio weighting, the organization's portfolio has had an average annual volatility of between 7% and 7.5%. The new portfolio with the higher equity content has had a risk of 9% to 10.5% over these periods.

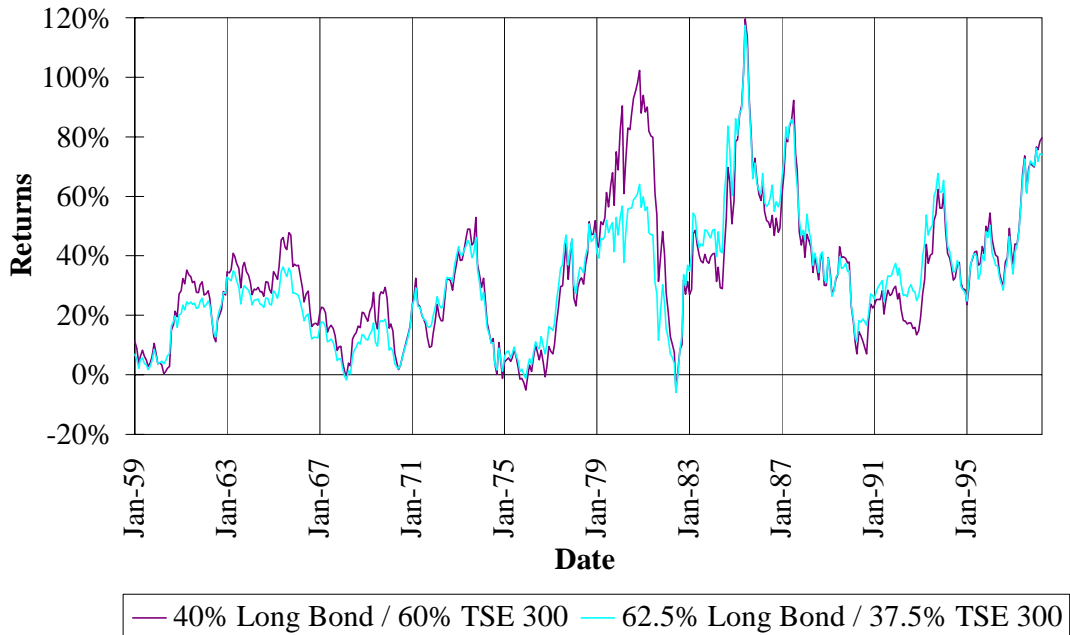
Notice how much steeper the efficient frontier has been in the 1990s. During this period, the investor has received a much higher rate of return for a lower level of risk than has been typical in the past 40 years. This has lulled some investors into a sense of complacency. The efficient frontier is likely to flatten over the next decade, regressing towards its long term slope. Due to this expected flattening, the Organization's trustees should determine whether it is prudent to increase their risk profile to achieve their long term spending rate, or to maintain the present risk profile and adopt a more flexible policy towards their spending rate.

From these efficient frontiers, we can see where the Organization lies in terms of its attitude towards risk - where risk is measured as an annual volatility. Another important consideration is the Organization's risk horizon. The efficient frontiers generated above, implicitly assume a one year risk horizon. The organization's risk horizon is much longer, however. Based on the present and new asset mix policies, each portfolio's volatility using an annual and three year moving average is described in the following two charts. (See Appendix C - Asset Allocation, for a discussion on the impact of changing the investment horizon.)

**62.5%/37.5% & 40%/60% Long Bond/Equity Volatilities
Annual Moving Average**



62.5%/37.5% & 40%/60% Long Bond/Equity Volilities Three Year Moving Average

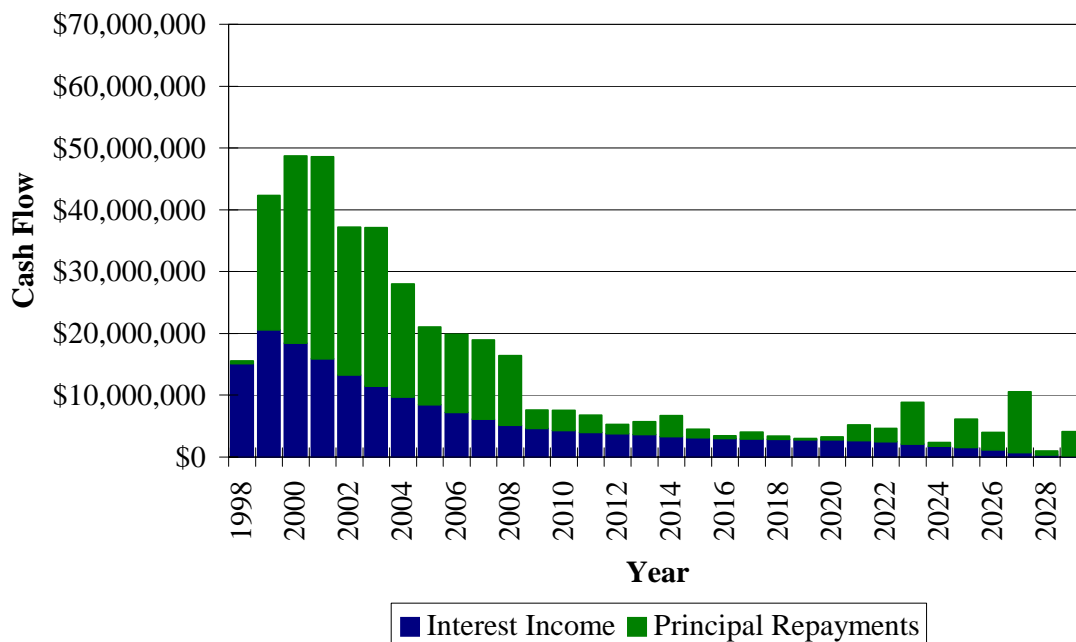


While the 40% Bond / 60% Equity portfolio is more volatile than the present mix in the short term, the down side volatility using a three year risk horizon is comparable to The organization's present portfolio. Notice also that the new portfolio's performance in the 1950s and 1960s is consistently higher than the existing portfolio.

Fixed Income Portfolio

The fixed income component of the new portfolio uses the ScotiaMcLeod Long Bond Index, while the organization is presently investing in the ScotiaMcLeod Universe Index. The cash flows from the ScotiaMcLeod Universe Index are described in the following chart.

Cash Flows ScotiaMcLeod Universe Index



Note how the interest income deviates substantially from the form required in the The organization Cash Distribution chart. By using the Universe portfolio instead of the Long Index, The organization is taking on a short term interest rate bet vis-à-vis their cash flow requirements. This means, that the Organization is using a bond index in an active investment strategy. (We are assuming that in referring to the ScotiaMcLeod Index in the annual report, the author is referring to the ScotiaMcLeod Bond Universe Index). The aggressiveness of the active strategy is based on the degree to which the investment portfolio deviates from the forecasted liabilities. This strategy is an implicit bet that short term bonds will outperform long term bonds. This has not been an accurate forecast for the past 15 years. (For an example of a portfolio whose cash flows are more in line with The organization’s liabilities, see Appendix D - Sample Fixed Income Portfolio for The organization.)

The organization’s liabilities have duration of approximately 30 years (based on a 2% real rate of return for T-bill roles and one hundred years of cash flows). The ScotiaMcLeod Universe’s duration is only 5.5 years, while the Long Bond Index is 10.5 years. The difference between the liability and asset durations is going to be high regardless which index is selected, but the Long Bond Index has much less of a mismatch than the Universe Index.

Ethical & Community Constraints

As mentioned in the asset/liability analysis, the organization should consider how it can augment its investment decision making using ethical and community considerations.

Ethical Investing

An ethical tilt can be done without excessive cost (See Appendix C - Ethical Investing). As a minimum the organization would want to omit tobacco related stocks from its portfolio. They may also consider omitting alcohol companies and a few environmentally unfriendly companies. An entire tilt against resource companies is a long term sector strategy and should not be classified as an ethical constraint.

One other item which the Organization should consider is its use of Canada Trust as the custodian of its assets. Canada Trust is a wholly owned subsidiary of Imasco, which owns Imperial tobacco. Imasco, in turn is a major subsidiary of BAT Industries PLC of the UK, which is one of the largest tobacco companies in the world. While doing business with Canada Trust does not directly support the tobacco industry, it could be seen as indirect support.

Community Investing

Investing in the community can be done either through an equity tilt, or a fixed income tilt. The equity tilt can be quite difficult. The most efficient means of tilting the equity investment activity towards the local community is, when hiring a fund manager for the active component of the portfolio, ensuring that the manager has a superior knowledge of local businesses. Since the manager understands those businesses better, they will have a natural bias in their investing practices towards local firms.

One important consideration when investing locally in equities is a negative correlation between the equity investments and beneficiary needs. When the local economy turns down, there tends to be an increase in demand for a organization's assistance, while at the same time, the downturn has caused a decline in value of the local component of the organization's portfolio. This can negatively impact the organization's mandate, and increase risk.

A sample of a fixed income portfolio for the organization is included in Appendix D. The portfolio's yield is 21 basis points above the Long Bond Index, and 46 basis points above the Universe. This is a substantial increase in return for the minor additional risk. In fact, it could be argued that this portfolio has a lower risk than the organization's present portfolio.

Risk, Return, Cost & Constraint Summary

The organization's Risk, Return, Cost & Constraint profile is summarized below. The most important factor is the risk the Organization faces of failing to maintain its spending rate.

Risk

- Long term funding shortfall (failure to maintain spending rate).
- Excessive short term volatility, causing the Organization's trustees to alter its strategy.
- Liquidity risk is low and easily manageable.

- Risk horizon is greater than three years.

Returns

- Requirement is to generate a 5.5% real return on a long term basis. (7.5% nominal return based on a forecasted 2% inflation rate.)

Costs & Constraints

- Minimize costs by paying only for services which add value.
- Tilt investments away from unethical companies and avoid investing in any company that directly undermines the organization's mandate.

Phase Two

Investment Policy Statement

One of the most important duties of a fiduciary or trustee is the development and maintenance of an investment policy statement (IPS). A well constructed and properly followed investment policy statement is essential when running a long term investment strategy. By instilling discipline and accountability in the investment process, the IPS helps investors alleviate and sometimes avoid the many pitfalls which will be encountered along the way.

A well constructed IPS will contain the following elements:

- | | |
|---|---|
| 1. Purpose and Background | Laying the foundation of the document and providing perspective. |
| 2. Objectives | Concrete and clearly defined. |
| 3. Requirements and Tolerances | Should be broken into Return, Risk, Cost & Constraints. |
| 4. Control Procedures | Specific investment restrictions, reporting and responsibilities should be described. |
| 5. Investment Management Practices | Passive, Active and Manger Selection. |
| 6. Performance Measurement | Performance measurement techniques and targets should be set. |

For The organization, a sample investment policy statement was written, and is contained in Appendix E - Investment Policy Statement for The organization. (Note that this IPS is not complete, and is for sample purposes only. There was insufficient information to correctly determine all the criteria needed.)

Investment Strategy

Asset Allocation

The following is the recommended asset allocation for the organization.

Asset Class	Portfolio Holdings
Canadian Fixed Income, Cash & Equivalents	40%
Canadian Equity	60%
Foreign Fixed Income	0%
Foreign Equity	0%

It is based upon the required spending rate of 5.5%, a forecasted inflation rate of 2% and estimates of the long term returns on Canadian bonds and equities.

Benchmark Selection

Benchmarks are selected as a means to measure the performance of a given strategy or investment manager. A benchmark has been described as a “no brain” or auto pilot portfolio. The key to strategic asset management is to determine what percentage of the total portfolio is allocated to each of these auto pilot portfolios. Unfortunately, an extraordinary number of studies have shown that these auto pilot portfolios outperform most fund managers. On the other hand, this result demonstrates that the stock and bond markets in most developed countries are quite efficient. One of the most important aspects of portfolio management is proper benchmark selection.

The recommended benchmarks for the three portfolios are:

Fixed Income Component: ScotiaMcLeod Long Term Bond Index (Duration is 10.40 years)

Equity Component - Passive: TSE 300 Composite Total Return Index

Active: Customized Benchmark

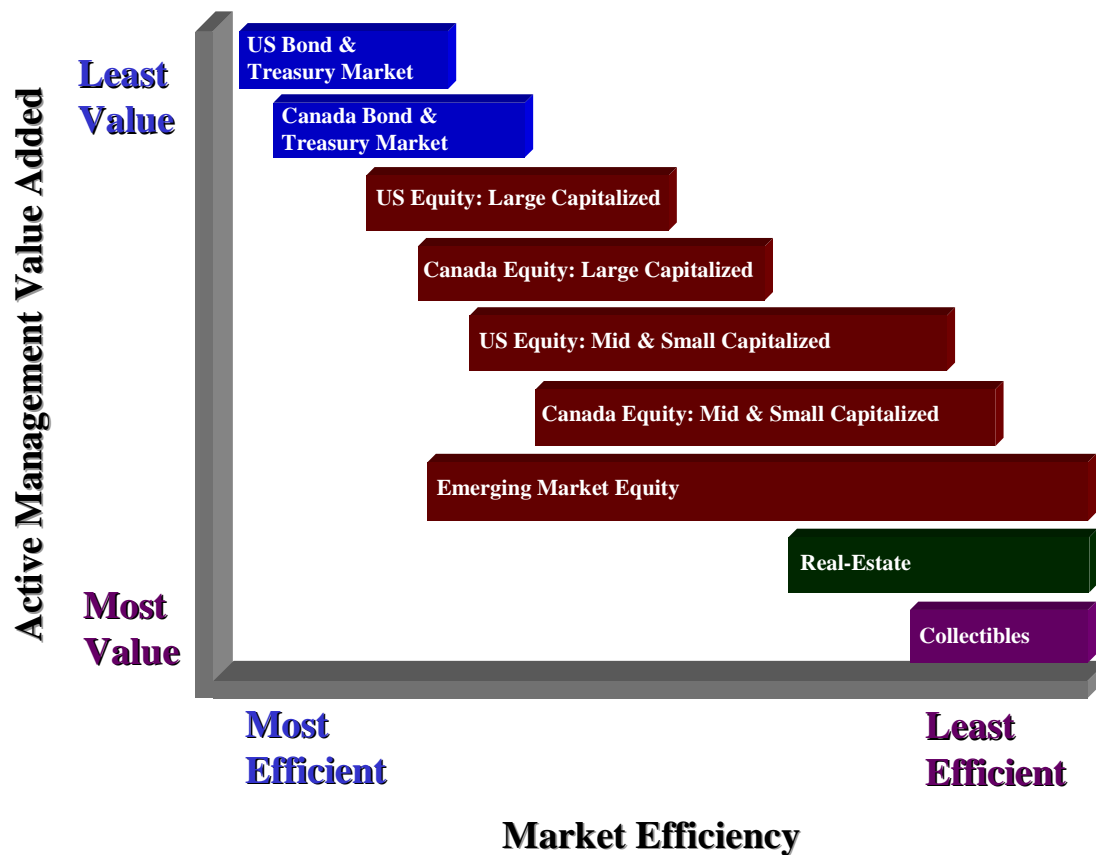
For the fixed income component, there are other indices to choose from, such as the Universe Index, and combinations of the Short and Mid Term Indices, but the duration, maturities and average cash flows of these indices do not fit the organization’s cash flow and liability structure as those recommended above.

Active or Passive Management

The organization is presently adopting a 50/50 passive/active management strategy, with 80% of the fixed income component in an index, 20% fixed income actively managed, and 100% equity actively managed.

The rationale for adopting this approach is not clear, and the strategy appears to be self contradictory. Passive strategies are used when the investor believes a market to be efficient; the more efficient the market, the more passive the strategy. In the passive/active decision process, the investor selects asset classes or subclasses which are believed to be efficient and adopts a passive strategy, and for those markets which are inefficient, an active strategy can add value.

The following diagram (as seen in the Investment Process overview section) qualitatively describes the efficiencies of each market, and the opportunity to add value through active management.



The organization has split the fixed income management into passive and active. One cannot have it both ways. An asset class (or subclass) cannot be simultaneously efficient and inefficient. An example of a more appropriate strategy would be to continue operating an 80% passively managed fixed income component, while selecting a high yield bond fund manager for the other 20%. This is assuming the investor believes that there are inefficiencies in the high yield bond sector.

In addition, as can be seen in the chart, the equity market is not entirely inefficient. What one finds is that pricing of large capitalized companies is fairly efficient, while there are opportunities in the small and mid capitalized sectors. Rather than labeling the entire equity market as inefficient, the investor should passively manage the large capitalized component and have an actively managed small and mid capitalized component. If there is an international component to the portfolio, active management is appropriate (active asset allocation).

For The organization, we recommend that the majority of the assets be managed on a passive basis. All of the fixed income component of the portfolio should be managed passively, and roughly 80% of the equity component should also be managed passively, leaving roughly 20% of the equity component available for active management.

The main reason for having most of the portfolio managed passively is that on average 93.6% of returns are due to the strategic asset allocation decision, which has already been discussed in this document. By determining the best asset mix, the majority of the value added has already occurred.

Fixed Income Component

Active management of bond portfolios has not been known to add any significant value. The table below is from a 1996 study showing annualized relative performance for Canadian bond portfolios in pension funds for the 10 year period ending June 30, 1995.

Portfolio	1986-95
1 st Quartile performers	11.6%
SMI Universe (benchmark)	11.3%
3 rd Quartile performers	11.1%

As can be seen in the table, the top bond funds managed to outperform the ScotiaMcLeod Universe by only 30 basis points. After paying active management fees, and ancillary costs of 15 to 50 basis points a year, these 1st Quartile portfolios would match or even under perform the benchmark. A properly constructed bond strategy, which takes into consideration the investor's risk profile, will add more value than the vast majority of active management strategies.

Equity Component

The ultimate form of passive investment is an index fund - which is a bet on market efficiency. Therefore, the more efficient a market the less likely one is to outperform it through active management. The following chart describes the success of active management in the Canadian and U.S. equity markets.

Period to May 1998	Percent of Active Fund Managers Out Performing TSE 300	Percent of Active Fund Managers Out Performing S&P 500
Past Year	18.6%	10.3%
Past 3 Years	17.5%	5.1%
Past 10 Years	27.9%	7.4%

Sources: U.S. figures from Financial Post June 13-15, 1998, and Canadian figures from Globe & Mail, June 18, 1998.

On the surface, the U.S. market is much more efficient than its Canadian counterpart. The reason for the apparent inefficiency in the Canadian market is that there is a structural inefficiency in the construction of the TSE 300 with an excessive bias towards resource stocks. In Appendix B - Ethical Investing, one can see that a portfolio without resource stocks would have had substantially better performance. If one were to match fund manager performance in Canada with an index without resources, the percentage of active fund managers out performing would have been very low. Also, there is survivorship bias in the Canadian figures and no risk adjustment. A discussion of these inefficiencies and a means of correcting for them can be provided upon request.

Our recommendation is to set the equity passive/active ratio to 80%/20% or 70%/30%. There is no hard and fast rule on this, since it tends to be a result of experience. The passive component need not be indexed to the TSE 300. The Canadian economy has been moving steadily away from resource based sectors and towards manufacturing and especially services. The equity market has not kept up with this trend, for a number of reasons. A passive portfolio tilted towards services and manufacturing will out perform resources over the long term as long as this trend continues.

The active component can be assigned to the small and mid capitalized stocks, where the market is not as efficient. Selection of the sector and style is dependent on the number of good managers who have consistently applied their investment strategy in that sector or using that style.

Manager Selection

The organization is presently using four investment managers. One of those managers is running an extreme passive strategy with an index, and the other three are actively managed balanced funds, each with a 75%/25% equity/bond ratio.

The rationale for having three balanced fund managers is not clear. This type of approach tends to be inefficient. There are three problems with this approach.

1. Regression to the mean.
2. Asset Allocation Overlap.
3. Cost.

Having three fund managers with the same investment mandate results in a regression to the mean of total portfolio performance, “The Market”, is simply the views of all investors. When an investor hires a number of fund managers investing in the same market, the total portfolio usually begins to look like the market. The more managers one hires, the more the total portfolio looks like an index fund. The benefits of risk reduction through diversification through fund managers are eliminated.

Since the organization has hired three balanced fund managers, portfolio performance becomes dominated by asset allocation. The asset allocation decision has been made by the Organization, so there is little benefit in having the fund managers replicates the asset allocation decision. A review of the organization’s performance analysis system would be required to ascertain whether this effect has been factored out.

Balanced fund managers are also more expensive than most other types of managers. The organization is likely paying an additional cost for a perceived diversification benefit, which in fact they do not receive.

We recommend that after determining which component will be actively managed (having decided on an asset allocation and passive/active strategy), the organization select managers in asset classes (or sub classes) where they have demonstrated a consistent style and an opportunity to add value through skill.

Manager selection is much more difficult than it first appears. There is an ongoing debate as to whether it is possible to consistently select fund managers who add value. The following table lists the top 20 equity fund managers in the United States from 1985-1989 and their subsequent performance for the next five years 1990-1994. While the reader’s eye tends to focus on the top fund, notice how the performance distribution for the subsequent five years is nearly random.

Ranking of Mutual Funds 1985-1994

Fund	Ranking During the Period 1985-1989 (out of 326 Funds)	Ranking During the Period 1990-1994 (out of 326 Funds)
20 th Century Giftrust	1	2
Fidelity OTC	2	51
Fidelity Magellan	3	40
Transam Capital Growth	4	294
Flag Inv. Telephone Income	5	239
AIM Weingarten	6	139
IAI Regional	7	150
Putnam Voyager	8	20
Scudder Capital Growth	9	265
AIM Constellation	10	10
Fidelity Strat Opp	11	185
New York Venture	12	47
Fidelity Adv Inst Equity Growth	13	7
Federated Growth Trust	14	282
United Income	15	123
Lexington Corp Leaders	16	210
Smith Barney Aggressive Growth	17	84
IDS New Dimensions	18	27
Dodge & Cox Stock	19	103
20 th Century Growth	20	105
Average Ranking	10	119
S&P 500	39	29

Mutual fund rankings were calculated using returns reported by Lipper. No implications should be drawn that similar investment performance will occur in the future.

Source: Copyright 1995, Investment Management Council

A detailed description of manager selection methodologies and their pros & cons can be provided upon request.

Investment Recommendation

Based on the information available (which may not be complete), the following strategy is recommended:

- An asset allocation which over time reaches a 60%/40% equity/bond mix.
- An 80%/20% passive/active distribution, where active managers are selected for lower efficiency markets (small and mid capitalized Canadian equities).
- Benchmarks
 - Cash & Equivalents ScotiaMcLeod 91-day T-bill index.
 - Canadian Fixed Income ScotiaMcLeod Long Bond Index.
 - Canadian Large Equity TSE 300
 - Canadian Mid & Small Equity Customized
- No holdings in tobacco companies and firms which are serious polluters.
- Tilt in the equity portfolio towards a more balanced distribution based on market capitalization and broader economy weights ⁵.

Rebalancing Strategy

Rebalancing is a critical part of any investment strategy. Failure to rebalance effectively will result in substandard performance.

There are two reasons to rebalance the portfolio. One is due to changes in the organization's financial position due to uneven cash flows, such as new gifts or a crises need from a beneficiary. The second involves some active management, where the investment manager decides to sell or buy certain assets in the portfolio to take advantage of changes in the long term strategic forecast. Any changes for this second reason should be over the long term and not attempts to "time" the market. They must be strategic in nature and not tactical, or under performance is likely to result.

(For an explanation of the different rebalancing approaches see Appendix C - Asset Allocation, the section on Dynamic Strategies.)

⁵ This approach has not been elaborated upon here. It takes advantage of a structural inefficiency in the Canadian Financial market vis-à-vis the broader economy. Performance of such a portfolio tends to be in the top 10% of Canadian equity funds.

Implementation

Implementation of the strategy requires focus on maintaining the long term spending rate, reducing the impact of market timing, keeping turnover as low as possible and cost control.

The present portfolio's asset allocation is 62.5% Bond and 37.5% Equity, while the recommended portfolio has an asset mix of 60% Equity and 40% Bond. A sudden rebalancing from one to the other would not be wise. It would create a market timing effect on the portfolio which could seriously increase risk over the short term (1 to 3 years). A more prudent approach would be to phase in a rebalancing strategy over the next two years.

Resetting the fixed income portfolio could be done over a period of three to six months. This would involve the sale of the shorter duration bonds and purchase longer duration securities. The securities which already have a long duration would remain in the portfolio until the total duration had been reset.

It is difficult to determine how much rebalancing is necessary in the equity portfolio, since we have no information on the securities held by the various fund managers. One or two sector or style specific fund managers could be selected for the actively managed component.

By maintaining a passive/active management mix based on market efficiencies, costs are controlled by the expenses being proportional to the value added.

A possible division of labor is described below.

Division of Labor

Function	The Organization's Strategic Committee	The Organization's Tactical Committee	ScotiaMcLeod Strategic & Passive Management	ScotiaBank	External Consultant	External Active Fund Managers
Liability Actuarial Analysis		✓			✓	
Asset / Liability Exposures Analysis		✓				✓
Economic Forecasts		✓	✓	✓		
Investment Policy	✓		✓			
Asset Allocation	✓	✓	✓			
Rebalancing Strategy	✓	✓	✓			
Benchmark Selection	✓		✓			
Specific Asset Selection		✓	✓			✓
Implementation		✓	✓			✓
Buying & Selling of Assets		✓	✓			✓
Monitoring Liability Needs		✓			✓	
Monitoring Asset / Liability Needs		✓				
Monitoring Economic Changes		✓	✓			
Generating Investment Reports			✓			✓
Custody of Cash Float				✓		
Custody of Securities			✓			
Reviews and Rebalancing		✓	✓			
Annual Review	✓		✓			✓
Quarterly Review		✓	✓			✓
Strategic Rebalancing	✓		✓			
Tactical Rebalancing		✓	✓			
Future Strategic Concerns	✓		✓			

Phase Three

Monitoring of Strategy

The monitoring of the strategy is divided into three activities.

- **Monitoring Asset / Liability Needs**
- **Monitoring Economic Changes**
- **Generating Reports**

Monitoring Asset / Liability Needs

Changes in cash flows due to gifts and beneficiary needs are likely to have only a minor impact on the management of the investment strategy. Monitoring these changes and adjusting the strategy accordingly will on occasion add value to the process. The organization should have a process in place which evaluates and objectively manages these flows.

Monitoring Economic Changes

Material changes in economic behavior must also be monitored and evaluated as to how they will affect the organization's portfolio and spending policies. Economists and pundits can provide a wealth of information on how various shocks and changes will affect the economy. The difficulty lies in sifting through all of this information to generate a reasonable forecast and determining how this will impact the organization's position. This is unlikely to occur often. Experience shows that the vast majority of forecasts and changes are short term and act more as a noisy distraction than materially impacting a long term strategy. Separating what is a long term trend and short term noise can be difficult.

Generating Reports

A variety of reports can be generated describing the portfolio holdings. The frequency and type of reports is dependent upon how often the portfolio needs to be rebalanced, and the portfolio's investment horizon. Reports should include account summary statements, scenario analysis, cash flows, duration, convexity and credit analysis for fixed income, and dividend and tracking errors for equity. Positional statements are issued at least on a monthly basis, and full positional analysis is done quarterly. If there is a material change in the position of the portfolio, either by an economic shock or a security specific shock, then a more comprehensive analysis is conducted. All reviews tie back to the question as

to whether the long term strategy or forecast is affected and in what way. Any change to the strategic direction of the portfolio must be discussed at the senior level of the organization. The organization should explicitly state areas of responsibility and the internal reporting structure. A recommended approach is to have two separate committees, one a tactical committee responsible for small changes and adjustments and the other a strategic committee to discuss any material long term changes. The strategic committee should meet to discuss these issues at least once a year.

Monitoring of Active Manager(s)

Effective monitoring of active managers is a subtle and complex task, involving much more than just reviewing the performance numbers. Unfortunately, all too often, quarterly performance numbers are the sole criteria by which success or failure is measured. This inevitably results in a “revolving door” of fund managers. Portfolio performance is reduced, since the investor is “timing the market” via fund manager selection.

Manager “styles” tend to do well for a few years, and then go out of fashion for a few more. The purpose of effective monitoring of active managers is to ensure that the manager, as a minimum, is following three criteria.

1. The active manager is investing within the guidelines and parameters as stated in the Investment Policy Statement.
2. The active manager is staying within their stated “style”.
3. The active manager is adding value in the long term (very difficult to measure in the short term).

Review and Rebalancing

Performance reviews and rebalancing should be made at the strategic level on a quarterly basis. A strategic committee’s purpose is to determine whether there is any need to change investment policy, and to review whether the investment strategy is being properly followed. In the event that the policy is not being followed, the strategic committee will take appropriate action to ensure that the situation is corrected.

Unplanned meetings occur when there is a material change in the behavior of the economy (a war occurs, the U.S. Federal Reserve or the Bank of Canada dramatically increases interest rates etc.) or if The organization encounters a dramatic change in its cash flow, through gifts or a regional crisis.

A description of a comprehensive review procedure can be provided upon request.

Recommendations & Conclusions

Our analysis has uncovered a number of concerns with the present investment strategy and has developed some recommendations to address these concerns. The concerns are:

- The Organization will be unable to meet its targeted spending rate using its present asset allocation strategy of 62.5% fixed income and 37.5% equity.
- The current fixed income portfolio's substantial mismatch against the Organization's liability profile.
- The possible undermining of the Organization's mandate by investing in companies which harm the local community.
- The inefficient and contradictory passive/active management strategy.

Based on the information available (which may not be complete), the following strategy is recommended which will address these concerns:

- An asset allocation which over time reaches a 60%/40% equity/bond mix.
- A 80%/20% passive/active distribution, where active managers are selected for lower efficiency markets (small and mid capitalized Canadian equities).
- Benchmarks
 - Cash & Equivalents ScotiaMcLeod 91-day T-bill index.
 - Canadian Fixed Income ScotiaMcLeod Long Bond Index.
 - Canadian Large Equity TSE 300
 - Canadian Mid & Small Equity Customized
- No holdings in tobacco companies and firms which are serious polluters.
- Tilt in the equity portfolio towards a more balanced distribution based on market capitalization and broader economy weights.

Main Recommendation:

The organization should have in place an investment process which captures all the key elements of the process described in this document.