UNIVERSITY OF
TORONTO

Endowments

Spending Formula and Investment Policy

Report to Business Board

November 1, 2010

58027

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Purpose of Study

The key long-term policy objectives for University of Toronto endowment funds are to maintain a steady and predictable flow of funds for spending that increases with inflation and to maintain the inflation-protected value of the original endowed gift over time. The current spending formula has a target annual spending allocation of 4%, with actual annual spending allocations expected to increase with inflation within a corridor of 3% to 5% of market value of endowments. The associated investment policy has a target investment return of 4% per annum over a 10 year period, after inflation, investment fees and expenses.

The current spending formula and associated investment policy have been in place since 2003. They were established following a thorough review and have been reviewed over the years. The results of those reviews indicated that the approach established in 2003 continued to represent an appropriate intergenerational balance between spending and preservation of capital and an appropriate balance between the desire for investment return and the risks associated with pursuing that target return. However, the dramatic market events that occurred as a result of the global financial and economic crisis of 2008 have raised questions about the University's appetite for risk and thus led to this review. While the current spending framework, with its focus on steady and predictable growth with inflation over time within a corridor, is deemed to be a good one, the percentages specifying the target payout per unit and the corridor boundaries are linked to the target investment return and will need to be changed if that target changes.

This paper reports on a thorough exploration of volatility risk with the University community and examines a number of possible investment risk and return targets and associated spending targets. The purpose of this paper is to determine the desired investment risk and return targets for endowments and, if necessary, revised endowment spending target and corridor percentages reflecting any revisions to the investment policy.

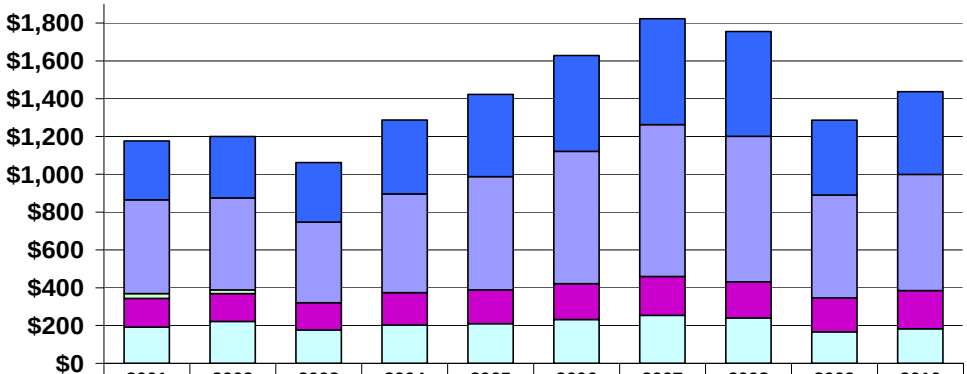
Endowments

It is important to have a common understanding of the characteristics and purpose of the endowments including conflicting demands, and the legal and policy environment. This section sets these out.

What They Are

Endowed funds are given to the University to support the academic mission of the university in a variety of ways: they fund scholarships and professorships and provide program and research support. One of the key characteristics of endowments is that they are intended to be perpetual. Traditionally this meant that capital had to be preserved at all times and no funds were made available for spending if there were no investment return. Funds were invested very conservatively, so that there was no possibility of loss of capital. More recently, practices have evolved, and, in the U.S., have been supported by legislation, permitting pooling of funds and a total return approach. These changes have opened up the investment options significantly and permitted beneficiaries of endowments to receive a more regular flow of funds as spending could be smoothed and did not depend totally on the short-term vagaries of the financial markets.

Endowments at Fair Value
at April 30
(millions of dollars)



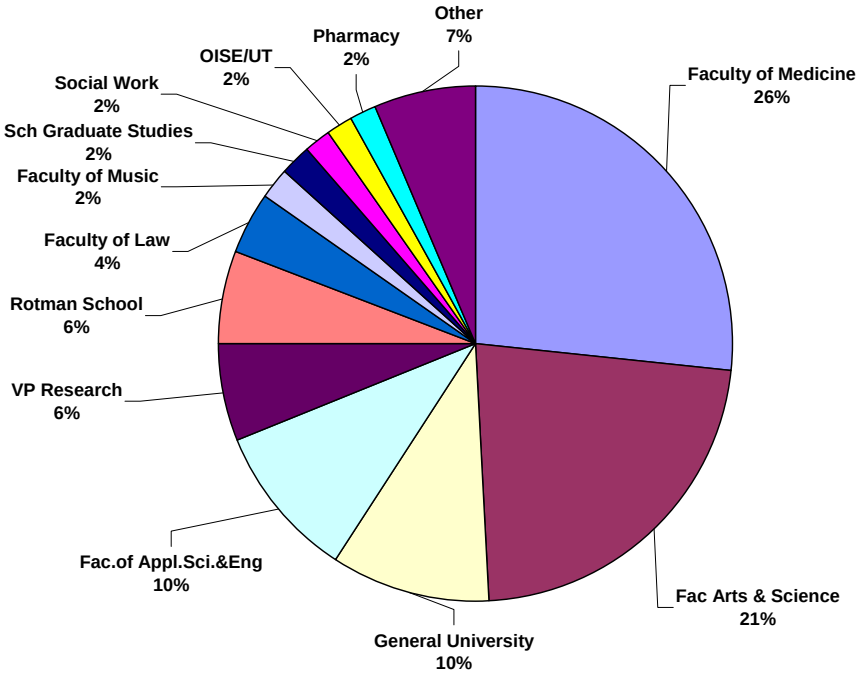
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Total endowments	1,176.2	1,199.7	1,062.3	1,287.7	1,422.8	1,628.8	1,822.7	1,754.8	1,286.3	1,437.2
Chairs and professorships	311.4	324.5	314.4	390.7	434.8	507.6	560.5	554.4	395.5	437.4
Student aid	495.6	486.4	427.3	522.8	599.7	699.4	802.4	768.1	543.9	614.1
Matching funds	25.4	19.2								
Academic programs	151.5	148.0	143.8	170.3	179.0	189.0	205.9	191.8	180.3	203.1
Research	192.3	221.6	176.8	203.9	209.3	232.8	253.9	240.5	166.6	182.6

The University of Toronto endowment is the largest in Canada, although it is small in comparison to many of its peer universities in the U.S. It has been in existence since the early twentieth century, but only became a significant pool of funds when the University embarked on a major fundraising campaign in the early 1990's. That campaign had a focus on encouraging endowed donations to support scholarships and endowed chairs.

At April 30, 2010, University of Toronto endowments totaled $1.437 billion and included over 5,150 individual endowment funds, usually supported by a donor agreement, or reflecting a collection of small donations with common restrictions.[1] Since 1990, the University has had a policy requiring inflation protection as one of its financial requirements for its endowments.

Endowments are restricted funds which must be used in accordance with purposes specified by donors or by Governing Council. The endowment principal is not available for use in support of general operating activities. They are subject to restrictions relating both to capital and to investment income. Endowments include externally restricted endowment funds (84.3%) and internally restricted endowment funds designated as endowments by Governing Council in the exercise of its discretion (15.7%). The Governing Council may have the right to subsequently remove the endowment designation on internally restricted endowments; however, the use of such funds may continue to be restricted. By category of restriction, the largest uses of endowment earnings are for chairs and professorships which support faculty salaries and benefits, and for student aid, which together account for about 73% of endowments. By division, the largest holders of endowments are the Faculty of Medicine and the Faculty of Arts and Science, which together account for 47% of endowment funds.

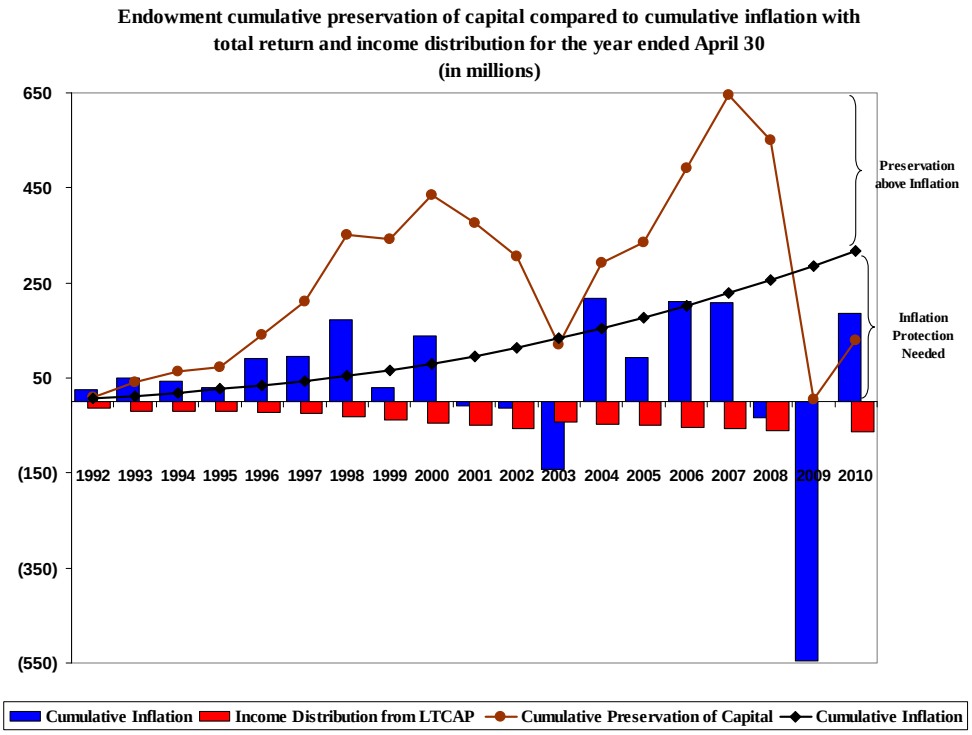
Share of Endowment Market Value by Division at April 30, 2010



[1] The University of Toronto endowment includes funds reported in the University of Toronto's financial statements, and does not include the endowment of Victoria University, The University of Trinity College, University of St. Michael's College, Sunnybrook Health Sciences Centre, and the affiliated colleges under the memorandum of agreement with the Toronto School of Theology, each of which is a separate non-controlled corporate body, the endowments of which are reported in the financial statements of that body.

The investment income earned on endowments must be used in accordance with the various purposes established by the donor or Governing Council. As part of its fiduciary responsibilities, the University ensures that all funds received with a restricted purpose or subsequently endowed for a particular purpose (and the investment income earned on such funds) are used only for that purpose.

Almost all endowments, about 96.1% of fair value and 5,139 funds, are invested in LTCAP, a unitized pool, of which endowments are the largest part.[2] Until 2008, the endowment pool was fully protected against inflation. Due to the economic crisis of 2008, at the present time, the endowment pool is not fully protected against inflation. At April 30, 2010, it had an inflation protection reserve of $124.5 million. While this represented a significant turnaround from the previous year, full inflation protection for the pool would be $316.1 million, a difference of $191.6 million. It is expected to be some years before the endowment pool as a whole returns to its full inflation protection. Even when the pool as a whole is again fully protected against inflation; there may be some individual funds which continue to be at less than original capital. This has been the case in previous years. During the period 2001 to 2007, there were a number of individual funds that were underwater (fair market value less than original principal) but all were restored to at least their original principal by 2007. The following chart shows the status of the endowment pool for the period from 1992 to 2010.



[2] Other long-term funds currently included in LTCAP are the Supplemental Retirement Arrangement (SRA), an unregistered pension plan, and the Long Term Borrowing Pool (LTBP), a sinking fund established to hold funds being accumulated to repay bullet debentures issued by the University.

Over the 19 year period since the inception of the pool, there has been a spending allocation in all years except 2009. That spending allocation has increased from one year to the next in all years except 2003, when a revised, lower spending allocation formula was adopted, and 2010 when the amount made available for spending was essentially the same as in 2008. There have been two periods where significant cushion in excess of inflation was built up, and the pool as a whole has been protected against inflation over the entire period except 2009 and 2010.

Conflicting Demands

The primary driver of the return target is the desired spending level. Unlike a foundation, there is no requirement that a minimum percent be paid out every year but there is strong pressure for the spending allocation to be as high as possible. Faculties want to be able to fund scholarships and chairs and rely on these funds to do so. In years where there is a low payout or no payout, commitments for scholarships and professors' salaries and benefits have to be funded from general operating funds.

Donors are also interested in high payout rates. They want to see their donations having a significant impact and many find the reality that a million dollar donation results in only $40,000 per annum being available for spending to be very disappointing. The fact that it will be available forever is small comfort. In times of high investment returns they are particularly insistent that payout levels should be raised and are not interested in the need to provide any cushion to fund payouts in times of low or negative returns.

The donor dilemma rests in the fact that they want high payouts and view the University as being too conservative when markets are good; but feel we are too aggressive when markets are poor – even when the target return and spending levels have remained the same.

Legal Framework

Canadian law does not address the widespread commonly accepted practices for managing endowments. Therefore, we normally rely on U.S. jurisdiction for guidance. This is a reasonable approach since the U.S. jurisdiction is highly respected legally and since U.S. and Canadian universities operate in similar environments. In particular, the U.S. is the leader in endowment legislation, management, theory and practice. Legislation in this regard has been endorsed for U.S. universities, and its adoption encouraged, by the National Association of College and University Business Officers (NACUBO).

In 1972 the *Uniform Management of Institutional Funds Act* (UMIFA) had allowed endowments to pool endowment funds for investment purposes and to delegate investment management to other persons (e.g. professional investment advisors) as long as the governing

board of the charitable institution exercised ordinary business care and was prudent in making these decisions.

In 2006, UMIFA was replaced by the *Uniform Prudent Management of Institutional Funds Act* (UPMIFA). UPMIFA to date has been enacted in 49 states and NACUBO, in March 2007, called for its prompt adoption by colleges and universities.[3] Therefore, we intend to be guided by UPMIFA with respect to endowment management. The major provisions of UPMIFA are:

- UPMIFA abolishes the historical dollar value (original principal) limitation on expenditures that was in previous legislation. As noted in the Act with prefatory note and comments[4], "UPMIFA improves the endowment spending rule by eliminating the concept of historical value (UPMIFA, p. 3). "The Drafting Committee concluded that providing clearly articulated guidance on the prudence rule for spending from endowment funds, with emphasis on the permanent nature of the fund, would provide the best protection of the purchasing power of endowment funds" (UPMIFA, p.4).

- Total return expenditure is expressly authorized under comprehensive prudence standards relating to the whole economic situation of the charitable institution.

- Portfolio managers are not limited in the kinds of assets that may be sought for the portfolio.

- Investment expenses must be managed prudently in relationship to the assets, the purposes of the institution and the skills available to the institution.

- States may adopt an optional rule that presumes expenditure exceeding 7% of fair market value of a fund is imprudent.

In brief, UPMIFA does away with the historical dollar value limitation on expenditures and embraces strategies for spending allocations based on total returns, all within a climate of financial prudence and acknowledgement of the broader economic situation of the organization.

If we accept the guidance provided by the U.S. jurisdiction, we have a clear conceptual framework for endowment management. We continue to assume that we want to restore inflation protected value of endowments over time.

[3] See www.nacubo.org for more information on UPMIFA.

[4] Uniform Prudent Management of Institutional funds Act, with prefatory note and comments, copyright 2006, by National Conference of Commissioners on Uniform State Laws.

Policy Framework

The University of Toronto operates within the following policy framework. The board-approved *Long-Term Capital Appreciation Policy* provides for the pooling of endowments in the long-term capital appreciation pool (LTCAP), which was established in 1991, and the investment of those funds in accordance with the *University Funds Investment Policy*. The *Policy for Preservation of Capital of Endowment Funds* provides for the maintenance of purchasing power over time through the concept of spending only a portion of investment returns in years of good returns and reinvesting a portion of those returns to enable the capital to grow over time to preserve spending power and to enable spending allocations to continue in years when investment returns are poor. This policy delegates the determination of the annual spending allocation to the University's administration. The vast majority of donations are governed by agreements that reference these policy documents.

In summary, from a legal and policy standpoint, it is clear that the University has the authority to specify principles of endowment management, to determine the spending and investment policies, and to apply those principles and policies to the participants of LTCAP.

Spending and Investment History

The following section provides an historical perspective on the spending formula, investment risk and return target and actual spending allocations and investment returns that will be meaningful when considering how the University should move forward on these issues.

Spending

The current endowment spending formula has a target endowment spending allocation, or payout, of 4% of market value of the endowment pool, with the endowment payout expected to grow each year at the rate of inflation in comparison to the previous year and to fall within a corridor of 3% to 5% of the market value of the endowment pool. The payout is based on the asset value at the start of the year and the payment is made just before year-end. This spending formula has been in place since 2003 (before then the spending policy was 5% of a four-year average of market values). Here is the history of payouts since 1992:

Endowments invested in LTCAP
Historical Payouts

Fiscal Year	Opening Unit Value		Payout per Unit		Percentage of Opening Unit Value	Dollars Distributed (in millions)
1992	$100.00	*	$5.50		5.50%	$13.7
1993	$103.07		$5.65		5.48%	$19.6
1994	$112.10		$5.65		5.04%	$20.0
1995	$118.66		$5.70		4.80%	$20.7
1996	$120.93		$5.75		4.75%	$21.5
1997	$139.16		$6.42		4.61%	$25.4
1998	$156.61		$6.90		4.41%	$32.3
1999	$186.71		$7.60		4.07%	$39.1
2000	$184.38		$8.33		4.52%	$45.1
2001	$201.64		$9.11		4.52%	$49.6
2002	$191.77		$9.36		4.88%	$57.2
2003	$179.79		$6.60		3.67%	$42.9
2004	$150.74		$6.73		4.46%	$46.4
2005	$176.07		$6.86		3.90%	$49.2
2006	$182.21		$7.00		3.84%	$53.7
2007	$202.63		$7.14		3.52%	$56.4
2008	$221.84		$7.65	**	3.45%	$62.1
2009	$210.16		$0.00		0.00%	$0.0
2010	$145.27		$7.26		5.00%	$62.4

* Inception of LTCAP at August 1, 1991.
** $7.65 per unit included a premium of $0.37 per unit to maintain the approximate position of the payout in the 3% to 5% corridor. Base payout was $7.28.

As the chart shows, since 1992, endowment payouts have totaled $717.3 million in support for faculty salaries and benefits, for student aid and for program and research support. Spending, both per unit (reflecting purchasing power increases) and in total dollars, increased steadily throughout the 1990's until 2002. As a result of poor market conditions during 2001-and 2002, the spending policy was re-evaluated and changed beginning in 2003, from 5% of a four year rolling average of market values, to the current spending formula of 4% within a corridor of 3% to 5%, to recognize that the risk associated with a real return target of 5% was higher than the University desired. During the growth market years from 2004 to 2007, the endowment funds built a strong cushion above inflation, in addition to having full inflation protection in place. Pressure to increase the payout was high, as the cushion above inflation had increased to several times the annual payout rate. However, during that period the payout continued to increase steadily with inflation, reflecting the discipline needed to build a cushion when times were good. A small additional payout was made in 2008 to maintain the payout at the same place in the corridor as the previous year (about 3.5% of market) but the University resisted the temptation to increase the payout in any material way. At the same time, the administration undertook a study to assess what an appropriate cushion might be, but was overtaken by the market crash in 2008. By the time the dust settled in 2009, the cushion was gone, the inflation protection had been eliminated, and the historical value of many funds had been eroded. However the cushion and the inflation reserve had served to protect the original principal of the overall pool from the significant erosion that would otherwise have occurred. For 2009, the normal endowment spending allocation was suspended entirely to preserve endowment capital.

For 2010, spending resumed at $7.26 per unit, representing 5% of opening market value at May 1, 2009, the upper range of the spending corridor, recognizing the reduction that had occurred in the opening market value of endowments and the fact that there had been no payout in 2008. By April 30, 2010 a portion of the inflation protection reserve had been rebuilt ($124.5 million out of a required $316.1 million). It is important to note that even when full inflation protection will have been restored to the overall pool, many individual funds will continue to be underwater (fair value less than historical value). At April 30, 2009, 71.3% of all funds were underwater. While there has been some improvement at April 30, 2010, it is expected to be some years before the endowment pool as a whole again has full inflation protection, and a period beyond that before all individual funds would be restored to historical value.

Investment

For many years, the investment return target was a 5% real return. Following poor investment returns in 2001 and 2002, the University engaged Aon Hewitt to assist in modeling a variety of portfolios designed to achieve a range of target returns and risk levels. They ran Monte Carlo simulations and provided a range of options with different characteristics. Each portfolio was assessed on the probability that there would be a shortfall in returns to fund the annual

payout that would require more than $10 million to be funded from the operating budget. The chart of options that was created in 2003 is shown below.

Alternatives Along Risk/Reward Spectrum

Payout Basis	Payout Rate	University Levy	Asset Mix	Probability of Shortfall >$0 Million	Probability of Shortfall >$10 Million	Probability of Loss of 10% of Purchasing Power	Probability of Loss of 25% of Purchasing Power
Market (no reset)	5.0%	0.5%	High Equity Bias	70%	40%	42%	33%
Adjusted Book (reset)	5.0%	0.5%	High Equity Bias	37%	23%	42%	34%
Adjusted Book (reset)	4.5%	0.5%	Equity Bias	30%	16%	38%	29%
Adjusted Book (reset)	4.0%	0.5%	Balanced (Equity/Bond)	23%	9%	31%	23%
Adjusted Book (reset)	2.75%	0.5%	100% federal real return bonds) (RRB)	0%	0%	0%	0%

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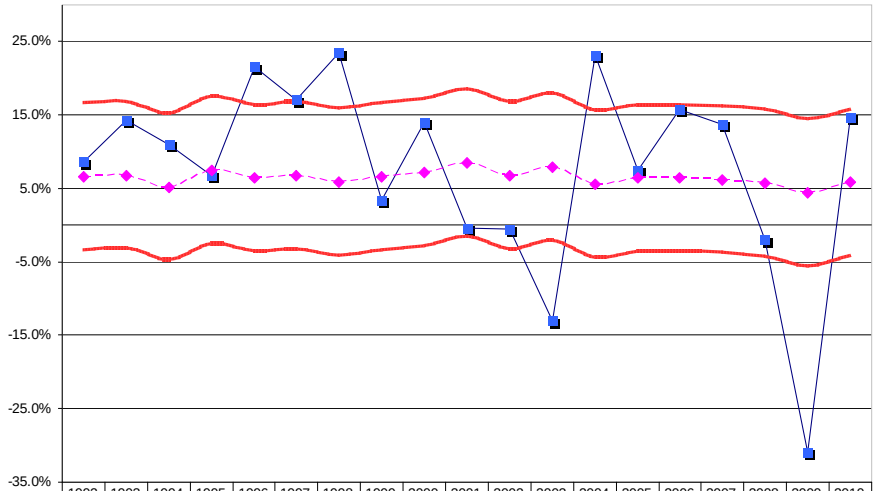
The University chose the portfolio with the target real return of 4.0%, which was associated with a 10% volatility risk target representing one standard deviation, both over a ten year period. At this level, and taking into account the inflation protection reserve in place at the time, there was a 9% probability that during the ten year time frame, results could be so low as to require a contribution of more than $10 million from the operating fund to subsidize the endowment payout. Very few members of the University community understood that this meant that in any ten-year period there was only a 66% chance, or 6 to 7 years out of 10, that the investment returns would be in the range of a risk corridor of -6% (real return) to +14% (real return) and that for 3 to 4 years, they would be outside the range either above or below.

The conclusion was that this was an acceptable level of risk and the Business Board approved the risk and return targets in early 2003. UTAM was tasked to achieve that return within the risk level. The asset liability study was re-run on a regular basis to 2007 with the conclusion that the return target continued to be achievable within the stated risk level.

What were the actual returns? The following charts show the actual, nominal returns, compared to the University's target, and compared to the 10% risk corridor. The first chart shows the nominal one year returns and the second chart shows the ten-year rolling average returns, both from 1992, which was the first year of operating of the endowed pool.

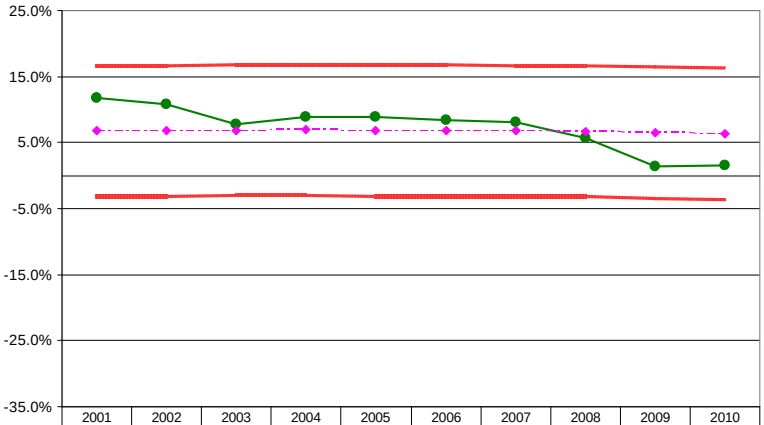
Long Term Capital Appreciation Fund (LTCAP)
1-Year Annual Rates of Return



	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Actual investment return	8.6%	14.2%	10.9%	6.7%	21.6%	17.1%	23.4%	3.4%	14.0%	-0.4%	-0.6%	-13.0	23.1%	7.4%	15.8%	13.7%	-2.0%	-31.0	14.7%
Target return*	6.6%	6.8%	5.2%	7.5%	6.4%	6.7%	5.9%	6.6%	7.2%	8.5%	6.7%	7.9%	5.6%	6.4%	6.4%	6.2%	5.7%	4.4%	5.8%
Standard deviation +10%	16.6%	16.8%	15.2%	17.5%	16.4%	16.7%	15.9%	16.6%	17.2%	18.5%	16.7%	17.9%	15.6%	16.4%	16.4%	16.2%	15.7%	14.4%	15.8%
Standard deviation -10%	-3.4%	-3.2%	-4.8%	-2.5%	-3.6%	-3.3%	-4.1%	-3.4%	-2.8%	-1.5%	-3.3%	-2.1%	-4.4%	-3.6%	-3.6%	-3.8%	-4.3%	-5.6%	-4.2%

If we look at the long-term investment history of the endowment pool since its inception in 1991, and if we ascribe the same +/-10% corridor to nominal returns for the entire period as those in place since 2003, we find the following. Over the 19 year period, the returns for 13 (68%) of the years were within the 10% risk corridor, and those for 6 (32%) of the years were outside the risk corridor (4 above and 2 below). For the 17 year period from 1992 to 2008, the average annual actual return was 9.2% compared to an average annual target return of 6.6%. If we include the 2009 and 2010 years, a 19 year period, the average annual actual return was 6.9% compared to the average annual target return of 6.4%. Over the entire period of the endowment pool, since inception, actual returns have exceeded the University's target return.

Long Term Capital Appreciation Pool Fund (LTCAP)
Ten-Year Rolling Average Return



	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Ten-Year rolling average return**	11.7%	10.7%	7.8%	8.9%	9.0%	8.4%	8.1%	5.6%	1.5%	1.5%
Ten-Year rolling Standard deviation +10%	16.7%	16.7%	16.9%	16.9%	16.8%	16.8%	16.7%	16.7%	16.5%	16.4%
Ten-Year rolling target return*	6.7%	6.7%	6.9%	6.9%	6.8%	6.8%	6.7%	6.7%	6.5%	6.4%
Ten-Year rolling Standard deviation -10%	-3.3%	-3.3%	-3.1%	-3.1%	-3.2%	-3.2%	-3.3%	-3.3%	-3.5%	-3.6%

If we look at the ten-year rolling averages, we find that for the entire period from 1991 to 2008, the actual 10-year average returns were at or above the University's target return, and that all years were within the 10% risk corridor.

However, if we concentrate on the more recent past, returns are more variable, as expected when a shorter period is studied. From 2004 to 2007 UTAM investment performance was excellent, outperforming the target real return, exceeding benchmarks and often in the top quartile. Results were within the target range except in 2004, when they exceeded the top of the corridor. In fiscal 2008 the market crash began and the fund suffered a negative return, although the result was still within the risk corridor. In fiscal 2009, the bottom fell out of the market, and the result was a negative return of 31%. A number of events came together to create this perfect storm. The CEO was new in April 2008. He had not had time to fully review what was in the portfolio before things began to change rapidly. The board had approved a policy of hedging 100% of the currency risk and did not agree to change that policy fast enough. A number of commitments came due at a point in the market cycle that required the sale of assets at low prices to settle them, requiring the sale of assets at low prices, resulting in further losses.

The University community reacted with shock and outrage. It became clear that very few people understood what the risk tolerance statement meant. "How could you lose 31% when you are supposed to stay within +/-10%?" was the question.

The composition of the portfolio was called into question. Hedge funds were deemed to be bad, risky investments, even though they lost much less than public equities during the downturn. Fund of funds hedge funds were particularly vilified when it was revealed that one of the funds had had an investment with Madoff and we lost $5 million. Private equities were attacked as too expensive and too illiquid and not transparent. Moreover, the new CEO pointed out that the existing portfolio was too complex relative to the current staff complement and the tools needed to assess risk and project scenarios were limited or non-existent.

Therefore, during late 2009 and into early 2010, the University conducted a wide-ranging review of the oversight and management of the University's investments. The recommendations of the review fall under the following three themes: closer alignment of management and governance with the University; clearer accountability; and stronger risk management. The UTAM Board has been reduced in size and its focus is corporate governance, rather than investment strategy per se. Strategic counsel on asset management is now being obtained from an independent blue-ribbon Investment Advisory Committee. Last, UTAM's CEO has overseen substantial changes to the portfolio that should lead to both reduced fees and more effective risk management.

Further the University has conducted broad discussions with University stakeholders regarding the University's appetite for volatility risk and Hewitt Associates has updated the quantitative models to reflect current assumptions and projections regarding the economic environment to assess what spending levels the University community desires and whether the resulting investment targets can be achieved within the volatility risk levels that the University believes it can tolerate. The following two sections explore these issues in detail.

Spending and Investment Going Forward

A number of steps have been taken in parallel to review and recommend return targets and volatility risk levels for the next few years. There have been focus groups with a wide range of university stakeholders along with quantitative work undertaken by Aon Hewitt to assess the alternatives for moving forward. Each will be discussed in turn.

The University's Appetite for Volatility Risk

A basic working definition of risk is the likelihood of a negative result happening. In the context of endowments, risk could mean the likelihood that investments will not achieve their target return, that investments will suffer an actual loss, or that payouts will have to be reduced or cancelled in a particular year. Risk is the price that is paid for a target return level. One important thing to know about risk is that you can't make money without taking risk. Risk management is not an exercise to extinguish risk. The goal of risk management is to ensure the balance between risk and reward is in proportion. It is important to understand that only about one third of an effective risk management program is quantitative. The challenge for the University is to decide:

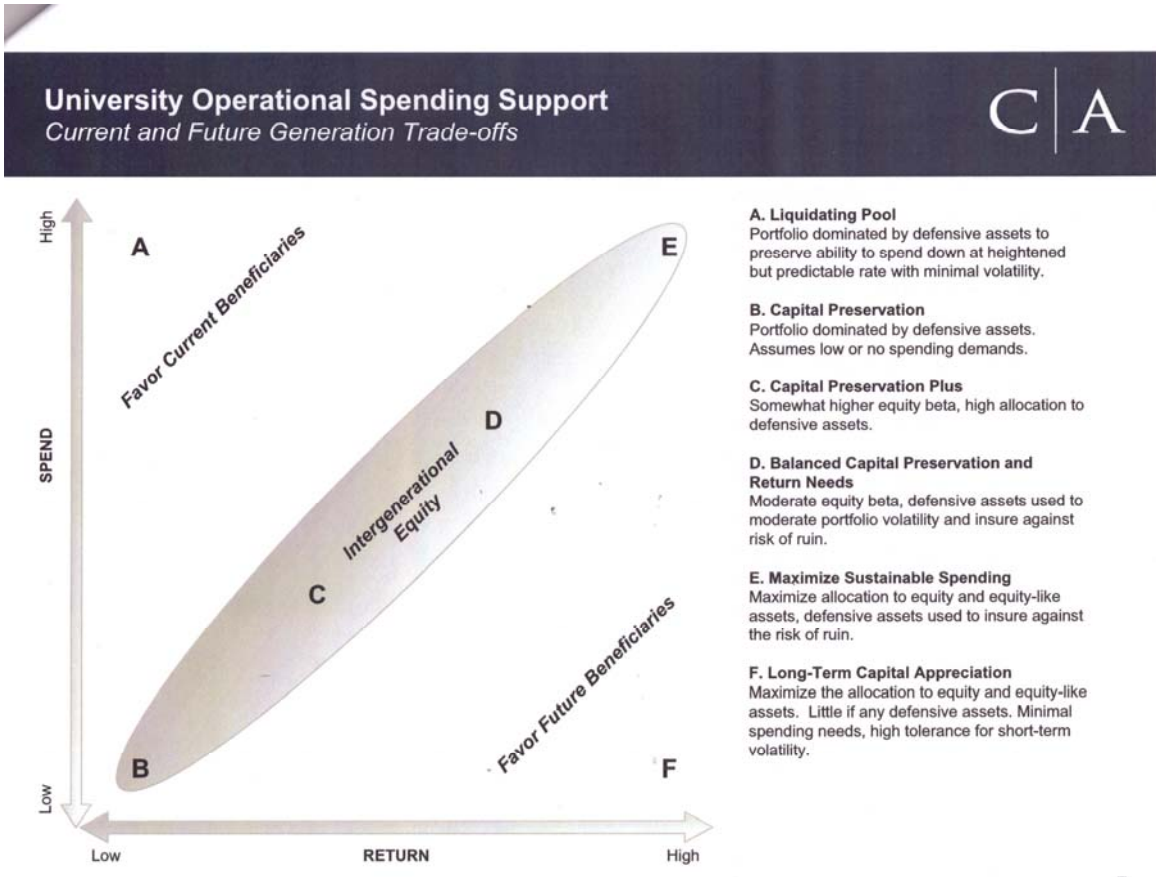
- what kinds of risk we can live with (the source of risk and how much to mitigate),
- how much risk we are able to tolerate,
- how to quantify risk,
- how to express and explain it in a way that stakeholders understand.

To explore the University's appetite for volatility risk, four focus groups were held with a wide range of university stakeholders to get their views of the desired return target and an acceptable volatility risk level. Cambridge Associates facilitated these sessions, which were thoughtful discussions. The groups discussed the conflicting objectives:

- Desire to maximize long-term returns.
- Desire to maximize the stability and predictability of spending from endowments.
- Desire to maximize the level of annual spending.
- Desire to preserve purchasing power.

The focus groups debated the optimal trade-offs for the University of Toronto and completed surveys in which they were required to choose between these conflicting objectives. As part of the session, they considered the following chart, presented without numbers

associated with the portfolios and debated where they believed the University should be positioned with respect to investment risk and return.



There was a thorough discussion of the trade-offs amongst the conflicting objectives that needed to be made under the various scenarios presented here. The general view that emerged was one of comfort with the “D” range. There were some who favoured the “E” range for its growth, but most felt that it represented more volatility than they would like to see. A few favoured the “B” to “C” range, but most felt that the resulting spending allocation would likely be too low to satisfy donors and Faculty needs.

At the end of each session, participants were asked to complete the survey. A total of 40 surveys were completed and submitted. The Cambridge Associates report provided the following very relevant commentary on the discussion around endowments which is reproduced here in its entirety, in italics.

> *“..it was acknowledged that endowments play an important – although variable – role in the mission of the University. For some academic divisions they are a large part of the total operating budget, while for others they play a very modest role or even no role at all. One participant noted that while, in the aggregate, endowments helped underwrite only a small portion of University operations, the funding they provide is critical to maintaining and enhancing the University’s*

programmes. Indeed, one participant went so far as to say they were a part of the University's "margin of excellence."

In each session, we discussed the natural tension that exists between providing funding for current programming and providing funding for future programming. The way the assets of the endowments are invested, as well as the spending rate from those funds, helps create a balance between these two competing objectives. Ultimately, the right balance should preserve what one participant called "intergenerational equity" that provides for the needs of today as well as those of tomorrow.

The role of the donor was discussed in each of the sessions, with many participants voicing the opinion that gifts to the University will become increasingly important in the future in order to offset revenue constraints elsewhere. It was noted that donor preferences may well affect the risk and return profile of the endowments, and that the level of spending from endowments needed to be attractive to donors and yet sustainable over time as well.

In the survey, participants were asked a set of questions aimed at assessing the value they placed on preserving inter-generational equity, as well as questions that sought their views on the appropriate level of risk. Participants generally agreed that preserving the purchasing power of endowments was important, with 68% of participants somewhat to strongly preferring the goal of growing purchasing power as opposed to maximizing current spending. A more targeted question asked for a preference between preserving purchasing power and maintaining spending of no less than 4% per year. To that question 75% of the participants somewhat or strongly preferred preserving purchasing power.

Asked to express a preference for either "stable and predictable returns" or "top-quartile" returns, 78% of participants preferred stability over reaching for excess return. The preference for stability had its limits however. When asked to choose between limiting portfolio losses to no more than 15% or avoiding bottom quartile results as any cost, only a slight majority (53%) of participants) preferred limiting losses to poor relative performance (even though that poor relative performance might be positive).

There was some sentiment expressed during the sessions that the risk profile of endowments should be modestly higher than that of pensions. In general a return

objective of 4% plus the rate of inflation was the most commonly suggested level of appropriate return."

While the survey results indicated that 68% participants preferred to preserve purchasing power over maximizing current spending and that 75% of participants preferred to preserve purchasing power over maintaining spending of no less than 4% per annum, discussion also indicated a strong desire to maintain the current spending level. It was recognized that the University of Toronto can tolerate volatility in returns and in payout levels, once in a while, but that it would become a much bigger problem if returns were poor and payouts cancelled or reduced for several consecutive years. Even two years without a payout would be a problem for some departments and faculties. It is very important that decisions around spending and risk be taken in a strategic fashion that takes account of the larger financial picture of the University and its faculties, including the other sources of income that may be brought to bear and their size and levels of risk.

We have concluded from these discussions that we should try to maintain the current spending level at the present time to avoid dislocation to faculty budget plans. The expressed preference for preserving purchasing power over maintaining a minimum 4% payout provides support for the current spending corridor approach that allows fluctuation of actual payouts between 3% and 5%. Additionally this preference provides support for considering lowering the payout at some point in the future if we do not rebuild inflation protection of the endowment pool over a reasonable period of years.

Endowment Risk Study

While it is easy to decide what the desired return target should be, based on the desired spending rate, it is not as easy to assess whether this target can be achieved at a reasonable or acceptable level of risk.

Aon Hewitt has been engaged again to perform the modeling that was initially done in 2003 and updated in the intervening years. They are using updated views of the economic and market conditions, and taking into account endowments that no longer have full inflation protection and as such, the results are naturally different from 2003. Their world view is quite pessimistic with respect to volatility over the next ten years. By way of illustration, a conventional Canadian institutional portfolio asset mix (such as the University's Reference Portfolio[5]), using Hewitt's assumptions, would currently be expected to generate a real return of 4.8% with a 13.0% volatility.

The goals of their study were to understand the endowments' spending risk and to identify the optimal investment strategies to manage that spending risk. The starting point of the analysis was April 30, 2010, at which time the market value of assets in the endowment pool in LTCAP was $1.381 billion, and a spending allocation had just been made at $7.26 per unit based on the opening market value at May 1, 2009. There were 8.667 million units in the pool at the beginning of the projection period and this number was held constant throughout the study. The selected portfolios were:

Least risk portfolio	1.9% real return portfolio with a 3.2% risk tolerance;
Portfolio B	3.0% real return portfolio with a 4.7% risk tolerance;
Portfolio D	4.0% real return portfolio with a 7.3% risk tolerance;
Portfolio 4/10	4.0% real return portfolio with a 10.0% risk tolerance;
Portfolio E	5% real return portfolio with a 9.3% risk tolerance;
Portfolio F	6% real return portfolio with a 12.9% risk tolerance.

This range was selected to provide a wide spectrum of potential return scenarios and to illustrate the variability of potential shortfalls for various return levels. The 4.0% return target has been examined using two volatility risk levels.

[5] The Reference Portfolio was adopted by the University in January 2009 as an additional measure to provide a comparator to the active management strategies being pursued by UTAM. It is a relatively simple portfolio that could be invested passively, which has a reasonable expectation of meeting the University's return target over the long-term, within the risk targets set by the University for UTAM. Its asset mix was set at 30.0% Canadian Equity Index, 7.5% US Equity index, 7.5% US Equity Local, 7.5% MSCI EAFE Equity, 7.5% MSCI EAFE Equity Local, 35.0% Canadian Universe Bonds, and 5.0% Canadian Real Return Bonds.

UTAM has also done extensive modeling based on their view of the economy and the markets over the coming years and most recently had presented a policy update to the UTAM Board in September 2009 (that modeling is currently being updated as part of their usual annual review of investment strategy). At that time, the results of their modeling indicated that a 4.0% real return could only be achieved with a standard deviation of 10.6% and the Reference Portfolio was expected to produce a real return of 3.6% with a volatility of 11.8%. Like Aon Hewitt, UTAM is also pessimistic about the prospect of a significant improvement in the next few years. Differences between modeling conducted by UTAM and that done by Hewitt include the following:

- A timing difference in assumptions. UTAM assumptions were at June 30, 2009 while Hewitt assumptions were at December 31, 2009.

- Different treatment of bonds. UTAM took an active position on bonds while Hewitt identifies what is imbedded in the yield curve, capturing what the market is saying about bonds.

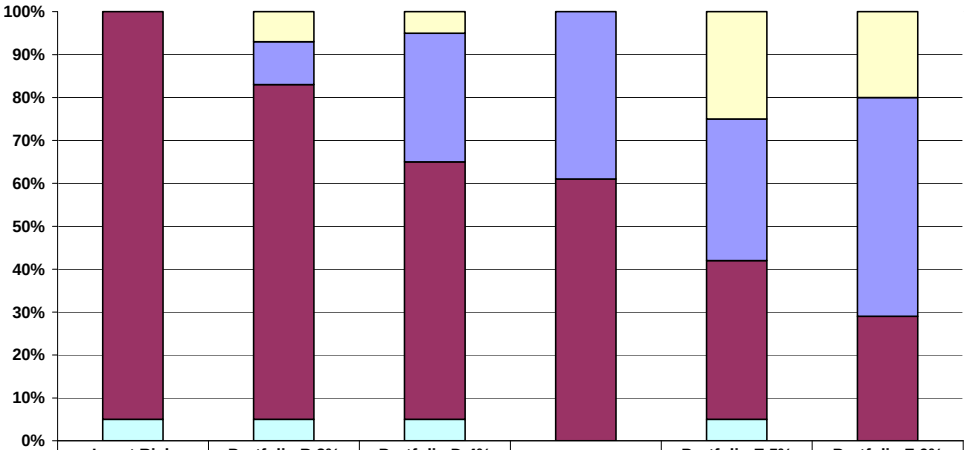
- Different treatment of currency. UTAM's initial modeling in September 2009 took into account a 100% currency hedging strategy. Hewitt modeling reflects unhedged results.

- Differences in volatility on individual asset classes. While both views are pessimistic, Hewitt generally assumes greater volatility than UTAM did.

We considered both sets of views to represent reasonable considered approaches on the part of careful, thoughtful expert professionals and do not reject either view or consider that they should be brought together in a single view. Particularly when the economic climate is so uncertain and when we have been through a period of such turmoil, with its continuing aftereffects, we would expect to see differences in future predictions amongst experts.

We have examined two 4% portfolios (one with 10% risk but not with the UTAM asset mix), using Hewitt assumptions, in this analysis. The asset mix identified by Hewitt for these portfolios is shown below.

Long-Term Capital Appreciation Pool
Asset Mix Assumptions for Portfolios Under Consideration



	Least Risk Portfolio 1.9% Real Return; 3.2%	Portfolio B 3% Real Return; 4.7% SD	Portfolio D 4% Real Return; 7.3% SD	Portfolio 4% Real Return, 10% S.D.	Portfolio E 5% Real Return; 9.3% SD	Portfolio F 6% Real Return; 12.9% SD
Other (diversifying)	0%	7%	5%	0%	25%	20%
Equities	0%	10%	30%	39%	33%	51%
Fixed income	95%	78%	60%	61%	37%	29%
Cash	5%	5%	5%	0%	5%	0%

The market value of assets and the spending rate policy were modeled over a 10 year period ending in 2020. The market value of assets was projected based on simulated asset returns, and the actual spending was determined based on two spending policies:

- the current spending policy with its start point of $7.26 per unit for 2010 (5% of opening value at May 1, 2009), increasing to $7.33 per unit (at the median) for 2011 and increasing by assumed inflation bounded by the current 3% to 5% corridor limits for 2012 to 2020,

- a reset spending policy that varied for each expected return target considered and which matched that return target and was bounded by +/- 1% in each year (e.g. for a target return of 3%, the spending policy for 2011 was reset to 3% of opening market value at May 1, 2010 and then increased for assumed inflation and bounded by 2% and 4%).

For each portfolio selected, and for each spending policy, they modeled market value and spending rate, along with the probability of a spending shortfall exceeding $10 million, which we want to avoid, and the probability of returning to inflation adjusted capital, which we want to achieve. Their modeling process included 5,000 independent economic trials using a building block approach that started with inflation and interest rates, and then modeled other asset classes using a multi-factor regression analysis. The modeling process generated extensive data, key portions of which are summarized below.

Alternatives Along Risk/Reward Spectrum

		At Current Spending Rates		At Reset Spending Rates	
	Standard Deviation	Probability of Spending Shortfall Amount Exceeding $10 M in Any Year	Probability of Returning to Inflation-Adjusted Capital by 2020	Probability of Spending Shortfall Amount Exceeding $10 M in Any Year	Probability of Returning to Inflation-Adjusted Capital by 2020
Portfolio F 6.0%	12.9%	38.4%	51.1%	44.3%	37.8%
Portfolio E 5.0%	9.3%	36.4%	37.9%	28.6%	32.8%
Portfolio 4/10	10.0%	50.8%	24.9%	24.4%	30.7%
Portfolio D 4.0%	7.3%	44.4%	18.7%	13.7%	25.3%
Portfolio B 3.0%	4.7%	52.8%	3.7%	1.3%	19.3%
Least risk portfolio 1.9%	3.2%	74.4%	0.1%	0.3%	9.3%

The desirable outcomes are: low probability of spending shortfall, and high probability of returning to inflation-adjusted capital.

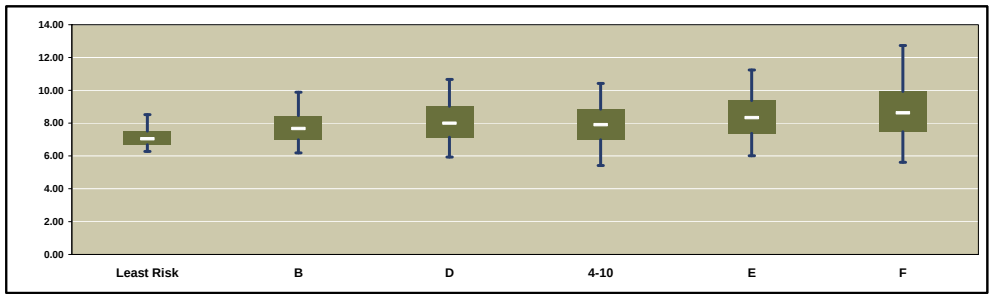
Current Spending Scenario

The current spending scenario starts with a 5% spending allocation for 2010 and attempts to increase that allocation by inflation each year within a spending corridor of 3% to 5% of market value. For 2011, the spending allocation per unit under all portfolios would be $7.33 at the median. As we would expect under this spending formula, the modeling shows that the 5% and 6% return portfolios have the smallest risk of a shortfall exceeding $10 million in any year since their return targets equal or exceed the spending target. All portfolios with a return target less than the spending target show a higher probability of shortfall, with the probability of that shortfall rising to 74.4% under the least risk portfolio. Intuitively it makes sense that it would be very difficult to maintain the current spending scenario with a return target less than 2.0% real return.

Under the current spending scenario, the lower the target return compared to the spending allocation, the lower the chance that we will return to full inflation protection by 2020. There would be virtually no chance of returning to full inflation protection with the current spending in concert with dropping the return target to the least risk target of 1.9%. If we would maintain the current spending target and the current return target of 4.0%, we would have between 18.7% and 24.9% chance of returning to full inflation protection by 2020. The following Hewitt chart shows the range of spending allocations expected in 2020.

Current Spending Scenario
Spending Rate in $ per Unit in 2020
All Portfolios

	Least Risk	B	D	4-10	E	F
Very Good (95th Percentile)	8.51	9.88	10.67	10.42	11.24	12.73
Good (75th)	7.51	8.46	9.02	8.85	9.37	9.93
Central (median)	7.05	7.67	8.00	7.91	8.33	8.63
Poor (25th)	6.68	6.99	7.15	6.99	7.38	7.48
Very Poor (5th)	6.28	6.19	5.93	5.42	6.01	5.61

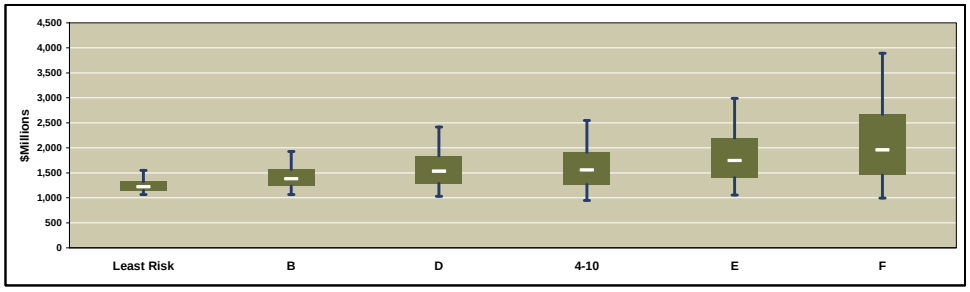


As the chart shows, the spending allocation in dollars per unit increases with a higher investment return target, moving from left to right on the graph but so does the volatility, which is illustrated by the thickness of the box.

The next chart shows the range of market values that would be associated with the spending allocations in the previous chart. It also illustrates the increasing volatility as one moves from the least risk portfolio on the left to the 6% portfolio on the right. The least risk portfolio has a small range of market values while the 6% portfolio has the potential for high market values, but a much larger range of possible outcomes.

Current Spending Scenario
Market Value of Assets in Millions of Dollars in 2020
All Portfolios

$Millions	Least Risk	B	D	4-10	E	F
Very Good (95th Percentile)	1,550	1,927	2,416	2,547	2,989	3,890
Good (75th)	1,321	1,566	1,837	1,911	2,195	2,670
Central (median)	1,221	1,383	1,533	1,557	1,747	1,958
Poor (25th)	1,146	1,237	1,290	1,268	1,407	1,456
Very Poor (5th)	1,067	1,068	1,030	947	1,055	996



Reset Spending Scenario

Now let us consider the reset spending scenarios. Under these scenarios, the spending allocation beginning with 2011 is reset to a level that matches the real return scenario. The start point is the payout at April 30, 2011 which is based on the opening market value at May 1, 2010. The risk corridor has been maintained at 1% on either side of the spending target. The revised spending allocations would be as follows:

Portfolio	Spending Target	Lower Bound	Upper Bound	$ per unit 2011
Least risk portfolio 1.9%	2%	1%	3%	$3.19
Porfolio B 3%	3%	2%	4%	$4.78
Portfolio D 4%	4%	3%	5%	$6.37
Portfolio 4/10 4%	4%	3%	5%	$6.37
Portfolio E 5%	5%	4%	6%	$7.97
Portfolio F 6%	6%	5%	7%	$9.56

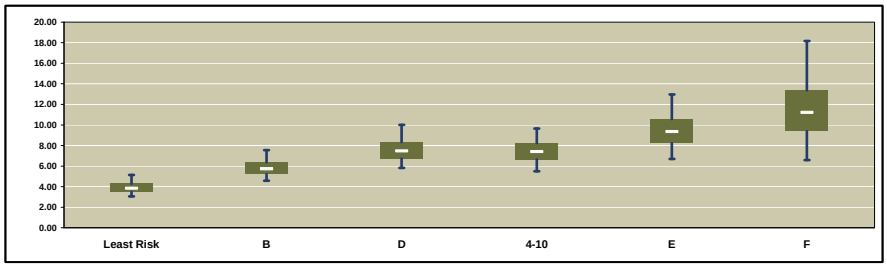
Under the reset spending scenarios, the probability of shortfall and the probability of returning to inflation-adjusted capital are different than those under the current spending scenarios. The following table shows the impact of the change.

		Impact of **Changing** from Current ($7.33 at Median) to Reset Spending Policy	
	Reset Spending Rate at April 30, 2011	**Change** in Probability of Shortfall Exceeding $10 M in any Year	**Change** in Probability of Returning to Inflation-Adjusted Capital by 2020
Portfolio F 6.0%	$9.56	5.9%	-13.3%
Portfolio E 5.0%	$7.97	-7.8%	-5.1%
Portfolio 4/10	$6.37	-26.4%	5.8%
Portfolio D 4.0%	$6.37	-30.7%	6.6%
Portfolio B 3.0%	$4.78	-51.5%	15.6%
Least risk portfolio 1.9%	$3.19	-74.1%	9.2%

As the chart shows, under the reset spending policy, the 6% portfolio has both a higher probability of a spending shortfall and a lower probability of returning to inflation-adjusted capital (both undesirable outcomes) than under the current spending scenario since the payout is higher than the current payout. and the 5% portfolio has a lower probability of returning to inflation-adjusted capital. All of the other portfolios have both a lower chance of spending shortfall and a higher chance of returning to inflation-adjusted capital but achieve these results by reducing the payout for spending. The following Hewitt charts show the impact of the reset spending scenarios on spending and market value for each portfolio in 2020.

Rest Spending Scenario
Spending Rate in $ per Unit in 2020
All Portfolios

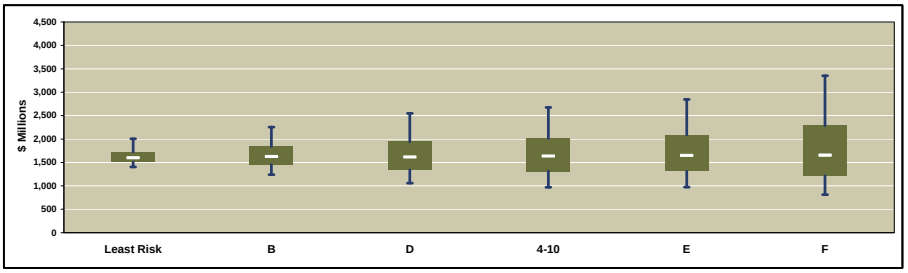
	Least Risk	B	D	4-10	E	F
Very Good (95th Percentile)	5.15	7.54	10.00	9.65	12.95	18.16
Good (75th)	4.29	6.36	8.32	8.24	10.57	13.37
Central (median)	3.85	5.74	7.48	7.41	9.36	11.22
Poor (25th)	3.48	5.21	6.73	6.66	8.23	9.38
Very Poor (5th)	3.05	4.58	5.83	5.50	6.70	6.58



The reset scenario shows a similar pattern to the current spending scenario, albeit at different spending allocation rates. The lower risk portfolios have a much more predictable spending rate, fluctuating within a much tighter band, than the higher risk portfolios, but less potential for a higher rate and a much lower rate overall. The next chart, showing the market values associated with the reset spending allocations shows the same pattern.

Reset Spending Scenario
Market Value of Assets in Millions of Dollars in 2020
All Portfolios

$Millions	Least Risk	B	D	4-10	E	F
Very Good (95th Percentile)	2,005	2,257	2,546	2,674	2,847	3,349
Good (75th)	1,722	1,842	1,940	2,014	2,091	2,285
Central (median)	1,598	1,627	1,615	1,635	1,650	1,656
Poor (25th)	1,506	1,450	1,343	1,317	1,311	1,212
Very Poor (5th)	1,403	1,241	1,059	968	974	813



As we can see from the above, there are advantages and disadvantages to each of the scenarios and each of the portfolios. The question is, which spending scenario and which investment portfolio together best fit the University's risk tolerance? This is discussed in the next section. But, before that, it is important to put the quantitative modeling process in perspective as a decision tool.

The Role of Judgment

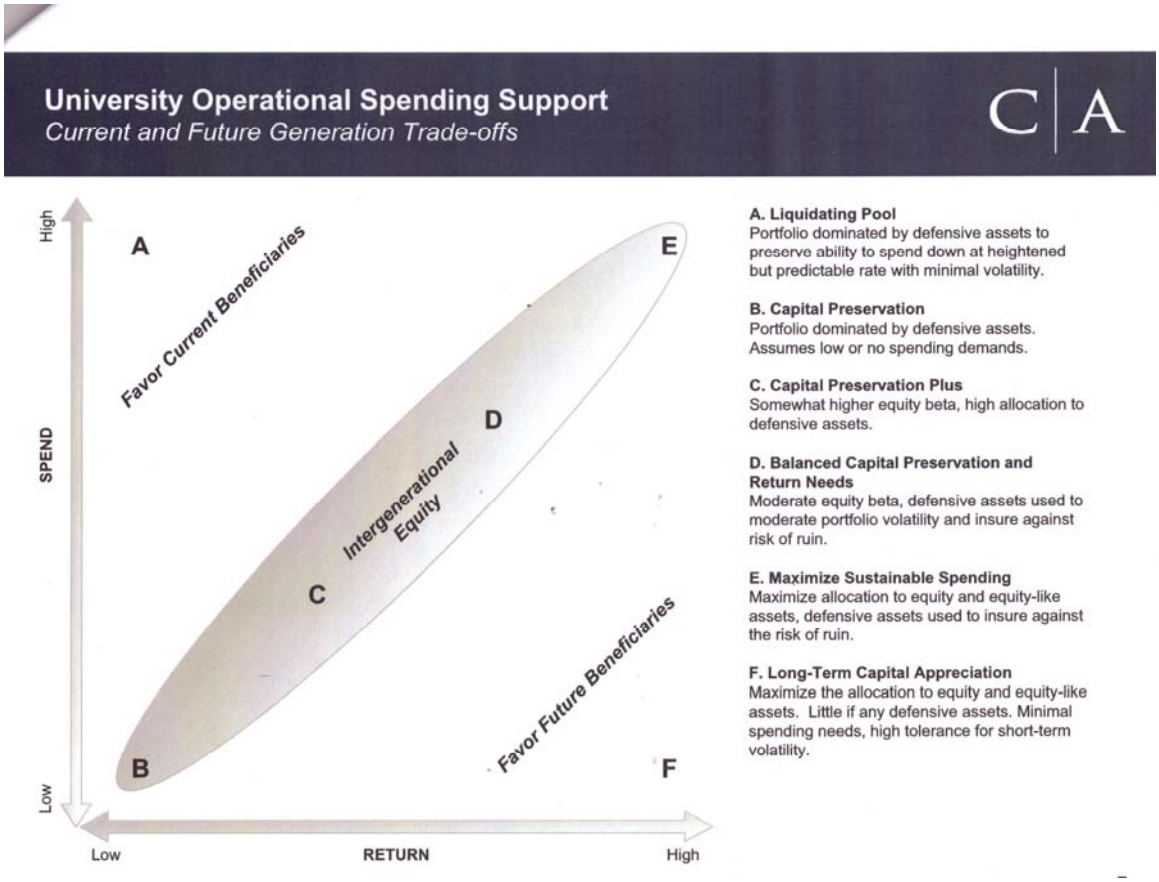
It is important to note that this modeling focuses on portfolio volatility and that volatility for an individual asset class varies over time. There are also more risks associated with investments than just volatility, such as liquidity risk (the risk that the money will not be available when it is needed for spending) and the risk associated with the complexity of individual transactions and with asset classes as a whole.

There are no mathematical models that capture all elements of risk, or that can predict what behaviours would ensue as various possible outcomes begin to unfold. For example, if the returns are not good, we would likely change our strategy. The mathematical models should be viewed as tools that help in assessing risk, but they do not provide a complete and comprehensive assessment of all the risks associated with making investment choices. This is partly why the range of outcomes for a given asset mix can be so broad under different market scenarios. Judgment must be applied to the results obtained from modeling and we should take into account the broader environment in which the targets are being established. Whatever we decide, we will need to review our decisions regularly and be prepared to adjust them over time.

Discussion and Conclusions

Let us now return to the University's objectives and compare them to the quantitative options considered in endowment risk study.

As noted earlier, the focus groups considered the following chart and debated where they believed the University should be positioned with respect to investment risk and return.



As noted earlier, while some favoured the "E" range for its growth, most felt that it represented more volatility than they would like to see. While a few favoured the "B" to ""C" range, most felt that the resulting spending allocation would likely be too low to satisfy donors and faculties. The general view that emerged was one of comfort with the "D" range which balanced capital preservation and spending needs. Additionally, there was strong support for the view that it would be beneficial to faculty budget planning if the current spending scenario of $7.26 per unit could be maintained going forward and not reset to a lower rate. It was recognized that the University of Toronto can tolerate volatility in returns and in payout levels, once in a while, but that it would become a much bigger problem if returns were poor and payouts cancelled or reduced for several consecutive years. Even two years without a payout would be a major problem for some units.

The choices that were studied are indicated in the following chart. Which of these options would best meet the University's objectives, bearing in mind the limitations of the financial modeling and the chance that none of the scenarios shown below will play out in the future?

When all the portfolios from 1.9% return to 6.0% return are considered, the 1.9% portfolio can easily be rejected as providing insufficient return to balance capital preservation and spending needs. The 6.0% portfolio can also be easily rejected as having too much volatility and not meeting the "D" portfolio characteristics. This leaves us with a choice between the 3%, 4% and 5% return targets and four portfolios.

Alternatives Along Risk/Reward Spectrum

		At Current Spending Rates		At Reset Spending Rates	
	Standard Deviation	Probability of Spending Shortfall Amount Exceeding $10 M in Any Year	Probability of Returning to Inflation-Adjusted Capital by 2020	Probability of Spending Shortfall Amount Exceeding $10 M in Any Year	Probability of Returning to Inflation-Adjusted Capital by 2020
Portfolio F 6.0%	12.9%	38.4%	51.1%	44.3%	37.8%
Portfolio E 5.0%	9.3%	36.4%	37.9%	28.6%	32.8%
Portfolio 4/10	10.0%	50.8%	24.9%	24.4%	30.7%
Portfolio D 4.0%	7.3%	44.4%	18.7%	13.7%	25.3%
Portfolio B 3.0%	4.7%	52.8%	3.7%	1.3%	19.3%
Least risk portfolio 1.9%	3.2%	74.4%	0.1%	0.3%	9.3%

Under the current spending scenario, all four remaining portfolios have a significant chance ranging from one third to one half of a shortfall amount exceeding $10 million in any one year. Portfolio B has almost no chance of returning to inflation-adjusted capital by 2020 while the remaining 3 portfolios have a relatively low chance ranging from less than one fifth to just over one third of returning to inflation-adjusted capital by 2020.

The 5% portfolio appears more attractive than the 3% and 4% portfolios at the current spending rate from the standpoint of shortfall risk and especially from an inflation-protection perspective. Looking at the reset spending scenario, the portfolio still has relatively low shortfall risk and the best potential inflation protection of the four portfolios considered. However, the 5% portfolio may not be viewed as fully meeting the characteristics of the "D" portfolio since increasing the targeted rate of return in an "uncertain" investment world might be viewed by some as less than prudent.

The 3% portfolio has the highest risk amongst the 3% to 5% range of a spending shortfall under the current spending scenario because it has the largest gap between the current spending rate and the 3% return target. Resetting the spending target to 3% essentially eliminates this risk, bringing it down to 1.3%. However, even then the probability of a return to the inflation adjusted

capital level is very low. In summary, we would have no choice but to bring down the spending allocation under this option, and for this reason, this option is rejected.

The two 4% portfolios were supposed to represent a balance between the 3% and 5% portfolios. However, the simulations indicate that the 4/10 portfolio is inefficient relative to the other three portfolios (this difference from the UTAM analysis highlights the sensitivity of the results to the choice of input assumptions used). The other 4% portfolio has a higher risk of a spending shortfall under the current spending scenario than the 5% portfolio but a lower risk than the 3% portfolio. Under the reset spending scenario, the shortfall risk of any one year would be greatly reduced; however the probability of returning to full inflation protection would not be significantly increased. Nevertheless, the 4% portfolio would seem to offer the University the opportunity to maintain the current spending target and the current return target within a volatility risk level that sits within the comfort zone identified in the risk and return sessions with the “D” portfolio. As an added advantage, we would retain the option of resetting the spending rate to the 4% level at some point in the future if the returns over the next several years would track the poorer outcomes in the modeling. This could be done without severely compromising the current understanding of our endowment payouts by donors. While the above comments might seem to argue for this portfolio, there is one troubling element. Retaining the same return target but lowering the volatility target would strike many seasoned investors as somewhat unrealistic given today’s investment environment.

Consequently, based on Hewitt’s input assumptions, the choice would seem to be between the 4% and 5% portfolios but without a clear winner. As such, after reviewing all of the inputs, both qualitative and quantitative, the University concluded that there should be no change to the target return or the volatility risk target of the endowments (LTCAP). It is further concluded that, at the present time, and dependent upon 2010-2011 actual investment returns, we should be able to maintain the current spending scenario, based on a rate of $7.26 per unit at April 30, 2010, as the basis for going forward. By 2020, the difference between maintaining the current spending rate going forward and adjusting it to 4% was modeled at about $77 million in market value at the median. We will retain the option of reducing the spending rate to the 4% level in future if a poor economic climate necessitates it. To avoid the further dislocation of yet another reduction in spending; this is a risk and a cost worth taking.