

UTFA Newsletter

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Salary, Benefits and Pensions Information Report¹ #5

"... the prediction of short-term market movements is a task reserved for fools, small children, and institutional strategists."

William J. Bernstein²

The Looming Pension Abyss

The Provost has proposed a 4.45% cut to base budgets³ for 2003-04. The 4.45% cut fails to address a larger budget issue: the growing deficit in the registered pension plan.

An examination of our defined benefit pension plan suggests that the likely financial shortfall⁴ in the plan during the next two years alone may be more than *ten times larger* than the \$22.2 million represented by the 4.45% cut. The projected shortfall numbers are alarming, as are the implications for academic budgets and academic programs.

The current and future financial shortfalls in the pension plan can be directly linked to the Administration's failure to prudently hold in reserve its past pension windfalls, namely the numerous pension contribution holidays since 1987.

If the funds representing these contribution holidays had been conservatively set aside in a pension reserve account, there would be no pension crisis today; there would still be a substantial pension surplus.

(Please note that the appendix, starting on page 5, provides quantitative detail. The interested reader can turn to it next.)

¹ Related reports are posted on the UTFA website at: <http://www.utfa.utoronto.ca/html/newsbul/index.htm>

#4: [The Anomalous UofT Pension Plan](#) (Sept 12, 2002),

#3: [Salary Structures, PTR, and Gender at U of T](#) (March 11, 2002),

#2: [The UofT Pension Plan: Is it competitive? Is it equitable?](#) (Oct 12, 2001), and

#1: [Inflation and Salary ATB](#) (Sept 27, 2001).

² Bernstein's website article, "The Returns Fairy... Explained", at <http://www.efficientfrontier.com/ef/403/index403.htm>

³ As per memo to PDAD&C on April 8, 2003, this 4.45% represents a \$22.2 million cut on base budgets of \$499 million.

⁴ This statement is made with the following understanding: Pension plans make assumptions about future market returns. Although there are well-defined long-term historical averages for market returns, nobody can predict the near term numbers or their longer term future evolution. There is, however, compelling evidence (compelling for the author and many others) that future returns are likely to be below past averages for some time to come and are a natural consequence of the unprecedented high returns of the earlier decade.

Ottawa made us spend it?

The Provost writes:⁵

“The pension contribution savings are those monies that the university was prohibited by federal law from putting into the pension plan when the surplus was high.”

The Provost is correct about the federal tax law. But she fails to mention the other choices that were available to the Administration of the day:

- Over the past 16 years the University could have improved the pension plan benefits for the active faculty and librarians sooner and more substantially than they did. It could have improved the survivor benefits to the allowed maximum of 66%. It could have improved indexation. It could have raised the payout on the CPP portion — up to 2%. It could have corrected earlier the inequitable pensions for part-time service and for broken-year service records. It could have provided buy-backs for all past service. It could have raised the \$150K salary cap limit on the SRA.
- Over the past 16 years the University could have made retroactive pension improvements for retirees that would have harmonized the retiree pension benefits with the pension benefits of the active members of the plan.
- Over the past 16 years the University could have set aside the excess funds in a separate pension “reserve account” for the day when the markets turned “south” and the other favourable conditions reversed. Table 1 demonstrates that year-to-year 10% swings in asset value are not uncommon.
- Over the past 16 years the University could have assumed a larger, rather than a smaller, portion of the annual service cost pension charge. It seems that with most pension improvements, the employee contribution rate increased and in addition the employee share or proportion of the total service cost also increased.⁶
- Over the past 16 years the Administration received the vast majority of contribution holidays. It could have been more generous in the sharing of the contribution holidays with the faculty and staff – who had to negotiate their holidays at the expense of other compensation benefits.⁷
- Over the past 16 years the University could have used more conservative actuarial assumptions in the plan to reduce the surplus and so given itself more room to contribute its annual service cost.⁷

The University of Toronto Administration chose *not* to do *any* of the above to the extent possible. Instead it chose to use our pension monies for university purposes entirely unrelated to the registered pension plan.⁸ Apparently it was easier to do this than to resolve the more important and more fundamental issue of chronic governmental underfunding of our institution.

⁵ PDAD&C memo of March 31, 2003, page 3. A similar statement was made in the April 8 FAQ document to PDAD&C

⁶ See UTFA Sept 12/02 Information Report #4 for a detailed discussion of this point.

⁷ While this was an option that some might have favoured, it does not follow the writer would agree. Personal financial considerations can and may lead to differing views.

⁸ The Supplemental Retirement Arrangement (SRA) has been recipient of some of the RPP contribution holiday funds. But the SRA should be funded independent of the RPP surplus. The SRA has a current shortfall of about \$38 million (and which is not considered in our shortfall discussions here) and an annual service cost of about \$3 million.

Will equity markets come back?

Of course they will improve, relative to their current performance. That is not at issue. The issue is: Improve to what? Can returns going forward average the assumed 7%⁹ or will they average less than 7%? If the returns are less than 7%, there will be an unavoidable pension shortfall. Such pension shortfalls must be addressed and cannot be ignored.

The reasons for reduced returns going forward (returns of less than 7%) are compelling.¹⁰ It seems clear that our RPP has to take a hit. That is already evident in Figure 1. What is less clear is how the total shortfall will unfold over time. Will it be sudden and sharp? Or will it be prolonged and gradual? Nobody knows.

The following table provides some longer term perspective on returns for the UofT pension plan, both for the actual returns over the past 16 years and the currently projected returns to 2006.

	Actual 1987 to 2002	Projected 2003 to 2006	Total 1987 to 2006
Average Return (Arithmetic Mean)	8.7%	3.0%	7.6%
Compound Return (Geometric Mean)	8.45%	3.0%	7.3%

The 20-year return number of 7.3% (lower right box) subsumes the -\$340 million pension plan shortfall estimate for 2006 (see page 5). Going forward, if one were to reduce the assumed rate of return in our plan from 7% to 6.5%, the pension plan liability would increase by about \$140 million.¹¹

If the current 7.0% return assumption in the pension plan is in fact valid, then the 20-year returns in the table demonstrate that the current downturn is simply an overdue correction and should have been anticipated.

The compelling conclusion is that the anticipated shortfall in our defined benefit pension plan will not be rescued by improvement in stock market valuations. The market is still shedding its accumulated and unrealistic expectation for earnings growth that it acquired during its irrational and exuberant run-up.

⁹ The 7% refers to the total return for all pension plan assets, a mix of both equities and fixed income.

¹⁰ Simply stated, capital gains, which accounted for much of the heady returns of the past two decades, have run out of room to appreciate.

(1) For a thoughtful long-term perspective on returns, see Bernstein's article: "Only Two Centuries of Data", which concludes with: "Which brings us back, as usual, to the Gordon Equation: The expected return of a stock or bond is equal to its income stream plus its growth. For stocks, this is (in nominal terms) $1.5\% + 5\% = 6.5\%$; and for bonds, $6.0\% + 0\% = 6.0\%$ ". (On the web at <http://www.efficientfrontier.com/ef/402/2cent.htm>)

(2) Warren Buffet, in his 2001 report for Berkshire Hathway (financial footnote 18, page 43), adopted the more conservative figure of 6.5% return (from 8.3%) for the defined benefit plans in the companies he acquired.

(3) The 2002 annual report of the Ontario Teachers Pension Plan echoes similar views: "Powerful parallels remain between today and extended periods of past underperformance following equity market booms. Following the decline in 1973, it took the U.S. market 19 years before it regained its previous peak in real terms."

¹¹ Estimate by David Short, Eckler Partners Ltd.

Risk Management

The UofT registered pension plan currently assumes a real return rate¹² of 4% per year and an inflation rate of 3% for a total nominal return of 7%. A basic investment question is: How is this assumed 4% real return “best” realized? The answer turns on how much risk one wishes to assume. Less risk is better. The Government of Canada 30-year real-return bonds (RBB)¹³ which, prior to 2000, were regularly selling at a real return yield of 4%¹⁴ or higher, are ideal. But UofT chose not to take this risk-free real return of 4%.

Instead, in 2000, UofT established the University of Toronto Asset Management (UTAM) Corporation to seek higher returns via more aggressive active management of its assets. Active management cost many extra millions in management fees and will probably expose the assets to increased volatility and higher risk. The implicit assumption is that such active management adds more investment value than it adds to pension operating costs. This, however, is a debatable point.¹⁵

Actuarial value vs market value of assets

The Hewitt RPP actuarial reports use a smoothing method to evaluate assets. This is called the *actuarial valuation of assets*.¹⁶ In a sharply dropping market (as we are currently experiencing) this smoothing has the effect of hiding large unrecognized losses. For this reason the actuarial report can understate the real shortfall and which is one reason why I have used *market value* numbers in my discussion.

Conclusions

Our actual total pension compensation *should be* the sum of the monies inside the plan (Figures 1) and the monies outside the plan (Figure 2). But it is not so. Even with the looming shortfall abyss seen in Figure 1, the sum of the two shows a substantial surplus. The size of the withdrawn surplus (the \$929 million in Figure 2) reveals the scale of the shortcomings of our present defined benefit pension plan. The less that is contributed into the actual pension plan, the smaller will be the pensions in retirement. There is no free lunch.

It seems evident that the past practice of spending all contribution holiday monies, based on a few years of spectacular market movements, was foolish. (This is the point of the quote by Bernstein at the start of this newsletter.) Similarly it would be foolish now to be in denial of the resulting consequences that confront us.

I welcome any comments or questions.

George Luste

¹² *Real return* means the investment return *above the inflation rate*.

¹³ Information on real return bonds in Canada and their historic returns can be found at the following two Bank of Canada websites: ret http://www.bankofcanada.ca/en/pdf/real_return_eng.pdf and <http://www.bankofcanada.ca/en/bond-look.htm>

¹⁴ At this time the real return yields of Government of Canada real return bonds maturing in 2021 or 2026 or 2031 have decreased to about 3%, reflecting perhaps their recently increased popularity -- as a reaction to the poor returns in the equity markets. For a short while, in January of 1995, these same bonds had a real return yield of 5%.

¹⁵ All of the statistically convincing articles in the financial literature that the writer has ever read show that active management investing, as opposed to passive investing, is a loser's game. A recommended popular and well written introductory book on the subject is Burton Malkiel's "A Random Walk Down Wall Street".

¹⁶ The method assumes an annual growth rate equal to the valuation interest (currently at 7%) followed by a 33-1/3% adjustment toward actual market value.

Appendix Follow the Money

What are the numbers? Using the Provost's own assumptions for anticipated rates of investment return for the current year and the next three years, the approximate cumulative projected shortfalls in our pension plan (at market value), is estimated to be as follows:

- I. July 1, 2003 **-\$150 million** shortfall (with a 0% return for 02-03)
- II. July 1, 2004 **-\$260 million** shortfall (with a 2% return for 03-04)
- III. July 1, 2005 **-\$320 million** shortfall (with a 4% return for 04-05)
- IV. July 1, 2006 **-\$340 million** shortfall (with a 6% return for 05-06)

The 2003-04 base budget cut of 4.45% does *not* address the anticipated -\$150 million shortfall for this July nor the possible -\$260 million shortfall projection for July 1, 2004.

To understand the larger problem we need to consider two different sets of pensions monies:

- a) The first set involves the monies inside the pension plan.
- b) The second set involves monies outside the pension plan, consisting of the current and past pension contribution holidays.

a) Monies inside the pension plan

Money flows in and out of the pension plan on an annual basis. At present the following first five numbers approximate the hypothetical "*steady state*" in our plan. "*Steady state*" here means that the pension assets are earning exactly the assumed 7% return, and that the employees and the employer are both contributing their full annual service cost¹⁷ -- thus ensuring that the pension obligations of both current and future retirees are being funded.¹⁸

Annual Inflow:	(1)	\$144.4 million – (assumed 7% return on \$2,063M of assets)
	(2)	\$20.7 million – (active employee service cost, 2000-01 ¹⁹)
	(3)	\$34.7 million – (employer's remaining service cost)
Annual Outflow:	(4)	\$73.5 million – (pensions paid to retirees in 2000-01)
	(5)	\$8.6 million ²⁰ – (fees to manage pension plan)
Net Fund Balance	(6)	= 0 IF (total fund assets) = (total fund liabilities)

The above annual inflow in our example totals about \$200 million and the outflow totals about \$82 million.

¹⁷ The meaning of "service cost" was discussed in the Sept 12/02, UTFa Newsletter, Report #4, which is posted at <http://www.utfa.utoronto.ca/html/newsbul/html/sep12.2002.htm>. The numbers used here are from the July 1, 2001, Hewitt actuarial report of the UofT registered pension plan (RPP). The actual contributions in 2001-02 were about 50% of line (2) and 0% of line (3). In 2002-03 the contributions are 100% for line (2) and again 0% for line (3).

¹⁸ Note, however, that future returns, future inflation, future salaries, future government rulings, etc., are, of course, not known but are assumed in the actuarial evaluations.

¹⁹ 2000-01 represents the most up to date actuarial report available from Hewitt at this time.

²⁰ In 2001-02 this expense number increased to \$11.8 million. This pension plan expense translates to an annual cost of about \$1,009 to each of the retired and active 11,691 RPP members. Five years ago the annual fees were only \$2.6 million. This alarming increase is also discussed in the Sept 12/02 Newsletter.

The Provost's 4.45% budget cut only considers the pension obligations in line (3) above. It fails to consider any cumulative shortfalls due to line (1) above.

Line (1) clearly dominates the inflows. Observe that any return *less than 7%* is bad news. It means a shortfall. For example, a 0% return in line (1) means a \$144.4 million reduction in pension assets *in one year*. The present actuarial assumption is that our plan must return the full 7% (or 4% above an annual inflation rate of 3%) *forever* if it is to remain properly funded. Financial problems can arise when the returns either exceed or underperform the assumed number for an extended period. While the decade of the 1990's experienced returns substantially greater than 7%, recent returns and projected near term returns are less than 7%. To illustrate: in 1999-2000 pension returns averaged +17%, but the following year, in 2000-01, they were -5%. Such market volatility will result in large back and forth annual asset shifts in the hundreds of millions of dollars.

Line (6) refers to the net fund balance between the market value of all plan assets and the total actuarial liability of the pension plan. The next section examines this net fund balance.

Pension plan data: 1987 to 2006.

Figure 1 illustrates how the *difference* between pension plan assets (at market value) and actuarial liability has varied year by year since 1987 (via the solid squares and heavy line). Table 1 on the back page of this Newsletter lists the year by year numbers that give rise to this chart.

In figure 1 we also show the annual return rate²¹ in the plan using the X symbol, joined by the lightly dashed lines. The scale for the return rate is on the right hand side of the figure.

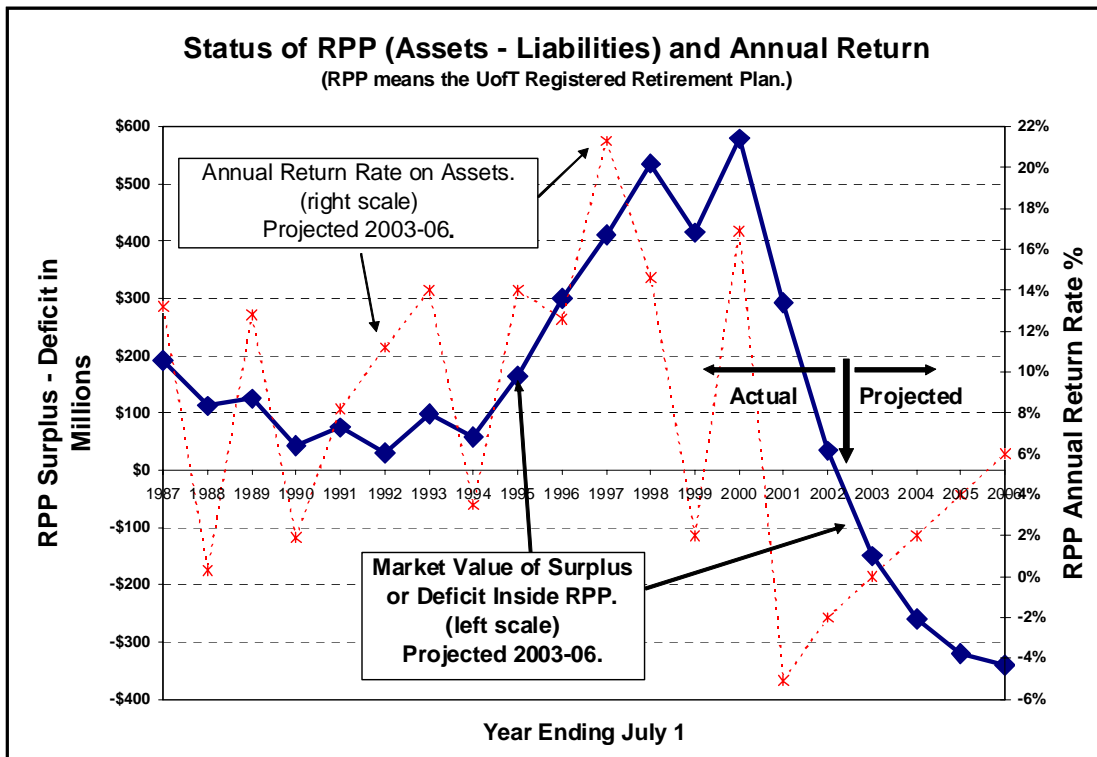


Figure 1

²¹ The surplus will not track the return rate uniformly from year to year because of *changes* in the contribution rates, in actuarial assumptions, in plan benefits, and in salary settlements from year to year, etc.

The projected data points for the four years from 2003 to 2006 use the Administration's assumed return rates of 0%²², 2%, 4% and 6%, respectively.

The large increase in the surplus from 1994 to 2001 was enhanced by the favourable combination of a number of factors reinforcing one another during this period: (i) market returns above the assumed rate, (ii) inflation below the assumed rate, and (iii) low salary settlements (below the assumed annual increase). In addition, as was discussed in the Sept 12/02 Newsletter, Report #4, the employee share of the annual pension service cost also increased. It therefore follows that it is incorrect to claim or imply that our pension surpluses resulted exclusively from favourable market returns and nothing else.

b) Monies outside the pension plan

In the 16 years since 1987, when the plan rules were changed,²³ the University has contributed less than two years of service cost. In the remaining 14 plus years it has not contributed a penny to the registered pension plan. The cumulative value of these numerous contribution holidays, at the pension rate of return, is about \$929 million as of July 1, 2003. The growth in cumulative value of the university holidays, since 1987, is illustrated in Figure 2. It charts the numbers in column [9] of Table # 1 on the back page. The corresponding total for the employee contribution holidays is shown in column [7] and totals \$131 million.

This \$929 million of pension service cost monies that were not put into the RPP is what should now be funding the estimated -\$340 million shortfall of July 1, 2006 (line IV on page 5 of this Report).

²² With nine months into the 2002-03 year, the 0% assumption appears to be a reasonable final estimate for 2002-03.

²³ In the 1987 settlement for salaries, benefits and pensions, between the Administration and UTFA, the pension plan rules were changed. Professor Michael Finlayson was both UTFA President and Chief Negotiator for UTFA in the 1987 negotiations. Martin Teplitsky mediated the settlement. In exchange for some pension improvements, UTFA signed away its shared responsibility of the pension assets. Your current UTFA president argued against acceptance of this settlement at that time -- but as a junior member of UTFA Council was on the losing side of Council's vote. The rest is history. This vote handed the Administration the ensuing pension contribution holidays. Prior to 1987 the University, by agreement, was bound to pay into the Plan an amount that bore the constant relationship of \$2.55 to the members payment of \$1.00 (see UTFA Newsletter #6, 23 January, 1987)

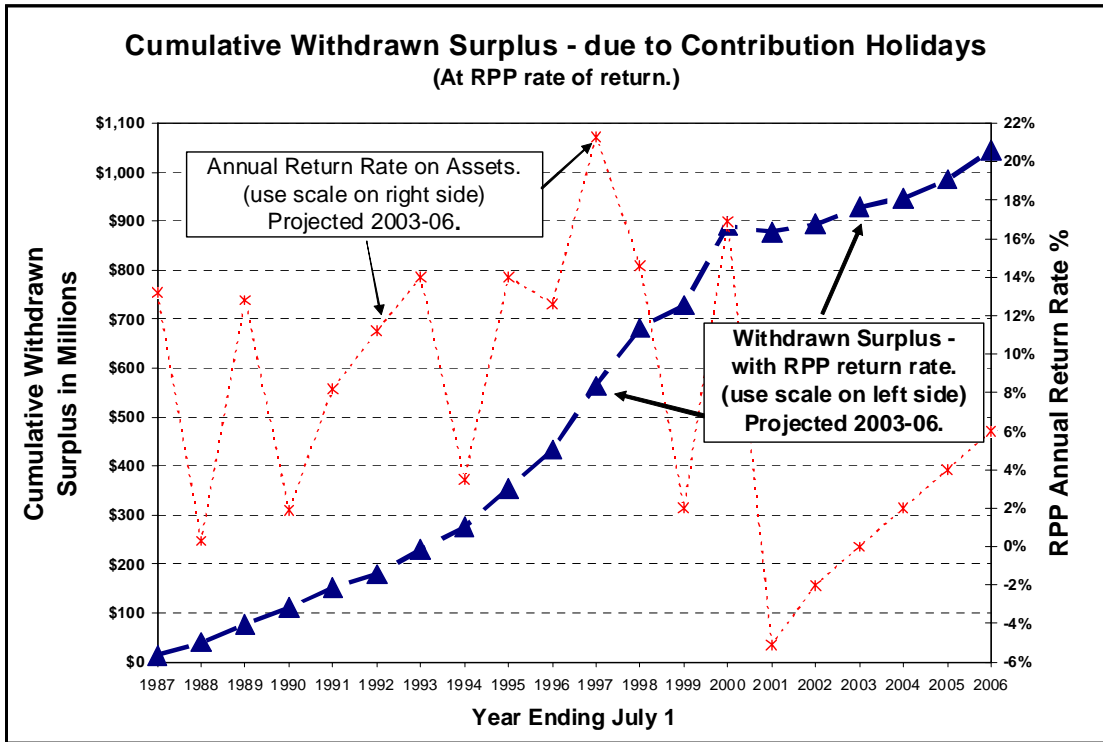


Figure 2

Data Table #1

The U of T Pension Plan - Data Summary for UTFA SB&P Report #5

(All dollar figures are totals for both faculty and support staff at U of T)

[1] Academic Year to July 1	[2] Assets Market Value \$ in Mil	[3] Liability Actuarial Value \$ in Mil	Figure #1 [4] Market minus Liability \$ in Mil SURPLUS	Figure #1 [5] Market minus Liability \$ in Mil DEFICIT	[6] Member Holiday \$ in Mil	[7] Member Holiday Cumulative \$ in Mil	[8] Uof T Holiday \$ in Mil	Figure #2 [9] Uof T Holiday Cumulative \$ in Mil	Figure #1 & #2 [10] Actual Market Return Rate	[11] RPP Cost (Fees) \$ in Mil
1987	805	614	192		2	2	14	14	13.2%	1.3
1988	801	689	112		1	3	27	40	0.3%	1.5
1989	890	766	125		2	5	29	78	12.8%	1.9
1990	888	845	43		6	12	31	111	1.9%	1.7
1991	944	870	75		0	13	29	151	8.2%	1.8
1992	1,061	1,032	30		4	19	10	179	11.2%	1.9
1993	1,209	1,110	98		(0)	21	22	229	14.0%	1.9
1994	1,260	1,202	58		(0)	22	37	276	3.5%	2.2
1995	1,408	1,244	164		(1)	24	36	355	14.0%	1.6
1996	1,549	1,249	300		(1)	26	31	434	12.6%	2.3
1997	1,848	1,437	412		0	32	31	564	21.3%	2.6
1998	2,039	1,503	535		15	54	31	682	14.6%	4.8
1999	2,009	1,594	415		18	73	32	728	2.0%	4.4
2000	2,259	1,680	579		19	108	33	890	16.9%	4.9
2001	2,063	1,771	292		21	122	35	878	-5.1%	8.6
2002*	1,940	1,906	34		10	130	35	894	-2.0%	11.8
				Projected Deficit in RPP			Projected UofT holiday \$		Projected Market Return	
2003	1,875	2,022		-150	-	131	35	929	0.0%	
2004				-260	0		0	948	2.0%	
2005				-320	0		0	985	4.0%	
2006				-340	0		0	1,045	6.0%	

* => with plan changes for 02-03

Note #1: The annual service cost for 2002-06 is estimated as \$55 million (split \$35 : \$20)
Note #2: The approximate deficit in column [5] is estimated by George Luste