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To: Governing Council Business Board Members

From: George Luste, President, University of Toronto Faculty Association (UTFA)
and Professor, Physics Department, University of Toronto

Re: Agenda item #3 - Pension Plans: Annual Financial Report for the Year ended June 30, 2010[1]

Question #1 – How serious is the deficit in the UofT pension plan ?

Answer: In round numbers the total accrued windup liability in the UofT pension plan is $4 billion. The market value of assets is about half of that, or $2 billion. It follows that the pension plan has a shortfall of $2 billion – or that 50% of the pension monies owing to plan members, both active and retired, is missing.

Question #2 – How did we get to this state?

Answer: The problems began in 1987. There are four main causes:

(i) - 18 years of missing pension contributions, starting in 1987
(ii) - time value of the missing contributions – the lost investment returns at a time when markets were booming
(iii) – recent investment loses and investment expenses via UTAM
(iv) – failure of appropriate oversight by the pension plan sponsor

Question #3 – Is the UofT pension plan still viable in the long term or is it fatally wounded, like the Titanic after it hit the iceberg?

Answer: The pension plan numbers suggest to me that long term survival is unlikely and that the Titanic analogy is appropriate. More on this in the discussion that follows.

Let's consider each question in more detail.

[1] The 132-page report, Annual Financial Report for the Year ended June 30, 2010, is available as a pdf file at http://www.governingcouncil.utoronto.ca/AssetFactory.aspx?did=7374

Question #1 – How serious is the deficit in the UofT pension plan ?

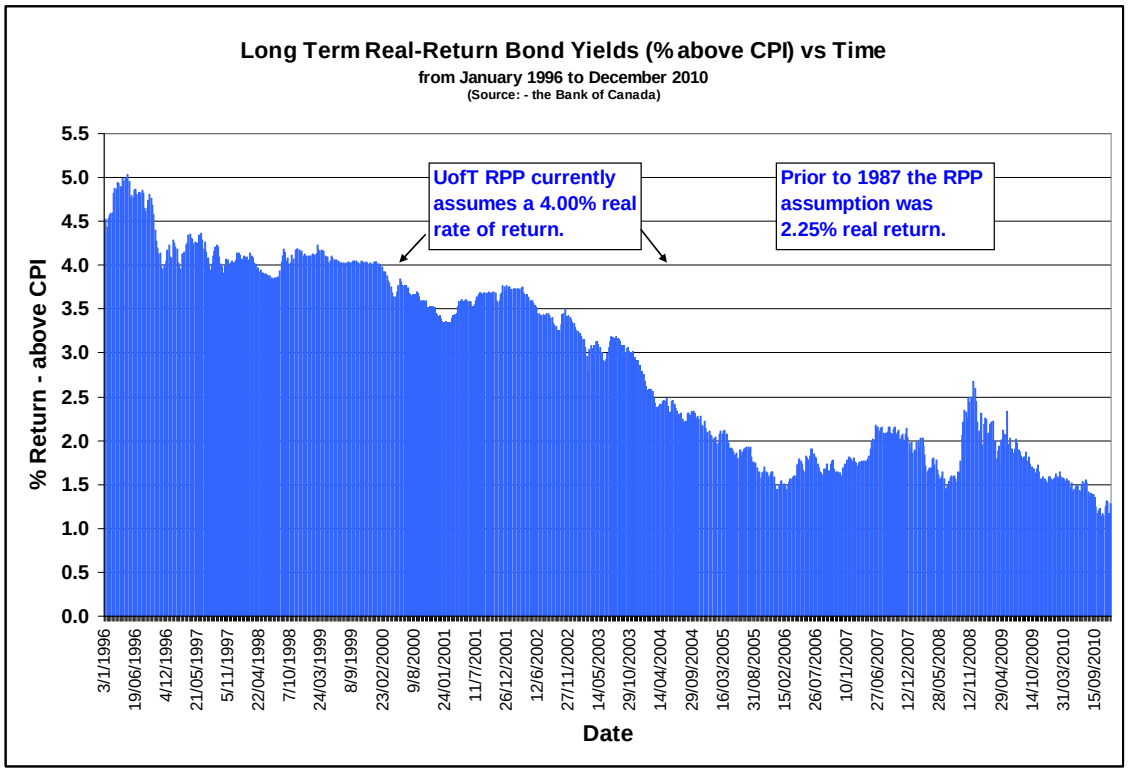
Page 2 in the report lists three different deficits as of July 1, 2010, ranging from $1.0 billion to $2.2 billion. Why? The short answer is there are three different estimates for the actuarial valuation of the "accrued liabilities" owing to the 16,041 participants in our RPP.

Which accrued liability number is most likely to be the correct estimate? Let's consider the three numbers in turn.

(i) Going concern actuarial valuation: The corresponding liability is quoted as $3.126 billion (page 2 in the report). This estimate is based on the optimistic assumption that the long-term go-forward investment returns will realize 4.00% above inflation. If one lowers this estimate to 2.00% as a real return, the liability increases by about $1.0 billion (page 46 in the report) and the actuarial deficit jumps to about $2.1 billion.

The question then becomes: What is the appropriate estimate today for the future real rate of return on our pension plan assets? The risk-free current rate of return (yield) on Government of Canada real-return bonds is between 1.20% and 1.30%. This suggests that a 2.00% real return assumption is more plausible than a 4.00% assumption. And therefore a $2.0 billion going concern deficit is more realistic than the $1.0 billion quoted in the report.

While on the topic of risk-free real-return bonds, the following chart illustrates how UofT missed a remarkable once-in-a-lifetime opportunity prior to 2000 to lock in a risk-free 4.00% (or higher) real return rate. (This was around the same time that UTAM was being organized.) Had that opportunity been seized, our going concern deficit today would be close to zero (as we would have also avoided the major UTAM investment losses of 2008-09.)



(ii) Solvency actuarial valuation: The corresponding liability is quoted as $3.264 billion (page 2 in the report). However, this actuarial estimate ignores the cost of the 75% indexation in our pension plan. This missing cost is on the order of $1 billion. If it was included, the total liability would be the same as the wind-up liability, or $4.2 billion with a deficit of $2.2 billion.

The term 'solvency actuarial valuation' is an excellent example of Orwellian doublespeak in the pension world, where the words are saying one thing but meaning another. It would be more correct and fitting to call this the "partial solvency valuation" rather than the solvency valuation.

(iii) Hypothetical wind-up actuarial valuation: "Wind-up" represents the most accurate cost measure today of all accrued obligations owing to pension plan participants. The corresponding liability is quoted as being $4.244 billion (page 2 in the report) with a deficit of $2.2 billion. The administration has injected the word "hypothetical" in the labeling and this too is misleading – like the misleading premise of the public relations reference to the "unsinkable Titanic". But the issue here is not whether or not there is an actual windup anytime soon, rather the real question is: 'What is the outstanding accrued liability of our pension plan?' My claim is that what is called the 'wind-up actuarial valuation' provides the most plausible estimate.

The following relates the $2 billion deficit to the individual faculty member:

About 65% of the total liability in the RPP can be attributed to faculty (both active and retired). 65% of $2 billion represents a $1.3 billion share of the deficit. The remaining $0.7 billion deficit would be attributed to the non-faculty staff at the UofT.

Retirees are insulated from the deficit because by law their pensions cannot be reduced (barring bankruptcy) and they are no longer contributing to the plan.

There are about 2,900 active (contributing) faculty and librarians in our RPP. Thus $450,000 of the $2 billion deficit relates to each active faculty and librarian member. ($1.3 billion divided by 2,900).

At a 6.5% interest rate (the current assumed nominal return rate in our RPP), the annual carrying cost for $450,000 is about $29,000.

At present the average annual contribution to our RPP by each of the 2,900 members is about $6,300.

Even if on a go-forward basis the existing deficit is made up on a 2:1 basis (employer: employee), the numbers are daunting. And keep in mind that the deficit payment is still just payment for past service, not for funding one's own current or future retirement.[2]

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[2] A related comment for current plan members: In the face of such a large legacy deficit, a young faculty member starting out at UofT today might seriously want to consider not joining the UofT pension plan. Please note that I am not advising this – only suggesting it be considered. If you do consider it, then be sure to also get independent and informed professional advice.
An alternative option for faculty not yet at the normal retirement age of 65 is to quit their employment at the university, take the pension lump sum (commuted value) out of the plan, and transfer it to a sheltered and individual pension vehicle. However, by quitting UofT one loses access to the UofT health and dental benefits for its retirees. Again be sure to get independent and informed professional advice before you make this irreversible decision.

Question #2 – How did we get to this state?

Prior to 1987: The 1987 mediated pension agreement set in motion the unfortunate chain of events leading up to today. Prior to 1987 the ratio of employer to employee contribution to the pension plan was fixed, by agreement, at about 2.5:1. That is, for every $1.00 contributed by the faculty member, the employer agreed to put in about $2.50. The actuarial assumptions were quite conservative (unlike today) and there was a much more certain surplus[3] in the plan – relative to what was claimed in later years. With the fixed contribution ratio as the driver for funding the pension plan, the cost and risk for underfunding was shared by the employer and employees, as were the benefits of any notional surplus.

From 1987 to today: The 1987 agreement did away with all pre-1987 agreements and replaced the fixed input ratio by a fixed input percentage of salary for employees while the employer or plan sponsor assumed responsibility for fully funding any remaining liability. The 1987 agreement gave the employer unilateral access to any pension surplus, on the understanding that the employer would be responsible for any deficit.

The new agreement was described by the UofT Administration as follows:

> "Under the University of Toronto Pension Plan, the pension promise is funded by both the participants and the University. The participant contributions are determined by a specific formula. **The balance of the cost of funding the pension promise is the sole responsibility of the University. In other words, the University bears the risk of fulfilling that pension promise and must manage that risk prudently**. The pension promise has a very long time horizon. At various times over that time horizon, due to economic and demographic circumstances, the university's funding to meet the pension promise may be quite high – as it was for the period prior to 1987 when the University contributions were 2 -2½ times participant contributions. At other times, the economic and demographic circumstances may result in lower contribution levels, as has been the case since 1987. The pendulum can easily swing either way…. Whatever the funding level, the pension promise does not change." [emphasis added]

Missing contributions and their time value: The following table has been shown before but warrants re-examination. It should also be included in the Administration's pension report. It vividly demonstrates the unfortunate consequences of the plan sponsor also functioning as the plan administrator. The plan sponsor, who has operating budget responsibilities, is arguably in a conflict of interest if they also control (as the official administrator of the pension plan) how much money is or is not put into the pension plan each year or set aside in a reserve account.

Furthermore, the Hewitt chart on page 80 in the report, which purports to show the History of Accrued Liability and Surplus/(Deficit) from 1991 to 2010, is misleading. It fails to fold in the effect of changing the actuarial assumptions over time. It seems to suggest that the 'deficit' problem only arose from events in 2008 and 2009. This is misleading to say the least. The 2008-09 investment losses compounded and laid bare the underlying funding fallacy. The seeds for today's deficit were planted with the contribution holidays that began in 1987, as the following

[3] While the phrase 'much more certain surplus' sounds awkward, it is deliberately used here to remind the reader of the fact that in a defined benefit pension plan any surplus or deficit projections must be questioned. DB pension plan projections are all about assumptions. Implausible assumptions lead to implausible and incorrect conclusions. More plausible assumptions will of course lead to more plausible conclusions.

chart clearly demonstrates. While the 2008-09 market losses are certainly a contributing factor, they should not be used as a cover for earlier failures to manage the plan prudently, nor should they obscure the underlying and dominant reasons for our deficit problem.

Academic Year to July 1	Did the University contribute its share of the annual pension plan service cost?	Cumulative total value of missing $ contributions (with plan rate of return).
1987	Partial pension contribution	$ 16 million
1988	No pension contribution	$ 42 million
1989	No pension contribution	$ 80 million
1990	No pension contribution	$ 113 million
1991	No pension contribution	$ 154 million
1992	Partial pension contribution	$ 182 million
1993	Partial pension contribution	$ 232 million
1994	No pension contribution	$ 279 million
1995	No pension contribution	$ 358 million
1996	No pension contribution	$ 438 million
1997	No pension contribution	$ 569 million
1998	No pension contribution	$ 687 million
1999	No pension contribution	$ 733 million
2000	No pension contribution	$ 895 million
2001	No pension contribution	$ 883 million
2002	No pension contribution	$ 898 million
2003	No pension contribution	$ 938 million
2004	Partial pension contribution	$ 1,089 million
2005	Extra pension contribution	$ 1,194 million
2006	Extra pension contribution	$ 1,258 million
2007	Extra pension contribution	$ 1,493 million

Each year the plan actuary calculates the service cost for one year of pensionable service. The above chart shows the years in which the employer did not put in any contributions and those years when only some portion of the service cost was contributed. The right hand column shows the cumulative value of the missing contributions[4], including the time value, using the actual pension plan investment return percentages. By July 1, 2007 the missing funds had a total value of $1.5 billion. The chart also illustrates the power of negative compounding and how even with extra contributions in 2005-2007, the problem of the missing contributions looms ever larger. This table does not include a smaller sum of missing contributions due to contribution holidays that UTFA negotiated for its members via its compensation settlements with the Administration.

Unfortunately, in the past the annual actuarial reports from Hewitt only highlighted numbers for one year at a time, thereby failing to provide this more informative cumulative and historical perspective. To summarize, 18 years of continuous failure to properly fund our defined benefit plan must have serious consequences, consequences that may be impossible to correct at this stage.

[4] This issue and how it was possible to engineer the contribution holidays is discussed in more detail in the UTFA information reports, titled “Inconvenient Truths” and posted at http://www.utfa.org/content/pension-issues

Recent investment loses and investment expenses via UTAM: These issues have been covered in more detail in prior presentations about UTAM to to Business Board[5].

Page 77 in the report shows that the market value of the U of T's investment assets decreased by about $0.8 billion from July 1, 2008 to July 1, 2009 and failed to recover significantly by July 1, 2010. The 2009-10 investment return was 8.2%. Bear in mind that this 8.2% is the return on $2 billion of assets – not the $3 billion that was there two years ago or the full $4 billion in assets that should be there. Obviously the missing $2 billion in assets does not earn any return. This is the losing dilemma of a diminished asset base.

Page 113 in the report shows fees and expenses totaling $24 million and $28 million in 2010 and 2009 respectively. Prior to 1998 the corresponding cost was about $2 million per year.

Failure of appropriate oversight by the pension plan sponsor: My views are of course reflected in the above statements and I leave it to the reader to judge the quality of the oversight record.

Question #3 – Is the UofT pension plan still viable in the long term? or is it fatally wounded, like the Titanic after it hit the iceberg?

There are two distinct funding issues in defined benefit pension plans like ours, and they must be considered separately. One is the annual service cost for the current year of pensionable service. The other is the deficit or monies owing for past service. This deficit is all about the past. This shortfall is caused by contribution holidays and investment returns that were less than the actuarial assumptions.

(i) Given the current actuarial assumptions in our RPP, the payment for the current year service cost, and only that cost, does not appear to be a major issue in our plan. To illustrate, page 81 in the report shows the total annual current service cost as $114.821 million, with $37.55 million of that coming from the employees and $77.666 million coming from the employer. The ratio of the service costs is 2.09 – not that different from what it has been over the past 30 years. But, as noted on page 34, if the real return (above inflation) assumption was lowered to 2.00%, from the current 4.00%, the total annual service cost would double.

(ii) The second funding issue poses a more serious problem: How does one fund the outstanding deficit of approximately $2 billion – monies that are owing to pension plan members but not covered by assets? Or is it even possible to fund this large sum over some reasonable amortization period? Perhaps we are already past the tipping point where any conventional correction is possible. Perhaps it is only a matter of time before our pension ship slowly but surely goes under. This demise is gradual because the outflow of funds in a DB plan is normally limited to the annual sum of pension payments[6]; it is not prone to everyone asking for all their funds at one time, as was the undoing of the Madoff Ponzi scheme.

[5] The reader can find numerous links relating to UTAM at http://www.utfa.org/content/pension-issues
[6] In 2008-09 the pension payment to retirees totaled $127.6 million. At this outflow rate a $2 billion fund can stay afloat for some time – even though it has a terminal problem.

What are the amortization numbers on a $2 billion deficit? This is not an area where I can claim any experience but let's assume that the $2 billion must be repaid over 30 years, at a carrying interest rate of 6.5% (the assumed return rate of our RPP) and constant annual payments. This resulting annual amortization payment to the pension plan amounts to about $153 million each year for 30 years. If one uses a shorter amortization time period, like 10 years or 20 years, the annual sum will of course be much larger.

What is the total annual cost if one also assumes the more conservative interest assumptions (as was the case prior to 1987)? If one was to reduce the assumed pension plan real return rate to 2.00% (above inflation), the new annual service cost increases to $181 million (page 34). Adding the $181 million to the above deficit repayment of $153 million result in a total annual pension payment of $334 million. This is about three times the current annual service cost of $114 million.

Could UofT employees and employer find the means to triple their annual contribution rates? I doubt that this feasible or possible. There would be very serious consequences in that salaries would have to be reduced, staff let go, while at the same time the individual pension contribution rates of those remaining in the plan would need to go higher still.

Thus I would wager that we have already struck the fateful iceberg.

There is still time, however, to commission an independent audit and assessment to confirm or qualify this prognosis.

Concluding thought:

" In the end, Reality trumps Perception every time.[7]"

[7] A slight variation of a quote by Richard Feynman (1918-1988), a great physicist, who was involved in the investigation of the space shuttle Challenger disaster in the 1980s. More quotes by and about Feynman can be viewed at http://en.wikiquote.org/wiki/Richard_Feynman