



University of Toronto Faculty Association
720 Spadina Avenue, Suite 419
Toronto, Ontario M5S 2T9
Telephone: (416) 978-3351
Fax: (416) 978-7061
E-mail: faculty@utfa.org
Website: www.utfa.org

Date: May 24, 2012
To: UTFA Council members and general UTFA members
From: George Luste, President, University of Toronto Faculty Association (UTFA)

Re: Serious Pension & UofT Matters – via four brief backgrounds

The following four attachments are not explained or discussed in full here, but could be helpful for the reader. These could be discussed at the Council if there is interest and time this week or later in June.

(i) Economist: - “Stuck in the middle. How low real interest rates hurt pension funds.”

Please read the two-page attachments from the Economist May 12, 2012, and the following quotes:

“a policy that (governments) transfers wealth from savers to borrowers.”

and

To earn the equivalent of a DB pension worth half their final pay-cheque, they or their employer would have to contribute 55% of their salary. That might sound a tall order. But funnily enough, the Bank of England contributes 56.4% of its payroll to its DB scheme, which is almost entirely invested in inflation-linked bonds.

(ii) Aon-Hewitt 2010-11 UofT actuarial report, page 19 pension assets and liabilities

The next two pages, the covered Aon-Hewitt plus the page 19 and its commentators.

To round numbers, as of January 1, 2012, the total wind-up pension liability is about twice the market value of assets in hand. There are about \$4.8 billion in total wind-up liability – but only about \$2.5 billion in assets.

The total liability covers both groups – the retirees who are now receiving a promised pension – and the activist who are still contributing. The assets are about enough to cover the retired participants – but this leaves very minimal assets to cover the active participants.

If one looks at the 3,000 active faculty currently, the above numbers suggest there are a shortfall of about \$450,000 to \$500,000 for each of the 3,000 of the faculty who are not retired and contributing input. The serious question: - where there will be a pension in place in the years ahead?

(iii) Malcom Hamilton presentation – “Dead Ends or New Roads for DB?” - almost 5 pages of text attached.

Malcolm Hamilton is one the most articulate and respected Canadian actuaries.

This complete presentation is worth reading and considering carefully – like the words:

“Rules of thumb. Everything works for young plans because the major thing in a young plan isn't what's happened so far is what the actuary assumes happens later. Actuaries have great power for young plans. Also everything works in bull markets. It's well known in the investment community that you can't distinguish the harebrained scheme from the good scheme in a bull market because all the hare-brained schemes work in a bull market. It's only when you get to bear markets, it's only when you have mature pension plans that you find out what works and what doesn't. “

(iv) George Luste hypothetical RRSP or Defined Contribution market return over 40 years.

The last two page pages show the RRSP total return, after 40 years, by 2011 – between the least \$2.6 million and the maximum \$3.5 million as shown via five possible investment indexes for an individual.

Over the 40 years the faculty member (like myself) could have contributed about 15.3% of salary between 1971 and 2011 to the RRSP – to realize the above \$2.6 million and \$3.5 million end value.

<http://www.economist.com/node/21554199> (website)

The Economist - and the Buttonwood report

Stuck in the middle

How low real interest rates hurt pension funds

May 5th 2012 | from the print edition



“DON’T save,” say the governments of rich countries as they worry about demand in economies that are hovering between sluggish recovery and recession. Their injunctions are aided and abetted by central banks, which are keeping interest rates negative in real terms (ie, after inflation), a policy that transfers wealth from savers to borrowers.

“Save,” say those same governments as they contemplate the ageing of their populations and the potential strain on the public purse. As encouragement, they offer tax breaks to those who put money aside to fund their retirement.

In this section

Pension funds are caught in the middle of these contradictory messages, and they are suffering. In Britain the Pensions Regulator, which oversees corporate schemes, recently relaxed its guidelines to help funds that are heavily in deficit.

The same policies that have forced down government-bond yields have forced up the cost of providing pensions. Offering a pension is like incurring a debt, since it involves the promise of a series of future payments. When pension funds calculate the value of their liabilities, they therefore use a bond yield to discount future payments. As bond yields fall, the liabilities rise.

This is not just a theoretical issue. It is possible for British companies to offload their pension liabilities to an insurance company. The insurance company largely funds such pensions by buying government bonds. So getting rid of the pension promise has become more expensive.

There are some positive effects from lower interest rates, of course. Firms enjoy reduced financing costs on their other debts, freeing up cash that they can devote to the pension fund. As John Ralfe, a pensions consultant, points out, if companies have matched their liabilities by buying inflation-linked government bonds, they are hedged. And for those funds that still have lots of money in equities, low rates have propped up the stockmarket, boosting the asset side of the equation.

Nevertheless, many pension funds are running fast simply to stay in the same place. According to Mercer, a consultancy, the combined deficit of FTSE 350 companies increased by £17 billion (\$27 billion) in the year to March 31st, even though businesses paid in £20 billion of contributions.

In these conditions a degree of flexibility on the part of the Pensions Regulator is understandable. Companies will be allowed a longer grace period to make up their deficits. Otherwise, a sharp rise in contributions might cause businesses to shed jobs, or even to go bust. But such forbearance does carry a risk. If companies were to go bust, their deficits would be larger than they otherwise would have been. That would mean bigger losses for the Pensions Protection Fund, a corporate-funded pot which underwrites the sector.

The wounds to pension funds may simply be collateral damage from policies designed to revive the entire economy. Central banks argue that pensioners would suffer along with everyone else if economies were plunged into endless recession. But as yet the low-real-rates policy has not been quite as effective as its supporters hoped. Households may have been discouraged from saving (the latest figure for America is just 3.8% of income), but businesses are still hoarding cash rather than investing in new factories and creating jobs.

Meanwhile, a longer-term problem is being stored up. Many companies have abandoned final-salary or defined-benefit (DB) pensions for new staff and switched to defined-contribution (DC) schemes, in large part because of the high cost of the former. These place the investment risk firmly on the employee.

Low real interest rates imply that workers should save a bigger sum for their old age in order to generate their desired income. But currently payments into British DC schemes, from both employer and employee, are just 8.9% of salary (the American contribution numbers are similar). According to the Pensions Corporation, another consultancy, a 35-year-old who funds a DC scheme at such a level will retire on just 8% of his final salary if interest rates are low. To earn the equivalent of a DB pension worth half their final pay-cheque, they or their employer would have to contribute 55% of their salary.

That might sound a tall order. But funnily enough, the Bank of England contributes 56.4% of its payroll to its DB scheme, which is almost entirely invested in inflation-linked bonds. It is a nice irony that the bank, which has done so much to discourage saving, is one of the most prudent savers of all.

Actuarial Report

University of Toronto

University of Toronto Pension Plan

As of July 1, 2011

Assets and Liabilities (continued)

ONLY PAGE 19 RESULTS

Solvency and Hypothetical Wind-Up Valuation Results

(Thousands of Dollars)	Solvency Valuation	Hypothetical Wind-Up Valuation
(1) <u>Market Value of Assets</u> ≈	\$ 2,486,272	\$ 2,486,272
(2) Less: Estimated Wind-Up Expenses	1,000	1,000
(3) Assets Net of Wind-Up Expenses	\$ 2,485,272	\$ 2,485,272
(4) <u>Solvency/Wind-Up Liability</u>		
<u>Active and Disabled Participants</u>	\$ 1,776,866	\$ 2,529,669
<u>Retired Participants</u>	1,607,354	2,025,723
Terminated Vested Participants	106,059	192,631
Suspended, Exempt or Pending Status	6,529	6,529
Total	\$ 3,496,808	\$ 4,754,552
(5) Surplus/(<u>Deficiency</u>), (3) - (4)	\$ (1,011,536)	\$ (2,269,280)
(6) Solvency Ratio, (1)/(4)	0.71	N/A
(7) Transfer Ratio, (1)/(4)	N/A	0.52

As provided under the Regulations to the *Pension Benefits Act* (Ontario), the Solvency Liability excludes the liabilities associated with escalated adjustments (future indexing). Reflecting future escalated adjustments in the Hypothetical Wind-Up Valuation increases the liabilities by \$1,257,744,000.

The assumptions used to determine the Solvency Liability are summarized on page 52 of this report. Note that the interest rates-with escalated adjustments reflect the value of future indexation of pensions during both the preretirement and postretirement periods.

In our opinion, the value of Plan assets, less a reasonable allowance for wind-up expenses, would be less than the actuarial liabilities (including escalated adjustments) by \$2,269,280,000 if the Plan were wound-up on the valuation date, assuming that there is a competitive market for inflation-indexed annuities, or that a reasonable fixed rate of indexation could be substituted for inflation-linked indexation to facilitate annuity purchases.

The Transfer Ratio as of January 1, 2012 is 0.45. ← LESS 6 MONTHS AFTER JULY 1, 2011

⇒ SUGGEST THAT IF RETIRED PENSIONS 100% COVER THEN ACTIVE PENSION MEMBERS HAVE ZERO FOR THEM IN THE RPP

Malcolm Hamilton's presentation at Benefits Canada Conference, on April 23, 2012.

George Luste received these rough notes from a friend. I find a similar report on the website at <http://www.investmentreview.com/expert-opinion/the-trouble-with-pensions-5895>

Dead Ends or New Roads for DB?
The evolution of actuarial thinking

One of the most captivating presentations at Benefits Canada annual Pensions and Benefits Summit in April was given by Malcolm Hamilton, a member of CIR's editorial board, and a Principal with Mercer Human Resource Consulting Limited. It was a session not to be missed. Herewith, some excerpts

Malcolm Hamilton

40 years I was in graduate school I was studying probability and statistics then I decided to become an actuary and as one does when one spends a lot of time getting educated, when I became an actuary I was looking for where I was going to apply my probability and statistics, so I glommed on in the 1980s to asset and liability modelling and it was, of all the work I ever did in my consulting career. I suppose it was the thing that I enjoyed most because it was very complicated, you had to develop programs and it was hard to communicate, you could just see the awe on the face of the audience as you would present all of these graphs which had no obvious conclusion. So I've always felt very close to asset-liability modelling and risk management.

But I noticed early on that all the studies ended with the same conclusion: that it would be roughly 60/40 for no apparent reason. And this sort of undercut the perceived value of the work. And I eventually came to realize it was because actuaries were so excited about getting into the modelling that there are two questions that you really should ask before you start managing somebody's risk. You should ask, before you do the modelling, not after. The first question is whose risk are you managing. The second question is why are they taking risk.

Unfortunately in pensions, anybody in the room who thinks they have really good answers to those two questions probably just hasn't thought about the questions for long enough. There is no obvious answer.

Now why is that? When I started consulting in the late 1970s, if I went a decade before even I started consulting, you had the economists: these are economists Nobel Laureate calibre economists, wrestling with the lifecycle retirement savings problem. Basically, the lifecycle model was: here you have individuals, they work for a period of time and then they retire, They have employment income while they're working and they don't have any income while they're retired, unless they save money during their working years, invest the money and draw the savings down to support themselves in retirement. The questions that the economists were driving towards an answer to, were, basically given that, how much should people save, when should they save, how should they invest the money and how do their investments change with the passage of time. That was basically the holy grail of personal financial planning,

It turned out, unfortunately, that there was no easy solution. They had to stumble into something called dynamic programming, which basically means that in order to practically solve the problem for any particular Canadian saving for retirement., you have to first sit the Canadian down and talk to them about the shape of their utility curve, this is a painful discussion that lasts a very long time and doesn't reach any conclusion but if you could push through that most daunting aspect of the study and then you

sort of have to deal with the second thing which people don't seem to be able to cope with and that's exactly how to trade off risk and return, what they're preferences, given all things available to them. So the bottom line is that there were lots of useful insights that came it and those of you familiar with target-date funds the glide path of the asset mix is largely a product of dynamic programming, it largely comes from lifecycle models. So useful insights came from this, but it turned out to be not a terribly practical way for people to save for retirement.

Then economists turned their attention to defined benefit plans, which were fairly abundant at that time, especially for large employers. And they said how should we deal with the investments of defined benefit plans? And the interesting thing here is that the actuaries had already gotten to that question and unfortunately they probably got it wrong. The economists came along later and looked at it and then they said you're really, if a defined benefit plan means guaranteed benefits, then the cost of the benefit that you're promising to the employees is really a riskless benefit. It doesn't depend on any way on whether you fund the benefit or how you invest the pension fund. You are just basically offering annuities and they have values and you can estimate those values without knowing how you're funded, how well you're funded and what your business is or how you plan to invest in pension funds. So their conclusion was that the defined benefit plan was really two different things. There's a promise that employers make to employees to pay guaranteed things. That's easily be priced. And then there's this second exercise which is more bewildering, which is legal requirements, how the money gets assigned, how the money gets invested, the gains and losses seem to largely accrue to shareholders, so how should that be invested. That really doesn't have any thing to do with retirement savings? It has to do with where shareholders are told by management that the company has to set aside a pot of money in trust

The first conclusion of the economists was that the share holders don't care. It's just a pot of money. You can take risk or not take risk. If you take risk, shareholders will expect to get better returns because they expect to get better returns when they take risk. If you don't take risk, they'll be content with lower returns because whatever you as a corporation do, however much risk you decide to take or not to take, your shareholders can largely undo that by changing their own portfolio.

That was the first go-around and then the economists later said you know, we've thought about this a little more and we actually think there's a tax arbitrage argument that says frankly the shareholder doesn't want you taking any risk in the pension fund because it's a tax shelter and you maximize the value of the tax shelter by investing entirely in fixed income investments. They went down that road; it was 1980 that Fisher Black wrote that paper. That paper still sits there I think as one of the great accomplishments of financial economics. It's never been, to the best of my knowledge, refuted.

What we're seeing today is that we're finally catching up with the 1980 insight. Now why did it take so long? It took that long because actuaries had got to the road earlier and viewed it very differently. Actuaries said basically these DB plans are the collective retirement savings of a whole bunch of people so we should look at it almost like the lifecycle savings model except that we have a collective fund representing the collective retirement savings of all of these people and the collective is different than the individuals because the individuals grow old. That's why it's called the lifecycle: things change as you grow old. A DB plan is there forever, so a DB plan is forever young and has an infinite horizon and is a sophisticated investor. In essence, it took the lifecycle model and said if you put in ageless individual who live forever, how will the model work and the answer was you basically increase your expected return by taking on risk. The actuaries looked at that if we can increase the expected return, we can set less money aside so we're reducing the cost of the pension by taking risk. Better still, since we

have an infinite horizon, if we just ignore what's going on in the short-term and rely on the randomness to average out over our very long investment period, we can pretty much ignore the risk. That, believe it or not, was pretty much the way DB plan investment started. It was very lucrative to take risk because you assumed you were getting a pleasant risk premium without really having to bear the risk. The actuaries could deal with the risk by ignoring it or smoothing it or amortizing it. The plans in the early days were small, the fund did pretty well – nobody asked any questions; it's not as if it was on the balance sheet. Nobody paid any attention. So basically the whole thing started down that road. It didn't work. It took a long time not to work.

Rules of thumb. Everything works for young plans because the major thing in a young plan isn't what's happened so far is what the actuary assumes happens later. Actuaries have great power for young plans. Also everything works in bull markets. It's well known in the investment community that you can't distinguish the harebrained scheme from the good scheme in a bull market because all the hare-brained schemes work in a bull market. It's only when you get to bear markets, it's only when you have mature pension plans that you find out what works and what doesn't.

So this very simple model that we have for DB plans didn't work in several respects. The first was the plans, notwithstanding the fact that they were going to be around forever matured, which means that they turned old, not quite individuals, but sort of like individuals. Having a plan today that's 50 years old, when you now have a mature workforce and an army of retired people, running that plan is not the same as running that plan when you came out of the gate and you didn't have any retired people and your active people had few years of service. So the plans matured. There really should have been a lifecycle there, we just didn't know enough to build it in and it becomes very visible when you get into an environment like today: low interest rates, volatile stock markets, high levels of economic uncertainty, big pension funds you just can't help avoid noticing that the investment risk here is significant. Even for larger employers, even the auto companies, the steel companies, the airline companies, the pulp and paper companies, we have long lists of whole industries that when they got to the end-game, found these risks couldn't just be ignored. And they could just be played down. You actually had to live with a very sizable risk that complicates your life.

That part didn't work out and the other part that didn't work out is therefore the ... it wasn't good enough that a fund did well in the long run, the fund actually had to do well in the medium term and the fund had to be relied upon do well in the medium term.

To make a very long story short, we find ourselves today with ...we're in a very different state than we thought where we would be in in the 1980s. One of the things that is sort of pushing this to a conclusion right now are changes in accounting standards. In the early days, the accounting profession stumbled upon this problem after the actuaries and after the economists. They came along more or less in the mid-to-late 1980s. They said we've got all of these corporations sponsoring pension plans that are off balance sheet. They're basically a pay as you accounting charge for the contribution, the contribution is highly manipulated by the actuary, it's not at all comparable from company to company, what we're we going to do about this. They went and talked to everyone they could find and the economists said here's the road you need to run down. The actuaries said here's the road you need to run down. They two roads were very different and the economists said let's go up the middle. So what we ended up with was an accounting system that had a lot of attributes of the actuarial system.

The accounting system basically told corporations that if you take risk you can tell your shareholders that your pension is less expensive and you don't have to tell them, by the way, that the risk is higher. You don't have to tell them that they're not being compensated for bearing that risk. You just have to

tell them that you're making that pension plan less expensive. With the passage of time in the private sector, the accountants have eventually concluded with the economists have it right. They're moving international accounting standards, eventually they will move financial accounting standards in the U.S. We will get to the place where the economists were circa 1980 said we should be, which is that the cost of your pension, if it's legitimately a DB pension plan, the cost of your pension plan does not depend on how you invest the pension fund, to all intents and purposes. There is no great advantage to taking risk and frankly there are bunch of drawbacks and other types of disadvantages to taking risk with pension funds.

You can see what's happening in the private sector as the private sector gets closer and closer to that standard, in particular with interest rates low, they are now confronted unavoidably with the very high cost of guaranteed pensions in a low interest rate environment. They're looking at that and they're doing exactly what they should do. They're looking at that and saying, you know, guaranteed pensions cost a fortune. We don't think employees would pay for it. If it would cost 30% of pay. Giving employees a guaranteed pension, do you think they would voluntarily pay the 30%? Do we roll the salary back by 30% and say don't worry about the rollback because you have a guaranteed pension. And the conclusion, I think rightfully, is the cost of pensions today, DB pensions, properly priced, is more than what employees would voluntarily pay for them.

At that point, in the private sector, they say well that's not an effective compensation element. You can't go to the board and say we're going to offer employees something very expensive, that the employees think is something worth half as much as it would cost us. The board will not rise and cheer, they will just ask a very pointed question in the presentation: why on earth would any sane corporation do that. The private sector, I think, is moving off in a DC direction.

The public sector, basically has the oldest-known accounting standards. That's basically the pure actuarial model. Risk is completely ignored. You can make your plan inexpensive by taking huge risks. You can make your plan inexpensive by leveraging up your risks and they're moving off in a very different direction. In the final analysis, I think that private sector accounting has got it right; I think public sector accounting standard has got it wrong. It probably isn't going to get fixed in my lifetime but it is probably the best explanation I can find at this point in time for why these two sectors are marching on in very different directions with their DB plans.

Where does this go? I don't want to leave you with the impression that risk management isn't important. It's very important in the DC plans. It's very important for us to have good target-date funds. It's very important for us to think about how individuals through their life should manage their risk.

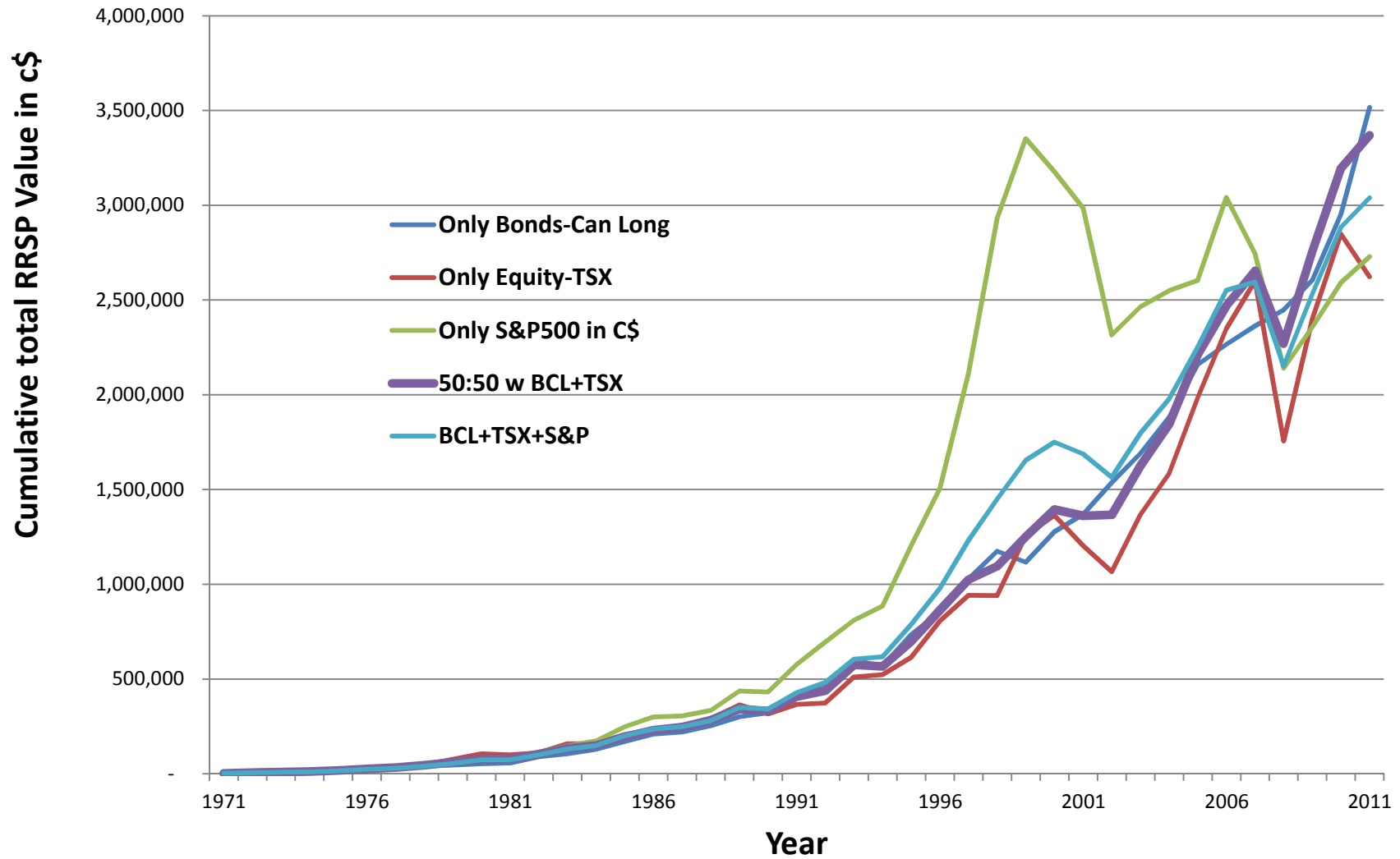
It will, I think, be very important not for DB plans, but also for what I suspect will be the successor of the DB plans, which is the target-benefit plan. The advantage of the target benefit plan – the target benefit plan is basically it looks like a DB plan, but the message to each of the members is different. It isn't: this is your guaranteed pension and you get it no matter what, the message to members is this is the pension we would like to deliver and we will deliver it as long as we can get returns on this order of magnitude. But if we can't get the returns for a period of time, whether because interest rates are low or stock markets do badly, then we're going to reserve the right to reduce the pensions and we won't reduce them permanently, it's not for all time, we just reduce them for the time the plan is underfunded and if things return to normal, if interest rates go up, if stock markets improve then pensions will go back to where they were, perhaps even more.

The target benefit is basically exactly like the DB benefit, without the guarantee. Interestingly, if you

could get DB plans to target benefit, you would frankly be exactly where actuaries were pricing the benefit to be. You're basically, what I think here is going to happen with the passage of time, is we're to make the benefit fit the investment policy that makes sense for retired people, rather than have this artificial guaranteed benefit that tries to support high-risk investments. At the end of the day, we can't afford retirement in this kind of a world without taking investment risk. So if the risk has got to be taken, it has got to be taken, we can't pretend anymore that you can just finesse it and it will go away if you ignore it. If it is going to be taken, it has to be borne, and properly it should be borne by the individuals, the members of the pension plan, not by shareholders. Ask the shareholders to bear it and they will say: pay me for it. If you want me to take risk I can take this risk myself, I can compensate when I take it for myself. If you want me to take it, I need to be compensated for it. The members don't want to pay that compensation. They'd like the guarantee for free, they don't want the guarantee at market value, the easiest way to resolve that is that the members need to take the risk.

I think that's where some of the Ontario plans are headed, I think that's where the plans in the Netherlands... other governments are headed I think it's ultimately where we need to be and that makes all these risk management strategies relevant again. Because now you are managing the collective, whether it be DB or Dc managing the collective retirement savings of a bunch of people. They want good returns, because that gives them better pensions. They want low risk, because that gives them secure pensions. There's a trade-off there and it has to be made and they have to make it and that's as it should be.

**1971<=>2011, 40 years of pension accumulation via an RRSP -
or a Defined Contribution (DC) pensionl account -
via five simple different indexes (bond and or equities), in Canadian funds**



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1																		
2																		
3		Annual	Annual		Annual	Annual	Annual		Annual	Bonds	Equity	Equity		Prof	Prof	Prof	Prof	Prof
4		RRSP	RRSP		Prof	Prof Input	Prof Input		Canadian	Long	TSX	S&P500		Tot RRSP \$	Tot RRSP \$	Tot RRSP \$	Tot RRSP \$	Tot RRSP \$
5	Year	limit %	limit \$		Salary \$	RRSP \$	RRSP %		Inflation	Canadian	Composite	in Can\$		w B-LC	w TSX	w S&P	w TSX+BLC	w TSX+S&P+BLC
6		A	B		C	D	E		F	G	H	I		J	K	L	M	N
7														Value				
8	1971	20%	2,500		13,000	2,500	19%		5.0%	14.8%	8.0%	13.2%		2,870	2,700	2,830	2,785	2,800
9	1972	20%	4,000		13,910	2,782	20%		5.1%	8.1%	27.4%	18.2%		6,110	6,984	6,633	6,555	6,248
10	1973	20%	4,000		15,482	3,096	20%		9.4%	2.0%	0.3%	-14.7%		9,390	10,111	8,299	9,763	8,656
11	1974	20%	4,000		17,680	3,536	20%		12.3%	-4.7%	-25.9%	-26.8%		12,319	10,112	8,664	11,264	9,503
12	1975	20%	4,000		19,696	3,939	20%		9.5%	8.0%	18.5%	40.7%		17,559	16,651	17,732	17,217	15,958
13	1976	20%	5,500		21,212	4,242	20%		5.8%	23.6%	11.0%	23.0%		26,946	23,192	27,029	25,172	23,715
14	1977	20%	5,500		23,631	4,726	20%		9.5%	9.2%	10.7%	0.7%		34,586	30,905	31,977	32,874	29,874
15	1978	20%	5,500		26,065	5,213	20%		8.4%	4.1%	29.7%	15.5%		41,431	46,845	42,954	44,523	40,282
16	1979	20%	5,500		29,114	5,500	19%		9.8%	-2.8%	44.8%	16.8%		45,617	75,795	56,595	60,528	54,406
17	1980	20%	5,500		32,899	5,500	17%		11.1%	2.1%	30.1%	35.5%		52,190	105,765	84,138	76,658	73,418
18	1981	20%	5,500		37,538	5,500	15%		12.2%	-2.1%	-10.2%	-5.6%		56,479	99,916	84,619	77,106	74,202
19	1982	20%	5,500		41,704	5,500	13%		9.2%	46.0%	5.5%	26.0%		90,489	111,214	113,550	103,877	100,281
20	1983	20%	5,500		44,415	5,500	12%		4.6%	9.6%	35.5%	24.0%		105,204	158,148	147,622	134,041	130,133
21	1984	20%	5,500		46,902	5,500	12%		3.7%	16.9%	-2.4%	12.9%		129,413	159,720	172,874	149,658	148,006
22	1985	20%	5,500		49,857	5,500	11%		4.4%	26.7%	25.1%	39.4%		170,934	206,690	248,654	195,343	200,152
23	1986	20%	7,500		52,899	7,500	14%		4.2%	17.2%	9.0%	17.2%		209,125	233,467	300,212	229,416	235,379
24	1987	20%	7,500		56,125	7,500	13%		4.2%	1.8%	5.9%	-0.9%		220,524	255,184	304,943	246,037	248,360
25	1988	20%	7,500		59,437	7,500	13%		4.0%	11.3%	11.1%	7.0%		253,791	291,842	334,314	281,933	280,906
26	1989	20%	7,500		63,657	7,500	12%		5.2%	15.1%	21.4%	27.8%		300,746	363,402	436,838	342,255	350,186
27	1990	20%	7,500		68,049	7,500	11%		5.0%	4.3%	-14.8%	-2.9%		321,501	316,008	431,452	331,393	341,675
28	1991	18%	11,500		71,928	11,500	16%		3.8%	25.3%	12.0%	29.9%		417,250	366,809	575,395	406,842	427,347
29	1992	18%	11,500		74,805	11,500	15%		2.1%	11.6%	-1.4%	18.4%		478,485	373,013	694,883	439,678	480,636
30	1993	18%	12,500		77,498	12,500	16%		1.7%	22.1%	32.5%	14.5%		599,493	510,805	809,954	575,622	605,431
31	1994	18%	13,500		79,125	13,500	17%		0.2%	-7.4%	-0.2%	7.5%		567,631	523,256	885,213	566,736	617,663
32	1995	18%	13,500		82,053	13,500	16%		1.8%	26.3%	14.5%	33.9%		733,969	614,586	1,203,377	698,604	788,244
33	1996	18%	13,500		85,417	13,500	16%		2.2%	14.2%	28.3%	23.6%		853,609	805,834	1,504,059	863,426	978,297
34	1997	18%	13,500		87,638	13,500	15%		0.7%	18.5%	15.0%	39.2%		1,027,524	942,234	2,112,443	1,023,811	1,232,019
35	1998	18%	13,500		90,180	13,500	15%		1.0%	12.8%	-1.6%	37.8%		1,174,275	940,442	2,929,549	1,095,400	1,448,809
36	1999	18%	13,500		94,238	13,500	14%		2.6%	-6.0%	31.7%	13.9%		1,116,509	1,256,342	3,352,133	1,251,394	1,655,168
37	2000	18%	13,500		99,044	13,500	14%		3.2%	13.0%	7.4%	-5.6%		1,276,910	1,363,810	3,177,158	1,393,913	1,750,814
38	2001	18%	13,500		101,619	13,500	13%		0.7%	6.1%	-12.6%	-6.4%		1,369,125	1,203,769	2,986,455	1,361,672	1,688,280
39	2002	18%	13,500		107,513	13,500	13%		3.9%	11.1%	-12.4%	-22.8%		1,536,096	1,066,328	2,315,966	1,366,234	1,564,914
40	2003	18%	13,500		111,706	13,500	12%		2.0%	9.1%	26.7%	5.8%		1,690,610	1,368,142	2,464,575	1,626,706	1,797,107
41	2004	18%	14,500		116,174	14,500	12%		2.1%	10.3%	14.5%	2.8%		1,880,736	1,583,125	2,548,489	1,844,716	1,976,985
42	2005	18%	16,500		120,937	16,500	14%		2.2%	13.8%	24.1%	1.5%		2,159,055	1,985,135	2,603,464	2,213,916	2,252,808
43	2006	18%	18,000		125,170	18,000	14%		1.6%	4.1%	17.3%	16.0%		2,266,314	2,349,677	3,040,898	2,470,731	2,551,960
44	2007	18%	19,000		130,552	19,000	15%		2.4%	3.4%	9.8%	-10.3%		2,363,014	2,600,807	2,744,728	2,654,053	2,594,544
45	2008	18%	20,000		134,599	20,000	15%		1.2%	2.7%	-33.0%	-22.6%		2,447,356	1,755,941	2,139,900	2,268,934	2,152,474
46	2009	18%	21,000		138,907	21,000	15%		1.3%	5.5%	35.1%	9.1%		2,604,115	2,400,647	2,357,542	2,754,791	2,532,127
47	2010	18%	22,000		144,880	22,000	15%		2.4%	12.5%	17.6%	8.9%		2,954,380	2,849,033	2,591,321	3,194,698	2,884,745
48	2011	18%	23,000		150,964	23,000	15%		2.3%	18.1%	-8.7%	4.4%		3,516,286	2,622,166	2,729,351	3,368,930	3,040,151
49																		
50	AVG	19.0%					15.3%		4.5%	10.7%	12.2%	11.4%						