Teachers' Pension Plan Board
Ontario

REPORT ON FUNDING

April 2002

This is a report on the financial health of the Teachers' pension plan and on the progress of the development of a funding management policy.

The responsibility to ensure a defined benefit pension plan is fully funded lies with the sponsor of the plan, usually the employer. In the case of the Teachers' pension plan, however, there are two sponsors: the Ontario government and the Ontario Teachers' Federation, representing the plan members.

The co-sponsors negotiate the use of surplus and, when there is a deficiency, they both make additional contributions to ensure the plan is fully funded within a specified time period.

To assess the financial health of the plan, we hire an independent actuary to conduct a valuation at least once every three years. This valuation determines if the plan has a funding surplus or deficit.

Funding Valuation Results

On January 1, 2002, the Teachers' pension plan had a funding surplus of $1.9 billion, including a $3-billion smoothing adjustment. Without smoothing, the plan had a $1.1-billion deficit.

($ billions) (at January 1)	**02**	01	00	99	98	96	93**
Net assets	**$ 69.5**	73.1	68.3	59.1	54.5	40.1	29.4
Smoothing	**3.0**	(4.3)	(7.3)	(5.1)	(6.0)	(1.8)	---
Value of assets	**72.5**	68.8	61.0	54.0	48.5	38.3	29.4
Future contributions	**13.7**	14.4	13.4	12.0	12.6	14.5	14.3
Special payments*	---	---	---	3.7	8.5	8.4	8.4
Actuarial assets	**86.2**	83.2	74.4	69.7	69.6	61.2	52.1
Future accrued benefits	**84.3**	76.4	69.8	66.2	62.8	60.5	50.6
Surplus (deficit)	**$ 1.9**	6.8	4.6	3.5	6.8	0.7	1.5

* Payments committed by the government toward the pre-1990 unfunded liability

** Valuation dates determined by co-sponsors

Assumptions

Valuations use many estimates, or assumptions. Among them are: how long will a teacher teach? What will inflation be in the future? What salary increases are teachers likely to receive? How long will the average teacher live?

These assumptions are used to estimate the value of the future benefits owed to teachers. In addition, an assumption of the long-term rate of return is used to determine if today's assets plus future contributions will be sufficient to pay promised pensions.

Valuation Assumptions

(percent)	2002	2001
Discount rate	6.30	6.25
Salary escalation rate	2.90	3.20
Inflation rate	1.90	2.20

The discount rate is the long-term market rate of return used to determine the present value of all future pension benefits and assets.

The assumptions are intended to be accurate over a long horizon. While actual experience mirrors some assumptions closely, annual equity returns fluctuate greatly compared to our assumption (6% plus inflation).

It would be impractical to adjust contribution rates frequently because of investment swings. So, to reduce short-term fluctuations in the funding surplus, equity returns compared to our long-term assumptions are 'smoothed.'

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Understanding Smoothing

Gains and losses from equities are smoothed over five years, a practice accepted by the actuarial profession and pension regulators.

Smoothing defers gains when actual equity returns exceed the 6% plus inflation assumption. On the other hand, when returns are below the assumption, smoothing defers losses (as is the case this year). This practice is simply used to soften the impact of annual volatility in equity markets.

How Smoothing is Calculated

($ billions)

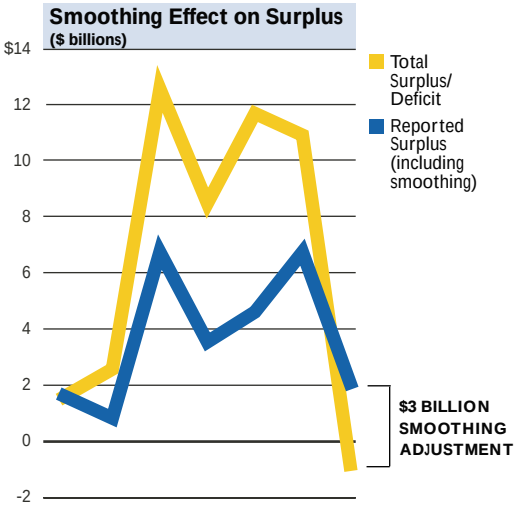
Year	Gain/ (loss)	to be recognized in 2006	2005	2004	2003	Held back in 2002
1997	$3.5					
1998	$1.3				0.3	**0.3**
1999	$6.7			1.34	1.34	**2.7**
2000	($1.2)		(0.24)	(0.24)	(0.24)	**(0.7)**
2001	($6.6)	(1.32)	(1.32)	(1.32)	(1.32)	**(5.3)**
Smoothing						**(3.0)**

Each year, we recognize 20% of equity gains or losses. Smoothing consists of the remaining portions that will be recognized in the future. For the last two years, equity returns have fallen short of our assumption, causing losses held back by smoothing.

At its peak, smoothing held $7.3 billion in reserve. In 2002, smoothing increased actuarial assets by $3 billion to show a $1.9 billion surplus, instead of a $1.1 billion deficit.

However, smoothing is only capable of absorbing short-term fluctuations in returns and will not sustain a funding surplus in a long period of poor market performance.

The funding surplus is the more important number for plan members. It is used to determine benefit improvements or changes to the contribution rate.



Without the $3-billion smoothing adjustment, the plan would have had a funding deficiency of $1.1-billion this year. We are concerned about the downward trend.

Comparing Valuations

We also report a financial valuation in our annual report. The two surpluses are different because the funding surplus includes two projections: future contributions and future benefits for all current teachers.

Comparing the valuations shows a $5.1-billion difference. In other words, there is a $5.1-billion cost to provide future benefits for plan members that are not funded by the current contribution rate. We expect this gap to grow as new teachers enter the plan.

($ billions)	Financial (at Dec. 31/01)	Funding (at Jan. 1/02)
Net assets	$ 69.5	$ 69.5
Smoothing adjustment	3.0	3.0
Future contributions	---	13.7
Actuarial assets	72.5	86.2
Accrued benefits	65.5	65.5
Future benefits	---	18.8
Surplus	**$ 7.0**	**$ 1.9**

The Role of a Funding Management Policy

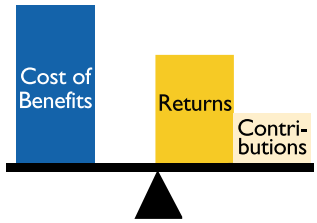
Within certain legislated limits, the co-sponsors negotiate benefit and contribution levels. For 2002, the co-sponsors have decided not to make any changes to contributions or benefits and to concentrate on developing the funding management policy. The pension board fully supports their decision and efforts.

In light of our outlook for equity markets, new benefit costs present a challenge to us and a cautionary note to plan members and the co-sponsors. Over the next decade, we expect modest real rates of return from stock and bond markets compared with the past 10 years.

Despite what the 1990s suggested, 2000 and 2001 have proven that markets are not one-way streets. In fact, historically they have only produced returns equal to the plan's 4.5% long-term funding requirement about 60% of the time.

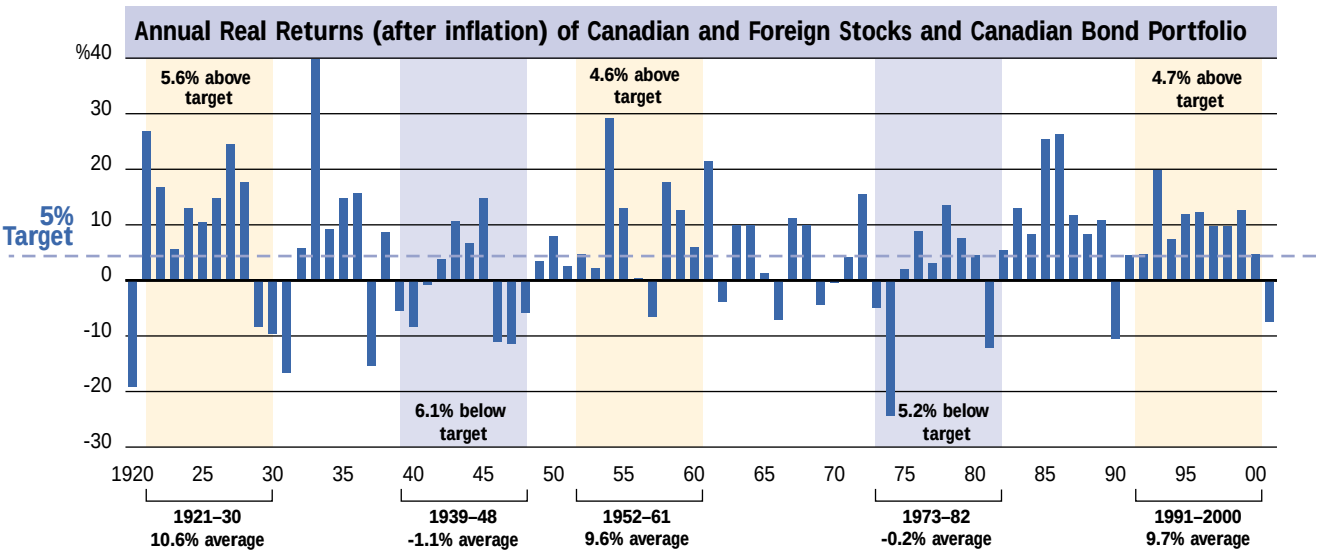
To sustain improved benefit levels for young and future teachers, without the need for contribution increases, we will need to generate a minimum real rate of return of 5% over the long term. That may be very difficult over the next decade.

Over the long term, benefits must balance with contributions plus investment returns or there will be a deficit. If the fund has a deficit when the funding valuation is filed, the law will automatically trigger a contribution rate increase. The only alternative for the co-sponsors would be to reduce future benefits.



The objective of a funding management policy is to provide a framework for improved long-term governance of the fund by determining when it is prudent to increase benefits, change contributions, or conserve assets. This policy will guide the co-sponsors in making these complex decisions, and help address the risks of poor market performance borne by both working teachers and the government. It is also important from an investment perspective, as it will change the risk profile of the fund and affect the pension board's investment policies.

Teachers have told us in focus groups that they would prefer contribution rates to remain stable. A funding management policy will help to ensure this occurs. Development of a workable policy will put the plan's co-sponsors at the forefront of exercising solid pension plan governance that balances the interests of all plan members – working or retired teachers – and the government.



This graph shows how a hypothetical portfolio, based on a similar asset mix as our own, would have performed over the last 80 years. One of the best decades in history was the 1990s. The portfolio includes two-thirds stocks (28% Canadian, 17% U.S., 22% foreign), and one-third Canadian bonds. The plan will need to earn a minimum of 5% over the long term to fund benefits at current levels.

Use of Surplus

In 1990, the plan had a $7.8 billion unfunded liability. The Ontario government agreed to pay the initial unfunded liability through a series of special payments over 40 years.

The pension plan has enjoyed a series of funding surpluses, primarily due to above-average investment growth brought on by strong equity markets throughout the 1990s and lower than expected increases in wages and inflation.

Since 1993, $18.6 billion in surplus was used by co-sponsors to improve benefits and eliminate special payments.

Valuation date	Surplus/ (Deficit)	OTF	Ontario government	Surplus remaining
1990	($7.8) unfunded liability	Increased contributions by 1% to 8.9%	Agreed to make a series of special payments to eliminate the unfunded liability and match increased contributions	Special payments considered an asset bringing the plan to a $0 surplus
1993	$1.5	$325 million to offset social contract days	Eliminated special payments for $1.2 billion saving	$0
1996	$0.7	$0.6 for benefit improvements and RCA contributions[2]		$0.1
1998[3]	$6.8	$2.2 for benefit improvements[4]	$4.6 to reduce the value of remaining special payments	$0
1999	$3.5		$3.5 to reduce the value of remaining special payments[5]	$0
2001	$6.8	$6.2 for benefit improvements[6]		$0.6
2002	$1.9	Co-sponsors agreed not to make any changes to benefits or contributions		$1.9
Total		$9.3 billion	$9.3 billion	

[1] Savings offset cuts that would have been made in the education sector as part of the government's overall cost-cutting program.

[2] Benefit improvements: reduced early retirement penalty to 2.5% from 5% for each point short of 90 factor, making it easier to retire early; lower CPP reduction after age 65 (to 6.8% from 0.7%).

[3] In 1998, the co-sponsors agreed future surplus would first be used to eliminate the remaining special payments, and the next $6.2 billion would be available exclusively to the OTF.

[4] Benefit improvements: 85-factor window from 1998 to 2002; lower CPP reduction after age 65 (to 0.6%)

[5] The government paid off its remaining special payments by the end of 1999.

[6] Benefit improvements: permanent 85 factor; 10-year pension guarantee; reduced pension as early as age 50; lower CPP reduction (to 0.45%); 5-year average YMPE to calculate CPP reduction; pension recalculation based on approximate best-5 salary for older pensioners; and top-up waived for LTIP contributions.