



Tennessee Treasury Department TCRS 2011 Strategic Initiatives

June 2010

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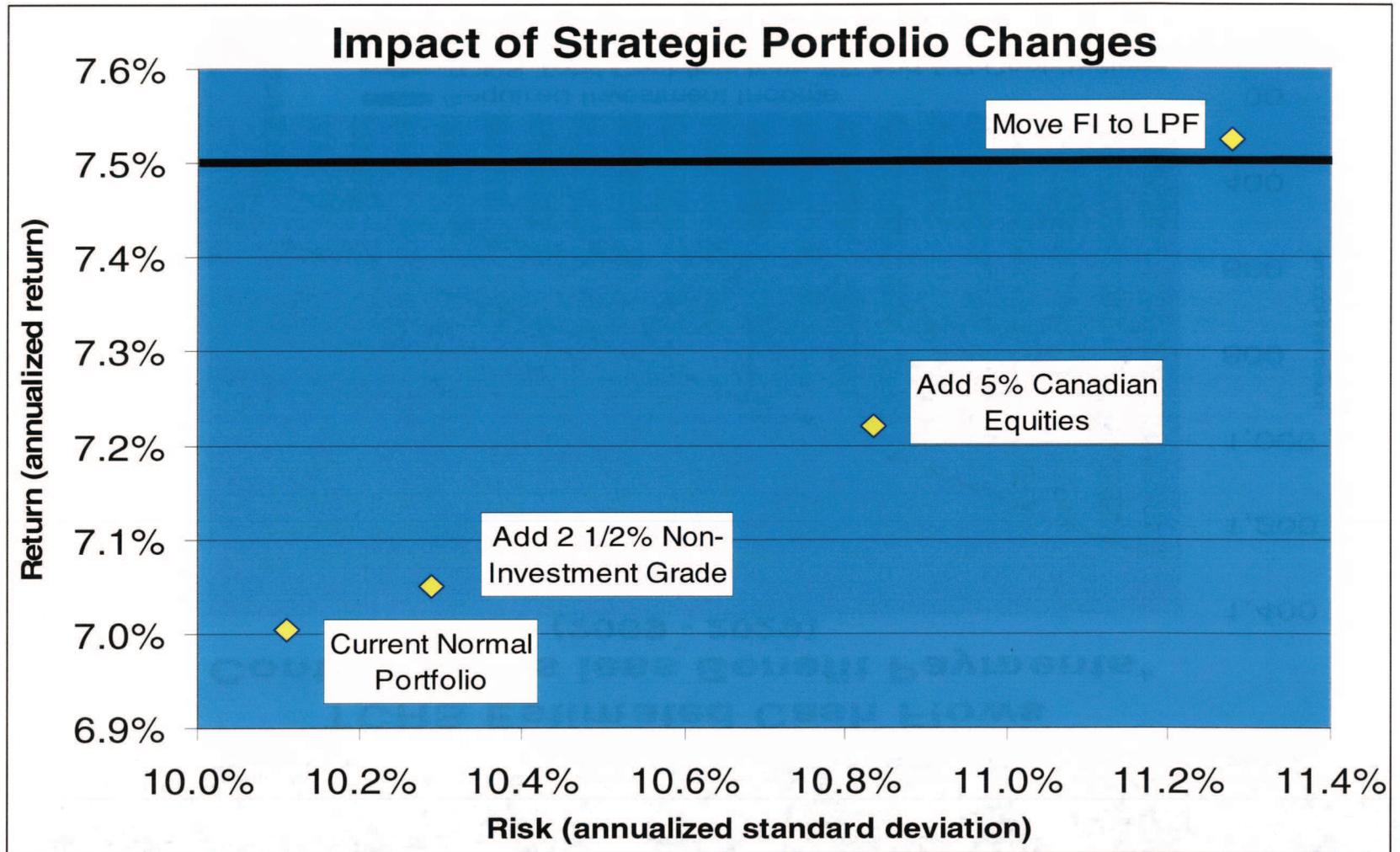


Strategic Initiative Benefits

- Increase expected returns by \$165 million per year
 - Improve expected returns 0.55%
- Decrease funding pressures
 - Ease pressure on state and local governments
- Diversify portfolio risks
 - Broaden risks instead of just pushing equity allocation higher
- Closer matching of assets to liabilities
 - Liabilities have a duration of 15 – 18 years



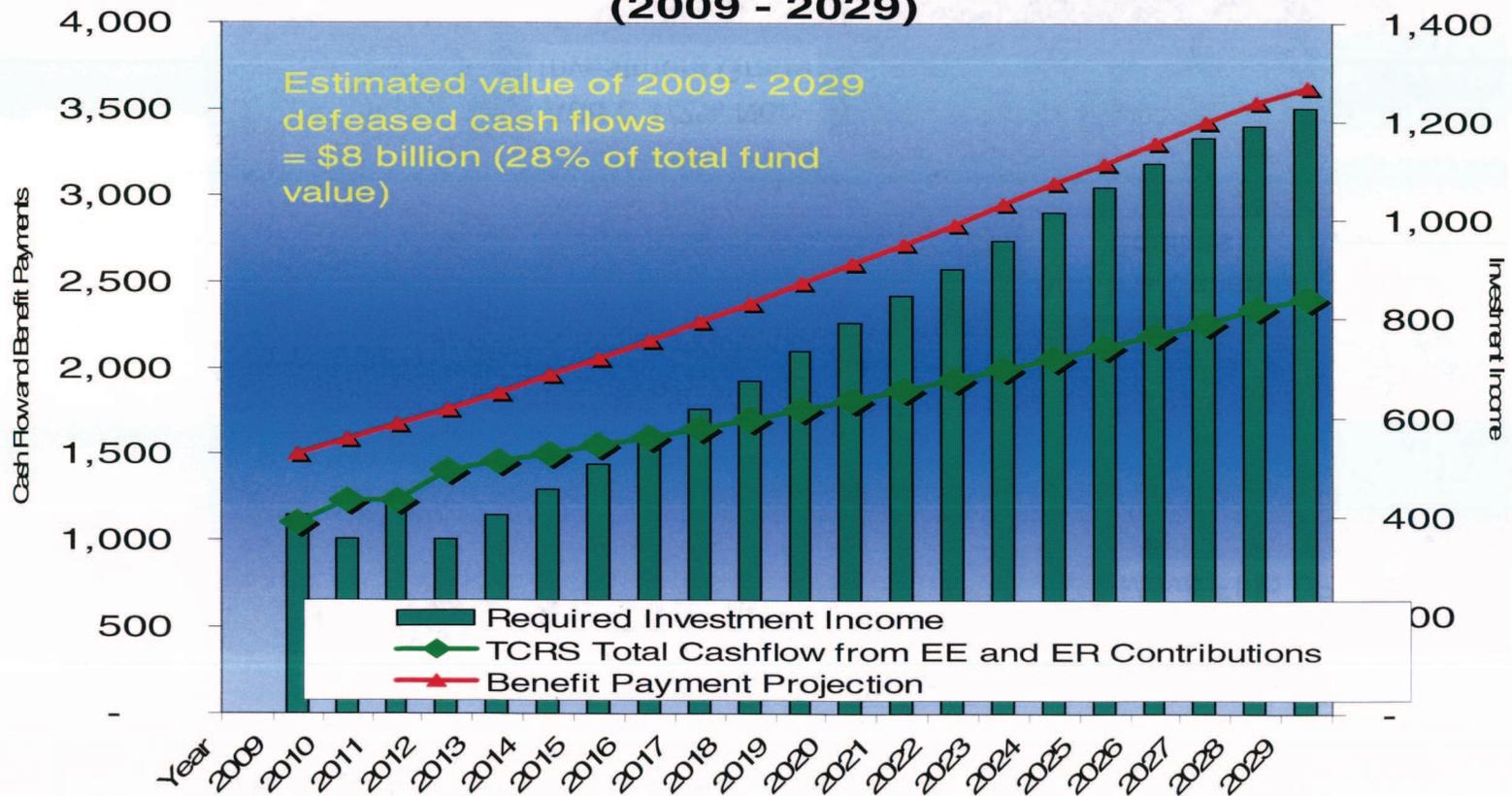
Strategic Initiative Benefits





Future LDI (Liability Driven Investing)

TCRS Estimated Cash Flows Contributions less Benefit Payments* (2009 - 2029)



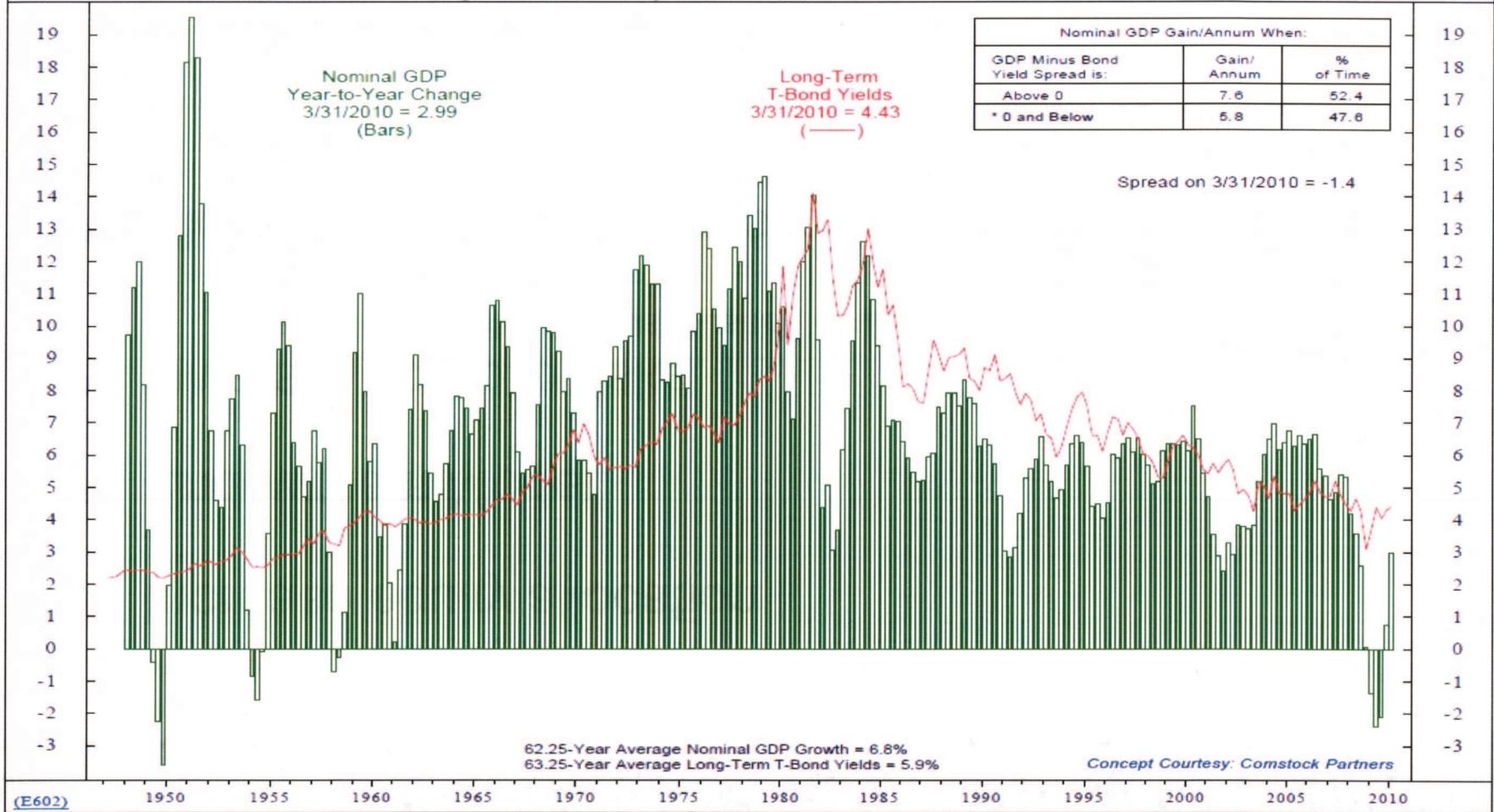
* Estimates based on BPS&M Actuarial Valuation, July 1, 2009



The Problem

Nominal GDP Growth & Long-Term Treasury Bond Yields

Quarterly Data 3/31/1947 - 3/31/2010



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Review of Alternatives

- Increase equity allocation
- Endowment Model
- Diversify portfolio risks
 - Broaden risks instead of just pushing equity allocation higher
- Closer matching of assets to liabilities
 - Liabilities have a duration of 15 – 18 years



Recommendations

Asset Class	Current Normal	Proposed Normal	Description	Impact (bps)
US Equity	35%	35%		
International Equity	15%	15%		
Canadian Equity	0%	5%	Increase the overall equity exposure and international exposure by creating a Canadian index portfolio.	22
US Fixed Income	27%	26%	Lengthen fixed income portfolio by moving from Citigroup BIG benchmark to the LPF benchmark. Increase the returns of the fixed income portfolio with a weighting of 2 ½% in non-investment grade bonds.	27
Intl Fixed Income	4%	0%	This portfolio currently has a yield to maturity of 1.6% and a duration of 6.6 years. It has a low expected return with a moderate amount of risk. This change should increase the expected returns of the fund at least 5 basis points.	5
Inflation Hedged Bond	8%	8%		
Real Estate	7%	7%		
Private Equity	3%	3%		
Short Term	1%	1%		
Securities Lending			Adding a prudent securities lending program should increase the returns of the fund by \$6 to \$10 million.	2
Total	100%	100%		56



Critical Assumptions

- Government and market stability
- Asset valuations are relatively consistent
- Capital asset pricing model (CAPM) works
 - i.e. higher risk assets have higher returns
- Standard deviation and correlations are stable
- Risk/Return based optimization is effective



Citigroup BIG versus LPF

The Long Pension Fund Index was designed to provide a long duration profile while allocating in fixed proportions across the investment grade marketplace. The broad sectors of credit (30%), governments (40%) and mortgages (30%) hold static proportions.

	Broad Investment Grade BIG	Long-Pension Fund LPF	Diff
Duration*	4.7	8.0	3.3
Yield to Maturity*	3.0	4.1	1.1
Credit Rating	AAA	AAA	
Strengths	stability	income, deflation protection	
Weaknesses	low return	inflation sensitivity	

* as of 5/31/2010



Non-Investment Grade Bonds

Non-investment grade bonds typically include high-yield or “junk” bonds and areas such as bank loans or “levered” loans. Non-investment grade lending encompasses lending in below investment grade companies and in non-rated fixed income instruments.

	Broad Investment Grade BIG	High Yield HYMI	Diff
Duration*	4.7	4.6	-0.1
Yield to Maturity**	3.0	9.2	6.2
Credit Rating	AAA	B+	
Strengths	stability	return	
Weaknesses	low return	economic sensitivity	

* as of 5/31/2010

** or yield to worst



Canadian Equities

The Canadian stock market is approximately 10% of the total size of the U.S. stock market and 50% the size of the U.K. equity market. The Standard & Poors TSX/60 benchmark is comparable to the S&P 500 benchmark used in the United States. The Canadian stock market is generally inflation sensitive due to higher weighting in energy and commodity producing companies.

	S&P 1500	S&P TSX/60
Market Capitalization	11,230	1,450
Currency	USD	CAD
Price/Earnings	16.4	18.6
Yield	1.9	2.7
Companies	1500	60

*Bloomberg as of 6/11/2010



International Fixed Income

The International Fixed Income portfolio is managed against the Citigroup G-5 ex. U.S. benchmark. The benchmark is comprised of the sovereign bonds of the United Kingdom, Japan, Germany and France. Japanese bonds comprise 60% of the benchmark by value.

	Broad Investment Grade BIG	Citigroup G5 ex. U.S.**	Diff
Duration*	4.7	6.3	1.6
Yield to Maturity*	3.0	1.6	-1.4
Credit Rating	AAA	AAA	
Strengths	stability	currency diversification	
Weaknesses	low return	very low yield	

* as of 5/31/2010

** as of 3/31/2010



Securities Lending

Securities lending is the temporary lending of securities to a borrower in exchange for cash collateral. Shares are borrowed for short sales, merger arbitrage, proxy voting and trade fails. The lender receives and invests the cash collateral in short term securities. The lender returns to the borrower the collateral plus a below market interest fee, called a rebate. The interest earned on the collateral, less the rebate, is the revenue generated from securities lending.

- Benefits: \$6 to \$10 million in annual revenue

- Risks:
 - Borrow default
 - Cash mismanagement
 - Operational/trade fails

- Implementation
 - Conservative and risk-averse



Concluding Thoughts

- Incremental step in long road
- Small increase in risks and returns
- Eases funding pressure
- Next move more liability focused