Ontario Funding Reforms

Actuarial and Investment Implications for Pension Plans

Hosted by the Ontario Regional Council

March 7, 2018

Albany Club

Toronto, ON

Special Thank you to our Platinum Sponsor

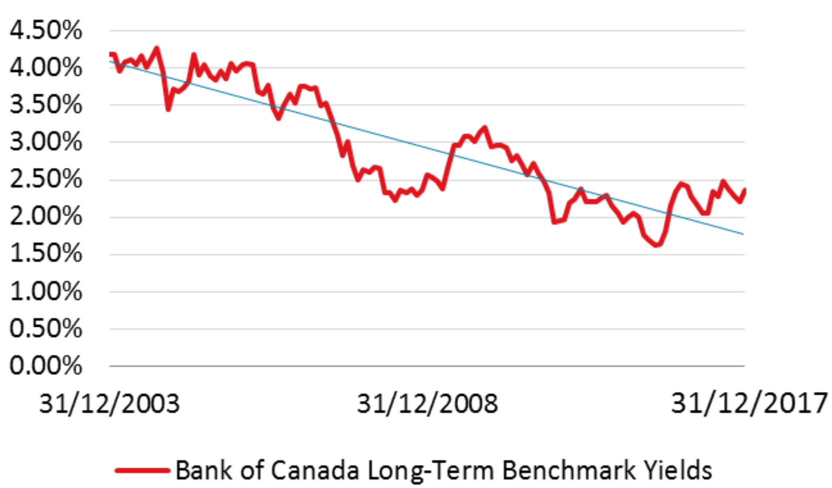
CIBC MELLON

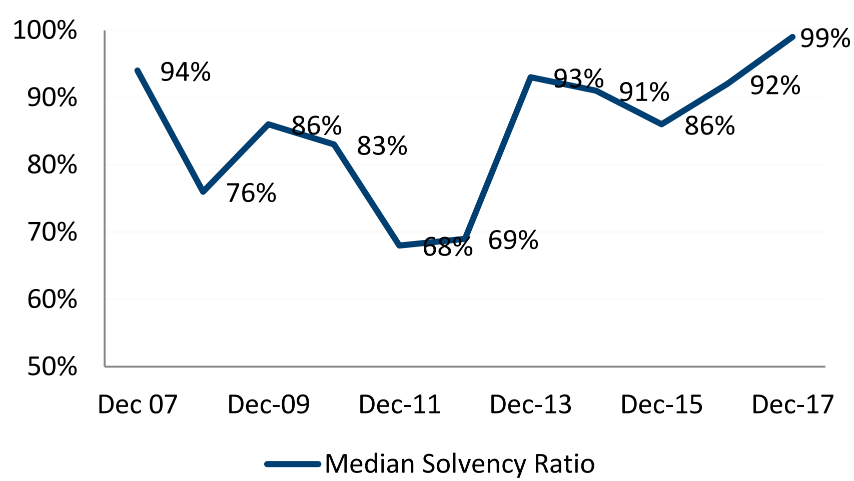
Ontario Funding Reforms

Linda Byron, FSA, FCIA
Senior Partner
Aon

Canadian Pension Funding Landscape

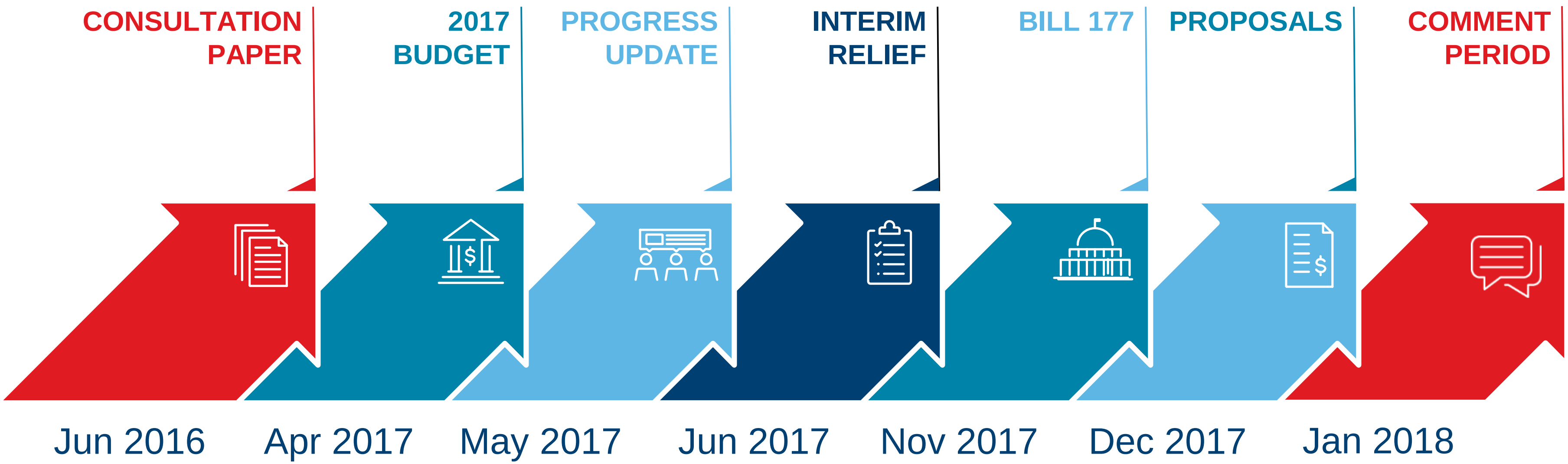
- Decreasing bond yields and persistently low interest rate environment and volatile asset returns
- Solvency contributions were volatile and high
- Temporary solvency funding relief measures after 2008 financial crisis
- Many plan sponsors have been contemplating and implementing de-risking and exit strategies
- Many jurisdictions in Canada have already introduced or are contemplating changes in legislation affecting funding





Cross-Country Reforms to DB Funding Rules

Ontario Funding Reform Roadmap



Overview of New Funding Framework

What Has Been Announced

1 Solvency Reform

- Target reduced to 85% of solvency liabilities (from 100%)
- Deficits (based on 85% target) funded over 5 years with a 12-month deferral
- Letter of Credit (LOC) limit remains at 15% of solvency liabilities. New 85% target, becomes threshold for reduction of LOC

2 Going Concern Reform

- Deficits funded over 10 years (instead of 15 years) with 12-month deferral
- Special payments consolidated into a single schedule
- Separate amortization schedules for benefit improvements and past service liabilities for new plans

3 Provisions for Adverse Deviations (PfAD)

- Explicit margin applied to both going concern liability and normal cost when determining minimum contributions

4 Transitional Rules

- Allow any increase in contributions under new rules to be phased in over a three-year period
- Permit use of any solvency excess to reduce either payment amount or amortization period
- Special rules granted to broader public sector (BPS) plans listed in BPS Regulation

Overview of New Funding Framework

What Has Been Announced

5

Benefit Improvements

- Restrict benefit improvements unless plan’s solvency ratio is at least 85%, and going concern funding ratio (without PfAD) is at least 90%. Lump sum contribution could be made to satisfy requirements

6

New Disclosure Required

- Require specific content to be included in the first pension statement for active and inactive members after new rules come into effect

7

Annuity Purchase

- Full discharge of liabilities upon buy-out annuity purchase, subject to certain conditions

8

Contribution Holidays

- New requirements and restrictions on use of surplus
- Surplus can no longer be used to pay PBGF premiums

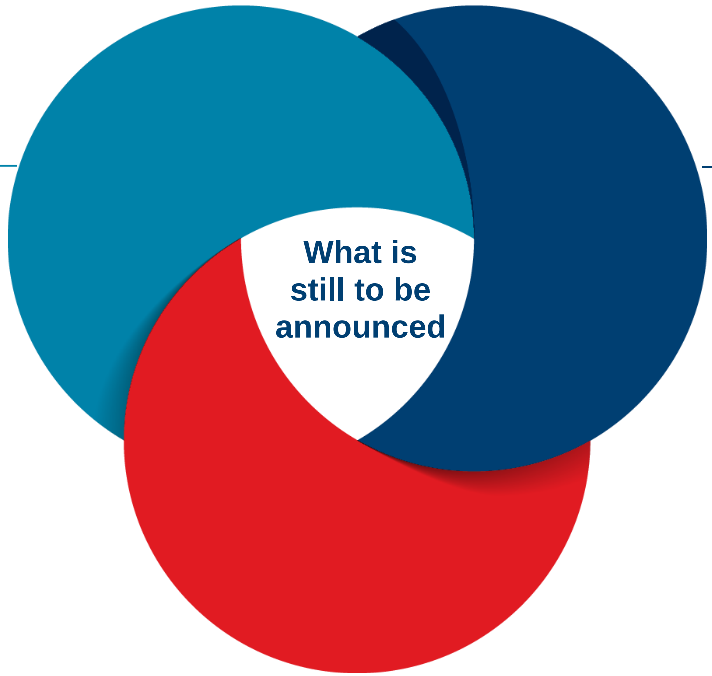
9

Others

- Monthly maximum PBGF benefit increased from $1,000 to $1,500
- Increase in PBGF assessment fees
- Funding and governance policies to be filed with FSCO

Overview of New Funding Framework

Content of funding and governance policies



Effective date of new rules

Details on characteristics of bonds that would not be considered as fixed income assets for purposes of determining the PfAD

Provision for Adverse Deviation (PfAD)

An explicit margin will be applied to both going concern liabilities and normal costs

May result in additional employer contribution requirement

PfAD

- Will **NOT** be applied for going concern liability or normal cost in respect of future indexation
- Depends on whether plan is open or closed to new members
- Depends on the plan's target asset mix

Fixed Income

- Cash
- Term Deposits/ GICs
- All Bonds (except employer issues)
- Insured Contracts
- 50% of Specified Alternative Investments

Non-Fixed Income

- All Equities
- Employer Issued securities
- 50% of Specified Alternative Investments

Provision for Adverse Deviation (PfAD)

As a % of Going Concern Liabilities and Normal Cost

Fixed Component

Closed Plans: 5%
Open Plans: 4%

+

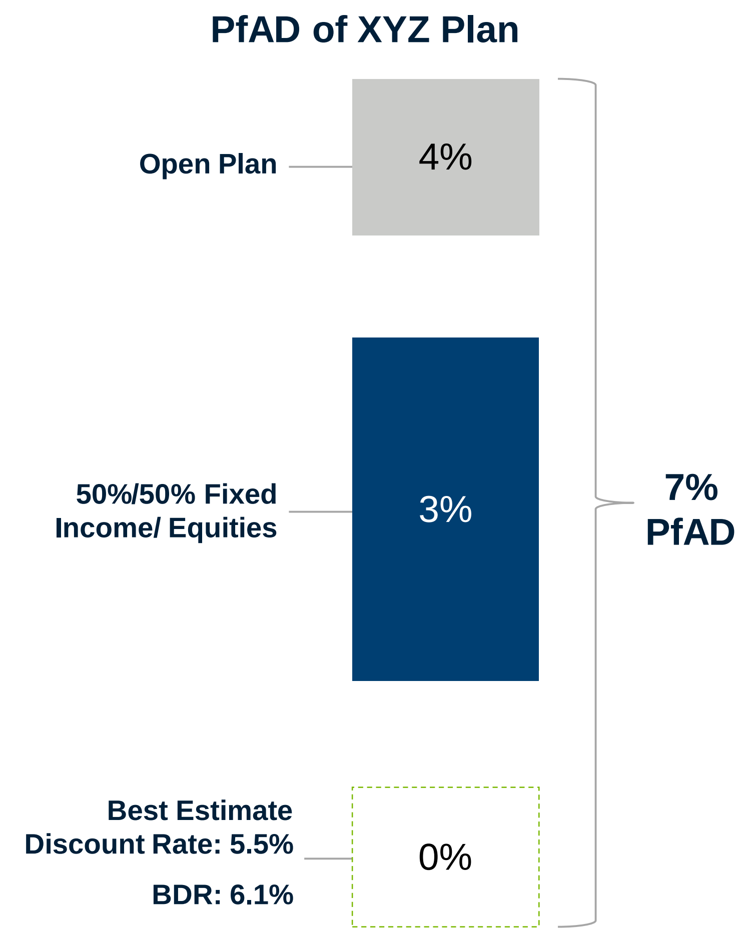
Asset Mix Component

% of non-fixed income	Closed Plans	Open Plans
0%	0%	0%
20%	2%	1%
40%	4%	2%
50%	5%	3%
60%	7%	4%
70%	11%	6%
80%	15%	8%
100%	23%	12%

+

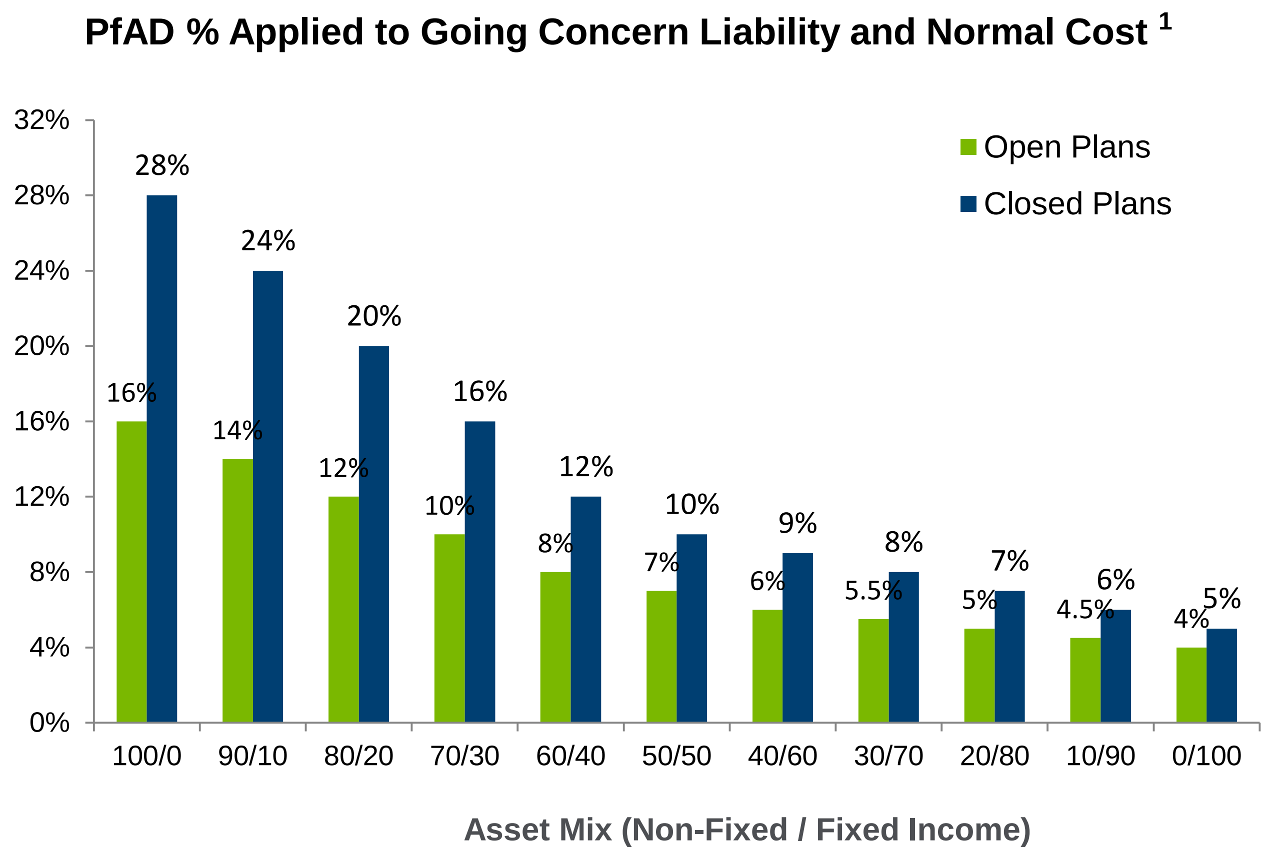
Discount Rate Component

Duration x (Best Estimate Discount Rate – BDR[1])



[1]Benchmark Discount Rate = V122544 Rate + 5% x % of Non-Fixed Income + 1.5% x % of Fixed Income + 0.5% for diversification

Range of PfAD



[1] *Assuming plan's best estimate discount rate is less than BDR*
[2] *From best estimate discount rate*

Explicit PfAD will replace existing **implicit margin** included in the going concern discount rate assumption

7% PfAD
(typical **open** plan)

≅

50 bpt reduction[2]
in discount rate for liabilities
(35 bpts for normal cost)

10% PfAD
(typical **closed** plan)

≅

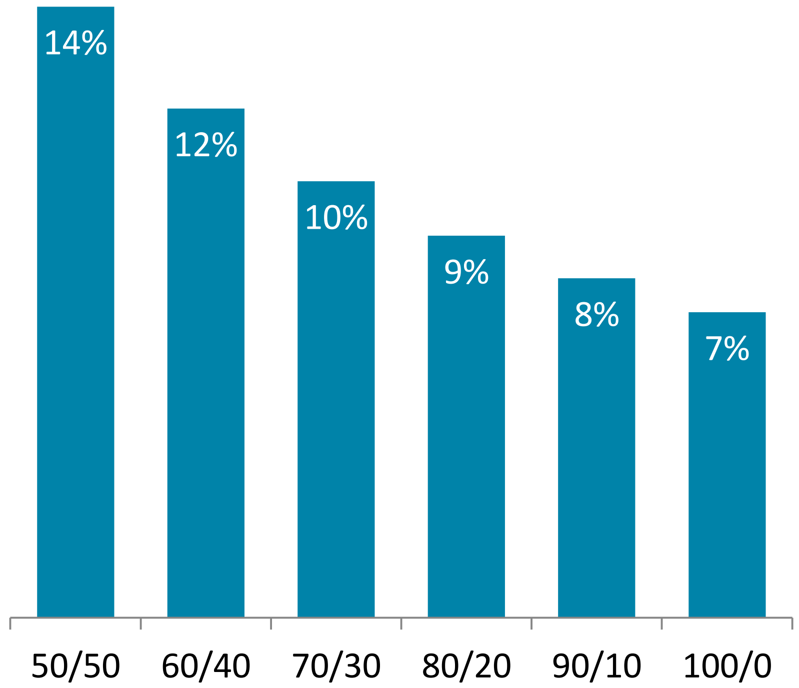
100 bpt reduction[2]
in discount rate for liabilities
(67 bpts for normal cost)

Current service contributions

Higher impact of PfAD for contributory plans

Current service contributions

Increase in employer contributions (PfAD = 7%)

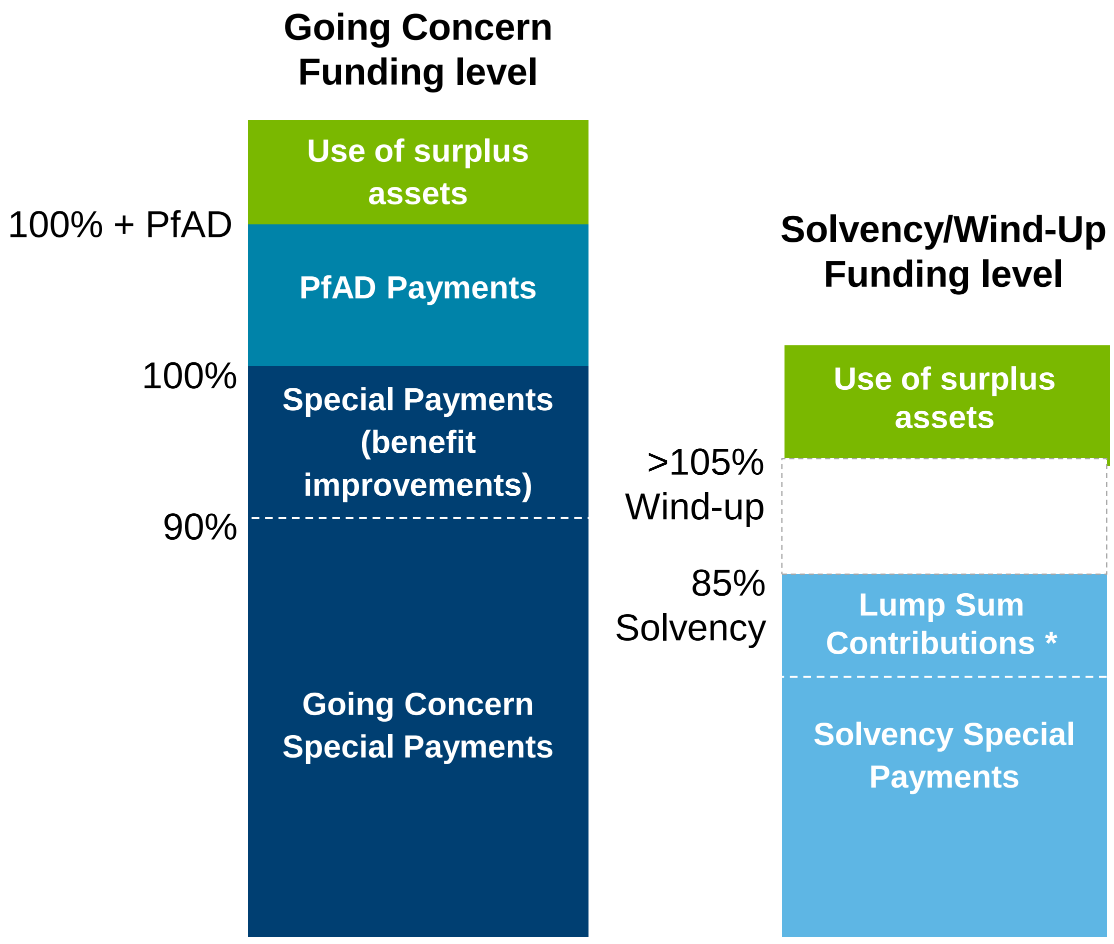


Employer contributions / employee contributions

Plan sponsors may consider **funding non-investment expenses explicitly rather than implicitly** through discount rate

Higher best estimate discount rate

Overview of Special Payments



Special payments
determined based on going concern valuation and include PfAD payments

Use of surplus assets
permitted when going concern deficit and PfAD are fully funded AND wind-up funding level is at least 105% after use of assets

Benefit improvements
permitted when going concern funding level is at least 90% AND the solvency level is at least 85%

* Required if funded ratio drops after taking into account the cost of benefit improvements

Who Is Impacted By the New Funding Rules?

Who
IS
Impacted?

- Single-employer DB plans of private companies,
- BPS (special transitional rules apply*), and
- Public sector with valuations dated on or after December 31, 2017 filed after new rules come into force
- Multi-employer pension plans that do not currently qualify as specified Ontario multi-employer pension plan (SOMEPP)

Who
IS NOT
Impacted?

- Jointly sponsored pension plans (JSPPs)
- Target benefit multi-employer pension plans (TBMEPPs)
- Plans not subjected to the Pension Benefits Act (such as SERPs or plans falling under federal or another province's jurisdiction)

* Current temporary solvency relief that was granted to those BPS plans under the BPS Regulation continues to apply to a valuation dated before December 31, 2017 or filed before the effective of the new rules

Comparison of Ontario and Quebec Funding Rules

	Ontario	Quebec
Fresh Start Valuation	No	Yes
Transitional Measures for Higher Contributions under New Rules	Yes (0 - 1/3 - 2/3)	Same
Use of Surplus Assets	GC = 100% + PfAD; WUP = 105%	GC = 100% + PfAD + 5%; SOLV = 105%
Solvency deficit	Any deficit < 85%	None
Solvency amortization period	5 years	N/A
Going concern amortization period	10 years	Same (but transition from 15 years)
Funding of PfAD	All of it, except no PfAD on liabilities or normal cost related to future indexing	Only PfAD > 5% (e.g. if PfAD is 15%, only require to fund 10% of liabilities)
Determination of PfAD	Fixed component (closed plans: 5%, open plans: 4%) + Variable asset mix component + Formula based discount rate component	2-dimension grid based on duration mis-match (duration of assets compared to duration of liabilities) and asset allocation
Fresh start of special payments	Yes (except for schedules related to benefit improvement and past service liabilities for new plans)	Same
Letters of credit recognition	Only for solvency (to get to 85%)	Solvency and GC (new LC can only be taken for funding of PfAD)

ACPM Submissions on:

- Proposed Changes to DB Funding Rules, Annuity Discharge and PBGF Assessments

Lindy Charles

Ontario Teachers' Pension Plan

Summary of Comments / Recommendations

Funding Rules For Defined Benefit Plans

Annuity Purchase Discharge of Liabilities

PBGF Assessments

A clear framework based on sound principles

Transparency

No increase in administrative cost / burden

Recognize long term nature of DB plans

Defined Benefit Funding Proposal

PfAD =

- Policy Rationale
- Harmonization
- Clarify margins in actuarial assumptions are not required

1) Fixed component

- Risk based minimum
- Remove distinction between open / closed plans

+

2) Asset mix component

- Reflect asset liability mismatch
- Remove distinction between open / closed plans

+

3) Discount Rate component

- Remove specific BDR definition from Regulation

Defined Benefit Funding Proposal

Notional Reserve Accounts	• Addresses trapped capital concerns • Harmonization • Transparency around surplus ownership

Contribution Holidays	• Overly restrictive criteria
	  • Limit on available surplus
	  • Ratios to maintain

Transition Period	• Increase from 3 to 5 years • Phase in going concern special payment schedules
JSPP Exemption	• Provide similar exemption for plans structured like JSPPs

Annuity Purchase – Discharge of Liabilities

Proposal

- Annuity purchases for former and retired members
- Must replicate benefits / amount / form as if no purchase
- Members retain entitlement to surplus
- Must retain the greater of the solvency ratio pre-purchase and 100% (85% if new rules adopted)

ACPM

- Harmonization re entitlement to surplus
- Lesser of the pre-purchase ratio and 100% (85%)

PBGF Assessments – Current vs Proposed

	Current	Proposed
Basic Assessment	$5 per member	$0
Risk Based Assessment	Tier 1 + Tier 2 + Tier 3	
Tier 1: PBGF assessment base up to 10% of PBGF liabilities	0.5%	0.75%
Tier 2: PBGF assessment base between 10% & 20% of PBGF liabilities	1.0%	1.5%
Tier 3: PBGF assessment base greater than 20% of PBGF liabilities	1.5%	2.25%
Assessment on PBGF liabilities	0%	0.015%
Maximum Assessment per member	$300	$600
Plant Closure / Permanent Layoff[1]	2% times	3% times
Minimum Assessment	$250	$0

[1] Times liabilities for plant closure and permanent layoff benefits that employer elected to be excluded from solvency liabilities

PBGF Assessments

- Lack of transparency in the analysis supporting the assessment
  - How does it relate to the increase in coverage
- Recommend a risk based assessment rather than on liabilities
- Maintain PBGF Contributions are payable from surplus (or Reserve Account)

Ontario Funding Reforms

Dave Makarchuk, CFA , FSA, FCIA

Partner

Mercer

INVESTMENT IMPLICATIONS OF PROPOSED ONTARIO FUNDING RULES – OUR SUMMARY VIEW

The proposed rules don't explicitly restrict any investment strategy

They implicitly encourage some strategies and discourage others via PfAD rules … but the rules aren't perfect

Implications vary significantly from sponsor to sponsor … and so too should actions

A structured decision making framework can help sponsors determine what the best course of action is for their situation

The funding changes intersect with a low yield environment at the end of a long bull run … time could be of the essence for many

WHY DO WE MAKE INVESTMENT DECISIONS?

We make investment decisions **TO DELIVER BETTER OUTCOMES**

One's perception of a 'Better Outcome' **CAN VARY SIGNIFICANTLY**

Identifying, and articulating, desired outcomes is the **FOUNDATION FOR GOOD FIDUCIARY DECISIONS**

EVERY INVESTMENT DECISION WE DO (OR DO NOT) MAKE IS DRIVEN BY 4 KEY FACTORS…

Return

Risk

Cost

Time

THESE 4 FACTORS FORM THE FOUNDATION OF A LEVERAGABLE DECISION MAKING FRAMEWORK

Return	How does a change impact expected returns?
Risk	How does a change impact expected risk?
Cost	How much does a change cost?
Time	How much time will this change take?

FOUR QUESTIONS ONTARIO SPONSORS SHOULD BE ASKING GIVEN PROPOSED FUNDING CHANGES

Return	Do the changes allow us to pursue higher returns?
Risk	Should we increase or decrease risk?
Cost	How will the changes impact our expected costs?
Time	Do the proposed changes impact our time horizon?

SPONSORS RUN CLOSED DB PLANS FOR A VARIETY OF REASONS ….

Time

HR REASONS	ANNUITY PRICES
SURPLUS UTILIZATION (DC CONTRIBUTIONS PERHAPS)	WINDUP COSTS
ACCOUNTING COSTS	LEGISLATIVE FRAMEWORK
SIZE OF SOLVENCY DEFICIT	INTERNAL RESOURCES

Investment returns encourage a shorter time horizon for many

While other sponsors may embrace a longer time horizon

Return

Risk

Cost

Elimination of solvency funding doesn't make deficiencies disappear

Sponsors who would rather not fund toward a fully funded plan have more flexibility ... Pursuing higher returns is one of three options …

By Contributions?	By Investment Gains from Growth Assets?	By Liability Gains?

Many underfunded plans will see their funding costs decline … but that doesn't mean they should 'do nothing'

Some plans (especially fully funded plans) may see their costs rise

IS NOW THE TIME TO INCREASE RETURNS OR DECREASE RISK?

Return

Risk

SOME SHOULD EXPLORE INCREASING RETURNS

Some plans don't have the return potential to achieve a fully funded position without funding

SOME SHOULD REDUCE RISK

Fully funded closed plans should consider locking in gains and annuitizing. Soon.

ALL PLANS SHOULD OPTIMIZE RISK

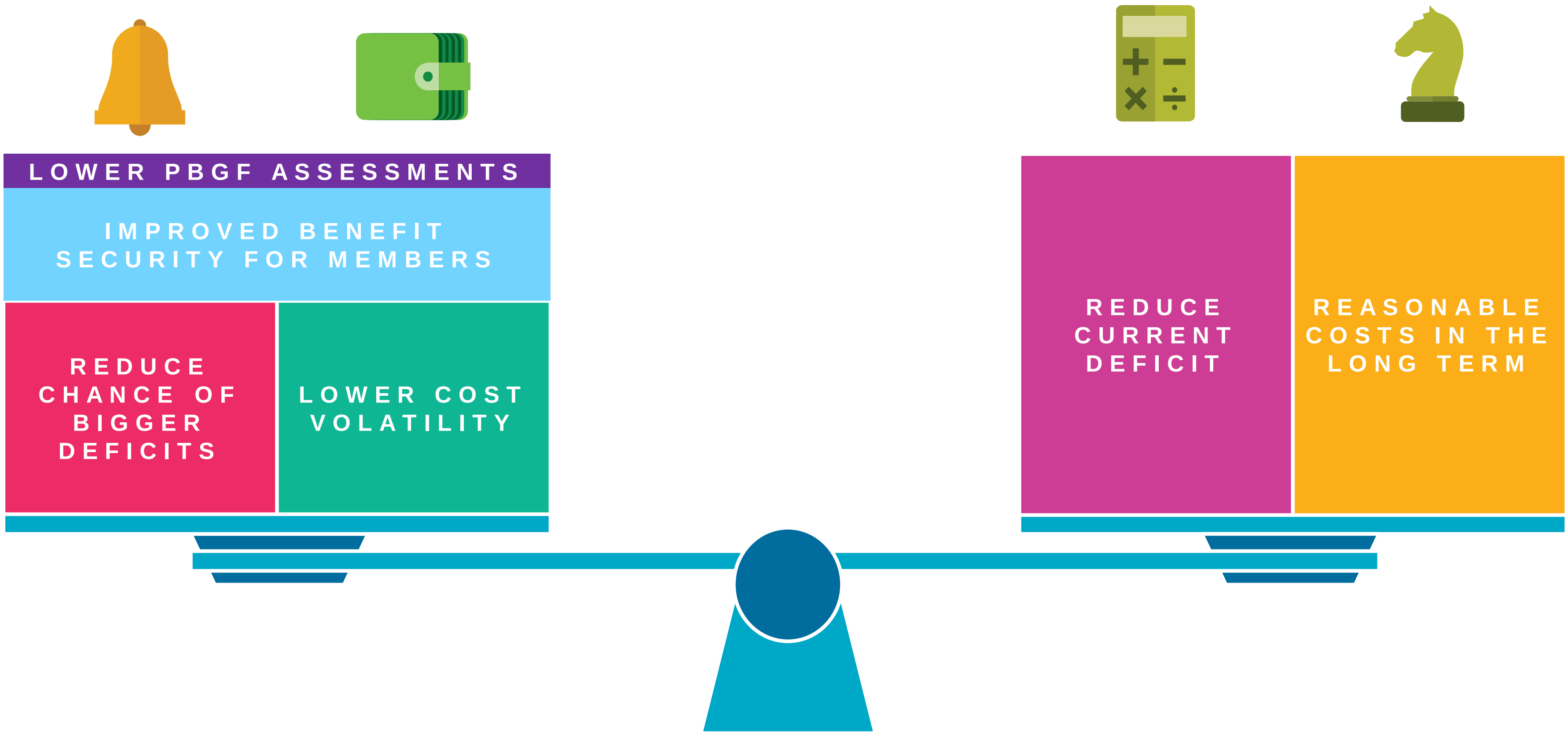
...but not just because of the proposed funding rules.

Diversify and innovate to drive better outcomes!

FUNDING CHANGES INTERSECT WITH LOW YIELDS AND A LONG BULL RUN … EVERYONE SHOULD BE RE-EVALUATING INVESTMENT STRATEGY

REASONS TO DECREASE RISK

REASONS TO INCREASE RISK



AN INVESTMENT PERSPECTIVE ON THE PROPOSED PFAD RULES

While it's easy to pick holes in the PfAD rules from an investment perspective, options are limited

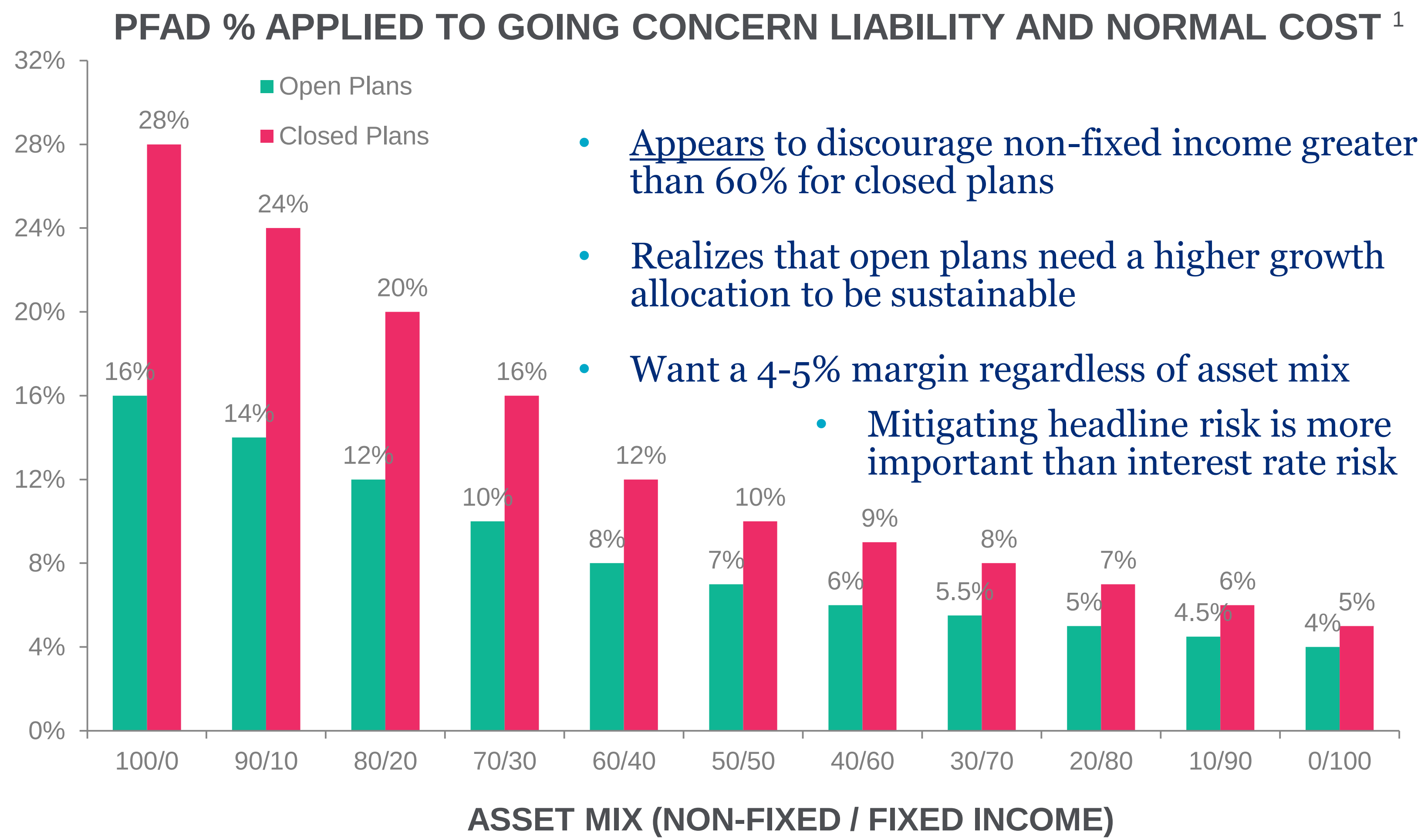
Balancing accuracy with simplicity and optics is challenging at the best of times

- In an ideal world, the PfAD would be a function of the anticipated volatility of funded positions
- In a world where innovation is rapid, expected volatility is uncertain, and broad brushes are used, compromises have to be made

PfADs are too high in some cases, too low in others

WHILE UNDERSTANDING THE IMPLICATIONS OF ASSET MIX DECISIONS ON PFAD LEVELS IS IMPORTANT … WE DO NOT RECOMMEND, NOR ANTICIPATE, THAT THE IMPERFECTION OF THE PFAD RULES DRIVE ASSET MIX DECISIONS

SOME OF ONTARIO'S IMPLIED PFAD MESSAGES



- Appears to discourage non-fixed income greater than 60% for closed plans
- Realizes that open plans need a higher growth allocation to be sustainable
- Want a 4-5% margin regardless of asset mix
  - Mitigating headline risk is more important than interest rate risk

[1] *Assuming plan's best estimate discount rate is less than BDR*

ALL OF THESE ASSET MIXES WILL HAVE THE SAME PFAD … BUT SOME ARE MORE PRUDENT THAN OTHERS …

Asset Class	A Traditional Balanced Fund	A Second Generation Asset Mix	A Progressive Asset Mix	A Progressive Mix with a Matching Bond Overlay	A bad idea!
Total Fixed Income	**40%**	**40%**	**30%**	**~100%**	**40%**
Cash	-	-	-	-	40%
Universe Bonds	40%	-	-	-	-
Long Term Bonds	-	40%	30%	-	-
3X Synthetic Long Bonds	-	-	-	30%	-
Total Equity	**60%**	**60%**	**30%**	**30%**	**60%**
Canadian Equity	30%	15%	10%	10%	-
Cannabis Stock	-	-	-	-	60%
Traditional Global Equity	30%	15%	10%	10%	-
Small Cap/Emerging Markets/Low Volatility	-	30%	10%	10%	-
Total Alternatives	**0%**	**0%**	**40%**	**40%**	**0%**
Private Equity/Hedge Funds	-	-	20%	20%	-
Real Estate/Infrastructure	-	-	20%	20%	-
Expected Return	5.7%	6.2%	6.3%	6.6%	???
Expected Volatility	9.6%	11.0%	8.5%	11.3%	?????
Expected Surplus Volatility	12.2%	12.3%	10.2%	8.4%	???
Interest Rate Hedge Ratio	20%	40%	30%	90%	0%

THE EXPECTED IMPACT OF ASSET MIX SHIFTS ARE MUCH GREATER THAN PFAD DIFFERENCES

Asset Class	A 60/40 Second Generation Asset Mix	A 50/50 Second Generation Asset Mix	A 40/60 Second Generation Asset Mix
Total Fixed Income	**40%**	**50%**	**60%**
Long Term Bonds	40%	50%	60%
Total Equity	**60%**	**50%**	**40%**
Canadian Equity	15%	13%	10%
Global Equity Portfolio	15%	13%	10%
Global Small Cap Equity	15%	13%	10%
Emerging Market Equity	15%	13%	10%
Total	**100%**	**100%**	**100%**
Expected Return	6.2%	5.7%	5.2%
Expected Volatility	11.0%	9.6%	8.5%
Expected Surplus Volatility	12.3%	10.2%	8.2%
Interest Rate Hedge Ratio	0.40	0.50	0.60
Closed Plan PfAD	12%	10%	9%
E [Discount Rate] after PfAD	5.0%	4.7%	4.3%

PFAD ‘ARBITRAGE’ IS CERTAINLY AVAILABLE
SUGGESTIONS IF YOU NEED TO MANAGE YOUR PFAD

Make the most of the PfAD ‘Free’ asset classes, and consider increasing allocations to them

Cash

Term deposits/ GICs

All bonds (except employer issues)

Insured Contracts

Understand what a ‘Specified Alternative Investment’ is … and maximize risk/return within them

50% of Specified Alternative Investments

[1] *For example, real estate and infrastructure investments*

Optimize the 100% PfAD asset classes … consider transitioning modest volatility asset classes to other categories

All Equities

Hedge Funds

Employer issued securities

SOME GOOD INVESTMENT QUESTIONS FOR ADMINISTRATORS, REGULATORS, AND ADVISORS REGARDING THE PFAD

Do the PfAD rules incent me to lengthen or shorten fixed income duration?

My plan has a glidepath. How do I determine my PfAD?

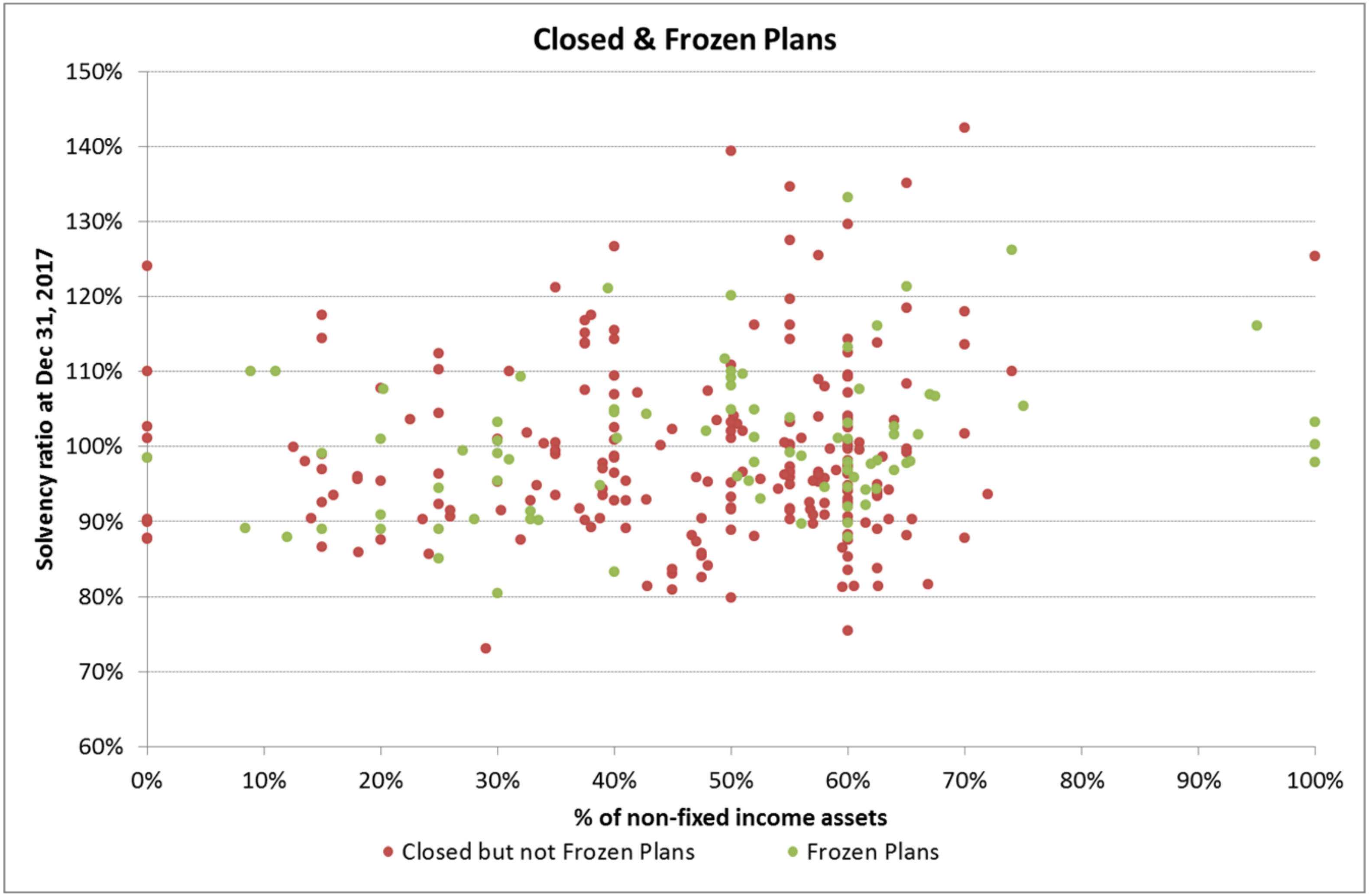
If I switch from an equity portfolio with a bond overlay to a bond portfolio with an equity overlay, will my PfAD be lower?

We use a diversified hedge fund portfolio to provide downside risk protection and returns that have low correlation with equities, but the PfAD is as high as Private Equities or Emerging Markets.

Should we:

- Sell the hedge funds and buy private equity or emerging markets since the PfAD is the same?
- Transition the hedge fund portfolio into a portable alpha strategy over fixed income (so it doesn't attract a PfAD)?
- Abandon the strategy since the PfAD penalty is too high?

THE DISPERSION OF ESTIMATED FUNDED POSITION AND ASSET ALLOCATION IS BROAD



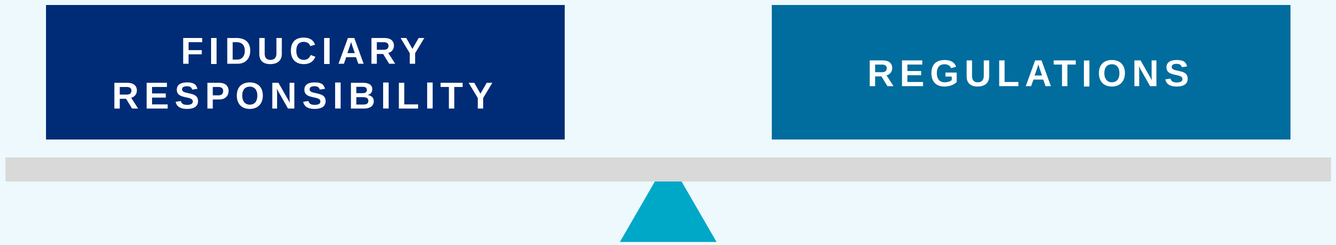
REGARDLESS OF THE FINAL PFAD REGULATIONS, FIDUCIARIES NEED TO DO WHAT'S IN THE BEST INTEREST OF THEIR PLAN MEMBERS …

Focus on driving better outcomes … rather than optimizing the PfAD

Well funded closed plans should be considering annuitization/ windup sooner rather than later

Poorly funded closed plans have flexibility … use it wisely

Open plans should focus on the longer term … and lever investment innovation to drive better outcomes!



Ontario Funding Reforms
Case Studies

Case Study 1: A Closed Plan with a Modest Deficit

Situation

- Closed Plan
- Non-Indexed
- Solvency payments
- PfAD 8.5%

Asset Mix

- 55% long bonds
- 10% Universe bonds
- 35% Equity

Considerations

- Actuarial
- Plan Improvement
- Contribution Holiday
- PBGF Premium
- Investment

	in '000's		
	Going Concern	Best Estimate	Solvency/Wind-Up
Assets	$ 150,000	$ 150,000	$ 150,000
Liabilities	$ 150,000	$ 145,000	$ 170,000
Funded Position	$ -	$ 5,000	$ (20,000)
Funded Ratio	100%		88%
PfAD		($ 12,000)	
Funded Position	$ -	($ 7,000)	
Total Normal Cost	$ -	$ -	
PfAD	n/a	$ -	
Employer Normal Cost	$ 0	$ 0	
Special Payments	$ 4,300	$ 2,400	
Employer Contributions	$ 4,300	$ 2,400	

Case Study 2: A Well Funded Closed Plan

Situation

- Closed Plan
- Non-Indexed
- No Solvency payments
- PfAD 11%

Asset Mix

- 45% bonds
- 55% equities

Considerations

- Actuarial
- Plan Improvement
- Contribution Holiday
- PBGF Premium
- Investment

	in '000's		
	Going Concern	Best Estimate	Solvency/Wind-Up
Assets	$ 200,000	$ 200,000	$ 200,000
Liabilities	$ 165,000	$ 155,000	$ 190,000
Funded Position	$ 35,000	$ 45,000	$ 10,000
Funded Ratio	121%		105%
PfAD		($ 17,050)	
Funded Position	$ 35,000	$ 27,950	
Total Normal Cost	$ 3,000	$ 2,760	
PfAD	n/a	$ 300	
Employer Normal Cost	$ 3,000	$ 3,060	
Permitted Application of Surplus	$ (3,000)	$ -	
Employer Contributions	$ -	$ 3,060	

Case Study 3: An Open Plan with a Deficit

Situation

- Open Plan
- Indexed and contributory
- Solvency payments
- PfAD 8%

Asset Mix

- 35% long bonds
- 55% equities
- 10% real assets

Considerations

- Investment
- Actuarial
- Plan Improvement

	in '000's			
	Going Concern	Best Estimate	Solvency	Wind-Up
Assets	$ 1,000,000	$ 1,000,000	$ 1,000,000	$ 1,000,000
Liabilities	$ 1,100,000	$ 1,050,000	$ 1,200,000	$ 1,700,000
Funded Position	$ (100,000)	$ (50,000)	$ (200,000)	$ (700,000)
Funded Ratio	91%	95%	83%	
PfAD		$(71,000)		
Funded Position	$ (100,000)	$ (121,000)		
Total Normal Cost	$ 45,000	$ 43,000		
Employee Contributions	$ (20,000)	$ (20,000)		
Expense Margin	Implicit in DR	$ 1,500		
PfAD	n/a	$ 3,000		
Employer Normal Cost	$ 25,000	$ 27,500		
Special Payments	$ 43,000	$ 16,000		
Employer Contributions	$ 68,000	$ 43,500		

Case Study 4: A Well Funded Open Plan

Situation

- Open Plan
- Member Contributions
- Indexed
- No Solvency Payments
- PfAD 8%

Asset Mix

- 30% long bonds
- 50% equities
- 20% real assets

Considerations

- Investment
- Actuarial
- Plan Improvement
- Three-year phase-in

	in '000's			
	Going Concern	Best Estimate	Solvency	Wind-Up
Assets	$ 500,000	$ 500,000	$ 500,000	$ 500,000
Liabilities	$ 520,000	$ 495,000	$ 500,000	$ 800,000
Funded Position	$ (20,000)	$ 5,000	$ -	$ (300,000)
PfAD		$(30,000)		
Funded Position	$ (20,000)	$ (25,000)		
Total Normal Cost	$ 20,000	$ 18,700		
Employee Contributions	$ (8,000)	$ (8,000)		
Expense Margin	Implicit in DR	$ 1,000		
PfAD	n/a	$ 1,200		
Employer Normal Cost	$ 12,000	$ 12,900		
Special Payments	$ 1,900	$ 3,300		
Employer Contributions	$ 13,900	$ 16,200		

Special Thank you to our Platinum Sponsor

CIBC MELLON