

MANITOBA PUBLIC UTILITIES BOARD

Re: MANITOBA PUBLIC INSURANCE CORPORATION (MPI)
GENERAL RATE APPLICATION FOR
2017-2018 INSURANCE YEAR
HEARING

Before Board Panel:

Robert Gabor, Q.C. - Board Chairperson
Karen Botting - Board Member
Anita Neville - Board Member
Allan Morin - Board Member

HELD AT:

Public Utilities Board
400, 330 Portage Avenue
Winnipeg, Manitoba
October 28, 2016
Pages 1791 to 1980



“When You Talk - We Listen!”



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1 --- Upon commencing at 9:03 a.m.

2

3 THE CHAIRPERSON: Good morning,
4 everyone.

5 Mr. Williams, I believe you're on tap.

6 MR. MATT GHIKAS: Mr. Chairman,
7 actually, I'll -- I'll --

8 THE CHAIRPERSON: Oh, Mr. Ghikas, more
9 undertakings?

10 MR. MATT GHIKAS: I just have an
11 undertaking to file, and then I'll turn it over --

12 THE CHAIRPERSON: Okay.

13 MR. MATT GHIKAS: -- to Mr. Williams.

14 THE CHAIRPERSON: Sure.

15 MR. MATT GHIKAS: This is Undertaking
16 Number 34, and it would be MPI Exhibit 70. And it was
17 to file the HSBC Global presentation slide that --
18 that Dr. Cleary referred to yesterday.

19 THE CHAIRPERSON: Okay. Thank you.

20 MR. MATT GHIKAS: Thank you.

21

22 --- EXHIBIT NO. MPI-70: Response to Undertaking
23 34: HSBC Global
24 presentation slide

25

1 MR. BYRON WILLIAMS: Good morning, Mr.
2 Chair and members of the panel. I do wish to
3 introduce Mr. Valter Viola, V-A-L-T-E-R, V-I-O-L-A,
4 who will be appearing as a witness for CAC (Manitoba)
5 today.

6 You should have in front of you a very
7 short pol -- PowerPoint relating to Mr. Viola's
8 qualifications, and we would ask that that be marked
9 as CAC-23.

10

11 --- EXHIBIT NO. CAC-23: PowerPoint relating to
12 Valter Viola's
13 qualifications

14

15 MR. BYRON WILLIAMS: I can indicate
16 that there is -- does the panel have that?

17 THE CHAIRPERSON: No.

18 MR. BYRON WILLIAMS: Oh, they'll --
19 you'll have it in a second. My apologies. I should
20 also note that there'll be a -- a longer PowerPoint
21 that, assuming qualifications go well, we'll introduce
22 at -- at that point in time.

23

24 (BRIEF PAUSE)

25

1 MR. BYRON WILLIAMS: Just while we're
2 waiting, I can indicate for the panel's information
3 that Mr. Viola's curriculum vitae has already been
4 filed on the record of this evidence. I think it's
5 marked as Appendix A to his evidence of September
6 26th, beginning at page 48. And once the
7 qualifications are distributed, we'll just have the
8 witness affirmed.

9

10 CAC (MANITOBA) PANEL 1:

11

12 VALTER VIOLA, Affirmed

13

14 EXAMINATION-IN-CHIEF BY MR. BYRON WILLIAMS (QUAL)

15 MR. BYRON WILLIAMS: Just for the
16 purposes of where we're going in the qualification
17 stage, we are asking to have Mr. Viola qualified as an
18 expert in three (3) distinct areas; 1) investment
19 portfolio management, 2), investment portfolio
20 research, economics, and risk management, and 3) --
21 that was a long one, so investment portfolio research,
22 economics, and risk management, and 3) quantitative
23 asset liability modelling.

24 Mr. Viola, you hold a bachelor's degree
25 in commerce from the University of Toronto from 1986?

1 MR. VALTER VIOLA: Yes.

2 MR. BYRON WILLIAMS: And you were
3 honoured with a CA designation in 1989?

4 MR. VALTER VIOLA: Yes.

5 MR. BYRON WILLIAMS: You earned an MBA
6 from the University of Western Ontario in 1990?

7 MR. VALTER VIOLA: Yes.

8 MR. BYRON WILLIAMS: And you were --
9 became a chartered financial analyst in 1995.

10 MR. VALTER VIOLA: That's correct.

11 MR. BYRON WILLIAMS: And between 1992
12 and 1993, you were a lecturer at Wilfrid Laurier, and
13 York universities on subjects including investments,
14 finance, and accounting?

15 MR. VALTER VIOLA: That's correct.

16

17 (BRIEF PAUSE)

18

19 MR. BYRON WILLIAMS: Turning to your
20 qualifications, page 2, and beginning with your work
21 at 'Teachers in 1993' I wonder if you could, please,
22 discuss your work experience as it relates to the
23 expertise that underlies your evidence.

24 MR. VALTER VIOLA: Sure. So I was
25 hired in '93 three (3) or four (4) years after the

1 Ontario Teachers' Pension Plan was -- was founded, and
2 I started off in 1993 as the only analyst -- the first
3 analyst in the research and economics group, which --
4 so sort of the thinking tank of the group -- of the --
5 of the fund, if you will.

6 At the time, it was about a \$25 billion
7 fund and the first task as the analyst in the group
8 was to develop an asset liability model to support the
9 asset mix planning for the fund. So the -- the plan
10 had non-marketable debentures. It had a swap program
11 to get to foreign equity exposure and equity exposure
12 away from fixed income, and my first task was to build
13 an asset liability model from the ground up working
14 with outside actuary and modelling the characteristics
15 of the assets in relation to the liabilities to
16 support asset mix policy decisions for the fund.

17 I was there for seven (7) years, so
18 starting off as an analyst I progressed within the
19 research and economics group undertaking policy
20 research on what asset class characteristics were of
21 benefit to the fund. Given that its liabilities were
22 long term in nature, indexed to inflation, and so we
23 introduced asset classes to the fund. Things like
24 real-return bonds, commodities, infrastructure later
25 in the seven (7) year per -- program that I was there,

1 at least the research behind it, to support policy
2 decisions.

3 I became a research director overseeing
4 staff, and we looked at things also like currency
5 hedging, whether it was prudent and appropriate to
6 hedge some of the foreign equity exposure's currency
7 risk.

8 And then probably five (5) or six (6) -
9 - five (5) or six (6) -- six (6) years into the seven
10 (7) years that I was an Ontario Teachers' I became a
11 portfolio manager for the real-return bond portfolio,
12 which was the least risky portfolio, given the nature
13 of the pension obligations of the fund.

14 And then I also became a portfolio
15 manager with -- for a portfolio called Tactical Asset
16 Allocation, TAA, which was a shorter horizon view on
17 broad asset classes and whether the fund was better
18 off to overweight or underweight certain things, like
19 Canadian equities versus fixed income.

20 So those were two (2) portfolios that
21 fell into our research group for a variety of reasons
22 from the traditional silos that were public equities,
23 real estate, et cetera, for reasons we can go on and
24 explain.

25 And then by the time I had left after

1 seven (7) years, I had been on the investment planning
2 committee, which is a senior management team, not an
3 executive -- I wasn't an executive at Ontario
4 Teachers' but every two (2) weeks this committee
5 chaired by the chief investment officer would get in a
6 room and talk about the views on the capital markets,
7 whether -- at a broad high level, not security
8 individual stock level but should the fund
9 overweight/underweight certain currencies, certain
10 asset classes, and just from a practical rebalancing
11 point of view what -- what was needed to go on at the
12 total fund level. So that's -- that stays at Ontario
13 Teachers' for seven (7) years.

14 MR. BYRON WILLIAMS: If I could just
15 stop you there for a second. In terms of -- you
16 mentioned the magnitude of Ontario Teachers' when you
17 joined them.

18 What was the magnitude of the fund when
19 you left it, sir?

20 MR. VALTER VIOLA: Rough -- there's
21 actually a slide, if I could -- upwards roughly 60
22 billion --

23 MR. BYRON WILLIAMS: Okay.

24 MR. VALTER VIOLA: -- when I left in
25 2000, summer 2000.

1 MR. BYRON WILLIAMS: And -- and where
2 is it today?

3 MR. VALTER VIOLA: Closer to one
4 seventy (170), so.

5 MR. BYRON WILLIAMS: Please proceed to
6 the --

7 MR. VALTER VIOLA: Sure.

8 MR. BYRON WILLIAMS: -- CPP
9 investment, then.

10 MR. VALTER VIOLA: So then -- so
11 having spent seven (7) years in increasing roles of
12 seniority at Ontario Teachers', I became the first
13 investment officer hired at the CPP Investment Board,
14 which today is about \$300 billion. But at the time,
15 in the summer of 2000 when I joined, it was one (1)
16 year old.

17 The Canada Pension Plan, of course, is
18 separate from the Canada Pension Plan Investment
19 Board. CPP was created in 1966, but like social
20 security in the US, didn't have bricks and mortar
21 assets, bon -- it had nonmarketable bonds behind the
22 promise, but no tangible stocks and -- and other
23 assets.

24 It started receiving funding in March
25 of 1999. They hired the CEO. I was the first

1 investment officer in -- in the investment department.
2 So I headed up research and risk. The other two (2)
3 colleagues who were at my level reporting to a
4 CEO/CIO, one (1) and the same, were head of public
5 markets and head of private.

6 The public markets VP didn't come for
7 another year, so I was essentially responsible in some
8 ways for that, as well. My overall mandate was to
9 oversee the total funds research and risk, the same
10 sort of responsibilities at Ontario Teachers', except
11 I wasn't the junior analyst, it was the -- at the head
12 of the group.

13 We had a small team in the early years,
14 but it -- it grew over the five (5) years that I was
15 there. And early days, it was all about how does one
16 manage a pool of capital that is important to
17 Canadians and, at the time and still is, is getting
18 more cashflows in than it's paying out pensions.
19 It'll probably, in the next five (5) years, start
20 paying out more in pensions than it receives in
21 contributions.

22 But in the summer that I joined, the
23 peak of the contributions is a billion dollars a month
24 coming in the door to reinvest. And -- and this is a
25 fund that's new to Canada, and it doesn't have all the

1 assets. It's got a billion dollars coming in the
2 door, and it doesn't have any of the liabilities on
3 its books.

4 So the first task was to develop a
5 framework for decision making to support how does one
6 deploy this large pool of capital, taking into account
7 the fact that, while we can't control the weather, we
8 need to take it into account. These liabilities on --
9 are on somebody else's books. How do you manage these
10 port -- this portfolio in light of that? So
11 everything from what asset mixes to deploy, whether to
12 use derivatives, and how to -- to deal with this
13 constraints that are listed on this slide.

14 Foreign property rule; it was still
15 binding. You couldn't invest physically outside
16 Canada beyond a certain limit. Nonmarketable bonds
17 that couldn't be sold, at Teachers', we swapped them.
18 The question was what do we do at CPPIB. And another
19 one which we can talk about later --

20 MR. BYRON WILLIAMS: Okay.

21 MR. VALTER VIOLA: -- which is an
22 important constraint.

23 MR. BYRON WILLIAMS: And when you left
24 CPP in 2005, what would be the approximate size of the
25 portfolio?

1 MR. VALTER VIOLA: That's a hard
2 question to answer --

3 MR. BYRON WILLIAMS: That's okay.

4 MR. VALTER VIOLA: -- because it's so
5 -- I'd have to look at the graph, to be honest.

6 MR. BYRON WILLIAMS: No worries. And
7 maybe --

8 MR. VALTER VIOLA: It's gone from 3
9 billion when I started to three hundred (300). You
10 could draw a straight line probably, and --

11 MR. BYRON WILLIAMS: Fair enough.

12 MR. VALTER VIOLA: -- a little curve,
13 but...

14 MR. BYRON WILLIAMS: Maybe you could
15 move just --

16 MR. VALTER VIOLA: Sure.

17 MR. BYRON WILLIAMS: -- to Holland
18 Park.

19 MR. VALTER VIOLA: So Holland Park is
20 my company, very small, but, basically, it -- it was
21 and still exists but in different forms. I'm
22 basically providing an outsourced research and risk
23 function to large funds and smaller funds in North
24 America.

25 So the mandate is -- or the vision was,

1 and still is, is to support funds that don't have 300
2 billion or 150 billion with assets under management
3 and help them tackle the same problems that the mega
4 funds have to tackle but with fewer resources.

5 So the view was to leverage the
6 experience on the policy development side, the risk
7 management stuff in particular, and help funds focus
8 on the risks that matter the most, starting with
9 frameworks.

10 And then also providing a -- a risk
11 analytical tool that I would host with licenced
12 software to provide regular reporting and transparency
13 to support their decision making. So kind of a bus
14 approach to make it more affordable for the 2 billion,
15 3 billion, \$5 billion fund, still big funds, but not
16 300 billion. Less frequently than Teachers' did, but
17 monthly reporting to provide transparency on the risks
18 that mattered the most. So that I've been doing for a
19 decade, but it has evolved over time.

20 MR. BYRON WILLIAMS: And just to
21 finish with that.

22 MR. VALTER VIOLA: Sure.

23 MR. BYRON WILLIAMS: In terms of the -
24 - the -- is that only in Canada, or would that include
25 North America?

1 MR. VALTER VIOLA: No. So -- so when
2 I started again after a dozen years at those two (2)
3 mega funds I looked down the list at the biggest
4 Canadian funds and -- and started to see what appetite
5 there was for this. So I had a lot of the big funds
6 that you'd recognize names for in Canada, as well as
7 some big funds.

8 So the biggest one in the US is \$100
9 billion fund in the -- in the US for which I developed
10 their investment risk management strategy.

11 And I don't know that I want to name
12 names, but -- but it -- it's a big fund and I've --
13 I've got other use -- I'm actually down in -- in
14 California next week on a Board of Education session
15 with one (1) fund.

16 MR. BYRON WILLIAMS: And just in terms
17 of the -- the relatively smaller funds that you work
18 with --

19 MR. VALTER VIOLA: Yeah.

20 MR. BYRON WILLIAMS: -- what would be
21 the -- kind of the --

22 MR. VALTER VIOLA: So the ones that I
23 had outsourced risk measurement services where I
24 provided monthly reporting, those funds started off in
25 the, I guess, the late -- around 2006. Those funds at

1 that time would have been about 4 and \$5 billion
2 funds.

3 I have had a small fund below a
4 billion, but it wasn't a major -- a -- a big
5 engagement.

6 MR. BYRON WILLIAMS: Okay. Thank you.
7 And then just before we move on to seeking to qualify
8 you, at the bottom of page 2 of your PowerPoint --

9 MR. VALTER VIOLA: Yeah.

10 MR. BYRON WILLIAMS: -- there you
11 identify four (4) constraints. And -- and I wonder if
12 you can explain how, if at all, those con --
13 addressing those constraints has informed your
14 expertise for the purposes of -- of this proceeding?

15 MR. VALTER VIOLA: So there's a belief
16 that I've articulated in the evidence that informs our
17 judgment. Those beliefs were developed at CPP
18 Investment Board. A colleague led the development.
19 And one (1) of them is actually not a belief, it's a
20 truism and it's -- it's regarding constraints.

21 And the -- and the belief or truism is
22 that constraints never increase risk adjusted returns.
23 So while we may have constraints imposed on a
24 portfolio for good reasons, I can explain examples of
25 ones later, but the -- the fact of the matter is when

1 we impose a constraint on a portfolio it's -- and
2 again, thinking of risk and return on this dimension,
3 we always want to go north west to the Northwest
4 Territories.

5 Winnipeg's great. You never want to be
6 in Toronto if you're looking at north and west, for
7 example. And constraints shift that efficient
8 frontier down. They -- or -- or they leave it
9 unchanged. So they can't -- they may not hurt you,
10 but they could really hurt you.

11 In -- in the span of the dozen years
12 that you see there, the constraints that -- as an
13 organization, the -- the funds for whom I worked, we
14 had to tackle was foreign property rule with both
15 funds. We couldn't physically invest in stocks
16 outside of Canada beyond a certain limit. You could
17 use derivatives to do that.

18 Non-marketable bonds, Ontario teacher's
19 last bond matured in 2012. CPP continues to get bonds
20 that it can't sell. And -- and we'll see in the -- in
21 the testimony that I make later the importance of
22 real-return bonds in certain portfolios to hedge
23 certain liability risks.

24 And the fact of the matter is -- and
25 real-return bonds haven't been around very long. In

1 Canada they were created in the early '90s. They came
2 in the US actually later. And the Bank of Canada has
3 a rule that for the options for these bonds -- there's
4 real-return bonds that provide inflation protection
5 and are really good assets for pension funds and other
6 funds like insurance companies that have somewhat
7 indexed or highly indexed inflation linked
8 liabilities.

9 Buying those in -- in appropriate
10 volume sometimes is a challenge. And in Canada, for
11 example, we couldn't buy enough of them. We always
12 bought at Ontario teachers one-quarter (1/4) the
13 issue. And when we found we didn't have enough we
14 went to the US and backed the truck -- the truck when
15 they created them a few years after Canada did.

16 And in the last year before leaving
17 teachers I -- I -- we bought \$5 billion, so -- and
18 created the -- another private equity investment
19 because the public markets didn't offer the ones that
20 we needed.

21 MR. BYRON WILLIAMS: Actually, that
22 private investment --

23 MR. VALTER VIOLA: Yeah.

24 MR. BYRON WILLIAMS: -- was a toll
25 road?

1 MR. VALTER VIOLA: So it was the
2 financing for the 407 toll road in -- north of the
3 City of Toronto that was the single biggest investment
4 that Teachers had made to date and it was among the
5 top forty (40) single holdings at the fund by the time
6 I left, and that sat in my portfolio.

7 So I did the due diligence on that. I
8 lead the due diligence on that.

9 MR. BYRON WILLIAMS: And then just
10 going to that TSX indexation --

11 MR. VALTER VIOLA: Yeah.

12 MR. BYRON WILLIAMS: -- very quickly,
13 I wonder if you can chat about the relevance, if any--

14 MR. VALTER VIOLA: Certainly.

15 MR. BYRON WILLIAMS: -- of your work
16 with --

17 MR. VALTER VIOLA: Right.

18 MR. BYRON WILLIAMS: -- CPPIB and with
19 Nortel?

20 MR. VALTER VIOLA: Right. So at CPP
21 Investment Board I was the first investment person
22 hired there. And within the first month of me being
23 there landed in August of 2000 -- there's a graph that
24 we'll see that showed where Nortel was and it was, you
25 know, the darling of the Canadian stock market.

1 And I don't know the full history
2 behind the regulations that were set out to create
3 this Canada Pension Plan Investment Board, but there
4 were certain regulations. There were at least ten
5 (10). I don't know how many there were, but there was
6 a reg ten (10) or reg -- reg nine (9), I believe, that
7 requited in -- for the CPP Investment Board to invest
8 -- it could invest actively, i.e., by -- selectively
9 pick which stocks in the S&P 500 in the US it -- it
10 choo -- chose to -- to invest in.

11 But in Canada there was a restriction
12 that required it to be passively indexed. It couldn't
13 -- it couldn't choose to underweight or overweight a
14 stock.

15 So by definition, we had to deploy --
16 and given the foreign property rule and the absence of
17 the ability to use derivatives on day 1, we were
18 forced to buy Nortel with a billion dollars coming in
19 the door. And Nortel's weight was so big that we
20 basically were so concentrated in one (1) stock that
21 it wasn't prudent.

22 The CEO at the time knew that wasn't
23 prudent. He didn't need a risk model or anything,
24 just common sense. So he lobbied, and it wasn't a
25 trivial exercise to get the regulation changed, but he

1 did.

2 And they actually didn't soften it
3 completely. They said, Okay, fine, we get the fact
4 that it's a problem. They took half of the regulation
5 and said, You can be half active.

6 As soon as that was in print, we sold
7 Nortel out the door to the extent that we could, and
8 it saved a half a billion dollars. And that was a
9 risk management decision that was the prudent and
10 appropriate thing to do.

11 But -- and again the costly constraint,
12 well intentioned, but cost, and -- and --

13 MR. BYRON WILLIAMS: And then just to
14 finish up, you've also served on committees. Without
15 asking you to elaborate --

16 MR. VALTER VIOLA: Sure.

17 MR. BYRON WILLIAMS: -- for the
18 Pension Investment Association of Canada --

19 MR. VALTER VIOLA: Yeah.

20 MR. BYRON WILLIAMS: -- or PIAC --

21 MR. VALTER VIOLA: PIAC, Yes.

22 MR. BYRON WILLIAMS: -- as well as
23 Healthcare of Ontario Pension Plan?

24 MR. VALTER VIOLA: I -- I was a
25 volunteer member at PIAC, which is an industry

1 association. HOOPP, I was actually paid as an
2 independent advisor, one (1) of three (3) to the
3 HOOPP. Healthcare now goes by a different name, but
4 it's HOOPP, Hospitals of Ontario Pension Plan. I
5 forget the exact name now. It's Healthcare something,
6 but's typically known as HOOPP. And I was an advisor
7 to their investment committee for three (3) years, I
8 believe.

9 MR. BYRON WILLIAMS: So I'd --

10 MR. VALTER VIOLA: Paid -- paid
11 service personally.

12 MR. BYRON WILLIAMS: Thank you. And I
13 appreciate your time.

14 Mr. Chair and members of the panel, we
15 -- again we'd ask that Mr. Viola -- just to back up.
16 My apologies.

17 Mr. Viola, you have not worked
18 extensively with any property and casualty insurer?

19 MR. VALTER VIOLA: No.

20 MR. BYRON WILLIAMS: We would ask that
21 Mr. Viola be qualified as an expert in investment
22 portfolio management; investment portfolio research,
23 economics, and risk management; and quantitative asset
24 liability modelling.

25 THE CHAIRPERSON: Mr. Ghikas...?

1 MR. MATT GHIKAS: I do have a few
2 questions for --

3 THE CHAIRPERSON: Okay.

4 MR. MATT GHIKAS: -- Mr. Viola on his
5 -- on his CV.

6

7 CROSS-EXAMINATION BY MR. MATT GHIKAS (QUAL):

8 MR. MATT GHIKAS: Good morning.

9 MR. VALTER VIOLA: Good Morning.

10 MR. MATT GHIKAS: Mr. Viola, my name's
11 Matt Ghikas, and I am the counsel for MPI. In Mr.
12 Williams's -- one (1) of his last questions there, he
13 asked you about the P&C casualty industry.

14 And I believe the question he
15 formulated was whether -- that you had not worked
16 extensively with P&C. And I think in your materials,
17 you indicate that you have not worked with P&C,
18 correct?

19 MR. VALTER VIOLA: Yeah.

20 MR. MATT GHIKAS: Okay. And the
21 reason I paused there is there's someone transcribing,
22 sir, that --

23 MR. VALTER VIOLA: I'm sorry. Is that
24 okay? Better? Sorry about that.

25 MR. MATT GHIKAS: So what we can --

1 he's transcribing, and so when we talk over each
2 other, it's a nightmare for him. So you and I --

3 MR. VALTER VIOLA: Certainly.

4 MR. MATT GHIKAS: -- will have to
5 pause.

6 MR. VALTER VIOLA: Okay.

7 MR. MATT GHIKAS: Okay?

8 MR. VALTER VIOLA: Yes.

9 MR. MATT GHIKAS: Now, in your CV that
10 was circulated today -- and it's -- it's page 50 of
11 the PDF that was CAC-11, for the record. But in your
12 -- your CV under Education, so that's on the third
13 page of your CV -- and you mentioned this morning that
14 you -- that you were -- obtained your chartered
15 accountancy designation in 1989, correct?

16 MR. VALTER VIOLA: That's correct.

17 MR. MATT GHIKAS: And are you still
18 certified, sir?

19 MR. VALTER VIOLA: No. I choose not
20 to pay the -- the fees, so therefore I don't -- I
21 can't -- I can't practice as a chartered accountant.

22 MR. MATT GHIKAS: And when -- when did
23 you allow that to lapse?

24 MR. VALTER VIOLA: When I started my
25 business and -- actually, not when I started my

1 business, but a few -- a few years ago when -- between
2 CFA dues and other dues, I knew I wouldn't be
3 practising public accounting. So I chose not to pay
4 the fees.

5 MR. MATT GHIKAS: And a few years ago,
6 is that -- can you give me a more precise time line?
7 Was that before --

8 MR. VALTER VIOLA: It's probably been
9 at least six (6) years, I would think.

10 MR. MATT GHIKAS: Okay. Was that
11 before or after IFRS came in?

12 MR. VALTER VIOLA: As I said, I
13 haven't been prac -- I did two (2) years of public
14 accounting. So after -- when I was in MBA school, and
15 that was two (2) years, I -- I haven't looked at a
16 GAAP since then, to be honest. So --

17 MR. MATT GHIKAS: Okay.

18 MR. VALTER VIOLA: -- I'm not -- I'm
19 not familiar with details. I know the principles and
20 I've taught the principles.

21 MR. MATT GHIKAS: Okay. And in terms
22 of IFRS, you -- you understand that there are
23 different accounting standards for entities like MPI
24 from those that are applicable to pensions, correct?

25 MR. VALTER VIOLA: That is correct,

1 and I believe I do note that in my evidence.

2 MR. MATT GHIKAS: Understood. And for
3 clarification, in -- in your experience, your
4 accounting experience that you would be dealing with
5 on a day-to-day basis in your practice, that would be
6 pension relating count -- accounting, sir?

7 MR. VALTER VIOLA: Actually it doesn't
8 really -- if I could just take a moment. Whether it's
9 -- it doesn't really matter the sector as an
10 investment analyst or risk analyst. You can
11 appreciate, I hope, the fact that different --
12 different users of information have different needs.
13 And so they will make adjustments to GAAP accounting,
14 whether it's an oil and gas company, or a pension fund
15 or an insurance company, to meet their needs.

16 So it's not to say that there are two
17 (2) sets of books. It's just that as an investment
18 analyst, we make regular adjustments for different
19 things, whether it's FIFO/LIFO, in this case it's
20 something else, to serve our purposes. Not to say
21 that GAAP is wrong or right. It is what it is for all
22 those right reasons as are actuarial reports.

23 But those purposes serve one (1) need
24 but we can't use the same tool to meet different goals
25 so adjustments are required. And I make adjustments

1 for market value differences on the asset basis, plus
2 market value at risk relative to accounting risk.

3 MR. MATT GHIKAS: Okay. And there
4 have been a number of developments in IFRS since your
5 certification lapsed, correct?

6 MR. VALTER VIOLA: I'm sure there have
7 been.

8 MR. MATT GHIKAS: Okay. And you did
9 confirm, I believe, that you're not an actuary.

10 MR. VALTER VIOLA: No, I -- no. We
11 can go into a separate story. I love actuaries, and I
12 regret not having taken the extra year to do that as
13 an under grad, to be honest. They changed it the year
14 we could do a B.Com in four (4). They made it five
15 (5) years and, call it lazy but I -- with hindsight it
16 would have been a good thing to have.

17 MR. MATT GHIKAS: Some -- some of my
18 best friends are actuaries, so --

19 MR. VALTER VIOLA: You know what --

20 MR. MATT GHIKAS: -- it's okay.

21 MR. VALTER VIOLA: -- they're -- I
22 have nothing but excellent things to say about
23 actuaries.

24 MR. MATT GHIKAS: Mr. Chairman, I -- I
25 --

1 MR. BYRON WILLIAMS: Mr. Viola, you
2 are responsible for written evidence filed on
3 September 26th, 2016, and marked as CAC Exhibit Number
4 11?

5 MR. VALTER VIOLA: Yes.

6 MR. BYRON WILLIAMS: And you are
7 responsible for the responses to Information Requests
8 of the Public Utilities Board that are marked as PUB
9 Exhibits 12-4 --

10 MR. VALTER VIOLA: Yes.

11 MR. BYRON WILLIAMS: -- through to 12-
12 8?

13 MR. VALTER VIOLA: Yes.

14 MR. BYRON WILLIAMS: And that written
15 material was prepared under your direction and
16 control, and is accurate to the best of your knowledge
17 and belief?

18 MR. VALTER VIOLA: Yes, it is.

19 MR. BYRON WILLIAMS: If Diana could
20 pull up your power -- the PowerPoint?

21 MR. VALTER VIOLA: Yeah, I've got it,
22 if you want.

23 MR. BYRON WILLIAMS: Oh, if Valter
24 could pull up the PowerPoint. And I'm going to turn
25 things over to Mr. Viola now.

1 MR. VALTER VIOLA: Thank you. And
2 it's a pleasure to be here. I've got -- I'm not sure
3 who's going to keep me on track for time, but I've got
4 three (3) sections to the presentation -- the
5 discussion. The first is an overview for context.

6 The second one on the left is a group
7 of what I call remedies to -- not symptoms but
8 problems that are not unique to MPI but are common to
9 all organizations, to be honest. And -- and it's just
10 with -- in a quest for excellence. There are things
11 that we all know, or should know, that stand in the
12 way of getting there and I've identified high level
13 what those are for every organization, and applied
14 them to MPI. So I'll talk about those as quickly as
15 we can without missing key points.

16 And then the final thing is to actually
17 look at the evidence, the eighteen (18)
18 recommendations that I made, and not go over all of
19 them, and certainly not focus on the accounting
20 treatments. More just the -- the portfolio and the
21 high level aspects of the framework that informs
22 decisions regarding the portfolio.

23 So it's important to differentiate
24 between symptoms and problems. I like to think of
25 portfolio management as the ultimate team sport for

1 reasons we can go into in a -- in a moment. And so
2 differentiating between symptoms and problems, if this
3 were a hockey team, I would describe this in a lighter
4 manner. This is the dismal science, so I apologize.
5 I try to keep it as light as possible. And hopefully
6 it's taken with that in mind.

7 I see three (3) symptoms of two (2) big
8 problems. The symptoms are that we have a shaky
9 goalie, we have a puck hog, and we're playing
10 shorthanded. And so the shaky goalie is this notion
11 that, as the key last piece of defence, we don't have
12 any real-return bonds in the portfolio, so we're
13 subject to getting scored upon, if you will.

14 And what's going to -- what's going to
15 hurt us? Unexpected inflation to the extent that we
16 don't have real-return bonds, which are bonds that
17 provide inflation protection with an appropriate
18 duration and time horizon to match the liabilities
19 that MPI is trying to manage against, and real
20 interest rate risk, which is the risk that real
21 interest rates differ from what we'd like them to be
22 in particular if they happen to go down by a lot.

23 So I would argue that this poses a bit
24 of a problem and that our duration management program
25 is less effective potentially than -- than it ought to

1 be or could be.

2 Canadian equity is the puck hog. There
3 is a home bias, a home country bias around the world.
4 We all tend to invest in the things we know best. MPI
5 has -- has a very much more concentrated portfolio in
6 Canadian equities compared to US or international.
7 And it's a particular problem in Canada because of the
8 nature of the Canadian equity market.

9 Typically, three (3) sectors of ten
10 (10) make up two thirds (2/3) to three quarters (3/4)
11 of the index. On a market value basis, if you -- and
12 -- and again, this I'll come to in a minute, but
13 there's a distinction between the asset pie chart that
14 says you have a 60:40 or 30:06 -- 30:70 mix of stocks
15 versus bonds, et cetera. The more important pie chart
16 is the pie chart of risk. Where does the risk come
17 from?

18 And so some of the concentration that's
19 in the Canadian equity portfolio on a sector basis
20 isn't really as transparent on first surface because
21 we typically measure things either on a book value or
22 accounting value pie chart rather than a risk pie
23 chart, which could be looking very different.

24 The third symptom of the problem is the
25 shorthandedness, the fact that we don't have any

1 international equities, a large part of the global
2 market. The US is typically more than half of the
3 global market. There's numbers later to suggest it's
4 a bit more than 50 percent. Canada typically is 3 to
5 5 percent, call it 4.

6 So there's a potential for missed
7 opportunities to add value, higher returns, and
8 diversify the portfolio. Those are symptoms of the
9 problem. The -- the problems, as I see it -- and,
10 again, they're not unique to MPI. Every organization
11 faces them for reasons we can go on in a -- in a
12 moment. But the two (2) big problems are focus. And
13 the second one is the process.

14 And by, "focus," I mean the clarity in
15 mission. There's a lot of things we want to do, must
16 do, and it's important to distinguish between goals
17 and constraints. And we can really only have one (1)
18 primary goal, or we should at least identify what that
19 primary goal is. Everything else is either a
20 secondary, tertiary goal or constraint. And I -- I
21 believe strongly that the focus on short-term rate
22 stability is at the expense of long-term lower premium
23 rate levels potentially through that focus.

24 The second -- second set of things
25 which consist of three (3) problems relate to the

1 process. And again, focus and process were identified
2 in my evidence having been identified by CEOs and
3 CIOs, chief investment officers, in the pension
4 industry back when I first started a quarter century
5 ago.

6 And over the years, I've learned that
7 that is in fact the case and it doesn't matter where
8 you go. It's always a challenge and some funds do it
9 better than others. In the case of the process,
10 there's three (3) elements. The first is that MPI
11 uses accou -- relies heavily on accounting metrics,
12 GAAP/IFRS-based metrics, to inform.

13 And again, there's -- there's no
14 problem with accounting, it's the use of accounting
15 for purposes that require adjustment. So, as I said
16 earlier in -- in a statement, as an investment
17 analyst, I need to make adjustments for earnings for
18 various reasons, not the least of which is I'm
19 focussed on risk, not market value.

20 But to the extent that accounting
21 values differ from market values, it's important me --
22 for me to understand how they're different and make
23 adjustments for the true volatility for the purpose of
24 setting an asset mix, for example.

25 So accounting tends to have less

1 volatile earnings, net income, with is a GAAP,
2 Generally Accepted Accounting Principles. I'll refer
3 to GAAP rather than IFRS if that's okay. And my
4 preference as a -- as a risk manager and portfolio
5 manager is I -- is -- is I need to better be informed
6 on my decision-making process based on market values
7 and risks related to them.

8 The second one is -- I'll move quickly
9 after this, asset based rebalancing. So this notion
10 that we set -- an asset mix once in a while, I think
11 there's a presumption by most people that that sets
12 the risk level in a static way, but the reality is, as
13 we'll see with Nortel, having the same allocation to
14 Canadian equities can change very quickly.

15 If a certain sector, or a certain stock
16 within a sector tends to go up or down in -- a lot.
17 So in Canada in particular there's a tendency for the
18 estimates of the risk for a particular asset class to
19 change. Even in the case of real-return bonds where -
20 - where the interest rates have gone down from when I
21 first started almost 5 percent real to almost zero
22 today. The risks are very different now for that
23 portfolio, for example.

24 And the last one is really one of
25 frequency. Given the fact that the world can change

1 very quickly, a static asset mix set once every four
2 (4) to five (5) years can have a varying risk profile.
3 So it's -- it's important, I believe, to have more
4 informed discussions about the more -- the -- the most
5 important risks that matter more frequently.

6 So the remedies are, again, I focus on
7 two (2) things, the framework; which is really about
8 what questions should you ask and what are the answers
9 to those questions? Those are the elements of a
10 framework. So if the first question is, What risks
11 really matter? Then the answer to that question helps
12 inform what the concept of a minimum risk portfolio
13 is.

14 So the framework elements, I'll talk
15 about in a few minutes. The next process is given
16 those definitions of what risk matter in light of what
17 goals you set. Then what's a process for managing that
18 and achieving those goals in a way that is prudent and
19 appropriate?

20 I have a love/hate relationship with
21 the word risk budget -- the words risk budgeting. The
22 investment industry is brutal for using words that
23 don't mean a lot, hedge funds, they don't really hedge
24 the funds, they might do the opposite. So I -- I --
25 but this one (1) actually really resonates with me and

1 I didn't create it, but it is really -- risk budgeting
2 is simply budgeting with the word risk stuck in front.
3 So think of budgeting as you would think any sort of
4 budgeting.

5 We have a plan and we want to achieve a
6 goal, and we need some money set aside. Otherwise, we
7 won't achieve it. We don't want to spend more than
8 budget, but if it gets it to the goal better maybe we
9 can spend a bit more than we -- we planned. A risk is
10 just the resource that we deploy.

11 So I'll move a little bit more quickly.
12 Terminology's important, because it can be confusing.
13 I have a few, not the least of which -- most important
14 -- no not -- not most important is my name. So if you
15 haven't figured it out, I am of Italian heritage.
16 There is no 'W' in the Italian alphabet. There's no
17 'X' or 'Y' and that's one (1) reason Italy never
18 produced any significant xylophone players, perhaps.
19 But there's no 'J' or 'K'. There's no Jack Viola.

20 Risk is the thing we want to worry
21 about. Risk, I didn't put it here, but I think of
22 risk as a good. It's a resource. It's -- it's a
23 good, not a bad, and it relates to the future.

24 And it's a resource we don't want to
25 waste because we don't have a -- an infinite tolerance

1 for risk, or appetite for risk. So it's always a
2 forward-looking metric. It's never perfect. It's
3 always an estimate, but the reality is if I had two
4 (2) choices on information that I use, you know, I'd
5 love it to be relevant, the information. I'd love it
6 to be reliable. I'd love to have it yesterday. I'd
7 love it to be timely. I'd love it to be
8 representationally faithful.

9 These are all FASB things that describe
10 what characteristics of information should inform
11 accounting. They're the same things that I do as an
12 investment analyst to inform what I do. So risk is
13 relevant. It's not -- you and I may differ on the
14 quantification, but if we're in the ballpark we'll
15 probably make better decisions than if we don't take
16 risk into account.

17 So risk is very important. It can be
18 thought of in an absolute or a relative sense,
19 relative to inflation, relative to liabilities, et
20 cetera. Value at risk is simply the risk of the value
21 that you care about most. I -- when I say value at
22 risk it's generic. It could be the value of risk that
23 my asset could go down, the value that it doesn't keep
24 up with inflation, the risk that it rises, but it
25 doesn't rise as fast as my liabilities.

1 So it could relate to assets,
2 liabilities, or both. I refer to the word surplus,
3 which is the difference between assets and
4 liabilities. Sur -- surpluses risk is the risk that
5 assets go up maybe, but liabilities go up faster and
6 therefore surplus falls. Value at risk is also known
7 as VaR. I'll -- I'll refer to the value at risk.

8 Duration is a fixed income notion, and
9 we'll come to it later but I'm sure the committee is
10 familiar with it. For example, the pension plan
11 that's embedded in MPI's portfolio and the liabilities
12 that are arising from it has a long duration sixteen
13 (16), which means for a 1 percent drop in interest
14 rates the liability will go up 16 percent, other
15 things equal. So that's a very -- that's a big
16 leverage effect. Think of duration as the longer --
17 the longer the time horizon the higher duration.

18 The -- the other thing to note with
19 duration is long or short is not risky or non-risky.
20 It depends on the context. So volatility and risk are
21 different, so I will try to be very clear on whether
22 I'm talking about volatility which may be good or bad,
23 and risk which is -- needs to be managed.

24 The only different -- I -- I mentioned
25 nominal and -- and real interest rates for clarity

1 here. We all know what inflation is. If there were
2 no inflation there would be no distinction between
3 nominal interest rates or yields, and real yields.
4 The difference reflects inflation. The important
5 point here to make is that real-return bonds, RRBs,
6 provide inflation protection.

7 So if you think of a real-return bond
8 as being this -- this bottle of water and I spent a
9 hundred dollars (\$100) on it, a real-return bond would
10 offer inflation protection. So if it offered a 1
11 percent real yield, and I bought it for a hundred
12 dollars (\$100), if there were no inflation I would get
13 1 percent times a hundred dollars (\$100).

14 But if there was inflation and it
15 caused -- and it was 2 percent, the hundred dollars
16 (\$100) after two (2) years would be indexed to be a
17 hundred and two (102), and the hundred and two (102)
18 is the principal amount against which that 1 percent
19 would apply.

20 So in a -- in an inflation invar --
21 inflation invar -- inflationary environment having a
22 real-return bond means that the hundred dollars (\$100)
23 that you put at risk will rise with inflation and
24 maintain its purchasing power in real terms, and the
25 real interest rate will apply, or the real coupon I

1 should say, will apply to that.

2 Nominal bonds on the other hand will
3 not. If you bought the same hundred dollars (\$100),
4 the value of that nominal bond, or simply bond, is
5 exposed to inflation risk. So if inflation turns out
6 to be higher than expected, which means that the
7 nominal interest rates will rise, that bond will do
8 poorly.

9 So nominal bonds and real-return bonds
10 will behave differently, depending on what factor is
11 changing. Is it the real interest rate? The
12 inflation expectation. That's it for that. So
13 hopefully that clarifies things that -- that I'll
14 discuss later.

15 In the evidence, I did talk about three
16 (3) truths and consequences, not to a great extent,
17 but I'll go through each of the three (3) columns.
18 The first one -- and the difference between a truth
19 and a myth is -- should be obvious. A belief is
20 somewhere in between. A myth is an untruth. And the
21 reality is, we need beliefs for example in the first
22 column because of an inconvenient truth.

23 And the fact of the matter is this
24 isn't the -- the land of physics where Newton's laws
25 apply. This is the land of human people making

1 decisions with a high noise -- or signal -- or sorry,
2 a low signal-to-noise ratio, which means there's a lot
3 of information and a lot of junk out there, and we
4 have to figure out what are the key things that are
5 important to manage your portfolios.

6 We don't have a choice. We have to
7 make decisions. And the beliefs is the best we can
8 do. And what are beliefs? They are not truths but we
9 hope they are close to the truth because we can't
10 prove them but we have empirical evidence to suggest
11 that they're closer to the truth than a myth, and they
12 make economic sense.

13 And they're important because we need
14 to make lots of important decisions, and we're not
15 alone. We need consensus among different people. And
16 often times when you see portfolios and they don't
17 look the way you think they ought to you can usually
18 point to a belief and say, That's the crux of the
19 issue.

20 So if you can get the beliefs straight
21 up front, you're likely to have a portfolio design
22 that's more aligned with what stakeholders need and
23 want, and more informed discussions about the problems
24 rather than the symptoms. So that's why they're
25 important.

1 The second one is really a governance
2 issue. I don't dwell on it other than to say that MPI
3 is no different from any other organization that
4 manages money. It's -- it's -- the -- the managers
5 who manage the money are distinct from the
6 beneficiaries on the liabilities side, and the owners
7 on the capital side.

8 And so there are issues related to
9 that. I -- my scope of the engagement wasn't to look
10 at governance issues but that's an important
11 consideration for understanding why certain things are
12 certain ways, and how to remedy certain things if need
13 be.

14 The last one is the blessing and the
15 curse that is risk management, at least on the
16 portfolio side. And it's the fact that risks don't
17 add. So, no, I don't use the CA designation as a
18 chartered accountant, but I'm happy to say I use it
19 because I can't add. And that's a good thing when it
20 comes to risk because if risks add, you're not doing
21 it right or you're not finding the things that allow
22 you to diversify the portfolio in ways that make the
23 portfolio more efficient.

24 So I like to think of risk conceptually
25 as -- as comprising an arrow. I don't want to go into

1 too details (sic), but if I talk about risk, just
2 think of the length of my arm, and my arm's a vector
3 or an arrow. It has both a length and a direction.

4 So the risk is very different depending
5 on if it's twice as long as my arm, two (2) arms, and
6 whether the arms are pointing towards each other, at
7 right angles, or end to end.

8 And so I would argue that risks add,
9 which is not a good thing -- if you stick the arrows
10 on top of each other -- because that means you don't
11 get any benefit from diversification. You get a hedge
12 if they point in the same direction and are the same
13 size.

14 And they're uncorrelated, and you rely
15 on Pythagorean theorem. So Pythagorus, the famous
16 Greek who said 'A' squared plus 'B' squared equals 'C'
17 squared, if you can use a calculator and use square
18 roots, that all you really need for risk, to be
19 honest.

20 So this -- this hypotenuse, if you
21 said, I'm going to go 1 mile north -- or kilometre
22 north and one (1) west, the sum of them is two (2)
23 units of distance. But if you take the shortcut, it's
24 only one point four (1.4). So risks don't add, and
25 it's important to understand the size the arrows and

1 their direction, because that's all that risk
2 management really boils down to.

3 So I'm going to move a little more
4 quickly. That's the ground, and I'll try to use the
5 same terminology. The barriers to excellence, again
6 they're not unique to MPI. Every organization
7 focusses on process and communication. I don't have a
8 -- a mandate to look at resources other than risk.
9 Risk, as I said, is a good. It's a resource. We
10 don't want to waste it.

11 The investment beliefs, I noted five
12 (5) in the evidence. They're listed here very
13 briefly. It's the -- the Reader's Digest version.
14 The first one is regarding sustainability. So there's
15 only two (2) certainties in life, death and taxes.
16 The rest is about risk management, as far as I can
17 tell.

18 So if you want to live to see another
19 day, I think it's important to think longer than
20 tomorrow and think long term and say, What's
21 sustainable look like? What am I striving to achieve
22 on a long-term basis? And then figure out what gets
23 in the way of achieving that.

24 So the second step in getting to where
25 you want to be long term is to determine how you can

1 hide or where you can hide, which is to say, If I
2 choose not to take risk, where's the hiding place?
3 What is the thing that I can invest in, the minimum
4 risk portfolio, that says, It's time to hunker down,
5 or it's time to hunker down plus take some prudent
6 risks once in a while?

7 So I can do both. I don't have to just
8 take risk completely off the table, but I need to know
9 what that minimum risk portfolio, which is the
10 reference for both defining how much risk to take and
11 whether I've taken too much, and a measure of success
12 long term.

13 So the minimum risk portfolio is really
14 the starting point for saying, If I want to go over
15 there, but I'm here, and I'm not ready to take steps
16 to get there, how do I not go backwards?

17 The additional risk, the third one,
18 should be straightforward. People are risk averse.
19 Organizations are risk averse. We need to get paid
20 for return -- get -- get an extra return for the risks
21 we take.

22 Total portfolio. This one's very
23 important and very subtle, and it's -- it's the
24 argument that risks don't add. And it's the fact
25 that, if this were an asset, I can't say whether I

1 like it or not. Everything's contextual.

2 In other words, if this is a real-
3 return bond or a piece of real estate, and someone
4 said, Should I buy this?, it depends. And not only
5 does it depend on my purpose and whether this piece of
6 capital meets that purpose, it also depends on what
7 else is in my portfolio.

8 It's like if you were playing hockey,
9 so, you know, everybody wants Wayne Gretzky at his
10 prime on their team. But if you really need a goalie,
11 maybe -- maybe it's not Wayne that you need.

12 So the reality is, in a team sport, if
13 you think about basketball -- I played a lot of
14 basketball. Order of magnitude, I'm 6 feet. Would
15 you rather have five (5) Valter Violas all 6 feet, or
16 would you like that 5-foot guard who's really good at
17 picking the ball off and the 7-foot lanky guy who can
18 score? Doesn't play any defence.

19 I'd rather have the 5-footer and the 7-
20 footer, one guy's really good on defence, like the
21 specialist, and another guy can put the ball in the
22 net, than five (5) Valters at 6 foot.

23 So this fourth one is very important.
24 It makes risk really complicated. So I can't answer
25 the question, Are real-return bonds good in isolation,

1 even if you told me relative to liabilities. Yes,
2 other things equal, they are, but it really depends on
3 what else is in the portfolio.

4 If you have a lot of inflation-hedging
5 properties in the portfolio to hedge a risk and a
6 liability, then RRBs don't make a lot of sense. If
7 you don't have any, adding a little bit has a big
8 bang.

9 The last one we talked about, the
10 constraints. I won't -- I won't go into it.

11 There's one (1) belief that's very
12 important. It was implicit in the evidence that I had
13 and the questions that I raised of MPI and Aon, and it
14 relates to market efficiency.

15 This is one (1) of the beliefs again
16 that were developed when I was at CPP Investment
17 Board. We had thirteen (13) beliefs, a dirty dozen.
18 And this one was important implicit in what my
19 evidence is and thoughts are, and it's simply that
20 markets are very efficient; simply put.

21 So if you pick up any textbook on
22 portfolio theory or investment management you should
23 see in their discussion -- it might go by another
24 name, but it's called the separation theorem.

25 And so if you think of the world of

1 risk management or portfolio management as consisting
2 of essentially two (2) buckets called -- called a
3 water bottle, the -- the risk-free bucket, real-return
4 bonds, cash, nominal bonds, whatever, it's low risk.
5 It doesn't matter how we define that.

6 And then we call this the risky bucket.
7 Unfortunately, we have only white candies in this
8 bucket, but think of it as a red buck, the bad bucket,
9 in a sense, because it's risky.

10 You and I may differ because we have
11 different tolerances on how much to put in the risk-
12 free asset versus how much to put in the risky red
13 bucket. But theory would suggest other things equal,
14 without making a lot of assumptions, if you looked
15 into the risky bucket, you might have a bigger bucket
16 in mine, you might put all your money in the risky
17 bucket, in which case, it's pretty full, I might have
18 just a tiny one.

19 But I look down from the top and I
20 looked at the composition, if it were a pie chart, the
21 pie chart should be roughly the same, other things
22 equal. So that's an important -- that's called a
23 separation theorem.

24 We may decide to have different
25 allocations, from zero to a hundred percent between

1 those two (2) buckets, but when you look inside the
2 risky bucket you should see the same mix, the same mix
3 between Canada, US international equities, other
4 things equal.

5 The world is -- has some -- you know,
6 not everyone has the same expectations. Not everyone
7 has the same definition of risk, so our least risky
8 portfolio might be cash, it might be real-return
9 bonds, it might be nominal bonds, it might be
10 something else.

11 An S&P 500 management who's tasked with
12 being the benchmark, cash is risky for them because if
13 they invest in cash and they're supposed to beat the
14 S&P 500, they could underperform if the S&P goes up.

15 So -- so what seems like risk to one
16 (1) person is not for another. So this is an
17 important concept, and we'll come back to it later.
18 I've talked about focus already. I talked about the
19 framework at a high level.

20 Again the framework is simply --
21 there's only two (2) things that are the problems at a
22 high level, I would say, and they're -- again, they're
23 not unique to MPI, it's every organization, the
24 framework.

25 The framework answers key questions.

1 What are those key questions? If I could flip to my
2 other document, the qualifications. We didn't go into
3 it, but there was a slide in there that I included.

4 MR. BYRON WILLIAMS: He's referring to
5 the last page of CAC-23.

6 MR. VALTER VIOLA: So page -- sorry,
7 it should be on the screen, page 8. This is an
8 article that I put in Ben -- I think it's Benefits
9 Canada. I can't see the year. Anyways, it goes
10 through the five (5) key questions that might be in a
11 framework.

12 So the answers to these form the
13 elements, what risks should we manage, how much return
14 do we need, how much risk is too much, where should we
15 take it, and did we get paid enough.

16 So if I had to put labels on them, the
17 questions, you know, the MRP, what's the minimum risk
18 portfolio, what's the return premium or the risk
19 premium, what's the risk limit, what's the risk
20 allocation, and what's RANVA, risk adjusted net value
21 added. Instead of looking at net income or returns,
22 look at risk adjusted net value added.

23 So the article describes it in more
24 detail. That's -- that's all I'm talking about when
25 I'm talking about a framework. We can only -- I -- I

1 like to keep things on one (1) hand. What are the
2 five (5) questions that matter the most?

3 Number 1, what's your goal.

4 Number 2, what's -- what's not risk in
5 relation to the goal, how much return do you need, how
6 much risk is too much, and what's the pie chart of
7 risk look like and how should you spend it. That's --
8 that's as simple as it is for me.

9 So that's what I -- that's how I define
10 a framework. Somebody else may give a different
11 label, but those are the important things, I think,
12 that need to be asked.

13 So let's move over to the process
14 quickly. Risk budgeting; I said, you know, is good.
15 It's not a four (4) letter word, it's a resource. The
16 question is: How can we best consume that risk?

17 This picture is not a risk budget.
18 It's -- it's quite different from a risk budget, but
19 it's what's typically done. It happens to reflect, I
20 think, based on the -- the portfolio that I had used
21 in the 'Q' and 'A', the accounting-base profile of
22 MPI.

23 So fixed income represents, on an
24 accounting basis, you know, a mixture of market value
25 and cost. That's less relevant than the fact that

1 it's based on assets under management, so roughly two
2 thirds (2/3) of the pie is in fixed income. Canadian
3 equities is about 12 percent. Excuse me. Real estate
4 about fourteen (14).

5 What this doesn't tell you is the risks
6 associated with those. So a more useful graph isn't
7 actually a pie chart, because pie charts add to 100
8 percent. If you put a risk pie chart in here, and
9 even though risks don't add, we can make them add in a
10 way that's meaningful. I would draw it as a stacked
11 bar graph, and say that it still has to add to a
12 hundred percent. A hundred percent of the risk can be
13 explained.

14 The positive things are the things that
15 contribute to risk. Canadian equities might
16 contribute 'X' percent to the risk. But certain
17 things take risk off the table. They're negative. So
18 you might have some things that sum to more than a
19 hundred percent contributing to risk, but there's
20 something else called assets in a minimum risk
21 portfolio that hedge risk, and that in aggregate, you
22 still have 'X' percent of risk but it's made up of
23 this stacked bar graph that sums to a hundred.

24 That's, I think, a better way to inform
25 discussions about what, what not to do for the

1 portfolio. And -- and it's important, particularly in
2 Canada, given the tendency of the -- the equity sector
3 to be more concentrated than, say, the S&P south of
4 the border, the S&P 500, which is more diversified.
5 It's more important to look at this risk pie chart
6 more frequently than, say, once every four (4) to five
7 (5) years because -- because a constant asset mix has
8 a evolving or a dynamic risk profile.

9 So -- so this is the kind of stuff --
10 and again, it's -- it's the -- it's the leaders at
11 Ontario Teachers that were pioneers in articulating
12 this stuff. They formalized it. I certainly
13 articulated it as head of research and risk at CPP,
14 published a bit on it and, you know, a lot of people
15 sort of say, Oh, risk budgeting, we don't do that.
16 Everyone budgets risk. They just do it less formally.
17 They call it something else.

18 That's enough said. So I'll do -- I'll
19 move quickly to the recommendations. I'll be there in
20 -- in three (3) minutes, say. Briefly, this is an
21 extract from the Ontario Teachers' Pension Plan
22 Board's annual report. I thought it was important to
23 -- to hear what the CEO reporting on the annual -- in
24 the annual report said in the year that I left Ontario
25 Teachers' after seven (7) years to join CPPIB.

1 We managed surplus at risk, which is
2 the difference between assets and liabilities, the
3 risk inherent in liabilities going up faster than
4 assets, using value at risk. That use of that risk
5 metric, value at risk, has forced us to think about
6 surplus risk as the aggregate of three (3) things.

7 Liability risk. I talked about the
8 arrow. So the liability risk is very -- it's very big
9 for a pension plan. The pension plan at MPI has a
10 duration of sixteen (16) years. Ontario Teachers'
11 wouldn't have a materially different one, as well. So
12 it's an inherently risky proposition to set up a
13 pension plan, as it is to provide auto insurance.

14 You have an obligation that extends
15 beyond one (1) year, and it's an uncertain one based
16 on underlying demographics, casualties, accidents, et
17 cetera. And -- and then those are just the real
18 things. Then there's -- then there's the inflation
19 risk and the real interest rate risk behind it.

20 So there's three (3) elements to the
21 funding risk, surplus risk, assets and liabilities.
22 The liabilities themselves, the asset mix policy, the
23 one that you set once in a while, in this case four
24 (4) to five (5) years, and that is the primary
25 determinant of whether the difference between assets

1 and liabilities are really at risk or not. And then
2 the third one is this active management risk, which is
3 really peanuts for most funds, and I won't talk about
4 that. We can if we want, if -- if I get a question
5 about it.

6 So the main source of liability risk is
7 the following, and it's not that different for P&C.
8 It's the risk that real interest rates fall, which
9 causes the present value of future pension benefits,
10 or claims insurance in the case here, or both, with
11 the pension plan as part of the fund. So if interest
12 rates go down, the value of anything goes up. If it's
13 a liability, it goes up. That's it.

14 At the top of the right there, it says
15 "asset mix policy risk." That's the -- the risk that
16 we set at one point in time, and then changes a little
17 bit over time, perhaps a lot, because we re-balanced
18 the fixed asset mix. It would be the mirror image of
19 the liability risk.

20 In other words, those two (2) arrows --
21 sorry -- those two (2) arrows would point in the same
22 direction, meaning there would be no surplus risk if
23 the size were the same and the directions were
24 opposite. If that were the case, we would perfectly
25 match the long-term objective that asset growth will

1 average a real return of four and a half (4 1/2).

2 That's the actuarial rate.

3 The reality is -- in the next page I'll
4 show interest rates at the time. The reality is the
5 actuaries come up with these rates for all the right
6 reasons to say, What makes this plan go around? What
7 do you need to sustain the plan on average? The
8 reality is nothing gives you both full hedging
9 properties, no risk, and the return that you need. So
10 you need to take risk. So that's the point there.

11 The next graph I'll go through quickly.
12 The top left basically sets the stage in 2000. It's
13 different today, and I have a graph later that says,
14 Back in the '90s when I was doing asset-liability
15 modelling and starting the framework development, real
16 interest rates were north of three and a half (3 1/2).
17 They almost peaked at five (5).

18 When I did the financing for the 407,
19 the real -- real return -- real yield was five and
20 three-eighths (5 3/8) percent, which is -- you can't
21 get that any more.

22 And we knew -- we knew that nominal
23 bonds -- if you look at the Canadian Institute of
24 Actuaries data historically, nominal bonds with
25 inflation risk never gave you anything close to that

1 over the long period of time, quarter century, half a
2 century.

3 So why wouldn't you back up the truck
4 with real-return bonds in the '90s when it almost gave
5 you the actuarial rate? And there was nowhere to go
6 but south because we knew pension plans would
7 eventually do that. So they were a bit of pioneers in
8 that.

9 Long story short, minimum-risk
10 portfolio is important -- slide 16. Real-return bonds
11 for a pension plan or any fund that has long-duration
12 liabilities that have some inflation and sensitivity
13 to them. Real-return bonds match the real zero coupon
14 cashflows associated with the liabilities.

15 There's -- and this is an important
16 distinction we'll come to later. There's a difference
17 between the effectiveness and efficiency of insurance
18 -- in this case buying real-return bonds for an
19 organization. They're -- they're related questions,
20 but they're separate, and it's important to
21 distinguish between them.

22 So real-return bonds -- I believe
23 strongly, and I think it's a fact, that real-return
24 bonds do a great job of hedging inflation risk on a
25 duration-matched basis. That I would strongly say is

1 -- is not more than just a belief, it's a fact.

2 The second question which is important
3 is: How much does that insurance cost? It's just
4 like driving a car. We all agree that having
5 insurance makes sense. That's the effectiveness. If
6 we don't, we run risk, or it may be illegal.

7 The second question is: Okay, what's
8 it going to cost to ensure -- to be able to put the
9 key in the ignition? And that cost varies, and it
10 varies in this case with real interest rates. And
11 unfortunately the cost of insuring against inflation
12 risk has gone up because interest rates are close to
13 zero.

14 Nominal bond's an important point which
15 again don't provide inflation protection. If
16 inflation turns out higher than we expect it to be,
17 nominal bonds will do poorly in that environment. So
18 enough said about that.

19 Risk budgeting -- again, budgeting with
20 the word "risk" in front of it. If you could do it
21 more frequently because the world changes, even though
22 the -- the asset mix is static, you're -- you're
23 better served.

24 Teachers, for example, big fund, lots
25 of resources. I know they looked at it -- they didn't

1 just review the investment policy once a year. It
2 wasn't an administrative Oh, it's time to review the
3 policy. They looked hard at whether the asset mix
4 required adjustment.

5 And they weren't afraid to go back and
6 forth. And if you look at how they went from -- they
7 -- they had swings of 20 percent over a period of a
8 few -- few years. Teachers was ranked a global
9 leader. I was very fortunate in the timing that I
10 had, being there at the right time.

11 So let's move quickly to CPPIB just for
12 two (2) minutes. And this is a graph that I think is
13 important. It's illustrative. It's at a point in
14 time. It's the first annual report that we prepared
15 when I was the head of -- the chief risk officer
16 there, similar dimensions as you're familiar to.

17 The labels don't have details, they're
18 general: return on the -- on the left, risk on the
19 bottom. Again, you don't want to be in Toronto if
20 this was a map of Canada. Winnipeg's great, but we
21 want to be in the Northwest Territories, up and to the
22 left.

23 Things to note, two (2) things. The
24 real-return bonds on the far left. In the context of
25 a pension plan, real-return bonds are the least risky

1 asset. If you look vertically up and down, you will
2 note at this point in time real-return bonds, we
3 expected them to have a higher return than Treasury
4 Bills but less risk.

5 So that's an interesting observations.
6 Again, most people think Treasury Bills, cash is the
7 least risky asset. It is if -- if you're worried
8 about losing money in the next ninety (90) days.

9 But if you're worried about paying
10 pensions over a quarter century, the risk you run in
11 T-Bills is that real interest rates stay low because
12 you're reinvesting every ninety (90) days at the low
13 rate. You haven't locked in that long rate.

14 So there's a difference between
15 reinvestment rate risk and market risk, and that's
16 what duration management is about. Duration manages
17 this seesaw between the risk of reinvestment at a low
18 rate and price risk on the other side.

19 Duration is the -- is the seesaw, the
20 time horizon where those exactly match for parallel
21 interest rate changes.

22 So that's why real-return bonds are to
23 the left, of tre -- treasury bills. And they're lower
24 and to the left at this point in time compared to
25 bonds, those with inflation risk, as they should be.

1 On average, real interest rates -- real -- sorry,
2 real-return bonds hedge inflation risk, so they should
3 offer a lower return compared to nominal bonds that
4 have inflation risk.

5 The very interesting one is up at the
6 top right. Forget about the venture capital, but look
7 at the US equities, international equities, and
8 Canadian equities, and again noting that this is at a
9 point in time it's illustrative we haven't put numbers
10 there for a reason.

11 But at that point in time, we believed
12 -- and again, this is 2000, so Canadian equities at
13 that time had a real TeleTech run-up. This was even
14 after the Nortel correction. It wasn't fully done, if
15 you look at a graph on the next page, I believe. But
16 we believe Canadian equities offered higher risk in
17 relation to the liabilities than international and US.

18 And so you're better off, actually,
19 diverting, other things equal, a bit of money from
20 Canadian equities to US. So that's just, again, a
21 point in time. I won't go into the -- I think Nortel
22 is -- is just the most evident one that I've lived
23 through.

24 This one -- this graph just shows that
25 the difference in returns can be shocking over a short

1 period of time. I happened to join in the summer of
2 2000. This was in our first annual report. And
3 again, there's nobody in the investment department.
4 We've got the CEO, who is the CIO, as well, chief
5 investment officer. We've got me and an office
6 manager and a receptionist who's bilingual.

7 And so we have two (2) weeks to prepare
8 for the board and say what do we do about Nortel. We
9 didn't need a big model. We just needed common sense
10 to say remove the regulation, that constraint is
11 binding, it's going to cost us one (1) day. We were
12 lucky in the timing.

13 So let's -- we'll -- I'll get to two
14 (2) last slides. And then we're into the
15 recommendations. The first is to note that real
16 interest rates have continued to decline. This is as
17 of the end of September from the Bank of Canada. Real
18 interest rates are basically zero using this
19 particular curve. They started at seventy-five (75)
20 basis points back in November, a year ago.

21 This graph is important because it goes
22 to the separation -- sorry, it goes to the -- this is
23 the asset mix taken from Ontario Teachers simply
24 because I think they are a leader. I haven't been
25 there for a long time. But I always read their annual

1 reports to figure out what they're up to and why.

2 And if you look, the -- the striking
3 thing is the red which says that -- this is over the
4 last decade. And again, I left in 2000, so this is
5 again my observations only. They've taken their
6 Canadian equity portfolio from what was -- I'll call
7 it 22 percent, 20 -- 25 percent, whatever, a quarter
8 of the portfolio, to 2 percent.

9 The non-Canadian equities, 44 percent
10 now. That includes Canada. Not -- sorry, not Canada,
11 US plus international. And the interesting one is the
12 real rate products. So these are the real-return
13 bonds that I was managing. We managed to get it to 10
14 billion.

15 If you look at the time series, when I
16 took over the portfolio we went from a very small
17 amount gradually increasing to doing the private four-
18 o-seven (407) financing, and then backing up the truck
19 and buying the US product because the Canadian market
20 just wouldn't allow us to buy more than a quarter of
21 the issue.

22 They've continued to buy those despite
23 the fact that we know that real interest rates went
24 from almost 5 percent all the way to almost zero.
25 This is as of the end of 2015. They still had one

1 dollar (\$1) in every five (5) in real rate products.
2 This is to the point of, again, if you're playing
3 basketball, what would you rather have, 6 foot vaulter
4 across the board or the 7 footer with a lot in
5 international equities, maybe a little bit more risk,
6 well, definitely more risk than real-return bonds, but
7 not -- not getting rid of the real return bonds
8 entirely.

9 Why? Because it's a team sport. You
10 don't want to play without a goalie. That's the
11 simple answer. And so everything's -- everything has
12 to be seen in the context of the whole. And so, to
13 me, I look at this picture and I go, That makes sense.

14 So on the next pages I won't go through
15 each recommendation; I've reordered them a little into
16 four (4) buckets. The framework which I talked about,
17 there's eighteen (18) recommendations. The last one's
18 about oversight. We'll -- we'll finish with the
19 pension fund because that's a unique one, the
20 framework up top, the portfolio and the metrics around
21 it.

22 With the metrics I'm referring to
23 accounting. And again, as I said, I'm not suggesting
24 in the accounting to not comply with GAAP or IFRS.
25 I'm just saying that we don't need a second set of

1 books. We need adjustments to reflect -- for the
2 purpose of setting asset mix and portfolio design, we
3 need different metrics that reflect, not only market
4 value, but market value at risk to better inform what
5 choices we make.

6 So let's get into the -- the delinking
7 of discounts rates. The recommendation here is,
8 again, for the purpose of setting asset mix, linking
9 assets and liabilities in this sense from a valuation
10 point of view, and I think Aon agrees with it, for
11 that purpose there's a -- there's a benefit to
12 delinking it.

13 I won't go into the details other than
14 to say if you make a promise to provide insurance, the
15 value and the value at risk of that promise, that
16 liability, it is what it is. It has risks. We may
17 debate how big it is and what it's subject to in terms
18 of risk, but the actual assets that back it to pay for
19 that, the composition of that doesn't affect the
20 nature of the liability. It is what it is.

21 So that's an important one. And right
22 now there's a -- there's an element through the
23 linkage that -- that is potentially problematic in --
24 in terms of measuring. Because if you don't measure
25 things as well as you can, I believe that the outcome

1 from the process of optimization won't be as good as
2 you'd like it to be.

3 We talked about constraints on --
4 number 7, I won't go into it other than to say if
5 there's constraints that are binding, think of a
6 better way to achieve what you're trying to through
7 the constraint, because there's an objective behind
8 it, through a better means.

9 If you want I can describe what that
10 means in more detail practically in terms of portfolio
11 design, but I don't think it's on point.

12 We talked about the -- the need for
13 framework and explicit risk management goals. To my
14 way of thinking, you know, the legislation at CPP
15 Investment Board had -- had the -- the following:
16 maximize return without undue risk, having a regard to
17 the factors that affect the funding.

18 So it's the same thing for every fund.
19 We want to avoid undue risk and undue risk is risk
20 that we don't know exists, number 1. So being more
21 risk aware is -- is a prudent and appropriate thing to
22 do. As -- you know, being more aware, there's always
23 stuff we're not aware of, but to be as informed as
24 possible about the things that could kill us, et
25 cetera, that's number 1 priority.

1 Second one is if we take risks, but we
2 don't have the capacities to manage it well, that --
3 that's not prudent, that's -- that's undo. And this
4 notion of having tolerances for risk is important.
5 And being inefficient, and again, that goes to the
6 point of constraints. We want to be up and to the
7 left on the efficient frontier, beyond it if we put
8 constraints it's going to shift the curve down and
9 make us worse off.

10 This one's important so I'll pause for
11 a bit. Page 27 talks about the definitions. And this
12 is the link with the -- the accounting. And again, I
13 have the highest regard for accountants and actuaries.
14 And it -- it has nothing to do with the suggestions I
15 had about accounting and understanding what choices
16 are being made and my desire or hope that -- not
17 desire or hope, I would say my preference as an -- an
18 investment portfolio manager and risk manager is
19 always to have comparability and relevance, trading
20 off timeliness and reliability and accuracy of the
21 metrics.

22 I'd rather have what's most relevant in
23 front of me even though it's not as reliable as I'd
24 like it to be. Having reliable information about
25 something that doesn't matter isn't really helpful.

1 So to me this means if your decision is to say --
2 answer this question, What mix of assets are best for
3 this fund on a long-term basis, then I think that
4 question has to be answered based on the best metrics
5 that are available, which are long horizon market-
6 based.

7 To the extent that you don't focus on
8 the long-term and you focus on the short-term and you
9 don't have metrics that are reflective of the true
10 volatility, then the optimization of that process will
11 not yield the sustainable portfolio that has good risk
12 return properties.

13 Simply put, I believe that the market
14 risk inherent in the portfolio and that needs to be
15 managed is more volatile than the accounting risk
16 numbers that flow from looking at accounting earnings.

17 And just to be clear, the things that I
18 worry about most are first the liabilities and then
19 the assets that are the most risky. And on both
20 fronts I would argue that the -- on the liability
21 side, for example, the pensions, and without going
22 into a lot of the details about the accounting,
23 because this was a good refresher course for me on
24 accounting, because again, I hadn't -- even when I was
25 -- in the two (2) short years that I was a public

1 accountant, I don't believe the notion of
2 comprehensive income existed back then.

3 It was net income, but I may -- I might
4 be wrong. So the accountants have even acknowledged
5 that net income serves a purpose, but we've got this
6 more comprehensive thing called comprehensive income.
7 And the difference between them is this other
8 comprehensive income.

9 And I would argue that if you -- if you
10 have to rely on accounting metrics for asset-mix
11 decision purposes, we should -- you should consider
12 moving to comprehensive income as the metric for
13 success return and on the retained earnings risk axis,
14 including the accumulated other comprehensive income.

15 That will only solve part of the
16 problem. It'll solve the equity problem, which is the
17 fact that equities have volatility. We know stocks
18 are volatile, but the accounting treatment for
19 equities by MPI treats them as assets that recognizes
20 for net income only the gains that are realized.

21 So if you sell IBM stock or the Royal
22 Bank of Canada, you realize it in cash, and therefore
23 it affects net income. But if you just hold IBM
24 forever, it's a long buy and hold, then the only risk
25 that gets reported in net income is the dividend yield

1 which is pretty stable and pretty low, and it's not
2 really volatile.

3 So -- so by -- so we are -- by relying
4 on accounting metrics to inform asset-mix decision,
5 we're not recognizing the true volatility in equities
6 because of that fact.

7 Now, the other one that's more
8 important, I believe, it's the remeasurement of
9 pension liabilities. I mentioned at the beginning
10 this notion of duration. A pension plan is an
11 inherently risky thing to propose, and -- and pension
12 funds have shut down, sadly, because they have lived
13 through the dire days not having, to be honest,
14 managed risk as well as they could have.

15 And it's this notion that, because it's
16 a long-term promise, it's very sensitive to the rate
17 of return on the assets. So MPI -- and I think it's
18 note 16 to the financial statement -- says that the --
19 and I think it's the last slide here, so it's sixteen
20 point two nine (16.29), I believe, at the end of the
21 last fiscal year.

22 It's higher now because interest rates
23 have gone down. I would suggest it's probably closer
24 to eighteen (18) given the change in interest rates.
25 In any event, let's call it sixteen (16).

1 That would suggest that, for every 1
2 percent drop in real interest rates -- and I showed
3 the graph before, that since November it's gone down
4 even more -- that liability goes up for every 1
5 percent. For every 1 percent drop, it goes up by
6 sixteen (16). So the value of the liability has gone
7 up on a market value basis.

8 And -- and the financial statements
9 will record that. They'll show in that note, but
10 they'll call it not net income effect. They'll call
11 it other comprehensive income.

12 And again, just to be clear, in the
13 asset-liability model, the questions I asked and the
14 responses I got, it's clear that OCI, other
15 comprehensive income, is not captured in the return
16 and risk metrics. So this is a very important point.

17 This says that for 18 percent of the
18 liability which is attributed to the pension plan as a
19 percentage of the total assets, 18 percent of that
20 relates to -- I think it's part pension plan, part
21 other employee benefits. So maybe it's not quite
22 eighteen (18).

23 But -- but the -- the inherently risky
24 nature of that will never get captured in the asset-
25 liability model for two (2) reasons; 1) it's called

1 other comprehensive income, and there's never a
2 reversal -- there's never a recognition of that,
3 unlike with equities which there will be a transfer to
4 net income, therefore recognized.

5 But with the remeasurement gains, it
6 will never be captured, and it is a volatile item. So
7 the first one is it's not measured in OCI, and 2) it's
8 the fact that that's how the -- the definition of
9 "risk" is -- is defined. So those are the -- those
10 are the key points, and we'll -- we'll come back --
11 back to that at the end.

12 This graph on slide 28 was in the
13 evidence, and -- and again, it's illustrative, it's
14 not to scale. And it's just to point out the fact
15 that the most risky things in either the assets at the
16 top or the liabilities at the bottom deviate from the
17 -- call it the 45-degree line.

18 If -- if the market value matched the
19 accounting values, then -- and they do in some cases
20 at the top, the cash accounting is really market value
21 accounting. Fair -- fair value to profit and loss,
22 the bonds, that market value accounting, but the --
23 the HCM bonds are not, et cetera.

24 So what -- the outlier there is the
25 equities. The most volatile thing in the portfolio is

1 -- and again, the distance -- forget about the
2 distance. It's just conceptual. This just simply
3 makes the point that there's a risk of not capturing
4 the true volatility and therefore having an
5 inefficient long-term portfolio because of the
6 accounting.

7 The minimum-risk portfolio, slide 29.
8 I've talked about it, I think, in the -- in the
9 rebuttal. MPI acknowledged that they would -- the
10 would look at it, and I think if I'm not mistaken,
11 they said they actually had one (1) at one point, but
12 I might be mistaken.

13 The next slide 30, the exclusion of
14 real-return bonds. Again, I think I go -- I go into a
15 few slides in detail, but I won't beat a dead horse
16 other than to say real-return bonds, the important
17 thing with this asset class that provides inflation
18 protection, there's two (2) questions to ask. One
19 (1), is it effective? And two (2), is it an efficient
20 use of capital?

21 The first question, I hope there's no
22 doubt that on a long term basis, real-return bonds,
23 even though they're volatile -- yes, they are. They
24 go up and down, but you can't hedge a long-term risk
25 that's volatile with a short-term asset that's not

1 volatile. It just doesn't work that way.

2 So if you have a long-term risk, you
3 can only hedge it best with a long-term asset that
4 mirrors its behaviour. That means it's volatile in
5 the short term, just like the liabilities are. So
6 that's the question about effectiveness.

7 The second question is: Okay, what's
8 it cost to insure? And that will vary with real
9 interest rates. And unfortunately the cost of
10 insurance today is very expensive with real interest
11 rates where they are. I won't go through the -- the
12 few notes. These are from the evidence based on a
13 build up of the questions and answers from the two (2)
14 series of questions and answers that I asked and were
15 given back by MPI and Aon.

16 And the punchline on all this is, I
17 think Aon agrees with conce -- conceptually that real-
18 return bonds on a long-term basis, yes, makes sense,
19 and are the low risk asset, but given the definition
20 of risk that MPI has chosen, they look riskier than
21 they truly are. I think that's the punchline.

22 Slide 35. I think MPI agrees, unless I
23 misquoted, they agree and acknowledge the fact that by
24 having nominal bonds in the duration management policy
25 rather than real-return bonds, given the inflation-

1 sensitive nature of the liabilities, it's a less
2 effective policy than it could be, and that's okay as
3 long as inflation is stable. We talked about at the
4 beginning the notion that the difference between real
5 interest rate risk and nominal interest rate risk is
6 inflation risk.

7 If there were no inflation, this would
8 not be an issue, and as long as the Bank of Canada
9 continues to be successful in keeping inflation in
10 check with a mean expectation goal of roughly 2
11 percent, plus or minus a bit, then on average, nominal
12 bonds can do the job, but they're not the best.
13 That's why I call them the shaky goalie. They're a
14 goalie, but they're not as good.

15 And again going back to the six (6)
16 footer versus the seven (7) footer and five (5)
17 footer, even -- even if you have -- I'd rather have a
18 stronger goalie that costs a bit more, and have that
19 seven (7) footer as well than the average Valter at 6
20 foot. So those -- that -- those are the points from
21 that.

22 I won't talk about the real estate. I
23 think there was an observation that the treatment of
24 real estate and the leverage -- the financial leverage
25 of borrowing was inconsistent between how it was

1 modelled, and how it was implemented. Not a big deal.
2 Four (4) percent. It's up to MPI to decide if it's --
3 if it's material.

4 The only suggestion is, and this is
5 what we've done at other organizations, is it doesn't
6 matter where the borrowing comes from, whether the
7 liability arises from the promise to provide claims
8 insurance, or a pension plan, or whether you're
9 borrowing it to buy real estate. Those obligations,
10 those liabilities all have financial risk. Those
11 should, I think, be grouped together, and the assets
12 that hedge those three (3) sources of risk should be
13 integrated in one (1) duration policy. Not a huge
14 point.

15 Canadian equities, the 10 percent
16 minimum. I mentioned the fact that every -- every --
17 I shouldn't say "every." Most funds, and even
18 Teachers' for example, until every recently, they had
19 a home country bias. They had more in Canadian
20 equities until those last few years than would be
21 suggested by this separation theorem, if you will.

22 And again, the separation theorem is --
23 is a theory that there are -- there are practical
24 limits to it, but one needs to look at really
25 significant differences between the allocations when

1 you look down into the risky bucket and ask why -- why
2 is one (1) bucket have a different pie chart than
3 another? Again, Canada represents about 4 percent of
4 the world market cap.

5 MPI's exposure is summarized on slide
6 38. So this is to the point of we're playing
7 shorthanded. No international equities, so compared
8 to other funds, SGI at the top, MPI has -- just
9 looking at the equity bucket, so 100 percent of the
10 exposure to equities, this red risky bucket. MPI has
11 two dollars (\$2) in Canada for every one dollar (\$1)
12 in the States, but nothing outside Canada and the US.

13 SGI has almost a quarter of its
14 portfolio in international. This is at a point in
15 time. It may have changed.

16 And if you look at PIAC, which is that
17 fund that Mr. Williams mentioned, I was a member of
18 the board -- not the board, but the Investment
19 Practices Committee. So it's a -- it's an aggregation
20 of the all the defined benefit pension plans who
21 submit to the survey. The average pension plan has
22 almost as much in international equity as US equity,
23 more reflective of the fact that international
24 equities are a big component of the global market cap,
25 and so again, a big difference between MPI and those

1 two (2) reference points.

2 The one that I -- I like -- I -- I used
3 -- you know, I haven't been at Teachers in a long
4 time, but the -- they have a lot of resources and
5 they're thoughtful people, as far as I can tell, even
6 today. A lot of the people I work with are still
7 there, and senior people. I always look to them to
8 make sure that I'm not look -- I'm not pointing in the
9 wrong direction and confirm that the things that I do
10 on a personal level, for example, makes -- makes
11 sense.

12 And if you look at the -- the middle
13 graph, MSCI is the Morgan Sta -- Morgan Stanley index.
14 It's an exchanged traded fund. On the next slide, 40,
15 I'd simply -- on October 18th I did a screen shot of -
16 - and this is what you could buy in you RSP, for
17 example.

18 With a click of a button you click on -
19 - this is iShares. So these are exchange-traded
20 funds. It's -- there's no active management, you just
21 buy it. And it gives you a broad exposure to the
22 country indexes.

23 This is the world index. At the top
24 you'll see it says, "United States." Of the hundred
25 percent of this exchange-traded fund, roughly 60

1 percent is in the US. Canada is at roughly 4, and so
2 sixty (60) plus four (4) roughly; the rest is
3 everybody -- everywhere else. So that's the right-
4 hand column -- sorry, the middle column.

5 The global market cap roughly is about
6 60 percent in the US, almost 40 in everything other
7 than the US or Canada and only 4 in Canada. Teachers
8 has changed their risk profile -- not risk profile,
9 their asset allocation. They're basically at the
10 market cap, although they had been higher in the past.
11 And I don't know if that's driven by a view about
12 relative valuation or this passive notion that we need
13 to own the market cap passively in its global
14 representation.

15 MPI just stands out as very different.
16 And -- and I believe that part of that -- again, this
17 has all been a discussion about problems about focus
18 and process not unique to MPI. They're challenges
19 that every organization faces, but these are the
20 symptoms of the problem. And again, the problem
21 starts with the focus on short-term rate stability as
22 a goal at the -- at the expense, I believe, at long-
23 term sustainably lower levels of rates. That's the
24 tradeoff.

25 And the metrics that are used that are

1 accounting tend to under represent the true
2 volatility. And, therefore, by not measuring the true
3 risks that matter I think the most in the long-term,
4 the optimization process doesn't identify the things
5 that are the good goalies, and -- and that's the punch
6 line. So I think this -- these are the symptoms of
7 the bigger problem.

8 So slides 41 and the next few are all
9 about accounting. Just to be clear, I'm not
10 suggesting not complying with GAAP. I'm suggesting
11 that adjustments need to be made for the purpose of
12 investment management, risk management, that's all.

13 The fourth -- the -- the slide about
14 the 105 percent rule, I applaud the fact that MPI has
15 decide that that rule is not applicable or no longer
16 required. I think that's a good practice to
17 implement.

18 The over reliance on quantitative
19 modelling, I've seen -- I've been inside the sausage
20 factory. I built asset liability models, so I know --
21 I know for better and worse what they do and what they
22 don't do well. And the reality is, if you live and
23 work with them, you either fall in love with them or
24 something -- something else.

25 But the reality is, once you develop

1 them, once you use them, you'll find that you don't
2 actually need them because you know the answer before
3 you push the num -- the numbers.

4 But the reality is, if you haven't been
5 inside the sausage factory all you see is the black
6 box output. And the reality is, when you look inside,
7 even though you have an asset mixed pie chart that has
8 eight (8) components to it and that all looks good,
9 and it gives you comfort that, you know, that was an
10 important process in the -- a really important
11 process. The reality is that there's so many things
12 that determine what the optimization looks like.

13 For an eight (8) asset class portfolio,
14 this was in the evidence, there are forty-four (44)
15 assumptions that go into that, one (1) for each asset
16 class for both the volatility and the return
17 expectations; there's sixteen (16).

18 And then when you do the matrix of
19 what's the relationship between Canadian equities and
20 all the other seven (7), you do the math it's eight
21 (8) time eight (8) is sixty-four (64). You take the
22 diagonal off and you divide by two (2) and the math is
23 forty-four (44).

24 So that's a lot of assumptions. And we
25 know that models, like boundary solutions, that's why

1 we put some constraints on them, because if you tweak
2 one (1) assumption then correlations are hard to get a
3 handle on without getting inside the black box.

4 Putting -- putting an asset -- putting
5 a portfolio and rebalancing to fixed weights based on
6 asset values rather than risk over a four (4) to five
7 (5) year horizon when we know that we don't have all
8 the confidence. Again, beliefs, these are beliefs.
9 These are not -- it's not like someone came down and
10 said, This is the correlation between Canada and the
11 US. Because if Aon did a study today or tomorrow, or
12 Mercer did one (1) or whoever, I did one (1), we won't
13 agree on all those inputs.

14 So we hang a lot on that. That's just
15 a fact. It's not to say we shouldn't do it. It's
16 just that we should beat those up and really
17 understand what the critical drivers are more
18 frequently than once every four (4) to five (5) years.

19 I'm not -- and I've only two (2) slides
20 left, plus. The -- the pension fund is -- again, I'm
21 not -- I'm not asked to say what ought to be done with
22 the pension plan other than to provide -- shine a
23 light on what the issues are. And I believe the
24 issues are that the pension plan main risk, which is
25 the sixteen (16) year duration isn't captured at all

1 in the asset/liability modelling because of the
2 accounting treatment, AOCI, and the fact that unless
3 the plan gets wound up there will never be a transfer
4 of that profit and loss effect, the sixteen (16) year
5 swing from year to year when interest rates go up and
6 down.

7 And so I think, in part, I would
8 believe that the -- the outcome of the asset liability
9 model says real return bonds aren't as good an asset
10 class is because part of the risk -- a significant
11 component of the risk isn't captured there.

12 So, of course, real return bonds won't
13 be as attractive, other things equal. For context, we
14 know that bonds -- bond prices and liabilities, which
15 is a bond, it's a short bond, those -- those values
16 change inversely with interest rates.

17 So the pension liability, I -- this is
18 a qualification, I put it's 18 percent of assets.
19 That actually -- that -- that should probably be a
20 little bit lower, because I think I included -- that's
21 an oversight on my part, I apologize. I think that
22 includes both other benefits as well as the pension
23 fund, so it's not 18 percent. It might be a little
24 lower. I don't know what the split is.

25 But the duration of the pension plan,

1 that's in note 16, I believe, the financial statements
2 on the next page is sixteen (16) years. So -- and
3 again, I worry about accounting driving behaviour.
4 Where -- whereas I think as an analyst in risk and
5 portfolio management I sort of take accounting numbers
6 or actuarial numbers and adjust for them, but I would
7 -- I -- I would -- I'm worried that recognition or
8 non-recognition will change what actually happens.

9 And again, to keep it really simple,
10 again, I have a high regard for actuaries and
11 accountants. I also have a high regard for
12 economists, and portfolio managers, and risk managers.
13 They all do -- there's five (5) I people I mentioned
14 there, they all do different things.

15 But the reality is accountants really
16 keep it simple. Accountants and actuaries don't
17 actually pick up the phone and call a broker and say,
18 Sell this -- and external managers. They don't
19 actually have a real impact on what ultimately will
20 jingle in your pants -- in your wallet.

21 It won't impact -- well, it may to the
22 extent that you have restrictions imposed, but the
23 reality is the risks are the risk and the world will
24 play out. All accountants and actuaries do is provide
25 you information to help you form certain decisions,

1 not all decisions. And it doesn't change reality.

2 So the reality is if -- if I -- I -- my
3 understanding again of accounting, it does change
4 depending on the jurisdiction, whether you're Canada
5 or the US, a certain province or not, whether you're
6 P&C, pension or whatever. The reality is the
7 liabilities are the liabilities. The duration is very
8 long.

9 If the accounting profession says, If
10 you split out the pension plan and say it's a distinct
11 entity, I suspect -- and I could be wrong to be
12 confirmed by those who are practising accountants, I
13 suspect that that would trigger a realization, a
14 recognition in income that would show a higher
15 liability than perhaps is recognized right now. And I
16 would -- anyways, that's -- that's -- how that affects
17 behaviour, asset mix, is a secondary question but an
18 important one.

19 I will say, though that, again, going
20 to the point that liabilities and bonds, their value
21 is inversely related with interest rates.

22 So if -- if the pension plan discount
23 rate is revised or recognized differently as a -- as a
24 separate entity, the impact of a revision from
25 whatever it is to a lower rate will have a big impact

1 to the tune of sixteen (16). And that's -- the
2 sixteen (16) year duration, a fine toin -- a fine
3 point, but real interest rates have changed a lot.

4 Duration only measures the effect at
5 small changes. If you look at the curvature of
6 pricing for a bond relative to interest rates, it
7 assumes that you're a tangent. Convexity is the rate
8 of change of the rate of change, and you'll find that
9 convexity doesn't -- doesn't help you. So the loss on
10 a duration basis actually underestimates the loss in
11 reality.

12 So the numbers on the next page
13 hopefully capture at the top left at a high level what
14 I'm talking about. This is the note -- I believe it's
15 note 16 to the financial statements -- that says that
16 the duration highlighted in yellow is sixteen point
17 two (16.2) years -- sorry, sixteen point three (16.3)
18 years for the liability arising from pensions.

19 There's two (2) components to the
20 benefits: the pension plan on the left and the
21 benefits on the right. And again when I said before,
22 I -- I made a mistake. I apologize. I said that I
23 think the 18 percent included both components. It's
24 both the pension plan and the other benefit plans.

25 And if you look at the balance at March

1 1st, the pension plan at the end of 2016 is 340
2 million roughly. The -- the other benefits are
3 smaller. So the sum of the two (2) I think is 18
4 percent of the total, roughly. So obviously pension
5 plan's the bulk of it anyways. That's just small
6 point.

7 The important point to note is that
8 what you will look at is the highlighted items: re-
9 measurement gains and losses. If you look at that
10 number from year to year, the assumption has changed
11 from 3.6 percent yield up to four point zero (4.0), so
12 an increase of forty-five (45) basis points, almost a
13 half a percent.

14 That's caused a big swing from year to
15 year. So in 2015, the loss was due to a change in
16 interest rates, and it was to the tune of 39 million.
17 Moving to 2016, it's a gain because the inverse
18 relationship between yields and liabilities.

19 So when interest rates -- the discount
20 rate went up by almost a half a percent, then the
21 liability went down, and that was a gain, so it's a
22 negative. So you have to keep the signs straight.
23 But you can see there's a -- there's a big swing there
24 from a loss of thirty-nine (39) to a swing of twenty-
25 seven (27).

1 If you look at each of the other three
2 (3) line items above, just on the pension side, the
3 left side, they're stable. So the benefits paid, they
4 increased a little bit. The interest cost, it
5 increased a little bit. The current service cost, it
6 increased a little bit.

7 It's that volatile piece, and if you
8 look at the top, I've summarized it in red. The
9 volatile piece, which is the thing that I think really
10 matters, isn't captured in that income and therefore
11 not captured in asset-liability modelling. It's
12 captured in OCI.

13 So you'll never capture that under
14 current accounting, as I understand it, unless you
15 split out the pension. And -- and, you know, I don't
16 know if that affects what you do with the pension.
17 That's a governance question.

18 I just need to be transparent and help
19 the committee understand and appreciate the fact that
20 the accounting treatment is driving the portfolio
21 design. And it's -- and it's -- again, as I said,
22 it's -- it's the problem that's leading to the -- the
23 symptom which is no real return bonds despite being
24 low -- low yields and being a high insurance premium
25 to hedge that risk.

1 So that was probably longer than you
2 expected or hoped, but hopefully it was helpful and
3 clear.

4 THE CHAIRPERSON: Thank you.

5 MR. BYRON WILLIAMS: And I'll just
6 indicate Mr. Viola is -- is ready for cross-
7 examination.

8 THE CHAIRPERSON: Yeah. Okay. We'll
9 take a break until eleven o'clock. Thank you.

10

11 --- Upon recessing at 10:42 a.m.

12 --- Upon resuming at 11:04 a.m.

13

14 THE CHAIRPERSON: Mr. Ghikas...? No,
15 I -- I think -- I believe you're up.

16 MR. MATT GHIKAS: Thank you. Okay.

17 THE CHAIRPERSON: Okay.

18 MS. KATHLEEN MCCANDLESS: Yes, if you
19 note from the procedural outline, when the Intervenor
20 witnesses are crossed, the order changes, and MPI
21 counsel proceeds first.

22 MR. MATT GHIKAS: Fair enough. Thank
23 you.

24

25

(BRIEF PAUSE)

1 CROSS-EXAMINATION BY MR. MATT GHIKAS:

2 MR. MATT GHIKAS: Mr. Viola, the -- if
3 we turn -- if we could pull up the slide 22, please,
4 Diana?

5

6 (BRIEF PAUSE)

7

8 MR. MATT GHIKAS: Right. Okay, and --
9 and, Mr. Viola, you mentioned that Teachers' has about
10 170 billion under management, sir?

11 MR. VALTER VIOLA: I think -- I think
12 that's what I had when you look at the website,
13 roughly. South of two hundred (200).

14 MR. MATT GHIKAS: Okay. And -- and I
15 -- I'm advised that MPI has approximately 2.5 billion
16 under management. Does that accord with your
17 understanding?

18 MR. VALTER VIOLA: Sound about right,
19 yeah.

20 MR. MATT GHIKAS: Okay. And -- and so
21 that would be roughly seventy (70) times larger?

22 MR. VALTER VIOLA: I'll trust the
23 math, yeah.

24 MR. MATT GHIKAS: Okay.

25 MR. VALTER VIOLA: It's big -- it's

1 much bigger.

2 MR. MATT GHIKAS: And in terms of the
3 relative size to the CPP, that, as you identified in
4 your report, is the single largest purpose pool of
5 capital in Canada?

6 MR. VALTER VIOLA: Yes.

7 MR. MATT GHIKAS: And its
8 capitalization -- or, sorry, it's assets under
9 management is roughly 290 billion?

10 MR. VALTER VIOLA: Yes.

11 MR. MATT GHIKAS: So over a hundred
12 times a hundred and sixty (160), I believe it is --

13 MR. VALTER VIOLA: Yes.

14 MR. MATT GHIKAS: -- larger than MPI?

15 MR. VALTER VIOLA: Yeah.

16 MR. MATT GHIKAS: And the small funds
17 that you work with, as I understood it, they range in
18 -- you've done work with some as small as 4 to 5
19 billion, and one (1) in the 1 billion range?

20 MR. VALTER VIOLA: I think I said,
21 Less than 1 billion, but I -- I can't think of the 1
22 billion that you're referring to, but certainly this -
23 - the ones on the measurement platform, if I think
24 back of when I had them first rough -- I -- I believe
25 5 billion would be the order of magnitude, yes.

1 MR. MATT GHIKAS: Thank you.

2 MR. VALTER VIOLA: One (1) -- one (1)
3 US that was below a billion, but it was a small
4 engagement. Consulting only.

5 MR. MATT GHIKAS: Thank you. Now, you
6 -- you've -- if we're looking at the slide you've
7 identified, obviously, the -- and referred to the --
8 the breakdown of their asset classes as of this point
9 in time, 2015.

10 Would it be a prudent investment
11 strategy for a company to simply adopt the same asset
12 allocations of Teachers' without regard to their own
13 risk tolerance and investment objectives?

14 MR. VALTER VIOLA: I agree it would
15 not be prudent just to follow what somebody else is
16 doing, but if I could qualify that, I'd like to.

17 MR. MATT GHIKAS: Absolutely.

18 MR. VALTER VIOLA: So -- but I did
19 make the point to say there were two (2) buckets, the
20 risk-free bucket, call it -- just to keep it simple,
21 and then the risky bucket, the red bucket. And I said
22 that -- if I could jump to a slide, if that's all
23 right? Sorry, I don't have control of the mouse.

24 MR. MATT GHIKAS: Just indicate the
25 slide --

1 MR. VALTER VIOLA: Sorry, I'm just
2 trying to find it. It's the separation, so slide 8.
3 That's the one, the market efficiency.

4 Again, if -- this is textbook stuff,
5 portfolio management 101, that says other things equal
6 -- if we looked into the risky bucket, this is modern
7 portfolio theory, we should, other things equal,
8 expect to find whether it's a small bucket, 2 billion,
9 2 hundred million, whatever, versus 3 hundred billion.

10 We should look down into that bucket
11 and still see roughly the same mix between Canada, US,
12 and international. And I believe you raised the point
13 of a risk tolerance, so those were two (2) separate --
14 that's the separation theory, I'm saying. The risky
15 bucket is over here and will have different
16 allocations to that, and perhaps because of different
17 durations and liabilities, different fixed income, or
18 other assets in that one.

19 But in the risky bucket, other things
20 equal, we should expect to see the same -- the same
21 pie chart of Canada, US, international, regardless of
22 size.

23 MR. MATT GHIKAS: And in terms of
24 investment objectives, those would differ -- differ
25 from company to company as well?

1 MR. VALTER VIOLA: The specifics
2 would, but I would suggest that the -- they're more
3 similar than different.

4 MR. MATT GHIKAS: Okay.

5 MR. VALTER VIOLA: They generally say,
6 Maximize return without undue risk, and then they
7 specifically qualify what risk is to them.

8 MR. MATT GHIKAS: Now, if -- if
9 reality was as simple as the -- the textbook 101 that
10 we're looking at on slide 8 there wouldn't be much of
11 a market for asset liability studies, were there?

12 MR. VALTER VIOLA: Let me think about
13 that for one (1) second. No, I would disagree with
14 that. This slide 8 has to do with the composition of
15 the risky bucket. It has -- says nothing about how
16 much to put in that risky bucket, which is one (1) of
17 the main outcomes, I think, of asset liability
18 modelling, for example.

19 MR. MATT GHIKAS: One (1) of the
20 things that you did mention when you were referring to
21 buckets earlier on when you were giving your
22 presentation, sir, was that there are different views
23 of risk, I think was the term you used, and that that
24 may influence the breakdown of the classes in the
25 bucket?

1 MR. VALTER VIOLA: Which bucket,
2 sorry?

3 MR. MATT GHIKAS: I was going to say
4 the mints, but I -- you're -- you were --

5 MR. VALTER VIOLA: For the red -- the
6 red risky bucket?

7 MR. MATT GHIKAS: Yeah.

8 MR. VALTER VIOLA: Okay. So could you
9 rephra -- rephrase the question just so I'm clear?

10 MR. MATT GHIKAS: Certainly. So in
11 the -- in the red risky bucket -- well, let me -- let
12 me back out of the analogy here. You indicated that -
13 - that people have different views of risk.

14 And you referred to an example where
15 one (1) fund manager might find cash to be a risk?

16 MR. VALTER VIOLA: Correct. Do you
17 want me to expand upon that?

18 MR. MATT GHIKAS: Please.

19 MR. VALTER VIOLA: I'd be happy to do
20 so. So again, this goes to your purpose. I like to
21 use the word 'purpose' and 'cap' -- sorry, 'purpose'
22 and 'capital'. So depending on your mission, you will
23 define risk uniquely.

24 So if you are a portfolio manager, as I
25 was, for real return bonds, and I put my silo hat on,

1 not my total fund, and -- and someone said your --
2 your goal is to beat the benchmark, back then, it was
3 the Scotia Capital real-return bond index, I would
4 say, well, then I'd better buy real-return bonds that
5 are in the index.

6 If I do the 407 toll road, it's not in
7 the index, I take risk relative to benchmark. I may
8 still do so because there's an opportunity to add
9 value, but I take active risk or tracking error in
10 relation to it.

11 And -- and just to make one (1) subtle
12 point here, as well, the reason I got the mandate to
13 invest in real-return bonds was, if I could jump to a
14 slide, the truth and consequence slide, this was the
15 governance issue, and it all has to do with incentive
16 behaviour.

17 People do what their incented to do.
18 And, in this case, if someone told me, your -- your
19 objective is to beat the benchmark, then by deviating
20 from the benchmark I take risk. Sorry, I'm just
21 waiting for the slide.

22

23 (BRIEF PAUSE)

24

25 MR. VALTER VIOLA: Sorry, slide --

1 slide 5. So becau -- so this is an agency issue, so
2 I'm trying to answer your question. Real-return bonds
3 are a good thing to buy for a pension plan, but
4 pension plans aren't incented to buy them because the
5 people who typically manage them are paid based on
6 beating benchmarks.

7 And this is -- so there's no incentive
8 for someone to backup the truck to buy the least risky
9 asset because, if they're paid to beat the benchmark,
10 it's hard to beat that benchmark. That's why that got
11 carved out and given to me, because I was willing to
12 underperform the benchmark and back up the truck and
13 pay more than I needed to because it was good for the
14 fund.

15 So -- so to your point again, the link
16 between purpose and capital is important. So for
17 real-return bonds, as the manager in that silo, I
18 would say it wasn't in my interest to go out and buy
19 real-return bonds and back up the truck because I
20 would have market impact. In a concentrated market
21 there's only five (5) or six (6) bonds.

22 In the case of the S&P 500, if I was an
23 index manager and asked to beat the S&P 500, holding
24 cash would be risky even though you and I might argue
25 that cash is a low risk asset. So hopefully that

1 answers your question.

2 MR. MATT GHIKAS: Well, let's -- let's
3 get back to this. I mean, we -- investing isn't as
4 simple as simply taking what Teachers does and
5 whatever they invest in and investing in all those
6 same things if you have a different risk profile and
7 different investment objectives, right?

8 MR. VALTER VIOLA: It's not as simple
9 as that. But, again, going back to the separation
10 theorem, the risky portfolio should look more similar
11 looking down into that bucket than different. The
12 allocation to that bucket versus the -- the risk-free
13 bucket, that could be very different.

14 So if we wanted to look at -- let me
15 just go to it, the slide --

16 MR. MATT GHIKAS: The slice is the
17 size, if I can put it simply --

18 MR. VALTER VIOLA: Yeah, sure.

19 MR. MATT GHIKAS: -- the slices of the
20 pie may differ in -- in size, and would?

21 MR. VALTER VIOLA: The two (2) -- the
22 two (2) buckets will be in difference size, but when
23 you look inside the red risky bucket looking down the
24 pie chart should look the same, other things equal.
25 But in the risk free bucket it could look quite

1 different, because -- and I think that's the point
2 you're referring to.

3 In the risk free bucket I would agree.
4 So, for example, pension plan or insurance plan with
5 inflation index liabilities should have some inflation
6 linked products, other things equal, unless it doesn't
7 worry about inflation risk, because it's stable, in
8 which case nominal bonds seem right on a duration-
9 match basis.

10 So I think we're in agreement.

11 MR. MATT GHIKAS: Okay. Now, the...
12 You have -- if we go to slide 3, please, Diana. Thank
13 you. Now, the focus under -- next to focus as a
14 problem, and you've alluded to this quite some time
15 that -- that the sho -- the -- the short-term rate
16 stability focus is -- is a problem.

17 And would you agree with me, sir, that
18 it's only -- it's only a problem if people don't value
19 rate stability as being their number one objective?

20 MR. VALTER VIOLA: Sorry, I would -- I
21 just want to make sure I answer the question. I would
22 say it's -- you said -- you said the word "only" so I
23 want to be careful. Can you say the question again?

24 MR. MATT GHIKAS: Okay. Certainly.

25 MR. VALTER VIOLA: Thanks.

1 MR. MATT GHIKAS: You've characterized
2 it as a problem and my suggestion to you is, you know,
3 problem is in the eye of the beholder.

4 MR. VALTER VIOLA: Agreed. Well,
5 agree in the eye of the beholder, but if I could just
6 qualify that. I think when I said it, I'd have to
7 look at the transcript, but I believe what I said was
8 the importance of prioritizing goals, and one (1)
9 goal, the primary goal, as I understand it, is short-
10 term rate stability, which is a reasonable goal.

11 I would argue though that there's
12 another goal which is long-term rate minimization, and
13 that's what's not measured here. And again, I think I
14 believe I mentioned the fact -- the -- the word
15 'constraint' in there saying in -- in the framework
16 suggestions that I propose, the first question is,
17 What is the primary risk? I'm sorry, What is the
18 primary goal? Recognizing that there may be multiple
19 goals and therefore tradeoffs, but it has -- we have
20 to get a pecking order of what matters the most.

21 And the other ones are either
22 secondary, or tertiary goals, or constraints. And I
23 would agree that the primary goal appears to be, and
24 it's evidenced in the Aon reports, and other things
25 I've read, that the primary goal is focussed on short-

1 term rate stability.

2 MR. MATT GHIKAS: And the symptoms
3 flow from that focus?

4 MR. VALTER VIOLA: And others, the
5 others being the use of accounting metrics which don't
6 provide market value based metrics, and therefore, if
7 the inputs to the model show less volatile assets that
8 don't look like the long-term liabilities that I
9 believe is a -- if not the primary risk, or primary
10 goal, it should be an important goal, then I believe
11 that the smoothing -- the use -- the reliance on
12 accounting, no discredit to accounting, but it's the
13 reliance on accounting that doesn't fully reflect
14 market value.

15 I believe that is a -- that is a --
16 that is a problem.

17 MR. MATT GHIKAS: Now, if you could,
18 Diana, turn us to -- to page 41 of -- sorry, not of
19 the slide deck, of Mr. Viola's report, please. So on
20 this page, Mr. Viola, you're referring to constraints.

21 And I believe that what you're saying
22 here is that constraints, per se, are -- are not
23 necessarily bad. You're -- well, you're making the
24 point that constraints never increase expected risk
25 adjusted returns, right?

1 MR. VALTER VIOLA: That is correct.

2 And -- and that if there's -- underlying the
3 constraint presumably there's a goal for that
4 constraint.

5 And what I would argue is that
6 focussing on the goal of the constraint and seeing if
7 there's alternatives to imposing the constraints til
8 achieving it. And if you'd like, I can give an
9 example related to the portfolio -- not this specific
10 portfolio, but happy to do so.

11 MR. MATT GHIKAS: Well, I don't -- I
12 don't think that's necessary, but thank you. The --
13 so you would accept, then, presumably, that an
14 unconstrained portfolio couldn't be implemented in
15 this case?

16 MR. VALTER VIOLA: I -- I want to make
17 sure I understand the question. You're suggesting --
18 could you repeat that again?

19 MR. MATT GHIKAS: That an
20 unconstrained portfolio couldn't be implemented in
21 this case.

22 MR. VALTER VIOLA: When you say -- I
23 don't understand. From a capacity point of view when
24 you say, "can't be implemented"?

25 MR. MATT GHIKAS: Well, in this case,

1 you would expect that there would be constraints on
2 any portfolio, wouldn't you?

3 MR. VALTER VIOLA: I -- I believe you
4 do put constraints on them, and what I -- the -- the
5 type of constraint could vary. These ones -- these
6 are the motivations for the constraints, the nature of
7 this. They may be driven by regulation. Foreign
8 property rule was based on book value, but in risk
9 budgeting, you place a constraint based on risk
10 limits.

11 So constraints play a role. The
12 question then is: Make sure that they're prudent and
13 appropriate, and if -- and -- and if they do have a --
14 a cost that goes beyond achieving the objective of the
15 constraint, then think of other ways to achieve the
16 objective without imposing it. The long-short example
17 is one I could use to illustrate that.

18 MR. MATT GHIKAS: And the first bullet
19 there under:

20 "Nevertheless, there may be good
21 reasons for imposing constraints,
22 including some of the following,
23 perhaps."

24 You -- you list in the first bullet:

25 "Legislation or regulation."

1 Example: Maximum foreign property."

2 So presumably, you're citing
3 legislation here because performing an asset-liability
4 study is only useful if the output's practical and
5 capable of implementation, correct?

6 MR. VALTER VIOLA: Again, I want to
7 clarify the question. Could you repeat it, please?

8 MR. MATT GHIKAS: Would you do an
9 asset-liability study that doesn't account for
10 legislative requirements?

11 MR. VALTER VIOLA: No. Of course, if
12 there are real constraints that are binding, you need
13 to -- you can't -- it's just like GAAP. If you're --
14 if you're an account -- if it's an accounting
15 question, you would comply with GAAP.

16 So if there's a legislative requirement
17 that affects the portfolio in a certain way, then
18 clearly, the asset-liability modelling needs to
19 reflect that --

20 MR. MATT GHIKAS: And similarly --

21 MR. VALTER VIOLA: -- to the extent
22 that it can.

23 MR. MATT GHIKAS: -- and similarly,
24 you would want to reflect regulatory directives.

25 MR. VALTER VIOLA: Absolutely. No,

1 this is -- yes.

2 MR. MATT GHIKAS: Now, in -- who --
3 who decides -- I mean, if we -- if we look at market
4 risk management, for example, avoid concentration by
5 setting a maximum, who decides whether a maximum
6 concentration is reasonable, or when it's overly
7 restrictive?

8 MR. VALTER VIOLA: That is a
9 governance question, so I'll answer it at a high level
10 and then get into the details.

11 So the question of who -- who decides
12 it's --it's too much risk, depending on the nature of
13 the risk -- so if it's a material risk, i.e., the
14 total funds surplus risk or asset-liability risk, I
15 believe that the governing fiduciaries, whoever those
16 be, the board of directors or the investment committee
17 who makes recommendations to the board, I think it is
18 their responsibility to make sure, from a governance
19 point of view, that they understand the risks that are
20 inherent in the fund and that they should have
21 responsibility for doing that.

22 And I think most funds do that, but
23 they do it based on traditional asset mix constraints
24 rather than risk-based ones.

25 At -- at the funds that I work with,

1 the large funds and even smaller ones, I encourage
2 them to express -- I called it a belt-and-suspenders
3 approach, because risk has its flaws.

4 It's not perfect, but I trade off
5 relevance and reliability, saying I'd rather have the
6 more relevant thing and -- and recognize that it's not
7 as reliable in the sense that two (2) independent
8 people might have different opinions about the metric.

9 But I would suggest -- and what we did
10 in practice was have a belt and suspenders. The
11 traditional approach is do an asset-liability model --
12 modelling exercise once in a while, come up with the
13 asset mix, set the target asset mix, and then the
14 MinMax around it.

15 And that is -- and what I've suggested
16 is we -- we loosen the belt and tighten the
17 suspenders, so the -- the belt being the asset mix
18 constraints, make those bands wider, the MinMax, but
19 overlay it with the new suspenders, which are the
20 risk-based limits, which forces governing fiduciaries
21 to understand the inherent risks.

22 So by communicating and -- and having
23 to approve through policy risk limits, they won't
24 approve anything unless they understand them. So I
25 actually think that's a good practice, and so I hope

1 that answers your question but I'm not sure it does.

2 MR. MATT GHIKAS: And if we could
3 turn, Diana, to the report, page 19, please?

4

5 (BRIEF PAUSE)

6

7 MR. MATT GHIKAS: So here you're --

8 MR. VALTER VIOLA: Sorry, I just
9 realized -- if I could interrupt. You asked about
10 concentration. I just was talking about the level of
11 risk. The concentration is the mix of where it comes
12 from. That will be a harder thing to -- for a board
13 of governing fiduciaries to -- to get a handle on.

14 And I suspect -- I would suggest that
15 as long as you're compliant with the level of risk as
16 approved by some authority, whether it's a CEO, CIO,
17 CRO, or Board, that the allocation of that risk is a
18 management responsibility. It could be the portfolio
19 manager or the chief investment officer, and those --
20 that pie chart of risk, the analysis that should be
21 done is that is a risk which is a forward-looking
22 concept, should be viewed in light of the expected
23 return, which is another pie chart.

24 And if you did a graph of those two
25 (2), like if you thought in capital asset pricing

1 models, the question is: Are you plotting above or
2 below the line? On when -- when it's the most
3 relevant risk, marginal contribution, a beta notion,
4 and marginal return which is additive.

5 The question is, I think the portfolio
6 managers who know the portfolio are in the best
7 position to know as best as they can approximate that
8 line and come up with the metrics, am I above the line
9 with this asset class of security and should I buy it,
10 or am I below the line and is it too expensive?

11 MR. MATT GHIKAS: And so ultimately
12 it's a decision of the -- of the -- the fiduciaries,
13 as you put it --

14 MR. VALTER VIOLA: Yeah.

15 MR. MATT GHIKAS: -- in consultation
16 with their portfolio advisors.

17 MR. VALTER VIOLA: Right. So the
18 level probably higher level, and the attribution of
19 that source, the concentration, to the person who has
20 the best informed information about the nature of
21 those risks.

22 MR. MATT GHIKAS: Right. And so it's
23 important to have a good level of knowledge to
24 determine those things.

25 MR. VALTER VIOLA: A good enough

1 level, so nothing -- again we're -- we're living in
2 the world of the blind. My -- my old boss used to say
3 -- say in the -- in the land of the blind the one (1)
4 eyed man is king. So good enough is -- is better than
5 -- so relevance trumps reliability, so everything is a
6 matter of degree.

7 MR. MATT GHIKAS: Right. Now, so on
8 page 19 here, you're talking about constraints. And
9 you under point --

10 MR. VALTER VIOLA: Sorry, nineteen
11 (19) of which document?

12 MR. MATT GHIKAS: Sorry, of your
13 report, your original report.

14 MR. VALTER VIOLA: Okay.

15 MR. MATT GHIKAS: It should be up on
16 the screen in front of you.

17 MR. VALTER VIOLA: Oh, sorry. Okay.

18 MR. MATT GHIKAS: That's okay.

19 MR. VALTER VIOLA: No, I was looking
20 at the wrong screen. Sorry.

21 MR. MATT GHIKAS: And so you're
22 talking about constraints, and you say that -- under
23 two (2) how they're -- well, first of all you say
24 there are two (2) very binding constraints --

25 MR. VALTER VIOLA: Yeah.

1 MR. MATT GHIKAS: -- and then you
2 identify both of them, and the second one is how asset
3 classes are constrained and you say:

4 "Minimum/maximum asset allocations
5 in optimizations conducted as part
6 of the most recent asset liability
7 study, for example, are overly
8 restrictive."

9 And when you came to that
10 determination, sir, had you spoken to people at the
11 Department of Finance about what their concerns and
12 constraints are?

13 MR. VALTER VIOLA: No, I did not.

14 MR. MATT GHIKAS: Okay. And had you
15 spoken to people at MPI about what their concerns,
16 objectives, constraints are?

17 MR. VALTER VIOLA: No. I -- I believe
18 I simply asked who -- who set the constraints, and why
19 were they set at those levels.

20 MR. MATT GHIKAS: Okay. And you -- it
21 wouldn't be your practice to do an asset liability
22 study, for example, where you didn't talk to a client
23 about their objectives and limitations, correct?

24 MR. VALTER VIOLA: No, that's a
25 prudent thing to do. I would agree.

1 MR. MATT GHIKAS: And similarly with
2 your risk budgeting that you referred to in your -- in
3 your slide, I believe slide 3, the whole purpose of
4 that is to understand the client's objectives and
5 limitations having ongoing discussions with them,
6 correct?

7 MR. VALTER VIOLA: I don't disagree
8 with what -- what you just said.

9 MR. MATT GHIKAS: And -- and in your
10 case, you have arrived at the conclusion that it's
11 overly restrictive without having any experience in
12 the P&C industry, sir?

13 MR. VALTER VIOLA: It's true that I
14 have no experience in the P&C, but I'll qualify the
15 comment about overly restrictive, and again I refer to
16 the belt and suspenders approach, and this notion that
17 -- again this -- you could articulate this as my
18 belief but I believe that more freedom to have wider
19 bands -- and again -- sorry, let's take a step back.

20 This is for the purpose of asking an
21 asset liability model to take a series of inputs and
22 optimize. And I know from building the asset
23 liability model at Teachers way back in '94, getting
24 really into the weeds, and using models and developing
25 other models over a few decades, that constraints will

1 cause you to cause the optimizer to hit boundary
2 solutions.

3 So what I worry about in constraints in
4 optimizations is that you will hit a boundary solution
5 because that's just the way the math works. And so
6 the word 'overly restrictive' was probably descriptive
7 of my -- my preference or belief to say wouldn't it be
8 interesting to see what the optimizer would say if it
9 was less restrictive on the constraint side because it
10 probably pushed you to those boundary solutions.
11 That's all.

12 MR. MATT GHIKAS: Okay. And just as
13 an aside, staying with slide 3, your -- your remedy in
14 the red there, framework and risk budgeting, I didn't
15 see any reference in your actual report to risk
16 budgeting at all. You -- you'd agree with me that you
17 didn't discuss risk budgeting in your evidence, sir?

18 MR. VALTER VIOLA: I'd have to do a
19 search if I actually used the word; I'm not sure that
20 I did. I can do a quick search here, but I'm curious
21 to say -- and, again, I think I said it in -- in my
22 earlier statements I said -- you know, I defined it as
23 budgeting with the word 'risk' from it -- in front of
24 it. And I said, People sometimes say, oh, we don't do
25 risk budgeting. It's just another name for something

1 that they do to -- to a lesser degree or in a
2 different way.

3 So I would argue that it's just a
4 synonym for portfolio management, risk management,
5 with greater transparency frequency in risk terms.

6 MR. MATT GHIKAS: So people are --
7 people generally do risk budgeting. And this is
8 giving a formality or a name to it, effectively?

9 MR. VALTER VIOLA: I'm -- yeah. And
10 it's not my name. It's -- but -- and again, I think
11 that's why we -- we -- there's an article we -- we
12 published in 2000. I believe it was distributed in
13 advance. It was called, Pension Risk Budgeting,
14 Something New, Something, blah, blah, blah, blah.

15 And the point of the article was to say
16 it's -- it's the same old stuff viewed a little
17 differently. So the only difference is focus on risk
18 as a metric as opposed to assets and be explicit about
19 allocating it to people.

20 And the other thing that I didn't get
21 into was how -- and this is an important point, if you
22 don't mind, is the chief investment officer from
23 Teachers who retired, when asked by -- in an interview
24 with Benefits Canada they asked him, What was your
25 biggest challenge and achievement having been at

1 Teachers. And his biggest challenge was having people
2 focus on both sides of the balance sheet before trying
3 to add value.

4 And his biggest achievement was focused
5 on risk as the centre point and linking performance
6 and risk and compensation so that people were incented
7 to behave in the way that the organization wanted them
8 to do it. And so these are terms of risk budgeting
9 that were developed at Teachers, not by me.

10 I happen to be in the system, living in
11 it. But then when I went to CPPIB I certainly used
12 the word. And it's -- and it's -- I mean, it's in the
13 articles that we -- we distributed yesterday but may
14 not have appeared in the evidence per se.

15 MR. MATT GHIKAS: And your
16 recommendations, Mr. Viola, they -- they weren't your
17 recommendations in this evidence that you put forward
18 and talked about in your slides. They -- they weren't
19 based on having conducted a asset liability study of
20 your own, obviously?

21 MR. VALTER VIOLA: Not for MPI, no.

22 MR. MATT GHIKAS: And I -- I assume
23 that do --

24 MR. VALTER VIOLA: Ha -- having --

25 MR. MATT GHIKAS: -- doing an ALM

1 study is a much more significant scope of work,
2 correct?

3 MR. VALTER VIOLA: I would agree and
4 disagree. The -- the punch line on that is, yeah, to
5 do the fully baked one, yes. But the reality is, you
6 can -- again, this is the -- I said that what we were
7 doing at Teachers took us from a 20 percent to a 60
8 percent solution.

9 But it wouldn't be hard for me in a
10 simple spreadsheet, to be honest, to put in the
11 correlation matrix, the -- the forty-four (44)
12 assumptions, and get a pie chart of risk decomposition
13 that replaces the pie chart of accounting-based
14 metrics, for example.

15 It wouldn't be a full replication, but
16 it would be close enough to be able to appreciate the
17 factors that drive it. And it would allow me to -- to
18 show the impact of smoothing metrics of accounting
19 compared to market value without adjustments -- or
20 with adjustments, I suppose, so -- so it's a matter of
21 degree.

22 So I -- I dis -- I agree this is -- so
23 I want to make sure I answer your question.

24 MR. MATT GHIKAS: Okay. So let's --
25 let's break it down. In order to have done ALM study

1 --

2 MR. VALTER VIOLA: Yeah.

3 MR. MATT GHIKAS: -- what you would
4 require information like pension plan sensitivities,
5 right?

6 MR. VALTER VIOLA: Yeah, I'd need to
7 know -- having the sixteen (16) year duration is all
8 that I need -- really need, to be honest.

9 MR. MATT GHIKAS: Okay.

10 MR. VALTER VIOLA: Close enough if
11 we're just trying to get the ball over the net rather
12 than the top spin. So if someone told me it's a
13 sixteen (16) year duration as opposed to four (4),
14 that's -- that gets me started on the liability side.

15 MR. MATT GHIKAS: Now --

16 MR. VALTER VIOLA: More detail would
17 be better.

18 MR. MATT GHIKAS: Let's -- let's
19 backup here. My questions are from the perspective of
20 actually advising the administration of MPI's \$2.5
21 billion portfolio, so we're not talking back of the
22 napkin stuff here. I'm talking ALM.

23 MR. VALTER VIOLA: Sure.

24 MR. MATT GHIKAS: Okay. So in order
25 to do one (1) of those you would need the pension plan

1 sensitivities, right?

2 MR. VALTER VIOLA: How do you define
3 sensitivities?

4 MR. MATT GHIKAS: Well, you'd need
5 information about the membership data, for example, on
6 pension plans?

7 MR. VALTER VIOLA: Yeah, you'd need --
8 you'd want to build it up at a level of granularity
9 that was sufficient for the purpose at hand.

10 MR. MATT GHIKAS: Right. And you'd
11 need the value of assets portfolio returns?

12 MR. VALTER VIOLA: Sure, expectations.

13 MR. MATT GHIKAS: You'd need
14 capitalization of the Corporation, correct?

15 MR. VALTER VIOLA: That's an
16 interesting question. When you say "capitalization"
17 the funding ratio?

18 MR. MATT GHIKAS: The -- just in -- in
19 simpler terms, the -- the amount of -- well, in terms
20 of -- maybe this isn't so much a study issue, but in
21 terms of the parameters you would need to know what --
22 what the level of capitalization -- level of capital
23 or -- that you could -- how much loss you could
24 absorb, wouldn't you?

25 MR. VALTER VIOLA: So that's capital

1 at risk, not level of capital, just to clarify.

2 MR. MATT GHIKAS: Okay.

3 MR. VALTER VIOLA: So that's -- that's
4 the risk level of tolerance if you will. So, yes. So
5 -- well, sorry. That's a nice input. That becomes a
6 constraint though, right. So you're saying that you
7 could -- so in the up -- to do an asset/liability
8 study you -- you don't need that. That could be the
9 thought afterwards to say, Given the outputs, is that
10 within my risk tolerance. Is that clear?

11 MR. MATT GHIKAS: Okay. So in -- in
12 the optimization and making it practical in terms of
13 implementation, your level of ability to withstand
14 losses is an important factor to consider?

15 MR. VALTER VIOLA: Yeah, when you look
16 at the results of the asset/liability model then you
17 have to make choices and then the -- the risk
18 tolerance, however defined, is relevant.

19 MR. MATT GHIKAS: Right. And the
20 ability to count on a consistent amount of capital
21 would also be important over time? Your -- your
22 tolerance to risk of loss, for example, would be not
23 just a one (1) year thing, it would be over a period
24 of time how much you can stand to loose, wouldn't it?

25 MR. VALTER VIOLA: Yeah. Yes, is the

1 quick answer. I'm just trying to articulate it in a
2 way that's coherent. You're talking about risk
3 tolerance and that can be expressed many ways. It's -
4 - you're talking about loss, and I'll be more specific
5 perhaps. It's the risk of funding deterioration, the
6 -- the spreading out of asset and liability values and
7 it could be a one (1) time hit at a point in time, or
8 on average a sustained period of time.

9 When I talk about risk metrics there's
10 two (2) elements to it. It's the probability that it
11 could happen and its severity, however severe is
12 defined. In this case, deterioration of surplus or
13 funding. And if you pick one (1) you've talked about
14 the other. So if we talk about value at risk it's how
15 bad could the funding go with a certain probability.

16 So if it's a 1:100 year event it's
17 measured in dollars or as a percentage of the base,
18 for example.

19 MR. MATT GHIKAS: Right. So to make a
20 -- to make really significant investment decisions you
21 need to know those parameters first, effectively? You
22 need to understand where -- how much risk of loss you
23 can absorb in order to actually make use of it?

24 MR. VALTER VIOLA: Abs -- yes. To --
25 to make a decision on what assets to buy and in what

1 proportions, that decision needs to -- that's how you
2 execute the decision process or criteria to go in.
3 One (1) of them is the return expected and the other
4 is the tolerance for risk however defined.

5 MR. MATT GHIKAS: Okay.

6 MR. VALTER VIOLA: Agreed.

7 MR. MATT GHIKAS: And so getting back
8 to our types of inputs in a -- an ALM study, so you
9 would need claims discount calculations, correct?

10 MR. VALTER VIOLA: As I said, I'm not
11 a P&C actuary. I've modelled -- I've modelled eleven
12 (11) cohorts by entry of teachers. So I've gotten
13 into the weeds in terms of the population that's
14 underlying the financials in the P&C. I -- I'm not an
15 expert.

16 But the reality is, whatever drives a
17 cashflow obligation, that should be modelled at
18 whatever level of granularity based on benefit-cost
19 analysis. But those inputs are obviously relevant.

20 Can I make one (1) more observation?

21 MR. MATT GHIKAS: You certainly may.

22 MR. VALTER VIOLA: The -- you asked
23 about what one needs to do to do -- I'm say -- I'm
24 maybe not saying this in what you asked, but to do a
25 good enough job for AL modelling, if that's what we

1 want to call it, you need enough -- you know what, I'm
2 going to just stop. You didn't ask the question, so
3 I'll just stop there. I apologize.

4 MR. MATT GHIKAS: Now --

5 MR. VALTER VIOLA: Oh, that's okay.

6 MR. MATT GHIKAS: -- now, in terms of
7 the constraints in terms of the asset class mix in --
8 in MPI's case, your reference back to the page of your
9 report that we were on, which was nineteen (19), I
10 believe -- yeah. So you'll see at the bottom of -- so
11 it's -- it's up on the screen now. Thank you, Diana.

12 Right at the bottom there, it says:

13 "The constrained optimization
14 problem results in a predetermined
15 allocation of greater than or equal
16 or to 80 percent of the portfolio,
17 leaving little room to optimize
18 return-risk tradeoffs [and so on]."

19 Now, with respect to that 80 percent,
20 you -- you understand that a majority of that
21 constraint represents the use of bonds to hedge claims
22 liabilities against inflation risk --

23 MR. VALTER VIOLA: Yes.

24 MR. MATT GHIKAS: -- interest rate
25 risk --

1 MR. VALTER VIOLA: Yes, yes, yes.

2 MR. MATT GHIKAS: -- interest rate
3 risk, sorry.

4 MR. VALTER VIOLA: Yeah. I think I
5 listed them, yes. Yeah.

6 MR. MATT GHIKAS: And in terms of
7 matching the liabilities, you would agree with me that
8 the actual amount of the liabilities determines the
9 allocation of the bonds that you're matching to them?

10 MR. VALTER VIOLA: So you're asking me
11 if that should be or it is? Can you clarify your
12 question?

13 MR. MATT GHIKAS: Certainly. The --
14 if you were doing a matching -- if you were doing --
15 let's -- let's talk in the abstract.

16 If you're trying to match your
17 liabilities, the amount of liabilities that you've got
18 will determine the number of assets that you need to
19 match to them, correct?

20 MR. VALTER VIOLA: I'm going to
21 clarify that just because this is an issue we dealt
22 with at Teachers, and we changed the way we used to do
23 it. So you're -- you're assume -- you're implicitly
24 assuming that we have these liabilities and we're
25 dedicating a certain amount of assets -- call them the

1 goalies -- to hedge that risk.

2 And that's fine. And -- and so I would
3 agree with your statement that -- if you said, That's
4 what you choose to do. But I'll suggest that it's a
5 constraint, and constraints only hurt potentially.

6 If that's the constraint that you are
7 only going to dedicate a certain amount of assets,
8 these ones with the label 'bond' or 'real-return bond'
9 or 'cash,' fixed income to that, then of course I kind
10 of -- anyways, then, fair enough, the -- the liability
11 values determine the assets.

12 But I would argue that a more
13 enterprise-wide total portfolio perspective wouldn't
14 drill down into interest-rate risk management alone
15 and play whack-a-mole. And I say, "whack-a-mole" only
16 in the way that it's meant to be, in that that's
17 interest-rate risk, bang, pop it down, but equity risk
18 pops up over here.

19 I would rather -- that's why I like
20 value at risk because value at risk is agnostic to
21 what's the factor that drives it? Is it because of
22 interest-rate risk, currency risk, or equity risk?
23 I'd rather take a big piece of plywood and just whack
24 them all at once and say, That's interest-rate risk
25 management, as opposed to using a duration-matching

1 tool for just the one (1) interest-rate risk.

2 So if the constraint is hedge the
3 liability risk with only certain assets, then, yes, we
4 need to factor in the -- the capital under management.

5 MR. MATT GHIKAS: Bonds are a good
6 hedge against the impact of interest-rate changes on
7 liabilities, aren't they?

8 MR. VALTER VIOLA: Certain bonds are
9 better than others, depending on their inflation
10 sensitivity and depending on the nature of the
11 inflation risk and duration of the liabilities.

12 MR. MATT GHIKAS: Right. And the --
13 just in simple terms, the decline in the interest
14 rates will increase the liability side of the
15 equation, but it will also increase the market value
16 of the bond portfolio in simple terms.

17 MR. VALTER VIOLA: In market value
18 terms, yes.

19 MR. MATT GHIKAS: Okay. And vice
20 versa.

21 MR. VALTER VIOLA: Yes.

22 MR. MATT GHIKAS: And just comparing --

23 MR. VALTER VIOLA: Sorry, just to
24 clarify. Assuming the bases of the -- of the interest
25 rates we're talking about are the same, i.e., if we're

1 talking about -- let's assume inflation doesn't
2 change, and so the interest rate, whether it's real or
3 nominal, is the same rate, that's the change. The
4 quick -- the quick answer is yes.

5 MR. MATT GHIKAS: Okay. And just in
6 terms of comparing one (1) asset class to another, for
7 example, and I -- I do take your comment about wanting
8 to hit all the moles at once but let's just -- looking
9 at the -- the two (2) asset classes separately, the --
10 the bond returns tend to have a more direct
11 relationship with interest rate changes than equity
12 returns, correct?

13 MR. VALTER VIOLA: Agreed. Equity
14 returns are driven by more than just interest rates.

15 MR. MATT GHIKAS: Right. And with
16 bonds, it's sort of a mathematic relationship.

17 MR. VALTER VIOLA: Yes.

18 MR. MATT GHIKAS: Now --

19 MR. VALTER VIOLA: Fewer factors, yes.

20 MR. MATT GHIKAS: Right. Now, I want
21 to turn to a topic that I think is near and dear to
22 your heart, which is real-return bonds. The -- the --
23 can we go to page -- slide 3, please?

24

25

(BRIEF PAUSE)

1 MR. MATT GHIKAS: All right. So if we
2 look at your -- your reference, and I'm just using
3 this really as a jump off spot, Mr. Viola, but your
4 shaky goalie slide there about having no real-return
5 bonds.

6 So if I understood your evidence, there
7 is -- there is a cost to using real-return bonds.
8 They -- because you're essentially buying insurance
9 against inflation, correct?

10 MR. VALTER VIOLA: On average one
11 would expect that, yes, in -- in a rational market,
12 yes.

13 MR. MATT GHIKAS: And the -- would you
14 agree with me that the -- in the 1990s we were
15 experiencing sort of 5 percent -- there was a 5
16 percent year. I believe we were looking at 5 percent
17 in 1990.

18 MR. VALTER VIOLA: Yeah, initially.

19 MR. MATT GHIKAS: And the Bank of
20 Canada has been targeting between 1 and 3 percent
21 inflation since 1991?

22 MR. VALTER VIOLA: Sounds right.
23 Yeah.

24 MR. MATT GHIKAS: And --

25 MR. VALTER VIOLA: I don't know if the

1 date is right but, yes.

2 MR. MATT GHIKAS: And you'd -- you'd
3 accept that, subject to check, inflation has been sort
4 of on average 1.8 percent?

5 MR. VALTER VIOLA: I don't dispute
6 that.

7 MR. MATT GHIKAS: Okay. Now, are you
8 anticipating when -- in your recommendation, or your -
9 - your interest in real-return bonds here, Mr. Viola,
10 that -- that there will be significant inflation in
11 the next five (5) years, for example?

12 MR. VALTER VIOLA: I don't have a view
13 -- I don't want to state a view. I -- so I -- the
14 quick answer is I don't -- I'm not suggesting any
15 view. That's a risk management -- portfolio
16 management decision for MPI to make. But I -- I do
17 clarify a number of points saying that the
18 attractiveness from an insurance hedging point of
19 view, RRBs, I would suggest is -- hopefully there is
20 consensus that it is a good asset for the fund to
21 consider but that there is a varying price of
22 insurance cost. I've said that a few times.

23 MR. MATT GHIKAS: Right. It's -- sort
24 of is it an efficient use of capital given whatever
25 the Corporation assesses its insurance -- sorry, its

1 inflation risk to be.

2 MR. VALTER VIOLA: Yes, among all
3 other risks as well. And again recognizing that it's
4 both return and risk, so recognizing that even though
5 the insurance premium may be expensive in the car
6 analogy the -- having the flexibility to drive a car
7 despite paying higher premiums allows you to do things
8 that you wouldn't otherwise do, so.

9 MR. MATT GHIKAS: And right now it is
10 expensive insurance, correct?

11 MR. VALTER VIOLA: I -- the quick
12 answer is, yes, it is from a historical perspective.

13 MR. MATT GHIKAS: Now, nominal bonds,
14 if you turn to slide 16 for me, Diana, please?

15

16 (BRIEF PAUSE)

17

18 MR. MATT GHIKAS: So in the first
19 group of bullets there, we've -- we've dealt with the
20 insurance cost and now we -- you're saying nominal
21 bonds are only a good fit if insur -- inflation is
22 stable. And the -- the flip side to that is they are
23 a good fit when inflation is stable, correct?

24 MR. VALTER VIOLA: That is correct,
25 but risk is about the future so we all are -- we all

1 know we're going to be wrong about our forecasts. The
2 question is to what -- to what degree.

3 MR. MATT GHIKAS: Okay. And if we
4 can...

5

6 (BRIEF PAUSE)

7

8 MR. MATT GHIKAS: If we can turn to
9 slide 21, for example. So in order to -- so these are
10 -- these are real returns, are they?

11 MR. VALTER VIOLA: They're real --
12 real yields for a particular long-term real bond for
13 the Bank of Canada.

14 MR. MATT GHIKAS: And so in order to
15 convert these to a nominal, if our -- if our -- I
16 believe the inflation rate currently is one point
17 three (1.3) approximately, so you would add one point
18 three (1.3) to, for example, in August, zero point
19 two-two (0.22), and you'd end up with one point five-
20 four (1.54)?

21 MR. VALTER VIOLA: I can't disagree
22 with the math. I don't know what the purpose of that
23 would be.

24 MR. MATT GHIKAS: So -- well, I'm just
25 trying to understand what the amount is in nominal

1 terms.

2 MR. VALTER VIOLA: Okay, so that's an
3 -- are you -- that's fine. Are you asking: What's
4 the nominal yield on a real-return bond?

5 MR. MATT GHIKAS: Yes.

6 MR. VALTER VIOLA: I don't know that -
7 - I don't know how that's useful, but this is the real
8 yield on real bonds. It's what determines the price
9 of a bond. If you're looking at nominal interest
10 rates, you need a different curve.

11 MR. MATT GHIKAS: Okay. Well, let's -
12 - let's do it -- let's do it this way. So if we --
13 can you go to slide 15 for me? Thank you. So this --
14 this -- the source of this is from the year 2000,
15 correct?

16 MR. VALTER VIOLA: 2000 annual report
17 of Teachers', yes.

18 MR. MATT GHIKAS: Okay. And on the
19 left-hand side, there's real-return bond yields
20 graphed there.

21 And we -- we haven't seen real returns
22 of that nature for some time now, have we?

23 MR. VALTER VIOLA: Real yields, you
24 mean. Yes. The quick answer is I -- in 2000, they've
25 go -- the quick answer is, yes. They've been coming

1 down. There's a longer term and series graph that has
2 shown it's reasonably steady declining to where it is
3 today.

4 MR. MATT GHIKAS: Okay.

5 MR. VALTER VIOLA: Two (2) series are
6 maybe not identical, but they're close enough, I would
7 say. This -- this one probably has fewer bonds in it
8 than the one that I just showed. I shouldn't say
9 that. They're roughly the same series, I'm saying.

10 MR. MATT GHIKAS: Okay. And if you
11 can turn to slide 19 for me, please, Diana? Okay, so
12 again, you spoke to this earlier. And this is -- so
13 this is -- this is sixteen (16) years old, right?

14 MR. VALTER VIOLA: Yes. It was
15 illustrative --

16 MR. MATT GHIKAS: Okay.

17 MR. VALTER VIOLA: -- for -- to
18 support the framework discussion on how one defines
19 risk.

20 MR. MATT GHIKAS: Okay. So can we
21 agree that the -- the relative positioning of each of
22 these assets classes on this figure is -- is a
23 function of a number of different factors?

24 MR. VALTER VIOLA: Yes, the most
25 important of which is how you define success in your

1 organization. And so, in this case, the quick answer
2 is -- sorry, rephrase your question just so I can make
3 sure I answer it properly.

4 MR. MATT GHIKAS: Well, let me -- let
5 me get a little more specific, here.

6 MR. VALTER VIOLA: Sure.

7 MR. MATT GHIKAS: So the -- for
8 example, changing capital market conditions might
9 change the risk-reward associated with a particular
10 asset class?

11 MR. VALTER VIOLA: The quick answer
12 is, yes. But I can make a suggestion on which ones
13 change more and which ones change less.

14 MR. MATT GHIKAS: Certainly.

15 MR. VALTER VIOLA: So I -- I would
16 suspect -- I would assume -- starting from left to right,
17 that real-return bond becomes the anchor in this
18 framework. That will always be low, low risk, low
19 return, unless the world changes a lot; whether it's
20 higher vertically than treasury bills depends on the
21 forecast of interest rates.

22 In this case, it's slightly higher than
23 T-bills. And back then, I don't know what the T-bills
24 were, but I know real-return bonds were three point
25 two (3.2), so T-bills were slightly lower.

1 Nominal bonds vertically should be a
2 little higher because of the inflation risk. But the
3 distance between those for -- the first three four
4 (34) -- sorry, first four (4) on the horizontal, left
5 to right, that should be reasonably stable for a fund
6 that has a certain definition of risk.

7 The upper right, I think I made the
8 observation that, at the time when this was done, in
9 2001, March, I'd been there less than six (6) months,
10 or about nine (9) months maybe, nine (9) months.
11 Canadian equities were overvalued and -- and they were
12 to the right on the risk spectrum as we defined risk
13 because of the concentration.

14 But those numbers will change more.
15 And I would suggest that the Canadian equity one (1)
16 in particular will be more subject to revision in AL
17 modelling, that's my opinion, because of the nature of
18 the Canadian equity market.

19 Three (3) sectors make up usually two-
20 thirds (2/3) to three-quarters (3/4) of the index.

21 MR. MATT GHIKAS: And so some of the
22 factors that would influence where these are located
23 on this risk return figure, that would be inflation
24 expectations, for example?

25 MR. VALTER VIOLA: That's one (1).

1 MR. MATT GHIKAS: And interest rates?

2 MR. VALTER VIOLA: Interest rate
3 levels and outlooks, yes. And correlations and all
4 currencies, et cetera.

5 MR. MATT GHIKAS: And we've got a real
6 estate one (1) there, so presumably real estate market
7 changes?

8 MR. VALTER VIOLA: Expectations --
9 yeah, all the factors --

10 MR. MATT GHIKAS: Okay.

11 MR. VALTER VIOLA: -- return,
12 expectations, risk, correlations, volatilities.

13 MR. MATT GHIKAS: And -- and so 2001
14 you mentioned when you were speaking to this slide, I
15 believe at that time, the tech cen -- tech sector was
16 dominant?

17 MR. VALTER VIOLA: In Canada in
18 particular, yes.

19 MR. MATT GHIKAS: Okay. And it was --
20 well Nortel was still around.

21 MR. VALTER VIOLA: Still around and it
22 hadn't sort of hit the four dollar (\$4) mark and then
23 ultimately imploded. So I can't remember exactly, at
24 March that's when the year end is, but when I joined
25 in August it was at its peak at a hundred and twenty-

1 four dollars and fifty cents (\$124.50).

2 MR. MATT GHIKAS: And this is
3 obviously pre-2008 crash?

4 MR. VALTER VIOLA: Yes.

5 MR. MATT GHIKAS: And pre-quantitative
6 easing?

7 MR. VALTER VIOLA: Yes.

8 MR. MATT GHIKAS: And pre --

9 MR. VALTER VIOLA: A snapshot at a
10 point in time.

11 MR. MATT GHIKAS: Yes. And it's --
12 and we've since experienced record low interest rates?

13 MR. VALTER VIOLA: Historically, yes.

14 MR. MATT GHIKAS: Yeah. And it's
15 before oil prices declined?

16 MR. VALTER VIOLA: And a whole bunch
17 of other things, yes.

18 MR. MATT GHIKAS: Okay. Now, if -- if
19 I can turn you, Mr. Viola, just for a moment, rec --
20 I'm recognizing the time. If we could turn, Diana,
21 this is to an IR response. It's actually PUB 1-20.
22 And it's Attachment A, PDF 67.

23 Mr. Viola, last evening I circulated an
24 excerpt from this document and I don't -- I suspect --
25 well, you -- you did review the Aon materials

1 previously, correct?

2 MR. VALTER VIOLA: I rev -- I reviewed
3 some Aon materials, yes.

4 MR. MATT GHIKAS: Right. And was this
5 -- was this Phase I ALM study report one (1) of those
6 documents? Do you need to see the cover page?

7 MR. VALTER VIOLA: No, I believe it
8 is.

9 MR. MATT GHIKAS: Yeah. Okay. Just
10 in terms of this --

11 MR. BYRON WILLIAMS: Can I just
12 confirm that -- that he -- MPI was courteous enough to
13 send it last night, so this is a document that he's
14 had -- this page he's had an opportunity to review, so
15 we thank MPI for their courtesy.

16

17 CONTINUED BY MR. MATT GHIKAS:

18 MR. MATT GHIKAS: Thank you. And --
19 but even prior to that, sir?

20 MR. VALTER VIOLA: Yeah, I'm -- I'm
21 assuming this is from this -- and I suspect -- yes, I
22 did look at it. It's one (1) of the many things that
23 I did look at.

24 MR. MATT GHIKAS: Yes

25 MR. VALTER VIOLA: Do I remember it

1 specifically? No.

2 MR. MATT GHIKAS: Now, this -- this is
3 -- recognizing obviously that yours was a -- a
4 snapshot in time, this is sort of a different snapshot
5 in time, correct? A similar idea.

6 MR. VALTER VIOLA: It's not mine. It
7 looks like it. I -- I must admit, when I saw it I
8 wasn't sure about the horizontal access and why T-
9 bills were negative.

10 MR. MATT GHIKAS: Okay. The --

11 MR. VALTER VIOLA: It's on the
12 opposite side of that vertical -- I don't know if
13 that's just a round -- that -- that -- it could be
14 just a graphical thing, but I was just trying to
15 figure out what that meant.

16 MR. MATT GHIKAS: Oh, I see.

17 MR. VALTER VIOLA: It could be just a
18 transpositional thing. It looks like -- like -- I
19 don't understand what that is.

20 MR. MATT GHIKAS: Okay. And in terms
21 of -- in terms of -- just as a general question, Mr.
22 Viola, it's -- up to date information is better?

23 MR. VALTER VIOLA: I would not
24 disagree with that.

25 MR. MATT GHIKAS: Okay. Thank you.

1 MR. VALTER VIOLA: More up to date,
2 for sure. Those -- those pictures I showed were
3 illustrative of the framework, not a set of
4 assumptions going forward.

5 MR. MATT GHIKAS: Thank you. Okay.
6 Mr. Chairman, that would be a convenient time to
7 break.

8 THE CHAIRPERSON: Mr. Ghikas, do you
9 have any idea how long you'll be after lunch?

10 MR. MATT GHIKAS: I suspect I will be
11 under the half hour mark.

12 THE CHAIRPERSON: Okay. Thank you.
13 We'll break until one o'clock. Thank you.

14 MR. MATT GHIKAS: Thank you, Mr.
15 Viola.

16 MR. VALTER VIOLA: Thank you. You're
17 welcome.

18

19 --- Upon recessing at 11:59 a.m.

20 --- Upon resuming at 1:02 p.m.

21

22 THE CHAIRPERSON: Mr. Ghikas...? Oh,
23 sorry.

24 MR. BYRON WILLIAMS: Mr. Chair, if I
25 might, I just did want to acknowledge and thank our

1 client -- our client's representative, Ms. Gloria
2 Desorcy, the --

3 THE CHAIRPERSON: Okay.

4 MR. BYRON WILLIAMS: -- executive
5 director of CAC (Manitoba) for -- thank her for --

6 THE CHAIRPERSON: Nice -- nice to have
7 you here.

8 Mr. Ghikas, did you want to continue?

9 MR. MATT GHIKAS: Thank you, Mr.
10 Chairman.

11

12 CONTINUED BY MR. MATT GHIKAS:

13 MR. MATT GHIKAS: Welcome back, Mr.
14 Viola.

15 If I could start off just by turning to
16 slide 21 of the presentation, please, Diana. Right.
17 This one.

18 So, Mr. Viola, before lunch, I had
19 asked you about converting real yields on this slide
20 to nominal yields. And you had indicated that you
21 didn't see why that would be useful.

22 Do you recall that?

23 MR. VALTER VIOLA: I recall saying I
24 wasn't sure what the purpose was for doing that, so I
25 asked the question.

1 MR. MATT GHIKAS: Okay. Do you know
2 how MPI calculates its claims discount rate?

3 MR. VALTER VIOLA: I'm not an actuary,
4 so the quick answer is I don't know the details, no.

5 MR. MATT GHIKAS: And just stepping
6 back from the -- from that for a moment.

7 MR. VALTER VIOLA: At -- at a high
8 level, I have a conceptual understanding of what the
9 actuarial process is, but as far as the
10 implementation, the details, I don't know exactly the
11 details.

12 MR. MATT GHIKAS: Okay. And if --
13 just as a general statement, if you're adding a real-
14 return bond to a portfolio and the current yield of
15 the real-return bond is lower than the current
16 discount rate, it will directionally lower the
17 discount rate, all things equal, won't it?

18 MR. VALTER VIOLA: You're going to
19 have to say that again, sorry.

20 MR. MATT GHIKAS: Sure. If you are
21 adding a real-return bond at -- at a current yield
22 that is lower than the discount rate, the current
23 discount rate, it will directionally lower the
24 discount rate, all else equal.

25 MR. VALTER VIOLA: Sorry, if you're

1 saying if you're purchase -- if you're including bonds
2 in the calculation with a lower yield, will it bring
3 down the average? The quick answer is yes. Bringing
4 something in at a lower than average will bring the
5 average down.

6 MR. MATT GHIKAS: Now, we can turn
7 away from that and just go to the responses to
8 Information Requests. So this is -- this is PUB to
9 CAC IR-1-4. And if we look at 1-4, so just looking at
10 the question here for context, Mr. Viola, they -- the
11 PUB asked:

12 "For each of the eighteen (18)
13 recommendation -- recommendations
14 made by Mr. Viola, please provide a
15 high level outline in practical
16 terms of what steps the Corporation
17 and/or Aon would need to take in
18 order to implement each
19 recommendation."

20 And -- do you see that there?

21 MR. VALTER VIOLA: Yes.

22 MR. MATT GHIKAS: Okay. So if we can
23 just go -- the -- the recommendations that I'm
24 interested in at this moment is eleven (11), which is
25 over on page 16, I believe. No, recommendation 11,

1 sorry, that's page 18 it appears. There we go.

2 That's the one.

3 MR. VALTER VIOLA: Canadian equities?

4 MR. MATT GHIKAS: Yes, Canadian
5 equities, right. So the italicized portion was the
6 recommendation that you made in --

7 MR. VALTER VIOLA: Yes.

8 MR. MATT GHIKAS: -- your report,
9 correct?

10 MR. VALTER VIOLA: Yes.

11 MR. MATT GHIKAS: And the non-
12 italicized portion is the -- your response to the
13 request for the steps for practical implementation?

14 MR. VALTER VIOLA: Yes, as a quick
15 answer.

16 MR. MATT GHIKAS: Okay. And so if we
17 go to the recommendation number 12, if we scroll down
18 one (1) page, this is no international equities, and
19 again we see the italicized. That would be the
20 recommendation from your report?

21 MR. VALTER VIOLA: Yes.

22 MR. MATT GHIKAS: And the practical
23 step for implementation again is the un-italiti -- un-
24 italicized portion?

25 MR. VALTER VIOLA: That's correct.

1 MR. MATT GHIKAS: Okay. Now, do you
2 understand that -- sir, that -- that Aon's analysis
3 did include international equities, and that the
4 recommended portfolio didn't include them -- an
5 allocation to international equities because only the
6 riskiest portfolio included them?

7 MR. VALTER VIOLA: I -- I recall that,
8 yes.

9 MR. MATT GHIKAS: Okay. We can -- we
10 can -- if you need the reference it's CAC-1-82(b), but
11 we don't need to turn there, Diana. It's okay. And
12 are you also aware that Aon did a subsequent analysis
13 of the impli -- implications of moving Canadian equity
14 holdings to international equities?

15 MR. VALTER VIOLA: Yes.

16 MR. MATT GHIKAS: If we could call up,
17 Diana, Exhibit 39 which is Aon's response to PUB Pre
18 ask 2. And this was the set of responses where Aon
19 was asked by the PUB to respond to your report, Mr.
20 Viola. And if we can go, Diana, to slide 9 of that?

21

22 (BRIEF PAUSE)

23

24 MR. MATT GHIKAS: No, that's not the
25 one. Is it slide -- yes --

1 MR. VALTER VIOLA: Go back a couple --

2 MR. MATT GHIKAS: -- yes, page 9,
3 sorry. Yes. Okay. There we go. Right. So you'll
4 see under Item B there Aon's response provides an
5 analysis on the impact of moving 1 percent, 5 percent,
6 and 10 percent from Canadian equities to international
7 equities.

8 "This analysis indicates that
9 reducing Canadian equities and
10 increasing international equities
11 increases risk, and does not improve
12 rewards."

13 Do you see that?

14 MR. VALTER VIOLA: I do.

15 MR. MATT GHIKAS: And you have no
16 basis to disagree with the conclusion based on the
17 framework they've set out?

18 MR. VALTER VIOLA: No, but I'd like to
19 clarify that it's based on the framework that was set
20 up and, in particular, the definition of risk and
21 return that I described as a -- as one (1) of the
22 issues for discussion, or consideration.

23 MR. MATT GHIKAS: Right. And -- now,
24 if we can -- I just have some -- some general
25 questions for you. Now, one (1) of the concepts that

1 you've discussed, Mr. Viola -- and -- and I'm leaving
2 behind this slide now.

3 One (1) of the concepts that you
4 discussed in a general concept was modern portfolio
5 theory effectively?

6 MR. VALTER VIOLA: Yes.

7 MR. MATT GHIKAS: Okay. And would you
8 -- modern portfolio theory is a component of the CFA
9 curriculum, isn't it?

10 MR. VALTER VIOLA: I took my CFA a
11 long time ago but, yes, I would say that is a core
12 component.

13 MR. MATT GHIKAS: And you would expect
14 that there would be people at the Department of
15 Finance who would understand modern portfolio theory?

16 MR. VALTER VIOLA: I would suspect,
17 yes, for sure.

18 MR. MATT GHIKAS: And similarly at
19 MPI?

20 MR. VALTER VIOLA: Yes, I have no
21 reason to think otherwise.

22 MR. MATT GHIKAS: And similarly at
23 Aon?

24 MR. VALTER VIOLA: Certainly.

25 MR. MATT GHIKAS: And, similarly, at

1 investment managers retained by the Department of
2 Finance to deal with portfolio matters?

3 MR. VALTER VIOLA: I would say, yes,
4 having...

5 MR. MATT GHIKAS: And changing gears,
6 Mr. Viola. Your -- if we can go to -- well, let me --
7 let me ask you this. On page -- going to your report
8 for a moment. Thank you, Diana. You're doing very
9 well here as I bounce around. Page 5 of your report,
10 please. Yes.

11

12 (BRIEF PAUSE)

13

14 MR. MATT GHIKAS: I'm just trying to -
15 - sorry, bear with me, Mr. Viola --

16 MR. VALTER VIOLA: No worries.

17 MR. MATT GHIKAS: -- just for one
18 moment. Right, okay. Okay. It's the very last line
19 there that's showing on the screen. It says:

20 "To a lesser extent, I reviewed
21 information about MPI's capital
22 adequacy reserves. I also read the
23 IRFRF technical conference materials
24 and participated in the session by
25 phone."

1 Do you see that?

2 MR. VALTER VIOLA: Yes, I do.

3 MR. MATT GHIKAS: Okay. And -- and I
4 take it that CAC asked you to attend the conference by
5 phone?

6 MR. VALTER VIOLA: They asked me to,
7 but there were others on the call, yes.

8 MR. MATT GHIKAS: Yes. And --

9 MR. VALTER VIOLA: I did not
10 participate in person.

11 MR. MATT GHIKAS: Right. You -- you
12 attended by phone?

13 MR. VALTER VIOLA: Yes.

14 MR. MATT GHIKAS: And you were asked
15 on behalf of the person who retained you -- they --
16 they wanted you to be there?

17 MR. VALTER VIOLA: They asked me if I
18 could make it. I would and I did.

19 MR. MATT GHIKAS: Right. Thank you.
20 And -- but you -- you weren't asked to provide an
21 opinion on that matter, correct?

22 MR. VALTER VIOLA: No. The scope of
23 my engagement was to primary focus on the portfolio --

24 MR. MATT GHIKAS: Okay.

25 MR. VALTER VIOLA: -- as opposed to

1 reserve requirements or other such considerations.

2 MR. MATT GHIKAS: And, now, if --
3 Diana, back to the slide presentation, of Mr. Viola's
4 slide presentation. I'm on slide 44.

5

6 (BRIEF PAUSE)

7

8 MR. MATT GHIKAS: Okay, on this --
9 this is the pension liability accounting reference
10 here. Have you reviewed MPI's rebuttal evidence on
11 this point?

12 MR. VALTER VIOLA: I -- the quick
13 answer is I reviewed all of it. And I -- at a high
14 level, I think I responded that I wasn't going to
15 comment on accounting per se, but -- but I'm happy to
16 -- yes, I did look at it.

17 MR. MATT GHIKAS: Okay. But you --
18 you have com -- commented on accounting here, haven't
19 you?

20 MR. VALTER VIOLA: Yes. And to be
21 clear, not on accounting, but on the adjustments
22 related to it --

23 MR. MATT GHIKAS: Okay.

24 MR. VALTER VIOLA: -- in the bottom
25 part.

1 MR. MATT GHIKAS: And so would you --
2 would accept, sir -- I mean, did you see MPI's
3 rebuttal evidence that your recommendations contravene
4 the accounting standards that are applicable to MPI?

5 MR. VALTER VIOLA: Right. And to
6 clarify, I think I said it verbally earlier today that
7 I wasn't suggesting in my evidence that you should not
8 comply with either actuarial or accounting practices.

9 My suggestions in talking about
10 accounting in general was the need for adjustments,
11 not a second set of books, but a set of adjustments
12 which an investment analyst would normally make for
13 the purpose of adjusting the starting point accounting
14 numbers to serve a different purpose, portfolio
15 management.

16 MR. MATT GHIKAS: And if we can go to
17 slide 24, please, the de-linking discount rates. So -
18 - so you emphasize that theory suggests -- in the blue
19 there, theory suggests the approach is more
20 appropriate.

21 And you'd agree with me, sir, that MPI
22 obviously has to consider more than theory in its
23 investment decisions?

24 MR. VALTER VIOLA: I would agree with
25 that general statement, yes.

1 MR. MATT GHIKAS: And -- and have you
2 reviewed MPI's rebuttal evidence on this point, sir?

3 MR. VALTER VIOLA: I reviewed all of
4 it. I don't recall it in particular, but I'm happy to
5 look at it in detail.

6 MR. MATT GHIKAS: Okay. But do you
7 recall MPI's evidence in the rebuttal? And we can go
8 there. It's on page 5.

9 MR. VALTER VIOLA: If you don't mind,
10 I would like to see it --

11 MR. MATT GHIKAS: Certainly.

12 MR. VALTER VIOLA: -- before I comment
13 on it.

14 MR. MATT GHIKAS: Exhibit 20, page 5,
15 Diana, on the hard copy anyway. Delinking -- right --
16 there we go. Then just take a moment and read it.
17 Let me know when you're done.

18

19 (BRIEF PAUSE)

20

21 MR. VALTER VIOLA: Yeah, and just to
22 clarify, I think I qualify my -- my comment saying for
23 purposes of long-term asset allocation decision making
24 as opposed to accounting or actuarial practice
25 consider breaking the link. So it's not an actuarial

1 or accounting issue. It's a -- it's a conceptual
2 issue in terms of how you model assets and liabilities
3 values and values at risk for the purpose of setting
4 an asset mix.

5 And I -- I thought I saw Aon's
6 agreement on that point.

7 MR. MATT GHIKAS: And in terms of --
8 of MPI's role as a P&C insurer, you would expect them
9 to be employing actuarial standards, sir?

10 MR. VALTER VIOLA: For the purposes
11 that they are using, yes. But that's not the purpose
12 I was referring to in my earlier response there.

13 MR. MATT GHIKAS: Mr. Chairman --
14 thank you, Mr. Viola. Those are my questions for you.

15 MR. VALTER VIOLA: Thank you.

16 MR. MATT GHIKAS: And thank you. And,
17 Mr. Chairman, that concludes my cross of Mr. Viola.

18 THE CHAIRPERSON: Thank you, Mr.
19 Ghikas.

20

21 (BRIEF PAUSE)

22

23 THE CHAIRPERSON: Ms. McCandless...?

24

25 CROSS-EXAMINATION BY MS. KATHLEEN MCCANDLESS:

1 MS. KATHLEEN MCCANDLESS: Thank you,
2 Mr. Chair. Hello, Mr. Viola. I'm Kathleen
3 McCandless, and I'm Board counsel.

4 MR. VALTER VIOLA: Nice to meet you.

5 MS. KATHLEEN MCCANDLESS: And I have a
6 few questions for you this afternoon on your report.
7 Diana, could you please pull up page 10 of Mr. Viola's
8 report. And just with respect to the first
9 recommendation you've made here regarding clarity of
10 accounting choices, which is that MPI should clarify
11 what flexibility it has regarding the accounting for
12 assets and liabilities while remain -- remaining GAAP
13 compliant and the factors it takes into account in
14 electing to use one (1) method assumption over others.

15 To confirm, you are suggesting that MPI
16 should identify where it has flexibility to account
17 for investments and liabilities on a consistent basis?

18 MR. VALTER VIOLA: Yes, I -- I just
19 wanted -- the question was about where there's a
20 choice, because again, because I'm not a practising
21 accountant, I don't know what the flexibility is and
22 the rules change. I just wanted to know whether there
23 was a -- what the -- the criteria was used in -- in
24 selecting the choices they made.

25 MS. KATHLEEN MCCANDLESS: And so then

1 to confirm, are you suggesting that MPI make elections
2 that minimize the discrepancy between that income and
3 comprehensive incime -- income, classifying everything
4 as fair value through profit and loss?

5 MR. VALTER VIOLA: I would suggest
6 that for the purpose of asset/liability modelling, not
7 for purposes of accounting. I'm not an accountant to
8 opine on that.

9 MS. KATHLEEN MCCANDLESS: So just to
10 do it on a notional basis then?

11 MR. VALTER VIOLA: Yes, and then
12 again, it makes few adjustments and I think, again,
13 I'm not an accountant, but I -- I like -- I trade off
14 relevance and reliability. So even in accounting
15 reports, financials -- prepared for financial
16 statements, my preference is to see market value, but
17 that's my bias, my preference. It's not a
18 requirement.

19 MS. KATHLEEN MCCANDLESS: Thank you.
20 And so currently the changes in market value of the
21 equity portfolio are reflected in other comprehensive
22 income and only show up in net income when an equity
23 investment is sold?

24 MR. VALTER VIOLA: On the -- there's -
25 - yes, there's two (2) elements to the -- to that. On

1 the unrealized portion it would not hit net income,
2 only other comprehensive income, and therefore, not
3 reflected in the asset/liability process to the extent
4 that they rely on net income as opposed to the more
5 comprehensive notion of income. So just the
6 unrealized portion where there's a difference.

7 MS. KATHLEEN MCCANDLESS: So changes
8 in the market value of the MUSH bonds are not
9 recognized. They're valued at cost?

10 MR. VALTER VIOLA: My understanding is
11 the MUSH bonds are at amortized cost, which means the
12 accounting treatment is smoother in terms of measuring
13 the impact on net income, as I understand it.

14

15 (BRIEF PAUSE)

16

17 MS. KATHLEEN MCCANDLESS: Now, just
18 scrolling down to your recommendation regarding AFS
19 and HTM accounting, you state that market valuations
20 in the second paragraph there, are generally more
21 comparable, relevant, transparent, understandable, and
22 subject to less potential bias than valuations and
23 reports that are based on MPI's current accounting
24 practices.

25 Could you please clarify or expand on

1 how MPI's accounting could be subject to bias?

2 MR. VALTER VIOLA: Yes, and it goes to
3 the point -- to the recommendation that was being
4 implemented, agreed upon, which is the one hundred and
5 five (105) rule, which is the ability to pick up the
6 phone and ask an external manager to turn over the
7 portfolio, which -- which would trigger a gain and
8 therefore impact net income without changing the
9 substance of the portfolio's value.

10 So I didn't think that was a good
11 policy to have, and suggested that they change it, and
12 they agreed to. So that's one (1) -- that's one (1)
13 instance where net income can be changed without truly
14 affecting economic value added. And I didn't think
15 that was a -- I'm not a governance expert, but I
16 thought wasn't a -- that wasn't an appropriate policy
17 to have in place, and I suggested they change it.

18 MS. KATHLEEN MCCANDLESS: Okay. How
19 should the MUSH bonds be adjusted to fair market
20 value?

21 MR. VALTER VIOLA: For the purpose of
22 portfolio management decision making? So I would say
23 -- and again, the MUSH bonds are just like the non-
24 marketable bonds that we were responsible for managing
25 in Ontario Teachers'. It started off 100 percent, and

1 we swapped them away, but we did value them.

2 And again, trading off relevance and
3 reliability, just because they're non-marketable
4 doesn't mean we can't get a reasonable sense of the
5 market value. And I believe that, for purposes of
6 portfolio management, given the size of the bonds,
7 it's appropriate to mark them to market, value them
8 using the best possible pricing mechanism. And fixed
9 income is a fairly straightforward exercise to value
10 those bonds.

11 My under -- I don't know the details of
12 the bonds, but if they're straightforward, fixed
13 coupon with no optionality, then it's pretty
14 straightforward to pick a process and apply it
15 consistently with consistency -- consistently.

16 And the key in that, I would suggest,
17 is the consistency of the process over time because if
18 the process is applied consistently with, say, a
19 spread off a certain benchmark curve, then the income
20 effects, applied consistency will give you a market
21 risk assessment that better reflects the true
22 underlying volatility.

23 I think that's -- for purposes of
24 portfolio management, I think that's -- and for
25 duration matching, I would suggest that's -- that

1 would result in a better matching of the true
2 underlying volatility, I would suggest.

3 MS. KATHLEEN MCCANDLESS: And was that
4 the approach that was followed at Teachers' for their
5 non-marketable bonds?

6 MR. VALTER VIOLA: Certainly they --
7 we marked them to market as if they were marketable.
8 Sorry. Priced consistently with that, subject to the
9 fact that they weren't liquid so there was a different
10 premium return for the liquidity -- the illiquidity.
11 So there was a higher yield discount rate, but the
12 process for applying it was consistent and fairly
13 straightforward, I would suspect.

14 MS. KATHLEEN MCCANDLESS: Thank you.
15 Jumping ahead to page 11 of your recommendations
16 section of your report, on return and risk,
17 definitions of the assets mix decision -- pardon me.
18 Go back up to page 10, the very bottom of page 10.

19 You recommend that MPI should redefine
20 return risk used to inform its long-term asset mix
21 decisions to be based on valuations that reflect
22 market values rather than accounting ones, which may
23 be materially different.

24 So can you -- your belief then would be
25 that MPI's current accounting treatment is essentially

1 driving a sub-optimal portfolio design?

2 MR. VALTER VIOLA: I would say it's
3 not the account treatment because that is a GAAP
4 requirement. It's the reliance on GAAP numbers for
5 the purpose of setting the asset mix and making those
6 decisions that's the concern that I had.

7 And so that's why I suggest, regardless
8 of how the accountants choose with the elections and
9 the requirements, for portfolio management decision
10 making, asset mix decision making, there needs to be
11 an adjustment to the extent that the accounting isn't
12 market-value based.

13 MS. KATHLEEN MCCANDLESS: Thank you.

14 MR. VALTER VIOLA: You're welcome.

15 MS. KATHLEEN MCCANDLESS: Diana, could
16 we please pull up PUB-CAC-1-4, page 16?

17 Mr. Ghikas had some questions for you
18 about this document earlier. I just have one (1) for
19 you towards the bottom of the page. Just scroll up
20 slight, please, Diana.

21 With respect to the evolved risk
22 framework and then the very last paragraph there, you
23 note that the main concern that you have is reliance
24 on accounting metrics to inform asset allocation, and
25 that a change in accounting causes the net income --

1 and if we scroll onto the next page -- to become more
2 or less volatile.

3 And that might cause MPI to alter their
4 portfolio design although nothing real has happened to
5 the underlying assets or liabilities.

6 Can you just explain what you mean by
7 "real" in this context?

8 MR. VALTER VIOLA: Yes. I think -- I
9 think I'll make the assumption that I'm interpreting
10 the responses from both Aon and MPI correctly. But in
11 my First Round and certainly by the end of the Second
12 Round I think I came to the conclusion that there was
13 agreement among everyone that the liabilities arising
14 from the insurance business and the fact that we have
15 a pension plan, those liabilities -- the inherent risk
16 in them are what they are regardless of what the
17 assets are that back them.

18 So -- so accounting or actuarial
19 practices that -- and again keeping it really simple,
20 they are paper representations of funded status over
21 time, positions at a point in time. The accounting
22 and the actuarial valuations will come up with a
23 series of numbers, but that doesn't affect the
24 inherent nature of the liabilities. The liabilities
25 are what they are.

1 What I worry about is the -- when --
2 again measuring risk doesn't create it and not
3 measuring risk doesn't make it go away, but the
4 reality is it's human nature to see a reported metric
5 and -- and say, Risk has gone up or down because the
6 number has changed even though nothing has really
7 changed.

8 The thing that comes to mind when I
9 think of that is when we went to the metric system
10 when I was kid. All of a sudden 32 degrees got very
11 hot, using the Celsius -- the -- using the -- the
12 Celsius thermometer instead of Fahrenheit. We put a
13 new thermometer in the room but the temperature didn't
14 change.

15 So we wouldn't want people to use a
16 thermometer that isn't as accurate, and make real
17 decisions based on a new thermometer, or a different
18 thermometer, better or worse, when the economic
19 temperature of the room didn't change. So let's not
20 put on a sweater just because -- or take one (1) off
21 just because the temperature number has differed.
22 Hopefully that helps.

23 MS. KATHLEEN MCCANDLESS: Yes, it
24 does. Thank you. So just to confirm then you -- your
25 --

1 MR. VALTER VIOLA: You like that one,
2 did you? You're --

3 MS. KATHLEEN MCCANDLESS: I'm enjoying
4 the analogies, yes.

5 MR. VALTER VIOLA: -- oh, that's good.
6 That's good. It's the dismissal science, so we have
7 to have a bit of fun.

8 MS. KATHLEEN MCCANDLESS: So just to
9 confirm then, your -- one (1) of your main
10 recommendations would be that MPI should re-define
11 return risk for its long-term asset mix decisions to
12 be based on --

13 MR. VALTER VIOLA: Celsius.

14 MS. KATHLEEN MCCANDLESS: --
15 valuations that reflect market values, not accounting
16 values.

17 MR. VALTER VIOLA: Correct.

18 MS. KATHLEEN MCCANDLESS: Thank you.
19 At page 38 of your report, you -- you outline some of
20 the reasons that you believe comprehensive income
21 should be used?

22 MR. VALTER VIOLA: I say it's -- it's
23 a better outcome but -- but not the best. I think I
24 said that in my slides but I'm not sure if I said it
25 in my evidence because it's more -- by def -- it's

1 word -- the wording is right, comprehensive. It's
2 more comprehensive. It's closer to market value.

3 MS. KATHLEEN MCCANDLESS: Right. So
4 it gives a more complete picture.

5 MR. VALTER VIOLA: Yes, but it --
6 again to make one (1) point. It doesn't ever include
7 the pension effect, which is a substantial one,
8 because if you look at the statement footnote -- not
9 footnote but financial statement Note 16, unless the
10 pension plan is shut down or carved out, or the
11 accounting rules change, re-measurement never hits net
12 income. Equity gains and losses, when realized, do.
13 The pension fund doesn't.

14 MS. KATHLEEN MCCANDLESS:
15 Comprehensive income would be more neutral because
16 it's not impacted by portfolio turnover?

17 MR. VALTER VIOLA: Correct. Like that
18 one-o-five (105) rule wouldn't impact comprehensive
19 income but it would impact net income.

20 MS. KATHLEEN MCCANDLESS: Okay.

21

22 (BRIEF PAUSE)

23

24 MS. KATHLEEN MCCANDLESS: You indicate
25 that reliance on comprehensive income would likely

1 involve higher costs?

2 MR. VALTER VIOLA: I don't recall that
3 -- can you show me where I said that? Costs in terms
4 of...

5 MS. KATHLEEN MCCANDLESS: At the very
6 bottom of the page here:

7 "Any increased reliance on
8 comprehensive income would likely
9 involve higher costs, e.g., market
10 valuations."

11 MR. VALTER VIOLA: Right. Yes, for
12 the purpose of asset liability modelling I suppose
13 because it would require...

14

15 (BRIEF PAUSE)

16

17 MR. VALTER VIOLA: Yes -- right,
18 because right now for purposes of the AL (sic) Study
19 I'm not sure if they actually model the -- the pension
20 flows and the impact on OCI. If they do, it's in and
21 out because it doesn't factor by definition. If they
22 were to include it, I don't know if that requires an
23 enhancement to the process, or whether it's just a
24 toggle of a switch notionally. Do you know what I
25 mean? Any change involves some cost.

1 MS. KATHLEEN MCCANDLESS: You do
2 suggest that:

3 "Focusing on comprehensive income,
4 the bennet -- would be -- benefit
5 would be from a risk management
6 perspective as well as long-term
7 asset allocation."

8 Could you expand or explain that?

9 MR. VALTER VIOLA: I see them as one
10 and the same. So risk management to me is portfolio
11 management, so it's -- because the asset management is
12 a reflection of the risks that you measure. So to the
13 extent that you can measure the risks better, more
14 accurately, then the outcomes of the asset mix would
15 be better, other things equal.

16 MS. KATHLEEN MCCANDLESS: So, in your
17 view, ho -- how would MPI proceed to optimize its
18 portfolio? Would it be another asset liability
19 matching study?

20 MR. VALTER VIOLA: Well, I would say,
21 just as part of the process, whenever that process
22 gets applied, whether it's every four (4) years or
23 more frequently or less frequently, it's the
24 definition that's used on the 'Y' vertical and 'X'
25 axis. The return on risk, I think, are based, instead

1 of net income, which is an accounting metric, and
2 retained earnings, which is a cumulative net income
3 metric, it should be at a minimum based on
4 comprehensive income, not endco -- income and retained
5 earnings plus other accumulated other comprehensive
6 income, AOCI.

7 That's a better solution from a
8 portfolio management perspective. The best solution
9 though is mark to market. Again, not knowing what the
10 accounting treatments are of comprehensive income, I
11 don't want to rely on the accountants to tell me how I
12 should measure risk for portfolio management purposes.
13 I will make the adjustments, as a portfolio manager,
14 accordingly.

15 That's -- that's in the perfect world.
16 So I'm suggesting that the move to comprehensive
17 income would be an improvement in terms of the inputs
18 that go into the model and, therefore, the outputs
19 that come out from a long-term sustainability point of
20 view.

21 MS. KATHLEEN MCCANDLESS: Okay. And
22 so that would lead then to a different balance between
23 risk and rewards in a different optimized portfolio?

24 MR. VALTER VIOLA: Yes. If the inputs
25 going in are different, then the outputs coming out

1 will be different.

2 MS. KATHLEEN MCCANDLESS: And that
3 could include international equities?

4 MR. VALTER VIOLA: Well, that's an
5 outcome of the process of optimization. I don't know
6 what the outcome is depending on all the parameters,
7 but I can comment on other things if you'd like.

8 MS. KATHLEEN MCCANDLESS: Okay. How
9 do you reconcile the use of comprehensive income for
10 portfolio design purposes with basic rate level
11 indication being dependent on net income?

12 MR. VALTER VIOLA: That's a mouthful.
13 Can you repeat that, please? Sorry. I think I got
14 it, but I want to make sure.

15 MS. KATHLEEN MCCANDLESS: Sure. I
16 will repeat it.

17 MR. VALTER VIOLA: Please.

18 MS. KATHLEEN MCCANDLESS: How do you
19 reconcile the use of comprehensive income for
20 portfolio design purposes with basic rate level
21 indications being dependent on net income?

22 MR. VALTER VIOLA: Well, they're two
23 (2) different bases and they're two (2) different time
24 horizons, so we've got a quadrant of four (4). How do
25 I reconcile it? I always start with the assumption

1 that what matters most is the long-term sustainability
2 of the plan and that that should be the primary risk
3 and goal, but that's not for me to decide.

4 But if that's the chosen one, then I
5 would say -- I would say that you work backwards and
6 you say, What's the right thing to do? Best metrics
7 for purposes of long-term portfolio asset mix choices,
8 and then decide, okay, in parameterizing, setting the
9 limits for the rate setting process and the buffers
10 that are dependent on it. Select your reserves that
11 you're comfortable with based on the metrics that you
12 choose, and then set the boundaries, the min /max,
13 based on those metrics.

14 So if you choose a different
15 thermometer, then give guidance on what the readings
16 will be for what's cold and too high -- too hot, for
17 example. So I would say the short-term rate setting
18 metrics should be not driving the process, they should
19 -- you should use that as the balancing mechanism
20 after you determine what the best portfolio design is
21 on average for the fund to achieve sustainable levels
22 of reasonable rates without long-term risk to that.

23 Hopefully that answers the question.

24 MS. KATHLEEN MCCANDLESS: It does.

25 Thank you. So just going back to the asset liability

1 matching study. Just to clarify. How often, in your
2 view, should MPI be doing an ALM study or analysis?

3 MR. VALTER VIOLA: It's a hard one to
4 answer because I know there are costs, and costs are
5 an important consideration. But I'm not an economist,
6 but opportunity costs are often bigger than the real
7 costs that go out the door. And I think four (4) to
8 five (5) years is a very long time, to be honest,
9 because the world changes very reason -- sometimes
10 very quickly.

11 And -- and I think I made the point
12 clearly enough that there's a lot of assumptions, the
13 forty-four (44) key assumptions, we'll call them key,
14 or -- that drive the optimization and if those change
15 significantly, and -- and sometimes not even
16 significantly, it has a dramatic impact on -- on the
17 optimization.

18 So I do have a concern that when you
19 put it on and you set the asset mix policy for once
20 every four (4) years that people are -- are led to
21 this false sense of security that we've looked at it,
22 it's appropriate, and it's appropriate for that point
23 in time.

24 But if circumstances change, I think
25 there needs to be flexibility to use judgment to

1 override the policy and -- and either take more risk
2 or less risk depending. And the question is, what --
3 what criteria -- what information do you need to make
4 those decisions in the interim.

5 I personally think four (4) years is --
6 is too long. Having said that, you can't be doing
7 asset/liability studies every -- every quarter. A
8 nice to have is some more reasonable metrics that
9 allow you to more -- more frequently than once every
10 four (4) years have a facility to say, These are the
11 key drivers that I think will impact our decisions to
12 put more or less in the risky buckets and an ability
13 to have those discussions more often than once every
14 four (4) years.

15 And that's why, you know, for example,
16 I asked the question about -- I think there was a
17 response from Aon and MPI. I can't remember which.
18 Certainly Aon provided input on what the cost would be
19 to do a cert -- to answer a certain question that I
20 had posed. I would hope that a facility to answer
21 that kind of question would be enabled so that you
22 don't have to wait four (4) years to ask key
23 questions.

24 So it's a cost benefit analysis. If
25 the -- if -- if markets change a lot I think it -- you

1 should expedite the process of rev -- or review --
2 review whatever that process happens to be.

3 MS. KATHLEEN MCCANDLESS: So in doing
4 that type of an exercise, you would want to monitor
5 and see if any key assumptions made in the previous
6 review have since changed?

7 MR. VALTER VIOLA: Yes.

8 MS. KATHLEEN MCCANDLESS: Thank you.
9 Diana, back to page 11 of Mr. Viola's report. Your
10 recommendation with respect to the minimum risk
11 portfolio, isn't it about the middle of the page?
12 That the minimum risk -- a minimum risk portfolio for
13 market risk should be clearly defined. It should be
14 aligned with the interest of relevant stakeholders
15 with clarity regarding the short-term and long-term
16 factors that impact rate sustainability and other
17 important outcomes.

18 What -- just generally, what would be
19 the purpose of developing the minimum risk portfolio
20 and how would it be used to inform MPI on the optimal
21 portfolio?

22 MR. VALTER VIOLA: So the purpose of
23 the minimum risk portfolio is to identify where one
24 can hide if one doesn't want to take risk. So I've
25 made the suggestion that the least risky portfolio for

1 funds, whether it be pension funds or insurance
2 companies that have inflation linked liabilities, and
3 I'm not alone in this, suggesting this, that's why I
4 copied the annual reports extracts from both teacher
5 and CPPIB, that -- that the minimum risk portfolio is
6 -- is by definition the portfolio that hedges -- if
7 invested in it, it's just a reference portfolio like a
8 benchmark, the SNP 500.

9 You may choose not to invest in it.
10 But if you were to invest in it that would create the
11 least -- result in the least financial risk to the
12 thing that matters most to MPI and -- and I'm
13 suggesting that the thing that should matter most is
14 the long-term risk that the -- the fund will not be
15 sust -- sustainable at its current rate levels that
16 people pay. Organizations pay for insurance.

17 So that's the purpose of the minimum
18 risk portfolio.

19 MS. KATHLEEN MCCANDLESS: And the
20 minimum risk portfolio, in your view, should include
21 at least some long duration real-return bonds, given
22 the nature of MPI's liabilities?

23 MR. VALTER VIOLA: Yes, and it always
24 comes down to the cost, but I think I made it clear
25 how I preferred to have the 7-footer scoring the

1 baskets than the 5-footer who doesn't score a lot, but
2 -- so -- and again, the real return bonds, like
3 anything, has to be judged in relation to the other
4 assets that are in there.

5 So if there is no inflation risk, i.e.,
6 people believe inflation is gone forever, then nominal
7 bonds are -- are as good as real return bonds, because
8 there is no inflation risk. Having said that, that's
9 not a reasonable assumption. There's always inflation
10 risks. So I -- I'm not going to speculate on what the
11 optimal is.

12 I just made the observations that,
13 despite the fact that interest rates are as low as
14 they are, some funds have still got real-return bonds.
15 And my concern is that, when you really need
16 insurance, you won't be able to get it.

17 So again, if interest rates stay where
18 they are for both nominal and real, but inflation goes
19 up, nominal bonds will get hurt. But remember my
20 analogy of the -- buying the hundred dollar (\$100)
21 real-return bond. It's capital principal amount will
22 increase with inflation.

23 So again, maybe I'm the dismal
24 scientist that says, Inflation may rear its ugly head
25 at some point. But if you look to the south and

1 what's going on in the States, and you look at what
2 they don't record in the way of pension liabilities --
3 they don't have a Canada Pension Plan, and someday,
4 somebody has to pay for that -- and other things that
5 are going on.

6 The easiest thing for governments to do
7 is to their -- inflate their way out of problems. So
8 there's always an incentive for somebody to just print
9 money, so inflation will -- there may be deflation,
10 but -- so who knows what the optimal one is? It's all
11 -- it's a big, tough portfolio question.

12 MS. KATHLEEN MCCANDLESS: At page 18
13 of your report, you made certain observations
14 regarding Aon's position that real-return bonds are
15 not a good inflation hedge for MPI. And Aon's points
16 were made on the previous page, at page 17. Just for
17 your reference, if we -- but we can go ahead to page
18 18.

19 You take issue with Aon's observation
20 that real-return bonds don't match the financial
21 impact to MPI -- MPI on a year-by-year basis, and that
22 this is a symptom of a larger problem you refer to as
23 "portfolio constraints."

24 Can you just explain a little bit more
25 what you mean by that?

1 MR. VALTER VIOLA: Yes. Let me just
2 read it to clarify, but I think it's the same point
3 that I made in my PowerPoint slides today. So let me
4 just read for one sec.

5 And again, this -- I guess this goes to
6 the definition of return and risk for purposes of the
7 asset-liability modelling. So I think -- let me just
8 read it again...

9

10 (BRIEF PAUSE)

11

12 MR. VALTER VIOLA: Right. So the
13 symptom is that we're using accounting metrics to
14 inform asset-mix decisions. And the accounting
15 metrics and the focus -- rate stability and accounting
16 metrics short term, I think the -- again, I think
17 that's the wrong -- not the wrong focus. A better
18 focus would be longer horizon, market-based metrics to
19 inform portfolio design.

20 So the -- so the -- I think Aon -- I
21 agree with Aon, given the definition of risk and
22 return as used by MPI, which I have concerns about,
23 RRBs would not. So if you -- if you smooth -- if you
24 smooth in the asset liability model the volatility of
25 the assumptions because you're using accounting rather

1 than market, then of course it's not going to like
2 things that are unsmooth.

3 So if you look at the accounting for
4 real-return bonds, they're market to market, but MUSH
5 bonds are not. So which ones look better to you? In
6 reality, the real-return bonds better hedge the
7 underlying true market risks. But because of the
8 accounting, the MUSH bonds may -- may look better. So
9 I hope that's clear.

10 MS. KATHLEEN MCCANDLESS: Thank you.

11 MR. VALTER VIOLA: You're welcome.

12 MS. KATHLEEN MCCANDLESS: Now, I -- if
13 you jump to page 42 of your report, this is with resp
14 -- respect to minimum and maximum constraints and
15 optimizations. You indicate that 80 percent of MPI's
16 investment portfolio is constrained, leaving little
17 room to optimize return or risk tradeoffs.

18 And as I understand, your -- your
19 evidence is that relaxing constraints would improve
20 the investment portfolio design?

21 MR. VALTER VIOLA: It would make it no
22 worse, right.

23 MS. KATHLEEN MCCANDLESS: How would it
24 impact returns?

25 MR. VALTER VIOLA: Well, we could

1 either look at the return or the risk dimension. But
2 if we focussed on forgiven level of risk, however
3 defined, and we think of the efficient frontier. So
4 relaxing a constraint if it's binding will cause the
5 whole opportunity set to shift up, so for the same
6 level of risk, you'll get a higher return. The
7 question is: How binding are these constraints?

8 I -- I don't know. We'd have to do the
9 model, but I would say -- like, I'd say the biggest
10 binding constraint isn't the fact that we've put 80
11 percent limits. It's that we haven't -- we haven't --
12 it's not really a constraint. It's the measurement
13 issue. So let's -- let's just go off that topic.

14 Sorry, I don't know that I answered
15 your question.

16 MS. KATHLEEN MCCANDLESS: That answers
17 it --

18 MR. VALTER VIOLA: Okay, great.

19 MS. KATHLEEN MCCANDLESS: -- thank
20 you. You have made the suggestion that:

21 "The appropriateness and prudence of
22 having 10 percent minimum weight to
23 Canadian equities to retain a
24 meaningful exposure to home markets
25 should be reconsidered, given the

1 different interests of different
2 stakeholders."

3 MR. VALTER VIOLA: Yes, I said that.

4 MS. KATHLEEN MCCANDLESS: How should
5 MPI determine what is the optimal level of Canadian as
6 compared to international investments?

7 MR. VALTER VIOLA: Again assuming that
8 the -- the basis for making decisions is a purely
9 financial one, there's no other consideration, then --
10 then the -- whether it's Canadian equities or
11 international equities, do the optimization. Put the
12 best estimates in there. Don't overly constrain what
13 the model will do if the model is what we rely heavily
14 on. And see what -- what comes out of that process.

15 So whether it's Canadian equities or
16 international it doesn't really matter. It could be
17 real-return bonds. As long as the metrics going in
18 for making that assessment are appropriate and
19 prudent, then the outcomes should be judged in that
20 light. But again, that was a caveat saying that
21 assuming that it's the financial considerations, the
22 return and risk as defined best, are the only factor
23 going into this, and there isn't another factor --
24 goal that comes into play.

25 If there's a desire to invest

1 domestically, which some funds have, locally which
2 other funds have, then that's a -- that's a different
3 -- that's a constraint and it would have a cost, how
4 big I don't know, but by having that double agenda
5 would -- it complicates everything. So that's the
6 only comment I'd make there.

7 Again, in the purely financial sense
8 all constraints have a potential cost.

9

10 (BRIEF PAUSE)

11

12 MS. KATHLEEN MCCANDLESS: Okay. Thank
13 you, Mr. Viola. Those are my questions.

14 MR. VALTER VIOLA: You're very
15 welcome.

16 THE CHAIRPERSON: I'd ask if the panel
17 has any questions?

18

19 (BRIEF PAUSE)

20

21

22 THE CHAIRPERSON: Okay. I have a
23 question. Mr. Viola, when you were -- earlier on you
24 were talking with Ms. McCandless about the frequency
25 of the ALM Study and your comment was that every four

1 (4) years is too long. Each quarter would be too
2 short. That's quite a little gap.

3 And then you said what you could do is,
4 and I -- I use my own words, you talked about key
5 drivers, and I'd say evaluate based on key drivers
6 more frequently. Is that right?

7 MR. VALTER VIOLA: Yes.

8 THE CHAIRPERSON: Okay. What would
9 those drivers be?

10 MR. VALTER VIOLA: Certainly expected
11 returns.

12 THE CHAIRPERSON: Yeah.

13 MR. VALTER VIOLA: And -- and again
14 what's important -- this would be a good ask of Aon,
15 your -- they're your agent for doing this but of the
16 forty-four (44) metrics it would be nice to know if
17 they could rank order their confidence in each metric.
18 How confident are they with the real-return bond
19 return assumption.

20 You know, real interest rates are
21 basically zero. How key is that assumpt -- how --
22 what's the range of confidence in that assumption
23 compared to their expectation for Canadian equities?
24 So -- so the column of eight (8) return expectations,
25 how confident are they about the returns for the next

1 four (4) years, if that's how often they do it?

2 That's the returns. And then for --
3 for the column that is the volatilities, I would ask
4 the question of, How con -- how -- how volatile are
5 the estimates? It would be an inter -- it would be an
6 interesting question to see how those have changed
7 over time, so from -- from period to period.

8 Somebody has got the statistics. I
9 don't know if they could share them but it would be
10 nice to know how that table that they share, that
11 vector, changes over time. I would suspect that the
12 volatility for Canadian equity, that the change in the
13 estimate, that number, would be more volatile than
14 others but I don't know. It's just a -- it's just an
15 assumption.

16 The correlations are a hard one. It's
17 easy to mess them up, so they have to have certain
18 statistical properties. I'm not a statistician but
19 two (2) words that mean nothing to you, I'm sure, and
20 a little more than nothing to me is the -- the metrics
21 has to be positive definite, which is a statistical
22 term so you can't just say, If there's three (3) asset
23 classes these two (2) are perfectly correlated and
24 these two (2) are perfectly correlated. Well, that
25 defines the third correlation as being perfect too.

1 Sorry, I didn't mean to put that finger up.

2 THE CHAIRPERSON: None taken.

3 MR. VALTER VIOLA: That was very bad.

4 Anyways, you see what I mean. So even --

5 THE CHAIRPERSON: Yeah.

6 MR. VALTER VIOLA: -- with simple
7 three (3) assets, it's very complicated. So the
8 correlation matrix is a key important factor. Getting
9 that one would be a tougher one to get a handle on.
10 But the -- the volatilities is an important one, the
11 returns for sure.

12 THE CHAIRPERSON: Okay. And is this
13 strictly on a go-forward basis or can you do a study
14 of this retroactively?

15 MR. VALTER VIOLA: No, I'm cur -- I
16 would be curious to know whether if somebody --
17 someone looked at whatever that page is that
18 summarizes the volatilities. It would be nice -- it
19 would be interesting to have a time series of -- for
20 each line item, Canadian -- the eight (8) asset
21 classes --

22 THE CHAIRPERSON: Right.

23 MR. VALTER VIOLA: -- and seeing, like
24 -- you know. And again, maybe -- maybe if it's
25 confidential they should show you proportionally which

1 one's got more volatility, like, order magnitude, how
2 big's the bar, is Canadian equity revision to
3 estimates twice as big as US.

4 THE CHAIRPERSON: Okay. And on --

5 MR. VALTER VIOLA: That's a curious
6 one.

7 THE CHAIRPERSON: And on a go-forward
8 basis, would you do it annually? I mean --

9 MR. VALTER VIOLA: Yeah.

10 THE CHAIRPERSON: -- I'm trying to
11 figure out a time frame.

12 MR. VALTER VIOLA: I know. Again, if
13 -- if costs were -- weren't an issue, you know,
14 there's an annual process of most funds to review the
15 investment policies, and the asset mix decision is a
16 very important one, you know. So I think -- I think
17 four (4) years is a long time.

18 THE CHAIRPERSON: M-hm.

19 MR. VALTER VIOLA: I think as an
20 interim basis you could do something that asks really
21 tough questions without doing a full-fledged modelling
22 exercise, if you will. And again, I didn't -- it was
23 appropriate at one point to -- to pop this up. And
24 again, I'm not an actuary, but I'm making an
25 assumption. And here's my assumption about what

1 actuaries do. Sorry, I shouldn't say what they
2 actually do.

3 THE CHAIRPERSON: We do have a few
4 actuaries here --

5 MR. VALTER VIOLA: I know. But --

6 THE CHAIRPERSON: -- so watch out.

7 MR. VALTER VIOLA: But here's the
8 question for the actuaries. When -- when -- and this
9 is a pretty blunt question. But what's the new part
10 of an asset liability study? To me, it's the asset
11 side. It's the vector of volatilities and
12 correlations because the liabilities for a pension
13 plan -- yes, people age. Yes, pension plans --
14 there's more retirees compared to those contributor,
15 but that happens over a long period of time.

16 And so when we talk about the duration
17 of the liabilities being sixteen (16) years for a
18 pension plan. It's going to be -- ignoring the fact
19 that interest rates change and effect duration, it's
20 going to be sixteen (16) four (4) years from now plus
21 a little bit of sway room, so the inherent risks in
22 the liabilities don't change.

23 I think there's a myth, I certainly had
24 it, that the new part of the asset liability models --
25 and they do a lot of work to crunch up the numbers and

1 get them. But the reality is the substance is,
2 whether it's a pension plan, you got a cohort of
3 people that are there. It changes slowly.

4 Inherent risks don't change; it's a
5 sixteen (16) year duration. The new part is these --
6 this vector of volatilities, correlations that impact
7 the assets.

8 So I think the -- the -- my quick
9 answer is, and, again, this doesn't help the profit
10 picture of people who do these -- provide these
11 services, but I don't really need to know the update
12 on the liabilities because they haven't really
13 changed. I can do a rule of thumb and guesstimate the
14 fact that interest rates have changed.

15 And given my understanding of fixed
16 income, when interest rates fall the duration goes up,
17 other things equal. So I know the duration's not
18 sixteen (16) anymore, it's closer to eighteen (18)
19 because interest rates are now almost zero; it might
20 be even higher.

21 So given that, now what's the new --
22 maybe every two (2) years say, okay, What is the true
23 volatility of Canadian equities now? What is my
24 valuation of equities going forward, and do I have a
25 better decision today than two (2) years ago?

1 So I -- I actually think some sort of
2 medium from going every four (4) to five (5) years to
3 doing it every annual might be -- maybe every two (2)
4 years you use the same liability profile but just esti
5 -- update the capital market assumptions with regards
6 to the portfolio.

7 And even if you don't fully make it
8 through the asset liability model, there's probably
9 work-arounds that give you an ananal -- an analytical
10 solution on your desktop that gives you what you need.

11 THE CHAIRPERSON: Thank you. So we're
12 going to adjourn. Sorry. Oh, I'm sorry. Mr.
13 Williams, did you have a re-exam?

14 MR. BYRON WILLIAMS: I do not, but I
15 thank you for the opportunity.

16 THE CHAIRPERSON: Yep. Anyways, we'll
17 adjourn.

18 MR. BYRON WILLIAMS: If I might just -
19 -

20 THE CHAIRPERSON: Mr. Williams, yes?

21 MR. BYRON WILLIAMS: I should always
22 just --

23 THE CHAIRPERSON: Yes.

24 MR. BYRON WILLIAMS: -- check with Mr.
25 Viola, but I do not expect any...

1 THE CHAIRPERSON: Okay.

2

3

(BRIEF PAUSE)

4

5 MR. VALTER VIOLA: No. Mr. Williams
6 just asked me if there was anything I wanted to add.
7 I just wanted to say that this has been a wonderful
8 process for me. Mr. Williams asked me to help him
9 out, and he's helped me more because it's -- it's
10 caused me to rethink what I've been doing for a long
11 time and work backwards from pers -- principles.

12 And to be honest, you always relearn
13 stuff that you forget, and this stuffs not easy, and
14 nobody does it perfectly. And again, I -- I hope that
15 I positioned everything in a way that suggests that
16 everyone wants to be excellent.

17 And from experience from hearing the
18 CEOs and CIOs at a conference once and then living
19 through it, I think I know -- and it's not unique to
20 asset managers, it's a general principle, it's always
21 the same things that people should be worried about,
22 and these are the same things that -- that I've talked
23 about today.

24 So I appreciate the opportunity to --
25 to help in a small way if I did.

1 THE CHAIRPERSON: Well, we appreciate
2 your attendance and we really appreciate your
3 participation, Mr. Viola. Safe travels. We'll
4 adjourn until 9:00 a.m. on Tuesday. Mr. Ghikas, the
5 weather in Vancouver is just like this. Thank you,
6 everyone.

7

8 (PANEL STANDS DOWN)

9

10 --- Upon adjourning at 1:56 p.m.

11

12 Certified correct,

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14

15 _____

16 Sean Coleman, Mr.

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