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 27, 2016

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1 APPEARANCES

2 Kathleen McCandless)Board Counsel

3

4 Matt Ghikas)Manitoba Public

5 Michael Triggs)Insurance

6

7 Byron Williams)CAC (Manitoba)

8 Jared Wheeler (student-at-law))

9

10 Raymond Oakes)CMMG

11

12 Erika Miller)CAA

13

14 Christian Monnin (np))Bike Winnipeg

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1 --- Upon commencing at 8:58 a.m.

2

3 THE CHAIRPERSON: Good morning,

4 everyone.

5 Mr. Ghikas...?

6 MR. MATT GHIKAS: Thank you, Mr.

7 Chairman. Good morning, everyone. Just before we

8 move to our next witness, I had one (1) undertaking to

9 file which was Undertaking 26: Please provide an

10 analysis of the eighty-five (85) fatalities in terms

11 of rural/urban, age categories, and potential

12 contributing factors.

13 And that would be MPI Exhibit 68, and

14 that was filed electronically yesterday. And I

15 believe people should have a paper copy today.

16

17 --- EXHIBIT NO. MPI-68: Response to Undertaking

18 Number 26: MPI to provide

19 an analysis of the eighty-

20 five (85) fatalities in

21 terms of rural/urban, age

22 categories, and potential

23 contributing factors

24

25 MR. MATT GHIKAS: The other filing

1 that we made last night, Mr. Chairman, was an updated
2 CV of Dr. Cleary. That -- there was a previous
3 version that was filed on the 21st, I believe, and
4 just for the sake of completeness, there were a couple
5 of new publications that were added. So we refiled
6 his -- his CV last night as MPI Exhibit 69.
7
8 --- EXHIBIT NO. MPI-69: Updated CV of Dr. Sean
9 Cleary
10
11 MR. MATT GHIKAS: Now, perhaps -- the
12 -- the next witness, Mr. -- Mr. Chairman, is Dr. Sean
13 Cleary. And if perhaps we could start by having Dr.
14 Cleary sworn or affirmed, please.
15
16 MPI PANEL 5:
17
18 SEAN CLEARY, Sworn
19
20 MR. MATT GHIKAS: Now, in terms of
21 documents, Mr. Chairman, that we should be aware of
22 for -- for Dr. Cleary, he has prepared a report
23 entitled 'Interest Rate Forecast Risk' that was dated
24 August 2016 and was filed as MPI Exhibit 8.
25 And he also prepared a PowerPoint

1 presentation that was used at the technical conference
2 in August, along with the paper that was entitled
3 'Interest Rate Forecast Issues.' It was dated August
4 2016, and that had been filed as MPI Exhibit 7.
5 And a version of that PowerPoint
6 presentation that has been modified and updated
7 somewhat will be given this morning by Dr. Cleary.
8 And that was filed as Exhibit 47.
9
10 EXAMINATION-IN-CHIEF BY MR. MATT GHIKAS: (QUAL)
11 MR. MATT GHIKAS: Now, Dr. Cleary, the
12 -- your curriculum vitae that was filed as Appendix --
13 sorry, Exhibit 69, the -- the version that you had
14 provided yesterday, does that accurately set out your
15 qualifications and experience?
16 DR. SEAN CLEARY: Yes, it does.
17 MR. MATT GHIKAS: And you are
18 currently the BMO Professor of Finance at the Smith
19 School of Business at Queen's University. Correct?
20 DR. SEAN CLEARY: That's correct.
21 MR. MATT GHIKAS: What is the BMO
22 Professor of Finance?
23 DR. SEAN CLEARY: It's a chaired
24 position sponsored by the Bank of Montreal. And
25 basically you get chaired positions in business

1 schools and -- and other universities as a reward for
2 good performance, and continuing ongoing performance.
3 MR. MATT GHIKAS: And you earned your
4 PhD in finance in 1998, sir?
5 DR. SEAN CLEARY: That's correct, at
6 the University of Toronto.
7 MR. MATT GHIKAS: And you earned your
8 CFA, or chartered financial analyst, designation in
9 2001. Correct?
10 DR. SEAN CLEARY: That's correct.
11 MR. MATT GHIKAS: And you've also
12 written extensively on finance and capital market
13 matters, sir?
14 DR. SEAN CLEARY: Yes. From my CV,
15 you'll see there's thirty (30) referee publications.
16 Also I've, I guess, talked about the tax books and
17 other issue but capital markets and finance matters
18 obviously are dealt with in all the text books that
19 I'm an author or co-author on.
20 MR. MATT GHIKAS: And in terms of the
21 -- the text books, your works I believe include
22 thirteen (13) authored or co-authored finance texts?
23 DR. SEAN CLEARY: Yes, that's correct.
24 MR. MATT GHIKAS: And did you
25 previously work as a commercial lender?

1 DR. SEAN CLEARY: Yes. I worked for
2 RBC.
3 MR. MATT GHIKAS: And in the course of
4 your work in finance and capital markets matters, have
5 -- have you assessed the predictive power of different
6 interest rate forecasting approaches and risks to the
7 forecasting of interest rates?
8 DR. SEAN CLEARY: Of course most
9 formally in -- in these proceedings, and previous to
10 that very -- dealing with interest rate forecast and
11 testimony on cost of capital issues in Alberta and
12 Newfoundland. And also just as a matter of teaching
13 and writing textbooks, and -- and dealing -- doing
14 research, it's a topic that comes up from time to
15 time.
16 MR. MATT GHIKAS: And you alluded to
17 having been involved in other proceedings, Dr. Cleary.
18 As I understand it, you've testified as an expert
19 several times in Alberta and Newfoundland on behalf of
20 the Consumer Advocate.
21 DR. SEAN CLEARY: That's correct.
22 Those were for cost of capital hearings for regulated
23 utilities.
24 MR. MATT GHIKAS: And, Mr. Chairman, I
25 -- I would ask that Dr. Cleary be qualified, and I'll

1 read out the proposed qualifications slowly.
2 I would ask that Dr. Cleary be
3 qualified as an expert in the general area of finance
4 and capital markets, and specifically with respect to
5 the predictive power of different interest rate
6 forecasting approaches, and risks to the forecasting
7 of interest rates. And I will just read that again.
8 I would ask that Dr. Cleary be
9 qualified as an expert in the general area of finance
10 and capital markets, and specifically the predictive
11 power of different interest rate forecasting
12 approaches, and risks to the forecasting of interest
13 rates. And this is wording that had been identified
14 in a response to an Information Request, PUB-II-26.
15 THE CHAIRPERSON: Thank you. Mr.
16 Williams...?
17 MR. BYRON WILLIAMS: Just a few
18 questions for the witness.
19
20 CROSS-EXAMINATION BY MR. BYRON WILLIAMS: (QUAL)
21 MR. BYRON WILLIAMS: Excuse me. Dr.
22 Cleary, your report of August 2016 provides no
23 interest rate forecast of your own. Agreed?
24 DR. SEAN CLEARY: It does not.
25 MR. BYRON WILLIAMS: And would it be

1 accurate to say you have not published peer review
2 papers on the predictive powers of different interest
3 rate forecasting approaches?
4 DR. SEAN CLEARY: That would be
5 correct.
6 MR. BYRON WILLIAMS: And in your
7 testimony before the Newfoundland and Labrador Board
8 of Commissioners in terms of cost of capital you
9 relieved in that hearing on the consensus forecast and
10 -- and didn't delve into an analysis at the predictive
11 power of different approaches.
12 Would that be fair?
13 DR. SEAN CLEARY: With New -- in
14 Newfoundland I was asked specifically to deal in
15 capital structure issues, so the issue of interest
16 rate forecasting was not part of my testimony.
17 With Alberta, I did have to figure out,
18 determine, or come up with a best estimate of what I
19 thought was a reasonable risk-free rate, which in cost
20 of capital hearings you normally use the thirty (30)
21 year Government of Canada bond rate.
22 I relied on the consensus forecasts,
23 but I also tempered that by looking -- essentially
24 taking a midpoint between the consensus forecast for
25 ten (10) year -- they don't do for thirty (30) year

1 yields, so for ten (10) year yields. And I added
2 fifty (50) basis points, which is the typical spread
3 between ten (10) and thirty (30) year yields.
4 But I also used as a floor the existing
5 floor or ceiling, as you may have it, or for one (1)
6 limit, the existing rates, recognizing as the Alberta
7 Utility Commission did that the forecasts were
8 specifically in -- over the past few hearings tended
9 to be very high.
10 So I tempered it and used a midpoint
11 very similar to the approach that I'm advocating today
12 of a 50/50 approach where I took the -- the existing
13 rates as one (1) limit, the consensus forecast as the
14 other limit, and I used somewhere in-between.
15 So to that extent, I was -- while not
16 doing a detailed forecast, I was making a forecast per
17 se. And that -- that wou -- I should add that would
18 have influenced my recommendation on the allowed
19 return on equity.
20 MR. BYRON WILLIAMS: Yes. And we'll
21 get into that in -- in cross-examination. Just to go
22 back to my question.
23 In the Newfoundland hearing an analysis
24 of the predictive power of different interest rate
25 forecasting approaches was not part of your evidence

1 given that you were focused on capital structure,
2 agreed?
3 DR. SEAN CLEARY: I agree with that,
4 yes.
5 MR. BYRON WILLIAMS: And just remind
6 me, for the purposes, and we don't need to delve into
7 any detail at this point in time, for Alberta
8 evidence, what, if any, statistical tests you
9 performed in support of your analysis.
10 DR. SEAN CLEARY: I don't know that
11 there was any formal statistical test other than an
12 analysis that the -- the previous forecast, the
13 consensus forecast, tended to be too high. I looked
14 at previous decisions and the -- and the thirty (30)
15 rates that they used in those decisions which were
16 perpetually too high.
17 And, you know, reliance on such led to
18 allowed ROEs that I felt were higher than were
19 justified. So it was -- I don't know that there was
20 any fancy econometrics I did, but it was quite obvious
21 looking at the figures that I did provide in my
22 evidence that the forecasts were much too high.
23 MR. BYRON WILLIAMS: Yeah. So you did
24 the eyeball test?
25 DR. SEAN CLEARY: Well, I looked at

1 the actual data. And the data speaks very clearly
2 that, if you see a line that's way up here for
3 forecast, and then you see a line that's here that
4 were the actual rates it turned out to be -- and,
5 actually, I believe I have one (1) of -- a slide that
6 deals with that issue in my presentation, so I can
7 come to that issue.
8 MR. BYRON WILLIAMS: Sure.
9
10 SUBMISSIONS BY MR. BYRON WILLIAMS: (QUAL)
11 MR. BYRON WILLIAMS: Mr Chair, just
12 from our client's per -- perspective, there's no doubt
13 that the witness here is an expert in corporate
14 finance and cost of capital matters and clearly has
15 insight into the risks of forecasting of interest
16 rates.
17 It is clear in his cost of capital work
18 that he has done some modest work in terms of eyeball
19 tests or looking at the data but not performing the
20 statistical tests that -- that certainly our client
21 would expect with certain rigour.
22 So we're certainly not objecting to his
23 qualification as an expert in corporate finance and
24 cost of capital matters and with re -- certainly
25 empirical corporate finance and capital market issues

1 and risk to the forecast of interest rates.

2 From our perspective, great care should

3 be used in qualifying this witness in terms of the

4 specific claim of predictive power of different

5 interest rate forecasting approaches.

6 THE CHAIRPERSON: Thank you.

7

8 (BRIEF PAUSE)

9

10 RULING: (QUAL)

11 THE CHAIRPERSON: We're going to

12 qualify the witness as an expert as proposed by Mr.

13 Ghikas. Thank you.

14 MR. MATT GHIKAS: Thank you, Mr.

15 Chair.

16

17 CONTINUED EXAMINATION-IN-CHIEF BY MR. MATT GHIKAS:

18 MR. MATT GHIKAS: Now, Dr. Cleary,

19 were you the sole author of the report entitled,

20 'Interest Forecast Risk', dated August 2016, that's

21 been filed as Exhibit MPI-8?

22 DR. SEAN CLEARY: I was.

23 MR. MATT GHIKAS: And were you the

24 sole author of the PowerPoint presentation entitled,

25 'Interest Rate Forecast Issues' dated August 2016 that

1 was filed as MPI Exhibit 7 at the technical
2 conference?
3 DR. SEAN CLEARY: Yes, I was.
4 MR. MATT GHIKAS: And there are also
5 IR responses containing some material attributed to
6 you and among those would be, for the record, PUB 2-7,
7 PUB 2-25.
8 You -- you have reviewed those
9 responses, obviously?
10 DR. SEAN CLEARY: Yes, I did.
11 MR. MATT GHIKAS: And -- and you're in
12 agreement with the attribution of those responses to
13 you?
14 DR. SEAN CLEARY: Yes.
15 MR. MATT GHIKAS: And is the evidence
16 that you've provided in your report, your PowerPoint
17 presentations, your responses to Information Requests
18 attributed to you true and accurate to the best of
19 your ability?
20 DR. SEAN CLEARY: Yes.
21 MR. MATT GHIKAS: And you adopt those
22 documents as your evidence in this proceeding?
23 DR. SEAN CLEARY: I do.
24 MR. MATT GHIKAS: I understand, Dr.
25 Cleary, that you have an opening presentation and that

1 was circulated last night and filed -- pardon me, not
2 circulated last night. It was filed as...
3
4 (BRIEF PAUSE)
5
6 MR. MATT GHIKAS: MPI Exhibit 47. I
7 guess it was on the 21st of -- of October. Would you
8 please deliver that presentation now, sir.
9 DR. SEAN CLEARY: Yes, thank you.
10 Thank you -- thank you, everyone, for having me here
11 today. And I just want to -- most -- it's almost
12 identical to what I did in August, so I'll spend some
13 time at the start just telling you what I did do and -
14 - and what I -- what I did not do, basically.
15 So I looked at the issues of using the
16 standard interest rate forecast for ten year yields,
17 which are used to price the product. I have not been
18 asked to comment on the specifics of how these
19 forecasts are integrated into the Basic prices, but
20 rather as an expert on the historical record of
21 interest rate forecasts and the risk that this has
22 resulted in for MPI in particular.
23 So I thought I'd start with a brief
24 summary of the report. Over the last eight years
25 standard interest rate forecasts have exceeded the

1 actual ten year Canada's by a wide -- wide margin, 1.7
2 percent on average. That sounds like a lot. And, in
3 fact, since rates are so low it actually is -- is even
4 bigger than it sounds. It's about a 93 percent
5 forecasting error when -- when compared to the actual
6 yields that materialize, somewhere to the tune of
7 almost twice as much as the actual yields it turned
8 out to be.
9 In fact, if I look through one of my
10 tables, which I will do shortly, the forecasts were
11 seldom below the actual ten year rate over this
12 period, which is obviously a cause for concern, and
13 this creates a real risk.
14 On the next slide I just kind of
15 summarize some of the -- the other results that I
16 determined in my analysis. Naive forecast, and I
17 should define that up front, that a Naive forecast is
18 just when you take the existing rate and use that as
19 your forecast, something that, for example, the Bank
20 of Canada does with respect to exchange rates,
21 recognizing that it's hard to predict the future
22 direction of exchange rates.
23 So a Naive forecast with respect to ten
24 year Canada yields involves just taking today's rate,
25 it's about 1.15 or something like that today, and

1 saying that's what we predict will be the rate for the
2 coming periods.
3 When I tested that against using the
4 con -- not the consensus forecast, the SIRF based on
5 the banks and the other agency, we -- we saw a -- a
6 big improvement in the forecasting error, reducing it
7 by close to 60 percent. In fact, instead of being
8 1.72 percent above, it was somewhere to the tune of
9 0.7 percent.
10 So I then go on to show -- discuss some
11 empirical studies that have shown that this -- this
12 isn't nothing new. It's not specific to Canada during
13 this period. In fact, there's been several studies
14 that have shown that these so-called Naive forecasts
15 have done just as well, if not better in -- in many
16 cases, than average forecasts of -- of economists.
17 So as a preliminary step, in August, I
18 suggested at minimum, the existing level of ten (10)
19 year yields be used as a bottom -- I say "bottom" now,
20 but as one (1) limit that should be specified.
21 I say "bottom" now because the
22 forecasts today, as they have been for several years,
23 is that interest rates will increase. One could
24 envision at some point in the future where rates are
25 predicted to drop where the existing rate could then

1 be the top.

2 So jumping into some of my results

3 here, and I do apologize if -- if it's difficult to

4 read on -- on the screen or the printout. But if you

5 -- if you go to the corner, the -- the -- that's in

6 red on the -- on the presentation, you see that this

7 is a weighted average of all those forecasts and the

8 forecasting errors.

9 So in the -- in the left column, you

10 see actual. Those are the actual ten (10) year rates

11 that materialized since 2008, quarter 1 of 2008.

12 We see it -- it continually went down

13 from 3.71 percent all the way to about 1.19 percent,

14 where it was in the first quarter of 2016, and where

15 it sits about now, which, in itself tells you that

16 would have been a pretty good forecast for now,

17 because it's almost exactly the same.

18 And then what you see in the other

19 columns, 2009, '10, and so on and so forth, are the

20 forecasts that were produced in the -- the respective

21 GRAs. And you can see that almost all of those

22 numbers are negative.

23 And what that means is that the actual

24 numbers turned out to be a lot less than the forecast

25 did. And that's pretty much over -- eyeballing it, I

1 would say it's over 90, 95 percent of those are
2 negative.
3 And no surprise, when we take a
4 weighted average of those, we end up with 1.7 percent
5 on average -- that the forecasts were higher than the
6 actual rates because, while I don't have the actual
7 forecasts in there, generally through the whole
8 period, there was the inclination that rates would
9 increase, and in fact, they did the opposite.
10 So if we flip to the next slide, what I
11 did then was to transform those absolute numbers into
12 percentage numbers relative to the actual rates that -
13 - that materialized. And again, we see that they're
14 way off, and you see a lot of three (3) digit
15 percentage numbers: 115 percent, 178 percent, looking
16 in some of the columns.
17 And in fact, if we tally them all up,
18 it's minus 92.9 percent, or minus 93 percent, almost
19 double -- that the forecasts were almost double what
20 the actual rates turned out to be.
21 So that in itself tells you that these
22 forecasts were not particularly helpful over this
23 period. And I'm going to show you in a -- in a second
24 that -- that just using the existing rates would have
25 represented a significant improvement.

1 So just on the next slide, I just kind
2 of summarize this, the high by 1.7 percent or minus 93
3 percent forecasting error. And that's almost double
4 the actual yields.
5 So the -- before I -- I discuss just
6 using the existing rates, I -- as I mentioned at the
7 start, I want to see, well, is this just specifics and
8 to Canada since 2008? And -- and this is indeed one
9 (1) of the charts that I mentioned previously that I
10 would come back to and refer.
11 So when I was looking to forecast
12 interest rates in the 2013 cost of capital hearings in
13 -- in the Alber -- Alberta -- before the Alberta
14 Commission, I should say, what I did was I took a look
15 at the -- the forecasts that had been provided by the
16 experts testifying for both sides at the previous
17 hearings in 2011.
18 And if we look at the top, those
19 straight lines represent the forecast, most of which
20 were based on the consensus forecast, and I should
21 actually maybe define what I mean by consensus
22 forecast. There's -- Consensus Economics collects
23 forecasts from various economists in -- in a number of
24 countries around the world, most countries around the
25 world, and comes up with an average that they call

1 their consensus. They also do so for Canada.
2 Of course, in Canada they take the big
3 five banks and several others. I think they end up
4 with about a dozen, so they have the University of
5 Toronto, Research Insight, the -- the other banks,
6 Desjardins, National, investment banks from the US
7 operating here, and so on and so forth. Conference
8 Board of Canada, and -- and several others.
9 And they come up with what they predict
10 is -- were -- what the experts are predicting will
11 happen to -- they focus on 3-month rates and 10-year
12 rates, okay. So basically those upper lines represent
13 experts taking those 10-year rates and adding fifty
14 (50) to a hundred (100) basis points onto it,
15 depending on the expert, to come up with a thirty (30)
16 year forecast. And you can see at the time that they
17 were all hoovering be -- around 4 percent, 4 to 4.5
18 percent.
19 At the start of the period, yields were
20 around 3.7, and contrary to the predictions they went
21 down, and down further until they were almost hitting
22 2 percent. And these are the -- the thirty 30-year
23 rates. So the 10-year rates would have been probably
24 about fifty (50) basis points below that, just for
25 reference, which you can see from the bottom line.

1 So I would not classify this as an
2 eyeballing exercise. I would say this is the data.
3 This is the predictions by the experts, and this is
4 what actually happened. So I don't think there is any
5 necessary to do any formal statistical test to show
6 that those are -- are very divergent patterns there.
7 And I did the same thing in the 2016
8 hearings. I -- I looked from -- and -- and you'll see
9 here I'm included. And I also, you know, was -- at
10 the time I was using the consensus forecast, and I
11 ended up 3 1/2 to 3.7 percent. The other experts, Ms.
12 McShane and Dr. Booth, were a little bit above me.
13 And, in fact, from 3 percent they
14 dropped even further again contrary to the
15 expectations. And again those forecasts were based on
16 the consensus forecast, which would be very similar to
17 the SIRF forecast, I should say, because they would
18 include those and there also tends to be a clustering
19 of economic interest rate forecasters.
20 So the interesting line here is the --
21 the commission -- the two commission dotted lines. So
22 you see the green dotted line by the commissioner at
23 the top, and that is basically right around -- between
24 mine and -- and the other experts. And I should -- I
25 should note -- I think it was noted at the last time,

1 Dr. Booth seems to be blotted out here but he's the
2 same line as the McShane one, so but he was 4 percent
3 along there as well.
4 So the commission had this as an upper
5 limit and then what they did, recognizing in the
6 previous hearings and the ones before that, that these
7 consensus forecasts seem to be too high. They
8 established a lower limit, which you see in that red
9 dotted line, which was the existing rate. And
10 essentially they were taking a mid point between that.
11 And I thought that was a pretty good
12 approach, and I adopted it myself in 2016 because it -
13 - it just seemed to be a way of minimizing poor
14 forecast and -- and being a little bit closer to
15 reality. So if you actually look at that lower line,
16 it is by far the closest to the actual interest rates
17 of which are depicted in that solid blue line on the
18 chart, which are below all the actual consensus
19 forecasts.
20 So -- okay. So we're still in Canada
21 when we're talking there, and over the similar period,
22 but just to kind of -- this just summarizes why they
23 did that. They -- they noted the forecast appeared to
24 have mostly over estimated the yields in the 2010/2014
25 periods and, in fact, they said the upper bound may be

1 optimistic given the recent history, and the interest
2 rate increases may not occur as quickly as -- as
3 predicted at the time, and so far, they turned out to
4 be true.
5 Now moving on to is this just something
6 specific to Canada since 2008. I cite a couple of
7 research papers here, Spiwoks, Bedke, and Hein 2008.
8 They looked at ten (10) year US Government bond yields
9 and three (3) month US Treasury bill yield forecasts
10 over an earlier period in a different market, okay, in
11 the US 1989 to 2004, prior to -- well before 2008.
12 And they found that the Naive forecast
13 did better than the experts then. So there is a
14 different market, very large market, very heavily
15 scrutinized marked, even more so than Canada, more
16 information probably available to those economists
17 about the US -- what's going on in the US market. So
18 they didn't fare so well.
19 I also cited another study by Mitchell
20 and Pearce 2005. And they looked at six (6) month
21 forecast, 1982 to 2002, again prior -- well before
22 2008 and going back a little further in the US.
23 So between those two (2) studies they
24 encompass, you know, twenty (20) year periods and
25 fifteen (15) year periods back to 1982. And they

1 found a similar thing, that the forecast accuracy is
2 indistinguishable from that of a random walk model
3 when forecasting the 'T' bill rate, but the -- it's
4 significantly worse for the 'T' bond rate.
5 I would actually expect that because
6 the 'T' bill rate is a shorter term rate and is more
7 subject to monetary policy and central bank action.
8 Although, as we know by reading the papers and
9 following the news over -- over the past few years,
10 central bank action is -- also is difficult to
11 predict.
12 So again, looking at three (3) month
13 'T' bills, ten (10) year 'T' bonds, they didn't do
14 very well. I should just mention what I -- what they
15 refer to with a random walk model. It just means you
16 just arbitrarily said the -- the pi -- the interest
17 rates could go anywhere. It just the names in jest.
18 So, in other words, it has no useful
19 predictive power with respect to three (3) month 'T'
20 bills. And, actually, their predictions were worse
21 than just arbitrarily saying -- picking numbers that -
22 - that they would be in the future.
23 So those are fairly significant sample
24 sizes that -- that both of those studies look at.
25 Here's just more anecdotal evidence that I found in a

1 2010 MoneyWatch article. And just I -- I put this in
2 also since two thou -- since 2008 in a different
3 market. And we see here that the average estimate was
4 4.1 percent of where ten (10) year treasury notes were
5 going. Seven (7) expected it to be higher than 5
6 percent. Only two (2) predicted it to be below 3
7 percent, so that's two (2) out of fifty (50), or 4
8 percent.
9 And, in fact, the treasury yield
10 slumped, so. I do like the -- the point that this
11 journalist actually was quite fair to the forecasters
12 in suggesting the fact that they turned out to be
13 wrong doesn't mean they were incompetent. It just
14 makes a very important point, that it's hard to
15 predict the future when we're dealing with financial
16 forecasts that deal with people and deal with economic
17 circumstances that sometimes you ca -- it's hard to
18 predict well in advance.
19 So I said I would get back to this --
20 this idea of just looking at the Naive forecast. And
21 this table is similar to the one that I showed you
22 before, except that now all of the forecasts that are
23 used in this table would just be what the existing
24 rate was at the start of the period or at the time of
25 the -- the GRA hearings.

1 And, again, since interest rates, you
2 can see from the actuals, did decline over the period,
3 we still have a lot of negative numbers here because
4 it kept falling just by nature, but they're much less
5 negative than the forecasts which were predicting
6 rising interest rates generally through the entire
7 period.
8 The result of all of that is that the
9 weighted average that you see in the -- in the corner
10 there in red again is minus 0.73 percent, which is,
11 you know, a full 1 percent below the 1.72 percent
12 error that we had when we looked at the S-I-R-Fs.
13 And if we turn to the next slide we'll
14 see from a percentage point of view that means the
15 forecasting error was 39.5 percent, which is less than
16 half of the 93 percent. And -- and is, you know, it's
17 -- it's still a high number, but it's much better than
18 ninety (90) -- minus 93 percent. So -- so this would
19 have actually improved the forecasting performance if
20 we had just done nothing.
21 I somehow suspect that that's why the
22 Bank of Canada uses the existing exchange rate as
23 their best predictor. That they've found out through
24 time that it's difficult to predict it and then at
25 some point it minimizes the forecasting errors by just

1 taking the other, but although, I -- I don't presume
2 to know that for a fact, but it seems to make sense to
3 me.
4 Okay. With -- so just summarizing
5 that, the Naive forecasts are too high by minus 0.73
6 percent. The average percentage forecast error is
7 minus 39 percent. Big improvement. I made a note
8 here and I -- I didn't want to replicate the tables,
9 give everybody's eyesight a break, but from the 50/50
10 strategy -- and what -- I should just explain what a
11 50/50 strategy is.
12 I would, essentially, do what the
13 Alberta Utilities Commission did in the 2013 decision.
14 What I recommend in my 2016 is that I establish one
15 limit as the existing interest rate, a 10-year yield,
16 the other limit would be the average S-I-R-F, or the
17 average forecast, and those would be the upper and
18 lower limit of the -- the field and then I would take
19 the mid-point of that limit.
20 So essentially 50 percent of one, the -
21 - the S-I-R-F and 50 percent of the Naive. When I did
22 that over this period, not surprisingly, because
23 interest rates decline signif -- you know, continually
24 over the period, I didn't do as well with this as I
25 did with the Naive approach. I will come back to that

1 in a second. But I just note it here and I'll come
2 back to this point later on, that the absolute error
3 was 1.22 percent, so it's all -- it's almost ident --
4 halfway -- it is exactly halfway between the two.
5 And the forecasting error minus 66
6 percent, again, while not extremely impressive, is in
7 -- is above the Naive error, but well below using the
8 consensus forecast. So just a -- a quick comment that
9 I thought was -- that I discussed in my report, of
10 course everybody is agreeing that interest rates have
11 to go up, maybe.
12 Everybody's been agreeing on that point
13 for several years. It does seem that we're in an area
14 where we have so much debt trading and negative
15 interest rate territory. The Bank of Canada even had
16 the -- the nerve to mention the possibility for
17 Canada. We see that in -- in German bonds, and
18 Japanese bonds, and Swiss, and so on and so forth.
19 When is it going to end?
20 And I think most people would agree
21 that interest rates are going to go up. On the other
22 hand, there's a lot of things that are keeping
23 interest rates down. One of the -- the main things
24 that everybody talks about is the quantitative easing
25 programs initiated by several central banks, the US of

1 course being the first, followed more recently by the
2 European Central Bank, and Japan, which have begun
3 doing so aggressively.
4 The UK followed the US earlier, cease
5 their program of buying bonds for a while to keep
6 interest rates low, recently resumed it at a smaller
7 scale, but they haven't started putting -- I guess the
8 bottom line is US has stopped buying these bonds, but
9 they haven't started selling them back to -- until
10 they start selling them back interest rates are going
11 to stay low.
12 Looking at longer term evidence, the
13 long-term yield spread over inflation is 1.85 percent.
14 So that's like the 30-year yields I'm referring to
15 there. Unfortunately, I didn't have the data for 10-
16 year yields going way back. So that implies 3.85
17 percent normal, a 10-year yield with 2 percent
18 inflation.
19 We're a long way from there now at 1.15
20 percent. It's going to take a while to get there,
21 especially with Japan upping their -- their
22 quantitative easing program, and ECB still
23 maintaining, UK back in the fray, and US still holding
24 onto their bonds.
25 In fact, you hear people refer to a new

1 normal. And -- and reading some articles over the
2 past month or so talking -- a lot of -- of people
3 forecasting that -- that the new normal, we may not
4 get to that 3.85 percent for ten (10) year yields. We
5 may, but I think it's going to take a while to get
6 there.
7 And I guess the message that I would
8 have is: Be sceptical of forecasts over 3 percent
9 over the -- the intermediate period. Anything over 4
10 or 5 percent, I -- I think is -- is way out there.
11 Now -- and I guess to -- to -- the last
12 thing I wanted to comment on is -- and I should say
13 these are the only two (2) new slides -- sorry, the
14 only new slide that I've added since August. And at
15 that time, I'm on record as -- as advocating a 50/50
16 approach. It just really wasn't written up formally
17 in my presentation.
18 So if we take a look at the evidence
19 that I've provided, and we look at the SIRF and the
20 average error minus 1.7 percent, or a forecasting
21 error of minus 93 percent, the Naive, much lower.
22 And in the 50/50, somewhere, I think,
23 halfway in between, the -- the obvious question is:
24 Why am I not advocating a Naive approach, here,
25 because it seems to have done better? And I -- I

1 suggest that a 50/50 approach is most likely to
2 minimize the error, which. I think, to me, is what the
3 definition of a best forecast is, if you can minimize
4 the forecasting error.
5 And I think a 50/50 in the long run
6 will reflect the fact that interest rates may increase
7 soon, and these would be forecasted -- these would be
8 included in the economic forecasts, but that it may
9 not happen as quickly as possible -- or, sorry, as
10 anticipated.
11 And the evidence shows that even
12 directionally, the economists have not done a good
13 job, not only in terms of forecasting the absolute
14 level, but even which direction it's going to go.
15 They -- they have a poor record of forecasting the
16 direction.
17 So by establishing a starting point
18 where we are today as one (1) of your limits, I
19 believe your -- that will minimize forecasting errors
20 and -- and I've put here, the chance of being way off.
21 And, you know, if -- and it also is a
22 way of adjusting for the timing of changes. Perhaps
23 the forecasts are going to be right, but maybe it
24 happens in six (6) months and not in three (3) months
25 as they forecast. So if you're halfway between, you

1 might get it right there.

2 So for -- for those reasons, I think a

3 50/50 approach, given that you're dealing with a

4 difficult issue trying to forecast the future levels

5 of ten (10) year interest rates, I think that's a

6 reasonable compromise.

7 So just to -- I think I have just a

8 concluding slide, here. So over the last years, the

9 forecasts have been way off, almost double the

10 actuals. This is a real risk. While it doesn't --

11 Naive forecasts, while they don't fully address

12 forecasting risks, have done a lot better. And I'm

13 recommending the -- that a 50/50 approach would be a

14 way of obtaining a best estimate.

15 So thank you very much.

16 MR. MATT GHIKAS: Thank you, Dr.

17 Cleary.

18 Dr. Cleary's available for questions.

19 THE CHAIRPERSON: Thank you.

20 Ms. McCandless...?

21 MS. KATHLEEN MCCANDLESS: Thank you.

22

23 CROSS-EXAMINATION BY MS. KATHLEEN MCCANDLESS:

24 MS. KATHLEEN MCCANDLESS: Good

25 morning, Dr. Cleary.

1 DR. SEAN CLEARY: Good morning.
2 MS. KATHLEEN MCCANDLESS: I am Board
3 counsel, and I have some questions for you with
4 respect to your report and your presentation this
5 morning.
6 When it comes to interest rate
7 forecasting in this proceeding, a lot of focus has
8 been applied to the term "best estimate." How would
9 you define a best estimate?
10 DR. SEAN CLEARY: I would say that a -
11 - the best estimate is the one that will minimize the
12 forecasting error. So in other words, it will be
13 closest to the actual value that will materialize.
14 MS. KATHLEEN MCCANDLESS: How do
15 considerations of accuracy and bias enter into the
16 determination of what is a best estimate?
17 DR. SEAN CLEARY: To me -- and -- and
18 the measure that I looked at, the percentage
19 forecasting error, is a measure of accuracy. And
20 that's very important, because it -- you know, in
21 terms of pricing the product. When -- when the actual
22 turns out to be very different from the forecast, then
23 there's a real cost involved.
24 So accuracy -- the most acc -- the best
25 estimate would have the highest accuracy, and it

1 should be unbiased. So I don't believe that there's
2 been any evidence suggesting that the SIRF is a
3 biassed forecast, that the -- that the banks have any
4 particular inclination to be -- have a -- a hidden
5 agenda, if you will, to forecast higher interest
6 rates.
7 But nonetheless, if we look over the
8 past few years, there has been a bias to the upside,
9 and that's just been in -- I would say in good faith
10 that that was just the general consensus of the
11 markets as it -- things are going to turn around and
12 then, Oops, we have a -- a banking crisis in Europe,
13 and, Oops, you know, we have more turmoil here, and,
14 Oops, Jap -- Japan continues to get worse, and so on
15 so forth.
16 So the -- the recovery has been slower
17 than anticipated, and -- and the central bank action
18 has -- has been very conservative in terms of when
19 they're going to start throwing bonds back into the
20 market, and which will have an impact.
21 MS. KATHLEEN MCCANDLESS: Thank you.
22 You are aware that MPI's current and proposed interest
23 rate forecasting approach is dependent on forecasts
24 prepared by the major Canadian banks?
25 DR. SEAN CLEARY: That's correct.

1 MS. KATHLEEN MCCANDLESS: I understand
2 from your CV, that you spent some time early in your
3 career working for one (1) of those banks.
4 DR. SEAN CLEARY: Yes.
5 MS. KATHLEEN MCCANDLESS: At that
6 time, were you involved in the development of their
7 interest rate forecasts?
8 DR. SEAN CLEARY: No. I -- I would
9 have been involved in using their forecast. I was a
10 commercial lender, so. It was actually a very
11 interesting time, because at the time, Prime was 16
12 percent, and -- and it was higher than -- the short-
13 term rates were 16 percent, and five (5) year loans
14 were 12 percent.
15 And, of course, when you see an
16 inverted yield curve like that, the -- the implication
17 is that investors expect rates to drop, which they
18 subsequently did with the help of John Crown, and so
19 on so forth.
20 MS. KATHLEEN MCCANDLESS: So as a
21 commercial lender, did you use the bank forecast in
22 your work at the time?
23 DR. SEAN CLEARY: Only to the extent
24 that it would have been in the pricing of the products
25 that I was providing to my customers.

1 So I had -- I -- when you work with the
2 bank, and if you're dealing with a commercial
3 customer, and I dealt with several -- many, I should
4 say, if they asked you what your view on interest
5 rates was, you typically provided them with what the
6 bank forecasts were.
7 And pricing of the pro -- and that was
8 a way for you to interpreting -- interpret for them
9 the pricing of the products that you would be offering
10 to them, which would be basically credit lines which
11 are based on Prime, and maybe some -- you know, some
12 longer term fixed-term loans which would also be based
13 on existing rates, but also indirectly to the interest
14 rate forecasts of the bank.
15 MS. KATHLEEN MCCANDLESS: Thank you.
16 Since your time at the bank, in your career, have you
17 had cause to explore the merits and underpinnings of
18 bank interest rate forecasts in general?
19 DR. SEAN CLEARY: In general, as -- as
20 mentioned earlier, I haven't -- it hasn't been an area
21 of research for me. But it -- it is something that,
22 you know, as a -- as a professor who teaches, as
23 someone who worked with a bank, write textbooks, you -
24 - you're very aware of the inter -- and also as
25 someone who's had too many mortgages and still has a

1 mortgage, it's something that you're always doing on
2 an ongoing basis, trying to figure out where interest
3 rates are going.
4 And, you know, my exp -- my general
5 experience is that they haven't done a great job of
6 it, even going back previous to 2008, and -- and the
7 research that I cited supports that notion. Not
8 terrible, but it's a tough thing to do. I've made a
9 couple of mortgage mistakes relying on interest rate
10 forecasts. My last one I locked in at fixed because I
11 was sure it had -- it was too good. It had to go up,
12 and sure enough, they went down, so there you go.
13 Everyone makes mistakes.
14 MS. KATHLEEN MCCANDLESS: Diana, could
15 you please pull up MPI Exhibit 8. Dr. Cleary, that's
16 your report. And I'd like to take you to page 6.
17 And page 6 describes what follows in --
18 at table 3.
19 DR. SEAN CLEARY: Okay.
20 MS. KATHLEEN MCCANDLESS: And perhaps,
21 if you want for your reference, we can just take you
22 to table 3 briefly, or if you're comfortable with
23 reference to the text here. I just have some
24 questions about --
25 DR. SEAN CLEARY: Sure, yeah.

(BRIEF PAUSE)

MS. KATHLEEN MCCANDLESS: Thank you. Now, you describe what table 3 represents, which was what you -- the results you obtained when you expressed the forecast error as a percentage of the actual rates, which is one (1) way -- standard way of measuring forecasting ability?

DR. SEAN CLEARY: M-hm.

MS. KATHLEEN MCCANDLESS: Is it fair to say that you tested the forecasting accuracy of the so-called standard interest rate forecast by measuring the absolute and percentage error of the forecast versus the actual values looking back over the eight (8) prior GRAs?

DR. SEAN CLEARY: So I think probably footnote 3 on that page might speak to that point. And, in fact, I -- I just used the actual minus the forecast instead of the absolute value of the actual minus the forecast.

So that means that the -- if I had used the absolute values, those errors -- remember -- if you look at table 3 or if you recall from my presentation, there was a few positive numbers in

there where the forecast was actually -- or sorry, where the actual turned out to be a little bit more than the forecast.

By -- by just doing actual minus forecasts I'm essentially adding those back in. So if I use the absolute value, the forecasting error I'm -- I'm almost for sure would have been more than a hundred percent because it was 93 percent.

The reason I chose to do it this way was because I was focusing on how much higher they had been on average. So, in fact, the -- the actual forecast error technically, and -- and I could easily calculate that, would be above a hundred percent.

MS. KATHLEEN MCCANDLESS: Would you agree that this historical period of about eight (8) years is quite unusual in the history of interest rates and interest rate movements in Canada?

DR. SEAN CLEARY: It's certainly atypical in terms of the rates have been so low and people have been forecasting them to go -- to go up and they keep -- continue to go down. I think things are changing.

And, in fact, I was -- I serve on an advisory board for an investment newsletter. And one (1) of the -- the recent summary papers was on

1 interest rates, in fact. And there's an interesting
2 table there that shows that forecasts going back to
3 2000, and these are US treasuries, have almost always
4 been over, over this period.
5 So that -- we're now looking at a
6 period of about sixteen (16) years, which is a
7 sustained period, where the forecasts have been too
8 high. And I think -- again this is opinion, but my
9 belief is that people just always expect it to return
10 to what was normal.
11 And then what was normal in 2000 was --
12 the rates were lower than they were I 1998. And then
13 in 2003 they said, well, okay, let's forget '98, let's
14 go back to 2000. And then they -- they continued to
15 go down.
16 So this -- this belief that we would
17 eventually go back to, you know, a period where ten
18 (10) year rates are going to 5 or 6 percent, which
19 even back in 2008 you see some of the forecasts were
20 up there, I believe is misguided. But it's -- it is
21 human nature to -- to believe that we will go back to
22 what's normal, just like some people think that 10
23 percent expected return on the stock market is
24 reasonable, and those days are gone; it's 8 percent.
25 MS. KATHLEEN MCCANDLESS: In your

1 answer you referred to an analysis. Was that a
2 Canadian or US analysis?
3 DR. SEAN CLEARY: The -- the two (2)
4 papers that I cited earlier, they were -- oh, you mean
5 the one I just referred to?
6 MS. KATHLEEN MCCANDLESS: Yes.
7 DR. SEAN CLEARY: Yes. Sorry, yes.
8 It's -- it's a document from -- I should give a little
9 bit of background. This investor let -- when I'm on
10 the Advisory Board, what the person who runs that does
11 is summarizes various research articles for his
12 clients who are all institutional investors, pension
13 plans and so on and so forth.
14 So one (1) of the documents that he
15 summarizes is a report -- a presentation, actually, by
16 HSBC Global Research. And I could provide it to you
17 if you want, by way of undertaking. There's one (1)
18 slide in particular that shows this. Unfortunately,
19 being a presentation and not a research paper I don't
20 have all the data, which I would have liked to look
21 at, but the -- the chart itself shows very clearly
22 that the forecast have been over.
23 MS. KATHLEEN MCCANDLESS: Perhaps we
24 can -- could have that by way of undertaking, Mr.
25 Ghikas.

1 MR. MATT GHIKAS: Is it the whole
2 newsletter or just the slide that...
3 DR. SEAN CLEARY: I -- I think
4 probably the newslet -- I -- I could provide the
5 newsletter, but there's a lot in there that may not
6 have been an interest, but I could provide the HSB
7 Global Research presentation that they cite. Would --
8 MS. KATHLEEN MCCANDLESS: Yes.
9 DR. SEAN CLEARY: -- would that be --
10 I -- I can do either, because I have them on my
11 computer.
12 MS. KATHLEEN MCCANDLESS: The
13 presentation.
14 DR. SEAN CLEARY: The presentation.
15 MR. MATT GHIKAS: Thank you. We'll
16 take that. Thank you very much.
17
18 --- UNDERTAKING NO. 34: MPI to produce
19 presentation by HSBC
20 Global Research
21
22 CONTINUED BY MS. KATHLEEN MCCANDLESS:
23 MS. KATHLEEN MCCANDLESS: Diana, just
24 for Dr. Cleary's reference, could we scroll back up to
25 the top of the page?

1 Can you confirm that you observed a
2 weighted average percentage forecast error of a
3 negative 92.9 percent overall for the SIRF ranging
4 from negative 27.2 percent in the 2016 GRA to a
5 negative 144.9 percent in the 2012 GRA?
6 DR. SEAN CLEARY: Yes, that's correct.
7 MS. KATHLEEN MCCANDLESS: How are the
8 weights determined for the purpose of calculating that
9 weighted average?
10 DR. SEAN CLEARY: Okay. That's a good
11 question, right. I meant to mention that when I was
12 doing my presentation. So if you look at table 3,
13 maybe --
14 MS. KATHLEEN MCCANDLESS: That's on
15 the following page, page 7.
16 DR. SEAN CLEARY: Yeah. If you look
17 at table 3. And if you look under 2009 GRA, for
18 example, there's how many forecasts? There's one (1),
19 two (2), three (3), twelve (12), twenty (20), right,
20 right Q1 through -- and then if you go further over to
21 2016 you see that there's only -- just by definition
22 of where we are there's only five (5) observations.
23 So I weighted those accordingly,
24 according to the number of observations.
25 MS. KATHLEEN MCCANDLESS: Thank you.

1 Overall, the forecasted values were high by almost a
2 factor of two (2) on average.
3 Is that right?
4 DR. SEAN CLEARY: That's correct.
5 MS. KATHLEEN MCCANDLESS: Is it fair
6 to conclude that both accuracy and bias are concerns
7 here?
8 DR. SEAN CLEARY: Definitely accuracy
9 is a concern. The bias is a -- I've got to mention, I
10 -- I don't have any reason to believe that this is a
11 conspiracy of any sort, that they have any, you know,
12 ulterior motive for this. The bias is concerning,
13 because, you know, as I've said, there's an
14 inclination to expect things to return to normal.
15 And even today when we're expecting
16 rates to increase, there -- there is maybe that
17 tendency, or bias, if you will, to expect things to
18 return to normal. And I -- I do believe that interest
19 rates will increase at some point in the future. I
20 think it's going to be a lot slower than people are
21 predicting and I don't think it's ever going to return
22 to -- to the levels that some of the people are
23 expecting it to.
24 So that is kind of a bias, but the
25 accuracy is -- is more the concern, and I guess the

accuracy is affected by this bias to return to what we know.

(BRIEF PAUSE)

MS. KATHLEEN MCCANDLESS: Yeah, just -- and for clarity, when we're speaking about bias, we're referring to statistical bias, not psychological bias, or emotional bias?

DR. SEAN CLEARY: Yeah, that's a good question and it's very difficult to separate the two (2), because I am -- I actually was talking about some behavioural things. Statistical bias in a sense that most recently the bias has been to over-estimate, right. And I guess that bias clearly shows up in -- in the forecasting error in -- in my sample.

So I guess that would be a statistical bias. I guess I was trying to think of what is the source of that statistical bias, because I believe it actually -- somebody asked me a question in August that got me thinking about it. I wrote it down. Is there any particular reason why there would be this bias and I -- I think it's generally just a case of the prevailing view is that -- that things are going to return to a more normal state.

1 MS. KATHLEEN MCCANDLESS: So just
2 taking you back to your previous response after --
3 before my question for clarification on the bias
4 issue, you described some accuracy and bias --
5 potential concerns.
6 And so based on your observations,
7 would you characterize the Standard Interest Rate
8 Forecast as a best estimate?
9 DR. SEAN CLEARY: No, I -- I do not --
10 I -- I -- as -- I think the -- that it is a useful
11 estimate. In and of itself, I do not think it is the
12 best estimate because there is a clustering. And by
13 using the existing as a starting point, or one of the
14 limits, I think you will come up with a better
15 estimate, which I refer to as the best estimate.
16 MS. KATHLEEN MCCANDLESS: In what
17 respects does the Standard Interest Rate Forecast fail
18 to achieve best estimate status?
19 DR. SEAN CLEARY: Well, if you -- if
20 you look at the track record of the S-I-R-F, and --
21 and I should comment, I think I did in August but I
22 haven't today. And the consensus forecast I discussed
23 previously, which is -- is broader than the -- so
24 there was some discussion in August if we got more
25 forecasts would we get a better -- would that be the

1 best estimate?

2 And my view at the time, and still my

3 view, is that more is always better but it's not going

4 to cure the problem. Because they tend -- if I looked

5 at the consens -- if you ever did compare the

6 consensus estimates which is, say, twelve (12) for

7 argument's sake versus the -- the six that's in the S-

8 I-R-F, I suspect that -- to be 98 percent correlation

9 between them which means they're almost the same.

10 And the problem -- because I know this

11 from visually looking at the consensus forecast, which

12 I've used several times, and if I look at the big five

13 banks it -- the average of those is almost always the

14 same average as the consensus forecast.

15 So trying to use this consensus

16 forecast because it's a bigger pool wouldn't create a

17 best estimate, in my opinion, and it's not feasible --

18 it's not -- for logistical reasons because they only

19 forecast out three months and twelve (12) months

20 ahead. So you -- you know, you need forecasts out for

21 ten quarters so I don't think that would be feasible.

22 And also it's a little bit more dated

23 than the bank forecast because they have to collect

24 all the bank forecasts plus from these other bodies,

25 so by the time they get it published you probably have

1 another lag of about a month.

2 So I would say the S-I-R-F as is

3 presently constructed seems to me to be a reasonable

4 forecast. The reason I don't think it's the best

5 estimate is just because it's very difficult to

6 forecast interest rates.

7 And the track record shows that they're

8 not doing a great job, and the other -- which doesn't

9 surprise me because the other evidence I've pointed to

10 shows that US inter -- US economists aren't doing a

11 much better job of forecasting the interest rates

12 there, not only since 2008; certainly since 2008, but

13 even previous to that going back to 1982, and that --

14 that doesn't surprise me. It's very difficult thing

15 to forecast these.

16 So I think by using the existing rate

17 as a starting point, and -- and the other point I

18 should note is not only are they off but they're often

19 off in terms of direction. So that, in itself, tells

20 you that using the existing as a starting point over

21 the long run should minimize your variance because if

22 they can't even get the direction right then, okay,

23 but if you temper that by using the existing rate and

24 they're predicting up but it actually goes down, by

25 using the existing you've minimized -- or reduced some

1 of the variance.

2 MS. KATHLEEN MCCANDLESS: Thank you.

3 So your conclusion, or your evidence that the SIRF

4 does not achieve best estimate status, do you base

5 that in this -- on anything other than the

6 retrospective testing summarized here and, if so, what

7 else?

8 DR. SEAN CLEARY: I base that on the -

9 - the testing that I've done with the data I've looked

10 at, from my general experiences through time since,

11 you know -- and -- and since -- let me think. I was a

12 commercial lender -- I started out in 1989 and then I

13 went -- after that in -- as a finance professor, so

14 interest rates and forecasts would be something I'd be

15 very cognizant of the entire period.

16 Although I didn't do any formal

17 research studies on it, just on a day-to-day basis

18 doing what I do, I -- I know that the record has not

19 been great. I've cited some empirical studies that go

20 back to in other markets in 1982, 1989, previous

21 periods.

22 And the -- and it more or less

23 confirms, you know, what I have generally felt to be

24 the case, that -- that they haven't -- don't have a

25 great track record and -- and I don't beat upon them

1 for it. It's a very difficult thing to do.

2 MS. KATHLEEN MCCANDLESS: Thank you.

3 The Standard Interest Rate Forecast is

4 comprised of short-term forecasts for the five (5)

5 major Canadian banks plus a short and long-term

6 forecast from Global Insight, correct?

7 DR. SEAN CLEARY: That's correct.

8 MS. KATHLEEN MCCANDLESS: Can you

9 think of a reason that the banks and Global Insight

10 would publish interest rate forecasts that are not

11 best estimates?

12 DR. SEAN CLEARY: I -- I can't really

13 think of any reasonable good reason they'd have for

14 doing that.

15 MS. KATHLEEN MCCANDLESS: Do you know

16 if the banks' published interest rate forecasts are

17 used internally or only intended for external users?

18 DR. SEAN CLEARY: Sorry about that. I

19 think the banks are very transparent. They would have

20 certain -- I think the -- the forecasts we're looking

21 at -- I guess I'm trying to wrap my head around the

22 question.

23 You're saying, are they giving one (1)

24 public forecast and -- and have an internal one that's

25 different? I would doubt that, given the -- the good

1 corporate governance practices of the banks.
2 That doesn't mean on a particular
3 trading desk for -- you know, for RBC on the -- the
4 bond trading desk or whatever, that the head person
5 there is not saying, Well, I don't believe these
6 forecasts that the bank's using, and we're trading on
7 this basis. You know, that could be the case, but I
8 would generally consider that the -- the public
9 forecasts are what they're using internally as well,
10 to the best of my knowledge, I should qualify.
11 MS. KATHLEEN MCCANDLESS: Thank you.
12 In your experience, how important is the accuracy of
13 the published interest rate forecast to the operations
14 of a bank?
15 DR. SEAN CLEARY: It's also a very
16 interesting question. I think that they would use
17 those forecasts internally for -- for some planning
18 purposes. Producing poor forecasts is not going to
19 promote the head economist's -- chief economist's
20 career, nor is it a good thing for the bank.
21 What good could come of it? Well,
22 okay, if they forecast high interest rates and people
23 rush to lock in their mortgages at lower rates today,
24 does the bank actually gain from that? Not really,
25 because -- because in six (6) months, they would --

1 they could issue the same mortgage at a higher rate.
2 So I don't -- I don't see what they
3 would gain from having poor forecasts. And I think,
4 for their own planning purposes and for reputational
5 purposes, they have -- they have incentives to -- to
6 produce good -- as good of forecasts as they can.
7 And -- and I -- and I -- I should say,
8 I mean, I'm criticizing the accuracy, but not the
9 intent. It's just a very difficult thing, and I think
10 they're very learned. And I -- and I know people who
11 are economists and senior economists at some of the
12 banks, and they're very bright people, and they have
13 the -- the best information and access to the
14 information. It's just things happen that are very
15 difficult to predict.
16 MS. KATHLEEN MCCANDLESS: Would the
17 accuracy of the published interest rate influence the
18 bank setting of the spread between interest rates on
19 loans and interest rates on deposits?
20 DR. SEAN CLEARY: It could possibly,
21 but I don't think it generally does, because the --
22 the spreads are kind of set based on the existing
23 rates so that they can earn, you know, reasonable
24 profit.
25 So very few instances, certainly at the

1 ten (10) year -- like, ten (10) year loans or
2 whatever, would you see that -- that they would be
3 issuing loans based on forecasts of interest rates as
4 opposed to what the existing rates are, because they -
5 - they just go out and they match it today in the
6 market to eliminate their interest rate. So what's
7 relevant to them is the existing interest rate. And -
8 - and to a certain extent, that's reflective of what
9 people think is going to happen to interest rates.
10 So it's -- inherently, you know, it's -
11 - it's reflected in it but not explicitly. I guess
12 implicitly is...
13 MS. KATHLEEN MCCANDLESS: Thank you.
14 Diana, if we could go back to Dr. Cleary's report at
15 page 8. Towards the bottom of the page beginning at
16 line 21 you wrote that:
17 "It is clear that using other
18 sources of interest rate forecasts
19 is unlikely to solve interest rate
20 forecasting issues."
21 Is it fair to say that you believe that
22 adding additional sources of interest rate forecasts
23 to the standard interest rate forecast is unlikely to
24 help the forecasting accuracy?
25 DR. SEAN CLEARY: I -- I think that it

1 will not hurt. More -- more data is better than less.
2 But I don't think you're going to see significant gain
3 from it as you will be incorporating the existing
4 yields because for all of the reasons that I mentioned
5 before.
6 The -- those forecasts, you're adding
7 additional layers of complication to come up with a
8 number that's probably not going to be right anyways.
9 And if -- if they get the direction right I think
10 they're doing a good job even, you know, if they get
11 the direction.
12 If they get the direction, then you
13 have to get the timing right, and it's very, very
14 difficult. And then the third thing is if you get the
15 magnitude of the change correct.
16 So there's three (3) things they're
17 trying to forecast, the direction, the timing of the
18 changes, and the magnitude of the changes. So putting
19 those three (3) things together, it's -- you know,
20 it's like predicting the weather three (3) days from
21 now, so. And I'm from Nova Scotia originally, so
22 that's almost impossible, but I think people say that
23 everywhere.
24 So I think that much more value is
25 added by incorporating existing yields as one (1) of

1 your benchmark -- or limits, I should say.

2 MS. KATHLEEN MCCANDLESS: In the

3 standard interest rate forecast there is only one (1)

4 source used for interest rate forecasts over the

5 longer term; that's global insight.

6 If the objective of the standard

7 interest rate forecast is to develop a consensus

8 forecast would the SIRF be improved by the additional

9 of other long-term forecasts to augment that of global

10 insight?

11 DR. SEAN CLEARY: I think much the

12 same. They're -- if they're readily available at the

13 same time, because you do have timing issues if you

14 get the forecast. Supposing you have the forecast --

15 and banks will tend to release around the same time,

16 right?

17 So if adding three (3) or four (4)

18 other bodies who release around the time, you think

19 you'll improve your accuracy, it might help a bit; it

20 shouldn't hurt, unless -- unless you have a rogue

21 forecast here. But I don't think in Canada we have

22 any of those.

23 But I would look at the logistical

24 issues associated with the timing because if you had

25 to wait say an extra month to get two (2) or three (3)

1 extra forecasts in there, that -- that lag of extra
2 month then makes the banks' forecasts more dated, and
3 so it -- it could backfire.
4 And -- and my -- that's -- of course I
5 haven't studied this in depth, but my -- my general
6 impression is that you'll get fairly similar results.
7 And I don't -- it would depend on -- if it's easy to
8 do and it doesn't cost you any time, then why would
9 you note do it?
10 If it's complicated and -- and it
11 creates a lag in timing, then I would say -- I -- I
12 would want to have the most up-to-date information as
13 possible; that's important. To me, that would be the
14 most important thing because things can change over
15 the span of two (2) weeks dramatically and you'll see
16 interest rate forecasts being changed, right?
17 So if you have to wait for some, I
18 would say there is a cost involved there.
19 MS. KATHLEEN MCCANDLESS: All right.
20 So just going back to the -- the question of consensus
21 forecast.
22 And if the objective of the -- of the
23 SIRF is to develop a consensus forecast, then would
24 you not want to have more than one (1) forecaster?
25 Otherwise, it's a consensus of one (1),

is it not?

DR. SEAN CLEARY: Well, it's a consensus of the banks and -- and one (1) forecaster. So if you're saying that there's concern about the -- and the banks -- the banks are not always exactly the same. You usually have one or two that's a little bit different. So using the average of those, you're typically going to -- to get about the same answer.

If you add more -- so I would say it's a consensus of the big five and Global Insight, right, so.

MS. KATHLEEN MCCANDLESS: With respect to the long term forecast though that's just the one, yes?

DR. SEAN CLEARY: Right. Yeah, because I think that's another problem. When you start going to some of these other options, that -- do they provide the data you need.

So -- so that -- that would be -- like I said, if it's -- if it's easy to do and it doesn't cost you in terms of timing, and they have all the information that you want, then certainly having more information is always better than having less information.

But if the costs in terms of timing, or

1 that you can't get the full information you need then
2 I would say then it's not worth really gathering that
3 data from another forecaster, for example. Though --
4 and -- and I -- and honestly I cannot say that I know
5 the exact timing of these organizations and when they
6 come out with their -- with their predictions.
7 But I do know from looking through the
8 Consensus Economics forecasts numerous times that
9 they're almost always the same, and I could probably
10 pick any six out of that twelve (12) and get the same
11 average, so.
12 MS. KATHLEEN MCCANDLESS: Is Global
13 Insight a consensus forecaster in effect gathering
14 various public domain forecasts into a single
15 consensus forecast?
16 DR. SEAN CLEARY: Yeah. Basically
17 they just collect the data, and produce the averages,
18 so -- and they charge a lot for their product, too.
19 It's like $425. just to average twelve (12) numbers
20 but that -- that's for Canada but they do it for all
21 the countries, so.
22 So it's -- it's -- most of the -- most
23 of that you could do on your own because -- because
24 almost all these organizations have public information
25 available.

1 MS. KATHLEEN MCCANDLESS: Would you
2 agree that there's a risk of double counting if a
3 consensus forecast is combined with the various bank
4 forecasts for the purposes of deve -- developing
5 another consensus forecast?
6 DR. SEAN CLEARY: Yeah. Sorry, if you
7 use -- are we talking Consensus Economics, that
8 forecast? Is that what we mean?
9 MS. KATHLEEN MCCANDLESS: Yeah, just
10 the dictionary definition of consensus.
11 DR. SEAN CLEARY: So consensus --
12 okay. If the banks are included in that consensus
13 forecast, then you either use one or -- or the other,
14 right, because otherwise you are double counting just
15 as suggested, yeah.
16 MS. KATHLEEN MCCANDLESS: Thank you.
17 Subject to there being a sufficient
18 number of independent interest rate forecasts, would
19 you agree that a possible upward bias in the current
20 S-I-R-F could be mitigated by eliminating the high
21 forecast value in each forecast period being averaged?
22 DR. SEAN CLEARY: There's no doubt
23 that doing that, and if you -- if you have an outlier
24 -- and -- and I could also say if you have an outlier
25 on the low side, too. I mean, right now the -- the

1 concern is about them being over -- you know, the
2 estimates being too high but if you're going to put
3 the process in place, and that's why I recommend a
4 50/50 split, I think you should be aware that four,
5 five years down the road you could be in a situation
6 where everybody is forecasting interest rates to
7 decline again, right.
8 So -- so then if you're going to throw
9 out the high one then maybe throw out the low one but
10 that only leaves you with four, but I somehow suspect
11 it's not going to change things too much because they
12 are -- they tend to not be too divergent.
13 MS. KATHLEEN MCCANDLESS: Thank you.
14 Diana, could we, please, move to page 16 of Dr.
15 Cleary's report?
16
17 (BRIEF PAUSE)
18
19 MS. KATHLEEN MCCANDLESS: Now, in this
20 section of your report you undertake a similar
21 retrospective test of forecast -- forecasting accuracy
22 of a Naive forecast. Yes?
23 DR. SEAN CLEARY: That's correct, yes.
24 MS. KATHLEEN MCCANDLESS: And what is
25 a Naive forecast?

1 DR. SEAN CLEARY: Okay. So the Naive
2 forecast is then when I just take the existing rate,
3 so consider this the October GRA and I think the ten-
4 year rate is 1.15 percent today, somewhere around
5 there last I read.
6 And then for the next -- for the future
7 periods I assume that interest rate -- the ten-year
8 yield will remain at 1.15 percent. So for the next
9 ten (10) quarters, or however far out I want to go, I
10 assume that the interest rate in that period is 1.15
11 percent.
12 And then just to illustrate, then, the
13 50/50 if -- if you don't mind, then if the forecast
14 was 2 percent, for example -- well, let's -- let's say
15 two (2) -- or say 1.85 percent, then -- then it would
16 be 2.5 percent would be my forecast.
17 MS. KATHLEEN MCCANDLESS: Would you
18 always use the most recent reported value for
19 establishing the Naive forecast, or is there a
20 possible merit in averaging recent values exhibiting
21 unusual volatility?
22 DR. SEAN CLEARY: Yeah, that's --
23 that's a very good question. My inclination -- and to
24 be quite honest, I didn't specify this clearly, I
25 would use the most recent, because that reflects

1 everything that's happened up to today.
2 And I think if you take an average over
3 -- over the past six (6) months, for example, then
4 you're kind of throwing out information, because the -
5 - the interest rates have actually adapted from what
6 they were six (6) months ago to what they are today in
7 response to new information.
8 So I would say stick with the -- the
9 most recent, that should be the closest to, and -- and
10 also, it's your starting point again, okay.
11 MS. KATHLEEN MCCANDLESS: Thank you.
12 Mr. Chair, I expect I'll have about
13 fifteen (15) to twenty (20) more minutes of
14 questioning. So I'm at the disposal of the panel. If
15 you wish me to continue I'm certainly happy to do so.
16 THE CHAIRPERSON: Yeah, I think -- if
17 it's fifteen (15) to twenty (20) minutes, let's
18 continue.
19 MS. KATHLEEN MCCANDLESS: Thank you.
20
21 CONTINUED BY MS. KATHLEEN MCCANDLESS:
22 MS. KATHLEEN MCCANDLESS: Now, with
23 respect to this section of your report, can you
24 confirm that you observed a weighted average
25 percentage forecast error of negative 39.5 percent

1 overall for the Naive forecast ranging from a positive
2 12.1 percent in the 2016 GRA to negative 72.1 percent
3 in the 2012 GRA?
4 DR. SEAN CLEARY: Yes, that's correct.
5 MS. KATHLEEN MCCANDLESS: Would you
6 agree that these measure -- measures suggest some
7 improvement over the standard interest rate forecast?
8 DR. SEAN CLEARY: A significant
9 improvement.
10 MS. KATHLEEN MCCANDLESS: Is accuracy
11 still a concern here?
12 DR. SEAN CLEARY: In this case, it's
13 still -- that's still not a good track record, just
14 because rates continually declined contrary to
15 expectation.
16 So even using the Naive or the existing
17 rate, you're still going to be off, because they --
18 they kept going down almost continually throughout the
19 period.
20 MS. KATHLEEN MCCANDLESS: And is bias
21 still a concern here, and that would be statistical
22 bias?
23
24 (BRIEF PAUSE)
25

1 DR. SEAN CLEARY: Oh, it -- it appears
2 to be over this period, but I would say that, you
3 know, over longer periods of time, that starting with
4 the existing, you're going to have periods where it
5 goes up and down.
6 Right now, we're just in a period where
7 it's continually gone down, but obviously during this
8 sample period, the bias going down is a concern.
9 MS. KATHLEEN MCCANDLESS: And so based
10 on this, would you characterize the Naive forecast as
11 a best estimate?
12 DR. SEAN CLEARY: And -- and this is -
13 - and again, a very good question. If I was just
14 looking at the numbers, and I was trying to sell a
15 product to somebody, it would be much easier to sell
16 the Naive with the 39 percent error, although it's --
17 maybe nobody wants to buy anything with a 39 percent
18 error.
19 But certainly a lot better than the
20 product with a 92 percent error. This is where
21 judgment is involved, and this is -- I -- I think
22 that, yes, over this period, it appears that that
23 would have been the -- the best course of action.
24 Do I believe that will be the best in
25 the long run? I do not. And I think that because

1 what the Naive will not do is -- you know, when --
2 when rates -- I -- I think taking a compromised
3 position between the forecasts, which are based on
4 very detailed analysis, and I think those forecasters
5 are going to be right eventually. Interest rates are
6 going to go up. It's just taking so long to happen.
7 They're going to be right in terms of
8 the direction. Their timing has obviously been wrong,
9 and I think they're going to be wrong in terms of the
10 magnitude. Although, more recent forecasts are much
11 more tempered, and I think they're getting away from
12 this idea that ten (10) year yields have to go to 5
13 percent, which I don't think they are going to go to 5
14 percent over the next decade.
15 So statis -- if I just look at the
16 statistics and don't add any judgment, yeah, it seems
17 like the Naive is the best. But I don't believe that
18 would be the best estimate going forward.
19 MS. KATHLEEN MCCANDLESS: Thank you.
20 So just for clarification, you -- you mentioned in
21 your answer the best course of action, being the Naive
22 forecast. That's not the same thing as the best
23 estimate.
24 Would that be accurate?
25 DR. SEAN CLEARY: Yeah. I meant, it

1 would have been the best over this period, but I -- so
2 ex-post, it was clearly the best course of action, but
3 ex-ante, you know, to try and predict the future, I
4 don't have the confidence that it would be the best
5 estimate.
6 MS. KATHLEEN MCCANDLESS: Would that
7 be the best course of action or the better course of
8 action?
9 DR. SEAN CLEARY: The better course of
10 action is to use the 50/50.
11 MS. KATHLEEN MCCANDLESS: Okay. So
12 the better course of action would be to use the 50/50,
13 which means then that the Naive would not have been
14 the better course of action or the best course of
15 action.
16 Would that be accurate?
17 DR. SEAN CLEARY: I'm starting to get
18 confused. Can I -- can -- maybe I can say it this
19 way. I think that, at certain periods in time, the
20 Naive forecast will be the better forecast. And I've
21 shown you evidence where it has been.
22 I think at other points in time that
23 the S-I-R-F would -- would do better. So I think
24 weighting them equally, given that we can't predict
25 ahead of time -- if -- if we could, we'd all be rich -

1 - which is going to be better over the next six
2 months, whether the forecasts are going to be better
3 or whether using 1.15 percent will be better.
4 So if I'm trying to forecast over ten
5 quarters, my best course of action is to say, It could
6 be this is better or it could be that is better. So
7 if I take the middle road, I will minimize my
8 forecasting errors.
9
10 (BRIEF PAUSE)
11
12 MS. KATHLEEN MCCANDLESS: So a few
13 moments ago, you had mentioned that the Naive forecast
14 was the best course of action. But then now we've
15 heard your evidence with respect to the 50/50.
16 So just for purposes of a clarification
17 then, would you characterize the Naive forecast as the
18 better course of action as compared to the S-I-R-F?
19 DR. SEAN CLEARY: I think -- and I
20 probably didn't express it properly -- I meant based
21 on this historical evidence over this period, that
22 actually the Naive approach would have been the best
23 approach, better than the S-I-R-F or better than the
24 50/50, okay? But that's just based on what's happened
25 since 2008, okay?

1 MS. KATHLEEN MCCANDLESS: Okay. So
2 there is no other approach out there that would have
3 performed better than the Naive? If it's the best --
4 DR. SEAN CLEARY: I can't speak to
5 that because there -- there's so many different
6 approaches people have to forecasting interest rates.
7 And I -- I did not see many people -- many forecasts
8 that -- that predicted the trail of interest rates
9 going continually downward that -- that I did see.
10 So if there is a better way, I haven't
11 seen it. And if somebody does have a better way,
12 presumably they're using it to make money for
13 themselves rather than share it with the public.
14 That's what I would do.
15 MS. KATHLEEN MCCANDLESS: Thank you.
16 If we could move to page 18 of your
17 report, and this is the section of the report
18 beginning at line 1 where you undertake a similar
19 retrospective test of forecasting accuracy of a
20 blended 50/50 average of the S-I-R-F and the Naive
21 forecast.
22 Can you confirm that you observed a
23 weighted average percentage forecast error of negative
24 66.2 percent overall for the 50/50 forecast?
25 DR. SEAN CLEARY: Yes, that's correct.

1 MS. KATHLEEN MCCANDLESS: And so we --
2 we did hear you speak just moments ago about some of
3 this, but perhaps you could just summarize based on
4 this how you would characterize the performance of the
5 50/50 forecast relative to the Naive and the SIRF?
6 DR. SEAN CLEARY: Yeah, so the
7 historical performance falls somewhere in-between the
8 two (2), almost identically exactly halfway on an
9 absolute basis, right, minus 1.2 percent off versus
10 minus 1.7 or point -- minus .7.
11 That would be expected during a period
12 where interest rates have declined pretty much
13 consistently over the entire eight (8) year period.
14 So it -- it did not perform the best over this sample
15 period.
16 The reason that I recommend it is that
17 I believe that going forward in the short-term where
18 we expect interest rates to go up, and also in the
19 long-term, that it is a good compromise that should
20 out perform either the SIRF or the -- the Naive
21 forecasting approach going forward.
22 So, in other words, if five (5) years
23 from now we're sitting here and we look back, I would
24 expect that the 50/50 approach would have out
25 performed the other two (2).

1 (BRIEF PAUSE)

2

3 MS. KATHLEEN MCCANDLESS: In your
4 opinion, is it worthwhile to take steps to improve the
5 standard interest rate forecast, for example, by
6 adding additional long-term forecasts or mitigating
7 upward bias so as to improve the resulting 50/50
8 forecast?
9 DR. SEAN CLEARY: I... If you can...
10 If it can be done without creating a lag in the
11 information that you're acting upon and -- and if they
12 -- if using additional forecasters provide the
13 information that you need. And I guess I could have
14 said it all in one (1) sentence. If they provide the
15 information you need in a timely manner, then there is
16 no harm in trying, so.
17 It's -- I -- I don't think it's going
18 to add a whole lot of value. And, in fact, it would
19 be easy to take a look and see, you know, like, what
20 the SIRF forecasts were versus what they would have
21 been if you'd gone back. I guess it's -- it's
22 difficult now because you can't go back. It's hard to
23 get those -- those forecasts way back when.
24 But I -- I suspect if you looked at it,
25 it wouldn't have changed things very much at all.

1 MS. KATHLEEN MCCANDLESS: Thank you.
2 Diana, could we please go to MPI Exhibit number 47,
3 that's your presentation from this morning, Dr.
4 Cleary, page 17?
5 The very bottom bullet on the page you
6 conclude that a 50/50 approach should minimize
7 forecasting error.
8 How do you know that the choice of
9 50/50 weights actually minimizes forecasting error?
10 DR. SEAN CLEARY: I can't say for
11 certain that the 50/50 weights will do that. So it's
12 a comprised position where I'm taking -- trying to
13 deal with a difficult si -- issue, trying to forecast
14 interest rates for the future.
15 And I've got two (2) -- two (2) numbers
16 that I can use. I can use this SIRF for consensus
17 forecasts or whatever I may have. And I'm pretty sure
18 that's going to be wrong. The evidence tells me it's
19 not going to be right very often, at least not in
20 terms of the timing, the direction, and the magnitude,
21 all three (3) categories.
22 I also think that if I just say
23 interest rates are -- use the Naive is essentially
24 saying interest rates are never going to change. I
25 think interest rates are going to change, so I'm going

1 to be wrong with that one, too.

2 So I'm just saying that, on average, if

3 I take an average of these two (2) things that should

4 be related -- both should be related to future

5 interest rates; that's the point. They're not --

6 they're not terrible estimates. But I'm trying to

7 temper the fact that it's -- you know, interest rates

8 probably are going to change.

9 The evidence -- and I didn't spend much

10 time talking about it, but if I look at some of those

11 research papers, it tells me that not only do they

12 have huge forecasting errors and that Naive is better,

13 but a lot of those papers -- or some -- two of those

14 papers discuss that they're not even good at

15 predicting the direction.

16 So I think what I'm trying to do is

17 minimize the variance knowing that I'm going to be

18 wrong to a certain extent, and trying to get as close

19 to the actual answer as possible. So that's -- 50/50

20 is -- is a judgment on my part.

21 MS. KATHLEEN MCCANDLESS: Okay. So is

22 it more the case that it would essentially reduce

23 forecasting error rather than -- than minimizing it?

24

25 (BRIEF PAUSE)

1 DR. SEAN CLEARY: I would -- I would
2 say for sure that -- or, not for sure, I would say
3 that I believe that a 50/50 approach will definitely
4 reduce forecasting error from simply using the bank
5 forecasts on their own. As to whether that is the
6 point that minimizes it, it's a judgment call. I
7 mean, I'm trying to -- to come with it.
8 So I can't guarantee it would minimize
9 it but that would be my beliefs, is that -- that by
10 start -- you know, using the starting point and taking
11 account all these forecasts that the banks put a lot
12 of time and energy and -- and good research into
13 coming up with, that taking them both kind of with a
14 grain of salt knowing that there's going to be errors,
15 I -- I'm somewhere in between.
16 And -- and it -- and I guess what I'm
17 thinking of is I could sit here today and say, For the
18 next quarter I might weight the S-I-R-F 80 percent and
19 the existing 20 percent, if I looked at their
20 forecasts and believed them, but I can't tell you over
21 ten periods -- maybe another period I'll say, I'll
22 take the existing and weight that eighty (80) and --
23 and the thing. So it's a compromise situation.
24 MS. KATHLEEN MCCANDLESS: Thank you.
25 Mr. Chair, I was optimistic on my time estimate. I'm

1 hopefully not optimistic this time when I say probably
2 ten to fifteen (15) more minutes, so perhaps we want
3 to take the break?
4 THE CHAIRPERSON: Yeah, we will --
5 sorry. We'll take a break for fifteen (15) minutes.
6 Thank you.
7
8 --- Upon recessing at 10:34 a.m.
9 --- Upon resuming at 10:58 a.m.
10
11 THE CHAIRPERSON: Ms. McCandless.
12 MS. KATHLEEN MCCANDLESS: Thank you.
13
14 CONTINUED BY MS. KATHLEEN MCCANDLESS:
15 MS. KATHLEEN MCCANDLESS: Diana, could
16 we, please, pull up MPI Exhibit 47, page 18.
17 Dr. Cleary, this is from your
18 presentation this morning. And at the very bottom you
19 conclude that "a 50/50 approach be used to obtain the
20 best estimate."
21 Did you reach this same conclusion in
22 your report which was provided earlier at MPI Exhibit
23 8?
24 DR. SEAN CLEARY: The report I did not
25 specify recommending a 50/50. I -- I did in that

1 report represent -- or, sorry, suggest that at minimum
2 that the existing rate should be used as one of the
3 boundaries, along with the S-I-R-F.
4 So in other words, the 50/50 weighting
5 was not explicit in what I said but by implying that I
6 would use those two bounds, the forecast and the
7 existing rate, that it was kind of implicit if I
8 decided to kind of take the midpoint of that range to
9 determine the best estimate. But I -- I did not
10 specifically speak to that.
11 MS. KATHLEEN MCCANDLESS: How did the
12 change in your recommendation come about?
13 DR. SEAN CLEARY: I don't think it was
14 a change so much as it was just a refinement. And --
15 and it was -- had to do with the timing of when I
16 wrote the report, and then when I was coming here to
17 present it. And I -- I believe if you go back on the
18 record of those -- of the conference we had in August
19 that -- that I am on record of recommending the 50/50.
20 So it's something that -- in terms of a
21 specific recommendation, when I prepared my initial
22 report I wasn't asked for a specific recommendation.
23 I was just more or less commenting on the existing
24 evidence on the interest rate forecast.
25 And then when I did -- when I was

1 reading over in preparation for my presentation and
2 then during my presentation the question logically
3 came up, so what would you recommend, and that's what
4 I recommended at the time.
5 MS. KATHLEEN MCCANDLESS: Thank you.
6 For the purposes of the GRA, MPI relies on a three (3)
7 year interest rate forecast to develop its estimate of
8 the required rate level change.
9 If the length of your retrospective
10 testing in your report was limited to three (3) years,
11 do you believe the conclusions would be any different?
12 DR. SEAN CLEARY: Sorry, I didn't
13 quite catch that. Could you repeat that?
14 MS. KATHLEEN MCCANDLESS: If -- so MPI
15 relies on a three (3) year interest rate for the
16 purposes of the GRA --
17 DR. SEAN CLEARY: Right.
18 MS. KATHLEEN MCCANDLESS: -- interest
19 rate forecast to develop its estimate of the rate
20 level change.
21 DR. SEAN CLEARY: Right.
22 MS. KATHLEEN MCCANDLESS: So if the
23 length of your retrospective testing in your report
24 was limited to three (3) years, do you believe that
25 your conclusions would be any different?

1 DR. SEAN CLEARY: Okay. Yeah, so in
2 other words, the -- the tables that I provided used
3 the forecasts out to five (5) years, I believe, right.
4 Is it five (5) years? Yes. Sorry, I should just look
5 at my table.
6 And the answer to that question is that
7 the forecasting error would be much lower, because the
8 errors -- if you look at, for example -- well,
9 actually, I see we have the -- the slides up. Could
10 we go to one (1) of the previous slides? Back a few
11 to the one (1) using the SIRFs. So it's another one
12 (1) of those tables.
13 This -- maybe one (1) -- maybe even
14 back one (1). Yeah. So this is slide 5, for the
15 record. Okay. Because it's not labelled on mine, so
16 thank you. Slide 5. And if you notice -- if you look
17 at that, that the forecasting errors going forward
18 beyond -- you know, after ten (10) quarters, for
19 example, they get larger.
20 So the -- the -- it would not be as --
21 as large. But -- so that's to be expected, right, the
22 further into the future that you're trying to predict
23 the less certain. But you can also see that they
24 would still be very negative and also that the Naive
25 approach would still be much, much better, because you

1 could just compare this slide to one (1) a few slides
2 further and I can tell you that I did look at this and
3 that the Naive approach was still a lot better than
4 the other.
5 But the forecas -- the -- the magnitude
6 of the errors would be lower. And actually, I did
7 want to mention this at the time, this comes back to a
8 point I was making before we took a break, that it's
9 important to use the most recent level of the ten (10)
10 year rate and also important to get the most recent
11 forecast that you -- you can have, because they will
12 have the best information and -- and things change
13 very quickly in the financial world and interest
14 forecasting is front and centre of it.
15
16 (BRIEF PAUSE)
17
18 MS. KATHLEEN MCCANDLESS: Would the
19 50/50 still, in your view, be the best estimate if we
20 looked at the three (3) year period?
21 DR. SEAN CLEARY: Yes, it would. Just
22 for the -- the reasons I outlined earlier that I think
23 there's -- even over the shorter period you can see
24 there's still substantial errors. And -- and if you -
25 - again, I think starting out at the existing rate

1 compensates for a couple things, that the rates could
2 go in either direction, either in the same -- the
3 direction of the -- of the forecast, or it could
4 surprise everyone and go the other direction.
5 So if you -- if you weight in the
6 existing rates you're going to minimize your
7 forecasting error in the long run over periods of
8 interest rate increases and decreases.
9 MS. KATHLEEN MCCANDLESS: Thank you.
10 Diana, could we please go to Dr. Cleary's report at
11 pages 18?
12 And just at the very bottom of the
13 page, you mention that you acknowledge that yields
14 will eventually start to increase gradually? It's on
15 the screen before you at lines 29 and 30.
16 DR. SEAN CLEARY: M-hm.
17 MS. KATHLEEN MCCANDLESS: Does this
18 suggest that there is a diminishing value to the Naive
19 forecast or any forecast based on it as the length of
20 the forecast is increased?
21 DR. SEAN CLEARY: So is -- does this
22 suggest diminished use of the Naive as the forecast
23 period increases? Is that the question, or just the
24 fact that I believe that interest rates are going to
25 increase? But again, I could be wrong, and -- and

1 people have been wrong before.

2 So I still think that, even though I'm

3 believing this today, who knows? Like, the -- the fed

4 might decide, No, we're not going to sell back these

5 bonds for another two (2) years, and then all of a

6 sudden interest rates could go even lower.

7 We could -- you know, we creep back up

8 to 1.15 percent now. I think they were about 1

9 percent when I was here in the summer. Who's to say

10 something couldn't happen and they go back below 1

11 percent over the next six (6) weeks? I can't say

12 that.

13 That's why I'm saying the Naive is --

14 is useful as a -- as a fencepost, if you will, in

15 terms of a range of estimates because, whether they go

16 up or down, you know, having that as one (1) of your -

17 - one (1) of your basis for the estimates is going to

18 minimize some variance, there.

19 But also, if we just take the Naive

20 approach, we're ignoring information that there is a

21 lot of information that -- that all of the economists

22 and experts and so on and so forth are analyzing that

23 suggests that there are pressures that interest rates

24 will increase.

25 And again, I think the problem is -- is

1 the timing and the magnitude of those increases that -
2 - that is the most difficult to forecast.
3 MS. KATHLEEN MCCANDLESS: So the
4 farther out in the forecast, does the value of the
5 Naive forecast diminish?
6 DR. SEAN CLEARY: Yes, I would agree
7 with that.
8 MS. KATHLEEN MCCANDLESS: Thank you.
9 At what length of forecast does this eventual gradual
10 increase in interest rates start to become a concern?
11 DR. SEAN CLEARY: I mean, it's
12 difficult to say, because it -- it has a lot to do
13 with -- with how quickly interest rates are changing.
14 But unfortunately, using the SIRF for whatever type of
15 forecast you -- you decide to use doesn't eliminate
16 that issue either, because you're using it ten (10) --
17 ten (10) quarters forward.
18 If you could actually use their updated
19 forecasts every month, that would be a better forecast
20 to make, right? But you can't do it, because it's a -
21 - a medium-term product, and the -- the interest rates
22 you're interested in forecasting are from today for
23 the next ten (10) quarters.
24 If you could revise your estimates or
25 your forecasts every -- every quarter, that would make

1 a big difference, just like the -- you know, if rates
2 change, then the banks are going to come out with new
3 forecasts very quickly, right?
4 You're going to see them up on their
5 website very quickly as they react to that new
6 information. But unfortunately, you can't use it, you
7 know, for -- for MPI's purposes. So that's
8 unfortunate.
9 And so -- so what I'm getting at there
10 is, okay, then when rates change, the Naive -- well,
11 if you've used that for the next ten (10) quarters,
12 you're stuck with it now, and, you -- you know, you
13 can't update that either every quarter.
14 So it -- it's -- you know, it's a --
15 it's an issue that it's unfortunate you have to deal
16 with it. But you're -- you're kind of stuck with an
17 old -- you're stuck with an old Naive forecast and --
18 and -- or, sorry, an old Naive forecast and an old
19 SIRF or whatever you -- you chose. So inherently,
20 you're going to have some -- some forecasting error.
21 MS. KATHLEEN MCCANDLESS: So does that
22 perhaps argue for a blended forecast using varying
23 weights with less weight accorded to the Naive
24 forecast as one goes farther into the future?
25

1 (BRIEF PAUSE)

2

3 DR. SEAN CLEARY: That's a good
4 question. I never -- I -- of course, you know I put
5 forth a fairly simple approach, but I would suggest
6 that that actually would not make sense because -- for
7 the following reason: That it's true that ten (10)
8 quarters from now what the rates were today may be
9 very different, but, unfortunately, we don't know
10 which direction they're going. We think they're going
11 up.
12 But all we have to do is look at the
13 evidence and know that they thought they were going up
14 for the last eight years and they continued to go
15 down.
16 So if you pencil in -- and let's just
17 say that interest rates actually -- contrary to what
18 most of us believe and hear, they actually go down
19 over the next ten quarters. It could happen. And if
20 I use the -- if I weighted in the Naive, I'll be
21 closer -- I'll still have error, obviously, but I'll
22 be closer by weighting it fully out to the full term
23 than if I take in those forecasts of them going up,
24 right, because those forecasts going up will be even
25 more wrong if we go down, right?

1 So -- so I think -- no, I think you
2 take the Naive and you -- and, also, they could go up,
3 and then come down, right? And that's the good thing
4 about having a starting point. They -- they tend to
5 fluctuate around a starting point unless there's a
6 free fall like we've seen the last eight years or
7 unless there's a huge surge which some people predict,
8 but not...
9 Even I note that the bank -- the bank
10 forecasts over the -- over the last year or so,
11 they're -- they've become very tempered. They're
12 still bullish in the sense that they believe rates are
13 going to go up, but they've become very tempered in
14 those forecasts, not -- not going back to the levels
15 they used to in their earlier forecasts --
16 MS. KATHLEEN MCCANDLESS: Thank you.
17 DR. SEAN CLEARY: -- which is -- which
18 is a good thing.
19 MS. KATHLEEN MCCANDLESS: So going
20 back to your view that yields will eventually start to
21 increase gradually.
22 Why do you believe that interest rates
23 will not hit 5 percent in the next decade?
24 DR. SEAN CLEARY: I just don't see it
25 because we have a 2 percent inflation target. And the

1 spread, I think -- what did I say the spread was, two
2 -- thirty 30-year -- 30-year yields, 2.35 percent
3 above inflation in the long-run, so -- and they're
4 about fifty (50) basis points above 10-year yields on
5 average.
6 So that means about a 1.85 percent --
7 so that to me tells me 3.85 percent maybe, right? And
8 that may be some sort of a long-term level. But right
9 now, inflation is below 2 percent, too, so I don't see
10 it. Three point 8 percent is a very high part.
11 In fact, that -- that Investor Lit
12 article that I referred to earlier, I believe there is
13 something talking about real interest rates in there.
14 If you just could hold on for second here, I'll tell
15 you.
16 And they're looking back to 1802 to
17 2011, so that's a pretty long survey. And this is US
18 data. Canada's always similar. And they show a 3.6
19 percent real return on long-term bonds. So that's in
20 the US, but that's on long-term bonds. A fifty (50)
21 basis point spread means about a 3.1 percent on 10-
22 year bonds. That's over two hundred (200) years, two
23 hundred and ten (210) years.
24 So that is something that speaks to me.
25 And I think with 2 percent inflation target and 3

1 percent -- and 5 percent is -- is very lofty. And I
2 think that things have changed in the -- the article
3 also goes on to suggest that those sort of real
4 returns on bonds is not likely to happen. And they're
5 actually -- they predict a 2.6 percent on treasuries
6 going forward, not that 3.6 percent.
7 So that would be 2.1 on your -- your
8 ten (10) years, so you're still around 3.8, 4.1
9 percent, which, to me, that's -- I think that's
10 ambitious. And we may get there, but it won't be for
11 five years, I don't think.
12 MS. KATHLEEN MCCANDLESS: To what
13 extent are your conclusions from this study dependent
14 on the current unusual interest rate environment?
15 DR. SEAN CLEARY: So a lot of my --
16 you know, my analysis involved looking at this current
17 interest rate environment because that's the
18 environment that we're in and that's the most recent
19 data we have.
20 But, as mentioned, you know, I also
21 cited some research studies that looked at other
22 markets, previous periods, the US in particular, and
23 confirmed my beliefs and -- and what I generally
24 believe. And why do I believe that these forecasts
25 are wrong consistently; I don't know, just through

1 experience and -- and recognizing it.

2 Can I point to twenty (20) different

3 articles that led me to this conclusion; no. I've

4 been in the finance business for I guess too long now,

5 twenty-seven (27) years and -- and just -- you know,

6 just some -- some things you just come to believe in.

7 And one of the things I believe in is

8 that you can't go to the bank with the bank's

9 forecast, so to speak but -- they do have useful

10 information in them but they're -- they're -- it's

11 inevitable. It's difficult to predict the future,

12 particularly over a short term, I should say.

13 MS. KATHLEEN MCCANDLESS: Is there a

14 best before date for your recommendations? So, for

15 example, might changing circumstances lead to

16 different conclusions and, if so, what should we watch

17 for?

18 DR. SEAN CLEARY: No, there's no best

19 before date. I think it would work very well right

20 now. I mean, if I wanted to come in here -- it would

21 be easy for me to sell -- just use the Naive based on

22 the evidence I've provided but I don't -- I would not

23 believe in that. I -- I think that that -- that's

24 over a period of continually declining interest rates.

25 It's good -- it -- I think that the

1 approach I'm recommending would work very well in the
2 short term because you're tempering in -- essentially
3 what you're saying is, Right now the forecast is for
4 rates to increase, and you're tempering that by
5 saying, Maybe they don't increase or maybe they don't
6 increase as fast as people think they do, or maybe
7 they don't increase as much as they think they will.
8 It also protects you against the
9 possibility that rates could decline further before
10 they actually increase. So I -- I -- there's no best
11 before date. If -- if we're a year from now and rates
12 are, you know, still the same and people are
13 predicting them to go up or -- I -- I think it's still
14 going to work best to minimize the variance.
15 Or if a year from now in the unlikely
16 event ten year rates were 2 percent and people were
17 forecasting the decline, I think you'll still minimize
18 your variance by incorporating the existing rates at
19 that point.
20 And so short answer, no expiry date. I
21 think -- I think it would work very well at any point.
22 MS. KATHLEEN MCCANDLESS: Thank you.
23 So clearly forecasting interest rates is not easy.
24 In your opinion, if MPI's rate setting
25 approach could be changed to be less sensitive on

1 interest rate forecasting, would that be a worthwhile
2 undertaking, all other things being equal?
3 DR. SEAN CLEARY: It's very difficult
4 for me to speak to that because I understand, you
5 know, the pricing is a complicated issue in terms of
6 how they finance the product and what not, and
7 inherently when you're financing it in the -- the mid-
8 market -- debt market you're -- you're going to be
9 subject to changes in interest rates.
10 If there's a way that you don't have to
11 rely on the forecast, again I -- I was never asked to
12 comment on the way that they're forecasting, so it's
13 difficult for me to comment on that without
14 recognizing explicitly. Obviously if you have no
15 forecast risk, then it makes pricing a lot better if
16 there's...
17 MS. KATHLEEN MCCANDLESS: Or if you
18 could reduce forecasting risk, that would make pricing
19 better?
20 DR. SEAN CLEARY: It -- it certainly
21 should, if you can reduce the forecasting risk. Yes.
22 MS. KATHLEEN MCCANDLESS: Thank you.
23 Those are my questions for you, Dr. Cleary. Thank
24 you.
25 DR. SEAN CLEARY: Thank you very much.

1 THE CHAIRPERSON: Thank you, Ms.
2 McCandless. Mr. Oakes, I understand you're going
3 next?
4 MR. RAYMOND OAKES: Thank you, Mr.
5 Chairman.
6
7 CROSS-EXAMINATION BY MR. RAYMOND OAKES:
8 MR. RAYMOND OAKES: And just a very
9 few quick questions, Dr. Cleary.
10 Would you agree with me that one
11 prudent way to reduce the effect of the interest rate
12 forecast -- forecast risk is to have less investments
13 that are affected by the interest rate, and diversify
14 and have more funds in those investments that are not
15 subject to the interest rate risk, such as MUSH bonds
16 and equities?
17 DR. SEAN CLEARY: It's very difficult
18 for me to comment on that because right now I've been
19 asked to comment on forecasting risk. And what you're
20 suggesting sounds good from a forecasting risk
21 perspective, but I understand that MPI also has to
22 deal with substantial interest rate risk associated
23 with their asset/liability management of the -- of the
24 Company.
25 And so it's kind of hard for me to

1 speculate from -- from what I have read, that this has
2 been determined a -- a -- consistent with their
3 overall risk targets that this was the -- the way it
4 has to go. And -- and so I can't really speculate as
5 to -- if you can do it another way, maybe it reduces
6 forecasting risks, but who knows, it -- it could
7 create another type of an interest rate risk that --
8 that is bigger.
9 So it's -- it's very difficult for me
10 to speculate on that.
11 MR. RAYMOND OAKES: Well, Dr. Cleary,
12 I'm not asking you about looking at the effect of the
13 asset/liability matching, but you'll agree with me
14 that MUSH bonds, for example, have no interest rate
15 forecast risk?
16 DR. SEAN CLEARY: And -- and so you're
17 suggesting?
18 MR. RAYMOND OAKES: If I could ask you
19 that question: Is that your understanding as well,
20 that MUSH bonds are not subject to an interest rate
21 forecast risk?
22 DR. SEAN CLEARY: Could you -- could
23 you please define what you mean by MUSH bonds for me?
24 MR. RAYMOND OAKES: They're municipal
25 bonds that are not traded on the open market. They're

1 -- they're bought without an interest rate component
2 or a changing yield. It's a -- it's not tied to a
3 outside valuation.
4
5 (BRIEF PAUSE)
6
7 DR. SEAN CLEARY: But I -- sorry, I --
8 I just don't understand how that eliminates interest
9 rate risk. Because even -- even if you don't sell the
10 bond, or the market value goes up or down, you know
11 that the value of the bond has gone up or down.
12 And as interest rates, change your
13 income streams either become more or less attractive
14 from holding that bond, whether you sell it or not.
15 So you always -- whether you sell the bond or not, you
16 have price risk and you have reinvestment rate risk,
17 right.
18 And the price risk occurs, you know, if
19 rates go up, the bond price goes down. On the other
20 hand, if -- if rates go up your reinvestment income
21 goes up on those bonds, on the coupons you receive on
22 them. So I'm not quite sure why -- why that would
23 take the risk out of it, because that -- that could
24 alm -- that statement could almost apply to all the
25 public bonds too, if -- if MPI has no intention of

1 selling them over that short-term period.
2 But the fact that there is or isn't a
3 market price, I wouldn't say is not relevant, but it's
4 -- it's not the overriding factor in -- in this
5 interest rate risk scenario.
6 MR. RAYMOND OAKES: And would -- would
7 your answer be different with respect to equities?
8 Would you agree with me that there's little or no
9 interest rate forecast risk if the portfolio was
10 equities?
11 DR. SEAN CLEARY: I would say there
12 would be huge interest forecast risk with equities
13 along with a bunch of other risks not related to
14 interest rates. All you have to do is look at the
15 stock markets today and the movements that are being
16 caused by, you know, the way that Janet Yellen
17 sneezes, or whatever. It's -- everyone is trying to
18 predict what's going on with interest rates.
19 So you can't separate equity markets
20 and the fixed-income markets, because there's a big
21 overlap there.
22 MR. RAYMOND OAKES: Your test --
23 DR. SEAN CLEARY: And -- and as
24 mentioned, equities, then you open up a whole bunch of
25 other risks in there that are not privy to high-

1 quality bonds.

2 MR. RAYMOND OAKES: Your testimony

3 earlier today, you said that the accepted return on

4 investment for equities would be 8 percent.

5 Can you confirm that, sir?

6 DR. SEAN CLEARY: That would be what I

7 would refer to as the required return on the overall

8 stock market over a long period of time. So the

9 problem is you get to that 8 percent over a ten (10)

10 year period by having returns of minus 22 percent,

11 plus 27 percent, plus 8 percent the odd year, you

12 know, minus two (2), plus four (4).

13 So it's very -- very risky, and that's

14 -- that's why we require a higher rate of return on

15 the stocks than we do on the bonds to reflect that

16 risk.

17 MR. RAYMOND OAKES: And what

18 percentage of return on investment would you use on

19 that same long-term period for bonds?

20 DR. SEAN CLEARY: Ten-year bonds?

21 MR. RAYMOND OAKES: Yes.

22 DR. SEAN CLEARY: Difficult question.

23 Today I would say, over the short term, very difficult

24 to -- to even get the 1.15 percent yield on them

25 today, although it's definitely doable if you hold

them to maturity.

Of course, over the long run, do I think that that's the -- the return on 10-year bonds? What was the evidence I was suggesting, 2.6 percent real return going forward maybe?

But that's going to be after -- in order to get those -- those returns on -- on bonds, we would have to have rates at a more normal level. And so I would say, in the short term, very low return on -- on bonds. Once rates normalize, maybe we're going back to 3, 3 1/2 percent nominal returns.

MR. RAYMOND OAKES: Those are all my questions, Mr. Chairman. Thank you.

THE CHAIRPERSON: Thank you.

Mr. Williams...?

MR. BYRON WILLIAMS: Yes. Could we stand down for about two minutes? I just want to have a brief conversation --

THE CHAIRPERSON: Certainly.

MR. BYRON WILLIAMS: -- with My Friend.

THE CHAIRPERSON: Yeah.

(BRIEF PAUSE)

1 MR. BYRON WILLIAMS: Thank you, Mr.
2 Chairperson. And I -- we just stood down because I
3 just wanted to make sure that Our Friends were
4 comfortable.
5 If I could, there is an excerpt from an
6 October 7th, 2016, report of the Alberta Utilities
7 Commission. If that might be marked as CAC Exhibit
8 21.
9
10 --- EXHIBIT NO. CAC-21: Excerpt from Alberta
11 Utilities Commission
12 report dated October 7,
13 2016
14
15 MR. BYRON WILLIAMS: And also there's
16 a very light and interesting read titled 'Performances
17 of Survey Forecasts by Professional Analysts: Did the
18 European Debt Crisis Make It Harder or Perhaps Even
19 Easier?' which we'd ask be marked as CAC Exhibit 22.
20
21 --- EXHIBIT NO. CAC-22: Report titled
22 'Performances of Survey
23 Forecasts by Professional
24 Analysts: Did the
25 European Debt Crisis Make

1 It Harder or Perhaps Even
2 Easier?'
3
4 MR. BYRON WILLIAMS: And I think MPI's
5 done me the great courtesy of distributing that for
6 me. I do thank them for their -- their courtesy, and
7 the Board secretary as well.
8
9 CROSS-EXAMINATION BY MR. BYRON WILLIAMS:
10 MR. BYRON WILLIAMS: Dr. Cleary,
11 you've been busy on the regulatory front in 2016,
12 filing written evidence in Newfoundland, Alberta, and
13 Manitoba, agreed?
14 DR. SEAN CLEARY: Yes, that's correct.
15 MR. BYRON WILLIAMS: And you provided
16 written evidence to the Newfoundland Board of
17 Commissioners Public Utilities on or about February
18 17th, 2016, on the subject of capital structure and
19 related issues?
20 DR. SEAN CLEARY: That sounds about
21 the right date, yes.
22 MR. BYRON WILLIAMS: And recognizing
23 that this was not a cost-of-capital proceeding and
24 that you were not providing evidence related to a
25 capital asset pricing model, in terms of interest rate

1 levels in -- before the Newfoundland Board of
2 Commissioners, it was your view that it would be
3 reasonable to assume that bond yields would increase
4 slowly in the coming months?
5 DR. SEAN CLEARY: And you --
6 MR. BYRON WILLIAMS: I've got a
7 reference to your evidence.
8 DR. SEAN CLEARY: You have a
9 reference?
10 MR. BYRON WILLIAMS: Yes, from page 12
11 of your evidence.
12 DR. SEAN CLEARY: That seems pretty
13 consistent with my views.
14 MR. BYRON WILLIAMS: It's -- it's from
15 page 12 of your evidence in the Newfoundland
16 proceedings.
17 DR. SEAN CLEARY: In the Newfoundland
18 -- okay.
19 MR. BYRON WILLIAMS: And I can share
20 this. I -- I thought you would have had that
21 memorized, sir. I'm joking now, but -- and in
22 presenting that view, you noted that this seemed to be
23 the consensus view of most economists in January of
24 2016?
25 DR. SEAN CLEARY: Yes, that's correct.

1 MR. BYRON WILLIAMS: And you filed
2 written evidence on or about March 23rd, 2016, in an
3 Alberta Utilities Commission hearing related to the
4 generic cost of capital for the 2016/'17 year, sir?
5 DR. SEAN CLEARY: That's correct.
6 MR. BYRON WILLIAMS: And without
7 asking you to elaborate, I'll ask you to confirm that
8 in estimating the allowed return on equity, or ROE,
9 for the average Alberta utility one (1) mechanism you
10 employed was the capital asset pricing model
11 estimates, agreed?
12 DR. SEAN CLEARY: That's correct.
13 MR. BYRON WILLIAMS: And to perform
14 that calculation the risk-free rate, or RF, is one (1)
15 element of that calculation, agreed?
16 DR. SEAN CLEARY: That's correct.
17 Normally, the -- the thirty (30) day Canada bond
18 yield.
19 MR. BYRON WILLIAMS: And certainly,
20 sir, for the purposes of the cost of capital estimates
21 of the risk-free rate in that proceeding, the lower
22 bond of your estimate was based on the actual
23 prevailing long-term government yield with a very
24 slight upward rounding adjustment.
25 Would that be fair?

1 DR. SEAN CLEARY: Yeah, I think it was
2 1.96 percent, so I rounded it to 2.0, yeah. That was
3 my lower bound, the existing rate.
4 MR. BYRON WILLIAMS: And the upper
5 bound of your estimate was based on the consensus
6 economic forecast for government ten (10) year yields
7 with an adjustment for the long-term average spread
8 between ten (10) and thirty (30) year bonds, agreed?
9 DR. SEAN CLEARY: Yes. I added fifty
10 (50) basis point to it. And I think that gave me an
11 upper limit of 2.6 percent.
12 MR. BYRON WILLIAMS: And you
13 recommended using the consensus forecast as the upper
14 bound and the actual prevailing long-term as the lower
15 bound, agreed --
16 DR. SEAN CLEARY: That's --
17 MR. BYRON WILLIAMS: -- with those
18 adjustments?
19 DR. SEAN CLEARY: That's correct. And
20 then I used the midpoint of 2.3 percent as my best
21 guess, similar to the 50/50 approach would apply.
22 MR. BYRON WILLIAMS: And the word you
23 used was 'best guess' now, sir?
24 DR. SEAN CLEARY: Best estimate.
25 MR. BYRON WILLIAMS: Oh. And in that

1 proceeding there were a number of other witnesses,
2 including Dr. Bente, B-E-N-T-E, Villadsen, V-I-L-L-A-
3 D-S-E-N. Is that correct?
4 DR. SEAN CLEARY: That's correct.
5 MR. BYRON WILLIAMS: And without
6 asking you to elaborate I'll ask you to confirm that
7 you reviewed the evidence submitted by Dr. Villadsen
8 in the course of your hearing prepar -- preparation
9 and presentation, agreed?
10 DR. SEAN CLEARY: I would have
11 reviewed her direct evidence. And I seem to recall it
12 was about a hundred and forty (140) pages, about an
13 eighty (80) page rebuttal and over a thousand pages of
14 appendices, so -- so I reviewed the direct stuff, you
15 know, to the best of my ability.
16 MR. BYRON WILLIAMS: Right. You did
17 not memorize the thousand pages and its appendices?
18 DR. SEAN CLEARY: I'm sorry. I did,
19 actually, I just forgot on the way here.
20 MR. BYRON WILLIAMS: Yeah, that's
21 understandable. Now, in your PowerPoint presentation
22 this morning you cited the evidence that you filed in
23 the recent 2016 AUC proceeding, agreed?
24 DR. SEAN CLEARY: Yes, that's correct.
25 MR. BYRON WILLIAMS: And you're aware

1 that the AUC issued a decision with regard to the
2 generic cost of capital on October 7th, 2016?
3 DR. SEAN CLEARY: Yes.
4 MR. BYRON WILLIAMS: And that -- I
5 take it you were aware of that fact before today, sir?
6 DR. SEAN CLEARY: Aware that the
7 decision was issued October 7th? Yes, I was.
8 MR. BYRON WILLIAMS: Okay. And so you
9 have at least a high level familiarity with -- with
10 the results as they relate to the risk-free rate, to
11 the commission studies?
12 DR. SEAN CLEARY: To -- to -- I read
13 over the document. And they do not exactly specific
14 what risk-free rate they use, actually.
15 MR. BYRON WILLIAMS: So just so we
16 understand, sir, I'll -- I'll direct your attention to
17 CAC Exhibit 21. And, Diana, if we could go to round
18 about paragraphs 131 and 132 under 'Commission
19 findings,' it's your understanding, sir that with
20 regard -- sorry, I'll let you get there.
21 Do you have that, sir?
22 DR. SEAN CLEARY: Yes. Sorry, yes, I
23 do.
24 MR. BYRON WILLIAMS: It's your
25 understanding, sir, that with regard to the risk-free

1 rate, the Commission findings are found at paragraphs
2 131 through 133. Agreed?
3 DR. SEAN CLEARY: That's what they
4 state as their findings.
5 MR. BYRON WILLIAMS: Okay. And
6 directing your attention -- Diana, if you can pull one
7 thirty-two (132) and one thirty-three (133) on the
8 same slide, that's -- if not, that's fine. Just leave
9 -- let's stop right -- that's -- Dr. Cleary, can you
10 read that or is that -- you can see that okay?
11 DR. SEAN CLEARY: Yeah, I have the
12 printed copy, as well --
13 MR. BYRON WILLIAMS: Okay, super.
14 DR. SEAN CLEARY: -- thank you.
15 MR. BYRON WILLIAMS: In terms of its
16 findings, the -- the Commission observed that experts
17 had formed an expectation supported by Consensus
18 forecasts that interest rates were likely to rise by
19 the end of the 2016/'17 period.
20 Do you see that characterization of the
21 evidence, sir?
22 DR. SEAN CLEARY: Sorry, could you
23 just repeat what you -- what you said?
24 MR. BYRON WILLIAMS: The -- the
25 Commission's findings characterize the evidence as

1 experts in the proceeding forming an expectation
2 supported by Consensus forecasts that interest rates
3 were likely to rise by the end of '16/'17. Agreed?
4 DR. SEAN CLEARY: Yes. And -- and
5 again I -- I noticed that they do not state their own
6 opinion on this. They're just summarizing the
7 expert's opinion.
8 MR. BYRON WILLIAMS: And they did
9 observe differences on the speed and magnitude of any
10 interest rate increase in the short term.
11 Would that be fair?
12 DR. SEAN CLEARY: Where --
13 MR. BYRON WILLIAMS: In terms --
14 DR. SEAN CLEARY: -- where do you see
15 that?
16 MR. BYRON WILLIAMS: At the bottom of
17 paragraph 132, sir.
18 DR. SEAN CLEARY: Oh, yes.
19 MR. BYRON WILLIAMS: And in terms of -
20 - under its findings the Board determined that general
21 expectations are that interest rates will rise during
22 the '16/'17 period.
23 Would that be fair, sir, directing your
24 attention to paragraph 133?
25 DR. SEAN CLEARY: Yes. And then they

1 say:

2 "Again uncertainty remains regarding

3 the speed and magnitude of the

4 increases."

5 Which is pretty much echoing what --

6 what I was saying earlier today.

7 MR. BYRON WILLIAMS: And it's

8 certainly not endorsing a Naive forecast, sir?

9 DR. SEAN CLEARY: It -- to me it does

10 not endor -- and I looked through the entire document

11 because obviously I'm -- I'm used to reading the AUC's

12 decisions, and it's very conspicuous by its absence

13 that they do not -- even when they summarize the CAPM

14 results later on in the report, that they do not, as

15 they normally do, say which range they use for the

16 risk-free rate.

17 So -- so I don't know that they're use

18 -- I don't exactly what they're doing because they're

19 just -- they did not reveal the details as they

20 normally do.

21 MR. BYRON WILLIAMS: A general

22 expectation that interest rates will rise during the

23 '16/'17 period would be inconsistent with the

24 expectation of the Naive -- Naive forecast. Agreed?

25 DR. SEAN CLEARY: Yes.

1 MR. BYRON WILLIAMS: Sir, directing
2 your attention back to paragraph 126 of this report,
3 Diana, if we could go there, and I'll give you a
4 second, Dr. Cleary --
5 DR. SEAN CLEARY: Did you say page 26?
6 MR. BYRON WILLIAMS: Sorry, I -- I
7 probably mumbled. I'm referring to paragraph 126.
8 DR. SEAN CLEARY: Okay. Sorry. No,
9 you didn't. I -- I just missed it. Thank you.
10 MR. BYRON WILLIAMS: And I'll just
11 give you a second to observe that -- or review that
12 quote, the Board reporting the comments of Dr.
13 Villadsen.
14
15 (BRIEF PAUSE)
16
17 MR. BYRON WILLIAMS: You've had --
18 DR. SEAN CLEARY: Yeah.
19 MR. BYRON WILLIAMS: -- you've had a
20 chance --
21 DR. SEAN CLEARY: Yes. Yes.
22 MR. BYRON WILLIAMS: -- to look at it,
23 sir? So you -- you see here a bit of a dispute
24 captured in this paragraph and elsewhere in the
25 decision between Dr. Villadsen and -- and the other

1 witness in terms of whether Consensus forecasts
2 exhibit a consistent systematic upward bias. Agreed?
3 DR. SEAN CLEARY: Yes, because Mr.
4 Thygesen noted that there had been a consistent upward
5 bias, and also looked at -- looked at the forward
6 curve and determined that the -- the current forecasts
7 were also upward bias.
8 MR. BYRON WILLIAMS: And the point I
9 want to draw to your attention, sir, is on the second
10 line of the indented quote where Dr. Villadsen is
11 providing her observation of the -- the record and
12 suggesting that academic analysis of economic
13 forecasts of government bonds yields more generally
14 have found that any "bias" in forecasts is not
15 consistently upward or downward, but rather toward the
16 status quo.
17 Do you see that reference, sir?
18 DR. SEAN CLEARY: Yeah, I see her ref
19 -- I can't recall what she was referencing, to be
20 quite honest, but --
21 MR. BYRON WILLIAMS: I do have the --
22 sir, if it would help, and if you rec -- need to
23 refresh your memory, I could provide you with the
24 excerpt from her written rebuttal that -- that it
25 enables you to.

1 Would that assist you, sir?
2 DR. SEAN CLEARY: No, I -- I rea -- it
3 reads fine to me now. I --
4 MR. BYRON WILLIAMS: In making that
5 assertion, sir, would it be fair to suggest that Dr.
6 Villadsen was relying on the work of Spiwoks, S-P-I-W-
7 O-K-S, in particular, the status quo bias of bond
8 market analysis?
9 DR. SEAN CLEARY: I -- honestly, I
10 can't recall.
11 MR. BYRON WILLIAMS: With --
12 DR. SEAN CLEARY: Because I -- I know
13 I received the email last night just --
14 MR. BYRON WILLIAMS: But, sir, this --
15 I'm referring to --
16 DR. SEAN CLEARY: But I -- I never
17 read that paper before.
18 MR. BYRON WILLIAMS: I'm referring to
19 her evidence.
20 DR. SEAN CLEARY: I --
21 MR. BYRON WILLIAMS: You did read her
22 rebuttal evidence?
23 DR. SEAN CLEARY: I didn't read that
24 paper.
25 MR. BYRON WILLIAMS: You did not read

her rebuttal evidence?

DR. SEAN CLEARY: I -- I've never read that paper that -- that you're referring to, because now -- it's just coming to me now that that was mentioned in an email about 9:00 last night and -- and then when I saw it, I -- I have not seen the paper.

MR. BYRON WILLIAMS: Okay. And just --

DR. SEAN CLEARY: And I did -- I did have time to read the abstract of that paper this morning, so I had about ten minutes to look over it.

MR. BYRON WILLIAMS: That's fair.

What I'm asking you though, sir, is -- I'm suggesting to you that her conclusions in terms of the literature were formed in part by that paper and that that was made clear in her rebuttal evidence and you have no recollection of that?

DR. SEAN CLEARY: That was several months ago and I was -- to me the risk-free rate was not the part we were focussing on in terms of her rebuttal. It was her use of various methods and adjusting datas up and several other things that we felt more pressing to address as the issue.

So I didn't think the -- the interest rate RF was the big issue, because of all the inputs into the CAPM it's the easiest one to input.

1 MR. BYRON WILLIAMS: Okay. And -- and
2 just -- I'm asking you if you would like me to refresh
3 your memory by giving you an excerpt from her
4 rebuttal, simply for the proposition that she relied
5 on Spiwoks' work?
6 DR. SEAN CLEARY: That's not
7 necessary.
8 MR. BYRON WILLIAMS: Okay.
9
10 (BRIEF PAUSE)
11
12 MR. BYRON WILLIAMS: Sir, in terms of
13 your written evidence for the Manitoba process, when
14 were you retained? On or about.
15 DR. SEAN CLEARY: July, I think.
16 Sometime in July, or -- I can't remember.
17 MR. BYRON WILLIAMS: That's fair
18 enough.
19 DR. SEAN CLEARY: In the summer
20 sometime.
21 MR. BYRON WILLIAMS: And do you have a
22 ballpark estimate, sir, of how many hours you spent on
23 that report? Less than fifty (50)?
24 DR. SEAN CLEARY: Less than fifty
25 (50), yes, more than -- more than twenty (20).

1 MR. BYRON WILLIAMS: And that report
2 was shared with the Public Utilities Board and
3 Intervenors, I'll suggest to you, on or about August
4 15th, 2016, in preparation for the workshop?
5 DR. SEAN CLEARY: That sounds about --
6 MR. BYRON WILLIAMS: Yeah.
7 DR. SEAN CLEARY: -- the correct
8 timeline.
9 MR. BYRON WILLIAMS: Now, in that
10 report, sir, you cite two academic reference, I'll
11 suggest to you, Spiwoks, S-P-I-W-O-K-S from 2008,
12 Spiwoks et al., and Mitchell et al., from 2005.
13 Would that be fair?
14 DR. SEAN CLEARY: That sounds correct,
15 yes. Yes, that's correct.
16 MR. BYRON WILLIAMS: And you are
17 certainly not suggesting that those two (2) articles
18 represented an exhaustive review of the literature?
19 DR. SEAN CLEARY: No, but it was
20 interesting when I did do a review that there was not
21 many papers that showed up.
22 MR. BYRON WILLIAMS: You are not
23 suggesting, sir, that there have not been papers
24 published on the subject area since 2008?
25 DR. SEAN CLEARY: No, I'm not

1 suggesting that at all. I'm just telling you that --
2 that when I did a search on the topic and we had --
3 came up with these ones -- or I should say I came up
4 with these ones, didn't come up with much else,
5 anything else.
6 And -- and these, to be quite honest,
7 aren't in the top journals in finance. And -- and I'm
8 familiar with the materials that are in the top
9 journals in finance, say the top ten (10) or twenty
10 (20). And it actually struck me that it's very
11 interesting that there's not many research papers on
12 this topic.
13 MR. BYRON WILLIAMS: And of course,
14 sir, you've acknowledged that SPIWOKS, S-P-I-W-O-K-S,
15 had published in this field since 2008?
16 DR. SEAN CLEARY: I -- I notice the --
17 the paper that I cited, obviously, and then was sent
18 yesterday afternoon another paper with SPIWOKS as a
19 co-author on it.
20 MR. BYRON WILLIAMS: And that would be
21 'The Status Quo Bias of Bond Market Analysts'?
22 DR. SEAN CLEARY: Yeah. So I -- I was
23 not familiar with that one before. Again, because I
24 don't even -- I don't even think that one's published
25 yet. It's a working paper from 2011, so it's hard to

1 -- to find these ones unless you're looking very hard
2 for them.
3 MR. BYRON WILLIAMS: Sir, subject to -
4 - to check, I'll suggest to you that it's published in
5 the Journal of Applied Finance and Banking.
6 Would you accept that, subject to
7 check? Michael?
8 DR. SEAN CLEARY: Can we make sure
9 that we're talking about the same paper? Because he
10 seems to have about four (4) papers using the same
11 data and coming up to similar conclusions. 'Trapped
12 in the Here and Now,' is that the one you're talking
13 about? That was one (1) of the ones I received
14 yesterday, 2011.
15 Oh, you're talking about the status quo
16 of the bond market.
17 MR. BYRON WILLIAMS: Yes, the same one
18 that was filed before the Alberta Utilities -- or
19 referenced before the Alberta Utilities Commission,
20 sir. You see there the -- the reference to its
21 publish? That's okay, sir. We'll -- we'll --
22 DR. SEAN CLEARY: No, no. I believe
23 you. It's Journal of Applied Finance and Banking.
24 Okay. That's -- yeah. That's a different one than
25 the one I was referring to, which is very similar, I

1 might add. So -- and that journal, I'm not really
2 familiar with it.
3 MR. BYRON WILLIAMS: Now, sir, in
4 terms of the term "test for statistical significance,"
5 generally speaking they're used to address the
6 question: What is the probability that we think a
7 relationship between two (2) variables is really just
8 a chance occurrence?
9 Would that be fair?
10 DR. SEAN CLEARY: Sorry, could --
11 could you just repeat that?
12 MR. BYRON WILLIAMS: Sure. Do you
13 need a moment, sir?
14 DR. SEAN CLEARY: Sorry. I thought I
15 had that paper you were referring to, so I was just
16 looking for it. I apol -- I apologize.
17 MR. BYRON WILLIAMS: I don't really
18 think it's necessary. It's -- but I can certainly
19 give a copy to Mr. Triggs if that helps. But I don't
20 think we need to go there right now, sir.
21 DR. SEAN CLEARY: I found it. Sorry.
22 MR. BYRON WILLIAMS: Okay.
23 DR. SEAN CLEARY: Sorry. It was --
24 yeah, I -- I do have it.
25 MR. BYRON WILLIAMS: Yeah. Fair

1 enough.

2 DR. SEAN CLEARY: And the version -- I

3 guess that was my confusion because the version I have

4 shows a working paper.

5 MR. BYRON WILLIAMS: Sir, this is a

6 simple question. Tests for statistical significance

7 are used to address the question: What is the

8 probability that we think a relationship between two

9 (2) variables is really just a chance occurrence;

10 agreed?

11 DR. SEAN CLEARY: Tests of statistical

12 significance?

13 MR. BYRON WILLIAMS: You're familiar

14 with that term, are you, sir?

15 DR. SEAN CLEARY: Oh. Well, it can be

16 -- that's -- that's why I'm trying to narrow it down

17 because there's several tests of statistical

18 significance --

19 MR. BYRON WILLIAMS: I'm speaking --

20 DR. SEAN CLEARY: -- for --

21 MR. BYRON WILLIAMS: -- in

22 generalities, sir.

23 DR. SEAN CLEARY: In general --

24 MR. BYRON WILLIAMS: The purpose of a

25 test for statistical significance --

1 DR. SEAN CLEARY: One (1) purpose of a
2 test for statistical significance is a better way of
3 phrasing it. So that -- yes, you could test if -- if
4 a relationship is -- what did you say -- by chance?
5 MR. BYRON WILLIAMS: Yes. Whether
6 it's random or not, sir.
7 DR. SEAN CLEARY: Sure. Yeah. Sure,
8 that's one (1) use, one (1) test of statistical
9 significance.
10 MR. BYRON WILLIAMS: And we -- I want
11 to, sir, be very clear now. We're going back to the
12 authority you cited, Spiwok (sic) 2008, okay, just for
13 a second.
14 DR. SEAN CLEARY: Right.
15 MR. BYRON WILLIAMS: In that work,
16 comparing the forecast time series with the time
17 series of the Naive forecasts, they employed Thiel's,
18 T-H-I-E-L apostrophe 'S', in a quality con --
19 coefficient in testing, agreed? Page 6 of your
20 report, sir, if you're looking for it.
21 DR. SEAN CLEARY: Okay. Agree, yes.
22 MR. BYRON WILLIAMS: And in terms of
23 Mitchell 2005, sir, the other authority you cited,
24 I'll suggest to you that they tested both for
25 unbiasedness and predictive ability.

1 Would that be fair, sir?
2 DR. SEAN CLEARY: Yes.
3 MR. BYRON WILLIAMS: And, sir, in your
4 report from August of 2016, you did not report on any
5 statistical tests of significance, agreed?
6 DR. SEAN CLEARY: No, I did not. I
7 just -- I just measured the forecasting error.
8 MR. BYRON WILLIAMS: And specifically
9 with regard to forecasts made in temporal proximity to
10 the financial crisis and early part of the recession,
11 you did not test for structural breaks to evidence for
12 crisis-related changes and corresponding forecast
13 errors. You did not test for structural breaks, sir?
14 DR. SEAN CLEARY: No, I did not.
15
16 (BRIEF PAUSE)
17
18 MR. BYRON WILLIAMS: Going, sir, to
19 the general body of work of Spiwok, S-P-I-W-O-K,
20 whether it's '08 or 2011, you'll agree that he has
21 suggested that there is a robust tendency towards a
22 status quo bias on the part of forecasters?
23 DR. SEAN CLEARY: So the paper that I
24 read when I got to my room last night, the 2011 paper
25 by Spiwoks et al., discusses that. And, basically,

1 the -- the other paper that you just mentioned, the
2 status quo bias of bond market analysis, uses the
3 exact same dataset, and basically just uses a
4 different statistical test, from what I can see, to
5 come to the same conclusion.
6 So the two (2) papers using the same
7 dataset comes to the same conclusion just using
8 different statistical tests. And so what he's
9 suggesting in here is that forecasts -- forecasts tend
10 to be related to recent levels of interest rates,
11 which seems quite obvious to me that that would be a
12 good starting point and, in fact, is what -- what I'm
13 forecasting.
14 The -- the 2011 paper, since I haven't
15 read the status quo of the bond markets, just -- like
16 I said, just briefly looked at what the dataset was,
17 and it was the same --
18 MR. BYRON WILLIAMS: So, sir, just to
19 --
20 DR. SEAN CLEARY: -- is it --
21 MR. BYRON WILLIAMS: -- to my question
22 though. Is the general premise of Spiwok -- you read
23 his 2008 report as well. Is the general premise that
24 there is a robust tendency towards a status quo bias
25 towards recent forecasts -- or recent -- would that be

1 fair, sir?

2 That's his conclusion whether you agree

3 with it or not.

4 DR. SEAN CLEARY: Yes, that is his

5 conclusion. And I don't agree with some of the

6 things, the way he's interpreted things.

7 MR. BYRON WILLIAMS: Okay. Fair

8 enough.

9 DR. SEAN CLEARY: Although I will say

10 there's a lot of statements in there that would

11 support what I'm saying, is -- which is that they have

12 -- and I will also note about both of these papers,

13 that he is not -- in these papers does not actually

14 test the accuracy of these forecasts. There's no

15 formal tests of the accuracy of the forecast as there

16 is in the 2008 paper.

17 The -- both of these papers seem to be

18 forecast -- trying to be positioned in what we call

19 the behavioural finance literature by saying there's

20 reasons why they will be influenced by the recent ten

21 (10) year yields, and also some of the things that I

22 said in August. That there's reasons why they're

23 going to cluster together the 2011 paper anyways. You

24 don't want to be too far from the crowd.

25 And -- and under those scenarios that

1 he's envisioning, a useful starting point is the
2 existing rate.
3 MR. BYRON WILLIAMS: Sir, you also
4 should have beside you CAC Exhibit 22, the glibly
5 named 'Performance of Survey Forecast' paper by Kunze,
6 K-U-N-Z-E.
7 DR. SEAN CLEARY: Oh, yeah. Just --
8 just one (1) moment. I do have that somewhere.
9 MR. BYRON WILLIAMS: And I may have
10 been more timely in sharing that with you, sir.
11 You've had an opportunity to review that paper?
12 DR. SEAN CLEARY: Yeah, I had -- I got
13 that when I got to my room yesterday, as well, so.
14 Kunze -- Kunze and Gruppe, right?
15 MR. BYRON WILLIAMS: Yes. And you
16 pronounce the name so much better.
17 DR. SEAN CLEARY: I -- I don't know if
18 I did or not.
19 MR. BYRON WILLIAMS: It sounded good.
20 It sounded like it had a real German flare to it, sir.
21 What this paper attempts to do, I 'll suggest to you,
22 is evaluate the performance of survey forecasts for
23 the three (3) month rates in the Eurozone performed by
24 financial professionals. Agreed?
25 DR. SEAN CLEARY: Yes. I think the

1 three (3) month Euribor is what they look at.
2 MR. BYRON WILLIAMS: And they test for
3 structural breaks for crises-related changes, and the
4 corresponding forecast errors. Agreed?
5 DR. SEAN CLEARY: Yes.
6 MR. BYRON WILLIAMS: And this paper is
7 focussed on the performance of professional interest
8 rate forecasters before and during the financial
9 crisis. Agreed?
10
11 (BRIEF PAUSE)
12
13 MR. BYRON WILLIAMS: It's right in the
14 abstract, sir, if you're --
15 DR. SEAN CLEARY: Yes, because 1999 to
16 2013 -- or, sorry. Yes --
17 MR. BYRON WILLIAMS: Okay.
18 DR. SEAN CLEARY: Sorry, I just want
19 to clarify. I do know that the papers by Spiwoks, the
20 sample period ended in like '09. So that was just,
21 you know, kind of at the end of the crisis in North
22 American, the start in Europe, so.
23 MR. BYRON WILLIAMS: Sir, noting --
24 noting the time, I just want to draw you to the
25 conclusions of this paper at page 137 under number 6.

1 (BRIEF PAUSE)

2

3 DR. SEAN CLEARY: Yes, I'm -- I'm with

4 you.

5 MR. BYRON WILLIAMS: And -- and in

6 particular the last two (2) lines of -- three (3)

7 lines of the conclusion. One observation that at

8 least these authors seem to make as -- that it would

9 be -- a noteworthy result of their findings was that

10 relying on a simple Naive forecast would be major

11 mistake. Agreed?

12 DR. SEAN CLEARY: Yeah, that's exactly

13 what I was saying earlier, as well.

14 MR. BYRON WILLIAMS: And they also

15 suggest that professional forecasters might have

16 earned their keep during the financial crisis. And

17 you may not agree with them on that point?

18 DR. SEAN CLEARY: Well, I -- I would

19 like to say that I -- I would like to agree with that

20 statement in general, even though the briefs in

21 evidence suggest they didn't. So I would like to

22 believe that they do earn their keep.

23 MR. BYRON WILLIAMS: And, sir --

24 DR. SEAN CLEARY: There's useful

25 information in it, is a polite way of saying it.

1 MR. BYRON WILLIAMS: Thank you. Sir,
2 just in terms of your general literature review, and
3 if you're not familiar with this source you just tell
4 me, okay?
5 Are you aware whether or not there was
6 research by Adolfson, A-D-O-L-F-S-O-N, from 2005
7 addressing extrapolating the current level of interest
8 rates into the future and whether that would be
9 economically meaningful.
10 Is that a study that you came across in
11 your work, sir?
12 DR. SEAN CLEARY: I'm not familiar
13 with that.
14 MR. BYRON WILLIAMS: Mr. Chair, those
15 are my questions. Thank you.
16 THE CHAIRPERSON: Thank you. Does the
17 panel have any questions?
18
19 (BRIEF PAUSE)
20
21 THE CHAIRPERSON: Mr. Ghikas, did you
22 have any re-examination?
23 MR. MATT GHIKAS: I do not, Mr.
24 Chairman.
25 THE CHAIRPERSON: Thank you. Well,

1 Dr. Cleary, thank you very much for coming here today.
2 We'll adjourn for the day. No, sorry, I'm -- I'm told
3 not, I -- what do we have?
4 MS. KATHLEEN MCCANDLESS: We have Mr.
5 Johnston and Ms. Reichert back --
6 THE CHAIRPERSON: Oh, correct, yes.
7 MS. KATHLEEN MCCANDLESS: -- this
8 afternoon.
9 THE CHAIRPERSON: So we'll be back --
10 we'll -- we'll break for an hour. Thank you.
11
12 (PANEL STANDS DOWN)
13
14 --- Upon recessing at 12:03 p.m.
15 --- Upon resuming at 1:03 p.m.
16
17 THE CHAIRPERSON: Okay. Ms.
18 McCandless...?
19
20 MPI PANEL 1 CONTINUED:
21
22 HEATHER REICHERT, Previously Sworn
23 LUKE JOHNSTON, Previously Sworn
24
25 CONTINUED CROSS-EXAMINATION BY MS. KATHLEEN

1 MCCANDLESS:

2 MS. KATHLEEN MCCANDLESS: Welcome

3 back, Ms. Reichert and Mr. Johnston. I have a few

4 questions for you this afternoon for clean-up cross-

5 examination and questions arising from answer to

6 undertakings that have been provided.

7 So my first area of questioning is in

8 respect of Undertaking number 1, but I'm going to take

9 you back through some of the filing before my

10 questions on that undertaking.

11 So, Diana, could you please pull up

12 from the filing AI7, the actuary report of October 31,

13 2015, page 42.

14 And this table documents the derivation

15 of the valuation discount rates before margin. And

16 towards the bottom of the screen we see that there's

17 3.42 percent for non-indexed lines and 1.39 percent

18 for indexed lines.

19 MR. LUKE JOHNSTON: Correct.

20 MS. KATHLEEN MCCANDLESS: And that's

21 for the valuation as at 31 October 2015, correct?

22 MR. LUKE JOHNSTON: That's correct.

23 MS. KATHLEEN MCCANDLESS: Could you

24 please walk us through the build-up of the 3.42

25 percent discount rate, including a description of the

1 basis of derivation of a duration-weighted yield --
2 for example, 3.17 percent for government bonds?
3 MR. LUKE JOHNSTON: Okay. So we're
4 taking -- we're matching our claims liabilities to the
5 fixed income portfolio, and we're using the yield on
6 that portfolio as the basis for calculating the
7 present value of the claims.
8 As you can see in the table, there's
9 four bond categories, the largest being the government
10 bond category and then the non-marketable or MUSH bond
11 category with corporate bonds and floating-rate notes
12 being a smaller percentage.
13 Originally when we started performing
14 this calculation, we would just take the weighted
15 average yield, being the -- the weights being the
16 dollar value and the yield being the -- the yield in
17 the second column. What we realized, though, is that
18 we had to take into account the duration of -- of the
19 bonds in that calculation, so we take a duration-
20 weighted yield.
21 So what that means is we look at the
22 dollar value times the duration times the yield as the
23 weight, the reas -- reason being, as a simplistic
24 example, if you bought a bunch of short-term bonds and
25 put them into this portfolio with a duration of one

1 month, you wouldn't want the discount rate to be
2 pulled down significantly from that purchase. So the
3 duration-weighting exercise gives more weight to the -
4 - based on the -- the term of the bonds.
5 So that -- as best I can without
6 writing a formula down for you, that's the -- that's
7 how we determine that duration-adjusted yield.
8 MS. KATHLEEN MCCANDLESS: Thank you.
9 Diana, could you please pull up
10 investment -- from the filing investment 3, Table 33
11 -- 3.3.1.3?
12
13 (BRIEF PAUSE)
14
15 MS. KATHLEEN MCCANDLESS: And if we
16 scroll down, as at October 15 -- or sorry, 2015, this
17 table shows the marketable bond portfolio yield to
18 maturity was 2.96 percent?
19 MR. LUKE JOHNSTON: Oh, as of October?
20 Yes, thank you. Yeah.
21 MS. KATHLEEN MCCANDLESS: And that's
22 representing a 1.42 percentage point spread over the
23 corresponding Government of Canada ten (10) year bond
24 yield of 1.54 percent. Agreed?
25 MR. LUKE JOHNSTON: That's -- agree.

1 MS. KATHLEEN MCCANDLESS: How do we
2 properly relate the 2.96 percent marketable bond
3 portfolio yield to maturity at October 2015 to the
4 work up of the valuation discount rates for the
5 October 2015 valuation?
6 MR. LUKE JOHNSTON: I can take that as
7 an undertaking. It would be hard for me to explain
8 that in words. The two nine six (2.96) would -- I
9 believe this is just marketable bonds so that would
10 exclude the non-marketable portfolio in that -- in
11 that number.
12 So the undertaking would be to show how
13 the two point nine six (2.96) is derived from the
14 marketable bonds.
15 MS. KATHLEEN MCCANDLESS: Thank you.
16
17 --- UNDERTAKING NO. 35: MPI to show how the 2.96
18 percent is derived from
19 the marketable bonds
20
21 CONTINUED BY MS. KATHLEEN MCCANDLESS:
22 MS. KATHLEEN MCCANDLESS: While we
23 have this table in front of us, we might also note
24 that at February 2016 the marketable bond portfolio
25 yield to maturity was 2.85 percent representing a 1.66

1 percentage point spread over the corresponding
2 Government of Canada ten (10) year bond yield of 1.19
3 percent. Agreed?
4 MR. LUKE JOHNSTON: Agreed.
5 MS. KATHLEEN MCCANDLESS: So the
6 spread of marketable bonds over Government of Canada
7 ten (10) year bonds increased from 1.42 percentage
8 points at October 2015 up to 1.66 percentage points at
9 February 2016. Agreed?
10 MR. LUKE JOHNSTON: Agreed.
11 MS. KATHLEEN MCCANDLESS: Is this
12 spread shift illustrative of the imperfection of using
13 Government of Canada ten (10) year bonds as a proxy
14 for the yield to maturity on the overall bond
15 portfolio to which Ms. Reichert testi -- testified
16 previously?
17 MR. LUKE JOHNSTON: Can -- would you
18 mind repeating that for me one more time, just --
19 thank you.
20 MS. KATHLEEN MCCANDLESS: The spread
21 of marketable bonds over Government of Canada ten (10)
22 year bonds increased, as we see before us, from 1.42
23 percentage points at October 2015 up to 1.66
24 percentage points at February 2016.
25 And so is this spread shift

1 illustrative of the imperfection of using Government
2 of Canada ten (10) year bonds as a proxy for the yield
3 to maturity on the overall bond portfolio to which Ms.
4 Reichert had testified?
5 MR. LUKE JOHNSTON: So the reason
6 there's a spread is because we're not just investing
7 in Government of Canada ten (10) year bonds. We have
8 bonds of variation duration of diff -- various
9 quality, et cetera.
10 So in our financial modelling we will
11 look up at the time of the -- that the forecast is
12 done what the spreads are for the -- for those various
13 categories I just mentioned, and that is fed into the
14 forecasting model for the prediction of -- of what the
15 yield will be based on our actual portfolio.
16 So just a straightforward example, as
17 rates have declined our duration of our liabilities
18 goes up. We're going to be investing in longer term
19 bonds and we want our forecast to recognize that those
20 bonds may have higher yields relative to a different
21 bond term. Like any forecast related to investments
22 there's risks in those spreads, and they -- they could
23 change.
24 Our forecast is -- is not anticipating
25 or predicting any change in the spreads that we

1 observe when the forecast is made. But could they
2 change; yes, but that -- that's true of -- of all the
3 forecasts that we make.
4 MS. KATHLEEN MCCANDLESS: Thank you.
5 Diana, could you, please, pull up from the AI section
6 of the filing, AI.7, actuary report, February 29,
7 2016, page 4?
8
9 (BRIEF PAUSE)
10
11 MS. KATHLEEN MCCANDLESS: And if we
12 scroll to the body of the letter here. This letter
13 from MPI's external actuary, Mr. Cheng, to Ms.
14 Reichert specifies the valuation discount rates before
15 margin.
16 And so, as indicated, 3.34 percent for
17 non-indexed lines and 1.31 percent for indexed lines
18 for the valuation as at 29 February, 2016, correct?
19 MR. LUKE JOHNSTON: Correct.
20 MS. KATHLEEN MCCANDLESS: By way of
21 undertaking, can the Corporation provide a table
22 similar to that just discussed from the October 2015
23 valuation to document the derivation of the valuation
24 discount rates for the February 2016 valuation?
25 MR. LUKE JOHNSTON: Yes, we can do

1 that. So is the undertaking to do the exact same
2 exercise that was requested for October, or is there
3 further work to that?
4
5 (BRIEF PAUSE)
6
7 MS. KATHLEEN MCCANDLESS: It would be
8 the table reflected on page 42 of the October 31,
9 2015, actuary report updated for the February 2016
10 valuation.
11 MR. LUKE JOHNSTON: Okay, we'll do
12 that undertaking.
13 MS. KATHLEEN MCCANDLESS: Thank you.
14
15 --- UNDERTAKING NO. 36: MPI to provide a table
16 similar to the October
17 2015 valuation to document
18 the derivation of the
19 valuation discount rates
20 for the February 2016
21 valuation
22
23
24 CONTINUED BY MS. KATHLEEN MCCANDLESS:
25 MS. KATHLEEN MCCANDLESS: Is the

1 derivation of the fiscal year-end valuation discount
2 rate subject to external audit?
3
4 (BRIEF PAUSE)
5
6 MR. LUKE JOHNSTON: Can you repeat
7 that just to make sure I got it right? Thank you.
8 MS. KATHLEEN MCCANDLESS: Is the
9 derivation of the fiscal year-end valuation discount
10 rates subject to external audit?
11 MR. LUKE JOHNSTON: Okay, so the --
12 the -- I'm struggling with the word 'auditing',
13 because I know the external actuary will request all
14 our bond holdings, and so that's Mr. Cheng. So he can
15 confirm that what we're showing in that table is -- is
16 correct. And then just one (1) moment on the actual
17 auditing piece.
18
19 (BRIEF PAUSE)
20
21 MS. HEATHER REICHERT: Our external
22 auditors, when they're auditing our financial
23 statements, one (1) of obviously the largest balance
24 sheet items are the claims liabilities, they have
25 their own actuaries in the firm that also audit the

1 claims liability calculation.

2 To do that, they need to be auditing

3 the discount rate that is used. They do rely on the

4 work of our external actuary. But then they also re-

5 perform many of the tests themselves with their

6 internal actuaries.

7 MR. LUKE JOHNSTON: Just -- just to

8 add to that piece. Our auditor will do a lot of

9 direct contact with our external actuary. And I'm --

10 although Joe (phonetic) may ask me to provide him

11 additional information to support the auditing

12 questions, I don't necessarily hear everything that

13 Joe was asked from our auditing area.

14 MS. KATHLEEN MCCANDLESS: Thank you.

15 Last week, in your testimony, Ms.

16 Reichert, in speaking about the actual weighted

17 average yield to maturity for the bond portfolio, you

18 indicated that the actual weighted average yield to

19 maturity at the end of February 2016 was three point

20 five-six (3.56). And if you require the transcript

21 reference, I can provide it for you.

22 But my question would be: How does the

23 3.56 percent cited relate to the 3.34 percent from Mr.

24 Cheng's letter?

25

1 (BRIEF PAUSE)

2

3 MS. HEATHER REICHERT: Maybe we can

4 have the transcript reference and/or whatever other

5 document was being referenced that would have had the

6 three point five-six (3.56), because I'm pretty

7 confident that I didn't come up with that number

8 myself, and had to have been referring to something.

9 MS. KATHLEEN MCCANDLESS: Sure. It's

10 transcript page 593.

11

12 (BRIEF PAUSE)

13

14 MS. KATHLEEN MCCANDLESS: Line 13.

15 And I believe reference to a document is earlier in

16 your testimony so I can probably provide that for you

17 in just a minute.

18 MS. HEATHER REICHERT: Thank you.

19

20 (BRIEF PAUSE)

21

22 MR. LUKE JOHNSTON: I'm -- I'm not

23 certain from the reference what the difference is. It

24 could be that the actual report is using a duration

25 weighted average yield versus just a weighted yield,

1 but along with the other two undertakings, we'll do
2 that reconciliation for you if -- if you'd like that.
3 MS. KATHLEEN MCCANDLESS: Thank you.
4
5 --- UNDERTAKING NO. 37: MPI to provide a
6 reconciliation between the
7 actual weighted average
8 yield to maturity of 3.56
9 percent and the 3.34
10 percent cited in the
11 letter from the actuary in
12 respect of the valuation
13 at February 29, 2016
14
15 CONTINUED BY MS. KATHLEEN MCCANDLESS:
16 MS. KATHLEEN MCCANDLESS: Thank you.
17 And also by way...
18
19 (BRIEF PAUSE)
20
21 MS. KATHLEEN MCCANDLESS: Also by way
22 of undertaking, can the Corporation provide a table
23 similar to that we just discussed, from the October
24 2015 valuation to document the derivation of the
25 valuation discount rates for the May 2016 and the

1 August 2016 valuations?

2 MR. LUKE JOHNSTON: So the undertaking

3 is to -- to do -- perform the derivation exercise for

4 October, February, May, and August of the last five

5 quarterly reports?

6 MS. KATHLEEN MCCANDLESS: Just the

7 summary table which we previous -- previously reviewed

8 from the October 2015 valuation. So a table similar

9 to that, but to document the derivation of the

10 valuation discount rates for the May 2016 and the

11 August 2016 valuations.

12 MR. LUKE JOHNSTON: We can provide

13 those, yes. Yeah.

14 MS. KATHLEEN MCCANDLESS: Thank you.

15

16 --- UNDERTAKING NO. 38: MPI to provide a table

17 similar to that from the

18 October 2015 valuation at

19 page 42 to document the

20 derivation of the

21 valuation discount rates

22 for the May 2016 and the

23 August 2016 valuations

24

25 MR. MATT GHIKAS: May I ask that you

1 just repeat the undertaking so that we can get people
2 working on it?
3 MS. KATHLEEN MCCANDLESS: It's to
4 provide a table similar to that from the October 2015
5 valuation at page 42 to document the derivation of the
6 valuation discount rates for the May 2016 and the
7 August 2016 valuations.
8
9 (BRIEF PAUSE)
10
11 MR. MATT GHIKAS: Thank you.
12
13 CONTINUED BY MS. KATHLEEN MCCANDLESS:
14 MS. KATHLEEN MCCANDLESS: Thank you.
15 Is the derivation of the interim quarter end des --
16 discount rates subject to external audit?
17 MR. LUKE JOHNSTON: No, they are not.
18 MS. KATHLEEN MCCANDLESS: The
19 Corporation's forecasting of yields on marketable
20 bonds and non-marketable bonds are both dependent on
21 the forecasting of yields on Government of Canada of
22 bonds subject to spread adjustments, agreed?
23 MR. LUKE JOHNSTON: Agreed.
24 MS. KATHLEEN MCCANDLESS: The spread
25 adjustment used for marketable bonds is based on

1 recent observed historical spreads which vary with the
2 duration of the marketable bond portfolio, agreed?
3 MR. LUKE JOHNSTON: Agreed.
4 MS. KATHLEEN MCCANDLESS: And the
5 spread adjustment used for non-marketable bonds is
6 based on -- on recent observed historical spreads, and
7 was fixed at 1.75 percentage points based on a five
8 year historical average, agreed?
9 MR. LUKE JOHNSTON: Agreed, yeah.
10 MS. KATHLEEN MCCANDLESS: Thank you.
11 Diana, could we please pull up MPI
12 Exhibit 27? And that's the response to Undertaking
13 number 1.
14 And the second page of this document,
15 this table shows actual and budgeted Government of
16 Canada 10-year bond yields at the end of the first two
17 quarters of the current fiscal year, agreed?
18 MR. LUKE JOHNSTON: Agreed.
19 MS. KATHLEEN MCCANDLESS: With the
20 knowledge that the February 2016 actual Government of
21 Canada bond yield was 1.19 percent, this table shows
22 that the bond yield fell by seventeen (17) basis
23 points over the first two quarters of the current
24 fiscal year, agreed?
25 MR. LUKE JOHNSTON: Subject to check,

1 agreed, yeah.

2 MS. KATHLEEN MCCANDLESS: By way of

3 undertaking, we would like the Corporation to expand

4 on this information and prepare two schedules, the

5 first tied to the GRA as originally submitted, the

6 second tied to the GRA as amended on October 7, 2016.

7 Both schedules should include forecast

8 and actual, where available, information at successive

9 quarter ends from February 2016 to February 2017 with

10 respect to Government of Canada 10-year bond yield,

11 marketable bond portfolio duration, yield to maturity,

12 assumed spread, non-marketable bond yield to maturity,

13 total bond portfolio yield to maturity, and valuation

14 discount rate.

15 Is that something that the Corporation

16 could provide by way of undertaking?

17 MR. LUKE JOHNSTON: Probably can't

18 verbally answer that one, so I'll take that as an

19 undertaking. You read it fairly clearly, so I -- I

20 think we -- we should have it.

21 MR. MATT GHIKAS: Ms. McCandless, none

22 -- none of us were able to record all of that. And I

23 think you were reading something, so if perhaps we

24 could collect what you were reading from when you read

25 that undertaking so that we might -- might look at it

1 a little more closely. It was hard to absorb all of
2 it.
3 MS. KATHLEEN MCCANDLESS: We can
4 provide something in writing. Thank you.
5 MR. MATT GHIKAS: Thank you.
6 MR. LUKE JOHNSTON: If -- if I could
7 add, just in case my back row are squirming here, I'm
8 going on the assumption that we have all of the
9 information that you just asked for. It sounded
10 something -- like something reasonable, but if we
11 cannot get something for you or do not forecast on --
12 at that certain time period or something, we'll let
13 you know.
14 MS. KATHLEEN MCCANDLESS: That would
15 be fine if we -- if the Corporation could just use its
16 best efforts to answer the undertaking requested.
17 MR. LUKE JOHNSTON: Absolutely.
18
19 --- UNDERTAKING NO. 39: MPI to use best efforts to
20 expand on MPI Exhibit 27
21 and prepare two (2)
22 schedules, the first tied
23 to the GRA as originally
24 submitted, the second tied
25 to the GRA as amended on

1 October 7, 2016, both
2 schedules to include
3 forecast and actual, where
4 available, information at
5 successive quarter ends
6 from February 2016 to
7 February 2017 with respect
8 to Government of Canada
9 10-year bond yield,
10 marketable bond portfolio
11 duration, yield to
12 maturity, assumed spread,
13 non-marketable bond yield
14 to maturity, total bond
15 portfolio yield to
16 maturity, and valuation
17 discount rate
18
19 CONTINUED BY MS. KATHLEEN MCCANDLESS:
20 MS. KATHLEEN MCCANDLESS: Thank you.
21 Now, Ms. Grammond had mentioned last
22 week, I believe, that she would be following up with
23 some questions on investments after a provision of the
24 answer to Undertaking number 4. And so I'm going to
25 ask you some questions on that undertaking now.

1 Diana, could you please pull up the
2 investment section of the filing? It's actually at
3 the -- at Tab 11 of the book of documents as well.
4 That's Table 1 from page 4.
5 This is the Corporation's summary of
6 investment income. And if we look to marketable bonds
7 unrealized loss, for 2015/'16, the table shows a loss
8 of $76.7 million in 2015/'16.
9 Is that correct?
10 MS. HEATHER REICHERT: Yes, that's
11 correct.
12 MS. KATHLEEN MCCANDLESS: And
13 according to the table, these losses were projected to
14 continue from 2016/'17 to 2018/'19. That's 66.9
15 million and 68.1 million and 80 million?
16 MS. HEATHER REICHERT: Correct.
17 MS. KATHLEEN MCCANDLESS: And that was
18 due to changes in interest rates?
19 MS. HEATHER REICHERT: Correct.
20 MS. KATHLEEN MCCANDLESS: That's
21 interest -- increases in interest rates quarterly over
22 these three years?
23 MS. HEATHER REICHERT: That's correct.
24 MS. KATHLEEN MCCANDLESS: Now, if we
25 go to investment section of the filing, one point one

1 (1.1), page 10, beginning at line 9 the Corporation
2 states that:
3 "In 2016/'17 Basic investment income
4 is forecasted to be $16.8 million."
5 And continues on there. I -- I won't
6 read it all. But the marketable bond losses were
7 primarily driven by the external forecast, and the
8 forecast -- it was forecasted to increase by fifty-
9 seven (57) basis points?
10 MS. HEATHER REICHERT: Correct.
11 MS. KATHLEEN MCCANDLESS: And if we
12 turn back to the table that we were just looking at,
13 the projected losses in marketable bonds, they are
14 projected to subside in 2019/'20, and '20/'21?
15 MS. HEATHER REICHERT: Correct.
16 MS. KATHLEEN MCCANDLESS: And that is
17 because interest rates were forecasted not to change?
18 MS. HEATHER REICHERT: Correct.
19 MS. KATHLEEN MCCANDLESS: And is that
20 assumption realistic?
21 MS. HEATHER REICHERT: That's based on
22 the -- the standard inter -- this is the one that was
23 in our filing, so this is based on the Standard
24 Interest Rate Forecast that is based on the five (5)
25 major banks and Global Insight.

1 And as I've commented before, what is
2 critical in these hearings is what is being forecast
3 for 2017/'18 and 2018/'19 as it's those forecasts that
4 are behind the rate that we are requesting.
5 So '19/'20 and '20/'21 are -- are there
6 solely for information, and do not in any way impact
7 on the rate that's being sought at this hearing.
8 MS. KATHLEEN MCCANDLESS: Thank you.
9 Diana, could we then, please, pull up MPI Exhibit
10 Number 32, and that was the response to Undertaking
11 Number 4, in which the Corporation was asked to
12 provide updates to its projections reflecting the new
13 interest rate forecasting approach.
14 And so this reflects the 50/50 interest
15 rate forecast based on August 2016?
16 MS. HEATHER REICHERT: Correct.
17 MS. KATHLEEN MCCANDLESS: If we
18 compare what was forecast in the previous table before
19 the 50/50 with this now update, and we look to --
20 again to marketable bonds unrealized gains or losses,
21 there is a change from what was previously discussed.
22 And we see now for 2016/'17 marketable
23 bonds unrealized gains, there is now a $7.4 million
24 gain in the update?
25 MS. HEATHER REICHERT: Yes, and we --

I can -- subject to check but that would be -- because I'm -- I'm fairly certain that -- as this was updated after two (2) quarters of actual results, that this was reflecting the actual interest rates for the first two (2) quarters of '16/'17, and then the forecast based on the 50/50 scenario subsequent to that.

(BRIEF PAUSE)

MS. HEATHER REICHERT: Okay. So the back row has confirmed for me that that is, in fact, the case.

MS. KATHLEEN MCCANDLESS: Thank you. If we look to the bottom of the screen with respect to investment income, for 2016/'17 there is $106.2 million investment income?

MS. HEATHER REICHERT: On a corporate basis, correct.

MS. KATHLEEN MCCANDLESS: And then that's 90.8 million for Basic?

MS. HEATHER REICHERT: That's correct.

MS. KATHLEEN MCCANDLESS: And, Diana, could we go back to the -- the previous table then?

(BRIEF PAUSE)

1 MS. KATHLEEN MCCANDLESS: And again to
2 the bottom when we look to total investment income,
3 for 2016/'17 that was $19.6 million for corporate, and
4 sixteen point eight (16.8) for Basic?
5 MS. HEATHER REICHERT: That's correct.
6 The majority of that swing, of course, is from going -
7 - marketable bonds of minus sixty-seven (67) in this
8 schedule to a plus eight (8) in the other schedule.
9 That's the majority of the swing.
10 MS. KATHLEEN MCCANDLESS: So with
11 respect to Basic then, we have a difference of $90.8
12 million in the update as compared to sixteen point
13 eight (16.8) in the table before you, so a difference
14 of $74 million?
15 MS. HEATHER REICHERT: Yeah, that
16 would be again forecasted based on actual interest
17 rates for the first two (2) quarters, and then
18 forecast subsequent. What actually will transpire in
19 this current fiscal year is still to be determined.
20 MS. KATHLEEN MCCANDLESS: Thank you.
21 For 2017/'18 for basic investment in -- income we have
22 $9.8 million here. And if we flip back to the other
23 table, which is the update. Pardon me, this is the --
24 yes, this is the update.
25 For 278 -- 2017/'18 we have $36.3

1 million for basic investment income?

2 MS. HEATHER REICHERT: Correct.

3 MS. KATHLEEN MCCANDLESS: And so

4 that's a difference of $26.4 million then?

5 MS. HEATHER REICHERT: Correct,

6 subject to check.

7 MS. KATHLEEN MCCANDLESS: And then,

8 lastly, with respect to 2018/'19 in the update for the

9 50/50 there is basic allocation investment income of

10 $25.7 million.

11 And flipping back to the filing we have

12 for 2018/'19 basic allocation investment income of

13 $5.1 million, yes?

14 MS. HEATHER REICHERT: Correct.

15 MS. KATHLEEN MCCANDLESS: And again,

16 that's a difference of about $20.6 million?

17 MS. HEATHER REICHERT: Correct.

18 MS. KATHLEEN MCCANDLESS: The change

19 to 50/50, this assumes interest rates do not rise as

20 fast as in the application?

21 MS. HEATHER REICHERT: That's correct.

22 MS. KATHLEEN MCCANDLESS: And as we've

23 seen, investment income is not forecasted to material

24 -- materially higher?

25 MS. HEATHER REICHERT: Correct. And I

1 think if you look at the claims -- claims incurred
2 forecast, you'll see that it's also expected to be --
3 is forecasted to be higher, as well. So the -- the
4 netting together would have produced a negative impact
5 and, hence, why you needed a 4.3 percent increase
6 instead of the 2 percent before we were using the
7 50/50 forecast.
8 MS. KATHLEEN MCCANDLESS: And realized
9 gains on equity investments do not change in 2016/'17?
10
11 (BRIEF PAUSE)
12
13 MS. HEATHER REICHERT: So, I mean, we
14 can flip between the two (2). The difference between
15 the two (2) investment forecasts were specifically as
16 it related to the interest forecast going and moving
17 to the 50/50. So if there was any changes in
18 equities, you can look to see if there were changes in
19 equities, it's a very sensitive financial model that
20 we have.
21 So if there were more moneys to invest,
22 for instance, then there may have been more money
23 invested in equities or, conversely, less money to
24 invest in equities, so there could be slight changes.
25 But, generally, you would expect the change to only

1 show up in marketable bonds.

2 MS. KATHLEEN MCCANDLESS: Thank you.

3

4 (BRIEF PAUSE)

5

6 MS. KATHLEEN MCCANDLESS: Now, Diana,

7 could you pull up from the investment section of the

8 filing attachment F, page 3?

9

10 (BRIEF PAUSE)

11

12 MS. KATHLEEN MCCANDLESS: And in front

13 of you we see that the Corporation had $74 million in

14 unrealized gains?

15 MS. HEATHER REICHERT: As at whatever

16 date this is? Yes.

17 MS. KATHLEEN MCCANDLESS: And that

18 includes $28.6 million in Canadian equities?

19 MS. HEATHER REICHERT: Correct.

20 MS. KATHLEEN MCCANDLESS: And $44.3

21 million in US equities?

22 MS. HEATHER REICHERT: Correct.

23 MS. KATHLEEN MCCANDLESS: And this is

24 in addition to income from the same year of $15.4

25 million?

1 MS. HEATHER REICHERT: Which income in
2 the same year, sorry?
3
4 (BRIEF PAUSE)
5
6 MS. KATHLEEN MCCANDLESS: If we go
7 back to the book of documents, Tab 11, the summary of
8 investment income from the filing.
9
10 (BRIEF PAUSE)
11
12 MS. KATHLEEN MCCANDLESS: Okay. I'll
13 move on for now. Just back to the unrealized gains.
14 So gains are only realized when the portfolio requires
15 rebalancing?
16 MS. HEATHER REICHERT: Yes, correct.
17 MS. KATHLEEN MCCANDLESS: Are there
18 any other circumstances where gains would be realized?
19
20 (BRIEF PAUSE)
21
22 MS. HEATHER REICHERT: Sorry, just to
23 be more complete on that answer, the only time that we
24 -- we would be triggering investment -- or equity
25 gains or losses is if we are doing a rebalancing when

1 we're looking at how much bonds we have versus
2 equities, et cetera.
3 But there will be natural turnover
4 based on what the investment managers are doing. So
5 they hold the portfolio, and they will turn over bonds
6 when they -- or equities when they believe that the
7 market warrants them crystalizing some gains.
8 MS. KATHLEEN MCCANDLESS: And if we
9 turn to the investments appendix from the filing,
10 Appendix A, page 6. This is from the investment
11 policy statement.
12
13 (BRIEF PAUSE)
14
15 MS. KATHLEEN MCCANDLESS: At the
16 bottom of the page, the last paragraph indicates that
17 the Corporation may request realization of gains
18 subject to ratio of market value to book value, both
19 Canadian and US equity portfolios exceeding 105
20 percent?
21 MS. HEATHER REICHERT: So this -- this
22 particular paragraph in here is an oversight on our
23 part for not having removed it previously. This
24 existed back when the accounting rules were such that
25 you -- you could trigger equity gains and -- and then

1 immediately repurchase the -- the equities and -- and
2 thereby manage your -- your bottom line more directly.
3 That particular accounting rule, or
4 option that existed no longer exists. So this was in
5 place at a time when -- when that practice could
6 occur. And this was to protect and ensure that we
7 were not impacting too negatively by the -- the market
8 value to book value ratio.
9 So this was raised as a -- a question
10 in one (1) of the Information Requests, I believe by -
11 - by CAC. And we agreed that it was an outdated
12 clause, and that we will remove it the next time that
13 this policy comes up for review, which will be next
14 year.
15
16 (BRIEF PAUSE)
17
18 MS. KATHLEEN MCCANDLESS: Thank you.
19 Diana, could we please pull up MPI number -- Exhibit
20 Number 55.
21 This is a response to an undertaking of
22 the Corporation, Undertaking Number 18, in which the
23 Corporation was asked to explain why the result of the
24 iterative adjustment is equal across all periods,
25 considering that the addition of the 26 million of

1 total equity at the start of the forecast period in
2 this instant -- I -- I believe that should say
3 instance, would be expected to generate any -- sorry,
4 additional investment throughout the forecast period.
5 The Corporation's response is in front
6 of you. And the Corporation has indicated that the
7 financial model is not capable of handling the
8 addition or removal of funds to or from Basic retained
9 earnings from external sources, correct?
10 MR. LUKE JOHNSTON: That's correct. I
11 -- I maybe can expand on that a little bit more. The
12 -- when we built our financial model, we never
13 anticipated that we would receive capital injections,
14 or send money to other sources, that -- that the money
15 would only be the result of transfers in between the
16 different lines of business.
17 So -- so when answering this question,
18 it implied that we had to essentially add or remove
19 funds in different years. And I didn't realize that -
20 - and I don't think our staff did either -- that --
21 that doing that wasn't going to trigger investment
22 income as anticipated. So we just revised that --
23 that process to treat it as transfers instead.
24 MS. KATHLEEN MCCANDLESS: By saying,
25 'external,' do you mean external to Basic or external

1 to the Corporation?
2 MR. LUKE JOHNSTON: Yeah, it was
3 treated it as being external to the Corporation, which
4 was again something we would never anticipate
5 happening when the model was developed. We were going
6 to look at that as a function put in there.
7 For answering this question, we treat
8 it as -- as transfers to and from Basic and Extension,
9 even though we would likely never do that in practice.
10 But that's how we answered this question. The money
11 has to come from somewhere essentially, we assumed.
12 MS. KATHLEEN MCCANDLESS: The response
13 indicates that a consequence of this model limitation
14 is an improper calculation or allocation of the
15 investment income arising from the added or removed
16 funds, correct?
17 MR. LUKE JOHNSTON: In the original
18 way that it was constructed, yes. In the revised
19 response, it should be calculating that correctly now.
20 MS. KATHLEEN MCCANDLESS: Okay. Thank
21 you. The response goes on to indicate how the
22 Corporation has corrected for this improper cal --
23 calculation or allocation of investment income.
24 Can you please describe how this
25 correction has been accomplished and the extent to

1 which this correction fully addresses the modelling
2 problem being fixed?
3 MR. LUKE JOHNSTON: So I kind of
4 mentioned this a little bit already, but the model
5 contemplates that transfers occur, and that would
6 clearly trigger a change in how investment income is
7 allocated to each line. It never contemplated just
8 getting money from another source and not from another
9 line of business.
10 So to answer this particular question,
11 we assumed that the money had to come from somewhere.
12 If -- if Basic was going to increase capital as
13 requested in this question, we assumed that that came
14 from Extension. The model handles that correctly and
15 is probably a good assumption because again the money
16 has to -- would in theory have to come from somewhere.
17 But going forward, if this is going to
18 be a regular request -- and I can discuss with Mr.
19 Pelly if -- if -- how we've treated it to answer this
20 question is appropriate in his opinion. If it's not,
21 we can build that functionality to allow capital
22 injections or whatever is necessary.
23
24 (BRIEF PAUSE)
25

1 MS. KATHLEEN MCCANDLESS: So in the
2 instance, as indicated in the undertaking, the request
3 for the undertaking and the $26 million of total
4 equity at the start of the forecast period, at what
5 points in time over the forecast are the cited
6 transfers to or from Extension retained earnings
7 applied?
8 MR. LUKE JOHNSTON: Just remembering
9 the original question here. If you go to one -- PUB-
10 1-25, I think our first paragraph was -- said that we
11 were having some trouble understanding the rationale
12 for the question.
13 But we basically created a restated
14 model to hold the MCT ratio constant over time. And
15 to do that would require injections or whatever of
16 capital to meet that ratio. And then the scenarios
17 were run off of that revised model.
18 So whenever -- at least in the restated
19 scenario, whatever monies were needed to hit that MCT
20 ratio that was assumed to be held constant over the
21 forecast period, that's where the monies would be
22 added or removed.
23
24 (BRIEF PAUSE)
25

1 MS. KATHLEEN MCCANDLESS: Diana, could
2 you please pull up PUB/MPI-I-25, page 2?
3
4 (BRIEF PAUSE)
5
6 MS. KATHLEEN MCCANDLESS: Yeah. And
7 just scroll to the table as -- in the screen.
8
9 (BRIEF PAUSE)
10
11 MS. KATHLEEN MCCANDLESS: So in the
12 table before you, it's the modified base scenario and
13 we see with respect to the MCT ratio that it's
14 constant across the bottom of the table.
15 So under this scenario, are transfers
16 or injections happening at every year end to achieve
17 this result?
18 MR. LUKE JOHNSTON: That's right.
19 MS. KATHLEEN MCCANDLESS: So then if
20 we could flip to page 5?
21
22 (BRIEF PAUSE)
23
24 MS. KATHLEEN MCCANDLESS: And with
25 respect to the table in front of you now, are those

1 injections only done at 2016/'17, or are they done
2 throughout the forecast period?
3 MR. LUKE JOHNSTON: My understanding
4 it would be as per the original scenario but I may
5 have to maybe have an offline discussion with Mr.
6 Pelly or -- or whatever is necessary to -- to deal
7 with this scenario. Obviously we've struggled to
8 understand exactly what the intent is but it's -- it's
9 not because we don't want to do it. We can -- we just
10 -- maybe just had to clarify certain pieces of it.
11 And just so the Board's aware, this is
12 purely a DCAT lower bound exercise we're discussing
13 here, and it doesn't relate to the rate indication in
14 any way.
15 MS. KATHLEEN MCCANDLESS: Thank you.
16 And we are happy to have that offline discussion.
17 MR. LUKE JOHNSTON: Me, as well.
18 MS. KATHLEEN MCCANDLESS: Now, just
19 following up on some of the testimony from Ms.
20 Spiropoulos from Aon earlier this week, we understand
21 that Ms. Spiropoulos -- from her that MPI selected the
22 metrics to be used in the ALM Study, namely the ten
23 (10) year average basic net income to measure reward
24 and ten (10) year average standard -- standard
25 deviation of Basic RSR to measure risk.

1 We also understand that MPI's primary
2 concern for the ALM Study was to address volatility of
3 the premium rate requirement. Would that be accurate?
4 MR. LUKE JOHNSTON: That's correct.
5 MS. KATHLEEN MCCANDLESS: Why consider
6 higher levels of Basic net income as a reward if an
7 intuitive consequence of persistent higher levels of
8 Basic net income is a rate reduction and/or an RSR
9 rebate, either of which increases the volatility of
10 the premium rate requirement?
11 MR. LUKE JOHNSTON: Okay. Just to
12 make sure I understand, I think the question was why
13 would higher net income be considered a reward if it -
14 - if it may lead to volatility in the rates, or the --
15 so the forecasts that are -- so -- so let's say we --
16 we change our investment strategy and we get more
17 investment income. The practical reality of that
18 would be lower rates, all else equal.
19 So the -- yeah, this -- so if you -- if
20 we're thinking that high net income would lead to
21 higher investment forecasts would lead to lower rates,
22 we think of that as positive. However, you can
23 imagine a scenario where say you have 100 percent in
24 the stock market, that might have the lowest rate
25 prediction but an extreme amount of volatility.

1 So there's a balance between -- between
2 those two (2) scenarios. But for the same level of
3 risk our goal on the investment side would be to
4 maximize return and net income.
5 MS. KATHLEEN MCCANDLESS: Thank you.
6 Since Basic's target capital range is now expressed in
7 terms of total equity instead of RSR, would the
8 Corporation change its choice of metric for risk if it
9 were to redo the ALM study today?
10 MR. LUKE JOHNSTON: For risk? So
11 given we have a total equity rate stabilization
12 reserve targets now, that would be a -- a reasonable
13 change to make in the -- in the study.
14
15 (BRIEF PAUSE)
16
17 MS. KATHLEEN MCCANDLESS: So if --
18 does the Corporation have any sense as to whether --
19 if they used standard deviation as a -- a metric for
20 risk, if that would at all change the outcome based on
21 total equity?
22
23 (BRIEF PAUSE)
24
25 MR. LUKE JOHNSTON: Just -- just so I

1 understand, I think the question is: If we had
2 changed the metric to total equity instead of retained
3 earnings, would that have changed the outcome of the
4 ALM study? Is that the question? Yeah.
5 My expectation would -- would be that
6 it wouldn't be significant, but I -- I don't have any
7 basis for that. I was just asking if -- if we had
8 measured that anywhere. To my knowledge, we haven't.
9 MS. KATHLEEN MCCANDLESS: Thank you.
10 Diana, could you please pull up MPI Exhibit 58?
11 That's the response to Undertaking 19.
12 And this was where the Corporation was
13 asked whether it would be practical or possible for
14 MPI to undertake to prepare an updated response to PUB
15 MPI-1-25 to be consistent with the amended DCAT and
16 target capital analysis that was provided on October
17 7th. And the response is provided below.
18
19 (BRIEF PAUSE)
20
21 MS. KATHLEEN MCCANDLESS: Can you
22 confirm that the Corporation's proposed lower Basic
23 total equity target is $159 million based on a two (2)
24 year combined scenario at a one (1) in forty (40) year
25 outcome level as presented in the DCAT amended October

1 7, 2016?

2 MR. LUKE JOHNSTON: I can confirm.

3 MS. KATHLEEN MCCANDLESS: Would you

4 agree that the modelling process undertaken for

5 Exhibit 58 was intended to identify what level of

6 Basic total equity is estimated to be necessary in

7 order to maintain a nonnegative Basic total equity

8 over each of a two (2) year and a four (4) year time

9 horizon resulting from the worst estimated 95th

10 percentile and 97.5th percentile adverse events

11 identified for Basic?

12 MR. LUKE JOHNSTON: That, I believe,

13 is the intent of this question. But on the face of

14 it, yes, that's what it -- what it's attempting to do.

15 Whether we've got the final mechanics of it correct

16 per Mr. Pelly, what it -- Mr. Pelly's intentions are,

17 but we'll review that off -- offline I think is the

18 plan, but that's what I believe he's attempting to do

19 here, or the PUB advisors are attempting to do with

20 this question.

21 MS. KATHLEEN MCCANDLESS: And going to

22 page 4. Do the results of this modelling process as

23 summarized here on page 4 suggest any change to the

24 Corporation's proposed lower Basic total equity target

25 of $159 million?

1 MR. LUKE JOHNSTON: There's a slightly
2 different approach here being used to answer this
3 question. Obviously, the approach that I've used in
4 the DCAT is one that I feel is appropriate. That
5 said, assuming everything in this question is
6 constructed as they intended in -- by Mr. Pelly. It
7 appears 161 million would be the equivalent requested
8 lower target based on this method, which is very close
9 to the 159 million. I would consider that a
10 immaterial difference for a DCAT.
11 MS. KATHLEEN MCCANDLESS: Thank you.
12 Intuitively, at a given percentile outcome level, one
13 might expect a longer time horizon to require more
14 starting Basic total equity to protect against
15 insolvency.
16 Would you agree?
17 MR. LUKE JOHNSTON: Sorry, can you
18 just one (1) more time just to make sure I got it?
19 MS. KATHLEEN MCCANDLESS: Sure. So
20 intuitively at a given percentile outcome level, one
21 might expect that there would be a longer time horizon
22 to require more starting Basic total equity to protect
23 against insolvency.
24 Would that be accurate from your
25 perspective?

1 MR. LUKE JOHNSTON: A longer --
2 assuming I'm understanding this correctly, in the -- a
3 very important assumption in the MPI DCAT is the
4 management action, or we call it management and
5 regulatory action assumption. For single year
6 scenarios they happen in that year, there's nothing we
7 can do. The rates have been set. It's gone.
8 Like it's too late already. Once you
9 have two (2) year scenarios MPI could in theory come
10 to the Board and we could be in the middle of an
11 adverse circumstances and the Board and MPI may react
12 to the circumstance saying, Hey, we need to have an
13 RSR rebuilding fee or a small rate increase.
14 So there may be some action there.
15 When you start getting into longer term scenarios it
16 becomes less realistic that we're not going to react.
17 And -- and you'll see in the DCAT that longer forecast
18 period scenarios have much more significant management
19 action.
20 So the most significant scenarios
21 before management action are absolutely the longer
22 term scenarios. But after management action the
23 implications from those are reduced significantly,
24 because it's assumed that the Board and MPI will react
25 to adverse circumstances.

1 So to answer your question, not -- I
2 believe not necessarily would a longer forecast period
3 lead to a more adverse result depending on -- on how
4 you assume to react and the -- when I say sensitive,
5 you know, if -- if you just reacted with a 10 percent
6 rate increase every time you had a big stock market
7 crash, well, you wouldn't need a lot of initial RSR,
8 right.
9 You could just charge everybody, but
10 that would obviously violate the whole point of the
11 RSR.
12 MS. KATHLEEN MCCANDLESS: Thank you.
13 Previously the Corporation has argued for a four (4)
14 year time horizon for lower limit target setting
15 purposes.
16 And you would recall that?
17 MR. LUKE JOHNSTON: I do.
18 MS. KATHLEEN MCCANDLESS: And from MPI
19 Exhibit 58, which is before you, at a 1:40 or 97.5
20 percentile outcome level, the four (4) year time
21 horizon result suggests a lower Basic total equity
22 target of 143 million.
23 Would the Corpor -- has the Corporation
24 changed its position on the appropriate time horizon
25 for lower limit target setting purposes?

1 MR. LUKE JOHNSTON: No. The reason I
2 say, no is that I still think it's important that we
3 test all the periods of -- of time, one (1), two (2),
4 three (3), and four (4) year to see what really is the
5 most adverse circumstance before and after management
6 action.
7 So intuitively before we apply -- or
8 before we run the scenarios and apply management
9 action, I would have no idea what -- whether the two
10 (2) year 1:40 or the three (3) year, or the four (4)
11 year, whatever the -- which one (1) is going to be the
12 worst.
13 We -- we kind of find that out as we do
14 the analysis and, yeah, and get the output. So I like
15 the method we have right now to just test everything.
16 It's a little bit cumbersome in terms of all the
17 tables and stuff in the DCAT, but I think it's a -- a
18 good approach, so I -- I recommend sticking to it.
19 MS. KATHLEEN MCCANDLESS: Thank you.
20 Diana, could we go to MPI Exhibit Number 14, slide 21.
21 And that's -- Ms. Reichert, that's from your
22 presentation at the beginning of the hearing. And
23 just one (1) question was -- in your evidence you
24 mentioned that two (2) transfers from Extension
25 equalled 20 percent of the RSR rebuilding fee.

1 Do you recall?
2 MS. HEATHER REICHERT: Yeah. That's -
3 - the -- the simple math that we typically use is in
4 and around 8 or 9 million is equal to a percent. So
5 we -- you know, $150 million worth of transfers is --
6 guess it's close to 20 -- 19, 20 percent if you were
7 trying to convert that into what would the rate
8 increase be in order to achieve that kind of revenue.
9 MS. KATHLEEN MCCANDLESS: Thank you.
10 That answered my question.
11 Could we turn to Exhibit number 53?
12 And this is a response that the
13 Corporation provided to Undertaking number 8, and the
14 question was the number of IT staff that had been
15 brought in to replace consultants to date. And the
16 response was that, to date, twelve (12) full-time
17 employees have replaced consultants.
18 What is the expected full-year level?
19 MS. HEATHER REICHERT: Sorry, can you
20 repeat that?
21 MS. KATHLEEN MCCANDLESS: Is there --
22 are there any further IT staff being brought in
23 towards the year end to replace consultants? We have
24 a number of twelve (12) to date.
25 MS. HEATHER REICHERT: I don't know if

there will be more. It is extremely difficult to hire the appropriate IT resources. So if they're fortunate enough to find people qualified for the particular positions to bring them in-house, then that number could increase. But at this -- at this point, I don't know if that will be the case.

MS. KATHLEEN MCCANDLESS: Thank you. And then if we could go to Exhibit number 65, which was the response to Undertaking number 10.

This was to provide the number of consultants operating -- supporting operating activities, general operating activities, compared to those number of consultants that are supporting improvement initiatives as forecast over the next five years. And so the table in front of you indicates the response.

It appears that, for 2016/'17, seven positions were from ongoing operations?

MS. HEATHER REICHERT: Oh, sorry. Now I -- now I see what you're looking at. Yeah, that would have been a forecast at a point in time, yes.

MS. KATHLEEN MCCANDLESS: And then there are four from improvement initiative as well from the baseline?

MS. HEATHER REICHERT: Yes, based on

1 this schedule.

2 MS. KATHLEEN MCCANDLESS: And then

3 looking to the period from 2018/'19 through to '20,

4 '21, '22 for operating activities and for improvement

5 initiatives, it appears that those numbers are

6 constant with the exception of -- of a reduction of

7 one from 2018/'19 in operating activities.

8 Is this the area that MPI is focussing

9 on replacing?

10 MS. HEATHER REICHERT: I'm sorry, can

11 you repeat or reword that question? I'm not sure what

12 you're asking.

13

14 (BRIEF PAUSE)

15

16 MS. KATHLEEN MCCANDLESS: Yeah. We

17 had heard that there was going to be an inter --

18 internalization of twenty-seven (27), and it appears

19 that there's -- that twelve (12) have been

20 internalized.

21 So the remaining fifteen (15), where --

22 where will that come from?

23 MS. HEATHER REICHERT: Well, this --

24 this is forecasted -- I think if you look at forty

25 (40) baseline to when it stabilizes as twenty-eight

1 (28) for operating, that's a reduction of twelve (12).
2 And then the seventy-six (76) to sixty-four (64) is
3 another reduction of twelve (12).
4 I appreciate that doesn't add up to the
5 -- to the twenty-seven (27). Again, I'm not sure if
6 the baseline for '15/'16 had assumed some additional
7 reductions. But, generally, this was trying to show
8 when we thought the internalization of twenty-seven
9 (27) positions was going to occur.
10 That was -- and I think in other IRs,
11 we had indicated what we thought that would be over
12 what time period.
13 MS. KATHLEEN MCCANDLESS: Okay. Thank
14 you. Previously we had reviewed the project charter
15 for the technology modernization. And I won't take
16 you to the reference, but the total cost of the
17 project as discussed was $40 million.
18 You recall that? I can take you to the
19 reference.
20 MS. HEATHER REICHERT: Yeah. It was a
21 five year forecast, I believe, in varying amounts that
22 added up to 40 million over that five (5) year
23 forecast period.
24 MS. KATHLEEN MCCANDLESS: And then if
25 we look to the expense's Appendix 13, page 36, from

1 last year's GRA, and, Diana, could we, please, pull
2 that up.
3
4 (BRIEF PAUSE)
5
6 MS. KATHLEEN MCCANDLESS: That was
7 Appendix 13, page 36. For the technology
8 modernization on the forecast side of the table, or --
9 we have 8.325 million for the period from 2016/'17
10 constant throughout 2019/'20, so roughly a budget of
11 $33.3 million over four (4) years?
12 MS. HEATHER REICHERT: Yes, and -- and
13 if you can help me I'm not sure if this -- oh, yeah,
14 it does say in the corner. So this is Basic. The 40
15 million was, I believe, if I'm not mistaken was the
16 Corporate. So only a portion would get allocated to
17 the Basic program from the 40 million over the four
18 (4) or five (5) years.
19 MS. KATHLEEN MCCANDLESS: So that's
20 the explanation for the difference?
21 MS. HEATHER REICHERT: Yes.
22 MS. KATHLEEN MCCANDLESS: Thank you.
23 MS. HEATHER REICHERT: Yeah.
24 MS. KATHLEEN MCCANDLESS: Diana, could
25 we, please pull up MPI Exhibit Number 59, and that's

1 the answer to Undertaking Number 24.

2

3 (BRIEF PAUSE)

4

5 MS. KATHLEEN MCCANDLESS: This was to

6 provide the number of drivers for each DSR level and

7 the corresponding revenue.

8

9 (BRIEF PAUSE)

10

11 MS. KATHLEEN MCCANDLESS: And just

12 generally with respect to what's indicated here, there

13 appears to be a trend in increasing driver earned

14 premiums for the period from 2015 through to 2019?

15 MR. LUKE JOHNSTON: If you can just

16 scroll up a little bit, I believe you but -- that's

17 correct, yeah.

18 MS. KATHLEEN MCCANDLESS: What factors

19 are leading to the growth in the number of earned

20 drivers at DSR level 20?

21 MR. LUKE JOHNSTON: So -- okay, at

22 level 20? So each year it's been, I guess, five (5)

23 full years of DSR now, we re-state how drivers move on

24 this scale. We're expecting it to normalize at -- or

25 stabilize, pardon me, at some -- at some point.

1 Based on what we know now about --
2 about driver movement we are expecting that negative
3 twenty (20) category to increase but you can see that
4 the increases are at a decreasing pace going --
5 slowing down to -- to about twenty-five hundred
6 (2,500) drivers by the end of the forecast period.
7 The best case scenario would be that
8 that never happens, and they just drive better. And
9 we are seeing some evidence of that, but we keep
10 taking into account the - what -- what is the -- what
11 is improved experience every year, but this is our
12 latest forecast based on what we know as of the last
13 full year of DSR.
14 MS. KATHLEEN MCCANDLESS: Thank you.
15 Mr. Chair, I don't expect that I have much longer.
16 Perhaps this might be an opportune time to just have a
17 brief break, as I wanted to confer with MPI counsel
18 about one matter before we ...
19 THE CHAIRPERSON: Will the -- the
20 conversation also occur between Mr. Pelly and Mr.
21 Johnston now? I -- I'm just wondering how the follow
22 up goes if we have a -- as a result of it we have
23 another undertaking. So I -- I'm just wondering maybe
24 if you could talk at the same time. Okay?
25 MS. KATHLEEN MCCANDLESS: Sure.

1 THE CHAIRPERSON: So we'll take
2 fifteen (15) minutes now.
3 MS. KATHLEEN MCCANDLESS: Thank you.
4 THE CHAIRPERSON: Thank you.
5
6 --- Upon recessing at 2:11 p.m.
7 --- Upon resuming at 2:28 p.m.
8
9 THE CHAIRPERSON: Ms. McCandless...?
10
11 CONTINUED BY MS. KATHLEEN MCCANDLESS:
12 MS. KATHLEEN MCCANDLESS: Thank you.
13 Just before we get back into your questions, Mr.
14 Johnston, Ms. Reichert, at the break there was a
15 discussion that we had with MPI counsel, and so we'll
16 just address that right now.
17 Mr. Keith is not here to provide any
18 follow-up to answers provided with respect to road
19 safety issues, but I believe that we have agreed that
20 there will an undertaking response provided with
21 respect to some information provided in MPI Exhibit
22 number 68, which is Undertaking number 26, and so I'll
23 just put it on the record.
24 So at page 3 of Undertaking number 26,
25 which is MPI Exhibit number 68 -- and perhaps, Diana,

1 we could just put it up on the screen for reference.
2 The -- the table at the top of the page is with
3 respect to the age of people killed to October 16,
4 2016, by road user class. And then it's also broken
5 down by age.
6 With respect to the age group of 25 to
7 34, the total number of people killed is seventeen
8 (17). And at the age of 65 plus it's sixteen (16).
9 With respect to those two (2) page
10 demographics, 25 to 34 and 65 and above, would the
11 Corporation undertake to provide an explanation or any
12 analysis as to its understanding of the reasons for
13 the -- the significant levels of fatalities in those
14 two age categories?
15 MR. MATT GHIKAS: And we, Mr.
16 Chairman, will -- will take that undertaking.
17 Obviously, to the extent that the information is
18 available, we'll provide it, so we'll make our best
19 efforts.
20 MS. KATHLEEN MCCANDLESS: Thank you.
21 THE CHAIRPERSON: Thank you.
22
23 --- UNDERTAKING NO. 40: MPI to provide an
24 explanation or any
25 analysis as to its

1 understanding of the
2 reasons for the -- the
3 significant levels of
4 fatalities in the age
5 categories 25 to 34 and 65
6
7
8 CONTINUED BY MS. KATHLEEN MCCANDLESS:
9 MS. KATHLEEN MCCANDLESS: Diana, could
10 we please pull up Exhibit number 37.
11 And this is the response to Undertaking
12 Number 12, which was to provide the equivalent figures
13 for the Corporation's actual yield on its fixed income
14 portfolio as opposed to the Government of Canada ten-
15 year bond. The schedule is in front of you, and it
16 runs into the second page.
17 Does this schedule represent the
18 standard interest rate forecast for the Government of
19 Canada and that forecast marketable bond yield?
20 MR. LUKE JOHNSTON: Can you scroll to
21 the to -- the top of the question? Yes. Yes, it is.
22 Thank you.
23 MS. KATHLEEN MCCANDLESS: Thank you.
24 Are you assuming different marketable bond yields
25 under the 50/50 interest rate forecast?

1 MR. LUKE JOHNSTON: Yes, we are.
2
3 (BRIEF PAUSE)
4
5 MS. KATHLEEN MCCANDLESS: Thank you.
6 Now could we turn to Exhibit 38, which is Undertaking
7 Number 13. And this was to provide a numerical
8 schedule for the August 50/50 interest rate forecast.
9 And so can you just confirm that this
10 reflects the August 2016 update of interest rates
11 based on the standard forecast?
12 MR. LUKE JOHNSTON: Confirmed.
13 MS. KATHLEEN MCCANDLESS: You've
14 included the Naive forecast. That assumes no change
15 in Government of Canada interest rates from what was
16 at last actually realized?
17 MR. LUKE JOHNSTON: Correct.
18 MS. KATHLEEN MCCANDLESS: And that's
19 1.03 percent, as we see before us?
20 MR. LUKE JOHNSTON: That's right.
21 MS. KATHLEEN MCCANDLESS: On MPI
22 Exhibit Number 27 -- and if we could just flip to
23 that. I believe that's Undertaking Number 1. On the
24 attachment it's indicated that the actual at Q2 for
25 2016/'17 is 1.02.

1 Is there a reason why it's 1.02 on this
2 schedule as opposed to the schedule in the response to
3 Undertaking number 13, Exhibit 38?
4
5 (BRIEF PAUSE)
6
7 MR. LUKE JOHNSTON: If you still have
8 those two, I can't remember the previous exhibit, but
9 -- so this figure is as of the end of August. And if
10 you go to the other table that forecast is actually at
11 July 31st. So they're at different points in time and
12 I didn't remember that either until I asked, so.
13 And that's -- yeah, just for the Naive
14 forecast.
15 MS. KATHLEEN MCCANDLESS: Thank you.
16 And so the 50/50 that we see before you on MPI Number
17 38, that's just the mid-point between the standard and
18 the Naive, correct?
19 MR. LUKE JOHNSTON: Correct.
20 MS. KATHLEEN MCCANDLESS: And so
21 basing the application on a Government of Canada ten
22 year interest rate of 1.19 percent for the end of
23 2016/'17?
24 MR. LUKE JOHNSTON: 1.19, yes.
25 MS. KATHLEEN MCCANDLESS: Yes, and

1 1.69 percent for the end of 2017/'18?
2 MR. LUKE JOHNSTON: Correct.
3 MS. KATHLEEN MCCANDLESS: And then
4 1.97 percent for the end of 2018/'19?
5 MR. LUKE JOHNSTON: That's correct.
6 MS. KATHLEEN MCCANDLESS: As at the
7 end of 2015/'16, the Government of Canada rate was
8 1.19 percent.
9 So MPI's best estimate then would be
10 that interest rates will effectively move up seventy-
11 eight (78) basis points over the next three years, so
12 by the end of 2018/'19?
13 MR. LUKE JOHNSTON: That's correct.
14 MS. KATHLEEN MCCANDLESS: Thank you.
15
16 (BRIEF PAUSE)
17
18 MS. KATHLEEN MCCANDLESS: Now, Diana,
19 could we please pull up MPI Exhibit Number 60, and
20 that's the response to Undertaking Number 14.
21
22 (BRIEF PAUSE)
23
24 MS. KATHLEEN MCCANDLESS: And this
25 table represents the balance of the unrealized gains

1 as of September 30, 2016?

2 MS. HEATHER REICHERT: Correct.

3 MS. KATHLEEN MCCANDLESS: And if we

4 look to the unrealized gains on available for sale

5 assets as at September 30, 2016, there is $67.3

6 million, yes, for the reported Q2 results?

7 MS. HEATHER REICHERT: Yes. Yes.

8 MS. KATHLEEN MCCANDLESS: And if we

9 flip back to the reported Q2 results, which is at MPI

10 Exhibit Number 24, page 10 of the PDF.

11

12 (BRIEF PAUSE)

13

14 MS. KATHLEEN MCCANDLESS: And we

15 scroll to the bottom of that page. We see that there

16 was other comprehensive income of $61.5 million after

17 realizing capital gains on equity sales of $5.5

18 million.

19 MS. HEATHER REICHERT: Yeah, the

20 balance in other comprehensive income at the end of

21 August was $61.6 million.

22 MS. KATHLEEN MCCANDLESS: And net

23 income for the first six months was, as indicated, a

24 net loss of $30.9 million.

25 MS. HEATHER REICHERT: Correct, on a

1 corporate basis, yes.

2 MS. KATHLEEN MCCANDLESS: As at August

3 31st. Now, if we go to the update at Exhibit Number

4 60.

5

6 (BRIEF PAUSE)

7

8 MS. KATHLEEN MCCANDLESS: We see that

9 as at September 30, 2016, MPI is now reflecting a net

10 loss after surplus distribution of $8.5 million?

11 MS. HEATHER REICHERT: Yes, on a

12 corporate basis.

13 MS. KATHLEEN MCCANDLESS: And can you

14 confirm that the reclassification of net-realizable

15 gains -- pardon me, yes, net-realizable gains relate

16 to available for sale assets actually, and that

17 indicates that the Corporation has realized gains of

18 $37.8 million?

19 MS. HEATHER REICHERT: Correct. So

20 we've realized 37.8 million in the seven (7) months

21 ended September 30th.

22 MS. KATHLEEN MCCANDLESS: And what

23 does this relate to?

24 MS. HEATHER REICHERT: That would

25 relate to the sale of equities during the first seven

1 (7) months of the year.

2

3 (BRIEF PAUSE)

4

5 MS. KATHLEEN MCCANDLESS: Okay. So

6 the Corporation realized roughly $32.2 million in

7 equity gains in September?

8 MS. HEATHER REICHERT: I'd have to see

9 the other schedule again, but assuming your math is

10 correct, yes.

11 MS. KATHLEEN MCCANDLESS: We can flip

12 back. It's page 10.

13 MS. HEATHER REICHERT: Yeah. So it's

14 the difference between the 5.6 million for the -- in

15 the six (6) months, and then at the end of the seven

16 (7) months it was thirty-seven (37). So around 32

17 million of gains was realized.

18 MS. KATHLEEN MCCANDLESS: Thank you.

19 Why did the Corporation realize a gain in September?

20 MS. HEATHER REICHERT: I'm sorry?

21 MS. KATHLEEN MCCANDLESS: Why did the

22 Corporation realize a gain in September?

23 MS. HEATHER REICHERT: Because we had

24 a rebalancing that we needed to have occur in

25 September. So we needed to sell some equities in

1 order to purchase additional bonds.

2 MS. KATHLEEN MCCANDLESS: Thank you.

3 So then can you confirm, based on Exhibit 24, which is

4 in front of you, that there was a net loss for the six

5 (6) months ended 31 -- August 31, 2016, of $30.9

6 million.

7 And if we flip over to Exhibit Number

8 60, at the end of September now, that net loss has

9 been cut to $8.5 million?

10 MS. HEATHER REICHERT: Yes, I can

11 confirm that. And probably again the better one to

12 look at, if you're talking about gains and sales of

13 equities, is to look at total comprehensive income.

14 So if you know -- or if you can flip

15 back, total comprehensive income at the end of August

16 was 30.6 million. At the end of September it was 20.9

17 million. So during that one (1) month period there

18 was a net loss of approximately 10 million.

19 MS. KATHLEEN MCCANDLESS: Rates are

20 set based on net income?

21 MS. HEATHER REICHERT: Yes, they are.

22 MS. KATHLEEN MCCANDLESS: Thank you.

23 And what is the source of the gains in the period from

24 August 31 through to the end of September?

25 MS. HEATHER REICHERT: Well, that

1 would mostly be the gains on the sale of the equities.
2 MS. KATHLEEN MCCANDLESS: Is that
3 Canadian or US equities?
4 MS. HEATHER REICHERT: I believe it
5 was mostly US equities.
6 MS. KATHLEEN MCCANDLESS: Now, if we
7 go to MPI Exhibit Number 32, and that's the answer to
8 Undertaking number 4, the attachment at page 1, and as
9 previously reviewed at the bottom of the page, for
10 2016/'17 investment income will now be $106.2 million?
11 MS. HEATHER REICHERT: Again, based on
12 solely updating our original forecast for '16/'17 on
13 the basis of actual interest rates for the first two
14 (2) quarters. This does not reflect any other
15 adjustments for what actually occurred in the first
16 two (2) quarters.
17 MS. KATHLEEN MCCANDLESS: Thank you.
18 And then if we look up on the table to Canadian
19 equities, realized gains, and US equities, realized
20 gains, for Canadian equities the Corporation will
21 realize $11 million in gains, and for US equities, the
22 Corporation will realize about $6.9 million on the US
23 equity portfolio?
24 MS. HEATHER REICHERT: Again, on a
25 forecasted basis. So we do forecast how much our

1 equities will turn over in a year, which is then
2 realized in net income. So it's when they turn over
3 when they're sold that you would recognize the gains
4 or losses from -- from equities. So this was the --
5 is the forecast as part of the Application.
6 MS. KATHLEEN MCCANDLESS: Thank you.
7 And so that's a total of roughly $17.9 million in
8 gains for the year?
9 MS. HEATHER REICHERT: Forecasted,
10 yes.
11 MS. KATHLEEN MCCANDLESS: And so this
12 appears to be an improved financial outcome for
13 2016/'17.
14 How does this realized equity sale in
15 the third quarter of 2016/'17 impact on what is now
16 being forecast for the year end?
17 MS. HEATHER REICHERT: Being forecast
18 for the year end as -- as it relates to what's on this
19 particular table, all other things being equal, you
20 would -- and again, who knows what's going to happen
21 with the interest rates for the last six (6) months of
22 the year, but assuming every other forecast in this
23 schedule is accurate, and the only thing different was
24 what we actually achieved in the -- in the equity
25 gains in the first six (6) months, you would expect

that the total investment income would be higher than a hundred and six (106).

But there's an awful lot of moving parts that can change that by the end of the year.

MS. KATHLEEN MCCANDLESS: Diana, could we please pull up PUB/MPI-II-25, and Attachment A?

(BRIEF PAUSE)

MS. KATHLEEN MCCANDLESS: And if we go to the bottom -- maybe we could shrink it down just a little bit so we can see budget for 2017, the statement of operations for the Corporation. If we look to budget 2017, the Corporation is for -- was forecasting a net loss of $34.3 million.

Is the Corporation still forecasting that now that it's realized gains?

MS. HEATHER REICHERT: Specifically as it relates to investment income, so if the only forecast that changes that's underlying the 2016/'17 budget figures that we have there relates to the sale of equities, then we would be forecasting that loss to be something less. But as you know, this forecast has six (6) months of interest rates forecasted in it.

Even though it's at the 50/50 scenario,

1 they're still being forecasted to increase. If
2 interest rates, in fact, do not increase, that will
3 change this $34.7 million loss. We have yet to endure
4 the winter, and the number of claims that that may or
5 may not result in. So that's another very big number
6 that can have a significant swing before the end of
7 the year.
8 So at -- at this juncture, I -- I'm not
9 prepared to say that that net income loss that's being
10 forecasted there will be higher or lower. It could
11 very much go either way.
12 But I would also like to just -- to
13 remind the panel that whether we finish the year with
14 a $34 million loss or a 34 million gain, per se, that
15 is not impacting on what we are requesting for a rate
16 increase for 2017, because again, that is based on
17 what we are forecasting to happen in '17/'18 and
18 '18/'19.
19 The impact of what happens in '16/'17,
20 that would need to be dealt with should our RSR not be
21 sufficient to absorb if it becomes a loss. Then --
22 then that would become an issue for our 2018 general
23 rate application if we were in a situation where our
24 RSR was in a deficit position and we needed to look to
25 -- to rebuild that, or -- or have transfers going into

1 it, whatever the case might be.

2 MS. KATHLEEN MCCANDLESS: And have

3 there been any other material changes to the financial

4 forecast that we're not aware of?

5 MS. HEATHER REICHERT: Again, we've

6 talked about interest rates. We've talked about the

7 sale of equities, claims incurred, I'm trying to

8 remember. There -- oh, we talked about that as it

9 related to the first six (6) months, that we had a --

10 a considerable amount of hail in the first six (6)

11 months, so that meant that we had not achieved budget

12 in the first six (6) months for claims. I believe

13 that was in and around 20 million, something like

14 that.

15 So lots of different pluses and minuses

16 that will continue to impact these numbers until the

17 end of the year.

18 MS. KATHLEEN MCCANDLESS: Okay. Thank

19 you. Those are my questions.

20 THE CHAIRPERSON: Okay. I guess we

21 should deal with undertakings in relation to CAC.

22

23 CONTINUED CROSS-EXAMINATION BY MR. BYRON WILLIAMS:

24 MR. BYRON WILLIAMS: I just have one

25 (1) question to the --

1 THE CHAIRPERSON: Okay.
2 MR. BYRON WILLIAMS: -- or undertaking
3 to the MPI panel, and it relates to MPI Exhibit 49.
4 And to the panel, you'll recall there's
5 been discussion in this hearing, and perhaps the
6 chairperson asked a question as well, in terms of the
7 -- the treatment of nonmarketable bonds.
8 And in terms of this Undertaking 23, my
9 understanding is that, for the purposes of comparing
10 the MPI portfolio results to -- to some of its
11 benchmarks, Ellement, E-L-L-E-M-E-N-T, implies -- does
12 an implied -- presents an implied market value
13 calculation that is actually prepared by the
14 Corporation.
15 Is -- is that correct?
16 MR. LUKE JOHNSTON: That's correct.
17 MR. BYRON WILLIAMS: And I hate to do
18 this this late in the day, Mr. Johnston, but just at a
19 -- at a high level, perhaps you can perhaps go down to
20 the last paragraph and -- and tell us a little bit
21 about how that is -- what -- what this answer is -- is
22 telling us, if you would, sir?
23 MR. LUKE JOHNSTON: Okay. So there's
24 -- like other bonds, MUSH bonds have a series of
25 cashflows based on the yield and, I guess, principle

1 of that bond. The way we hold those bonds right now
2 would be on a book value basis as there's not a market
3 for -- a market rate, I guess, for those bonds.
4 I'm just looking here. Can you go down
5 to next page, please? So given we have the cashflows,
6 what we've done is look at the current rates for MUSH
7 bonds being issued and essentially taking the
8 cashflows and discounting them to present day value
9 based on the current MUSH rates in the market.
10 And that gives us a present value of
11 the bond at that -- at the current yields, which will
12 typic -- well, to the extent that the yield is
13 different than what's being earned on the MUSH bond
14 will give a different price than today's dollars and
15 yields.
16 MR. BYRON WILLIAMS: And just so my
17 fatigued mind can follow you, Mr. Johnston, to the
18 extent that the yield on a current bond is lower, that
19 would tend to increase the value of the MUSH -- the
20 imputed value of the MUSH bond.
21 Is that right?
22 MR. LUKE JOHNSTON: That's right. If
23 the -- if the yield and the coupon rate were the same
24 you'd -- on a par of one hundred (100), that would be
25 a price at a hundred. If the coupon rate is say 5

1 percent and the discount rate is 3, you'd have a par
2 value higher than a hundred and -- and vice versa for
3 a lower current rate.
4 MR. BYRON WILLIAMS: Mr. Johnston,
5 thank you for that brave effort this late in the week
6 in the hearing. And I have no further questions.
7 THE CHAIRPERSON: Thank you. I
8 believe that concludes the matters before us today,
9 Ms. McCandless?
10 MS. KATHLEEN MCCANDLESS: Yes, that is
11 correct.
12
13 (BRIEF PAUSE)
14
15 MS. KATHLEEN MCCANDLESS: There is one
16 (1) matter. I'm advised that Mr. Johnston and Mr.
17 Pelly talked offline during the break and that the
18 Corporation has offered to provide an update to
19 Undertaking 19, which was Exhibit -- MPI Exhibit
20 Number 38 -- 58, pardon me, reflecting their
21 discussions.
22 And so is it possible that the
23 Corporation could provide an update to Undertaking
24 Number 19, MPI Exhibit Number 58, based on the
25 discussions that Mr. Johnston and Mr. Pelly had?

1 MR. LUKE JOHNSTON: Yes. We just had
2 a minor difference in how that calculation was to be
3 done. So we're -- we have no issue updating it.
4 Thank you.
5
6 --- UNDERTAKING NO. 41: MPI to provide an update
7 to Undertaking number 19,
8 MPI Exhibit number 58,
9 based on the discussions
10 that Mr. Johnston and Mr.
11 Pelly had
12
13 THE CHAIRPERSON: Thank you. Okay,
14 with that, any other matter?
15 MS. KATHLEEN MCCANDLESS: I believe
16 that's it --
17 THE CHAIRPERSON: That's it. Okay.
18 MS. KATHLEEN MCCANDLESS: -- for
19 today.
20 THE CHAIRPERSON: Okay. Thank you,
21 all. We will reconvene at nine o'clock tomorrow
22 morning. Thank you.
23 MS. KATHLEEN MCCANDLESS: Thank you.
24
25 (PANEL STANDS DOWN)

1 --- Upon adjourning at 2:53 p.m.

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5 Certified Correct,

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8 _____

9 Sean Coleman, Mr.

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