SUR-REBUTTAL

Newfoundland Power Inc. 2016

EVIDENCE OF

Laurence D. Booth

BEFORE THE

Board of Commissioners of Newfoundland and Labrador.

March 2016

I INTRODUCTION

Q. PLEASE DESCRIBE YOUR NAME AND THE PURPOSE OF THIS SUR-REBUTAL EVIDENCE

A. My name is Laurence Booth and I filed evidence before the Board on February 17, 2016 with my full CV and work experience at that time. On March 19, 2016 I was surprised to see that both Newfoundland Power and Mr. Coyne had filed Rebuttal evidence, since it was not on the schedule and I was not expecting it. The rebuttal evidence of Mr. Coyne mischaracterises my evidence in several places as well as being factually incorrect. In response, counsel asked me to file this Sur-Rebuttal. In drafting this sur-rebuttal I have only responded to the comments of the company and Mr. Coyne; any "new evidence" is only in response to new evidence contained in the rebuttal.

Q. HOW HAVE YOU STRUCTURED THIS SUR-REBUTAL

A. I will first address Mr. Coyne's rebuttal as most of it is incorrect, some obviously so. Consequently, I will take each of his topics and respond to them in turn listing the starting page number. I will also refer to several of the decisions of the Alberta Utilities Commission, since they have heard Mr. Coyne's evidence on several occasions and rejected significant parts of it. At the end I will rebut some of the comments of Newfoundland Power.

Placing the Common Equity Ratio and ROE in perspective, page 6

Mr. Coyne's comments and in particular the table on page 7, have no substance. Mr. Coyne presented a similar graph before the BCUC, where he indicated that he was not aware of any Board in Canada accepting such a table. The reason is simply that the table makes no sense. For example, a utility could be allowed 100% equity financing at 5% and would be at the top of his graph. Yet I doubt that any utility in Canada would be happy earning an allowed ROE less than NP's embedded debt cost.[1] Similarly, a utility could be allowed 10% common equity and a 25% allowed ROE and would be at the bottom of the table and I am sure some would be quite happy

[1] This assumes a stand-alone utility and the debt capacity is not transferred to a parent to use.

with that. The point is that the common equity ratio times the ROE is only part of the utility cost of capital and legally what is required is a fair ROE on that equity capital, not a combination of the two ignoring other aspects of the cost of capital. So apart from that fact that the graph ignores risk, and treats all the utilities as if they are the same, the table itself is meaningless.[2]

Capital Market Conditions Pages 12-21

A major area of disagreement between myself and Mr. Coyne is our interpretation of current capital market conditions. Below is the latest forecast from RBC (March 11, 2016).

		Actuals				*Forecast*							
		15Q1	15Q2	15Q3	15Q4	16Q1	16Q2	16Q3	16Q4	17Q1	17Q2	17Q3	17Q4
Canada													
	Overnight	0.75	0.75	0.50	0.50	0.50	0.50	0.50	0.50	0.75	1.00	1.25	1.75
	Three-month	0.55	0.58	0.43	0.51	0.40	0.40	0.50	0.60	0.85	1.10	1.35	1.80
	Two-year	0.50	0.48	0.52	0.48	0.40	0.50	0.65	1.00	1.30	1.60	1.95	2.45
	Five-year	0.77	0.82	0.80	0.73	0.60	0.80	1.05	1.35	1.70	2.00	2.35	2.70
	10-year	1.36	1.69	1.43	1.40	1.20	1.50	1.65	2.00	2.35	2.60	2.80	3.05
	30-year	1.98	2.31	2.20	2.15	1.85	2.25	2.40	2.70	2.95	3.05	3.20	3.35
United States													
	Fed funds**	0.25	0.25	0.25	0.50	0.50	0.75	1.00	1.25	1.50	1.75	2.25	2.75
	Three-month	0.04	0.03	0.00	0.17	0.20	0.40	0.45	0.70	1.00	1.30	1.90	2.45
	Two-year	0.56	0.64	0.64	1.05	0.85	1.10	1.25	1.60	1.90	2.20	2.60	2.95
	Five-year	1.37	1.64	1.37	1.76	1.30	1.60	1.75	2.15	2.40	2.65	2.95	3.20
	10-year	1.93	2.35	2.04	2.27	1.85	2.10	2.15	2.55	2.80	3.00	3.25	3.40
	30-year	2.54	3.12	2.86	3.02	2.65	2.90	2.95	3.30	3.45	3.55	3.75	3.85

It is obvious that current long term Canada (LTC) bond yields are 0.80% below equivalent yields in the United States and have been for several years. Moreover, they are forecast to remain so at least until the end of 2017 and probably significantly beyond that.

Where Mr. Coyne and I disagree is our interpretation of credit spreads. Below is the A spread for both the US and Canada. The A spread in Canada is the same as in my main evidence, which is the difference between the Scotia capital index of corporate bonds rated A and LTC bond yields. The A spread in the US is from Merrill Lynch.[3]

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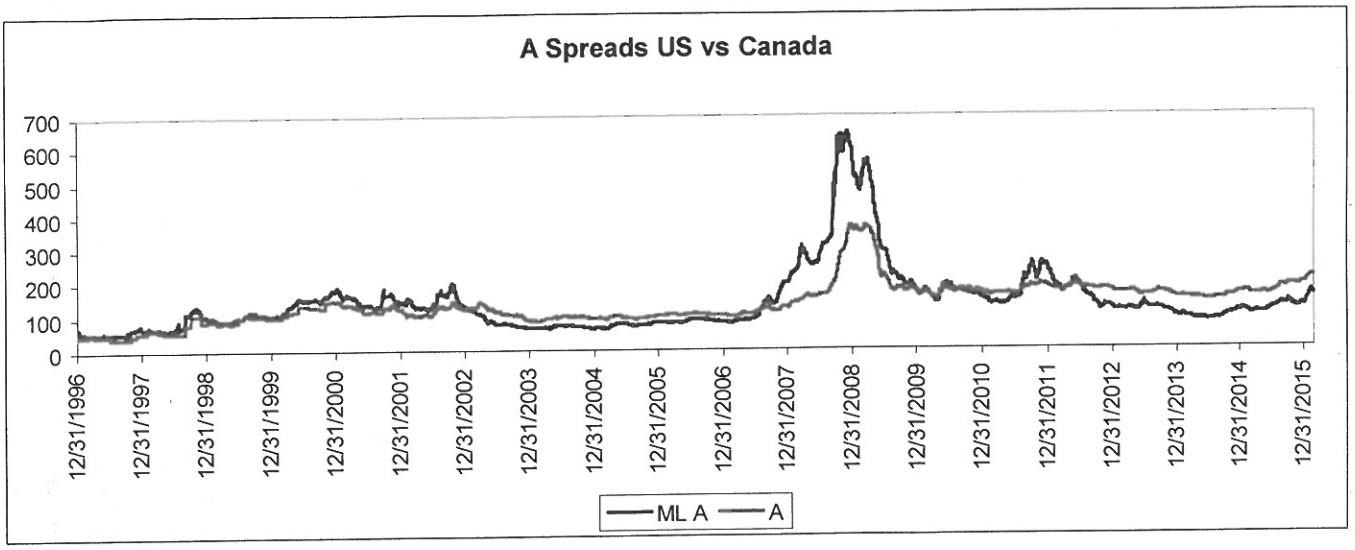
[2] There are very good reasons why EGNB and Heritage Gas are at the top of the graphic.

[3] US spread data is from Merrill Lynch and available at the Federal Reserve Economic Data bank (FRED) at http://research.stlouisfed.org/fred2/series/BAMLC0A3CA/downloaddata?cid=32297. The vertical axis has the spread in basis points that is 1/100 of a %.



Spreads in the US and Canada are never going to be the same, since the composition of the markets are different. However, spreads were very similar up until the early 2000's, then we see that during both the Tech (internet bubble) recession in the US and, particularly the financial crisis US, spreads went higher, reflecting the greater severity of the slowdowns in the US. The A spread demonstrates just how much more severe was the impact of the financial crisis in the US. However, between the two US recessions, spreads in Canada were marginally higher and since June 29, 2012 "A" spreads in Canada have averaged 0.51% more than in the US.

The question is how to interpret the higher credit spreads in Canada. Mr. Coyne in his rebuttal (page 12) states that "if the credit spread is increasing, investors are demanding more compensation and this points to higher risk relative to the comparative period." This statement is not generally correct.[4] It is true that spreads have increased marginally in both the US and Canada over the past eight months reflecting general concern about China and for Canada the impact on resource prices. However, as is obvious from the above graph spreads have been significantly higher in Canada since about 2010, except for the period when the US Congress seriously considered not renewing the Federal debt limit in 2011 and the US lost its AAA bond rating.

[4] At least Mr. Coyne does acknowledge that Canadian utilities face lower financing costs than do US utilities (page 14). However, in his claimed integrated capital market this should reflect lower risk.

The persistently higher credit spread in Canada is not due to any heightened risk aversion in Canada, since we have had very easy credit markets through much of this period. In my 2012 Evidence (page 23) I stated the following:

> *"Reuters reported Governor Mark Carney as saying*
>
> > *"We're in a very different place than the major crisis economies, such as the U.K.,"*
> >
> > *"Our economy's almost back at full capacity, the labor market's been growing, we're growing above – we had been growing above trend, and the extent to which we continue to grow above trend, we may withdraw some of that monetary policy stimulus."*
> >
> > *"But we have a financial system that's firing on all cylinders and so we will have to adjust – we will adjust if it's appropriate,"*
>
> *Reuters went on to report Governor Carney as saying that the country's relatively strong economic fundamentals had helped push the Canadian dollar to parity with the U.S. dollar on Friday for the first time since May and that the currency's value reflected a "safe-haven premium". As Governor Carney said*
>
> > *"There are relatively few places in the advanced world that investors can put their money with a degree of certainty that something catastrophic is not going to happen,"*
>
> *It goes without saying that a financial system "firing on all cylinders," while it describes Canada, it is not an accurate statement of conditions in the US."*

Since 2012 A spreads in Canada have been persistently higher than in the US by over 0.50%, while LTC bond yields have been below those in the US by a similar margin. Mr. Coyne and I agree on this since the data is what it is. However, Mr. Coyne (page 17) attributes the difference in Canadian spreads to higher credit risk. I would agree with this if there were any other corroborating evidence, such as from the Bank of Canada's senior loan officer's survey or the Canadian financial stress index, but there isn't. Instead, we have a persistently higher credit spread that goes back to the time when the Canadian financial system was firing on all cylinders and foreign investors "discovered" the Canadian government bond market. Persistently higher credit spreads over periods when the Canadian financial system has been much stronger than that in the US does not reflect credit risk, but structural changes. I would tend to believe the former Governor of the Bank of Canada in this regard.

It is this structural change in the Canadian capital market that has led me to put a floor under my LTC bond yield forecast of 3.8%. I recommended 3.8% as a floor in 2012 which was adopted by the Board and also at the same time by the BCUC in their ROE AAM. Until current LTC yield increase significantly and forecast LTC yields go above 3.8%, I have been recommending the same ROE. Mr. Coyne disagrees with this (page 7) but absent any change in business risk for a utility, which I have yet to see, the main driver for changes in the allowed ROE is the capital market and the dominant factor here is the impact of Quantitative Easing/Bond Buying/Operation Twist.

The Importance of CAPM, page 21

Mr. Coyne takes issue with the survey work of Graham and Harvey that I reference on page 37 of my evidence, which I find very strange. When corporations undertake investments they do so to enhance shareholder value. To do this they need to know what investors want on their capital investment. This concept is the cost of capital, where to estimate the equity cost most companies use the CAPM as the survey work indicates. What the investor requires to make an investment is then equal to the expected rate of return. This is the exact same concept used in regulation, except that in addition to the cost of equity capital we add an allowance for flotation or issue costs. The Graham and Harvey survey work simply indicates that the largest most sophisticated users traditionally use the CAPM over other methods for estimating the equity cost.

The Big Advantage of the CAPM, page 22

Dr. Booth's judgment is that the CAPM generally results in lower errors than applying the DCF model. The reason for this so that the risk free rate and market risk premium anchor the estimates so, for example, the CAPM should never result in an estimate lower than the risk free rate. In contrast, it is extremely easy to make significant mistakes with the DCF model.[5] In 38 years of teaching CAPM and DCF Dr. Booth has witnessed countless students using the DCF model and saying "the dividend yield is 2% and the company forecast minimal growth for the next five

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[5] As Dr. Booth will show in discussing Mr. Coyne's forward market risk premium estimate where Mr. Coyne initially relied on the constant growth DCF model, but now has been dramatically reduced by his using the multi-stage DCF model.

years therefore the DCF equity cost is 2%." Or the opposite problem, "the company is forecasting 25% earnings growth over the next five years and doesn't pay a dividend therefore the equity cost is 25%." In both cases, the DCF model generates very significant errors, since the company at issue does not satisfy the assumptions required to use the constant growth version of the DCF model. In contrast, there are no special requirements to use the CAPM as it is applicable for all risky securities. This does not mean that using the CAPM is free from making mistakes, but simply that compared to the DCF model the risk is lower.

Concern expressed by others in using the CAPM, Page 22

Apart from the fact that Dr. Booth also expresses concerns about using the CAPM in a mechanical manner at the current point in time, Mr.Coyne references a report by the Brattle group. What he fails to mention is that the Brattle group generally prepares ROE testimony on behalf of utilities and has done so in the past for TransAlta before the AUC, TransCanada and TQM before the NEB, Gaz Metro before the Regie and Union Gas before the OEB. Currently, they are before the AUC on behalf of the ATCO utilities.

The Brattle group's preferred technique is to use an Empirical CAPM or ECAPM. They base this on the early evidence described on page 22 of Mr. Coyne's rebuttal that low risk securities tend to have their return under estimated by the CAPM. As a result, they add a premium to the risk free rate and adjust their betas mechanically toward 1.0. However, what Mr. Coyne neglects to explain is that these early tests of the CAPM use the Treasury Bill yield as the risk free rate. In contrast, in a Canadian regulatory setting we use the forecast long Canada bond yield. Currently, Mr. Coyne for example is using a forecast LTC yield of 3.80% whereas applying the CAPM in the way it was tested would mean using the current Treasury Bill yield of 0.50%, or 3.3% less. In effect Mr. Coyne is already adding at least 3.3% to his CAPM estimates and already adjusting for the "pivot" described in the Brattle report so no other adjustment is needed.

The AUC recognized this in its generic cost of capital decision (2004-052, page 22) when it stated in reference to the Brattle witness Dr. Vilbert,

> *"Dr. Vilbert (sponsored by NGTL) used both a CAPM model and an ECAPM model. His ECAPM model included an adjustment factor to compensate for an alleged tendency of CAPM models to under-estimate required returns for lower risk companies. Dr. Vilbert's*

ECAPM model resulted in a recommendation for an 11% ROE on a 40% common equity ratio. Dr. Vilbert's ECAPM results would directionally support an increase from the midpoint of the Board's CAPM range.

The Board notes Calgary/CAPP's argument that applying CAPM using long-term interest rates (long-Canada bond yields) in determining the risk-free rate, as was done by all experts in this Proceeding, already corrects for the alleged under-estimation that ECAPM was designed to address. Calgary/CAPP argued that the under estimation would only be present if the CAPM were applied using short-term interest rates, which none of the experts did in this Proceeding.

The Board finds the Calgary/CAPP position persuasive and considers that the use of long-term Canada bond yields largely adjusts for the tendency of CAPM, when based on short-term interest rates, to under estimate the required returns for lower risk companies. Therefore, the Board will only place limited weight on the results of the ECAPM model."

Mr. Coyne may agree with other witnesses on behalf of utilities, such as the Brattle group, but that position has been rejected by Canadian regulators.

The "Best" use of CAPM, page 23

Mr. Coyne says that the textbook by Drs. Booth and Cleary says that the CAPM is "best suited for estimating the equity cost for companies with high growth rates and/or low dividends such as technology companies." This is incorrect as the referenced quotation says no such thing. The passage from the textbook says that the DCF model performs poorly for such firms, so it is best to rely on the CAPM. However, the CAPM performs well for all firms; there is no implication that it does not work for firms where the assumptions needed for the constant growth version of the DCF model are also met.

Dr. Booth's comment on the DCF Model falling out of favour in the 1990's, page 24

Dr. Booth filed testimony in the 1990s when the DCF model fell out of favour in Canada. It was replaced in 1994 by an ROE automatic adjustment model based on the CAPM by the BCUC and then in 1995 by the NEB and then in turn by most of the major regulatory boards in Canada. This is a fact that the Board of Commissioners should be well aware as it used an ROE AAM mechanism as well. In contrast, the US continued to use DCF and placed little reliance on the CAPM or ROE AAMs, which is a key difference in the application of regulation between the US and Canada. The referenced quotations from the Booth-Cleary textbook are correct: to apply the

constant growth version of the DCF model requires stringent assumptions not needed for the CAPM.

The Academic Support for the CAPM, page 23

Dr. Booth is not aware of any finance textbook that does not put the CAPM forward as the most important risk premium model. As Dr. Booth explains in his evidence page 38, the major challenger to the CAPM is not any of the procedures advanced by Mr. Coyne, but the Fama-French model for which Eugene Fama, in part, won the Nobel prize in economics. Further, as Schedule 3 of Dr. Booth's evidence shows the FF-3 factor model is simply a generalisation of the CAPM and usually does not significantly change the cost of equity estimates, but does significantly increase estimation error, as even Fama-French recognise. One important advantage of the Fama-French 3 factor model is that in their empirical tests the intercept is no longer significant which removes the criticism levelled against the CAPM from the early tests in the 1960s referenced in the Brattle Group report. If Mr. Coyne is to reject the CAPM the only acceptable alternative is the Fama-French model, which Dr. Booth has only seen used once in Canada. Any other model is far outside the mainstream of finance.

Dr. Booth's reliance on the CAPM, page 26

Mr. Coyne is using a straw man, as nowhere does Dr. Booth place primary reliance on the CAPM. At Page 43 Dr. Booth rejects the simple CAPM estimate, and at page 45 the conditional or CCAPM estimate. Here it has to be pointed out that *any* recommendation can be couched in terms of a risk premium over the forecast LTC rate. However, that does not mean that primary reliance has been placed on a CAPM or even a risk premium estimate. Dr. Booth has not placed primary reliance on the CAPM since the emergence of quantitative easing/bond buying/operation twist caused depressed LTC yields. Why Mr. Coyne would make such a statement when Dr. Booth's testimony has 15 pages on risk premium estimates versus 19 pages on DCF estimates is not clear.

The Risk-free rate, page 27

The base risk free rate should be the rate appropriate for the forecast test year since we are determining the fair ROE for that period, not a future period. This has been standard practice in

Canada since the BCUC and NEB started using the Consensus Economics three and twelve month forecasts for the ten year bond yield in their ROE adjustment mechanisms. My estimate using the Consensus forecast for 2016 is 2.81% versus the 3.8% used by Mr. Coyne. I can find no empirical support for anyone believing that the long Canada bond yield will average 3.8% in the 2016 test year. If that were a widespread acceptable forecast, investors would be holding LTC bonds expecting to incur very large losses. It is simply not a credible forecast and inconsistent with current capital markets.

The Size of the Market Risk Premium, page 28

My market risk premium estimate of 5.0-6.0% is based on my own estimates provided in my Appendix B and the survey results of Fernandez. As I have explained before many boards, it is difficult to go against the judgment of thousands of professionals responding to surveys. I agree with Aswath Damadoran that how the question is phrased is important, but Fernandez asked it in a very straight forward way. Further, this time Fernandez also included the overall expected return on the equity market as well as the components, which is difficult to argue with. In addition, I provided the TD Economics forecast plus the Aon Hewitt forecast provided by NP. One wonders just how many independent forecasts are needed of the market risk premium?

Dr. Booth does have one concern on the market risk premium, which is that Mr. Coyne claims to be using the market risk premium estimates of Duff and Phelps. In CA-NP-103/4, Mr. Coyne was asked to provide the actual return for the long Canada bond, instead he provided what he termed the income only return. Why this is important is that in his evidence he reports the historical market risk premium using "income only" returns for the US at 7.0%. However, Duff and Phelps themselves recently released their latest estimates for the US as indicated below, where they increased the US market risk premium estimate from 5.0% to 5.5%.[6]

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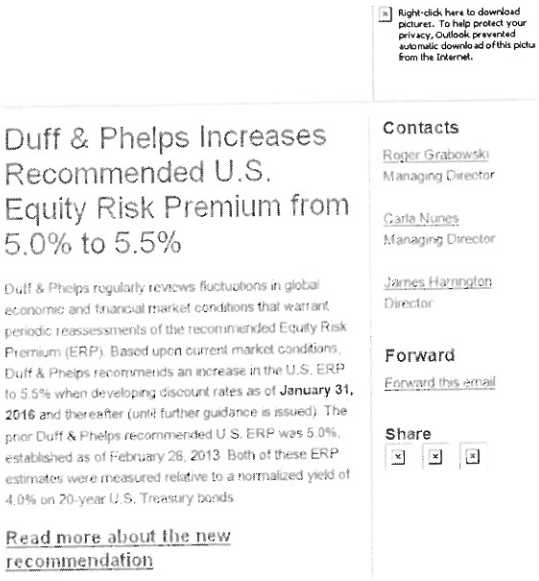
[6] https://sites-duffandphelps.vuturevx.com/8/1113/march-2016/duff-and-phelps-increases-recommended-u.s.-equity-risk-premium-from-5.0--to-5.5---email---split-b.asp?sid=00e15e62-af1e-4337-a26e-af97a0c7ef5e



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Duff & Phelps Increases Recommended U.S. Equity Risk Premium from 5.0% to 5.5%

Duff & Phelps regularly reviews fluctuations in global economic and financial market conditions that warrant periodic reassessments of the recommended Equity Risk Premium (ERP). Based upon current market conditions, Duff & Phelps recommends an increase in the U.S. ERP to 5.5% when developing discount rates as of **January 31, 2016** and thereafter (until further guidance is issued). The prior Duff & Phelps recommended U.S. ERP was 5.0%, established as of February 26, 2013. Both of these ERP estimates were measured relative to a normalized yield of 4.0% on 20-year U.S. Treasury bonds.

Read more about the new recommendation

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Why this is important is that not only is Duff and Phelps own estimate of the market risk premium 1.5-2.0% below that used by Mr. Coyne "using Duff and Phelps data" but they use it based on a normalised 4.0%, 20-year, US Treasury Yield, which is very similar to my own approach, as well as that of Aon Hewitt.

In terms of Mr. Coyne's forward looking market risk premium estimates of 9.8% for Canada and 8.1% for the US, he was subjected to cross examination on this before the BCUC two weeks ago. The basic problem was that he assumed the constant growth form of the DCF model to generate his estimates and this clearly does not hold for most companies. The reason for this is simply that the assumed analyst growth rates in his estimates vastly exceed any possible growth rate in the economy, resulting in internally inconsistent estimates. I assume to head off cross examination on this inconsistency Mr. Coyne on page 29 provides what he terms a "more conservative" estimate based on the multi-stage DCF model, which is what he was asked to do in BC as an undertaking. These estimates reduce the market risk premium for Canada from 9.8% to 5.39% or by 4.41% and from 8.1% to 3.96% or by 4.14% for the US.

These new "forward looking" market risk premium estimates have three implications.

- First, they demonstrate the huge errors introduced by the careless use of the constant growth DCF model. By any stretch of the imagination reducing the market risk premium estimate by 4.41% in Canada and 4.14% in the US is a significant error and likely greater than even the careless use of the CAPM.

- Second, Mr. Coyne regards the results of his own estimates as "anomalous" and rejects them based on his regression analysis, which in turn is based on the same constant growth DCF estimates which are incorrect. Further this is the same regression model that predicted a huge negative risk premium during the financial crisis!

- Third, when we partially discount the optimism of short run analyst forecasts by using the multi-stage DCF model the forward looking DCF market risk premium is consistent with historic estimates.

Beta estimates, page 31

Mr. Coyne continues to repeat the myth that Canadian utility betas revert toward 1.0 despite there being absolutely no evidence that supports that conjecture. At least Mr. Coyne does now accept that Gombola and Kahl have provided the only evidence for utility betas and that they found they revert toward their own mean, which Dr. Booth takes to be about 0.50, and not 1.0. However, Mr. Coyne rejects the only empirical evidence on utility betas in favour of the use of betas adjusted toward 1.0 for all stocks, *not* for utility stocks, by two private US services.[7] Notably he does not provide beta estimates from public services such as Yahoo, Google or the Globe and Mail, none of which adjust betas.

In 2009 the AUC stated (GCOC 2009-216, Paragraph 251)

> *"The Commission is persuaded by the empirical analysis of Drs. Kryzanowski and Roberts that there is insufficient evidence to support the use of adjusted betas for Canadian utilities if the purpose of the adjustment is to adjust the beta towards one and therefore, beta should not be adjusted towards one. Therefore, the Commission rejects Mr. Coyne's beta results as unreasonably high, because he adjusted his beta estimates on the assumption that they would revert to 1.00. In other words, his analysis assumes that, in time, utilities would be as risky as the market as a whole."*

Apart from the fact that the AUC specifically rejected Mr. Coyne's evidence, I am not aware of any Canadian regulator that has accepted betas adjusted toward 1.0. Mr. Coyne references the 2009 OEB technical conference and that the Board took no "issue with Concentric's adjusted betas." However, not specifically rejecting estimates is not the same thing as accepting them. Further, the OEB decision was not the result of a litigated hearing with information requests and

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[7] That is, this adjustment by Merrill, for example, is the same for all firms there is no implication that it is specific for utilities or that they even thought about how utility betas behave.

cross examination, so a large number of issues went unexamined including this inappropriate adjustment.

Fernandez view on Beta, page 34

Fernandez has concerns about the CAPM which he has expressed in an unpublished manuscript. Note these are his views and the paper has not passed any peer review process. In contrast, his survey reflects the view of thousands of professionals, that is, it is not Professor Fernandez' own view. When this was presented to the AUC they stated (GCOC 2011-474, paragraph 64)

> *"The Utilities also noted that Dr. Fernandez (whose work had been cited by Dr. Booth) had provided evidence that the CAPM does not work and had concluded that historical betas are useless to estimate the expected return of companies. However, the Commission continues to hold the view that CAPM is a theoretically sound and useful tool, among others, for estimating ROE."*

Conditional CAPM, page 38

Mr. Coyne takes issue with my 50% adjustment to the credit spread as judgmental. In truth it partially is, since the Bank of Canada researchers estimated a 37% adjustment. However, while he cites the OEB's 2009 decision, he fails to acknowledge that the experts on behalf of the utilities in that technical conference recommended a 50% adjustment, whereas I did not. I have subsequently accepted it as being plausible on the basis that over a normal business cycle it should even out to zero, since it is based on deviations of the credit spread from its average level. It has subsequently been accepted by the Regie and the BCUC, as well as the OEB, so it is not simply Dr. Booth's judgment. The problem is that a significant component of the "credit" spread is actually a liquidity spread and this is time varying. Moreover, the liquidity impact has become more important since bank regulators in the US have restricted proprietary trading by the major investment banks.

The second adjustment is my Operation Twist adjustment. My concern here is that the spread has become much more volatile since the start of 2015. At the time of my evidence I was unsure why it had become so volatile, further research has indicated that many preferred shares are rate re-set preferred shares, where every five years their dividend yield is re-set to a spread over the five year Canada bond yield, as described at page 47 of my evidence. The problem is that the Bank of

Canada decreased the over-night rate to 0.50% in Spring 2015 and now the 5-year Canada yield is at 0.68%. The result is that some preferred share-holders are faced with a significant cut in their *future* dividend, causing the market values to drop despite their *current* dividend. This causes their reported yield to increase. I therefore place less weight on preferred share yields now than I did in 2012.

My DCF Analysis, page 42

Mr. Coyne criticises my DCF evidence for relying on growth that is actually sustainable from utility operations, rather than relying on optimistic analyst expectations. In particular, he criticises me for not including "SV" growth where S is the proportion of equity financing from new share issues and V is the market to book ratio minus 1.0. In my judgement this adjustment is generally of very limited importance. The reason is that for utilities the market to book ratio should be close to 1.0 for effective regulation so the V term should be very small, while for almost all firms the S term is usually zero. The result is that the product of the two terms is usually not significant compared to problems elsewhere.[8]

I am also mystified by Mr. Coyne's reference to my sustainable growth estimates, where he states that "Dr. Booth has assumed the reasonableness of analysts' ROE projections, while contesting the same analysts' projections of company growth rates." This is categorically incorrect as I do not use analyst projected ROE estimates anywhere.

Finally, Mr. Coyne takes issue with my specific DCF estimates. However, what he fails to acknowledge is that I do not use individual estimates. Instead, similar to beta estimates, individual DCF estimates are always subject to measurement error, so the focus is on the sample average and median. Mr. Coyne also points to Duke Energy with a very low retention rate, but that simply highlights the fact that Duke Energy is paying out almost all its earnings and its current earned ROE of 5.95% is low. The same is true of Great Plains with an ROE of 5.70%. Again this simply reflects the variability in actual ROEs for these US utilities and the fact they

[8] An additional problem is determining why the number of shares outstanding has changed. For example, often this is due to the exercise of executive stock options. Further V is often negative for firms buying back their shares. I first became aware of the SV problems when preparing testimony before the US Interstate Commerce Commission for Dr. Myron Gordon in 1982.

are not comparable to NP as my Schedule 7 also indicates. It also shows that whereas a DCF analysis is useful for a true regulated utility where the ROE is stable as in Canada, it is not as useful even for these US utility holding companies which have quite volatile ROEs.

Analyst Bias, page 46

Mr. Coyne seems to be the last analyst who doubts that security analysts suffer the optimism bias. Here it should be emphasised that no-one doubts the integrity of security analysts, in fact Dr. Booth has trained several. The point is simply that they are human. Finance academics regard the optimism bias as well documented and automatically adjust for it in research. In previous evidence I have referred to the McKinsey study and newspaper articles in the Globe and Mail to indicate that it is not just academics, but professionals who also take it into account. This time I used an up to date RBC study, otherwise I would be criticised as out of date. Contrary to Mr. Coyne's statement RBC looked at the forecast for earnings and then what actually resulted, they did not use a five year forecast and compared it to a one year result as Mr. Coyne alleges. What RBC found is an identical pattern to that of McKinsey and finance researchers; that analysts start out high and gradually zero in on the true number as they get closer. In other words, we should take their long run growth forecasts with a grain of salt as they are optimistic. I am not aware of any reputable authority that disagrees with this assessment.

I would also point out the following assessment by the AUC (2009-216 paragraph 270)

> *"With respect to the analyses of Dr. Vander Weide and Mr. Coyne, the Commission considers that DCF growth estimates that exceed the expected growth in GDP over the long run are unrealistic, particularly for a stand-alone regulated utility. Dr. Vander Weide's DCF estimates assumed dividend growth rates that frequently exceeded the expected Canadian GDP nominal growth rate of 5 percent to 6 percent, including inflation. Mr. Coyne's DCF analyses similarly forecast dividend growth rates that are, for all but one of his proxy groups, above the expected GDP nominal growth rate. For this reason, the Commission rejects the results of the DCF analyses of both Dr. Vander Weide and Mr. Coyne."*

It is rare for a regulator to be so specific in rejecting an expert's evidence, but it is clear that the AUC rejected Mr. Coyne's DCF evidence as well as his adjusted betas. Also it is worth pointing out that the AUC also stated (GCOC 2015-2191, paragraph 190) that

"However, the Commission is also mindful that, as both experts acknowledged, the GDP growth rate may be an ambitious target for long-run earnings growth in respect of low-risk, mature, utilities."

That is to say that not just the first stage in a multi-stage DCF is optimistic, but also the second stage where it is assumed that growth equals that of GDP. I read this comment by the AUC as casting doubt on the multi-stage DCF model when used with both analyst growth forecasts and long run GDP growth.

Dr. Booth's risk assessment, page 50

Mr. Coyne takes issue with my risk assessment of NP. However, I think he missed the point. I judge there to be very little short term risk as NP consistently earns its allowed ROE, in this it behaves similar to every other major regulated utility in Canada. In the long term, the major risk is the death spiral that has affected two other Canadian utilities. However, this could only come about if ratepayers sign off from NP and use alternative fuels for space heating as electricity prices become uncompetitive. In my judgement this is highly unlikely given the involvement of the provincial government and the tools available to the Board to protect the utility. The major risk to investing in utility shares in Canada is market risk, not business or financial risk.

I agree that the Board might in the future take actions that hurt the bond holder, such as changing the deemed capital structure or depreciation rate etc, but the bond holder is protected by contract law. This is why there is an interest coverage restriction, as well as others, in the bond contract. The Board's primary duty is the fair return standard and ensuring that rates are fair and reasonable.

The Regie's recent decisions in Quebec, page 55

In 2011 I presented evidence before the Regie which allowed Gaz Metro an 8.90% ROE on 38.5% common equity. This 8.9% included a 0.25-0.35% additional risk premium for Gaz Metro, since the Regie regarded it as above average risk. From this I deduce that the benchmark or average risk utility was regarded by the Regie as having a fair ROE of 8.60% (mid-point) at that time. In 2013 I entered evidence on Hydro Quebec Transmission (HQT) and Distribution (HQD) before the Regie, both of which were treated as stand-alone utilities. The Regie allowed both an ROE of 8.2% on 30% common equity for HQT and 35% common equity for HQD. I

regard an ROE of 8.2% to be a drop from the 8.6% average risk utility, when the Regie decided Gaz Metro's ROE.

Q. DOES THAT COMPLETE YOUR SUR-REBUTTAL OF MR. COYNE?

A. Almost. In several places Mr. Coyne refers to practices in a foreign country, that is, the United States, as if US practices take precedence over practices in Canada. For example, he refers to the FERC's use of DCF and their attitude towards sustainable growth. However, he fails to list other decisions of the FERC. The AUC noted for example (2009-216, paragraph 183)

> *In addition to the evidence referred to above, the Commission has also been assisted in arriving at the above conclusion that regulatory risk is higher in the United States than it is in Canada by the recent finding of the FERC which was referred to in the evidence of Dr. Safir with respect to the inclusion of TransCanada in the proxy group it used to evaluate U.S. equity returns, stating:*
>
> > *Also, TransCanada's Canadian pipeline is subject to a significantly different regulatory structure that renders it less comparable to domestic pipelines regulated by the Commission.*

What is clear is that the FERC regarded its regulatory policies as different from those of the NEB.

Further when the AUC cross examined Ms Abbott who appeared on behalf of Altalink, there was the following exchange (2009-2216, paragraph 186)

> *Q. Can I ask you, ma'am, to turn back to page 36 of your evidence. 57.05.*
> *A. MS. ABBOTT: Okay.*
> *Q. Page 36.*
> *A. MS. ABBOTT: Yes?*
> *Q. Line 732.*
> *Q. The last line of that page, line 732, you indicate the average U.S. utility is rated BBB, and that there are no longer AAA companies?*
> *A. MS. ABBOTT: Yes.*
> *Q. Would that suggest that U.S. utilities are riskier, on average, than Canadian Utilities?*
> *A. MS. ABBOTT: Yes.*
> *Q. Could higher risk for US utilities justify a higher ROE and common equity ratio for US utilities when compared to Canadian Utilities?*
> *A. MS. ABBOTT: It could, yes.*

Q. Ms. Abbott, do you recall in the recent GTA hearing, you were asked by the Commission counsel about rating agency concerns about execution risk and the risk of having cost disallowed because they were found to be imprudent. And in your answer you refer to the State of Illinois. And if you'd like to turn it up, it's transcript volume 7, page 1083. At line 9.
A. MS. ABBOTT: Line 9. Okay.
Q. Your statement there was:
> *"There is a very different regulatory scheme in the States than there is in the Province of Alberta and a different record in terms of costs."*

Do you see that, ma'am?
A. MS. ABBOTT: Yes.
Q. What did you mean when you say the regulatory scheme in the US is very different than it is in Alberta?
A. MS. ABBOTT: Well, first of all, there is 50 different states and there are 50 different regulatory procedures in the States. And there are very few that have as many adjustment clauses as does Alberta; and there are none that I know of where companies are mandated to -- to build projects in the States.

Q. DO YOU HAVE ANY COMMENTS ON THE COMPANY'S REBUTTAL?

A. Yes. NP takes issue with the fact that I recommend a 40% common and 5% preferred share component, which is the same recommendation I made in 2012.[9] There are several comments and I will answer them in sequence.

Page 2 the need for refinancing

CU Inc. finances the ATCO utilities by raising debt and preferred shares on their behalf and they then issue securities to CU Inc. that mirror CU Inc.'s cost. There is no technical reason why Fortis Inc. cannot do the same for NP. This is particularly obvious given that Fortis Inc. in f act finances its investment in NP with approximately 35% common shares and 10% preferred shares and is a regular issuer of preferred shares. Nowhere does NP address the fact that its assets actually do support a 35% common equity ratio with what Fortis Inc. describes as a strong bond rating. Why NP's debt capacity has in part been transferred to its parent is never addressed in NP's rebuttal evidence.

There is no need for any refinancing. It would obviously be cleaner if Fortis Inc. purchased $55 million or so of NP preferred shares and NP then used the proceeds to dividend out the

[9] Note 40% common equity is the bottom of the 40-45% range the Board used in the early 1990's.

equivalent to Fortis, thereby reducing its common equity. This is a simple paper transaction. However, the same result is obtained by the Board allowing the ROE on 40% common and then allowing a preferred share rate on the 5% balance. This is what I recommend as an interim measure until the situation surrounding Muskrat Falls and electricity prices is resolved.

Deeming a preferred share component is exactly what the Regie allows Gaz Metro, where the common equity ratio is set at 38.5% and there is a 7.5% deemed preferred share component. Note, a deemed preferred share component has the advantage of imposing no financial risk on the shareholder while also providing equity support for the bond rating and credit metrics. It also maintains the Board's freedom of action for dealing with any possible electricity price shock.[10]

Page 4, Credit Metrics

It is not clear whether the credit metrics on page 4 include the 5% capital structure change as preferred shares or debt. It appears to be debt, which is not my immediate recommendation. Further as debt is refinanced, the credit metrics automatically improve as the embedded debt cost is lowered so it is unclear why the credit metrics worsen unless these are the metrics at current rates.

Comparison with Fortis Alberta, page 5

Dr. Booth used the data in Fortis Inc's presentation on bond ratings. This is presumably the data that NP's parent thinks is most useful. In footnote 7 in the rebuttal NP refers to its "long term" Moody's bond rating as Baa1. However, this is its issuer rating not its issue rating, that is, it is not the rating of the securities that NP issues to investors.

Further NP acknowledges that Fortis Alberta is allowed an ROE of 8.3% on 40% common equity but lays great store by the fact that Fortis Alberta has consistently earned more than its allowed ROE and that it over earns by more than NP. However, NP fails to mention three facts. First, Fortis Alberta is on performance based regulation, where gains are shared between shareholders

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[10] Note NP misstates my position when they say (page 2) that a preferred issue *must* be over $100 million. I never said that, what I said was that from the BMO preferred sharre statisics generally they are over $100 million.

and ratepayers, whereas NP is on cost of service. Second, Fortis Alberta did not have either its allowed ROE or common equity ratio changed when it went onto PBR.[11] Third, I am not aware of any rating agency changing the bond rating of a Canadian utility when it goes on PBR. I assume that this is because with the "stable rating philosophy" it is regarded as a temporary change.

It is my judgement that the AUC set Fortis Alberta's allowed ROE at 8.3% and its common equity ratio at 40% consistent with the fair return standard. Further these financial parameters were not set in anticipation that Fortis Alberta would over-earn while on PBR. This and the fact that Fortis Inc. finances NP with 35% common equity while earning less than 7.5% on average is powerful evidence that NP's 45% common equity ratio is excessive.

Q. DOES THIS COMPLETE YOUR SUR-REBUTTAL?

A. Yes.

[11] Utilities generally claim they are riskier when on PBR and over-earning!