

DEMANDE DE RENSEIGNEMENTS N° 1 DE DRE VILLADSEN AU DR BOOTH

1. Références : C-ACIG-0037

Page 2, lines 14-16 : “I base my LTC yield on the forecast from the Parliamentary budget officer and the Federal government’s budget briefing which itself was based on consensus values from the private sector.”.

Demandes :

- 1.1 Please provide a copy or citation to the referenced budget briefing used by Dr. Booth.

2. Références : C-ACIG-0037

Page 3, line 17 : “However, I have seen such qualitative risk factors consistently introduced in other hearings for the last almost four decades.”.

Demandes :

- 2.1 Please provide citations to the filed evidence in which such qualitative risk factors were described, and please provide the link and/or copies of the corresponding decisions.

3 Références : C-ACIG-0037

Page 4, line 3: “In my judgment, the only risk the utility shareholders face is standard market risk due to price fluctuations which is measured by their beta coefficient.”

Demandes :

- 3.1 Please specify which utility’s shareholders Dr. Booth is referring to in this sentence.
- 3.2 Please specify which beta coefficient Dr. Booth is referring to in this sentence.

4 Références : C-ACIG-0037

Page 9, line 4-7: “Even though I regard GMI as more risky than an average Canadian gas distribution utility, LUNB is even riskier as a greenfield utility that has not met its expansion targets and found competition from alternative fuels extremely difficult”.

Demandes :

- 4.1** Please provide any quantitative analysis of the business risk differences between LUNB and GMI to support Dr. Booth to conclude in his Direct Evidence that LUNB is “even riskier” than GMI?

5 Références : C-ACIG-0037

Page 10, footnote 4: “These growth rate forecasts are based on sell-side earnings estimates, which are known to be biased.”

Demandes :

- 5.1** Please provide any research or analysis performed by Dr. Booth to support the statement that short-term growth rate forecasts are biased.
- 5.2** Please provide any research or analysis performed by Dr. Booth to verify analyst bias in the growth rates used by Dr. Villadsen.

6 Références : i) C-ACIG-0037

Pages 23-24, lines 10-2: “In financial markets the Bank of Canada cut the overnight rate of 0.2% and announced a raft of asset purchase programs including buying approximately:

- 40% of the Treasury bills offered at auction each week
- \$5 billion of Government of Canada bonds each week
- \$50 billion of provincial bonds
- \$10 billion of corporate bonds
- \$36 billion banker’s acceptances
- \$3 billion Canada mortgage bonds”

Page 29, lines 11-16: “In 2011Q4 the U.S. Federal Reserve embarked on the most dramatic third round of bond buying (QE3) with an open-

ended commitment to buy \$85 billion of US government bonds and Federal agency backed mortgages every month. In addition to the Federal Reserve, the Bank of England, the European Central Bank, and the Bank of Japan all embarked on ambitious bond buying programs designed to lower long-term interest rates...”.

ii) C-ACIG-0039

Pages 7-8, lines 25-6: "Finally, 2020 and 2021 are special unto themselves since with a budget deficit of over 10% of GDP in 2020, the Bank of Canada started financing the government deficit by buying 40% of the Treasury bill auction and \$5 billion of Government of Canada bonds at auction. In this way the Bank of Canada joined similar programs elsewhere around the world with massive central bank government bond buying programs. These programs have clearly been effective as the coefficient indicates that real yields in Canada were 6.65% below where they would otherwise have been or an additional 4% below the already depressed real yields. The result has been record-low real yields last seen during the petrodollar recycling crisis and the war years.”.

Demandes :

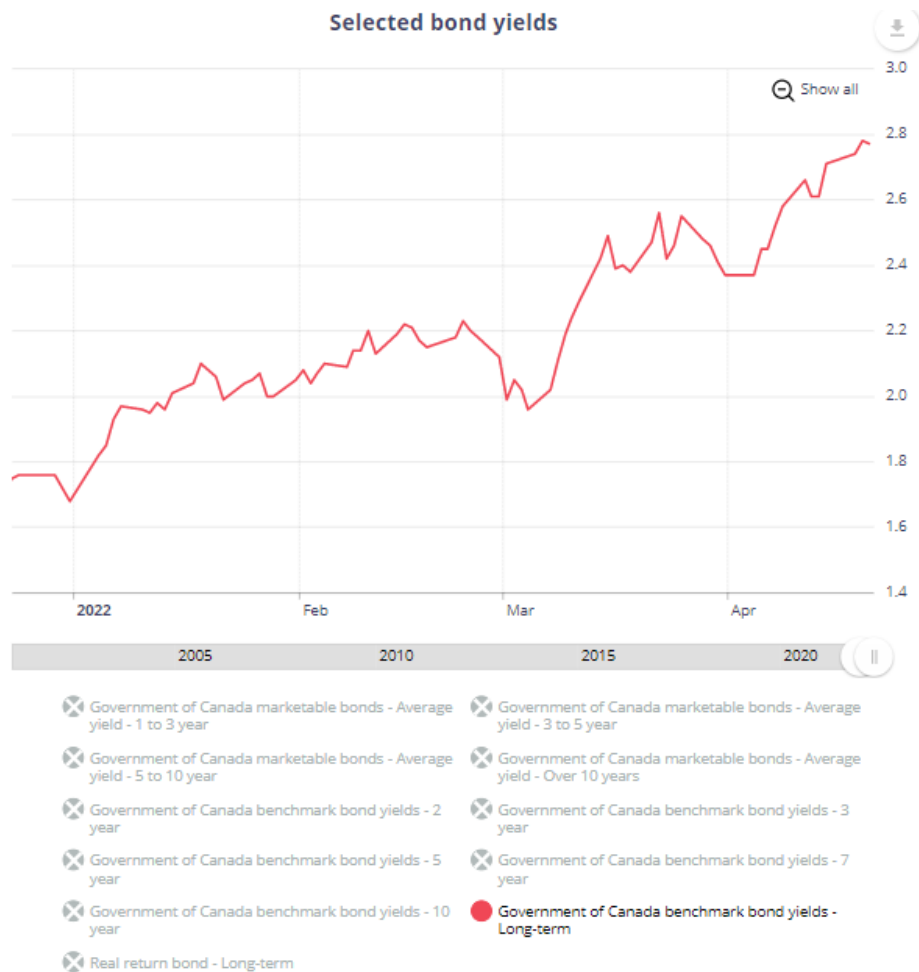
- 6.1** Please confirm that the Bank of Canada’s asset purchase program following the onset of the COVID-19 pandemic artificially suppressed government bond yields, similar to what happened in the United States. If not, please explain why and provide any evidence to support Dr. Booth’s rationale.
- 6.2** Please confirm that the Bank of Canada discontinued its asset purchase program in November 2021, which will put upward pressure on interest rates going forward.
- 6.3** Please confirm that the Bank of Canada increased its target for the overnight rate to 1% on April 13, 2022.

7 Références : i) C-ACIG-0037

Page 31, lines 9-12: "RBC is forecasting that the current overnight rate of 0.25% will increase to 1.25% by Q4 2022 and 1.75% by Q4 2023. The 30-year LTC bond yield will also increase from the current 2.17% in Canada to 2.30% by Q4 2022 and remain there until Q4, 2023.”.

Page 32, lines 7-8: “For the immediate future, I doubt that long-term interest rates will increase much beyond the RBC forecast...”.

ii) Bank of Canada, “Selected Bond Yields,” “Government of Canada benchmark bond yields – Long-term” February 1, 2022 to April 20, 2022.
<https://www.bankofcanada.ca/rates/interest-rates/canadian-bonds/>



Demandes :

7.1 Please confirm that the yields on long-term Bank of Canada bonds, as reported by the Bank of Canada, exceeds RBC’s Q4 2023 forecast of 2.3% since at least March 14, 2022.

7.2 Please confirm that the yields on long-term Bank of Canada bonds, (2.77%) as reported by the Bank of Canada, exceeds RBC's Q2 2022 forecast of 2.15% by approximately 62 basis points (as of April 20, 2022).

8 Références : C-ACIG-0037

In Section III and IV of Dr. Booth's testimony, he provides extensive commentary on financial market conditions going back several decades.

Demandes :

8.1 Please explain how historic financial market conditions are relevant to current market conditions and in the determination of the forward-looking cost of equity for the Quebec gas utilities.

9 Références : C-ACIG-0037

Page 51, lines 6-8: "In 2001, a survey of 392 US Chief Financial officers published in the Journal of Financial Economics by Graham and Harvey produced the following results".

Page 52, lines 1-2: "...Baker et al performed a similar survey of large and small firms in Canada with the results in the following table."

Demandes :

9.1 The studies quoted by Dr. Booth are 10 to 20 years old. Please provide any survey or data on commonly used financial models that were published during the COVID-19 period (i.e. since 2020).

10 Références : C-ACIG-0037

Page 51, lines 11-12: "The dividend discount model is known as the DCF model in regulatory hearings and comes in a poor 4th..."

Page 75, lines 24-25: "It also supports the value of currently look at DCF estimates despite the fact they are downplayed by both professionals and academics"

Demandes :

- 10.1** Please provide copies of standard MBA textbooks, peer-reviewed academic articles, or publications by financial professionals to support the statement that the DCF model is downplayed by academics?

11 Références : i) C-ACIG-0037

Page 61 lines 10-12: “The following graph is for the utility index beta using data back to 1987”.

ii) C-ACIG-0040

Page 16 of Appendix C shows Canadian utility betas against the US market index.

Demandes :

- 11.1** The figure on page 61 shows that COVID-19 had little impact on utility betas. However, the same chart shows that utility betas increased by about 0.15 to 0.2 during the Financial Crisis. Please confirm.
- 11.2** The beta figure on page 16 of Appendix C shows that betas increased by about 0.15 to 0.2 during the onset of COVID-19. Please confirm.
- 11.3** Please explain why Dr. Booth’s beta estimates on page 61 of his evidence did not increase as a result of COVID-19, despite the significant market correlation in early to mid-2020.
- 11.4** Please provide the data underlying Dr. Booth’s estimated betas with all formula intact.

12 Références : C-ACIG-0037

Pages 60-61, lines 9-1: “What is important is that both the market risk premium and the associated risk-free rate have declined from 2010 to 2021, that is, there is no evidence of an inverse relationship between the market risk premium and the level of interest rates over the last eleven years either in Canada or the U.S based on this survey data. Further, I am not aware of any recent research documenting an inverse

relationship once inflation collapsed to the 2.0% target level in both Canada and until recently the US.”.

Demandes :

- 12.1** In Dr. Booth’s view, will the presence of high inflation would cause investors to require a higher equity rate of return.
- 12.2** Please provide Dr. Booth’s evidence that the market risk premium has declined.

13 Références : C-ACIG-0037

Page 62, lines 11-15: “I also check for any beta ‘tendency’ using the Blume methodology and consistent with my testimony (with my late colleague Professor Michael Berkowitz) before the NEB in 2001, and two published research papers confirm that utility betas do not trend towards 1.0 as Blume estimated for all stocks. Instead, they gravitate towards their grand mean, which in 2001 Dr. Berkowitz and I estimated at 0.52.”

Demandes :

- 13.1** Please confirm that the above analysis is based on a source/reference that is dated from 2001.
- 13.2** If confirmed, is it Dr. Booth’s view that the risks faced by utilities have not changed since 2001?

14 Références : C-ACIG-0037

Page 65, lines 5-7: “Is 7.19% A Fair Generic ROE? According to the recent NBEUB decision the answer is yes since their generic ROE was 7.0%.”.

Page 3, lines 8-9: “My cost estimate of 7.0% plus the flotation cost of 0.50% producers a fair ROE of 7.5% and satisfies this risk ranking.”

Page 9, lines 4-7: “Even though I regard GMI as more risky than an average Canadian gas distribution utility, LUNB is even riskier as a

greenfield utility that has not met its expansion targets and found competition from alternative fuels extremely difficult”.

Demandes :

- 14.1** Please explain how a generic allowed return of 7.19% or ‘fair ROE’ of 7.5% meets the fair return standard if the average Canadian gas distribution allowed ROE in 2020 was 9.49% in 2020 (EGI-1, B-0016, pp. 16-17). Does Dr. Booth find that GMI and LUNB are more risky than the average Canadian gas distribution utility?

15 Références : C-ACIG-0037

Page 78, lines 6-7: “The following is from the Bank of New York Mellon”
Source note in the figure is dated November 30, 2020.

Demandes :

- 15.1** Please explain how a BNY Mellon forecast from 2020 is relevant to estimating the forward-looking cost of equity in 2022.

16 Références : C-ACIG-0037

Page 79, lines 4 and 8: “Blackrock is the largest asset manager in the world and the forecast of long run returns is below.”.

Demandes :

- 16.1** Please provide a citation for the Blackrock forecast, including the date that it was published/updated by Blackrock.

17 Références : C-ACIG-0037

Page 84, lines 1-4: “However, even in the 2018 edition there was no data for gas utilities after 2015 since they had all been acquired. However, for the overall utility index the growth rates were as follows”.

Demandes :

- 17.1** Please explain how a forecast from 2018, which relies on 2015 data, is relevant to estimating the forward-looking cost of equity in 2022.
- 17.2** Is it Dr. Booth's opinion that the energy industry has not changed since 2015 and that utilities are facing today similar challenges and growth opportunities as they were in 2015?

18 Références : C-ACIG-0037

Page 84, lines 7-8: "I would judge the cost of equity based on my CAPM estimates to be in a range of 6.55-7.40% or an average of 6.98%, which with the flotation cost adjustment means an ROE of 7.50%".

Page 9, lines 4-7: "Even though I regard GMI as more risky than an average Canadian gas distribution utility, LUNB is even riskier as a greenfield utility that has not met its expansion targets and found competition from alternative fuels extremely difficult".

Demandes :

- 18.1** Please explain how an allowed return of 7.50% meets the fair return standard if the average Canadian gas distribution allowed ROE in 2020 was 9.49% in 2020 (EGI-1, B-0016, pp. 16-17).
- 18.2** Does Dr. Booth find that GMI and LUNB are more risky than the average Canadian gas distribution utility?

19 Références : i) C-ACIG-0037

Page 87, lines 6-7: "First, they are mainly from utility holding companies rather than the underlying operating companies."

ii) C-ACIG-0040

Page 11, line 12: Appendix C presents a list of Canadian utility companies that Dr. Booth uses to estimate beta. The companies include TransCanada, Enbridge, Canadian Utilities, Emera, Fortis, and Pembina.

Demandes :

- 19.1** Is it Dr. Booth's view that entities that are not publicly traded should be used to estimate the cost of capital required by investors? If yes, please explain.
- 19.2** Can Dr. Booth please confirm that Canadian companies used in his beta analysis are holding companies and not underlying operating companies?

20 Références : C-ACIG-0037

Page 87, lines 17-18: "I have traditionally used Emera, Fortis, and Canadian utilities as the best proxies".

Demandes :

- 20.1** Can Dr. Booth explain the number of companies that would be sufficient to estimate the cost of equity in a statistically meaningful way? What is the minimal number of companies that would be required to estimate beta?

21 Références : C-ACIG-0037

Page 89, lines 15-18: "Is it commonly accepted that US utilities are riskier than Canadian ones? Yes. In 2012, I referenced two reports by Moody's, one in 2005 and another in 2009 where they reviewed their rating methodology.".

Demandes :

- 21.1** Is Dr. Booth aware of any more recent publications by Moody's and/or the other major credit rating agencies supporting Dr. Booth's assertion that "US utilities are riskier than Canadian ones"?

22 Références : C-ACIG-0037

Page 94: Dr. Booth compares the financial metrics for the Quebec utilities with other Canadian utilities. This includes Canadian companies presented in a table on line 13 as well as other utilities discussed on pages 95 and 96.

Demandes :

- 22.1** Please comment on whether any of these other Canadian companies selected by Dr. Booth have preferred shares in their capital structure? If yes, please comment on how the presence of the preferred shares would affect the financial metrics calculated by Dr. Booth?

23 Références : C-ACIG-0037

Pages 95-96: Dr. Booth discusses the net income percentages (NI%) of Énergir and Gazifère that result from his generic ROE recommendation.

Demandes :

- 23.1** Has Dr. Booth performed any calculations to assess the credit rating impact of his recommended ROE on the Utilities? If so, please provide the analysis including any work papers to support the analysis in native format with formulas intact.

24 Références : C-ACIG-0039

Page 3, lines 9-10: “In Schedule 1 I graph estimates of the average market risk premiums using Canadian data and these three estimation techniques”.

Demandes :

- 24.1** Please clarify what is meant by “using Canadian data”? Please provide an exact reference to the relied upon securities or indices used to estimate the market risk premium.

25 Références : i) C-ACIG-0039

Page 10, lines 20-22: “Duff and Phelps purchased the original data from Ibbotson and Sinquefeld which as a long history of being used in regulatory hearings and was originally developed at the University of Chicago.”.

Page 11, lines 7-8: “Since the inception of the Duff and Phelps service in 2008 their recommended market risk premium estimate has range between 5.0% and 6.0%”.

ii) EGI-5, B-0040 Cost of Capital Navigator 2021, Duff and Phelps
(Confidential)

Demandes :

- 25.1** Please confirm that the Duff & Phelps Cost of Capital Navigator states that the U.S. market risk premium (from 1935 to present) has ranged between 6.9% and 7.7% since 2008 and that the current value 7.7% is the highest MRP within that period.
- 25.2** Please confirm that Duff & Phelps Cost of Capital Navigator is based on Ibbotson and Sinquefeld data.
- 25.3** Please clarify that Duff & Phelps recommended risk premium estimates that range from 5.0% and 6.0% are based on Kroll/Duff & Phelps analysis and are not based on the Ibbotson and Sinquefeld data used in the Duff & Phelps Cost of Capital Navigator?

26 Références : C-ACIG-0039

Page 13, lines 8-9: “Similar to Duff and Phelps, Credit Suisse now produces an annual ‘Global Investment Returns Yearbook.’”.

Demandes :

- 26.1** Please provide a copy of the referenced Credit Suisse yearbook or relevant pages hereof.

27 Références : C-ACIG-0039

Page 15: Dr. Booth’s presents two graphs of the Canadian Risk Premium Estimates. One is calculated forward from 1924 and the other is calculated back from 2021.

Demandes :

- 27.1** In both of the above-mentioned graphs, the Risk Premium estimates become negative during a portion of the period analyzed. Is Dr. Booth suggesting that during this period the cost of equity is below the risk free rate (as measured using the CAPM for the broad market with a market beta of 1.0)? Please explain and provide corrected figures, if necessary.

28 Références : C-ACIG-0040

Page 3, line 7: In Schedule 1 is a graph of rolling betas on the Canadian utility sub index since 1988.”.

Demandes :

- 28.1** Please clarify which “Canadian utility sub index” Dr. Booth is using in his analysis. Please provide the security ticker or other identifying information.
- 28.2** Please provide a list of the companies included in the “Canadian utility sub index”.

29 Références : C-ACIG-0040

Page 8, lines 12-15: “However, low beta estimates for utilities do not mean they are under-estimated and need adjustment towards 1.0, since utility betas perennially low due to their low risk and this is not caused by estimation error. Instead, as Gombola and Kahl demonstrated utility betas are better mechanically adjusted by weighting with their grand mean.”.

Pages 19-20: Dr. Booth presents average and median betas for U.S. Gas utilities from 1993 to 2022.

Demandes :

- 29.1** Please confirm that cited study by Gombola and Kahl’s is based on the 15-year sample period from January 1967 to December 1981?
- 29.2** Is it Dr. Booth’s position that the systematic risk faced by regulated utilities has remained constant since 1960s, 1970s, and early 1980s?

- 29.3** Please confirm if the “average” and “median” betas shown on page 19 of Appendix C have not remained constant over time?
- 29.4** Please confirm that the “average” and “median” betas shown on page 19 of Appendix C have increased since about 2021?
- 29.5** Please confirm that the “average” and “median” betas shown on page 19 of Appendix C are higher in 2022 than at the time of last GMI hearing that Dr. Booth testified in 2011 (D-2011-182)?

30 Références : C-ACIG-0040

Page 10, lines 9-10: Another issue is the frequency with which betas are estimated. The standard in academic work is to estimate them over 5 years of monthly data.”.

Page 10, lines 13-17: “However, it is well known that betas are biased when estimated over high frequencies such as using weekly data. The reason for this is that many stocks do not trade that actively, so the prices are a bit ‘stale’ and do not reflect recent events.”.

Demandes :

- 30.1** Please provide any academic papers or textbooks references to support Dr. Booth’s assertion that 5 year monthly betas are the standard in academic work today (e.g., during the most recent five years).
- 30.2** Please clarify what Dr. Booth means by “many stocks do not trade that actively”?
- 30.3** Please explain what threshold Dr. Booth is using to determine if a stock is actively traded and whether the securities price is ‘stale’? Please provide any studies or analysis to support this threshold?

31 Références : C-ACIG-0040

Page 11, lines 7-11: “We would therefore not expect all beta estimates from different sources to be the same; this requires that everyone use the same estimation window which is highly unlikely. To look at the range

of estimates I collected the following beta estimates as reported by independent organizations CFRA, Reuters, Yahoo, and the Royal Bank of Canada on January 28, 2022, as well as my own estimates with data up to December 2021.”.

Demandes :

- 31.1** Please explain the methodology CFRA, Reuters, Yahoo, Royal Bank of Canada, and Dr. Booth used to derive their betas. Please provide the estimation window (e.g., 5 years, 3 years, etc.), sampling frequency (e.g., weekly, monthly, etc.), benchmark index (e.g., TSX, S&P 500, etc.) and date of each beta estimate.
- 31.2** To the extent not already provided as a schedule in Appendix C, please provide a copy of the source documents, reports, and/or databases from which Dr. Booth sourced his beta estimates.

32 Références : C-ACIG-0040

Page 12, lines 10-14: “It is also of importance that the way these estimates are derived appears to be consistent with conventional practice. One of the biggest data providers in Canada is the Financial Post, where their Corporate Analyzer data base includes ten year financial data for largely publicly listed Canadian companies.”.

Demandes :

- 32.1** Please confirm that other large financial data providers such as Bloomberg and Value Line publish adjusted betas.

33 Références : C-ACIG-0040

Page 13, lines 2-3: “What is clear from the above analysis is that the market recognizes that Canadian utilities are significantly lower than average risk.”.

Page 13, lines 18-20: “Given the marginal increase in the betas I would therefore tend to be conservative and increase the range to 0.50-0.55 with a mid-point of 0.525 which has historically been about the grand mean of the utility betas.”.

Page 11: Dr. Booth shows the average beta for a sample of Canadian utilities to range from 0.42 to 0.74. On page 12 of Appendix C, Dr. Booth shows the average beta for a sample of US gas utilities to range from 0.39 to 0.46.

Demandes :

- 33.1** Please explain why Dr. Booth considers that “significantly lower than average risk” Canadian utilities have average betas that are higher than a.) Dr. Booth’s historic grand mean and b.) the average betas for U.S. natural gas utilities?

34 Références : C-ACIG-0040

Page 13, lines 14-15: “From this analysis, I have generally set the generic risk assessment for a Canadian utility in a beta range of 0.45-0.55.”.

Page 13, lines 18-20: “Given the marginal increase in the betas I would therefore tend to be conservative and increase the range to 0.50-0.55 with a mid-point of 0.525 which has historically been about the grand mean of the utility betas.”.

Page 11: Dr. Booth shows the average beta for a sample of Canadian utilities from RBC (0.71), Yahoo (0.53), CFRA (0.72), Reuters (0.42), and Dr. Booth’s calculation (0.74).

Demandes :

- 34.1** Please confirm that Dr. Booth’s recommended Canadian utility beta range is lower than the average beta calculated using RBC, CFRA, and Dr. Booth’s estimates?
- 34.2** Please explain why Dr. Booth disregarded RBC, CFRA, and his own calculations when setting his recommended Canadian utility beta range?

35 Références : C-ACIG-0041

Page 4, lines 4-10: “If market-to-book ratios exceed one for a regulated company, most economist immediately assume that the firm’s return on equity exceeds the return required by stockholders, implying that the

regulator should lower the firm's allowed rate of return. This is a standard proposition. For example, in Kolbe, Read, and Hall (1984) they state (page 25) 'on balance we believe that setting the allowed rate of return equal to the cost of capital is the policy that best meets the standard of fairness.'

Demandes :

- 35.1** Please confirm that the presence of non-regulated subsidiaries or multiple regulated utilities with different allowed rates of return would cause the company's market-to-book value to not equal one? If not, please explain and provide supporting evidence.
- 35.2** Please confirm that the presence of expected growth opportunities would cause investors to value the company higher than simply the book value of the firm? If not, please explain and provide supporting evidence.

36 Références : C-ACIG-0041

Page 4, lines 24-25 and page 5, lines 3-5: "In the short-run, Schedule 2 demonstrates that the growth in dividends per share can be artificially manipulated by increasing the dividend payout...It is important in this case to base the estimate of the investor's required return on a long run sustainable growth rate, estimated from the underlying growth in earnings and dividends and the two components of growth."

Demandes :

- 36.1** Has Dr. Booth conducted any analysis to determine if such manipulation does occur and how often it occurs? Please indicate if his analysis finds that such manipulation is occurring in a way that could affect the cost of equity estimation for the gas companies in this proceeding?

37 Références : C-ACIG-0041

Pages 9-10, lines 21-2: "Finally we can look at the growth rate of the TSX dividends directly rather than indirectly by looking at their payout and profitability. Below are three estimates for the dividend per share growth since 1956 on the TSX".

Demandes :

- 37.1** Please provide all work papers and analysis to support the cited numbers, in native format with raw data and formulas intact.

38 Références : i) C-ACIG-0042

Page 2, lines 22-23: “It is a very general proposition in finance that if the investor expects to get what they require the market value is equal to the cost or in this case the book value.”.

Page 7, line 20-22: “For non-regulated firms this is correct since the objective of calculating the WACC is to maintain these higher market values! However, it is totally incorrect for a regulator who is taking with awarding a fair return regardless of what happens to the stock price.”.

ii) C-ACIG-0040

Page 11: Dr. Booth presents a table of Canadian companies that he uses to estimate beta.

Demandes :

- 38.1** Please confirm that a firm’s book value is indicative of a company’s existing assets. That is, the book value does not represent any growth opportunities not currently reflected in a company’s financial statements.
- 38.2** Please explain how the market’s expectations of future growth opportunities would affect the market-to-book ratio.
- 38.3** Please confirm that the publicly listed Canadian companies used in Dr. Booth’s analysis have non-zero growth rates from analysts.
- 38.4** Please confirm that the presence of non-regulated subsidiaries in a utility holding company would cause the market-to-book value to likely not equal 1.0.
- 38.5** Please confirm that the publicly listed Canadian companies used in Dr. Booth’s analysis have non-regulated business segments.