Allowed Return on Equity in Canada and the United States

An Economic, Financial and Institutional Analysis

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This study was commissioned by the Canadian Gas Association.
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I. INTRODUCTION

Canada and the United States have almost hundred-year histories of regulating investor-owned utilities. This shared experience is different from almost all of the rest of the world, where the appearance of investor-owned (i.e., private) utilities came only with the privatization wave of the late 20th century. The regulatory laws, mechanisms and institutions in those other countries are new—and in many cases untested. But longstanding regulatory institutions in Canada and the US have for decades been helping to provide safe and adequate services to the public at reasonable prices while ensuring that the companies involved remain “going concerns” with sufficient credit worthiness to attract the capital needed to maintain and expand their facilities.

Over the past decade, however, a significant difference has appeared in the regulatory practices between Canada and the US. In an effort to improve regulatory efficiency, Canadian regulators—first in British Columbia, then more widely—moved away from the case-by-case approach to determining the fair return on equity (ROE) for utility rate making purposes. Canadian regulators adopted generic, formula-based approaches to deriving the admittedly elusive fair ROE. US regulators in the 1980s and 1990s made two tries at generic, formula-based approaches to setting the ROE (one at the federal level and one in the State of New York), but, in the end, did not abandon their longstanding, case-by-case methods that rested on two existing and long-accepted financial theories.

The apparent efficiency of bypassing case-by-case evidentiary proceedings with a generic formula may have foretold a new and more efficient method of deriving regulated rates generally—except for one thing. The current Canadian generic ROE formula appears to have created a persistent divergence between allowed gas utility returns in Canada and the US. Since 1998, ROEs used to make regulated tariffs have been, on average, 100 to 150 basis points lower than in the US. That is, in dozens of evidentiary proceedings since 1998, US regulators have allowed their companies to set tariffs reflecting ROEs that were on average substantially higher than for their Canadian formula-driven ROE counterparts.

The purpose of this report is to analyze the root causes of this disparity between Canadian and US ROEs that has apparently been propelled—either directly or indirectly—by the Canadian ROE adjustment formula. Since the “appropriate” level of ROE is driven by the risk/return requirements of those utility investor-owners, the obvious question is whether Canadian utilities face sufficiently less risk than their US counterparts. Conversely, we investigate whether the difference in allowed returns for ratemaking is merely a symptom of a structurally inflexible formula rather than an indicator of underlying risk differences. If it is the latter, then Canadian regulators have indeed streamlined rate cases for the better. If the former, then perhaps the formula has had unintended consequences and is in need of updating better to reflect the market’s judgment on the cost of equity of regulated Canadian utilities.

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1 This report was written by NERA’s Kenneth Gordon, Special Consultant and former Chairman of the Department of Public Utilities Massachusetts and the Public Utility Commission in Maine and Jeff D. Makholm, Senior Vice President. They were supported by Ryan Knight at NERA.
It is important to state at the outset how we approach examining this divergence. We cannot automatically presume that the burden falls on Canadian regulators to justify the persistently lower average ROEs than those granted by their US counterparts. Nevertheless, it is the group of Canadian regulators that changed course in the last decade, led by those regulators using the generic formula for streamlined regulatory procedures. Those regulators in the US who failed to find a suitable way to streamline their ROE procedures continued on the former path common to both Canadian and the US regulation—to examine anew, in every tariff case, expert evidence on ROE for the company in question for the relevant period of time. We do not believe that either Canadian or US regulators would consider the results of those case-by-case evidentiary procedures to be biased on a large scale. They are perhaps expensive, time consuming or overwrought—but not biased. Therefore, it is natural—and again to us justifiable—to subject the new Canadian generic formula to the test of bias. If we find that Canadian and US utilities face comparable operating environments and risk to investors, then it is natural to question the efficacy of the new Canadian formula approach to the ROE, not the traditional path US regulators still hold. It is therefore not prejudgment that prompts us to examine underlying justifications for the new and lower Canadian ROEs, but practicality. We do not question whether US regulators (or Canadian regulators up to the adoption of the new formula) were incapable of deriving “just and reasonable” tariffs. What we do question is whether, based on underlying risk factors, the new Canadian generic ROE formula can do likewise.

Canadian regulators have acknowledged in rate cases that a disparity exists between Canadian and US allowed ROEs, but have not concluded whether or not the disparity warrants action. For example, the regulator in Quebec, the Regie de l’Energie, stated in 2007, “[i]n the Regie’s view, even though rates of return allowed in the United States are clearly higher on average than those allowed in Canada, the evidence does not make it possible to conclude that there is any prejudice to or unfair treatment of the distributor.... The evidence does not make it possible to compare the overall differences that may exist in the institutional, economic and financial contexts of the two countries and their impact on the opportunities they provide for investors.”

Unfortunately, nothing surrounding the required ROE for the purpose of making regulated tariffs is an easy discussion. Unlike the other elements of tariff setting (operating costs, maintenance costs, administrative expenses or the interest rates on utility bonds) the ROE is not directly observable. The required ROE is a function of investor expectations. Those expectations remain complex functions of how investors believe that price regulation, along with the utility’s other circumstances, will work to allow them a return on the capital that they devote to serving the public. Given the complexity associated with discussion of the fair ROE, this report will examine the root of the post-1998 differences in permitted ROEs. Those differences stem either from corresponding differences in risk in Canada versus the US or from more banal causes relating to the operation of the generic ROE formula itself vis-à-vis investors’ genuine risk-driven expectations.

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The report concludes that the regulatory environments in Canada and the US are highly similar and directly comparable. Since the world’s first utility commission regulatory statute was written in the US in 1907 in Wisconsin, that general form has been widely copied in all states and provinces in Canada and the US.4 These two national jurisdictions thus share a common heritage that is quite different, for example, from the newly-privatized regulatory jurisdictions in the rest of the world. Those jurisdictions overseas regulate their investor-owned utilities on an institutional basis quite different than in Canada and the US—two countries that share the longest, largest and most unencumbered trade border in the world. It is thus a fair question to compare and contrast Canadian and US utilities with each other to examine how their regulators deal with them and, in particular, derive the ROEs used to set their regulated tariffs.

Section II contains our Executive Summary. In Section III, we examine the evident divergence between allowed returns in Canada and the US that propels this study. In Section IV, we compare the methods used for setting base ROEs in Canada to the case-by-case methods still used by US utility regulators, despite two highly visible attempts to create generic formulas there. In Section V, we examine the sources of risk for regulated utilities and any apparent differences between investor-owned utilities in Canada and the US that might, in principle, explain the wedge in ROEs that has appeared since 1998.

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4 That statute was drafted by John R. Commons, a professor of economics at the University of Wisconsin and 10 years later the President of the American Economic Association.
II. EXECUTIVE SUMMARY

In the introduction to this report, we stated that we do not automatically presume that the burden falls on Canadian regulators to justify the persistently lower ROEs allowed relative to their US counterparts. First, those numbers may not fairly gauge the treatment of Canadian gas distributors on the part of regulators. Second, those ROEs may combine with other aspects of Canadian financial markets or regulatory procedures that do not generalize to the US. Third, the relative ROEs may reflect business, regulatory, or financial risk differences for Canadian gas distributors versus their US counterparts.

Taking these elements into account, however, it is our opinion that the generic Canadian formula itself should be the subject of scrutiny. The formula works like an “autopilot” for setting new Canadian ROEs that uses long bonds as the only contemporary gauge of financial markets—instead of directly targeting equity costs. If the new autopilot has been setting a different course than the case-by-case “human” pilots that previously characterized Canadian ROE, and still characterize US ROE setting, then the autopilot should bear the burden of showing that it is not biased. We cannot conclude going in that the group of independent regulators setting their own ROEs on a case-by-case basis are the ones to be exhibiting a bias.

Figure 1 in our report, showing a marked split in the allowed ROEs in Canada and the US, demands the examination of three issues regarding the meaning and comparability of the relative ROEs before the question of whether the Canadian formula has exhibited a bias in recent years can be addressed:

- We explain that under both Canadian and US regulatory methods, the ROE is the measure of cost of capital that enters the formula to make “just and reasonable” rates. It is the measure of compensation allowed for the capital that investors devote to the service of the public at the time rates are set. What happens afterward—in other words, what the utilities actually achieve in profitability—is a different matter. The actual returns reflect many things including management effectiveness, sales growth, the weather, macroeconomic considerations, changes in capital costs, etc. But regulatory treatment of investor-owners is tightly bound to the ROE. We conclude that allowed ROE is the proper metric for comparison.

- We find that the regulatory institutions and customs for setting regulated prices for investor-owned Canadian and US utilities are very alike. That is, in accounting, administrative procedures, regulatory legislation, and basic constitutional protections of private property, little or nothing separates the average Canadian from the average US regulatory jurisdictions, unlike newly-privatized utilities in new regulatory jurisdictions overseas, where regulatory institutions are young (and largely untested). There are of course differences in regulatory treatment from province to province and from state to state. But we find generally that there is no persistent difference in regulatory legislation or rule making between Canada and the
US.5 As such, the cost of equity capital is comparable between the two countries as long as the risk of gas distributors is the same or similar on both sides of the border.

- We examine the definition of risk to investors of placing their capital at the use of the public, for which the ROE provides compensatory payment. We look at how those risks could be different in Canada versus the US. What we find is that the basic sources of risk—regulatory, business and financial—are comparable with respect to both jurisdictions. Objective and disinterested analyses of the relative risks between Canadian and US utilities are rare, but what we have found points to no smaller risks in Canada. As such, we conclude that there is no objective evidence showing that business or regulatory risks are sufficiently lower in Canada to account for the divergences shown in Figure 1.

With this analysis, our conclusion is inescapable. The Canadian ROEs produced by the generic Canadian ROE formula are biased downward. The formula has, since its inception, ridden on autopilot the declining Canadian long-bond interest rates (the cost of a kind of debt) with no independent check on the cost of equity. The generic Canadian formula might not always be biased, and indeed in an era of stable interest rates and equity markets it may have held a true course for many years. But is has been overtaxed by the relatively unprecedented decline in interest rates since the late 1990s. The uncorrected, un-calibrated formula—not risk differences or inherent Canadian regulatory differences—has driven the divergence between observed Canadian and US ROEs.

The manifest remedies are either to return to “human” pilots (representing case-by-case ROE determinations) or re-calibrate the Canadian generic formula by re-examining the current relationship between the contemporaneous cost of debt and gas utility equity. Given the similarity in the jurisdictions, the institutions of regulation and capital markets, it would be useful in our opinion to employ both Canadian and US gas utility equities in such an analysis, along with both of the main cost of equity models (DCF and CAPM). Without a new calibration, it is likely that as long as the interest rates in Canada and the US remain low, the generic ROE formula will continue to fly off course—essentially treating Canadian utility investors unfairly and slowly taxing their financial health in this era of low interest rates.

5 If one threw all 63 federal and provincial/state regulatory statutes (13 for Canada, 51 from the US) into one pile with all the names blacked out, we would challenge anyone to sort them into a Canadian or US pile based on their content alone.
III. AN EVIDENT DISPARITY IN CANADIAN AND US ALLOWED RETURNS

This report is propelled by the need to examine the persistent gap between the allowed returns on equity for ratemaking purposes between Canadian and US regulators. This section examines what the divergence is and where it comes from. It examines whether the ROE figures in Canada and the US are both a reasonable and comparable metric for determining effective regulatory control over profitability in both countries, and also describes how the Canadian ROE formula works.

There are two key questions. First, does the divergence mean anything? Is the ROE (as opposed to earned returns) the right metric for comparison? Second, are the economies comparable enough (given differences in taxes, etc.—everything but regulatory risk) to permit ROE comparisons.

A. The Divergence between Canadian and US Allowed Returns for Ratemaking

Figure 1 shows that Canadian allowed returns were, at one time, higher than those allowed in the US, but that this changed during 1997. Since then, Canadian allowed returns have been markedly lower than those in the US.

Figure 1 was compiled using data submitted by members of the Canadian Gas Association (CGA) for Canada and data gathered from Regulatory Research Associates for the US. The CGA submitted data for 8 Canadian LDCs, although data were not available for every LDC for every year. The number of rate case decisions for US LDCs for which Regulatory Research Associates data were available varies from 10 in 1999 to 42 in 1993. The data used to construct Figure 1 is presented in Table 1 below.

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6 It is important to keep in mind that “allowed returns” (i.e., ROE) means the rate of return equity, permitted in a rate case proceeding, to form a component of regulated prices. It does not refer to an attempt by regulators to control the return on capital actually earned by utilities once those rates are set. Ratemaking in Canadian and US jurisdictions is generally a prospective exercise.
Figure 1 was generated by subtracting the average allowed US ROE from the average allowed Canadian ROE for each year. This differential for Canada ranges from 121 basis points above US ROEs in 1993 to 164 basis points below in 2007. Starting in 1997, the differential has been consistently negative; indicating that, over the past decade, average allowed US ROEs are higher on average than those in Canada. These average allowed ROEs for both countries are presented on Table 1.
By the simple metric of average ROEs in Canada and the US, a clear disparity has emerged. This disparity was the subject of a recent report by Concentric Energy Advisors, which examined the disparity between Ontario LDCs and US LDCs in particular. The Concentric Report concludes that Canadian ROEs were more sensitive to the drop in bond yields over this period than were US ROEs. Further, the Concentric Report suggests that this sensitivity arose through the adoption of an automatic adjustment mechanism that explicitly ties Canadian ROEs to long-bond prices.

### B. Is Allowed ROE the Proper Metrics for the Comparison of the Treatment of Utilities by their Regulators?

A threshold question is whether the figures in Table 1 mean anything in terms of assessing regulatory treatment in Canada versus the US. That is, given the unique economic and financial contexts of each country, are ROEs structurally different such that an allowed return in the Canada does not mean the same thing as an allowed return in the US?

Three issues arise in answering this question. First, is the ROE the proper metric, as opposed to the return that the utilities in question have actually achieved during the period of time the rates were in effect? It is a question that arises often in comparison of ROEs. Second, does capital flow freely between countries? If capital does not flow between countries, allowed returns are

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8 Id., p. 56.
likely to not be comparable as capital costs would reflect strictly national macroeconomic considerations. Third, given the distinct tax and financial environments, such as differences in country-specific interest rates, are allowed returns similar indicators in both Canada and the US? This section examines these issues in turn.

1. **Allowed ROEs versus Achieved Returns**

Is the allowed ROE the proper metric, or are the returns that the utilities in question have actually achieved during the period of time the rates were in effect the relevant indicator? We readily conclude that the answer is yes: allowed ROEs are the proper metric. Both in Canada and the US, the general manner of regulatory control is for regulators to set *reasonable rates* and then allow utilities to do the best they can to make a business and earn a reasonable return against those rates. That is to say, utilities in Canada and the US are not cost-plus businesses that can appeal to cover costs after the fact. Utilities are not confined to any particular return. There are admittedly exceptions (which we consider idiosyncrasies) to this general statement—but the character of ratemaking control in both countries is prospective.

For over a century, both in Canada and the US, the pull between private enterprise and the public welfare has been settled just this way: regulators deem the return to be considered “just and reasonable” and the private utility subsequently does its best to profit—until such time as the regulator or the utility request that the question of the forward-looking just and reasonable rates should be adjudicated again.

It follows that if the ratemaking mechanisms defined by regulatory legislation and rulemaking (*i.e.*, how costs are added together and then divided by measured sales to form the rate) are the same in Canada and the US, then the allowed ROEs are directly comparable. After the fact, some utilities may profit more than others (*e.g.*, those in fast-growing service territories versus slow-growing ones). Or there may be some times when it is easier than others for utilities to profit (*i.e.*, when capital costs are generally falling rather than rising against a fixed set of just and reasonable rates). But with the commonality of ratemaking mechanisms in Canada and the US, the role of the allowed ROE is the same. Hence, its comparability across jurisdictions is proper.

If ratemaking procedures and operating conditions are comparable in Canada and the US, there would be no reason to expect utilities in either country would regularly earn more than the allowed ROE. **Figure 2** shows that, as we would expect, given our review of the mechanisms of rate regulation in Canada, earned returns have been both above and below allowed returns in

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9 There is a comparison between returns for Canadian and US regulated pipelines, offered in NEB RH-2-2004 by CAPP (the Canadian Associate of Petroleum Producers) that might seem to suggest a persistent success in achieved returns for Canadian companies versus their US counterparts (although we have not looked closely into the sources or particular reasons for those results reported by CAPP). We note, however, that these are returns obtained by federally-regulated interstate pipeline companies, not local gas utilities. Those pipeline companies do not have the public service obligations or stable customer base of distribution companies, and they are not informative to the comparison of the Canadian versus US *utility* ROEs. See: NEB, *Reasons for Decision RH-2-2004 Phase II* (2005), Figure 5-1.
Canada since the inception of the formula. In our experience, this pattern of allowed versus actual ROEs, reflecting occasional average divergences, is characteristic of utilities in the US as well.

Figure 2: Allowed versus Earned Returns For Gas Distributors in Canada, 1992-2007

![Figure 2: Allowed versus Earned Returns For Gas Distributors in Canada, 1992-2007](image)

Source: Canadian Gas Association

We show Figure 2 merely as a way of dealing again with the statement that earned returns—an *ex post* measure of utility performance against a fixed set of “just and reasonable rates”—is not exceptional in Canada. There is nothing, to us, in Figure 2 that removes the reasonable use of Figure 1 as a reason to question whether Canadian ROE methods lately have been causing a divergence in the fair return between Canada and the US.

2. Capital Flows

There is no doubt that Canada and the US can experience unique macroeconomic conditions (interest rates, inflation, GDP growth, etc.). That said, Canada and the US share the longest, largest and most open trade border in the world. There has not been a shot fired in anger across this border since 1812. Canada-US trade is open, with few import or export taxes or tariffs.
Energy trade in North America is governed by the North American Free Trade Agreement (NAFTA), the Canada-US Free Trade Agreement (FTA), and the General Agreement on Tariffs and Trade (GATT). Among other things, NAFTA has “provided the building block for the emergence of a cooperative North American market for energy goods.”

Today, there are:

- 35 cross-border natural gas pipelines between the US, Canada, and Mexico.
- 22 cross-border oil and petroleum product pipelines.
- 51 cross-border electric transmission lines.

These facilities physically bind Canada and the US together. This physical integration is matched by capital market integration as well. Since deregulation of the wellhead price of natural gas (1985 in Canada, 1981 in US), trade in this “increasingly significant sector” would be based on “internationally-recognized, non-discriminatory market access principles.” With competitive markets for the gas commodity and for transport capacity, shippers can negotiate for gas supplies and pipeline space on transmission systems in both Canada and the US, searching for the most economical mix of commodity and transport costs. The situation between Canada and the US is remarkable—unlike many parts of the world, where pipelines are not built if it means passing through other countries.

There does appear to be a preference for domestic investment, especially by pension funds and other “trustee investments,” which could result in segmented capital markets. However, many Canadian firms are cross-listed on US exchanges—including Enbridge. As identified by the Concentric report, US investors do play a significant, albeit less prominent, role in the capitalization of Canadian utilities. To the extent that the trustee investments in Canadian utilities represent a structural barrier to investing outside the country, then the cross-border equity investments from the US are a marginal source of funds. Furthermore, some Canadian utilities and their parent companies engage in business in the US and abroad, indicating that utility companies are not regionalized.

One test of the comparability of allowed utility returns is the cost of capital for non-utility firms in Canada and the US. It may be that there are structural differences in the cost of capital

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11 Id., p. 34.
12 Id., p. 10.
13 Concentric, supra note 4 p. 50.
between Canada and the US that would result in a categorically lower cost of capital for Canadian firms, reflecting a lower opportunity cost of investment for Canadian utilities.

In an attempt to address this question, a 2007 study by researchers at the Bank of Canada estimated a cost of capital 30-50 basis points higher for Canadian firms than US firms, all else equal. The study estimated cost of capital based on a forward-looking, discounted cash flow (DCF) analysis of Canadian and US firms from 1988 to 2006. This study takes into account forward-looking investor expectations, and is evidence that the cost of capital does not appear to be categorically lower in Canada.

3. Tax Differences

Differences in tax laws have been proposed in some previous discussions about the differences in recent Canadian and US allowed returns as a potentially confounding factor in Canada-US comparisons. Tax rates facing Canadian and US investors are indeed different, both for domestic and cross-border investments. However, it is the practice of Canadian and US regulators to set allowed ROEs on a pre-tax basis, permitting income taxes for the utility, as such, to enter the ratemaking formula as a pass through expense in permitted rates. In other words, income taxes are treated in both jurisdictions as a measurable expense when grossing up the pre-income-tax ROE to calculate a post-income-tax figure for use in setting consumers charges. Therefore, as the income tax treatment is similar, if the institutional, financial and economic risk environments are comparable, ROEs are comparable as well, regardless of differences in taxation.

4. Macroeconomic Interest Rates

If interest rates forecasts are substantially lower in Canada, the apparent disparity in allowed returns may simply be a byproduct of lower underlying capital cost rates, and there may be no difference in the relevant fair ROE awarded by Canadian and US regulators.

As Figure 3 shows, interest rates have been in rough parity since the beginning of the divergence, and US long-bond yields were even below Canada’s for much of the time. This would indicate that macroeconomic interest rates are not driving the divergence since 1998 (although they may account for some of the positive divergence before that time), given that US interest rates have been both above and below Canada’s rates during the period of interest.

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16 The income taxes on dividends or capital gains for individual investors are not a subject of concern to Canadian or US regulators—only the income taxes that form a part of compensatory rates for the utility.
C. The Source and Form of the New Canadian ROE Methods

Beginning in 1994, Canadian regulators—first some, then others—have adopted automatic adjustment mechanisms for setting the ROE in utility rates based on a fixed spread with observed movements in Canadian interest rates on long bonds. In these jurisdictions, the ROE is automatically adjusted annually based on movements in long-term bond forecasts.

The approach used by the NEB, Ontario, Quebec and Alberta is to establish a “benchmark” ROE that is applied to all utilities, with individual business risks taken into account when the capital structure is “deemed.”\footnote{\textsuperscript{17}} The generic ROE is then adjusted annually as follows:

\footnote{\textsuperscript{17} Capital structures are “deemed” in Canada based on relative business risk. An LDC with more business risk will be deemed a higher equity ratio in its capital structure to raise the overall weighted average cost of capital. This contrasts with the US, where LDCs are predominantly allowed to choose their capital structure within a band of reasonableness.}
1. The forecast yields on 3 and 12 month out 10-year Canadian bonds are obtained from the most recent forecast by Consensus Economics.

2. These two forecasts are then averaged.

3. To get an estimate for a 30-year forecast, the result is adjusted to reflect the actual spread between 10-year and 30-year bonds in the previous month as reported in *The Financial Post*.

4. This estimated 30-year forecast is subtracted from the previous years’ forecast.

5. The difference is multiplied by 0.75.

6. The new ROE is previous years’ ROE plus (minus) the result.

Some provinces may use a slightly different adjustment, but the process is largely similar. The ROE adjustment is shown in Equation 1.

\[
ROE_t = ROE_{t-1} + 0.75(\text{Forecast}_t - \text{Forecast}_{t-1})
\]  

(1)

Using this formula, the following rates would result from a benchmark ROE of 12 percent based on interest rates of 8 percent if interest rates were to fall.

<table>
<thead>
<tr>
<th>Bond forecast</th>
<th>Allowed ROE</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.00</td>
<td>12.00</td>
</tr>
<tr>
<td>7.00</td>
<td>11.25</td>
</tr>
<tr>
<td>6.00</td>
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</tr>
<tr>
<td>5.00</td>
<td>9.75</td>
</tr>
<tr>
<td>4.00</td>
<td>9.00</td>
</tr>
<tr>
<td>3.00</td>
<td>8.25</td>
</tr>
</tbody>
</table>

The formula approach was first introduced in British Columbia in 1994 before being adopted by Manitoba and the NEB in 1995. Ontario adopted the NEB approach for 1997, and was followed by Quebec in 1999. Finally, Alberta adopted formula adjustments in 2004.
The 0.75 adjustment factor arose out of the 1995 NEB formula decision. The formula is based on the historical observation that allowed returns tend to move in the same direction as long-term bond yields. There was a desire to protect utility customers from high bond yields and shareholders from low bond yields, so the NEB decided to weight the ROE movement by 0.75 times the change in bond prices. Previously, Manitoba had used a 0.8 adjustment, while British Columbia made one-to-one adjustments if bond prices moved outside of a certain band.

Before the formula can be applied, a base ROE must be calculated. The benchmark ROE may be arrived at in a variety of ways, and is set in a manner similar to the setting of ROEs in the US. Equity risk premium (ERP) analysis, capital asset pricing model (CAPM) analysis and, less often, comparable earning analysis are all taken into consideration. Notably, the DCF method is given little to no weight, for a variety of reasons. For example, the NEB has acknowledged that the DCF test is theoretically sound, but raised concerns about practical difficulties.18

Not all major Canadian jurisdictions had implemented formula-based ROEs when US and Canadian returns began to diverge. However, the jurisdictions retaining case-by-case analyses seemed to set ROEs in a manner that was highly sensitive to changes in the bond markets.19 One could therefore view the “formula” jurisdictions as price leaders who set the standard for following the decline in bond prices in the setting of returns.

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**Table 3: Major Jurisdictions Implementing Formula-Based ROEs**

<table>
<thead>
<tr>
<th>Regulator</th>
<th>Jurisdiction</th>
<th>Case ID</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Utilities Board of Manitoba (PUBM)</td>
<td>Manitoba</td>
<td>PUB Order 49/95</td>
<td>1995</td>
</tr>
<tr>
<td>Ontario Energy Board (OEB)</td>
<td>Ontario</td>
<td>Draft Guidelines on a Formula-Based Return on Common Equity for Regulated Companies</td>
<td>1997</td>
</tr>
<tr>
<td>Regie de l’Energie</td>
<td>Quebec</td>
<td>D-99-11</td>
<td>1999</td>
</tr>
</tbody>
</table>

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19 See, Alberta Energy and Utilities Board (EUB), *Canadian Western Natural Gas Co. Ltd. 1997 Return on Common Equity and Capital Structure and 1998 General Rate Application*, Decision 2000-9 (2000). On page 65, the EUB states, “[t]he Board notes that interest rates and bond yields have significantly declined during the time frame… Consequently, this significant reduction in interest rates will have a major impact on the determination of a fair return for a utility.”
The unique feature of the Canadian ROE formula is that it sets a gap between Canadian long bonds and the fair ROE, as shown in Figure 3. The only reason that the ROE does not move in lock step with the long bond is the notion that the spread grows/shrinks with the move in the bond, by a quarter of the bond’s movement. We say “notion” purposely, because the formula’s tie between long bonds and ROE is not based on financial evidence on the contemporaneous spread between what the market requires as a return on bonds as opposed to a return on equity investments in Canadian utilities.

This last point bears emphasis. For those jurisdictions that have adopted the formula shown in Equation 1, or those jurisdictions led by those who do, the only new evidence determining ROE in utility rate cases is the movement in long-bond interest rates. Nothing in the application of the formula, as a factual matter, attempts to gauge contemporaneous equity cost rates. Rather, the formula adjusts ROEs based on the historical observation that allowed ROEs move in the same direction as bond yields.

In this fashion, the Canadian formula diverges from attempts in the US to streamline cost of capital proceedings by implementing a generic formula for the cost of capital. There have been two highly visible attempts to do such a thing in the US, by the Federal Energy Regulatory Commission (FERC) in the late 1980s and by the New York Public Service Commission (NYPSC) in the early 1990s. In both of those cases, the target of the generic formulae was the cost of equity, using contemporaneous market information with theoretical models designed specifically to gauge equity costs.

Neither the FERC nor the NYPSC methods ultimately resulted in an abandonment of a case-by-case examination of the cost of equity. The FERC methods have streamlined somewhat the construction of the “proxy groups” for gathering market information on similarly-situated regulated firms and have basically set the form of the theoretical formula for combining stock yields plus analyst growth rates (in the “yield plus growth” or DCF formula). Those streamlines aside, the FERC generally dropped its pursuit of a generic formula by about 1992 over legal concerns that a company-specific record must support the finding of a fair return. The FERC since has not departed from a case-by-case examination of the cost of equity. The NYPSC formula, for its part, was created after a multi-month process costing some millions of dollars. It, too, centered on a formula for deriving the cost of equity (rather than the long bond rates plus a pre-determined spread), but it was never adopted formally by the NYPSC.

IV. THE TRADITIONAL CASE-BY-CASE METHODS OF CANADIAN AND US REGULATORS

Rate cases in the US are relatively standardized affairs. This is not to say that US commissions never err in their decisions, that all commission decisions are objective or that rate cases are

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never protracted battles. Property rights and US regulation are continually evolving and have only reached their current state through experimentation and judicial rebuke.

In an attempt to relieve the regulatory burden the FERC intended to move to a generic ROE approach in the 1980s with Orders 420, 442 and 461, and similar efforts were made by the NYPSC and the Federal Communications Commission (FCC) in telecommunications. However, the generic ROE pursued in these cases was never applied extensively and fell into disuse. US ROEs are now determined the same way they have always been determined: through discounted cash flow (DCF) analysis that examines a comparable group similar to the utility in question.

US gas utilities generally do not generally undergo annual rate cases. Rather, the ROE stands until either the utility requests a rate case or the commission judges that conditions have changed enough to warrant a re-examination of rates. To streamline rate cases, commissions have objectivity standards that include the need for a theoretical justification of the methods used and all subjective decisions are justified in the public record. These standards help to ease contention in rate cases and limit the discussion to manageable issues.

In this section we will explore the methods used for rate setting in a case-by-case environment. We begin with the most popular method in the US, the DCF, before examining the CAPM and other ERP methods. Finally, we discuss the role of capital structures in case-by-case ratemaking.

A. Discounted Cash Flow (DCF) or “Yield Plus Growth”

The most popular method used to determine the ROE among US regulatory commissions is to determine what future stream of common dividends investors expect on a case-by-case basis using discounted cash-flow (DCF) analysis. Its popularity is a function of its ease of use and comprehension by finders of fact not necessarily particularly versed in financial theories. At its most fundamental level, the DCF method endeavors to compute the cost of equity capital by summing the two sources of equity investor returns—the “yield” portion (meaning the dividend yield with respect to the stock price) and the “growth” portions—the rise in the stock price that investors expect to see. In a world of complicated ratemaking formulae and financial theories, it is no surprise that “yield plus growth” has an intrinsic appeal, particularly when there are many sorts of similar utilities by which to gauge the sum of these two common-sense factors that make up the ROE. The formal statement of the DCF methodology grew out of Professor Myron J. Gordon’s work on stock valuation models, which was first published in complete form in 1962.

Part of the DCF formula that may not appeal to analysts and regulators is the growth rate expected by investors. That growth rate is inherently inscrutable, and in small capital markets

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21 California has annual adjustments to rates, but that is a unique US jurisdiction and not in any way an indicator of what happens in the rest of the country. The tortured experience associated with the lead up and aftermath of the California energy crisis of 2000-2001 continues to cast regulatory procedures there in a unique light.

(such as many utility jurisdictions overseas), it is very hard to gauge investor expectations and thus to apply the DCF model. But in the US, where the model retains its great popularity, a robust industry of independent stock market analysts helps greatly. Both in print and on the web, disinterested estimates of utility growth rates are readily available to assist in the calculation of DCF-derived ROE figures. Combining these publicly-available growth rate estimates with the availability of a number of similar-risk companies, in “proxy groups,” allows regulators to enjoy the stabilizing influence of the law of large numbers in setting the ROE. For practical-minded regulators looking for stable, understandable and objective evidence, its popularity is no surprise.

DCF analysis involves making selections at two key stages: first, the analyst selects a specific “proxy group” of utilities facing similar risks and then selects the various of inputs such as the growth rate. Many of the practical concerns of Canadian regulators over these selections have been addressed in US jurisdictions, and the regulatory burden of case-by-case ratemaking has been lightened by establishing consistent selection criteria at each stage. One concern unique to Canadian jurisdictions, however, is the applicability of proxy groups that contain US utilities.

Given the degree of capital market integration, the degree of cross-border gas trade, and the international presence of several Canadian LDCs, we believe that a proxy group that includes US utilities facing similar risks would be appropriate for Canadian utilities. We will examine in Section IV whether the risks facing Canadian utilities are, in fact, comparable to those facing US utilities but, so long as Canadian regulators are attentive to potential macroeconomic divergence, we see no economic or financial factor that would confound the use of proxy groups that include US utilities.

B. Equity Risk Premium (ERP) and the Capital Asset Pricing Model (CAPM)

Equity risk premium (ERP) analysis is based on the observation that it is more risky to hold equity than bonds. Assuming that investors are risk adverse, they will require a higher return to hold assets with higher risk. Equity returns therefore carry a premium over bond returns. If risk-free bond yields could be identified and the equity premium could be estimated, the cost of capital will result.

There are a wide variety of methods for estimating the cost of capital along these lines, the most popular of which is the capital asset pricing model (CAPM). The CAPM formula itself is rather straightforward. Its components are: (1) the risk free rate of return; (2) the market rate of return; and (3) the beta. These inputs are combined to estimate the ROE.

\[ \text{ROE} = \text{Risk Free Rate} + \beta \times (\text{Market Return} - \text{Risk Free Rate}) \]

In practical terms, the “law” describes the stability of a random variable, with repeated sampling. That is, given a sample of independent and identically distributed random variables, the sample average will approach and stay close to the true population average as the size of the sample increases. This is a long way of saying that the ROE results from a “proxy group” sample of similar utilities are more representative of the actual ROE than the ROE for a single company alone.

23 In practical terms, the “law” describes the stability of a random variable, with repeated sampling. That is, given a sample of independent and identically distributed random variables, the sample average will approach and stay close to the true population average as the size of the sample increases. This is a long way of saying that the ROE results from a “proxy group” sample of similar utilities are more representative of the actual ROE than the ROE for a single company alone.
Despite this algebraic simplicity, there are different methods to obtain each of these components and to compute the required rate of return. The effects of choosing one method over another can substantially change the required cost of capital. Because CAPM, with the exception of the beta term, does not have the “law of large numbers” properties in a comparable group that the DCF has, there is less reason to focus primarily on a comparable group rather than the utility in question, especially when the beta is significantly different from that of the proxy group.

The practical elements of the CAPM formula are full of contention. For example, the beta term relates the movement in an individual company stock price compared with that of the entire market for stocks. Greater relative movement vis-à-vis the market means a higher beta. Those betas published by investment analyst houses (such as Value Line, Merrill Lynch or others) make use of an adjustment procedure that moves “raw” betas toward 1.0. The “adjusted” published betas are generally the ones used by US regulators when they make reference to the CAPM.

The other area of contention is the market return—defined as the premium that the market for equities demands as a spread on the risk free rate. Market risk premiums are not published, but have to be derived. Some are based on historical achieved returns and others try to gauge investor expectations on future equity returns not unlike those who perform a DCF analysis. In rate case application of the CAPM, there is always dissension among interested parties regarding the size of the market risk premium, as its choice directly affects the level of “just and reasonable” rates. Practical-minded regulators wrestle with this issue.

- Despite these areas of contention, one benefit of the use of the CAPM is that the theory upon which it rests provides a relatively clear method for gauging the effect of increased leverage, or “gearing,” on the cost of equity. It is well known in both financial theory and in practical investment circles that a high proportion of debt in the capital structure adds financial risk to the business risk facing a company—and raises both the cost of debt and equity. The CAPM model provides a theoretical method to compute the effect of different gearing on the ROE.24 Indeed, in some prominent cases in the US, the this method has been used as the basis for regulators to grant higher equity costs to adjust for the use of greater gearing levels as deemed prudent by the regulator.25


25 For example, in the aftermath of the electricity utility restructuring in Texas, the Public Utility Commission there approved a 50 basis point “financial risk” premium to the cost of equity for all electricity distributors in the state to reflect its desire that the utilities all move toward a higher amount of debt in their capital structures (60 percent) reflecting the spin-off of their generating function. See Public Utility Commission of Texas, Order No. 42: Interim Order Establishing Return on Equity and Capital Structure, Docket No. 22344 (2000).
CAPM is often used in US rate cases, but it is almost never used as the sole determinant of the cost of equity capital.26 The judgment required in selecting parameters for the CAPM is no less significant than the judgment required for judicial use of the DCF, and the CAPM lacks the “central tendency” properties of DCF that smooth the results to yield a more reliable estimate.

C. Capital Structure

Modern financial theory suggests that there is a relatively wide zone of reasonableness for capital structures, with capital structures within that zone producing about the same cost of capital.27 In the US, a utility’s management is therefore granted a measure of discretion as to the type of capital raised. Having a solid level of financial integrity can provide rate stability and other benefits to customers, and commissions are reluctant to interfere with a utility’s capital structure unless it is pushing the bounds of reasonableness.

In the US, the projected actual capital structure ratios of the utility at the time that new rates would go into effect are used to calculate a pre-tax weighted-average cost of capital. Because the rate proceeding will set rates to be charged for service in future periods, it is appropriate to base the capital structure components on the best available estimates for the period of time in which the rates will be in effect. Furthermore, the actual degree of leverage has important implications for ratemaking, as higher leverage raises financial risk and therefore the cost of capital.

Financial risk is the portion of total corporate risk over and above basic business risk that results from using debt.28 Because equity investors are the residual claimants after the payment of debt, the cost of equity increases with higher debt ratios (i.e. with higher leverage). As a company increases the portion of debt in its capital structure, investors perceive a greater chance that there will not be sufficient returns available after the payment of fixed charges. Both the Modigliani-Miller theory, a the basis for the field of finance, and empirical tests of the theory confirm this inextricable link between capital structure and the cost of equity.29

The total cost of capital is therefore U-shaped with respect to capital structure. High equity percentages raise the WACC, but the WACC also increases at high debt percentages as investors seek higher returns on equity due to the increased financial risk.

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26 One jurisdiction in our experience, Oregon, for some time in the 1990s and into the mid 2000s appeared to use the CAPM as the sole method for finding the ROE. It stopped that seemingly sole reliance in 2001. See Public Utilities Commission of Oregon, Order No. 01-777 (2001).
Hypothetical capital structures have been used in the US when it was judged that utilities were deviating from reasonable capital structures by either employing too much debt or equity in an effort to raise overall returns. Hypothetical capital structures may also be used if the utility is owned by a parent company that faces markedly different risks from those faced by utilities and therefore carries a capital structure that would be inappropriate for a utility.

In such cases, the capital structure of a comparable group of utilities is used, on the basis that comparable groups’ capital structures reflect the opportunity costs facing investors, satisfying the comparable investment standard. Very rarely would a capital structure be “deemed” in the US without consulting a comparable group and addressing why the actual capital structure chosen by the management is inappropriate.
V. RELATIVE RISK FOR CANADIAN AND US GAS UTILITIES

The previous two sections of this paper described how Canadian and US regulators have derived the ROE. This section investigates whether there is any justification for concluding that lower (higher) risks for utilities in Canada (the US) justify ten years of divergent returns.

In this section, then, we first examine more carefully which risks matter to utility investors. We then examine the practical boundaries to those risks for regulated utilities in Canada and the US and upon what legal and procedural foundations those risks rest. Finally, we examine whether there is any evidence available that allows us to conclude that the divergence in Table 1 stems from any persistently lower risk in Canada for gas distributors than that level we observe in the US.

A. What Risk Matters to Utility Equity Investors?

Any discussion of risk in the context of utilities invites controversy. Much of this, in our opinion, comes from a colloquial as opposed to a technical definition of risk in the context of ROE. In setting a fair compensation for investors in the ROE, the risks that matter are the ones for which those investors require compensation. Colloquially, all would agree that predicting the weather is risky, but to the extent that over time weather conforms tightly to averages, the rates set on average weather patterns carry no particular risk to investors’ ability to recoup their cost of capital. That is to say, weather risk is not the same as ROE risk. For a natural monopoly gas utility whose costs are geared to serving customers with whatever local weather conditions exist, the weather does not stand between them and recouping their funds—and is not properly a part of the ROE.

Weather is merely one example of the need to focus on technical risk definitions in gauging the fairness of the ROE. While the cost of service may differ between US and Canadian utilities based on their distinct geographies and other factors, both can expect the opportunity to earn a fair rate of return that is based on the returns to an investment of comparable risk.

1. Regulatory Risk

The risk that a gas LDC faces is inherently intertwined with regulation. Gas LDCs are a natural monopoly—the only thing standing between an LDC and monopoly profits is regulation. The greatest risk to an LDC is the risk that the regulator will not allow the utility to recover prudent costs—including the cost of capital—in a timely manner.
2. Business Risk

The business risk faced by LDCs in Canada does not significantly differ from those in the US. There are forward-looking risks facing investors that are somewhat independent from regulatory risk. These risks are limited, however, as a utility has the right to call for a rate case if significant events (such as a recession) damage its ability to earn a reasonable return on its invested capital without an increase in prices—a recourse obviously not available to unregulated firms. Business risk is therefore an interaction between regulatory risk and the business environment and many business risks can be lessened, modified or even eliminated through various regulatory practices.

Forward-looking business risks include:

- **Long-Lived Assets.** Gas LDCs in Canada and the US connect to a multitude of consumers. Therefore, distributors are the ones charged with the planning of upgrades to networks that in many cases are decades old. The need for major expenditures to provide safe local service do not always follow rate case schedules, so there is often a lag between investments in long-lived assets and recovery of those costs in rates. Such risks in the cost of planning and engaging in ongoing local network maintenance are the same in both Canada and the US, and both utilize deferral accounts to mitigate this risk.

- **Risks of service interruptions.** Major or minor service interruptions are generally the responsibility of the distributor—as are the costs of remedying outages. Cracked gas mains, storm damage to electricity wires and sub-stations, are all the responsibility of the distributor, which can try to plan for—but cannot guarantee—the collection of all costs that are incurred.

- **Adequacy of depreciation.** The depreciation allowance included in distribution company rates is an estimate based on historic experience. Depreciation allowances may not consider economic obsolescence resulting from unanticipated technological change or potential large capital additions. As such, there is a risk that utility plant will be under-depreciated, and changes in technology or regulation may cause shareholders to bear the result of inadequate depreciation.

- **Risk of technological bypass.** Gas LDCs in Canada and the US are at risk of customers bypassing the network by switching fuels or adopting alternate technologies. If bypass is significant there is no guarantee that the remaining rates will be adjusted to recover the cost of abandoned or excess capacity.

- **Risk of the competitiveness of rates.** While LDCs are entitled to recover their actual, prudently-incurred cost of doing business, gas LDCs in Canada and the US are at risk for the continued viability of the overall business. Competitive pressures from distributed generation or alternate fuels could create a situation in which allowed revenues are not competitively viable.
- **Risk of timeliness and adequacy of allowed revenue levels.** Gas LDCs in Canada and the US face the need to increase distribution rates as costs increase. It is expensive and difficult to file for a small rate increase. Utilities would absorb such costs until they become large enough to justify the cost of a rate filing.

### 3. Financial Risk

Apart from the regulatory and business environments facing an LDC, investors face financial risk as well. Financial risk is the risk associated with carrying debt in the capital structure. Debt return (i.e., interest payments) are contractual obligations. Up to a point, raising utility funds with debt provides for a less expensive way to provide the capital needed to provide services to customers. But with greater proportions of debt, the risk that those interest payments will not be “covered” increases, and with it both the interest rate demanded by lenders and the return required by equity investors. This effect on required rates of return is well established and widely known.

Financial risk is generally taken into account in setting ROEs in US rate cases. To the extent that a regulated firm’s capital structure mimics those of a group of its regulated peers, no adjustment is necessary for financial risk. One the other hand, if there is a difference between the firms in question and their peers, then an adjustment to reflect the differential financial risk may be necessary (as happened in a noteworthy case for all of the regulated electric distributors in Texas—where a 50 basis point premium for the ROE was permitted to reflect the regulator’s desire for the distribution-only utilities to take on more debt).[^30]

The question of financial risk appears to often be obscured in Canada, where the generic ROE is provided for all utilities in a jurisdiction, leaving the issues of financial risk to be deal with in a specific deemed capital structure to address the risks of a particular distributor.

### B. What are the Practical Boundaries to Regulatory Risk?

With any investor-owned utility, the regulator and the utility have reciprocal obligations that are generally well recognized. That is, the utility operates the service and provides the capital needed to maintain and expand the facilities that allow the public to be adequately served. For its part, the regulator provides a stable regulatory environment, oversees the adequacy of services, and offers the utility a reasonable opportunity to earn a return on its investments.

Among its various duties, a key role for regulators is to signal, credibly, to investor-owned utilities’ investors how their investments will be recovered in regulated charges.31

Such regulation is described in the economic literature as a “form of long-term contracting.”32 Canada and the US have proven over 100 years of natural gas regulatory history that they are able to honor the “long-term contract.” The exact form of this long-term contracting has evolved throughout this history as regulators pushed against the regulatory boundaries, were reprimanded by courts, were given new direction through legislative action, and were chaired by individuals of various political inclinations as new executives were elected.

In mature regulatory jurisdictions with strong legal and administrative histories, such as Canada and the US, the regulatory compact represents a concatenation of: (1) strong primary legislation; (2) credible, comprehensive and transparent administrative procedures for making regulatory decisions and adjudicating disputes; (3) accounting regulation specifically designed for utility ratemaking; and (4) clear pathways for reliable judicial review of regulatory decisions. Newer regulatory jurisdictions around the world that do not have comparable bodies of regulatory precedent routinely use explicit contracts to express such principles.

1. Strong Primary Legislation

Canadian regulatory legislation is effectively very similar to that in the US, although Canada does not have all of the judicial precedent regarding the constitutional protection of private property that characterizes the US. Canada’s regulatory compact is based instead on common law and “fundamental justice” but nevertheless does appear to be comparable the US in practice.33 The US Constitution, especially the fifth and fourteenth amendments, provides the foundation that supports those protections in the US.

In Canada and the US, Supreme Court interpretations of this primary legislation define the legal limitations on regulators’ ability to take action on charges that may damage the value of utility investors’ property. The best known case is that of Federal Power Commission v. Hope Natural

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31 This mutuality of obligations is sometimes called the “regulatory bargain” or “regulatory compact,” but those are merely convenient labels for how governments and investors have traditionally worked out how the public will be adequately served by private companies.

32 Professor Oliver E. Williamson, an authority on the economics of transactions and regulation, noted that “[a]t the risk of oversimplification, regulation may be described contractually as a highly incomplete form of long-term contracting in which (1) the regulatee is assured an overall fair rate of return, in exchange for which (2) adaptations to changing circumstances are successively introduced without the costly haggling that attends such changes when parties to the contract enjoy greater autonomy.” Williamson, O.E., The Economic Institutions of Capitalism, Free Press, New York (1985), p. 347. See also Victor Goldberg, Regulation and Administered Contracts, Bell Journal Of Economics, Vol. 7 (Autumn 1976): p. 426-448.

33 Canada’s equivalent to the US 14th Amendment, Section 7 of the Charter of Rights and Freedoms, states: “[e]veryone has the right to life, liberty and security of the person and the right not to be deprived thereof except in accordance with the principles of fundamental justice.” As a relatively recent act, it remains to be seen exactly how “fundamental justice” will be interpreted but it has thus far been interpreted as more than simple procedural rights.
Gas, in which the Supreme Court set a standard for determining “just and reasonable” returns, a
standard that has stood the test of time.34 Canada and the US share a remarkably similar
regulatory mandate and their “fair and reasonable” standards for utilities returns are almost
identical. Indeed, Canada’s Northwestern Utilities v. City of Edmonton anticipated the landmark
US Hope case by fifteen years. Both established the opportunity cost of capital as the relevant
standard by which utilities’ returns should be judged.

The Supreme Court of Canada stated in Northwestern Utilities:

The duty of the Board was to fix fair and reasonable rates; rates which, under the
circumstances, would be fair to the consumer on the one hand, and which, on the
other hand, would secure to the company a fair return for the capital invested. By
a fair return is meant that the company will be allowed as large a return on the
capital invested in its enterprise (which will be net to the company) as it would
receive if it were investing the same amount in other securities possessing an
attractiveness, stability and certainty equal to that of the company’s enterprise…35

In the Hope decision, the US Supreme Court, by a vote of five to three, set a new standard for
determining “just and reasonable” returns for investor-owned utilities.

The return to the equity owner should be commensurate with returns on
investments in other enterprises having corresponding risks. That return,
moreover, should be sufficient to assure confidence in the financial integrity of
the enterprise, so as to maintain its credit and attract capital.36

In Bluefield, an earlier case leading up to the Hope decision, the US Supreme Court defined the
proper rate of return as follows:

A public utility is entitled to such rates as will permit it to earn a return on the
value of the property which it employs for the convenience of the public equal to
that generally being made at the same time and in the same general part of the
country on investments in other business undertakings which are attended by
corresponding risks and uncertainties...37

In setting required revenues, a utility’s returns would henceforth be measured by
investors’ possible earnings on alternative enterprises of similar risk. The Supreme
Courts thus ruled that a utility’s investments were safe from seizure (i.e., a “taking”) if
regulators set charges to award returns consistent with investors’ opportunity cost of

36 Hope, 320 US 591, 603 (1944).
37 Bluefield Waterworks & Improvement Co. v. Public Service Commission of the State of West Virginia et al., 262
US 679, 693 (1923). The Hope and Bluefield decisions refer to two Constitutional Amendments. The Fifth
Amendment, as interpreted by the Court, gave the Court jurisdiction over Congress in such matters. The
Fourteenth Amendment, under the Court’s interpretation, gave it similar jurisdiction over the States.
capital. These limitations on the discretion of regulators were not academic exercises. For the purposes of the future gas market, the *Hope* and *Northwest Utilities* decisions were critical. They sharply limited investor or shipper uncertainty regarding the ability of regulators to act in a manner that would damage the value of the assets that investors would devote to regulated enterprises.

2. Credible, Comprehensive and Transparent Administrative Procedures

Predictable regulatory or tariff-making practices are unlikely without a clear set of administrative procedures that bind the way that the independent regulators conduct their business. Canada and the US both provide stability to their utility investors through strong administrative procedures.

An important tenet of Canadian administrative practices is the common law right to procedural fairness. The Supreme Court of Canada has held that judicial and quasi-judicial bodies, but also other administrative decision makers, must follow common law principles of procedural fairness that include the right to be heard and the right to be judged impartially. 38

The 1946 Administrative Procedures Act guides regulatory procedures in the US. Similar to Canada, it requires regulators to hold hearings, warn participants of impending rule changes, to allow participation in regulatory proceedings from the affected parties and to accept evidence (subject to cross-examination in those hearings). The late US Senator Daniel Patrick Moynihan explained that:

> The APA rests on a constellation of ideas: government agencies should be required to keep the public informed of their organization, procedures, and rules; the public should be able to participate in the rule-making process; uniform standards should apply to all formal rule-making and adjudicatory proceedings; and judicial review should be available in certain circumstances. Taken together with the Freedom of Information Act, an amendment to the APA that was enacted in 1966 and added to in 1974, 1986, and 1996, the APA was intended to foster more open government through various procedural requirements and thus to promote greater accountability in decision making.39

These are precisely the elements of “due process” in the administration of regulation. Indeed, the legal inquiries that resulted in the Administrative Procedures Act arose out of the general judicial concern (arising in the US in the 1930s) that regulating prices of investor-owned companies *at any level* represented a potentially unconstitutional taking of private property. That

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38 An important decision with regard to procedural fairness was *Nicholson v. Haldimand-Norfolk Reg. Police Comrs.*, where the Supreme Court of Canada significantly extended the rights to procedural fairness to non-judicial administrative decision makers and solidified the right to justification for a decision. *Nicholson v. Haldimand-Norfolk Reg. Police Comrs.*, [1979] 1 S.C.R. 311.

potential unconstitutionality, it was rightly thought, could only be prevented if a specific framework was applied for assuring the due process of regulatory decisions.

While Canada does not have an exact equivalent to the U.S. Administrative Practices Act of 1946, it does have an umbrella of provincial statutes, the charter(s) of the administrative decision maker(s), and the protection of common law, which includes previous interpretations as well as foundational justice and the founding principles of the constitution. Through these channels, Canadian administrative procedures are equally well-established and effective as US procedures.

3. Accounting for Utility Ratemaking

The goals of effective and efficient regulation can be frustrated without a consistent, credible, and sustainable set of regulatory accounts. Strict accounting standards (i.e., the Uniform System of Accounts) rarely leave US or Canadian energy utilities and their regulators in major dispute over basic financial issues (like profitability, depreciation expenses or the admissibility of particular costs).

Strong and transparent accounting standards were established over half a century ago in Canada and the US, but such is not the case in other, supposedly “mature” jurisdictions. For example, a major component of the reviews of British Gas conducted in recent years by both Ofgas (the gas regulatory body before Ofgem was created) and the Monopolies and Mergers Commission concerned basic accounting and finance items in an environment with no regulatory accounting standards. This confusion in the UK over British Gas’s rate of profits on its capital stock and the depreciation allowed on billions of pounds sterling of transportation assets represents a major risk to utility investors that is absent in Canada and the US. Canadian and US accounting standards would never leave major assets in question, as was the case in the UK and elsewhere following privatization.

4. Reliable Judicial Review

Effective limits on regulatory authority in systems with well functioning regimes come from the judiciary and other paths of appeal. In both Canada and the US, the fundamental legal limitations on the ability of regulators to take actions that damage the holdings of utility investors (in some way or another) come from well-known Supreme Court decisions. The Courts in both countries have found that the property rights of investors in regulated companies,

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41 The Economist has referred to UK regulatory accounting as a “fiddly bit of guesswork.” (See: “Don’t you just love being in control?” The Economist, May 18th, 1996.)
as well as the rights of the customers they serve, require strict regulatory attention to invested capital.

C. What are the Elements of Canadian vs. US Regulatory Risk?

While Canada and the US share a credible regulatory environment, the exact regulatory foundations are admittedly not identical. However, the differences that do exist are more procedural than fundamental. The two jurisdictions engage in roughly the same practices, although they may go by slightly different names or receive more or less attention. The differing levels of attention does not imply that some practices are superior to others; rather, these differences arise from the dates the practices were implemented, the procedures used to handle the practices, and the emphasis placed on various practices in regulatory proceedings.

These principles are generally true of all regulatory jurisdictions in the US and Canada. Both equity investors and lenders generally give funds to utilities with the reasonable expectation the principles of obligations to be provided with a fair return will be honored. Even though the particular utility statutes may vary from jurisdiction to jurisdiction, and even though regulatory commissions may have different policies and precedents in different jurisdictions, investors anticipate the basic bargain between them and their regulator (who represents the public) will apply to their investments.

From the constitutional foundation through to administrative practices, accounting practices and judicial review, Canada and the US have virtually indistinguishable regulatory environments—so much so that the US Hope and Bluefield decisions are even cited in Canadian rate cases. Figure 4 illustrates the regulatory pyramid in Canada and the United states.

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42 See, for example, Alberta’s Generic Cost of Capital decision, where the EUB stated, “[t]he Board concurs that the above decisions [Northwestern, Hope, and Bluefield] are the most relevant judicial authorities with respect to the establishment of a fair return for regulated utilities.” Alberta Energy and Utilities Board, Generic Cost of Capital Decision 2004-052 (2005), p. 13.
Regulation in Canada and the US is founded on strong primary legislation that protects the rights of citizens. The constitution of Canada is an amalgam of codified acts and uncodified traditions and conventions. The Constitutions Act, 1982 established a Charter of Rights and Freedoms, the Canadian equivalent to the US Bill of Rights. While the Charter extends many protections to Canadian citizens, including the right to “foundational justice,” this Charter does not explicitly include the protection of property rights. A significant difference in the regulatory foundations is the strong constitutional protection of property rights in the United States afforded by the 5th and 14th amendments.

The regulatory compact in both countries is shaped by judicial decisions and includes the right to earn a “fair return” on investment, as determined by the opportunity cost of capital, which is termed the “comparable investment” standard. While the phrase, “regulatory compact,” is not used as often in Canada as in the US, the concept is there. Indeed, the decisions that shape the US compact are cited in Canadian rate cases, and the Canadian decisions are widely recognized as establishing an effective compact that is very nearly identical to that of the US.

While Canada does not have a single, federal administrative practices statute, administrative practices are highly refined in Canada and afford at least as much protection to investors as does the United States. The Canadian common law protection—enhanced by the introduction of foundation justice in the Charter of Rights and Freedoms and provincial administrative

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43 The Preamble to the Constitution Act, 1867 states that the provinces shall have, “a Constitution similar in Principle to that of the United Kingdom.” This has been interpreted as stating that the practices of the United Kingdom that were common before the creation of the constitution form part of the Canadian constitution—for example, the practice of an independent judiciary has been constitutionally guaranteed under this argument. See Provincial Judges Reference [1997] 3 S.C.R. 3.

procedures acts—equals the US standard of due process and the Administrative Procedures Act of 1946 in its protection of investors’ rights.

In both Canada and the US, regulatory accounting is sufficiently refined that actual accounts are used for ratemaking without contention, avoiding the regulatory conflicts that surround benchmarked costs or replacement value accounting. The right to use actual costs for intraprovincial/intrastate regulation comes from provincial and state statutes. While some provinces have “fair value” mandates and are not required to use book values, they do so nonetheless.45 This is similar to the US, where five states have “fair value” statutes but have defined fair value to be the book value, so it is a difference without a distinction.

There is a perception that Canadian judiciaries are reluctant to interfere with the decisions of utility regulators. However, US judiciaries also do not overturn regulatory decisions without a clear reason to do so, and judicial rebuke is the exception rather than the rule in the US. Most important is that clear pathways for appeal exist in both countries and appeals are conducted in a manner such that, should major grievances be raised, the judiciaries are capable of reaching a reasonable decision.

Canada and the US share similarly mature regulatory compacts, supported by well-established accounting, administrative and appellate procedures. They are unique in their advanced regulatory environment based on credible, actual accounts. The greatest risk-determinant for utilities, regulatory risk, is comparable in Canada and the US.

D. Does the Continued Ability to Raise Capital for Canadian Utilities Indicate that All is Well?

Figure 1 drove this examination of the foundations of the regulatory procedures and risk. It shows that the allowed ROE was persistently lower in Canada than in the US over the previous decade. To the extent that this divergence is found not to be the result of different Canadian regulatory practices or lower regulatory risk vis-à-vis the US, but the result of the use of Canada’s formula, an obvious question arises: would this cause investors to withhold funds from Canadian utilities?

In other words, is there any evidence that the Canadian utilities whose returns make up Figure 1 have been unable to raise funds? If the generic Canadian ROE formula rests too heavily on long bonds and ignores genuine equity capital costs, the most manifest evidence that this is detrimental would show up in a difficulty for those companies in raising new capital. Conversely, does the continued ability of these Canadian utilities to provide adequate services in and of itself refute any possibility that the formula-based ROE is biased or inadequate?

45 The use of actual accounts in Canada was upheld in *B.C. Electric Co.* where the court established that the book value of prudently incurred costs could be used to provide a fair return, despite a statute requiring that appraisal value be used. *B.C. Electric Co. Ltd. v. Public Utilities Commission et al.* (1957) 13 D.L.R. (2d) 589 (BCCA).
We conclude that as a practical matter the answers to these questions are no. Absence of evidence that Canadian utilities subject to the formula are barred from the market for funds does not constitute evidence that those ROEs are adequate in the market.

There are times in the not-so-recent past when persistently inadequate returns have appeared for utilities in general. During two periods of high inflation in the 1970s and 1980s, US utilities faced wholly inadequate returns. Inflation, coupled with the need to construct new generation and transmission capacity, ruined the ability of traditional regulatory procedures to provide utilities with a reasonable prospect of earning an adequate ROE. In short, the traditional methods of regulating rates, using a test year, created a lag in the ability to recoup ongoing, inflated, costs that visibly affected the financial health of utilities.

Evidence that the utilities were suffering was clear in the stock markets, as utility stocks slid in relation to their book values. During both periods, it was common for utility stocks to be trading below the equity book value of utility investments (roughly the equity “rate base”). When this happened, any new equity raised by these utilities would “dilute” the equity of existing shareholders—basically providing a subsidy to new equity investors from old ones. Such a subsidy could not continue forever, as it would doom an investor enterprise. As it happened, however, the problem—as highly visible as it was—was only relatively temporary.

No equity investors would willingly sell proportional rights to the future returns on the equity rate base for a discount—but they did so during this period anyway. Why? Given their overriding obligations to provide safe, adequate and reliable service to customers, they had effectively no choice in the matter. Inflation pushed up the cost of new funds to the extent that it reflected a subsidy from existing shareholders, but nothing during the years of high inflation left utilities off the hook regarding their own responsibilities to serve the public.

Fixing the problem required either a change in regulatory procedures to deal with high inflation (for example, using inflation accounting like in European or Latin American countries), or an end to high inflation itself. When inflation dropped in the US, utilities returned to business-as-usual. The prospect of high inflation is still a risk to which utilities have generally no defense except a strong belief that the central bank will work to prevent its recurrence. But in no fashion was the continued investment in US utility infrastructures in the 1970s and 1980s evidence that the ratemaking formula wasn’t damaging investor interests in periods of high inflation.

Similarly, the evidence that Canadian investors continue to provide safe, adequate and reliable service to their consumers cannot be taken as evidence, in and of itself, that the formula-based returns reflected in Figure 1 are fair. The utilities in Canada are a mixture of closely-held subsidiaries (without traded stocks of their own) and publicly-traded firms. If the ROEs based

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47 Of course, bankruptcy is a defense against persistent confiscatory regulatory treatment, but that has only appeared rarely in the US, and then only in conjunction with other idiosyncratic events.
on the formula are unfair, it would be, in our opinion, beyond practical measures to try to discern objectively, as a separate matter, how it damaged the interest of investors. By its very nature the market’s cost of equity is not easily and objectively measurable—which is precisely why regulators and analysis use indirect formulae like the DCF and CAPM. Reverse-engineering the effect of the Canadian generic formula is not a practical and objective possibility to measure the effect it has had on utility equity investments in Canada since around 1998.