

# **ENERGY LAW AND POLICY**

**Gordon Kaiser and Bob Heggie, Editors**

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# The Cost of Equity Capital and the Fair Rate of Return on Equity for a Canadian Utility

Professor Laurence Booth

## I. Introduction

The cost of capital and fair return on equity (ROE) is a major source of contention in rate hearings since there is little objective data as to its value yet it is of vital importance both to ratepayers and shareholders. Frequently expert witnesses present their estimates and recommendations using a variety of different techniques that often come to radically different conclusions. It is hardly surprising, therefore, that Canadian regulators have increasingly dispensed with such evidence in favour of formulaic ROE adjustment mechanisms. However, even these formulae are increasingly under attack as companies request a review of the ROE formula or a premium to the ROE or common equity ratio based on claims of increased risk or dubious comparisons with firms in other countries, notably the United States.

I was involved in the hearings that lead to many of the ROE adjustment formulae on behalf of intervenors<sup>1</sup> and some subsequent hearings that have reviewed them and am always forced to respond to issues raised by the utility. In this article I have been asked to discuss the major issues involved in setting the ROE. To this end, I will first discuss the general principles as to why utilities are regulated and why the ROE adjustment formulae have basically got it right. I will then discuss the problems in estimating the overall market risk premium and why increased globalization tends to reduce, not increase, risk premiums. Finally, I will discuss the unique risk of regulated utilities and why the market-to-book ratio is a useful check of whether or not the allowed ROE is fair.

I should add that the issues I will discuss are the broad issues affecting the ROE. In the short space allotted, I cannot discuss all the issues raised in a normal hearing, nor discuss the business risk of a typical utility in any detail. This article is focused more tightly on the underlying economic principles that constrain the fair ROE, since frequently in hearings these issues are not fully developed.

## II. General Principles

Utilities and pipelines are special types of firms since they are regarded as having market (monopoly) power and are thus regulated or operated under state control. Otherwise, a basic proposition from micro-economics is that they will abuse their market position and act contrary to the public interest by charging higher prices and earning excessive profits. The specifics of regulation will vary across jurisdictions and types of firm, but the general prescription is that the rates be "fair and reasonable". This allows the regulator to examine the costs required to provide service including the fair ROE or cost of equity capital.

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<sup>1</sup> My testimony was with my late colleague Dr. Michael Berkowitz. Others in this volume will provide the utility perspective.



premium to be about 5.0%.<sup>24</sup>

### VII. Utility Risk

The previous discussion has estimated the return on the stock market as a whole at about 9.50%. This is a forward-looking estimate based on a forecast long Canada bond yield of about 4.5% and a current market risk premium of 5.0%. The question is then: how do we adjust this estimate for the market as a whole downward to reflect the lower risk of regulated utilities?

In Schedules 2 and 3 are the earned ROEs and AROEs for two samples of Canadian utilities. The first represents the pipelines controlled by TransCanada, and the second the major gas distribution utilities. The data comes from various regulatory filings and reflects the amount of risk to which each utility has been exposed. If the utilities were risky, we would expect that the actual ROE would fluctuate around the AROE to reflect this risk, and this fluctuation would be larger for the riskier utilities. However, it is immediately obvious from this data that Canadian utilities consistently earn their AROEs. In fact, the pipelines generally over earn their AROE by 0.20 to 0.30%, whereas the gas utilities over earn by more depending on whether they have weather normalization accounts and performance-based regulation (e.g., Terasen Gas and GMI) or they do not (e.g., Enbridge and Union Gas).

From the earned ROE versus AROE data, it is clear that utilities in Canada have very little short-term business or financial risk. For at least the last 20 years, they have consistently over earned their AROE, and there is no evidence of any change in this ability. Hence, there has been no change in their risk profile. This assessment is unlike the situation of similar utilities in the U.S., where regulation is not as protective as in Canada.<sup>25</sup>

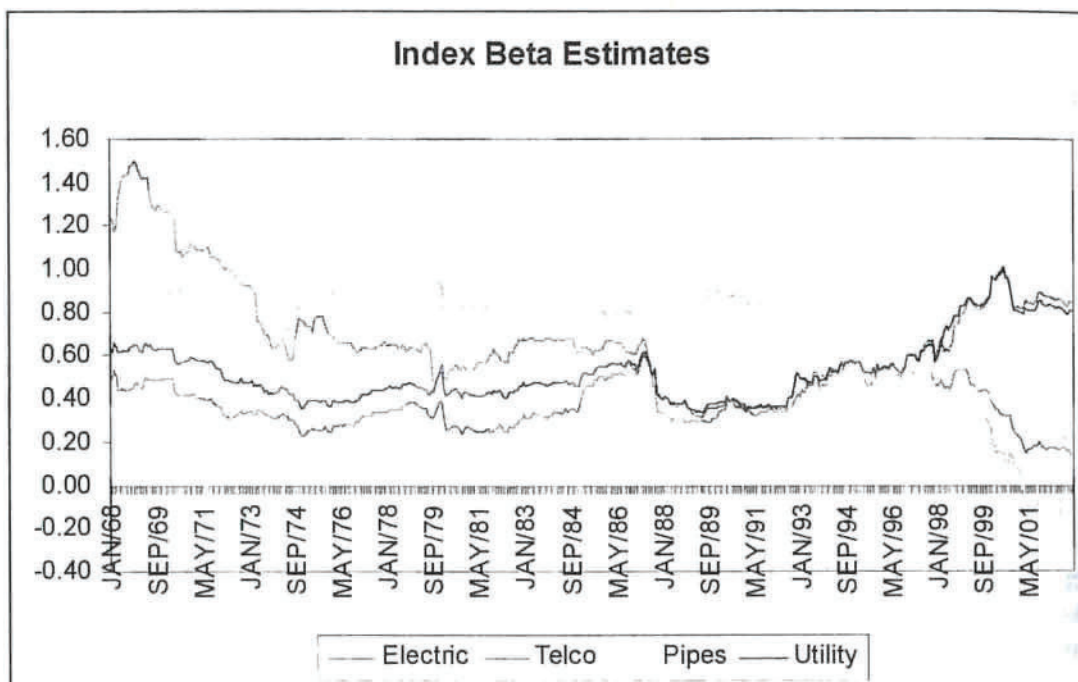
These Schedules indicate that most utility risk comes from the capital market in the way in which investors revise their expectations about the firm's prospects causing their prices to change. This capital market perspective is the reason regulators have placed primary reliance on the CAPM, where the risk measures (beta) quantify the amount of risk a share adds to a diversified portfolio.<sup>26</sup> Figure 11 below represents the beta of the main indexes up until 2002.

<sup>24</sup> This is slightly greater than the recent estimate of 4.43% for the U.S. by P. Easton and G. Sommers, "Effect of Analyst's Optimism on Estimates of the Expected Rate of Return Implied by Earnings Forecasts" (2007) *J. Accounting Research*, at 45-5.

<sup>25</sup> For example, there is more regulatory lag in the U.S. and less use of deferral accounts that pass on the cost of unexpected events to ratepayers.

<sup>26</sup> The key contribution of beta is to show how a security's return co-varies with that on the market since this risk cannot be removed through diversification. It is thus risk from the point of view of an investor holding a diversified portfolio.

Figure 11



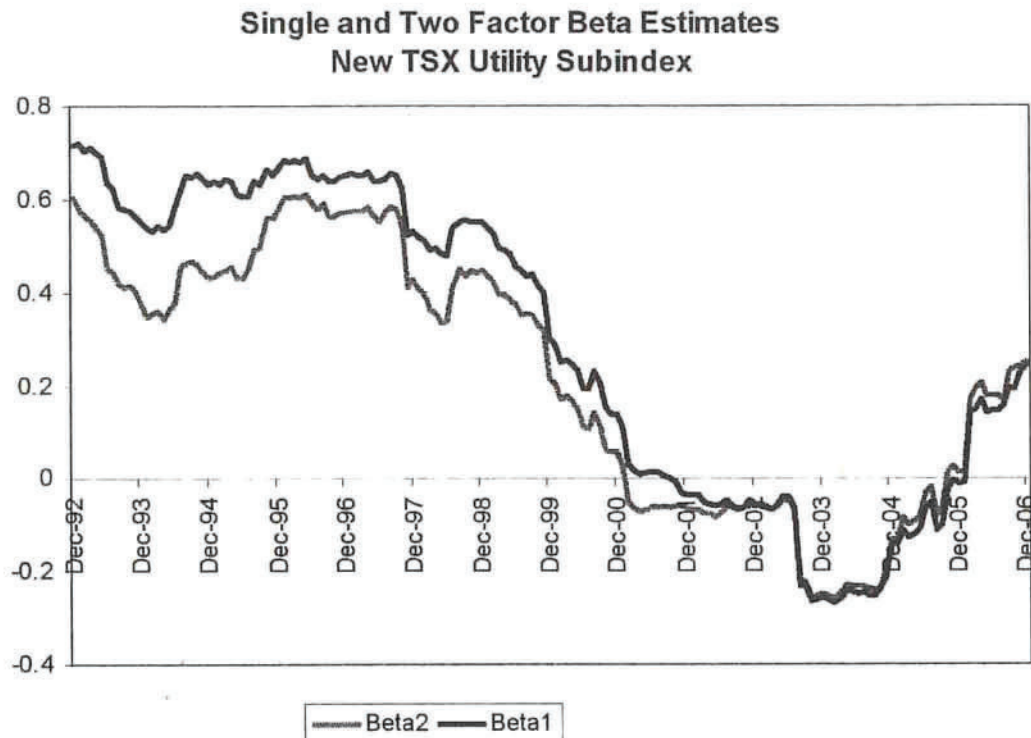
In 2002, Standard and Poors took over the maintenance of the TSE's<sup>27</sup> indexes and converted them into their global industry classification system (GICS). As a result, we lost some of the industry-specific indexes. Further, these estimates are for the utility holding companies (UHCs), rather than the pure utility operations and thus overestimate their risk. However, it is clear from the above graph that utility risk is generally below the average risk of the market, which is 1.0. In fact, you have to go back 30 years to get betas that are close to 1.0 for any of the different classes of UHCs. Further, the utility and Telco risk measures for the period 1996 to 2002 were highly affected by Bell Canada Enterprises' holdings of Nortel and the fact that BCE was the largest component of the Telco and utility index. Ignoring the Nortel effect of the internet bubble and crash, it is clear that pipeline and electric risk has been declining over the period 1993 to 2002.

Since 2002, the new TSX utility index has the following beta coefficient seen in Figure 12 below.

<sup>27</sup> The Toronto Stock Exchange has also been rebranded from the TSE to the TSX.



Figure 12



Two ways of estimating beta have been used: the first is the standard way where the only independent variable is the return on the market, and the second also includes the impact of interest rate. This latter method recognizes the fact that utilities are interest-sensitive stocks with a very high dividend component to their return.

Both estimation procedures give the same basic result. From 1992 to 2000 the beta estimates are similar to those of the old TSE indexes: they decline from the 0.50 level to 0 by the early 2000s. Further, the more recent data show the betas going negative in 2003 to 2004 before recovering to 0.20. All these estimates cover five years of data, so the latest 2006 estimates are for the period 2002 to 2006 and cover the gradual recovery from the slowdown of 2001 to 2002. What they indicate is that these UHCs did not exhibit the sharp drops of the market as a whole in the 2001 to 2003 bear market or the large increases in the bull market that followed. In other words, they are low risk and much less volatile than the market as a whole, which is what we expect from low-risk securities!

Overall, I continue to use a beta estimate of no more than 0.50 for Canadian utilities, which means a 250 basis point utility risk premium. If this is added to a flotation cost allowance of 0.50% and a forecast long Canada bond yield, the fair ROE for a Canadian utility is about 7.50%, which is less than the current formula AROE.

### VIII. Fairness Revisited

To return to the fairness of currently AROEs, it is important to remember that Justice Lamont's definition specifically looked at investment opportunities available in other *securities* similar to that of the company in question. This is because investors can only invest in the securities issued by corporations; they cannot di-