BC Ferry Commission
MEMORANDUM 25

To: Mr. Bill Cottick
Executive Vice President and
General Counsel, BCFS

From: Martin Crilly
BC Ferry Commissioner

Date: December 14, 2007

Re: Final Ruling on Return on Equity for Performance Term Two under s 41(2)(b) of the Coastal Ferry Act.

Purpose

This memorandum details the Commission's final ruling of 13.16% for the return on equity for performance term two for BC Ferries under s 41(2)(b) of the Coastal Ferry Act.

Statutory Requirements

The Act requires the Commission to set price caps enabling BC Ferries to receive a pre-tax return on equity. This is to be calculated by adding (i) an equity risk premium equivalent to that of other regulated businesses with reasonably similar risk characteristics, and (ii) a bond yield that is consistent with Government of Canada 30 year bonds.

Process and Summary of Results

- In December 2005 a first phase of work was completed after the Commission engaged Pricewaterhouse Coopers to advise on estimating an appropriate return on equity for BC Ferries. PwC examined regulated businesses with reasonably similar risk characteristics in countries with similar developed economies.

- In a second phase, completed in April 2006, PwC drafted a recommended equity risk premium. This used the Capital Asset Pricing Model (CAPM) model for establishing equity returns for regulated businesses, which appears in the worksheet at the end of this Memorandum.

- BC Ferries had opportunity to comment on the methodology and findings via face to face meetings with BC Ferries management and in written submissions.

- On September 17 2006, in its Memorandum 20, the Commission issued a preliminary ruling on the return on equity. The value was 13.82%, rounded to 14%.

- On March 30 2007, since forecasts then to hand indicated that long term bond yields had fallen by 50 basis points since September 2006, the Commission adopted a lower, final return on equity of 13.16% (unrounded) which was used both in its preliminary price cap ruling of that date and the final price cap ruling in Commission Order 07-01 dated September 18 2007.

Considerations

Significance. The cost of capital is an important issue for BC Ferries, its investors and its customers. For example, under the price cap regulatory regime, a one percentage point higher allowed pre-tax return on equity (ROE) would, through a higher price cap, increase BC Ferries tariff revenues by $1.75 million per year (assuming FY-end 05/06 equity level), or some $7 million accumulated over the four years of the second performance term. For ferry customers, on the other hand, the same one percentage point increase in ROE could increase fares by 0.5%, other things being equal.

Uncertainty. The Commission's review shows that uncertainty and vagueness pervades the estimation of an appropriate return on equity for BC Ferries. Underlying data used for estimating values show high variances. Some input quantities cannot be directly observed and must be inferred. It is open to question how much BC Ferries is a special case, how comparable other regulated businesses are to BC Ferries, and how similar are their operating environments to that experienced by BC Ferries.

Best Practice. We have aimed to employ best practice in arriving at the two statutorily required components of the return on equity, i.e. the risk-free rate and the equity risk premium.

Investment Needs. The Commission recognizes that investment for renewal of its fleet, facilities and equipment is a priority for BC Ferries. The governance framework limits the company to debt financing. Its ability to raise debt on reasonable terms rests on both the amount of equity in the company and on its earnings, both of which are a function of the allowed ROE. A higher allowed ROE makes the company more creditworthy and its bond issues more marketable. By itself, this suggests that it would be better to err on the side of setting the ROE too high rather than too low given the considerable uncertainty in determining it. BC Ferries has argued strongly for as high an ROE as reasonably possible.

However, it is worth noting that BC Ferries can challenge the price cap after it has been set by applying for an extraordinary mid-term increase. This suggests that the Commission could safely set a tighter cap. In addition, a higher cap penalizes ferry customers, at least for the duration of the second performance term, until the next cap-setting for the third period.

The Commission is also aware that its decision affects the cost-competitiveness of Alternative Service Providers relative to BC Ferries: the lower that the Commission sets BC Ferries' return on equity, the more difficult it will be for the ASP to bring their own capital and be cost-competitive, other things being equal.

Income Tax Exemption. BC Ferries' earnings are exempt from corporate income tax and the Coastal Ferry Act requires the Commission to set a pre-tax return on equity. The procedure used for determining the ROE first arrives at an after-tax result. This is then "grossed up" to give a pre-tax return that would result in BC Ferries earning the after-tax figure if it had been taxable. We have assumed that BC Ferries' earnings would be taxed as general active business income for a Canadian-controlled private corporation, at the 2009 combined federal and B.C. provincial income tax rates.

An alternative position is that, with an effective zero tax rate, the after- and pre-tax return figures should be the same, meaning no gross-up. The effect would be to pass the benefit of the non-taxable status directly to ferry customers through a lower price cap.

Behind the decision to gross-up the after-tax figure is the presumption that legislators (in establishing the governance framework) and the government (in its application of tax policy) intended that the benefit of BC Ferries' non-taxable status should go first to the company and its financiers and not directly to ferry customers. This interpretation makes it considerably easier for BC Ferries to achieve target levels of earnings and build equity, to meet its undertakings for maximum leverage and debt service coverage agreed with its financiers, and thereby finance its capital investments.

Trade Offs. Accordingly, trade offs have to be made. The Commission's ruling must provide the right incentives to BC Ferries in meeting its fleet renewal requirements in an efficient fashion. The Commission has to balance setting the price cap high enough to ensure an efficient and adequate investment level with keeping the price cap tight enough to prevent too large rent transfers from ferry customers.

Final Ruling

The Commission has made a final ruling as follows:

The **risk-free premium** will be forward-looking and, in the absence of forecasts of long bond yields for the period 2008-2012 will be estimated by adding 0.40% to the forecast of 10 year Government of Canada bond yields.

- The final ruling on the **risk free rate is 4.65%** (down from the preliminary 5.10%), following reference to relevant yield forecasts to Consensus Economics (source: British Columbia Investment Management Corporation).
- The equity beta is 0.5. The market risk premium is 5.50%. Accordingly the **Equity Risk Premium is 2.75%.**
- The net effect between the small-cap premium and the BC Ferries company-specific premium/deduction is +1.55%.
- Accordingly the after-tax ROE is 4.65% + 2.75% + 1.55% = 8.95%.
- The income tax rate is 32%.
- Accordingly the pre-tax ROE is 8.95%/(1-0.32) = 13.16%

References

- BC Ferries Response to the PWC Equity Risk Premium Report, Created May 25 2006
- BC Hydro Revenue Requirement Application 2004/05 and 2005/06 Volume 1 Chapter 10. Rate of Return on Equity
- British Columbia Utilities Commission Decision In The Matter Of Terasen Gas Inc. And Terasen Gas (Vancouver Island) Inc. Application To Determine The Appropriate Return On Equity And Capital Structure And To Review And Revise The Automatic Adjustment Mechanism dated March 2, 2006
- Civil Aviation Authority (UK) Economic regulation and the Cost of Capital Annex dated November 2001
- KPMG 2008 and 2009 Combined Federal and Provincial/territorial Income Tax Rates for Income earned by a Canadian Controlled Private Corporation dated June 10 2006
- Pricewaterhouse Coopers Draft Memorandum to the Commission on BC Ferries Response to the PWC Equity Risk Premium Report dated August 25 2006

- Pricewaterhouse Coopers Regulated Return on Equity for BC Ferry Services Inc. – Discussion Paper Confidential Draft April 12, 2006
- BC Ferry Commission Memorandum 20, September 17, 2007

Worksheet

The above calculations are summarized in a worksheet given below.

After-tax ROE = $R_f + \beta (R_m - R_f) + R_{rp} + R_{cs}$
Where
R_f = the risk free rate
$R_m - R_f$ = the market risk premium
β = the correlation between the security and the market return
R_{rp} = small cap premium
R_{cs} = company specific risk premium/deduction

Item	Formula	Figures used in Memorandum 20 ruling for Preliminary ROE	Figured used in Order 07-01 for Final Price Cap Ruling
3-month forecast of 10-year bond yield			4.10%
12-month forecast of 10-year bond yield			4.40%
Average of 3 and 12-month bond yields		4.70%	4.25%
Plus average 10-year – 30-year bond yield spread		0.40%	0.40%
Equals risk-free rate	R_f	5.10%	4.65%
Round to the nearest quarter percent			
correlation betw. the security & market return	β	0.5	0.5
the market risk premium	$R_m - R_f$	5.50%	5.50%
	$R_f + \beta (R_m - R_f)$	7.85%	7.40%
small cap premium	R_{rp}	4.55%	4.55%
company specific risk premium/deduction	R_{cs}	-3.00%	-3.00%
After Tax ROE		9.40%	8.95%
General Active Business Income Tax rate for CCPC in British Columbia over $400,000 in earnings	t	32.00%	32.00%
Pre-Tax ROE	After Tax ROE/(1-t)	13.82%	13.16%