

Crown Research Institutes' (CRIs') Target Return on Equity

Purpose of paper

The Crown Research Institutes Act 1992 (CRI Act) requires CRIs to generate, on the basis of generally accepted accounting principles, an adequate rate of return on shareholders' funds (equity). The 2005 Operating Framework for CRIs maintained that an adequate rate of return on equity invested in CRIs should reflect the cost of that equity. While the Crown does not own CRIs for the primary purpose of financial return (as CRIs contribute to broader goals) it is considered important they achieve their cost of equity (CoE) on average over time to ensure long-term viability.

In the draft 2006 Operating Framework for CRIs, shareholding Ministers have adopted a single CoE of 9.0% for all CRIs. The 9.0% CoE also represents the default post-tax target return on equity (RoE) for all CRIs. This report presents the rationale for 9.0% for the CoE and RoE targets.

What is CoE?

The CoE is the risk-free rate¹ plus the estimated return that shareholders expect given the level of risk their investment is exposed to, compared with the return they would receive from investing in a risk-free asset.

Shareholding Ministers have traditionally taken account of both return on assets² (RoA) and RoE to analyse whether a CRI is generating an adequate return as described in the CRI Act. The appropriate return target for RoA is generally accepted to be the weighted-average cost of capital (WACC), as the assets of a company are funded through both its equity and debt. Until 2004, the target return for CRIs for both RoA and RoE was their WACC. Shareholding Ministers relied on the CRIs to provide an appropriate WACC to benchmark their returns.

The use of WACC as a RoE target was considered reasonable when CRIs carried no debt, as their RoE and WACC were the same (as the only form of capital was equity). Now that the majority of CRIs have increased their debt levels, or plan to, we consider that there should be a distinction between the targets for RoA and RoE.

Calculating CoE

CoE can be calculated using a number of models. We have used the capital asset pricing model (CAPM). The CAPM model expresses the cost of equity as a function of the risk free rate, the market risk premium and the asset beta (a measure of the relative riskiness of the specific asset being valued). An asset beta of 0.7 represents a portfolio of assets with an average risk profile.

The 1997 Treasury paper "Estimating the Cost of Capital for Crown Entities and State-Owned Enterprises" (SOEs)³ provides guidance in relation to the selection of an appropriate beta. The paper identifies two default asset betas for reference where other comparators are unavailable:

¹ The risk-free rate is a theoretical interest rate at which an investment may earn interest without incurring any risk.

² RoA is defined as earnings before interest and tax (EBIT)/average total assets.

³ A copy of this paper can be found at: <http://www.treasury.govt.nz/publicsector/costcapital/costcap.pdf>

- treat the Crown Entity or SOE as average risk and use the asset beta of approximately 0.7
- treat the Crown Entity or SOE as very low risk, and use a low risk default asset beta, overseas market data suggest this lower bound should be set at 0.3.

Taking into account the nature of CRIs' businesses—which we consider are riskier than government departments—and Treasury guidance, we consider the most appropriate base case asset beta for CRIs is around the 0.7 mark.

As a comparison, all government departments and District Health Boards (DHBs) are subject to a capital charge on their reported taxpayers' funds. The capital charge regime was introduced in July 1991 as a means of encouraging departments to make the most efficient use of their available capital. For the capital charge calculation, the Treasury uses an asset beta of 0.3, which reflects the relatively low risk profile of departments. For the purposes of the capital charge calculation, a gearing level of 50% is assumed. The departmental capital charge rate is determined using CAPM to estimate the cost of capital. A capital charge rate of 8.0% on taxpayers' funds (which equates to a CRI's equity) is applicable to all departments and DHBs for the 2005/06 financial year.

Relevant CoE for CRIs

The asset beta can be used to calculate the corresponding CoE depending upon the level of gearing. Assuming an asset beta of 0.7, gearing from 0.0% to 30.0% gives a CoE range of between 8.8% to 10.9%. The increase in the cost of equity as gearing increases reflects the increasing financial risk as the company takes on more debt.

Recent target capital structure reviews for a number of CRIs have also indicated a cost of equity of 9.0% to 11.0% post-tax (ie at the net profit after tax line). Additionally, shareholding Ministers of Television New Zealand Ltd, a public organisation with both a profit and public good mandate, have an expectation of a target rate of return on equity of 9.0% (for 2005/06).

CRIs are also required by the CRI Act to undertake research for the benefit of New Zealand. At an individual project level some of this research, while generating significant wider benefits for New Zealand, may not have above-WACC returns. Therefore, shareholding Ministers have decided that the target CoE should be at the lower end of the range and should be set at 9.0%.

We are aware that an individual CRI's CoE could be higher or lower depending on the relative riskiness of the business and the gearing levels. However, we consider that the benefits of a single target (such as providing transparency, providing a benchmark for CRIs and demonstrating publicly that CRIs are not required to maximise profit) outweigh the disadvantages at this time.

Shareholding Ministers do not expect all CRIs to meet the 9.0% target RoE every year. They are cognisant that the CRIs are increasingly involved in commercialising research outputs and that this will mean profitability for some CRIs will be cyclical (profits will decrease in the early stages of commercialisation and increase when the benefits are realised). Therefore, we anticipate that for many CRIs the 9.0% RoE target will be delivered as a long-term average.