GOVERNMENT OWNED CORPORATIONS – COST OF CAPITAL PRINCIPLES

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GOVERNMENT OWNED CORPORATIONS - COST OF CAPITAL PRINCIPLES

1 PURPOSE AND SCOPE

The Cost of Capital Principles provide a framework for the calculation of cost of capital for Government Owned Corporations (GOCs).

The Government acknowledges GOCs will have a Board approved approach for determining cost of capital for the organisation and for investment proposals where risk profiles of those investments are materially different to that of the organisation and will undertake investment evaluation using this Board approved approach.

When shareholding Ministers are reviewing GOC investment proposals, it is preferable for there to be a consistent approach to the components of the cost of capital calculation across the GOC portfolio, particularly for generic inputs such as the risk free rate, market risk premium and the treatment of dividend imputation.

Accordingly, when submitting investment proposals for shareholding Ministers' consideration, GOCs are requested to provide analysis using a cost of capital based on these principles. This analysis may be in addition to analysis performed by the GOC using its Board approved cost of capital methodology.

This policy paper does not apply to those business areas within GOCs which have their cost of capital regulated by an independent entity, such as the Queensland Competition Authority (QCA). Indeed, the parameters outlined in the cost of capital principles may differ to those which could be applied by the QCA in a monopoly prices oversight referral. When determining a cost of capital, monopoly GOCs are to seek a commercial return while not exploiting monopoly powers.

The framework outlined in this paper has been developed with consideration given to the operational and financial environment in which GOCs operate, current and common practice by the market and achieving an outcome consistent with the principles of competitive neutrality.

2 METHOD

The Weighted Average Cost of Capital (WACC) approach for calculating the cost of capital for a corporation is widely used and accepted. It is the method adopted by all GOCs historically and remains the preferred methodology of most regulators. The WACC calculates an estimate of the expected rate of return on total company assets. It can reflect the minimum return sought by investors/shareholders while in other cases, investors/shareholders may set hurdle rates higher than the WACC.

The WACC method estimates the corporation's cost of capital by combining the return on debt and equity of a GOC, weighting these returns by the total value of debt and equity held. The formulation of the WACC outlined below has been chosen to incorporate the effects of taxation and the regime of dividend imputation.

The preferred method for calculating WACC is as follows:

Post-tax WACC = Rd*(1-T)*(D/V) + Re*[(1-T)/(1-T(1-γ))] * E/V

Where:

Rd	=	Cost of Debt
Re	=	Return on equity
D	=	Debt based on target capital structure
E	=	Equity based on target capital structure
V	=	Total capital employed
γ	=	Gamma - Proportion of imputation credits that can be used by shareholders
T	=	Tax collected at the company level

The post-tax WACC is to be applied to modelled nominal income before interest expense and depreciation, but after income taxation equivalents (excluding interest). Where it is not practical to model taxation cashflows, it is acceptable to apply the post-tax WACC to nominal income before interest expense less taxation equivalents (excluding interest) applied at the statutory rate.

A WACC should be calculated for each key business activity, with different risk profile, within the Group.

3 RETURN ON EQUITY

The return on equity is the annual rate of return an investor expects to earn on their investment in a corporation for the risk to which it is exposed.

It is recommended the Capital Asset Pricing Model (CAPM) be adopted for use by GOCs for the purpose of deriving the WACC. The CAPM is one of the most widely used and simplest methods for estimating the expected return on equity. Regulatory agencies in Australia, such as the Australian Competition and Consumer Commission (ACCC) and Queensland Competition Authority (QCA) use the CAPM in calculating the WACC.

CAPM

The CAPM states that a firm's cost of equity capital is equal to the risk free rate of return on the market, plus a premium above the risk free rate, to reflect the relative riskiness of the investment.

The CAPM can be expressed as:

$Re = Rf + \beta (Rm-Rf)$

Where:

Re	=	Return on equity
Rf	=	Risk free rate of return
Rm	=	Market rate of return
βe	=	Equity beta measures the correlation between the asset's risk and the overall market

The CAPM provides an estimation only of the rate of return an investor expects. It is not an actual measure. Preferred values/methodologies to be adopted in the calculation of the CAPM parameters are outlined below.

3.1 Market risk free rate

The market risk free rate of return is the return an investor could reasonably expect if they invested their money in a riskless investment. As the market rarely offers a riskless investment, a proxy for the risk free rate is applied. Most commonly, the return that investors can receive on government bonds is used as a proxy. In Australia, where sovereign risk is low, Commonwealth Government issued securities are most frequently employed.

When a WACC measure is calculated to assess an investment proposal, the term to maturity associated with the risk free rate should reflect the project life or the useful life of the assets. Many of these timeframes however, are considerably longer than the terms to maturity available in the bond market. Accordingly, the most frequently traded (i.e. most liquid) government bond with the longest possible term to maturity should be used to determine the risk free rate.

The majority of GOCs use the 10 year Commonwealth Government Bond rate as the risk free rate. Some GOCs use the rate at a specific point in time while others take the average rate over varying time periods.

OGOC's Position

GOCs are required to use the yield for a 10 year Commonwealth Government Bond as a proxy for the risk-free rate for use in the calculation of the rate of return on equity. Due to daily fluctuations in bond rates, the rate should be averaged over the 20 business day period prior to when the calculation is being performed. To ensure consistency across GOCs in the risk free rate used, Queensland Treasury Corporation (QTC) will publish the daily 10 year Commonwealth Government Bond yields and the weighted average of the last 20 business days.

Submissions from a GOC to use an alternative period for averaging the risk free rate may be considered if the market is exhibiting yields that are outside of expected ranges.

3.2 Market Risk Premium (MRP)

The market risk premium is the rate of return earned on a well-diversified portfolio of assets over the risk free rate. The market risk premium is scaled (using CAPM) measuring the risk of the asset relative to a market index.

Commonly, the rate of return used is the return on a market benchmark index such as the Australian Stock Exchange 200. Long term historical analysis of equity market returns indicates a range between 6% and 8% is appropriate for the market risk premium. Recent determinations by Australian regulatory bodies have allowed for a market risk premium of 6% in WACC calculations, after taking into account the relevant literature and recent empirical evidence.

OGOC's Position

GOCs are required to use a market risk premium published annually by OGOC at the commencement of each calendar year. OGOC will have regard to recent academic research and decisions made by regulators in determining the market risk premium to apply. The initial market risk premium to apply from 1 January 2006 is 6%.

3.3 Beta

The scaling factor Beta (β) to be applied to the risk premium, measures the volatility of the security under examination, relative to other market securities. If the security is more volatile than the market average, then the beta to be applied is greater than one. The beta for a company is calculated using regression analysis. For GOCs however, as they do not trade on the market, a comparative measure must be derived. Typically a beta is used which reflects betas of listed companies similar to the unlisted entity.

The beta value is the key sensitivity in the CAPM calculation. Therefore, identifying a company or group of companies for comparative purposes, especially in the case of a GOC, can be challenging. Ideally, the chosen comparative companies should be listed companies whose financial structure and industry environment reflect that of the GOC. Given the changing nature of the market environment it may be necessary to make comparisons with international companies, although caution should be used as market volatility and performance can vary substantially to Australia.

The equity beta (βe) is the beta which is observed in the market place. When using comparative companies the difference in leverage of the companies has to be considered. It is necessary to remove these differences in financial risk (gearing/leverage) by 'de-levering' the betas of the comparable companies to obtain their business risk. The beta with financial risk removed is referred to as the asset beta (βa).

To 'de-lever' an equity beta into an asset beta, it is preferred that GOCs use the formula outlined below:

$$\beta a = \beta e / (1+(1-T)*(D/E))$$

where

D = the market value of debt of the comparable companies
E = the market value of equity of the comparable companies
T = the effective tax rate

To 're-lever' the asset beta to calculate the equity beta for the GOC, the following formula should be used:

$$\beta e = \beta a * (1+(1-T)*(D/E))$$

where

D = is the value or proportion of debt of the GOC based on the target capital structure
E = is the value of proportion of equity of the GOC based on the target capital structure.

OGOC's Position

Each GOC should calculate the relevant beta for their corporate activities as a whole, and for each of their specific lines of business where those businesses have a materially different risk profile (eg. QR – passenger services, coal freight haulage etc).

The beta should be calculated using a statistically relevant sample of appropriate firms, and agreed with OGOC and relevant shareholding department.

A useful source of comparative betas can often be found in QCA/ACCC regulatory decisions of similar organisations.

GOCs are encouraged to obtain the assistance of Queensland Treasury Corporation to calculate the beta.

4 COST OF DEBT

The cost of debt is most commonly estimated by applying an appropriate debt margin over the risk free rate. Often, an average of industry debt risk premiums is used. For GOCs, it is appropriate to make reference to the margins published by QTC for calculating the competitive neutrality fee as these are based on notional stand-alone credit ratings. These margins will need to be adjusted to ensure they include the difference between the QTC yield curve and the Commonwealth Government 10 year bond rate from time to time. QTC will calculate these adjustments on a quarterly basis.

OGOC's Position

GOCs are required to use debt margins published by QTC in the calculation of WACC. QTC will update these margins quarterly. Where a GOC has multiple businesses, each requires an assessment of the individual businesses' credit ratings from which to calculate the businesses' cost of debt. These debt margins will be calculated by QTC.

5 PRE OR POST TAX

The 'plain vanilla' WACC can be adjusted to account for the effects of taxation on a company's cost of capital. In recent regulatory determinations, regulators have chosen to adopt a post-tax approach. Agencies including the ACCC, the Office of the Regulator General and the QCA have adopted the post-tax methodology in pricing determinations.

The majority of GOCs currently undertake project analysis using a post-tax approach. This approach is preferred by OGOC, subject to GOCs bringing to OGOC's attention any instances in which an investment is only value adding by virtue of benefits accruing from tax effective structuring.

OGOC's Position

GOCs are required to calculate a post-tax WACC for use in evaluating, and presenting investment proposals for shareholding Ministers' consideration. The statutory tax rate is to be applied over the life of an investment. In certain circumstances, OGOC may request a GOC to calculate the WACC on a different basis.

6 DIVIDEND IMPUTATION

The value chosen for dividend imputation (gamma) has a significant impact on the WACC. There are conflicting views on the magnitude of gamma, with no real consensus.

When assessing investment proposals, independent commercial advice provided to OGOC is that a value of zero should be used for dividend imputation as dividend imputation is not generally taken into account by the private sector and GOC competitors when determining a WACC.

Accordingly, for non-regulated assets and assets not subject to monopoly prices oversight, it is proposed all GOCs adopt a value of zero for gamma in calculating WACC. To the extent future academic research provides strong support for changes to this value for gamma, OGOC will review its position.

When using the WACC formula outlined in this principles paper, dividend imputation should not be reflected in the cashflows of the investment proposal evaluation.

OGOC's Position

GOCs are required to use a value of 0 for gamma in calculating WACC.

7 CAPITAL STRUCTURE

For the purpose of deriving WACC, it is necessary to assume certain proportions of debt and equity used to finance the corporation's assets. It is generally accepted that the weightings of debt and equity to be used for calculating WACC should be based on an optimal capital structure, rather than the existing capital structure of the entity.

For the purpose of calculating WACC, each GOC's Board should determine what in its view, is the optimal, most efficient capital structure for its business, having regard to relevant industry comparisons. The resulting capital structure should be provided to OGOC and relevant shareholding department for review by shareholders.

Further, GOCs may have different target capital structures for different business entities or projects. Where there are different capital structures, these should be used when determining the WACC rates for those different lines of business entities or projects.

OGOC's Position

GOCs are required to submit to OGOC and the relevant shareholding department the proposed capital structure(s) to be used in calculating the WACC(s) for shareholders review.

8 REAL OR NOMINAL WACC

While it is possible to calculate WACC in both real and nominal terms, it is often more difficult to use a real WACC due to the differing adjustments that need to be made to nominal cashflows. This may increase the potential for errors to occur in modelling. For these reasons, it is OGOC's preference that GOCs calculate WACC and undertake investment analyses in nominal terms.

OGOC's Position

GOCs are required to calculate WACC in nominal terms for the purpose of shareholding Ministers' review of investment proposals.

9 REVIEW PROCESS

Each GOC should review its WACC on an annual basis. Where required, assistance will be available from OGOC in the first instance. Ideally, separate WACCs should be calculated for those parts of a GOC's operations that face materially different business risk profiles.

In future, GOCs should include details of the calculation of WACC(s) in their Statement of Corporate Intent (SCI). As part of the negotiations regarding the SCI, OGOC with the relevant shareholding Department will review the determination of beta and the optimal capital structure in consultation with GOCs.

Other than the annual review process, in the event a GOC encounters a significant change to the risk profile of its business, it will be appropriate for the WACC to be recalculated in consultation with OGOC and the relevant shareholding Department.

Further, where the GOC is assessing a major project, it should calculate an appropriate WACC as part of a project assessment using these principles.