



New South Wales  
TREASURY



## Adjusting for expected inflation in deriving the cost of capital – NSW Treasury Response

### Introduction:

The Independent Pricing and Regulatory Tribunal (IPART) has released a paper discussing the possible approaches to adjusting the cost of capital for inflation and puts forward a preferred alternative. IPART has invited written comment on this paper. The following outlines the views of NSW Treasury.

### Treasury Response:

NSW Treasury supports IPART's review of the framework used to adjust for inflation in deriving the cost of capital. NSW Treasury acknowledges that there are problems associated with methodologies currently adopted by Australian regulators in deriving both forecast inflation and the risk free rate.

IPART currently uses the difference between nominal and inflation indexed Commonwealth Government Security (CGS) yields to adjust for expected inflation. Due to concerns relating to potential downward bias in indexed CGS yields, IPART's discussion paper recommends the use of zero coupon inflation indexed swaps to derive ten-year inflation forecasts.

NSW Treasury does not have any specific concerns regarding IPART's proposed methodology to derive forecast inflation and supports the use of financial market data, rather than economists' forecasts. However, NSW Treasury is concerned that derivation of the real risk free rate using both nominal CGS yields and forecast inflation, will subject the real risk rate parameter to two potential sources of estimation error.

IPART uses a real rate of return methodology in setting regulated prices. Therefore, the real risk free rate is the primary determinant of rate of return. Under IPART's current framework, the real risk free rate is derived directly from inflation indexed CGS yields. Forecast inflation is largely irrelevant, as ex-ante prices are determined in real terms and subsequently adjusted over the regulatory period using actual inflation.

However under the proposed methodology outlined in IPART's discussion paper, both nominal CGS yields and forecast inflation will be determinants of the real risk free rate. In this regard, NSW Treasury contends that a review of forecast inflation should not be undertaken in isolation of analysis relating to the appropriateness of nominal CGS yields as a proxy for the nominal risk free rate.

Standard commercial and regulatory practice has long regarded nominal ten year CGS yields as the best proxy for the nominal risk free rate. However, recent market evidence suggests an increasing downward bias in CGS nominal yields, reflecting safe-haven buying and heightened demand for good collateral following the US credit crisis and resultant turmoil in financial markets. If nominal CGS yields are downward biased, then real risk free rate estimates derived by deducting expected inflation from nominal CGS yields, will also be downward biased.

Recent reports from NERA and CEG question the appropriateness of nominal CGS as a proxy for the risk free rate in a CAPM context, due to the existence of a 'convenience yield' that depresses CGS yields relative to fair value based on an unobservable 'zero beta' benchmark.<sup>1</sup> The convenience yield represents that part of the spread between Commonwealth bond yields and yields on corporate assets and semi-Government (i.e. State Government) securities that cannot be explained by the lower risk of Commonwealth Government bonds.

It is argued that the source of the downward bias or 'convenience yield' is a shortage of supply of CGS relative to demand combined with the claim that Commonwealth bonds possess unique non-risk related characteristics relative to corporate bonds (such as high liquidity, high levels of transparency, simplicity and certainty of returns), which distort their reliable use as a proxy for the risk free rate.

CEG argues that the current historically high convenience yields on nominal CGS make them a poor proxy for the true risk free rate that should be used in the CAPM to price non Government assets (on which a convenience yield does not exist). CEG proposes that superior proxies for the risk free rate are yields on State Government debt, AAA rated fixed for floating swaps and the yields on CDS insured bonds – all of which have negligible risk of default.

The widening spread between CGS yields and alternative long term yields such as AAA rated swaps and State Government securities have been highlighted by the Reserve Bank:

*"The fall in CGS yields was not matched by movements in other long-term yields, such as swap yields. The spread between yields on 10-year swaps and CGS widened significantly in July – it is now around 70 basis points, having been steady at around 50 basis points over the past few years. This is the widest spread over the past decade. A widening of this spread is normally associated with periods of heightened financial uncertainty, when investor demand for the security of risk-free assets increases.*

*As with CGS yields, the widening in swap spreads tracked that in the US. Yields on state government securities (semis) have moved with the swap rate rather than with CGS yields. The semis' spread to CGS yields has also widened by around 20*

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<sup>1</sup> NERA, Bias in indexed CGS yields as a proxy for the CAPM risk free rate, March 2007;  
NERA, Absolute bias in (nominal) Commonwealth Government Securities, June 2007;  
CEG, Establishing a proxy for the risk free rate, A report for the APIA, ENA and Grid Australia, 17 September 2008.

*basis points. With most states' credit ratings at AAA, however, credit risk considerations do not appear to be a factor."*<sup>2</sup>

*"Following the onset of the recent credit turmoil and the general reappraisal of risk by market participants, spreads on all bonds relative to CGS have increased. Despite their high credit quality, semis were no exception to this (Graph 1). For example, the 10-year spread between semis and CGS has averaged 55 basis points over the past year, around double the margin typical before mid 2007. This increase is hard to explain because the credit risk of semi-government bonds is very low and is unlikely to have increased over this period. One possible explanation is that investors, particularly offshore, have preferred to only hold the sovereign name in times of diminished risk appetite. Another is that there has been a liquidity premium in the CGS market."*<sup>3</sup>

Over the past 12 months, credit spreads between ten year CGS and NSW Government bonds have continued to widen. NSW Treasury contends that such increases do not reflect the relative risk of Commonwealth versus NSW Government securities, especially given that NSW has retained a AAA credit rating over this period. Rather, the increase in credit spreads may be explained by an increase in the convenience yield investors are prepared to pay for CGS during the global financial crisis, suppressing nominal CGS yields to well below fair value.

Regardless of the methodology adopted to derive forecast inflation, if nominal CGS yields do not reflect the fair value risk free rate, then the derived real risk free rate will be equally underestimated. Given potential downward bias in nominal CGS yields, it is possible that risk free rate estimates derived using nominal CGS yields and forecast inflation, may be less robust than IPART's current methodology that applies a scarcity premium to observed indexed CGS yields.

NSW Treasury contends that further analysis of potential downward bias in nominal CGS bonds should be undertaken before implementing alternative approaches in estimating the real risk free rate.

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<sup>2</sup> RBA, August 2007 Statement on Monetary Policy, Page 48

<sup>3</sup> Guy Debelle, RBA Assistant Governor (Financial Markets), Recent Debt Market Developments, Address to the Debt Markets 2008 Summit in Sydney, 28 July 2008.