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28 May 2021

**Dalrymple Bay Coal Terminal User Group Submission to the
Queensland Competition Authority on its 2021 Inflation
Forecasting Review**

Dear Mr Millsteed

Thank you for the opportunity to comment on, and contribute to, the Queensland Competition Authority's (QCA's) 2021 Inflation Forecasting Review.

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Castalia has been asked to prepare this submission by the Dalrymple Bay Coal Terminal User Group (the DBCT User Group). The DBCT User Group represents companies who are current, and likely near future, users of the Dalrymple Bay Coal Terminal (DBCT).

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DBCT's services are declared and are subject to economic regulation by the QCA. While that regulation will shortly occur under a negotiate-arbitrate model, it is possible the QCA will be called on to arbitrate an appropriate price for the DBCT service. As a result, QCA's approach to setting inflation has a critical impact on how DBCT's services are regulated, and therefore the commercial position of the DBCT User Group.

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The QCA's issues paper requests comment on a broad range of issues. Our submission is focused on the key issues that are of interest to the DBCT User Group. Our submission below is structured as follows:

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- We first explain the scope of our submission
- We then present the analytical framework that guides our view on inflation
- We then propose an approach to addressing inflation risk; and
- How inflation should be measured applying our approach.

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1 Our submission relates to how inflation is compensated for in the return on and of capital, and not operating and maintenance costs

The issue of inflation enters cost-of-service regulation in two ways:

- O&M cost – if regulation seeks to incentivise O&M efficiencies, rather than simply allow recovery of actual costs, forward-looking forecasting of inflation is necessary to ensure that the O&M allowance is realistic and sustainable. Understanding cost drivers is also important for *ex post* reviews of prudence and efficiency of O&M. However, such *ex post* reviews do not require forecasting
- Return on and of capital – cost-of-service regulation requires the investor to be fully compensated for their opportunity cost of capital, which includes compensation for inflation.

DBCT's regulated charges only provide for the recovery of the return on and of capital invested in DBCT's assets. Under the access agreements, DBCT's O&M costs are passed through to DBCT's Users based on the costs to DBCT of procuring those services under a separate operations contract to a third party, awarded by DBCT.

Given the scope of QCA's regulation of DBCT, our submission only addresses the role of inflation forecasting in maintaining the investors' financial capital.

2 Key principles that should guide the approach to inflation forecasting

We understand that QCA, like all other Australian regulators, applies three key principles to return on and of capital for the providers of regulated services:

- First, QCA uses the Capital Asset Pricing Model (CAPM) to estimate the appropriate return on capital. This is relevant and important because CAPM is a nominal model which incorporates a market forecast of inflation (built into the risk-free rate) into its determination of the weighted average cost of capital. In principle, if the investor receives the nominal WACC, it would be fully compensated for future inflation
- Second, regulators prefer the depreciation profile (timing of return of capital) to follow an economically efficient pattern, so that each cohort of users of the regulated services contributes to the return of capital in proportion to the benefit it receives. In economic regulation, depreciation relates to the return of financial capital employed, rather than to the physical deterioration of the assets, even though at times it may be appropriate for the two to coincide. This is relevant because in practical terms the issue of inflation forecasting primarily arises due to preferences about the depreciation profile: that is, by allowing compensation of inflation to be achieved throughout the useful life of the assets
- Finally, regulation aims to allow for the maintenance of the financial capital employed by the investor. This means that the NPV of allowed return on and of capital should be zero. The relevant point here is that compensation for inflation must only happen once: either through the nominal WACC or

through the use of the real WACC and the revaluation of the asset base. It also means that the timing of compensation for inflation can be adjusted as long as the NPV=0 outcome is maintained.

The above principles, which the DBCT User Group fully supports, directly and immediately lead to a number of conclusions about the approach to inflation forecasting in relation to the return on and of capital.

3 National CPI to is the most appropriate measure inflation

The weighted average cost of capital, as estimated by the Capital Asset Pricing Model, measures the nominal opportunity cost of capital for an investor holding a fully diversified portfolio of assets. In other words, an investor requires compensation for taking on inflation risk to protect the purchasing power of the money they invested. This means that a chosen measure of inflation should be consistent with the implied inflation embedded in the nominal weighted average cost of capital and consistent with the broad needs of investors holding Australian dollar denominated assets.

It seems to us obvious that in assessing the opportunity cost of owning assets regulated by the QCA, diversified investors would be concerned not about inflation in any specific Australian jurisdiction or any specific sector, but with national inflation. This is the very essence of pricing capital deployed in the regulated assets in Queensland relative to all other investment opportunities. Any regional or sectoral variations in inflation could be diversified away as part of an investor's diversification strategy.

There are several ways to measure national inflation. These are:

- Consumer Price Index (CPI) – An index that measures the change in the price of consumer goods and services
- GDP Deflator – A measure of the change in the final price of all goods and services, including intermediate goods
- Producer Price Index (PPI) – An index that measures the change in the price received by producers to create their final outputs.

Out of these options we believe the CPI is the most appropriate. There two major reasons for this:

- Fundamentally, the purpose of investing is to enable future consumption. Investors in risk free assets seek to be compensated for the time value of consumption and any loss of purchasing power. The same logic applied to the diversified portfolio of assets with the addition of compensation for systematic risk
- CPI is a well-accepted measure of general inflation – it is used in the superannuation industry for payments, in Public Private Partnership transaction contracts, and in the indexation of government charges. It is also regularly and reliably published using a predictable methodology.

4 The key requirement for the measure of inflation used for asset revaluation is consistency

Using nominal WACC to compensate for inflation would completely eliminate the need to undertake inflation forecasting for the purposes of calculating the allowed return on and of capital. However, there are often good reasons why the QCA and other regulators prefer not to use this approach:

- It results in relative front-loading of depreciation in real terms. This means that the early cohort of users of the regulated assets make a greater contribution to the return of capital in real terms than the later cohorts. In many cases, this may be inefficient, particularly if the real incomes of future users could be expected to rise
- The use of the un-revalued asset base for regulatory depreciation (which is required to avoid double compensation for inflation when using the nominal WACC) opens a gap between the regulatory accounts and the general accounting practice, where there is generally a requirement to measure the assets at fair value. In principle, there is no reason why the regulatory accounts cannot be different from the general accounts and tax reporting, but a broad alignment between different forms of accounting helps reduce confusion.

The alternative, as used by the QCA and other Australian regulators, is to calculate the real WACC and adjust the regulatory asset base for inflation. In this approach, the compensation for inflation is effectively capitalised into the RAB. As a result, the required compensation for any given year's inflation is progressively provided over the life of an asset through both the return of capital, and return on capital based on an inflation adjusted RAB.

However, it is important to note that applying a CPI inflation adjustment to RAB, while closing the gap between the regulatory and other accounts, does not completely eliminate it. There are a number of reasons why fair value of the assets may differ from their inflation-adjusted value. One of the reasons is that change in the replacement cost of specific assets could deviate from general inflation. But that is not the only reason. Other reasons could include the fact that the actual deterioration of the assets (their physical depreciation) differs from their regulatory depreciation. Fair value may also be affected by market factors that are not related to cost.

In other words, an attempt to align the regulatory value of the assets with its precise fair value by means of using some kind of dedicated price index which is specific to the cost of construction of such assets is likely to be futile, apart from the fact that diversified investors are seeking compensation for general inflation.

In practice, an adjustment of the regulatory asset base for inflation is likely to be at best an approximation of fair value and would simply ensure that the regulatory accounts and the statutory accounts do not deviate too far.

If we accept that inflation adjustment to the regulatory asset base will not aim to perfectly replicate the replacement cost of the asset or its statutory fair value, the inflation adjustment should be seen not as an issue of the best possible forecast of inflation but an issue of setting a reasonable and consistent tilt factor into the profile of recovering the return of capital consistent with the underlying economic benefits available to different cohorts of users.

In this context, the key issue becomes ensuring consistency between the amount deducted from the nominal WACC to reflect potential inflation and the amount by which the RAB is adjusted. As long as the amount is the same, there is no risk of either under or over-compensation for inflation. For example, if inflation is assumed to be 2% per annum for a regulatory period, as long as the nominal WACC is reduced by that amount and the RAB is revalued by the same amount, in present value terms there will be no benefit or penalty to the investor if the 2% forecast happens to be wrong.

If inflation is lower than the expected 2%, the investor will receive a “windfall gain” of earning higher than expected real WACC, but it would be immediately offset by the “windfall loss” of lower than expected real return of capital during the period. The tilt of the return of capital will be slightly “wrong”, but the difference will be immaterial since the depreciation profile and the associated asset values are in any case not a perfect reflection of fair value.

The issue of inflation forecasting only becomes critical if there are different approaches to the calculation of the real WACC and the inflation adjustment of the asset base. This happens in particular if real WACC is reduced by forecast inflation, while the asset base is adjusted by actual inflation.

In such a case, there can be real gains and losses from getting the inflation forecast wrong. What is more, such an approach creates an incentive for the regulated entity to game inflation forecasts. If forecast inflation is systematically lower than actual inflation, the regulated service provider would receive a permanent benefit. Of course, if forecast inflation is systematically higher than the actual inflation, users would equally benefit.

One approach to address this “gaming” risk is to seek to improve the quality of inflation forecasting. However, we think this is unlikely to be productive. Part of the QCA's reasoning for adopting a negotiate-arbitrate model in respect of DBCT seems to be a view that forecasting errors are inevitable. In our view, there is no need to seek to achieve an unrealistically perfect forecast where a better and more practical solution is simply to eliminate the risk of permanent windfall gains and losses.

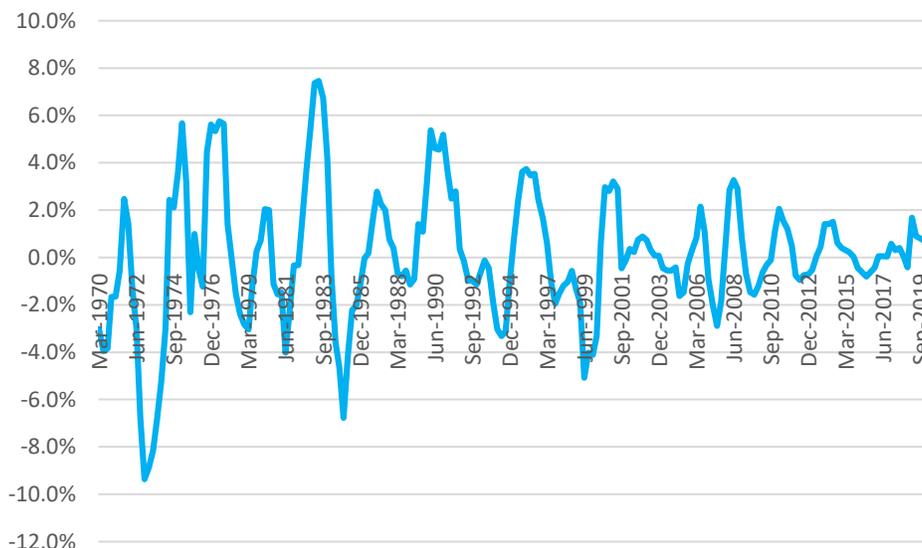
In our view, the best way to balance the considerations of eliminating such windfall gains and losses and of maintaining a broad alignment of the regulatory asset base with replacement cost is to use actual inflation from the previous period both to calculate the real WACC and to adjust the asset base for the current period.

There are several benefits to this approach:

- It eliminates the incentive and opportunity for regulatory “gaming”
- It eliminates the need for complex and sophisticated debates about inflation forecasts. Inflation is based on what has already occurred, rather a judgement of the likely future
- It broadly keeps the return of capital constant in real terms. The tilt is not as perfect as it would have been with perfect inflation forecast, but with annual adjustment for actual inflation it is unlikely to get materially out of line with the intended depreciation profile. Perfection is neither a possible nor a particularly useful objective here
- This approach is administratively simple and straight-forward to implement
- It lowers regulatory burden – fewer resources need to be spent by the regulator and regulated business to argue the appropriate way to forecast inflation.

In Figure 1.1 we show the difference between the current inflation rate and that from 1 year prior over the last 50 years to assess whether there is a risk of a systematic and significant bias in the real depreciation profile from using past inflation as predictor of the future. What we found is that although there are year-on-year variations, overall past inflation over-estimates current inflation by a negligible 0.1% per annum. In the current low inflation environment, any effects from using last period inflation to set current period real WACC and current period RAB adjustment would likely keep the real depreciation profile materially the same as getting forward inflation forecasts right.

Figure 1.1: Difference between current and 1 year lagged inflation.



Source: ABS, Castalia’s analysis

5 Conclusion

In conclusion, we urge the QCA to use the opportunity of the 2021 Inflation Forecasting Review to simplify the approach to inflation adjustment in relation to the return on and of capital.

In our view, there is little benefit from trying to improve the quality of inflation forecasts as this would only achieve spurious precision while opening opportunity for regulatory “gaming”. Rather, we ask QCA to consider eliminating the risk of such “gaming” while achieving a reasonable depreciation profile by simply using prior period inflation both for the calculation of the real WACC and for the adjustment of the RAB.

Should you have any questions, please do not hesitate to reach out to myself at alex.sundakov@castalia-advisors.com or Steven Hong at steven.hong@castalia-advisors.com

Yours sincerely

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