



Response to CEPA draft report on a WACC method for the ACCC



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1 Executive summary

1.1 Background

On 6 August 2025, the Australian Competition and Consumer Commission (ACCC) published, as part of its voice interconnection services access determination inquiry, a draft report prepared by CEPA that recommends a method that the ACCC could use when making regulatory determinations in respect of voice interconnection services, under NBN Co's (nbn's) special access undertaking (SAU) and the Regional Broadband Scheme levy.¹

The CEPA draft report referred to a December 2022 report we prepared for nbn as part of its application for a variation to the SAU.² It did not refer to a June 2025 report that we prepared for nbn as part of its Replacement Module Application (RMA).³

On 22 August 2025, the ACCC published a consultation paper on nbn's RMA,⁴ which commented on the WACC method that nbn had proposed as part of that process and our June 2025 report.

The ACCC published alongside its consultation paper a supplementary note from CEPA, which summarised the WACC parameter estimates submitted by nbn as part of its August 2023 proposed SAU variation by reference to our December 2022 report.

nbn has asked us to prepare this report evaluating the WACC method proposed by CEPA, having regard to the ACCC consultation paper and supplementary CEPA note.

1.2 Key findings

The similarity of WACC estimates under the CEPA and nbn methods should not give the ACCC comfort as to the robustness of the CEPA approach

nbn's RMA proposed a placeholder nominal vanilla WACC allowance of 7.1% (for 2026-27) using the method we recommended in our June 2025 report and data to 31 March 2025. Using data to the same cut-off date, CEPA recommends a nominal vanilla WACC allowance for nbn's RMA of 6.89%.

The ACCC should not assume, based on how similar these two WACC estimates are, that the WACC method proposed by CEPA is robust. The similarity of the estimates is an artefact of current financial market conditions being close to their normal (i.e., long-run average) levels. Specifically, interest rates are close to the long-run historical average level, as is the overall level of market risk. Under these circumstances, the WACC methods proposed by nbn and CEPA will produce very similar outcomes.

The primary WACC rule in nbn's SAU provides that the rate of return will be determined by estimating a nominal vanilla WACC which is "commensurate with the efficient financing costs of a benchmark efficient entity with a similar degree of risk as nbn in providing the NBN Access Service, Ancillary Services and Facilities Access Service." In estimating the WACC in accordance the primary WACC rule, the SAU provides that regard must be had to two objectives:

¹ CEPA, WACC Methodology, 1 August 2025.

² Frontier Economics, Return on capital and inflation, 7 December 2022.

³ Frontier Economics, WACC estimates and inflation forecasts for nbn's RMA, June 2025.

⁴ ACCC, NBN Co Replacement Module for the Second Regulatory Cycle, Consultation Paper, August 2025.



1. the objective of producing reliable estimates of the market cost of capital in a wide range of plausible market conditions; and
2. the objective of promoting stability in the rate of return over time.

Therefore, a key question is which of the two methods—the approach proposed by CEPA or the approach proposed by nbn—is capable of producing reliable estimates that are robust to a wide range of plausible market conditions and will promote stability in the rate of return over time?

The CEPA approach will tend to produce highly variable estimates of the cost of equity (and, therefore the overall WACC), which move counterintuitively in certain market conditions. For example, during financial crises, markets often experience a ‘flight to safety’, Government bond yields typically fall sharply, while investors demand a higher return on equity to hold risky assets. In these circumstances, CEPA’s method would produce *declining* cost of equity estimates—the opposite of what would be expected. Similarly, in periods of economic boom, interest rates typically rise and required equity premiums fall. Counterintuitively, CEPA’s method would produce *rising* estimates of the cost of equity during such periods.

By contrast, when applied to historical data, the approach proposed by nbn tends to produce far more stable estimates of the cost of equity (and, therefore, the overall WACC) in a wide range of market conditions, including periods of financial crises, economic booms and periods of relative normalcy. To the extent that the cost of equity estimates do change over time, they tend to move in a more intuitive way, rising modestly during financial crises, and falling modestly during economic booms. In other words, the approach proposed by nbn produces altogether more reliable and stable estimates of the market cost of capital in a wide range of plausible market conditions.

In our view, for this reason, nbn’s WACC method should be preferred over CEPA’s WACC method.

The key weakness of CEPA’s approach is its failure to ensure internal consistency between the parameters used to estimate the cost of equity

The primary reason why CEPA’s proposed method fails to produce reliable estimates of the market cost of capital in a wide range of plausible market conditions is because it fails to pair together internally-consistent estimates of the risk-free rate and the market risk premium (MRP), two parameters required to estimate the cost of equity.

CEPA’s approach is to estimate these parameters independently of one another. Specifically, CEPA recommends pairing together an estimate of the prevailing risk-free rate (estimated using a 20-day average of yields on Government bonds) with an estimate of the long-term MRP (estimated using a long-term historical average of excess returns realised on the stock market).

This ‘mix-and-match’ approach produces very volatile estimates of the cost of equity over time because the prevailing risk-free rate varies significantly over time as market conditions change. However, the long-term MRP remains essentially fixed over time. When these two estimates are combined together, the resulting cost of equity estimates will move in lock-step with changes in Government bond yields.

By contrast, nbn’s method involves:

- Pairing together prevailing estimates of the risk-free rate and MRP, to derive an internally-consistent estimate of the prevailing cost of equity;
- Pairing together long-term estimates of the risk-free rate and MRP, to derive an internally-consistent estimate of the long-term cost of equity; and
- Estimating the overall cost of equity by giving equal weight to the prevailing and long-term cost of equity estimates.



This approach, modelled on the Independent Pricing and Regulatory Tribunal's (IPART's) WACC method, results in relatively stable estimates of the overall cost of equity because:

- Prevailing estimates of the risk-free rate and MRP tend to move in opposite directions (consistent with what is expected to occur in real financial markets); and
- Neither the long-term risk-free rate nor the long-term MRP vary materially over time.

CEPA would be in a position to adopt an internally-consistent method if it did not unreasonably reject the Dividend Discount Model approach proposed by nbn

nbn proposed that the prevailing MRP should be estimated using four differently-specified Dividend Discount Models (DDMs) that are used by IPART and the Australian Energy Regulator (AER). nbn's proposed approach for the RMA was consistent with the recommendations we made in our June 2025 report and our December 2023 report.

CEPA recommends that the ACCC not adopt the DDM approach, citing a number of concerns that have been expressed by various regulators about the DDM approach. However, we note that, all of these concerns have been addressed in nbn's proposal, which CEPA fails to acknowledge.

The ACCC's RMA consultation paper states that:

We tend to agree that DGMs have strong theoretical roots and if appropriately utilised they are potentially a valuable tool for producing estimates that reflect prevailing conditions in the context of estimating WACC.⁵

We concur with the ACCC on this point.

Moreover, CEPA itself has recommended the use of DDMs to regulators in the UK, notwithstanding that all the reasons CEPA advises the ACCC against the use of DDMs would apply equally in the UK. Indeed CEPA has developed its own "in-house" DDM, which it has applied recently when advising regulators such as Ofgem and Ofwat on the cost of equity. It is not clear to us why CEPA has taken these apparently inconsistent positions when advising regulators in different jurisdictions.⁶

Given that nbn has addressed all the concerns about DDMs raised by CEPA, and given that CEPA itself applies the DDM approach when advising clients overseas, we consider that the ACCC should disregard CEPA's recommendation against the use of DDMs. This would allow an internally-consistent approach to estimating the cost of equity, which in turn would produce:

- produce reliable estimates of the market cost of capital in a wide range of plausible market conditions; and
- promote stability in the rate of return over time.

⁵ ACCC, NBN Co Replacement Module for the Second Regulatory Cycle, Consultation Paper, August 2025, p. 49.

⁶ For the avoidance of doubt, we are not suggesting that CEPA should have applied its in-house model in its advice to the ACCC. Our point is that it advised against the use of DDMs to the ACCC, even though it had recently applied DDMs, including its in-house model, when advising regulators recently in the UK. This seems inconsistent to us.



An internally-consistent estimate of the cost of equity could also be achieved by pairing together estimates of the long-term risk-free rate and long-term MRP

CEPA has recommended that the MRP be estimated by giving exclusive weight to a long-term MRP, estimated by averaging excess returns on the stock market over a long historical period (the HER approach). We support the use of the HER approach (in combination with the DDM approach).

However, CEPA proposes that a HER estimate of the MRP be paired inconsistently with a prevailing estimate of the risk-free rate. A more internally-consistent approach (which nbn has incorporated into its proposed WACC method) would be to pair the HER estimate of the MRP with an estimate of the long-term risk-free rate. The result would be an internally-consistent estimate of the long-term cost of equity (i.e., the minimum return that equity investors expect by investing over the long-term).

The internally-inconsistent estimate of the cost of equity proposed by CEPA (comprised of estimates of the prevailing risk-free rate and the long-term MRP) has no cogent economic meaning. Rather, it simply represents the consensus approach amongst regulators in Australia. In our view, the ACCC should adopt an approach that is economically meaningful, and consistent with the WACC objectives in the SAU, rather than simply following a demonstrably flawed approach used by most regulators in Australia.

We broadly agree with CEPA's conclusions on the comparator selection for the purposes of estimating beta and gearing

Both nbn and CEPA use a broad sample of listed international telecommunications firms to estimate two key WACC parameters: the asset beta (a measure of the systematic risk of the regulated business) and gearing.

Whilst the process used by nbn and CEPA to compile their respective comparator samples differ slightly, the resulting estimates of the asset beta and gearing are materially similar.

However, in the RMA consultation paper, the ACCC expresses concern that the comparator samples proposed by nbn and CEPA are problematic for the same reason. Specifically, the ACCC suggests that nbn has significant market power, but that many of the telecommunications firms in the two comparator samples face significant competition. Therefore, argues the ACCC, the systematic risk profiles of the comparators proposed may not reflect nbn's systematic risk profile.

The ACCC therefore suggests that it may be appropriate to either:

- exclude from the telecommunications sample those comparators that face significantly more competition than nbn; or
- introduce into the comparator sample firms from other sectors (e.g., regulated utilities) that have significant monopoly power in providing essential services.

Both we and CEPA disagree with these suggestions by the ACCC. It appears that the ACCC has simply *assumed* (without evidence) that the degree of competition faced by firms has a significant influence on systematic risk. It is likely that competition influences both systematic and non-systematic risk. However, there is no convincing evidence that the degree of competition has a material influence on systematic risk. For example (and as we show in this report), the empirical evidence suggests that:

- industries with firms with strong natural monopoly characteristics (e.g., water networks, airports and ports) have relatively high asset betas; and
- industries with firms facing strong competition (e.g., supermarkets) have relatively low asset betas.



It seems that exposure to revenue and volume risk is a much greater driver of systematic risk than exposure to competition. In our view, this means that:

- the degree of competition faced by the comparator firms should not be a determining factor in the composition of the sample; and
- the comparator sample should focus on firms drawn from the same industry because these firms will tend to have similar exposure to revenue and volume risk.

1.3 Report structure

The remainder of this report is organised as follows:

- Section 2 discusses the importance of internal consistency when estimating the cost of equity and, in particular, the differences between CEPA's and nbn's approaches to estimating the risk-free rate and MRP; and
- Section 3 addresses the issue of comparator selection for the purposes of estimating beta and gearing.



2 Approach to estimating the risk-free rate and MRP

2.1 CEPA's approach to developing its recommended approach

CEPA's approach to developing a recommended estimation approach to each WACC parameter is to first survey the approaches used by regulators in Australia, and then consider if there is a good reason to deviate from the 'consensus' regulatory approach.

For example, when considering which approach to recommend for the purposes of estimating the risk-free rate, CEPA states that:

Table 3.1 shows that most Australian regulators estimate the risk-free rate as the average yield of Commonwealth Government Securities over a period of 20, 40 and 60 days (depending on the regulator) leading up to the WACC estimation date, i.e. 31st March 2025 in this case. The short averaging period is primarily to capture effects of current market conditions and simultaneously to avoid reliance on a single observation at given point in time which would reflect short-term volatility.⁷

And:

There is near consensus among Australian regulators that the risk-free rate should be estimated based on a short-term averaging of yields on 10-year CGS. We see no reason not to align with this consensus view...⁸

Similarly, when considering which approach to recommend for the purposes of estimating the MRP, CEPA states that:

There is unanimous support amongst Australian regulators that the market risk premium should be informed by estimates of the MRP using the historical excess returns (HER) methodology. The amount of weight that Australian regulators place on HER estimates varies. The majority of regulators place the most weight on the HER approach with some, such as the Australian Energy Regulator (AER) and the ACCC in the past, placing 100% weight on the HER approach.⁹

⁷ CEPA, WACC Methodology, 1 August 2025, p. 13.

⁸ CEPA, WACC Methodology, 1 August 2025, p. 14.

⁹ CEPA, WACC Methodology, 1 August 2025, p. 5.



CEPA goes on to survey the pros and cons of alternative methods for estimating the MRP that have been considered by Australian regulators, namely, the Dividend Discount Models (DDMs) and the Total Market Returns (TMR) approach. When doing so, CEPA simply recites the strengths and weaknesses of the approaches that have been expressed by Australian regulators. CEPA ultimately recommends the HER approach based on the reasons set out by Australian regulators when adopting that approach:

With these considerations in mind, we recommend that the ACCC continue to apply the HER methodology to estimate the MRP. In the absence of robust methods to estimate a conditional MRP estimate, long-term realised returns can provide a reasonable guide to forward-looking expectations. HER is an unconditional estimation method, that provides a way to capture long-term realised returns in the MRP estimate. At the same time, the TMR (or Wright) method also achieves this outcome. We have not identified clear empirical or conceptual grounds to prefer HER to the TMR approach. However, without a more detailed investigation of the implications of placing some weight on the TMR approach, maintaining the HER method can promote regulatory consistency and avoid the risk of creating windfall gains or losses.¹⁰

Whilst CEPA does couch the supposed weaknesses of the DDM and TMR approaches as though it were expressing its own opinion, the arguments presented against these approaches are always those used by different regulators when rejecting the DDM and TMR approaches. Where an approach is adopted by a majority of Australian regulators, CEPA invariably favours that approach; there are no examples of CEPA recommending an approach, in respect of any parameter, that is contrary to the approach adopted by the majority of Australian regulators.

In our opinion, this is a weak methodological approach. A *reliable* method for estimating the cost of capital for regulated business cannot be based on a 'straw poll' of Australian regulators.

We accept that it is valid to consider the range of approaches used by other economic regulators. However, it is important to evaluate critically the merits of each approach, rather than simply accept or reject an approach because that is what most regulators do. The latter approach, which is adopted by CEPA in respect of key parameters, is likely to simply promote 'group think'.

To illustrate why this is not a valid approach, we note that prior to 2013 every regulator in Australia used the 'rate-on-the-day' approach to determine the allowed return on debt, reflecting the conventional wisdom of the day that to promote incentives for efficient investment, the entirety of the regulatory allowance should reflect the prevailing market cost of debt.

Swimming against that tide, the Australian Energy Regulator (AER) challenged the prevailing conventional wisdom in its 2013 Rate of Return Guideline, when it moved from the 'rate-on-the-day' approach to the 'trailing average' approach. The AER did so, because it recognised that a trailing average allowance is more consistent with a prudent and efficient debt management approach than is the rate-on-the-day approach. Had the AER adopted CEPA's approach of simply following the consensus, it would never have even questioned its established method.

Strikingly, since 2013, almost every other regulator has adopted some version of the trailing average approach, in every case citing the logic set out by the AER when it changed approach, and the ACCC itself has acknowledged that:

¹⁰ CEPA, WACC Methodology, 1 August 2025, p. 5.



There appears to be a sound argument for adopting the 'trailing average' approach for the RMD.¹¹

This demonstrates that a long-held consensus approach can be overturned, if the merits of an alternative approach are sufficiently persuasive. However, one must be open minded enough to question the status quo and consider the merits of alternative approaches objectively, without simply dismissing the alternatives because most regulators have not accepted those alternatives.

It is also worth pointing out that had other regulators eschewed the trailing average approach because there was, in 2013, only one regulator in Australia that had adopted it, consumers would have been worse off as a result. This is because it is now almost universally accepted by Australian regulators that the trailing average approach generally produces a closer match between the allowed return on debt and the prudent and efficient cost of debt. So, simply going along with the most widely-accepted approach will not necessarily best promote the long-term interests of consumers.

Finally, we note that, contrary to the approach adopted by CEPA, it can be informative and useful to focus on the exceptions rather than the norm. When there are examples of regulators that adopt a fundamentally different approach to that of their peers, those cases should be given particular attention and study, because they may reveal something that other regulators have missed or failed to address. The main problem with CEPA's approach of consensus-seeking is that it gives less weight to regulators that deviate from the norm, simply because they are 'outliers', regardless of how reliable their WACC method is.

For example, CEPA notes that "IPART has a unique approach to setting market-wide parameters (risk-free rate, MRP, and cost of debt)."¹² CEPA recognises correctly that IPART's method emphasises (much more than other regulators) the need for internal consistency between parameters such as the risk-free rate and the MRP. CEPA does not express an opinion on whether internal consistency is desirable, or whether the consequences of internal *inconsistency* are problematic.

CEPA's approach to evaluating IPART's method involves simply pointing out that the majority of other regulators adopt a different approach, and the reasons why. For example CEPA states:

The differences between IPART's approach and that of other Australian regulators reflect some fundamental differences in the way IPART and other regulators interpret the evidence before them:

- *While the debate on whether the risk-free rate and MRP are inversely related is not settled, unlike IPART most Australian regulators do not consider that evidence of this relationship is strong enough to move away from the HER approach.*
- *More fundamentally, other Australian regulators do not consider that the risk-free rate and MRP must be calculated over the same estimation windows. Instead, they seek to combine what they regard as the most accurate forward-looking estimate of both parameters. For the risk-free rate, most regulators consider that current CGS yields provide the best estimate. Similarly,*

¹¹ ACCC, NBN Co Replacement Module for the Second Regulatory Cycle, Consultation Paper, August 2025, p. 52.

¹² CEPA, WACC Methodology, 1 August 2025, p. 19.



regulators use HER because they regard these as the best available forward-looking estimate of MRP. Therefore, regulators that rely on HER do not consider that these are inconsistent with a current risk-free rate.¹³

At no point does CEPA evaluate how IPART's method has performed over time compared to the approach adopted by the majority of other regulators, or the approach it ultimately recommends. Our view is that it is irrelevant that IPART is the only regulator in Australia that adopts this particular approach. What matters is whether the approach IPART has adopted produces more reliable and estimates of the market cost of capital in a wide range of plausible market conditions, and stable returns over time (consistent with the WACC objectives specified in clause 2G.2.4(d) of the varied SAU) than the approaches adopted by other regulators.

No proper attempt is made by CEPA to evaluate and compare the reliability and stability of estimates under the nbn and CEPA approaches. We present evidence on this issue below in section 2.3.

2.2 The need for internal consistency when estimating the cost of equity

The most significant difference between our recommended WACC method, and the approach recommended by CEPA, is that we consider it essential the risk-free rate and MRP parameters should be estimated together rather than independently, in order to ensure internal consistency.

We recommend that the return on equity allowance be set by giving equal weight to an estimate of the prevailing cost of equity and an estimate of the long-term cost of equity, where:

- The prevailing cost of equity is estimated by pairing together, in an internally consistent way, an estimate of the prevailing risk-free rate and the prevailing MRP; and
- The long-term cost of equity is estimate by pairing together, in an internally consistent way, an estimate of the long-term risk-free rate and the long-term MRP.

The approach we recommended was modelled on the approach developed by IPART.

By contrast, CEPA recommends that the return on equity allowance be determined in an internally inconsistent way by pairing together:

- An estimate of the prevailing risk-free rate; and
- An estimate of the long-term MRP.

This is the approach currently used by the ACCC, the AER and most other regulators in Australia.

IPART has explained in some detail the problems that arise when the cost of equity is estimated in the manner recommended by CEPA. For example, in a 2020 submission to ESCOSA, IPART explained that:

ESCOSA, along with the AER and most other Australian regulators calculate the return on equity using equation (1).

¹³ CEPA, WACC Methodology, 1 August 2025, p. 20.



$$Re = (\text{short term})Rf + \beta * (\text{long term})MRP \quad (1)$$

As spot risk free rates are very low right now and the long-term MRP is lower than the current MRP, this procedure gives a low estimate of the cost of equity. In contrast, we calculate the return on equity using equations (2) – (4).

$$(\text{short term})Re = (\text{short term})Rf + \beta * (\text{short term})MRP \quad (2)$$

$$(\text{long term})Re = (\text{long term})Rf + \beta * (\text{long term})MRP \quad (3)$$

$$Re = \frac{((\text{short term})Re + (\text{long term})Re)}{2} \quad (4)$$

In our view, despite the fact that it is widely used, the approach taken in equation (1) will generate biased estimates of the market cost of equity because it combines incompatible short term and long term market observations. As you note in your statement of reasons (p 156) Frontier Economics recommended that, because there is an inverse relationship between the MRP and risk-free rate, it is important to adopt an approach to estimating the required return on equity that pairs the risk-free rate consistently with the MRP. We agree with Frontier on this point.

Our approach avoids that problem. Both short-term and long-term cost of equity estimates employ matched MRP and risk-free rate observations. It is highly significant that our current and long-term cost of equity estimates are quite similar to each other. Both of these numbers are higher than ESCOSA's equity return. We use the midpoint of the two in our WACC calculation.¹⁴

In a subsequent review of its approach to setting allowed returns, IPART affirmed its approach, noting the problems that arise from pairing inconsistent parameter estimates within the CAPM:

We consider it would be invalid to combine a current risk-free rate with a historic market risk premium, because the result of that calculation would not represent the state of the equity market at any point of time. By combining a current estimate of the risk-free rate with a current market risk premium estimate, we can approximate the current market price of equity. Likewise, by combining a historic estimate of the risk-free rate with a historic market risk premium estimate, we can approximate the historic average market price of equity. Either of these benchmarks would be a valid point of reference. When we combine the risk-free rates and market risk premium estimates in this time-consistent way, the current cost of equity is closer to the historic average cost of equity than either of them is to the time-inconsistent sum.¹⁵

The importance of internal consistency was tested in a 2022 case before the Supreme Court of Western Australia, involving an access pricing dispute between Perth Airport and Qantas Airways

¹⁴ IPART, *Submission on Draft Report, SA Water Regulatory Determination 2020*, 3 April 2020, p. 2.

¹⁵ IPART, *Review of our WACC methodology*, February 2018, pp. 51-52, emphasis added.



and its subsidiary airlines (Qantas). A key issue in that case was the WACC that should be used to set commercial charges at Perth Airport for Qantas. The expert for Perth Airport, Dr Hird, argued that the cost of equity should be set using the IPART WACC method. Dr Hird explained in his evidence to the Court that this approach contrasted with the approach adopted by the AER and the ERA (which are consistent with the approach recommended to the ACCC by CEPA):

In that context, Dr Hird considers the WACC methodology set out by IPART in 2018 to be appropriate because IPART has regard to both short and long term estimates of risk free rate and market risk premium parameters and pays attention to internal consistency when combining these parameters. Dr Hird considers that IPART's approach contrasts with that of other Australian regulators, such as the AER and the West Australian Economic Regulation Authority (ERA), which he says do not adopt internally consistent approaches for estimating the WACC.¹⁶

By contrast, the expert acting for Qantas, Dr Hern, adopted the approach recommended by CEPA—namely to estimate the MRP solely using the HER method, and independently of the risk-free rate:

Dr Hern explains that instead of assuming the risk free rate and market risk premium move inversely, his model is based on the assumption that it is best to estimate the market risk premium independently of the risk free rate on the basis that there is little evidence to support inverse correlation. Dr Hern explains his model is also based on the assumption that there is no better estimate of the market risk premium than the evidence based on long run historical returns.¹⁷

The Court concluded that the approach of ensuring internal consistency adopted by the expert for Perth Airport was more persuasive than the internally *inconsistent* approach adopted by the expert for Qantas:

Dr Hird's views (and therefore those of IPART) in relation to estimating WACC are more persuasive than Dr Hern's. The IPART approach appears to appropriately take into account the benefits of internal consistency between time periods and, having regard to both short and long term

¹⁶ Perth Airport Pty Ltd v Qantas Airways Ltd [No 3][2022] WASC 51 [295].

¹⁷ Perth Airport Pty Ltd v Qantas Airways Ltd [No 3][2022] WASC 51 [323].



estimates, reduce the potential for error in one type of estimate disproportionately affecting the final WACC.¹⁸

In other words, the key principle of the need for internal consistency between the estimates of the risk-free rate and the MRP, which underpinned nbn's WACC proposal, was tested and endorsed as "persuasive" by a Supreme Court in Australia in a recent, major legal judgement.

CEPA mentions this important judgment only in passing, in a footnote.¹⁹ CEPA does not engage with the substance of IPART's argument, nor the Court's findings, about the need for internal consistency. This is a major shortcoming of CEPA's analysis, since the principle of internal consistency was a key part of the WACC method proposed by nbn, including in its RMA.

2.3 The shortcomings of the CEPA approach to estimating the cost of equity

CEPA recommends that the ACCC should continue its existing approach of estimating the MRP using the HER approach exclusively. In this section we explain why this approach results in an internally-inconsistent estimate of the cost of equity.

We begin by noting that the HER estimate of the MRP is calculated as the difference between the long-term historical average return on the market and the long-term historical average risk-free rate:

$$\begin{aligned}
 MRP_{HER} &= \sum_{n=i}^N \frac{1}{N} [r_{m,i} - r_{f,i}] \\
 &= \sum_{n=i}^N \frac{r_{m,i}}{N} - \sum_{n=i}^N \frac{r_{f,i}}{N} \\
 &= \bar{r}_m - \bar{r}_f,
 \end{aligned} \tag{1}$$

where:

- $r_{m,i}$ is the realised return on the market in year i ; and
- $r_{f,i}$ is the contemporaneously estimated risk-free rate in year i .

CEPA recommends that the ACCC use the Capital Asset Pricing Model (CAPM) to estimate the cost of equity. We agree with this recommendation. The CAPM formula can be written as follows:

$$E(r_e) = r_f + \beta_e \underbrace{[E(r_m) - r_f]}_{MRP}, \tag{2}$$

where:

- r_f is the risk-free rate;
- β_e is the equity beta; and
- $E(r_m)$ is the expected return on the market.

As noted above, CEPA recommends that the ACCC implement the CAPM by giving exclusive weight to the HER estimate of the MRP:

¹⁸ Perth Airport Pty Ltd v Qantas Airways Ltd [No 3][2022] WASC 51 [327].

¹⁹ CEPA, WACC Methodology, 1 August 2025, footnote, 20.



$$E(r_e) = r_f + \beta_e [\bar{r}_m - \bar{r}_f], \quad (3)$$

where:

- r_f is an estimate of the prevailing risk-free rate; and
- $[\bar{r}_m - \bar{r}_f]$ is the HER estimate of the MRP, as in equation (1) above;
- \bar{r}_m is the long-run historical average return on the market; and
- \bar{r}_f is the long-run historical average risk-free rate.

In other words, under CEPA's proposed implementation of the CAPM, there two different estimates of the risk-free rate—an estimate of the prevailing risk-free rate and an estimate of the risk-free rate over the long-term. By contrast, the actual CAPM (developed by Sharpe and Lintner) is a one-period model that contains only one risk-free rate.

Note that in order for equation (3) to be equivalent to equation (1), one would have to assume the following relationship holds:

$$\begin{aligned} E(r_m) &= r_f + \bar{r}_m - \bar{r}_f \\ &= \bar{r}_m + [r_f - \bar{r}_f] \end{aligned} \quad (3)$$

That is, CEPA *assumes* implicitly that the expected return on the market is equal to the long-run historical average return on market plus the difference between the prevailing yield on Government bonds and the long-run historical risk-free rate.

This assumption appears nowhere in the CAPM or in finance theory. Nor is there any empirical evidence for its validity. In other words, there is no basis for such an assumption. Yet, it must hold in order to apply the method proposed by CEPA.

The main problem with the approach that CEPA proposes is that the resulting estimates of the cost of equity move one-for-one with changes in prevailing Government bond yields, because the MRP estimate is essentially fixed over time. This produces implausible estimates of the cost of equity in certain market conditions. For example, during financial crises, such as during the GFC and the peak of the Covid-19 pandemic, Government bond yields fell sharply. Because the CEPA approach simply adds a fixed equity risk premium to the prevailing risk-free rate, CEPA's method would imply, implausibly, that the cost of equity *fell* precipitously during these crises.

This can be seen clearly in Figure 1 below, which plots the return on equity allowance over time using CEPA's recommending approach, which involves adding the prevailing (i.e., 20-day average) risk-free rate to a constant equity risk premium (i.e., CEPA's equity beta estimate of 0.54 multiplied by a constant MRP estimate of 6.40%).

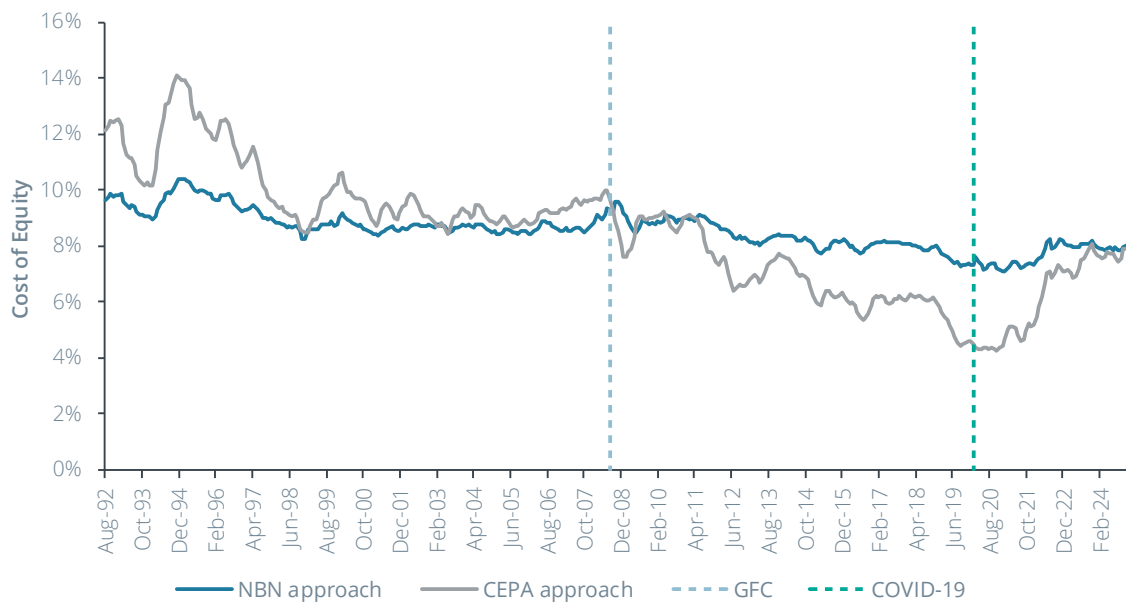
By contrast, as Figure 1 shows, under nbn's proposed approach, the estimated cost of equity remains fairly stable (though not perfectly constant) through financial crises and during economic booms (e.g., during the mid-1990s).²⁰ In our view, these estimates are far more realistic than those produced by CEPA's recommended approach.

Tellingly, the CEPA approach and nbn's proposed approach produce very similar estimates when Government bond yields are close to their normal (i.e., long-run average) levels, like at the present time. This demonstrates that the nbn approach is capable of producing reliable cost of equity estimates in a wide range of plausible market conditions.

²⁰ For comparability to the CEPA method, we adopt an equity beta of 0.54 when implementing the nbn method.



Figure 1: Cost of equity estimates under the method proposed by CEPA and nbn



Source: Frontier Economics analysis.

In our view, when assessed side-by-side, nbn's proposed method satisfies the objectives in clause 2G.2.4(d) of the varied SAU better than CEPA's recommended approach nbn method because it:

- Produces more reliable (and realistic) estimates of the cost of capital in a wide range of plausible market conditions, including during financial crises, economic booms and during 'normal' market conditions; and
- Produces far more stable estimates of the cost of capital over time.

Hence, when applied to historical data, the approach proposed by nbn unambiguously performs better than the approach recommended by CEPA.

2.4 CEPA's concerns over the DDM approach

CEPA appears to concede (as a number of regulators have done) that the true MRP does vary over time.²¹ CEPA goes on to state that:

In principle, we understand that it may be desirable to utilise a conditional MRP estimate [e.g., derived using the DDM approach] that reflects prevailing market conditions.²²

CEPA's main arguments against the DDM approach are the following:²³

- There is no consensus on the appropriate specification of the DDM, and estimates of the expected total return on the market can be highly sensitive to model specification;

²¹ CEPA, WACC Methodology, 1 August 2025, p. 22.

²² CEPA, WACC Methodology, 1 August 2025, p. 25.

²³ CEPA, WACC Methodology, 1 August 2025, pp. 24-25.



- There is no consensus on the appropriate inputs to the DDM (e.g., the long-run growth rate of dividends), and DDM estimates of the expected total return on the market are very sensitive to these input assumptions;
- There is no clear rationale that could guide how much weight should be given to DDM estimates;
- In the context where a regulator may be setting a fixed return on equity allowance for a period of time (e.g., five years), it is not clear whether DDMs do provide a more reliable estimate of the relevant market cost of capital over that horizon. This appears to be a reference to the first objective in clause 2G.2.4(d)(i) of the varied SAU;
- DDM estimates are far more volatile than unconditional estimates of the MRP (e.g., derived using the HER method). If significant weight were placed on DDMs, then the ACCC would need to expect that the market risk premium could shift materially between decisions, even if these are made a short time apart. This means that DDM estimates may be less supportive of stability over time, compared to an unconditional approach. This appears to be a reference to the second objective in clause 2G.2.4(d)(i) of the varied SAU; and
- The DDM estimates of the MRP are typically inversely related to estimates of the risk-free rate. However, the debate over whether the MRP and risk-free rate are truly inversely related is not yet settled.

None of CEPA's stated concerns over the DDM approach are original as they have all been raised previously by regulators such as the AER.²⁴ As we explain below, the approach proposed by nbn addresses all these concerns.

Furthermore, we note that the ACCC's consultation paper agrees that DDMs can be useful in estimating a cost of equity that reflects prevailing market conditions if implemented appropriately:

We tend to agree that DDMs have strong theoretical roots and if appropriately utilised they are potentially a valuable tool for producing estimates that reflect prevailing conditions in the context of estimating WACC.²⁵

That is, the ACCC does not consider that DDMs should not be used under any circumstance. We concur with the ACCC that DDMs are useful. Given that the approach proposed by nbn has addressed the key concerns raised by CEPA (and other regulators), we think the DDM approach is fit for purpose and should be adopted by the ACCC.

2.4.1 Uncertainty over model specification

CEPA's first concern about the DDM approach is that there is no consensus on the correct specification of the DDM, and that DDM estimates of the MRP can be sensitive to model specification. We agree with both these points. nbn's proposed approach acknowledged this issue and sought to address it by employing the average estimate from four differently-specified DDMs (i.e., three that are used by IPART, plus a three-stage DDM developed by the AER). nbn did not advocate for a single model specification. Combining estimates from multiple, differently-specified

²⁴ This is another example of CEPA simply reciting the arguments made by some Australian regulators, rather than expressing an original opinion.

²⁵ ACCC, NBN Co Replacement Module for the Second Regulatory Cycle, Consultation Paper, August 2025, p. 49.



models is likely to reduce model specification errors. We note that IPART similarly combines estimates from multiple, differently-specified DDMs to improve the reliability of its MRP estimate:

We acknowledge that our draft decision to use 6 models to estimate the implied MRP increases complexity in estimating the cost of equity with current market data, compared to our interim approach of using only Bloomberg's implied MRP estimate. However, we consider that it is important to obtain a robust estimate of the implied MRP, given its impact on the WACC using current market data and hence our final WACC estimation. An implied MRP estimate is likely to be sensitive to the specific model chosen by us, since each model makes certain underlying assumptions. We consider that employing a number of models to estimate the implied MRP reduces these concerns and enhances the robustness of our implied MRP estimate, leading to a better and more robust estimate of the cost of equity using current market data.²⁶

We note that whilst CEPA has not recommended that the ACCC use DDMs, in the UK CEPA developed two DDMs (a single-stage DDM and a multi-stage DDM) for Ofgem, for the purposes of estimating the total market return, as part of the RIIO-2 price control review.²⁷ CEPA recognised in its advice to Ofgem that DDM estimates can be sensitive to model specification. Nevertheless, CEPA did make choices about how to specify its multi-stage model and considered estimates from a single-stage model (i.e., it considered estimates from differently-specified DDMs, as nbn has proposed). CEPA also took account DDM estimates produced by other consultants (e.g., PWC). CEPA did not conclude in its work for Ofgem that model selection was so problematic that DDMs should not be used at all.

CEPA advised Ofwat through its PR24 price control. As part of that work, CEPA explained that it used DDM evidence to inform its estimate of the total market return (TMR), which in turn is used to estimate MRP in the CAPM formula:

*Our preferred approach is to assume that the TMR is largely stable, but to reflect that there is still some movement in the level of the TMR. Under this approach, we consider market cross-checks on the TMR specifically, **such as DDM inputs**, investment manager forecasts, price-to-earnings yields, and results from the additive ERP approach.²⁸ [Emphasis added.]*

In that same report to Ofwat, CEPA explains that:

²⁶ IPART, WACC methodology, Draft Report, September 2013, p. 15.

²⁷ CEPA, Review of cost of capital ranges for Ofgem's RIIO-2 for onshore networks, February 2018, Annex E and Annex F.

²⁸ CEPA, PR24 Cost of Equity, 11 July 2024, p. 71.



CEPA has its own in-house Dividend Discount Model, as further described in Appendix F.²⁹

Appendix F of that report goes on to describe the specification of CEPA's inhouse two-stage DDM, which:

- Makes use of data collected from Bloomberg;
- Utilises 12-month equity dividend yield for the market index;
- Involves estimating net changes in capital flows to proxy share buyback;
- Uses short-term nominal Gross Domestic Product (GDP) growth forecasts for the UK obtained from the Office of Budget Responsibility; and
- Constructs long-term growth forecasts using the previous ten years' average short-term growth forecast.

In other words, despite CEPA's advice to the ACCC against using the DDM approach, because there is no agreement over model specification or inputs, CEPA has developed its own "in-house" DDM, which it uses to provide MRP advice to regulators overseas.

2.4.2 Uncertainty over model inputs

There is no consensus on the appropriate inputs to the DDM, and that DDM estimates of the expected total return on the market are very sensitive to these input assumptions. Again, we agree with this point. However, we disagree that this problem is so serious that DDMs should not be used at all. Our view is that one should first identify the main concerns about the key inputs, and then seek to address those concerns at source.

For example, during its 2018 Rate of Return Instrument review, the AER identified two principal concerns with the DGM approach. The AER considered that:

- DGM estimates of the MRP could be systematically upwardly biased—for instance, due to the 'stickiness' of dividends, and because analysts' earnings forecasts (an input to the DGM) may be systematically over-optimistic; and
- There is considerable uncertainty over the appropriate long-run growth rate estimate to apply in the DGM.

The calibrated DGM approach proposed by ENA seeks to address both concerns directly and simultaneously by calibrating (i.e., selecting) the long-run growth rate such that the average MRP estimate over a long historical period is equal to the observed average MRP over that same period (i.e., 6.38%).

Our view is that all the conditional estimates of the MRP should be calibrated to ensure that they are consistent, on average, with the estimate of the long-run average MRP. An approach that, on average, produces estimates that are materially different from the observed long-run average MRP would not be internally consistent.

During the SAU process, the ACCC queried whether it would be appropriate to also calibrate the three IPART DDMs. We agreed with that feedback from the ACCC. We therefore performed the

²⁹ CEPA, PR24 Cost of Equity, 11 July 2024, p. 26.



calibration for each of the four DDM specifications by selecting the (unique) long-run dividend growth rate that equates:

- The average DDM estimate from 1988 to 2024; and
- The average observed MRP over that same period.

In our view, this is an appropriate (and unbiased) way to select the long-run dividend growth rate such that, whatever the specification of the DDM, it always produces an average MRP estimate that is consistent with the long-run HER estimate of the MRP. A supplementary draft note by CEPA, published as part of the ACCC's consultation on the WACC for nbn's replacement module, acknowledges that we presented calibrated estimates of the MRP from all four DDMs.³⁰ However, CEPA does not explain that the reason we produced calibrated estimates was to address concerns over the choice of key inputs (principally, the long-term growth rate) used in the DDMs.

We note that when CEPA developed its recommended DDM for Ofgem in 2018, it explained that:

...the DGM is sensitive to input assumptions which change based on prevailing forecasts, causing differing DGM results at different points in time. When using a DGM approach, care needs to be taken that the estimates are appropriate.³¹

And that:

The outputs from a DGM approach are sensitive to the inputs used. As such, the development of a DGM only provides an answer based on what is assumed in the first instance. As noted above, both PwC and Europe Economics present DGM evidence in their work for Ofwat on the cost of equity. The CEPA DGM is very similar in its specification to these models, although usually slightly different input assumptions for the model.³²

That is, in its work for Ofgem, CEPA acknowledged that the outputs from a DDM are sensitive to the model inputs—particularly the long-run growth rate—but CEPA nevertheless adopted a long-run growth rate assumption to apply in its preferred model that differed from the assumption that had been adopted by consultants for the water sector regulator, Ofwat. CEPA did not, in that case, conclude that uncertainty over input assumptions was such an insurmountable problem that the DDM approach could not be applied at all.

It is therefore unclear why CEPA now advises the ACCC something to the contrary.

³⁰ CEPA, NBN SAU – WACC, 15 August 2025, p. 6.

³¹ CEPA, Review of cost of capital ranges for Ofgem's RIIO-2 for onshore networks, February 2018, p. 112.

³² CEPA, Review of cost of capital ranges for Ofgem's RIIO-2 for onshore networks, February 2018, p. 115.

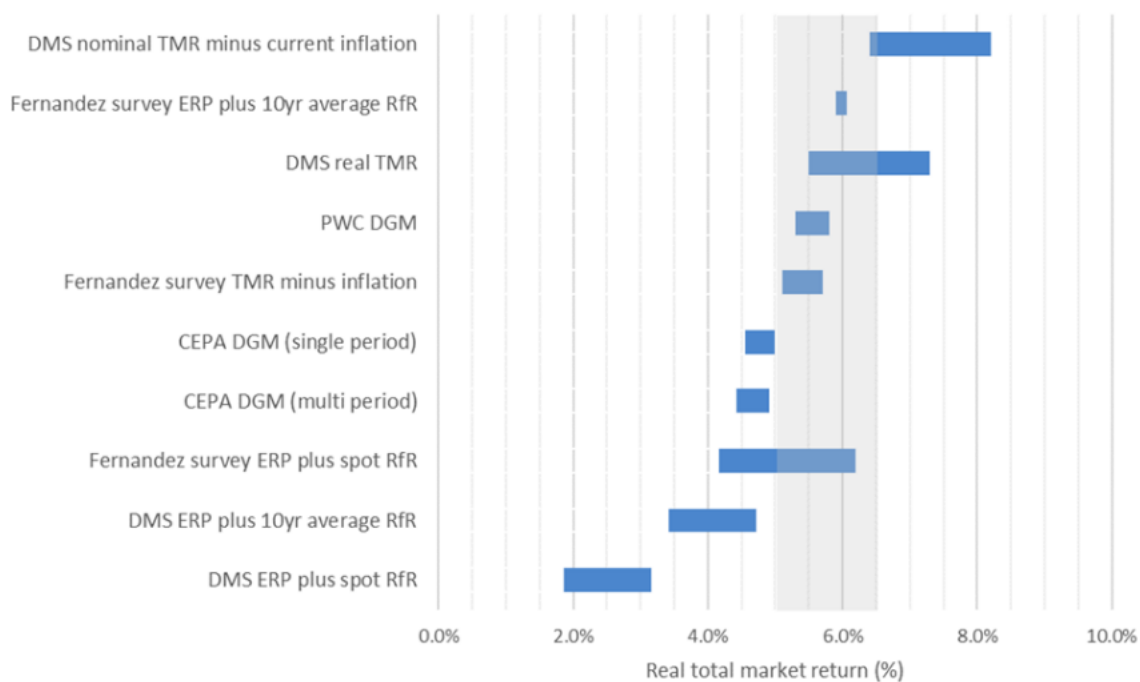


2.4.3 Uncertainty over how to weight DDM evidence

CEPA explains that although some Australian regulators do have limited regard to DDM evidence, it has not identified “a clear rationale” that could guide how much weight should be attached to such evidence. This too is an unconvincing reason for giving no weight to DDM evidence.

- In our report, we propose that equal weight should be given to unconditional (i.e., HER) and conditional (i.e., DDM) estimates of the MRP, mirroring IPART’s approach. The key feature of IPART’s approach is to ensure internal consistency by pairing together a conditional estimates of the risk-free rate and a conditional estimate of the MRP. Likewise, an unconditional estimate of the risk-free rate is paired with an unconditional estimate of the MRP. This results in two separate, but internally consistent, estimates of the cost of equity—one reflecting prevailing market conditions, and another reflecting expectations of the cost of equity over the long-term. Both are valid from the point of view of investors, so both should receive equal weight.
- Secondly, as noted above, CEPA has itself used DDM evidence to derive an estimate of the total market return for Ofgem and Ofwat recently. Figure 2 below summarises the different sources of evidence that CEPA relied on in its advice to Ofgem, including HER evidence (i.e., ‘DMS ERP’ plus risk-free rate), ‘DMS TMR’ evidence, surveys and DDM estimates from different models, including models developed by CEPA. This demonstrates that CEPA expressed no discomfort in attaching some (albeit non-transparent) weight to the DDM evidence it considered when developing its advice to regulators overseas, such as Ofgem.
- Finally, we note that CEPA does not avoid the need to weight the DDM evidence simply by recommending exclusive weight on HER evidence—because that approach attaches zero weight to DDM evidence. In our view, this is a more extreme (and unreasonable) approach than giving equal weight to DDM evidence, as nbn has proposed.

Figure 2: Evidence CEPA relied on when estimating the total market return for Ofgem



Source: CEPA, *Review of cost of capital ranges for Ofgem’s RIIO-2 for onshore networks*, February 2018, Figure E.7.



2.4.4 DDMs may not provide a reliable estimate of the cost of equity when the regulator is setting fixed allowances for a regulatory period

CEPA also argues DDMs may not produce a more reliable estimate of the relevant market cost of capital than the HER approach, if the regulator is setting a fixed WACC allowance for a regulatory period:

...there is an open question regarding whether a DDM estimate at one point in time provides a more reliable estimate of the market cost of capital relative to an unconditional approach when this point-in-time estimate is held constant for a five-year regulatory period. In a framework where the MRP is estimated once and then applied for five years, it is not clear whether DDMs do provide a more reliable estimate of the relevant market cost of capital over that horizon.³³

It is difficult to follow CEPA's reasoning in relation to this point. Conditional estimates of the MRP are forward-looking and reflect prevailing market conditions. Unconditional estimates are also forward looking but, as CEPA explains, they "will not incorporate the impact of short-term economic events."³⁴ Rather, unconditional estimates reflect forward-looking expectations of the MRP over the long-term.

Provided they are unbiased, conditional MRP estimates will tend to be more reflective of the MRP that is expected to prevail over the forthcoming regulatory period than would unconditional estimates. An unconditional estimate of the MRP would only reflect expectations over the forthcoming period if prevailing market conditions are in line with long-run conditions, or if the true MRP is constant over time. There is no evidence that the true MRP is invariant over time. Indeed, CEPA itself has previously concluded that:

there is acceptance that MRP is not stable³⁵

And that:

there is no good evidence that the MRP should be assumed to be independent of the RfR, the current implicit assumption of the AER's approach³⁶

It is difficult to reconcile CEPA's conclusion that the true MRP "is not stable" over time with its recommendation that the ACCC should rely exclusively on the HER approach, which assumes that the true MRP is constant. Giving 100% weight to an HER estimate of the MRP would not produce a

³³ CEPA, WACC Methodology, 1 August 2025, p. 24.

³⁴ CEPA, WACC Methodology, 1 August 2025, p. 22.

³⁵ CEPA, Relationship between the RfR and MRP, 16 June 2021, p. 6.

³⁶ CEPA, Relationship between the RfR and MRP, 16 June 2021, p. 6.



reliable estimate of the cost of equity over a regulatory period, unless the true MRP over that period is invariant to changing market conditions (which CEPA accepts is not the case), or unless prevailing market conditions happened to coincide with ‘average’ market conditions that are reflected in the HER estimate (which would be a matter of luck rather than the outcome of a sound estimation approach).

By contrast, the DDM approach makes no such restrictive assumption, because it allows for the possibility that the MRP may vary over time as market conditions change. Therefore, in our view, nbn’s proposed approach of giving equal weight to DDM evidence is likely to produce a more reliable estimate of the true MRP over a regulatory period than the approach that CEPA has recommended.

2.4.5 DDMs may increase rather than reduce the volatility of estimates

Referring to the second rate of return objective in clause 2G.2.4(d)(i) of the varied SAU, CEPA argues that:

DDM estimates are far more volatile than adopting one of the unconditional approaches. If significant weight were placed on DDMs, then the ACCC would need to expect that the market risk premium could shift materially between decisions, even if these are made a short time apart. This means that DDM estimates may be less supportive of stability over time, compared to an unconditional approach.³⁷

It is worth noting that clause 2G.2.4(d)(i)(B) refers to the objective of “promoting stability in the rate of return over time”, not individual parameters that are used to determine the overall rate of return. Because DDM estimates of the MRP tend to move inversely with the risk-free rate, the overall return on equity estimated using nbn’s proposed approach tends to be much more stable over time than estimates under CEPA’s proposed. This is clear from Figure 1 above.

2.4.6 The debate over whether the MRP and risk-free rate are inversely related is not yet settled

Another reason why CEPA appears to be reluctant to recommend adoption of DDM evidence is because the debate over whether the risk-free rate and MRP are inversely related is not yet settled.

However, when advising regulators in the UK, CEPA routinely *assumes* such an inverse relationship exists. For example, in 2022 advice to Ofgem, CEPA stated that:

We have used a CAPM-Total Market Returns (TMR) framework for our analysis.³⁸

TMR represents the total return required by investors for investing in the ‘market’ – that is, a diversified portfolio of assets. As discussed earlier in this report, the real TMR can be decomposed into the RFR (discussed in Section 2) and the MRP required to compensate investors for bearing the

³⁷ CEPA, WACC Methodology, 1 August 2025, p. 24.

³⁸ CEPA, Default Tariff Cap cost of capital, 25 August 2022, p. 5.



*additional risk of the market portfolio above that of a risk-free asset. By following a CAPM-TMR approach, **we assume that movements in the RFR are fully offset by changes in the MRP to maintain a constant level of TMR in real terms.***³⁹ [Emphasis added.]

In its advice to Ofwat during the PR24 price control review, CEPA explained that its approach to estimating the MRP (referred to by UK regulators as the 'equity risk premium') involves assuming that the total required return on the market is stable, with the MRP varying over time to offset changes in the risk-free rate. CEPA goes on to explain that this approach is preferable to assuming (as CEPA has advised the ACCC to do) that the MRP is stable, because such an approach produces unreliable estimates of the cost of equity in certain market conditions (which is precisely the argument we make in section 2.3 above):

In keeping with UK regulatory convention, our preferred approach is to estimate the total market return from available market evidence, and subsequently infer the equity risk premium. This approach is underpinned by adopting the assumption of a largely stable TMR, with the ERP fluctuating to offset movements in the risk-free rate. The alternative approach – direct estimation of the ERP – is more appropriate under the assumption that the ERP, rather than the TMR, is stable.

*Our approach has several theoretical and practical advantages over the alternative. First, it is consistent with the “flight to quality” expected under financial theory. During economic downturns, investors increase demand for less risky assets and require more compensation to hold riskier assets, driving down the risk-free rate and increasing the ERP. Second, the alternative approach can have adverse policy implications, including higher volatility in the allowed cost of equity (which could reduce investor confidence in the sector), and excessively high levels of equity market returns for firms in environments with low interest rates.*⁴⁰

In other words, when advising regulators in the UK, CEPA simply *assumes* an inverse relationship between the MRP and the risk-free rate. However, when advising regulators in Australia, CEPA is reluctant to make such an assumption. It is unclear why CEPA takes these apparently inconsistent positions when advising regulators in different jurisdictions.

In its advice to Ofwat during the PR24 price control, CEPA explained that the total required return on the market is unlikely to be perfectly constant over time:

³⁹ CEPA, Default Tariff Cap cost of capital, 25 August 2022, p. 21.

⁴⁰ CEPA, PR24 Cost of Equity, 11 July 2024, p. 56.



The relationship between the risk-free rate and the ERP has been discussed in detail within the empirical literature. We have previously concluded that this evidence indicates that there is greater stability in the TMR than the risk-free rate, but the TMR should not be considered perfectly stable.⁴¹

We agree with this point. That is why we recommend that, where it is feasible to do so (i.e., where the required data exist), DDM evidence be used (alongside HER evidence) to estimate the MRP. The DDM approach does not *assume* a perfect inverse relationship between the MRP and the risk-free rate, although it does permit (and often produces) an inverse relationship between estimates of these two parameters to emerge from the data.

CEPA summarises the findings it reported to the AER (on the evidence for a relationship between the MRP and the risk-free rate) as follows:

CEPA examined this issue for the AER as part of their 2022 Rate of Return Instrument process (see Box 2 below). We concluded that theory does not provide a clear answer on the RFR-MRP relationship. The empirical work we undertook provided some evidence for an inverse relationship between RfR and MRP especially in the post-1993 period. However, this relationship is not a perfect inverse correlation as assumed in the TMR approach. At the same time, our findings also did not support the perfect independence assumption of the HER approach.⁴²

Consistent with these findings, we do not think it is necessary to impose an assumption that the MRP and risk-free rate are perfectly inversely related, when it is feasible to apply the DDM approach. Rather, we suggest that DDM evidence be used (in combination with HER estimates) to estimate the MRP, and allow the data to speak.

2.5 The TMR approach

CEPA raises the possibility that the TMR or Wright approach could be used instead of DDM estimates, in combination with the HER approach, to estimate the overall MRP.⁴³ The TMR approach involves:

- Estimating the long-run average real historical return on the market;
- Adding a forecast of inflation to this historical average real return to obtain a forward-looking estimate of the long-run nominal return on the market; and then
- Subtracting an estimate of the prevailing risk-free rate to obtain an estimate of the prevailing MRP.

This approach assumes that the real required return on the market is constant and equal to the real historical realised return on the market and, therefore, movements in the risk-free rate are perfectly offset by opposing movements in the MRP.

⁴¹ CEPA, PR24 Cost of Equity, 11 July 2024, p. 70.

⁴² CEPA, WACC Methodology, 1 August 2025, p. 23.

⁴³ CEPA, WACC Methodology, 1 August 2025, pp. 22-23.



In its advice to the ACCC, CEPA suggests the following:

Giving preference to an unconditional MRP methodology does not necessarily point to adopting the HER method, given that the TMR or Wright approach provides an alternative. The debate on the relationship between the MRP and risk-free rate is not settled and the HER assumption that the MRP is stable is not necessarily correct. At the same time, the evidence in support of the TMR approach is also inconclusive.⁴⁴

Confusingly, CEPA suggests that the TMR approach is (like the HER approach) a method for estimating the unconditional MRP. It is not. The TMR approach assumes that the real required return on the market is constant over time, and that it can be estimated by taking a long-run average of ex-post real returns on the market. Under the TMR approach, the MRP is estimated by subtracting from an estimate of the long-run nominal return an estimate of the prevailing risk-free rate. Since the prevailing risk-free rate reflects prevailing market conditions, so too does the TMR estimate of the MRP. Hence, in our view, TMR estimates of the MRP are properly regarded as conditional (rather than unconditional) estimates of the MRP.

We do not have any strong objections to CEPA's suggestion that the overall MRP could be estimated by combining HER and TMR estimates of the MRP. The former assumes that the MRP is constant over time, whereas the latter assumes that the MRP is perfectly inversely related to the risk-free rate. The truth is likely to lie somewhere between these two strong assumptions. Therefore estimating the overall MRP by giving equal weight to both estimates would not be an unreasonable approach. For internal consistency, the risk-free rate should also be estimated by giving equal weight to the prevailing and long-term historical average risk-free rate.

However, given that it is unlikely that there is a perfect inverse relationship between the risk-free rate and the MRP, our preference would be to use DDM evidence (where such evidence is available) to estimate the conditional MRP. This estimate would then be combined with an estimate of the unconditional MRP, per the IPART approach, to estimate the overall MRP. That was the basis of nbn's RMA WACC proposal.

⁴⁴ CEPA, WACC Methodology, 1 August 2025, p. 25.



3 Comparator samples for beta and gearing

3.1 Developing a comparator sample

3.1.1 Our approach

We developed a comparator sample based on the two steps that regulators typically follow when estimating beta (and gearing) for regulated businesses:

1. Identify the characteristics of the benchmark entity's cost and demand structure that determine how much systematic risk it is likely to bear. This is sometimes called a 'first principles' analysis.
2. Determine a comparator sample that best represents the likely risks for the benchmark firm, taking into account the systematic risk profile of the regulated business, as identified by the first principles analysis. In order to improve statistical reliability, a pragmatic compromise must be made between a broader set of peer firms to improve statistical precision and the preference to limit the sample so as not to include firms that share few risk characteristics.

We started with a broad sample from Bloomberg and Refinitiv, limited to developed nations, and applied a number of validity checks (e.g., the firm must have a valid ISIN identifier). We next applied data quality and key characteristics filters for 5-year and 10-year periods, with the key characteristics being:

- Firms must own and operate infrastructure to supply broadband connectivity;
- Firms must generate a material share of revenue from broadband provision; and
- We use subsidiaries where parent and subsidiaries exist.

Using this process we identified a set of **79** comparator firms.

3.1.2 CEPA approach

CEPA's approach is as follows:

- Identify the broadest possible set of telecommunications sector comparators on the basis of broad Level 3 Bloomberg Industry Classifications (**BICS**) categories;
- Identify telecoms service lines that most closely approximate the nbn SAU services and voice interconnection services, (on the basis of more granular BICS categories);
- Apply a conservative filter for firm size (i.e., market capitalisation); and
- Apply other filters intended to ensure a minimum level of robustness within the comparator set, including for liquidity and the removal of comparators with characteristics that would be considered unrepresentative of nbn and voice interconnection service providers.

The initial filtering produces a shortlist of 123 firms, reduced to **54** firms through additional filters relating to:

- Market liquidity (bid-ask spreads); and
- Geographic filters (developed economies filter).



3.1.3 Discussion

We observe that CEPA has taken a very similar approach to comparator selection to the one we adopted, in that there is a focus on similar business activities, a choice of firms from developed countries only, and data filtering to exclude illiquid stocks.

Of the relevant differences, we observe that:

- We removed tower companies. Tower companies do not pass our filtering criteria relating to the supply of broadband connectivity on a regular subscription basis. Tower companies offer inputs to broadband connectivity suppliers on the basis of long-term contracts. We do not consider that these companies share similar risks to broadband connectivity suppliers – see Box 1. While we note that tower companies in the CEPA sample produce higher beta estimates than the overall sample, we are not convinced this reflects fundamental characteristics but is rather likely to be a function of statistical noise for the smaller sample (7 firms).
- CEPA's final set of filters produces fewer firms than our preferred sample. The sources of the differences are not, at this stage, apparent to us because we do not have a full list of filtered firms. While CEPA's sample overall is smaller than ours, it produces similar beta estimates. In our view, this indicates that both samples are likely to be large enough to produce statistically valid results. However, as we suggested in our report, we would not recommend placing a high weight on sub-samples of the broader sample due to the greater influence of statistical noise on small samples.

Box 1: Tower companies

In our view, the risk characteristics of tower companies are very different from broadband connectivity network suppliers due to higher revenue certainty. As an example, American Tower Corp states that its property operations (including tower leasing):

"...have generated consistent growth in revenue and typically have low cash flow volatility due the following characteristics: Long term tenant leases with contractual rent escalations. In general, our tenant leases for our communications sites with wireless carriers have initial non-cancellable terms of five to ten years with multiple renewal terms, with provisions that periodically increase the rent due under the lease, typically annually, based on a fixed escalation percentage (averaging approximately 3% in the United States)..."

Other features mentioned include consistent demand for sites, high lease renewal rates, high operating margins and low maintenance capital expenditures.

Source: American Tower Corp, 2024 Annual Report, pp. 2-3.

3.2 The relative risk assessment

3.2.1 First principles analysis

CEPA refers to a list of risk factors from Frontier Economics' 2022 report for nbn and also includes a factor relating to cross-country differences. In our 2025 report, we also consider the impact of firms earning revenues outside of their home markets (where listed), so we agree that this can be a relevant first principles consideration.



3.2.2 The relative risk assessment

Our approach

We considered whether we could use the results from a first principles analysis of nbn's risk characteristics to inform the point estimates of gearing and beta from within the range of estimates for the comparator sample.

Taking all the above benchmark characteristics into account, we concluded that we would expect that nbn faces similar risks on average to the firms in the telecommunications industry that form part of our sample. For example, the sample includes a diverse range of firms supplying broadband services to wholesale and retail customers, across different kinds of networks and under various forms of regulation (including no regulation). We provided a specific discussion as to the importance of competition faced to the relative risk assessment (Annexure B of our June 2025 report). We manage the risk of imperfect sample selection (i.e., the inclusion of firms that have different risks and different betas) through the use of median values, which minimises the impact of outliers.

CEPA approach

CEPA describes clearly the drivers of systematic risk that it considers are most relevant when selecting an appropriate sample of comparator firms, and for selecting subsets of firms within its sample to compare to the regulated business based on relative risk characteristics (e.g., demand risk). CEPA adopts as its point estimate for beta the mean (rather than median) estimate across its sample.

Discussion

While CEPA's discussion about the key drivers of systematic risk is thorough, and we agree with the notion that the relative risk assessment can assist comparisons from outside the sample (e.g., to other industry sectors), we do not consider it convincing for the purposes of triangulating or otherwise focusing a point estimate within the broader sample. The approach simply involves too many fine judgements that cannot be supported with evidence or replicated by a third party. This is particularly relevant when it comes to splitting the sample into various kinds of firms – mobile, fixed, tower, fibre, wholesale or vertically integrated. In many cases, it is not clear how precisely firms can be categorised into these groups. And, more importantly, there is no convincing evidence that the relative risks faced by suppliers of broadband and voice interconnection services differ. We discuss this point next, particularly with respect to the relevance of wholesale and retail activities.

3.2.3 Relevance of wholesale and retail activities

Our approach

We stated that, given nbn's supply arrangements have no long-term elements that protect its revenue streams, we do not see any reason why there would be, or any evidence that there is, a substantive difference between the systematic risk of (a) suppliers of wholesale and retail broadband services, and (b) a wholesale-only entity such as nbn. The market conditions that would result in a retail service provider losing customers or volumes would likely have the same effect on nbn or other wholesale-only entities.



CEPA approach

CEPA places some emphasis on wholesale activities being different from retail activities, and places nbn within a lower risk group of wholesale entities.

The primary reason given is lower exposure to bad debts than for retailers:

However, it may also be argued that nbn faces slightly lower levels of counterparty risk from bad debts at either the consumer or wholesale level than the RSPs that connect to its network, as these risks are not fully passed through to nbn...In this respect, investors may view systematic demand risk for the NBN SAU as being more similar to the wholesale-only comparators, and for voice interconnection services as being more similar to the vertically-integrated comparators.⁴⁵

Discussion

CEPA's claim with respect to exposure to bad debts is not supported by any evidence. Conceptually, it is not clear to us why nbn would be considered to face lower bad debt risk than an RSP.

RSPs would certainly be expected to face a greater frequency of bad debts because they have many more customers, but when wholesale entities have bad debts, they are likely to be much larger than retail bad debts.

At the retail level, Telcos have become quite sophisticated in avoiding consumer bad debts through credit management. Telstra's 2024 Annual Report notes that bad debts have no strong correlation to economic cycles unless certain thresholds are exceeded.

Our analysis has shown that generally overall macroeconomic factors, such as unemployment rates, interest rates or gross domestic product have no strong correlation with our bad debt losses unless certain thresholds are exceeded. As at 30 June 2024, those macroeconomic factors were within the relevant thresholds.⁴⁶

Even if it was established that the bad debts for retail firms tended to be higher than for wholesale firms, it would still be necessary to show that this has a material effect on systematic risk. No such evidence is provided by CEPA; the claim is simply assumed to be true.

Rather than bad debts, we maintain that the key distinction for wholesale entities is those firms that operate under long term contracts with revenue security and those that do not.⁴⁷ Many wholesale operators such as tower companies operate under such contracts, and we consider this revenue is likely to be more robust to economic conditions than revenues derived from subscriber sales that can vary from month to month. For this reason, they should not be considered to have similar risks to nbn.

⁴⁵ CEPA, WACC Methodology, 1 August 2025, p. 50.

⁴⁶ Telstra 2024 Annual Report, p. 134.

⁴⁷ See e.g. <https://www.grantthornton.co.uk/insights/understanding-value-drivers-in-telco-tower-valuations/>



That is, in our view, the appropriate distinction is not between retail and wholesale firms per se, but rather between those firms that are protected by locked-in long-term contracts and those that are not.

3.2.4 Competition and market power as a driver of systematic risk

Our approach

We found that the impact of competition and its antithesis, firm market power, on systematic risk was complex and uncertain. We analysed this issue in some detail in Annexure B of our 2025 report, highlighting that:

- The international comparator set only contains entities that own and operate broadband networks. This includes mobile/fixed wireless and satellite as well as fixed broadband networks.
- There is no recent evidence that the beta associated with the supply of mobile broadband services is higher than that associated with the supply of fixed broadband services, and our own beta estimates do not support a statistically relevant difference.
- While suppliers of mobile broadband services may face more competition than fixed suppliers, much of the competition risk is likely to be non-systematic. In an environment where mobile penetration in most mature economies exceeds 100%, it seems very unlikely that consumers are likely to respond to downturns in the economic cycle by disconnecting from mobile networks entirely, or by otherwise reducing their demand for mobile services in a manner that is very different to fixed broadband services. That is, aggregate retail demand for mobile services is unlikely to be very sensitive to economic cycles in a similar way to fixed broadband services and this is consistent with the recent empirical evidence.
- Empirical estimates of beta across industry sectors suggest that there can be wide variation in beta estimates among firms with monopoly or very strong market power, such that competition risk is not likely to be a strong driver of beta estimates in comparison to other factors. We present some of this evidence below in Table 1. This implies that the extent of competition faced by the regulated business should not be a determinative factor when selecting comparators for the purposes of estimating beta and gearing for a benchmark efficient firm with a similar degree of risk as nbn in providing regulated services.

CEPA approach

CEPA makes two related findings:

- That the demand risk faced by water or energy utilities is likely to be lower than for a typical telecoms service provider; and
- The extent of nbn's market power is related to its demand risk exposure. CEPA considers that nbn is exposed to much more significant competition than typical utility network providers, and it does not see a distinction in monopoly power relative to the sample comparators. On balance CEPA did not consider that nbn's market power impacts on its relative risk position beyond the other features of its demand composition described in this section.



ACCC approach

The ACCC's RMA consultation paper contains statements that reference the effect of market power on comparator selection. It argues that:

Given the unique characteristics of the NBN, we are particularly interested in views on the degree to which the proposed comparator firms likely have similar systematic risk profiles to that of the NBN. We note that firms in the telecommunication sector can be quite diverse in terms of their systematic risk profiles depending on the markets they operate in and the types of services they provide. Under the SAU, NBN services can be re-categorised as a competitive service and the regulatory asset base adjusted accordingly. As discussed later in this consultation paper, we propose to adopt a standard of effective competition when considering whether a service should be re-categorised in this way. Therefore there is a question of whether some of the proposed telecommunications comparators should be removed from the samples for estimating the equity beta if they do not have similar market power as nbn in the supply of its core regulated services. If a 'narrow' approach is adopted, we consider that it would be appropriate that those telecommunication firms that are less comparable to the nbn are excluded from the comparator set. If a 'broad' approach is adopted, we consider that to the extent that firms in other sectors (e.g. regulated utilities) may share similar characteristics to nbn (e.g. significant monopoly power in providing essential services) it is worth considering whether inclusion of these firms can improve the accuracy and reliability of the equity beta estimate for the NBN.⁴⁸

Discussion

We agree with CEPA that nbn is likely to face considerably more competition than energy and water utilities, and that there is no material or significant distinction in market or monopoly power relative to other firms within the broadband network sample. However, we think that the point regarding systematic risk is more fundamental; we suggest that even if it was the case that nbn faced less competition than the average or median firm in the sample, it is far from clear that this would reduce nbn's systematic risk.

In that regard, it is unfortunate that the ACCC appears to have jumped straight to the conclusion that the degree of competition faced by nbn is a key driver of its systematic risk – it is the only factor mentioned that is said to be relevant to comparator selection – without a more fulsome analysis of the drivers of systematic risk that is attempted by both CEPA and Frontier Economics.

As discussed in our June 2025 report, some elements of competition risk are likely to be systematic and some likely non-systematic. Non-systematic competition risk can be addressed through diversification, for example, by an investor by holding shares in all competing firms. Only systematic risks are compensated in the CAPM framework using beta estimates.

The argument that competition (and its antithesis, market power) increases systematic risk likely follows from the assumption that monopolies tend to face stable demand and therefore cash flows and returns, particularly when supplying income inelastic goods. This has historically been the case for network utilities that were protected from competition, including suppliers of fixed line voice services.

⁴⁸ ACCC, NBN Co Replacement Module for the Second Regulatory Cycle, Consultation Paper, August 2025, p. 50.



However, it is near-impossible to disentangle the effects of competition/market power, income inelasticity and regulation on systematic risk. For example:

- Suppose a monopoly firm faced a reduction in its demand due to a broad economic downturn. A reduction in demand for a profit-maximising firm will lead to a lower price and lower revenues – regardless of whether the firm is a monopoly or operates in a competitive market.
- If that monopoly firm was supplying an income-inelastic good, we would expect that demand and revenues would decline by less than for a monopoly supplying an income-elastic good. But that would also be true for firms in a competitive market supplying an income-inelastic good. For instance, supermarkets operate in highly competitive markets, but the empirical evidence suggests that they face relatively low systematic risk.⁴⁹
- Suppose further that the monopoly firm supplying an income-inelastic good was regulated with prices held below profit-maximising levels. In that case, it is possible that the regulatory framework may allow the regulated firm to recover temporary losses of revenue associated with the downturn. For example, by the regulator allowing for increasing prices or otherwise recovering revenue in future periods. That would be different from (unregulated) firms operating in competitive markets.

In each case, it is not obvious that market power and the firm's competitive environment *per se* is the main driver of systematic risk; the underlying product sensitivity to the market cycle and/or the regulatory framework are the fundamental drivers.

A further illustration of the difficulties with attributing higher betas to competition risks is provided by comparing beta estimates for monopolies (or near-monopolies) operating in different sectors. It is apparent that there are examples of monopolies with very different betas. Generally speaking, this is a function of more or less exposure to volume and revenue risk.

For example, water utilities have strong natural monopoly characteristics and are regulated in Australia and the UK for that reason. One would expect that these companies would have very little exposure to revenue risk due to the essential nature of the service they provide, and because economic regulation would tend to 'buffer' those risks (e.g., through the use of revenue caps). In its recent (i.e., 2025) Final Determination for Hunter Water and Draft Determination for Sydney Water, IPART updated its empirical estimates of beta and gearing for an international sample of listed water utilities. Table 1 presents the beta and gearing estimates for the comparator firms considered by IPART. Applying the same method used to obtain beta estimates for telecommunications firms yields an estimated asset beta of 0.44 for water utilities, with gearing of 36%. This estimated asset beta is materially above the figure of 0.35 applied to nbn, estimated by both CEPA and Frontier Economics.

Ports and airport operators in major cities are often described by the ACCC as monopolies or having a very high degree of market power. For example, The ACCC has consistently described major Australian airports, including Sydney Airport, as "natural monopolies" with "significant market power and no price regulation."⁵⁰ Table 1 presents updated beta and gearing estimates for an international sample of 20 airports. Again, these estimates show that airports are subject to substantial systematic risk, with an estimated asset beta of 0.74 and gearing of 19%. The explanation for this is that airport operators face significant volume and revenue risks because demand for airport services are closely aligned with trade and therefore economic cycles.

⁴⁹ As an example, sector data compiled by Professor Aswath Damodaran (NYU Stern) shows the average unlevered (asset) beta for the "Retail (Grocery and Food)" sector in the United States is 0.42 as of January 2025.

⁵⁰ See <https://www.accc.gov.au/media-release/sydney-aviation-alliances-proposed-acquisition-of-sydney-airport-not-opposed>.

**Table 1: Recent asset beta and gearing estimates for water networks and airports**

	Water	Airports
Asset beta	0.44	0.74
Gearing (using gross debt)	36%	19%
Estimation period	10Y and 5Y to March 2025	10Y and 5Y to March 2025
Details of sample	IPART sample of 11 water utilities used in recent decisions	20 airport comparators identified recently by the Malaysian Aviation Commission

Source: Frontier Economics analysis.

While we cannot definitively rule out the possibility that the degree of competition faced by firms contributes to their overall systematic risk, the empirical evidence suggests that competition is not a strong driver of systematic risk. As we show above, there are examples of firms (e.g., water utilities and airports) that face very little or no competition that have relatively high asset beta (and low gearing) estimates. There are also firms that face a high degree of competition (e.g., supermarkets) that have relatively low asset beta estimates. There is no basis for assuming that firms in highly competitive markets face high systematic risk, or that firms with monopoly characteristics face low systematic risk.

Given that the empirical evidence shows no strong link between the degree of competition and exposure to systematic risk, we do not think that the extent of competition/market power is a relevant criterion when selecting comparator firms. Rather, we think it is more important to select comparators that have similar exposure to volume and revenue risk. Our proposed sample is compiled by carefully selecting firms within the telecommunications industry with similar exposure to volume and revenue risk.

The point here is not to suggest that nbn has systematic risks that are more like water networks or airports. Indeed, the empirical evidence suggests that broadband network suppliers are likely to face lower volume and revenue risk than airports. Rather, the point is that using a comparator sample with only broadband network suppliers that face similar volume and revenue risk but different degrees of competition is likely to provide a better estimate of beta than a sample of monopolies across industry sectors with product characteristics that lead to very different volume and revenue risks.

3.3 Beta estimation

3.3.1 Statistical techniques and samples

Our approach to estimation is very similar to that of CEPA, including the use of 5-year and 10-year estimations across weekly and monthly estimation windows (using averages across all reference days).⁵¹ The estimates use the same time periods, to March 2025.

⁵¹ For example, our estimates using weekly data are estimated using returns measured Monday-to-Monday, Tuesday-to-Tuesday, and so on. We then take the average estimate over the five cases. We apply a similar approach when using monthly data. We understand that CEPA adopts a similar approach.



The main differences in the estimation relate to the use of gross or net debt used to de-lever the equity beta estimates to recover the asset beta. The difference in net debt vs. gross debt appears to have caused some differences in betas, although CEPA reports outcomes under both assumptions.

We discuss this issue further in the 'Gearing' section below.

3.4 The use of judgement in estimating nbn's beta⁵²

3.4.1 Our approach

We estimate an asset beta for nbn of 0.35, based on the average of sample medians for 5-year and 10-year estimates using weekly and monthly returns data. Whilst the firms within our sample are likely to have similar relative risks, the beta estimates of individual stocks can be subject to significant statistical noise. We therefore use medians to mitigate the impact of any outlier estimates.

3.4.2 CEPA approach

CEPA also chooses an asset beta of 0.35 for nbn, but does so for quite different reasons.

CEPA estimates an asset beta range across all comparators of 0.35 – 0.40, and places nbn at the low end of this range.

CEPA finds that nbn's systematic risk profile should more closely resemble that of its wholesale comparators. The wholesale comparators are consistent with a similar range overall on average (0.35-0.39), but this masks significant variation in the estimates between towers, wholesale fibre, and fixed satellite comparators.

CEPA states that "Acknowledging that our wholesale comparators are consistent with a slightly lower range of asset beta estimates, we therefore propose an asset beta at the lower end of our range, of 0.35."

3.4.3 Discussion

We consider that CEPA relies overly on subjective judgment to position nbn within the estimated beta range. We recommend a more objective method.

In our view, the evidence supporting an estimate at the bottom end of CEPA's sample range is weak. According to CEPA's own analysis, the wholesale comparator range, on average, is almost identical to the range across the whole sample (0.35-0.39) and the attempts to split this sample further into towers, fibre and satellite markedly increase the risk of results being affected by random statistical noise. For example, wholesale fibre has only two entities (Netlink Trust and Chorus) and the individual estimates of these firms vary significantly across time periods and estimation windows.

The flaw in the CEPA approach is most clearly identified with respect to tower companies. As we have argued, tower companies have quite different characteristics to network operators. CEPA notes that "From a contracting perspective, NBN may therefore be considered slightly higher-risk than a wholesale comparator with significant long-term contracted revenues,"⁵³ like a tower company. But the tower companies in fact have a *higher* estimated beta range (0.38-0.43) than the

⁵² Throughout this section, we refer to the estimation of "nbn's beta" as a shorthand description. More precisely we undertake the task of estimating beta for a benchmark efficient firm in the circumstances and position of nbn.

⁵³ CEPA, WACC Methodology, 1 August 2025, p. 51.



broader sample. There is no evidence presented that nbn should have a lower beta than a tower company.

Given there is little evidence of wholesale firm betas being below integrated firm betas, we suggest that an objective assessment of the empirical evidence presented by CEPA would support, at least, an estimate of nbn's beta of 0.37 based on that being the mean of its four estimation periods and sample windows (5-year and 10-year, weekly / four weekly). We also suggest that further consideration should be given to the sample medians.

In summary, our view is that CEPA's own evidence and analysis supports a higher asset beta than the figure that CEPA has adopted. Thus, the 0.35 asset beta that we have adopted is conservatively low when compared against CEPA's evidence and analysis.

3.5 Gearing estimates

Our approach

Our approach to estimating benchmark gearing is as follows:

- We follow the standard regulatory approach, adopted by all Australian regulators, in determining a benchmark efficient level of gearing rather than adopting the actual gearing of the regulated firm;
- We calculate gearing using the same sample of comparator firms that we use when estimating beta, we use book value of debt as a proxy for market value, and we use the market value of equity;
- We compute our estimates using 'total' or 'gross' debt that is reported by Bloomberg;⁵⁴ and
- We estimate the median gearing level of our 5-year and 10-year samples with weekly and monthly estimates and then take the average of those four medians.

We estimate gross debt benchmark gearing of 41%.

CEPA approach

CEPA follows the standard approach of estimating benchmark gearing using the same sample as for beta.

In choosing between gross and net debt, CEPA first reviews the standard practice among Australian regulators. It is clearly more common to use gross debt, with the ESC (Victoria) being the sole regulator using net debt. CEPA also goes on to present a theoretical rationale for the use of net debt, which is that holding cash offsets financial risk and so this should have the effect of lowering the firm's beta. CEPA concludes that to use gross debt would understate the extent to which factors other than the capital structure contribute to equity risk.

CEPA estimates net debt benchmark gearing of 35%.

Discussion

It is obviously not surprising that CEPA's estimate of benchmark net debt is lower than our estimate of benchmark gross debt – those two quantities differing by a firm's cash holdings.

We observe that the overall effect of this issue is relatively minor, as our higher gearing estimates produce higher equity betas, but this is offset in the WACC through a higher proportion of relatively

⁵⁴ As opposed to 'net debt' which is defined as gross debt less cash holdings.



cheaper debt financing. Conversely, the CEPA approach produces relatively lower equity betas, which is offset in the WACC through a lower proportion of debt financing.

We note that the choice between the use of gross vs. net debt depends on the assumed role of cash within the firm.

Gross debt would be used if cash is considered to be one of the collection of assets that the firm uses in its operations. In this case, cash is treated like any other asset and no adjustment is made to the debt figure in relation to it.

Net debt would be used if cash is considered to be unnecessary for the firm's operations and available to be paid off the firm's debt. Thus, a firm would be treated identically whether it held an amount of cash or whether it had used that cash to retire debt.

In our view, on average, firms hold cash that is required to support their operations – it is impractical for a firm to operate without some degree of cash holdings. That is, firms cannot, in general, use the entirety of their cash balances to pay down debt. For this reason, we use gross debt in our calculations.

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