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Submission to the Commerce Commission on CEPA EDB productivity study

Network Tasman appreciates the opportunity to submit to the Commerce Commission (Commission) on the CEPA EDB efficiency study.

CEPA highlights the inherent limitations of productivity studies

The Commission has engaged CEPA to provide an estimate of productivity changes for the EDB sector.

CEPA's paper appears to provide a fulsome account of the modelling it has done to deliver the Commission with the requested estimate. Network Tasman does not have the in-house expertise to assess the merits or otherwise of the technical aspects of the modelling CEPA has undertaken and will leave it to other submitters to comment on this aspect of the study.

This submission focuses on the challenges inherent in estimating EDB efficiency, as identified in the paper by the authors, and our concerns that there is no analysis of the effect that managing these difficulties and limitations has on the accuracy or robustness of the resulting productivity estimates.

The authors have, commendably, sought to be as clear as possible about the potential difficulties and limitations with studies of this kind, of which there are many.

Network Tasman's view is that while it is possible to derive an estimate of EDB productivity, the ability to derive an estimate does not ensure these estimates are accurate or robust.

The paper does not consider whether its findings are likely to provide accurate estimates of EDB efficiency upon which the Commission and other interested stakeholders can derive robust conclusions.

Given the number and significance of some limitations and challenges identified in the paper, Network Tasman submits it is incumbent upon the Commission to understand the effect the assumptions and simplifications CEPA has made on the accuracy and robustness of the productivity estimates it has derived.

Overview

The authors provide an excellent summary of productivity and how it is measured in practice – by splitting it into three categories: inputs, outputs, and method.

Whilst the authors identify what appears to Network Tasman to be significant shortcomings in each of the three categories, this submission focuses on how CEPA has defined an EDB's inputs and outputs.

Inputs

With respect to the inputs EDBs use to provide their services, the authors observe that network businesses depend on sunk capital for which cost must be allocated to the specific period being assessed.

The authors observe that there is no unique, or unambiguous way to carry out this allocation and that different choices of the allocation methodology will have a large impact on the apparent relative productivity.

The authors conclude there is no simple answer to how this allocation should be undertaken whilst noting that many productivity studies abandon attempts to include capital expenditure in the assessment.

Additionally, the paper observes that long-term cost and demand forecasts influence the choice of methodology used to allocate capital costs and that such forecasts are inherently uncertain and often controversial.

There is a lot in the above to cause concern:

- There is no consensus on how to allocate these costs.
- The options that are available can result in significant swings in apparent productivity.
- Many studies abandon attempts to include capital expenditure in their estimates.
- The choice of cost allocation methodology is influenced by related forecasts that are inherently uncertain and often controversial.

Yet, there is little discussion of how these issues are mitigated (or if they can be mitigated) or the potential effect these issues may have on the robustness or accuracy of the estimates.

Outputs

The authors note that assessing the productivity changes of a firm is relatively straightforward when the firm being assessed produces one or two homogeneous products. Unfortunately, EDBs do not provide a small number of homogeneous services. The authors acknowledge that EDBs' outputs cannot easily be summarised in a few variables.

The authors state that fully describing the services an EDB provides would require a range of information that is not normally available. CEPA states that assumptions must be made in order to "make progress on this matter"¹. However, with respect to these assumptions, the authors acknowledge that neither of these assumptions made will necessarily hold in practice. The authors then reassert that nevertheless, these assumptions are necessary to make progress.

Progress is not a sound basis for making assumptions that don't hold in practice. The fact there is consensus in the literature on this issue doesn't make the assumptions any more robust, it just suggests that they are clearly the least bad of the options available.

Is it an input or an output?

The paper also discusses what is considered a model input and what is considered an output. The authors note that it is common to use measures of output variables which would normally be considered an input (such as line length).

The authors observe that this can appear confusing at first. The implication is that on further consideration, the issue is not confusing. However, in the same sentence the authors note that this issue has contributed to a degree of confusion in the EDB productivity literature.

¹ CEPA, EDB Productivity Study – A report prepared for the Commerce Commission, 26 March 2024, page 14.

One would hope those contributing to the EDB productivity literature grant this issue more than passing consideration. The fact there is confusion amongst the literate would suggest there is not a settled methodology for defining an EDB's inputs and outputs.

This is reinforced by Table 3.1 which notes that the previous productivity study commissioned by the Commission used transformers, overhead line capacity and underground cable capacity as inputs, whereas the current analysis uses them as outputs.

Even more concerning is that these categories accounted for three of the four specified inputs used in the previous study.

To a layperson, it is hard to fathom how two different sets of experts can reach such different conclusions on the fundamental issue of what constitutes an input or an output.

Reliability is identified as a key output measure. It is difficult to argue with this. However, the authors note that reliability is, to a large degree, driven by weather conditions which are exogenous to the actions of the EDB. The challenge of distinguishing between actual quality degradation and just bad luck with the weather is noted.

The authors note that in principle, it should be possible to estimate the impact of increased reliability on the cost of providing EDB service, but that in practice, this has proven difficult.

Finally, the authors acknowledge that the data contained in these disclosures used to specify outputs does not cover the full range of potential outputs. The paper states that there may be valuable activities that EDBs have either started doing or increased their delivery since 2008 that are not included. This is a fundamental limitation of any productivity analysis.²

Network Tasman submits that an analysis that has difficulty robustly deciding whether a parameter is an input or an output, that is unable to observe the EDBs role in a significant output and does not account for known but unobservable/unmeasured outputs is highly unlikely to provide an accurate estimate of EDB efficiency.

Conclusion

Network Tasman commends the CEPA's candour about the potential weaknesses of its modelling, of which there appear to be many.

Many of these issues appear on face value to be significant. However, whilst the paper does a good job of identifying issue, it does not consider the implications of these shortcomings on the report's results. Instead the paper gives the impression that getting a result is more important than considering whether the result is meaningful.

With respect to defining the model inputs, the authors define two: opex and capital costs. The authors note the difficulties with allocating the costs of long-lived capital assets to the period being analysed, noting that there is no unique or unambiguous way to carry out this allocation and that different choice of allocation methodology will have a large effect on the apparent relative productivity. The authors note that many productivity studies consider this issue insurmountable and abandon attempts to include capital expenditure in their assessments.

In terms of outputs the authors characterise their definition of the services EDBs provide as "stylised and reductive"³. The paper also notes that there is uncertainty in the literature over what constitutes an input and an output for EDB services to the degree that there is uncertainty about whether network capacity is an input or an output.

Network Tasman is concerned that the Commission has decided to publish modelling that has been described by its own authors as stylised and reductive, based on assumptions that will not

² CEPA, EDB Productivity Study – A report prepared for the Commerce Commission, 26 March 2024, page 20

³ CEPA, EDB Productivity Study – A report prepared for the Commerce Commission, 26 March 2024, page 9

necessarily hold up in practice but are nevertheless necessary to make progress and fails to take account of known EDB outputs, among other things.

As the authors offer little insight into the materiality of these issues the reader is none the wiser about whether the figures that are ultimately presented in the paper are in any way likely to be reflective of actual sector productivity.

This is not a criticism of the authors; such analysis was presumably not part of their terms of reference. However, the absence of such analysis gives the impression that the Commission is more interested in deriving efficiency estimates than it is in understanding whether these estimates can offer any actual insight into EDB productivity.

Before progressing the analysis any further, Network Tasman urges the Commission to seek analysis on how material these issues are to the accuracy of the model estimations.