The role of the "X-factor" in the price path set in the EDB Default Price-quality Path decision

Summary

The role of the "X-factor" in regulation of EDBs is not straight forward.

Para 4.18 of the DPP3 Issues paper states "*The overall present value of revenues which regulated suppliers will be able to earn over the DPP regulatory period is unaffected by the choice of of the X-factor. The X-factor will determine the timing of of the maximum allowable revenue (MAR) that the regulated supplier can earn over the regulatory period, but not the present value of revenues.*"

This note explains how the Input Methodologies substantially reduced the significance of the choice of the X-factor.

The key point is that under the combination of the provisions of the Act and the input methodologies the X-factor:

a) reflects the long run average productivity improvement achieved (ie the long run past productivity outcome); and

b) affects only how the overall present value revenue cap is spread over the 5 year regulatory period and not the total present value of the revenue cap for the 5 years.

The productivity assumption that does affect the total present value of the revenue cap is the partial productivity forecast for opex (para X10.4 and A39 of the Issues paper). In contrast to the backward looking role of productivity in regard to the X-factor, the role of the partial productivity assumption in regard to opex is forward looking.

Background

Paragraph 53P of Part 4 of the Commerce Act, which was introduced in 2008, provides that:

• The Commission must set only one rate of change in prices for each type of regulated service (subsection five), unless the Commission decides that an alternative rate of change is needed to minimize undue financial hardship to the supplier or price shock to consumers, or as an incentive for a supplier to improve its quality of supply (subsection eight)

• The rate of change must be based on the long-run average productivity improvement achieved by suppliers operating in the industry in New Zealand, or by suppliers in comparable countries (subsection six)

• The selected rate of change may take into account the effects of inflation in the prices of inputs used by suppliers in the industry (subsection seven)

The term "rate of change in prices" refers to the change between years in the price (or revenue) cap imposed by the default price-quality path (DPP).

Analysis

The input methodologies establish a "building block" framework for setting allowed revenues for EDBs over a multi-year regulatory period. The building blocks process (as amended for the 2016 switch to a revenue rather than price path) in effect determines the present value of revenue that would result in an EDB earning the allowed WACC (ie the 67th percentile of the estimated WACC) over the regulatory period. (See Issues paper paras 4.12 to 4.18.)

The cap on the present value of revenue is then implemented by determining a revenue cap for the first year of the 5 year regulatory period on the one hand and a set of rates of revenue increase for each of the other 4 years in the regulatory period.[1]

Thus the overall revenue cap in present value terms is the actual decision variable. The role of the X-factor is solely to influence the allocation to different years of the allowed overall present value of revenue. Since the overall present value of revenue is determined independently, the X-factor does **NOT have ANY significant overall economic effect**.

Nevertheless , the Act requires that the rate of change between years must be based on the long run average productivity improvement **achieved** by suppliers operating in the industry.

In concept the purpose of this provision is that, if productivity was changing in line with its historic long run average trend, then the weighted average price or revenue in the last year of the regulatory period would reflect the change in productivity that had occurred over the regulatory period. That would tend to bring the prices or revenue in the last year of the regulatory period towards alignment with the price or revenue cap that would be set for the next regulatory period. The effect would be to reduce the level of price or revenue changes required between one period and the next.

As set out above, the Act requires a single rate of price (or revenue) cap increase for a industry eg all EDBs, unless different increases are needed to avoid price shocks.

The first time at which Part 4 began to determine prices was April 2012. (Between 2010 and 2012 EDBs were simply constrained to not increase prices faster than the CPI.) The results of the first application of the input methodologies resulted in price caps that were assessed to amount to price shocks for many of the EDBs, some being increases and some being reductions. (When weighted by customers, the increases and reductions virtually cancelled out. The main decreases were those required for Vector and Horizon with the increases being spread over many smaller EDBs.) Alternative rates of change were applied to spread the increases and decreases over multiple years thus reducing the impact in any one year. The spreading included spreading into subsequent regulatory periods. (Some smaller EDBs have never priced up to their pricing caps because they are largely owned by their customers although they do not meet the criteria for exemption from price regulation.)

The Act continues to mandate a price path with a rate of change based on long-run productivity improvement. Therefore, a long term productivity analysis has to be commissioned at each regulatory period but it plays very little if any role in the decision on the level of the present value of revenue that will be allowed. The Commission cannot say that a provision of the Act is irrelevant to the economically important decision - the decision on the present value of revenue but the irrelevance is recognised by those involved. The Commission has devoted little time to the the historic long run productivity because it is irrelevant to the economically important decision - the present value - and because the decision on the X-factor has been dominated by the price shock management.

---

[1] Under the previous weighted average price approach, prior to the shift to a revenue cap, the terminology was that the “starting price”, “Po”, was set along with a set of rates of change of the weighted average price.