Transitioning to a multi-year regulatory period

Port of Melbourne

February 2023

INCENTA
ECONOMIC CONSULTING

Table of Contents

1. Introduction and summary

1.1 Background and purpose of report

1. The Port of Melbourne ("PoM") is regulated by, amongst other things, the Pricing Order made under section 49A of the Port Management Act 1995 ("Pricing Order"). The Pricing Order requires PoM to demonstrate its compliance with certain pricing principles. A key component of the principles is the requirement for prices to generate revenue over a prospective period (referred to as the "regulatory period") that is consistent with a "building block" calculation of cost over that period.

2. Under the Pricing Order, PoM has the choice over the length of the regulatory period that is to be applied. Whilst to date PoM has applied single-year regulatory periods, it is considering applying a longer regulatory period. Incenta Economic Consulting ("we", "our" or "us") has been asked to provide advice in relation to the extension of the regulatory period and, in particular:

   a. the appropriate length of the regulatory period, and

   b. compliance with the pricing principles that may be affected by the length of the regulatory period.

1.2 Summary of conclusions

1.2.1 Reasons to extend the length of the regulatory period

3. Fixing prices (or a control over prices) for a (prospective) regulatory period, based on forecasts of revenue and costs for that period, is a standard mechanism for providing regulated businesses with a strengthened incentive to minimise cost. This incentive arises because, during the period when prices are fixed, the business retains any difference between forecast and actual outcomes over the regulatory period, which motivates it to either reduce cost or control increases in cost. This incentive to promote efficient behaviours ultimately delivers benefits to customers and society as a whole as these lower (or contained) costs feed into prices when prices are next re-set (i.e., after the end of a regulatory period).

4. During the period when the Tariff Adjustment Limit (TAL) constrains prices to be below the level that would ordinarily be determined,[1] the same incentives can be provided, although a modification is required. Specifically, the principal calculation during this phase is the amount of depreciation that is recoverable,[2] and identical incentives are

---

[1] The Pricing Order requires that the annual change in PoM's weighted average price not to exceed a prescribed limit, which is the growth in CPI over the year to March prior to the commencement of the pricing year. As such, when the TAL is binding, prices will be fixed at a level that is consistent with the TAL rather than the building block pricing principles.

[2] Refer to paragraphs 10 to 12 for a further summary of this calculation.

provided by calculating recoverable depreciation based on the forecasts of expenditure, other building block cost items, and demand for the regulatory period.[3]

5. In addition, setting a multi-year regulatory period can enhance the stability of prices to customers, and allow for efficiency gains in the administrative costs in relation to the regulatory regime.

6. There are a number of factors that influence the choice over the duration of the regulatory period, which include:

    a. That a longer regulatory period delivers a higher-powered incentive to outperform the forecasts, but also defers when these benefits are passed on to customers. This suggests the length of the regulatory period should be the minimum required to encourage efficiency gains.

    b. The prospect of windfall gains and loses – and hence risk – arising from differences between forecasts and actual outcomes, including from the occurrence of exogenous events. Factors that influence this are the robustness of forecasting methods and whether there are other measures available to ameliorate risks.

    c. The extent of comfort that the incentive to reduce cost will not be at expense of service performance (quality).

7. We recommend a five-year regulatory period be adopted for PoM. A five-year regulatory period is most consistent with regulatory precedent in Australia and is likely to represent an appropriate balance of interests between the regulated business and customers.

1.2.2 Key implementation decisions

Aligning the regulatory period with the ESC's compliance review

8. We recommend aligning the commencement of a new regulatory period with the outcomes of the ESC's five-year compliance review. That is, PoM would prepare its regulatory submission for a multi-year regulatory period after the ESC has presented its findings. This would ensure that PoM is able to remedy any non-compliance the ESC found against the Pricing Order as expeditiously as possible. In this context, we consider that the next Tariff Compliance Statement due in May 2023 for the regulatory period commencing July 2023 provides the best opportunity for PoM to properly incorporate the ESC's findings given the need to prepare a comprehensive proposal and have adequate stakeholder consultation on this proposal.

---

[3]   As discussed below, clause 4.4.2(a) of the Pricing Order permits an alternative to the standard straight-line depreciation to be applied if the TAL requires prices to be fixed at a level that does not permit the aggregate revenue requirement incorporating the full standard, straight-line depreciation to be recovered in the relevant regulatory period. We read this provision as permitting the depreciation component of the aggregate revenue requirement for the regulatory period to be reduced until the aggregate revenue requirement is able to be recovered under the TAL-constrained prices (subject to clause 4.4.3 of the Order). This calculation of the "recoverable depreciation" over the regulatory period would depend on forecasts of the building block cost items (i.e., expenditure and WACC) and demand.

Mechanism for setting prices for an extended regulatory period

9. When the TAL is not binding, prices can be set in a manner that is consistent with standard practice in Australia, namely:

   a. Forecasting expenditure and other building block cost items for the regulatory period (including the WACC and the RAB), and calculating the resulting "aggregate revenue requirement" for the regulatory period.

   b. Setting a control over prices that,[4] given the forecast of demand, is forecast to generate revenue over the regulatory period equal to the aggregate revenue requirement.[5] This process ordinarily results in a degree of smoothing of prices rather than being tied to each year's specific contribution to the aggregate revenue requirement (to avoid a situation where prices might decrease in one year, increase in the next, and so on).

   c. Applying the same process at the end of the period to reset prices for the next period, with the regulatory asset base (RAB) rolled-forward to the end of the preceding period by including actual capital expenditure and applying actual inflation for that preceding period.

Mechanism when the TAL is binding

10. When the TAL is binding, tariffs will reflect the TAL limit rather than a calculation of building block costs and, as a consequence, the regulated business will not be able to recover the aggregate revenue requirement (i.e., where this includes the standard straight-line depreciation). In this case, the Pricing Order authorises a different depreciation method to be applied, which we take as implying that depreciation should be set at the amount that will lead to the aggregate revenue requirement being recoverable.[6]

11. We note that a wide range of alternative depreciation methods may be consistent with creating an aggregate revenue requirement over the regulatory period that equates to the revenue expected under the TAL-constrained prices. In our view, one appropriate method would be to simply scale down the standard (straight-line) depreciation amounts until the

---

[4] The simplest form of control over prices is to set a schedule of price changes in real terms that are adjusted each year for CPI inflation.

[5] A discount rate (equal to the regulatory WACC) is normally applied when testing whether the forecast of revenue from a particular control over prices equates to the aggregate revenue requirement over the regulatory period.

[6] We refer interchangeably between the depreciation that is consistent with the aggregate revenue requirement being recoverable, and the depreciation that is recoverable. Our reason for treating these as interchangeable terms is because depreciation is the only element of building block costs where there is flexibility as to when the cost item is recognised (i.e., in the current period or in a future period), and so it is the only of the building block cost element that can be reduced without compromising the opportunity to recover efficient cost.

aggregate revenue requirement equates to the forecast revenue under the TAL-constrained prices.[7]

12. The amount of depreciation that is deemed to be recoverable during a regulatory period will depend on expenditure levels, other building block cost items and demand. The same incentives for efficiency can be provided by calculating this recoverable depreciation on the basis of the forecasts of expenditure, building block cost items, and demand as at the start of the regulatory period and fixing for the regulatory period the forecast of either "recoverable depreciation" (if "forecast depreciation" is used for the roll-forward of the RAB) or the "shortfall in depreciation" (if "actual depreciation" is used for the roll-forward of the RAB). [8][9]

Reopener provisions

13. It is common for regulatory regimes with a 5-year regulatory period to permit adjustments to prices where certain conditions or events that are specified as part of the price determination occur. The purpose of these adjustments is to reduce the uncertainty associated with forecasts of expenditure and demand. For instance, to account for uncontrollable costs or to only include large capital projects when they are triggered. We consider such adjustments have merit in the context of PoM. However, implementation will depend on interpretations of whether they are permitted under the Pricing Order.

     a. We note that on whether reopener provisions are permitted under the Pricing Order, the ESC indicated that if PoM considers it requires a reopener provision it would be up to it to make the case, including the circumstances that would trigger a reopening or variation of the period, to the ESC and to the Government.[10] An implication of the ESC's reference to the Government is that it may consider a change to the Pricing Order would be necessary.

Forecasting method

14. PoM will need to demonstrate its expenditure and demand forecasts are robust and represent an unbiased and accurate forecast. Indeed, the ESC identified confidence that forecasts are efficient and robust as an important factor when choosing the length of the regulatory period. It also noted that the longer the regulatory period, the more difficult it will be to ensure that forecasts are accurate.[11]

---

[7] We set out our detailed views regarding the calculation of alternative depreciation when the TAL binds in Appendix B.

[8] Under building block regulation there is a choice as to whether "forecast depreciation" or "actual depreciation" is used when updating the RAB. The choice between each has a small impact on the incentives regarding capital expenditure. As suggested in the text, to preserve the overall incentive of a multi-year regulatory period when the TAL is binding the mechanism used depends on the approach taken to depreciation when rolling-forward the RAB.

[9] The "shortfall in depreciation" refers to the difference between the forecast of recoverable depreciation and the forecast of standard (straight line) depreciation as at the start of the regulatory period.

[10] ESC, 'Statement of Regulatory Approach – version 3.0, Port of Melbourne Pricing Order', 20 December 2022, p.39.

[11] ESC, 'Statement of Regulatory Approach – version 3.0, Port of Melbourne Pricing Order', 20 December 2022, pp.39-40.

a. For capital expenditure and demand this requires assembling appropriate quantitative and qualitative evidence – supported by appropriate independent expert advice.

b. For operating expenditure, where there is reasonable confidence that the regulated business has an incentive to minimise expenditure, a standard method of forecasting operating expenditure is to commence with actual expenditure in a particular year (the "base"), and then make allowances for how expenditure levels are expected to change (in turn broken down into any "step" change in activities/requirements, and the expected "trend" in the cost of existing activities). However, one issue that arises with this method is that applying a single year as the "base" may create an incentive to re-time expenditure in order to inflate the "base".

i. One means of addressing this potential concern is to provide additional analysis to demonstrate that the base-year used is representative.

ii. Conversely, an additional incentive scheme could be imposed that delivers an equal incentive in each year of a regulatory period. However, it would be necessary to determine if the Pricing Order permits such a scheme.

Service performance

15. We do not consider that there should be a material concern that PoM is likely to be encouraged to pursue expenditure savings at the expense of service performance (quality). We observe that:

a. The regulation of service for existing assets is very prescriptive and likely to leave little room for PoM to reduce cost at the expense of service performance, however

b. Its obligations to develop the port to meet future growth in demand is less well defined, as is common for this type of infrastructure.[12]

i. The incentive to defer, or avoid, major augmentations could be remedied by only providing revenue for such projects once they commence,[13] or by requiring greater transparency at the time of setting prices what will trigger such projects proceeding and what may lead to them being deferred.

1.3 Requirements of the regulatory regime

1.3.1 Introduction

16. The regulatory regime guides PoM's choice over the length it selects for the regulatory period and the manner in which it is implemented. The regime comprises:

---

[12] We note that decisions over major expansions of infrastructure require a detailed investigation of technical feasibility and economic costs and benefits, and so typically cannot be distilled into a simple service obligation.

[13] This is referred to in electricity as a "contingent projects" mechanism. It means that customers are not required to pay for large projects until such time as they are triggered. It would be necessary to determine if such a scheme is permitted under the Pricing Order.

a. the objectives for the regime set out in section 48 of the Port Management Act (PMA), and

b. the Pricing Order, which sets out PoM's specific obligations related to the setting of Prescribed Service Tariffs.

17. In addition, the ESC has set out expectations for the section of the regulatory period in its Statement of Regulatory Approach.

18. In this report, where relevant, we identify where specific aspects of the Pricing Order or the ESC's expectations guide decisions for the implementation of a multi-year regulatory period. Given the objective provides more over-arching guidance we address that here.

1.3.2 Objective of the regime

19. The objective as set out in section 48 of the PMA is as follows:

> *48 Objectives of this Part*
>
> *(1) The objectives of this Part are—*
>
> *(a) to promote efficient use of, and investment in, the provision of prescribed services for the long-term interests of users and Victorian consumers; and*
>
> *(b) to protect the interests of users of prescribed services by ensuring that prescribed prices are fair and reasonable whilst having regard to the level of competition in, and efficiency of, the regulated industry; and*
>
> *(c) to allow a provider of prescribed services a reasonable opportunity to recover the efficient costs of providing prescribed services, including a return commensurate with the risks involved; and*
>
> *(d) to facilitate and promote competition—*
>
> *(i) between ports; and*
>
> *(ii) between shippers; and*
>
> *(iii) between other persons conducting other commercial activities in ports; and*
>
> *(e) to eliminate resource allocation distortions by prohibiting a State sponsored port operator from providing a relevant service at a price lower than the competitively neutral price for that service.*

20. In terms of the length of the regulatory period, the most relevant requirements of the objective are:

a. promoting "efficient … investment" (clause (a))

b. "for the long-term interests of users and Victorian consumers" (clause (a))

c.   "to protect the interests of users of prescribed services by ensuring that prescribed prices are fair and reasonable" (clause (b)), and

d.   "to allow a provider of prescribed services a reasonable opportunity to recover the efficient costs of providing prescribed services" (clause (c)).

21.   We read these requirements, in the context of the regulatory period, as requiring that extending the regulatory period should encourage PoM to improve its cost efficiency and asset utilisation (compared to the situation with a shorter regulatory period). Further, these benefits should be passed on to customers through lower prices (again, compared to the situation with a shorter regulatory period). The requirement for the promotion of efficient investment indicates that in extending the regulatory period there should be a reasonable expectation that costs will be recovered given this is a requirement for promoting efficient investment. That is, if a firm does not expect to recover costs and earn a normal return on investment it will, to the extent it is able, seek to avoid making new investments even when it is efficient to do so.

22.   In the remainder of this report, we identify where the regime objectives are particularly relevant to the choices made regarding the choice of the length of regulatory period for PoM.

2. Effect of extending the regulatory period beyond a single year

2.1 Introduction

23. In this chapter we explain why an extended regulatory period might be implemented in a regulatory regime. We also identify the implications of a longer regulatory period in circumstances where the TAL is binding and when it is not.

2.2 Rationale for extending the regulatory period

24. Implementing a multi-year regulatory period has the effect of fixing prices independent of cost and demand for that period. The principal rationale for fixing prices for a period is to provide a stronger incentive for the regulated business to undertake efficient expenditure or promote demand for services. As stated in the previous chapter, this is an outcome that would promote the regime objectives.[14] The incentive arises because, during the period whilst prices are fixed, the regulated business will retain the benefits (or costs) from out-performance (or under-performance) compared to the forecasts of expenditure and demand that were factored into the regulated price. Moreover, the strength of these incentives to be efficient will increase with the length of the regulatory period because any gains would be retained for longer – noting that the benefits from reduced costs or increased demand will be passed through to customers after the next review of regulated prices. Again, passing the benefits onto customers is an outcome that would be consistent with the regime objectives.[15]

25. Providing regulated firms with a profit motive to minimise expenditure or increase demand ultimately benefit customers and society as a whole. This is because the profit motive harnesses the knowledge and expertise of the regulated business to pursue efficiency gains, and as a result, should generate costs and prices in future periods that are lower than they otherwise would be without the incentive. For this reason, fixing prices for multi-year regulatory periods is a standard feature in regulatory regimes across Australia, New Zealand and the UK (we refer to this below as "price cap" regulation).

26. Other complementary reasons for extending the length of the regulatory period include to:

    a. generate stability in prices to customers, at least for the period of the regulatory period, and

    b. reduce administrative costs by reducing the frequency of major price reviews.

2.3 Considerations when deciding on the length of the regulatory period

27. While a longer regulatory period delivers a larger incentive and so, in theory, a larger benefit to customers and society, there remain constraints on how long a regulatory period should be set. Here we set out the main factors that should influence this decision.

---

[14]   Section 48 clause (a) of the PMA.
[15]   Section 48 clauses (b) and (c) of the PMA.

28.   First, ideally the length of the period should be the minimum necessary to induce the efficiency gains sought. If a regulatory period is longer than the minimum necessary customers would receive less of the share of the efficiency gain than is possible. This is because a longer regulatory period delays the time until customers receive the benefit of efficiency gains when prices are subsequently reset in line with costs. Deciding on how long a period is required to induce efficiency gains will depend on matters such as how 'easy' it is to make efficiency gains and the responsiveness of the business to financial incentives.

29.   Secondly, a change in expenditure or demand compared to forecast can arise due to factors outside of the control of the business. Accordingly, a longer regulatory period brings with it a greater potential for profit changes due to unexpected (exogenous) events rather than management effort, and hence a greater potential for windfall gains or losses. In addition to ensuring a sufficiently robust forecasting method is employed, it means also that the regulatory period should only extend for a period over which there is sufficient confidence in the forecasts of expenditure and demand. We note in many regulatory regimes it is feasible also to have prices or revenue adjust during the period using a pre-specified mechanism that accounts for circumstances outside of the control of the business that impact on returns. We discuss these mechanisms in the following chapter in Figure 1.

30.   Thirdly, the incentive to reduce expenditure may also provide an incentive for a business to reduce the quality of service that is provided. This is because cost savings can be achieved by avoiding expenditure focused on maintaining, or improving, service performance outcomes. Therefore, it is necessary for the regulation of service quality to be sufficiently robust to counter this incentive.[16]

31.   It is our opinion that a 5-year regulatory period would be appropriate for PoM. We take this view because it is consistent with regulatory precedent for similar infrastructure assets in Australia. Further, it is also consistent with the New Zealand (NZ) regime for major airports, which is the most similar to that of PoM's given it requires that NZ airports set their own prices with ex-post oversight by the regulator. We set out our views on the length of the regulatory period and the relevant precedent further in Appendix A.

2.4   Incentive mechanism when the TAL is binding

32.   The pricing principles in the Pricing Order currently apply two separate obligations on PoM.

    a. First, PoM is required to set prices for a regulatory period that are expected to generate revenue commensurate with a prescribed calculation of efficient cost for that period (referred to as the "Aggregate Revenue Requirement").

---

[16]   Measures that alter how the risk of forecast errors are allocated between PoM and customers may also affect the incentives to reduce service performance. For example, if cost recovery for major capacity additions only commenced once the construction of the project commenced, then the business would not have an incentive to inefficiently defer the project.

b. Secondly, separately to this, PoM's prices are also subject to a separate control referred to as the Tariff Adjustment Limit ("TAL"). The relevant provisions in the Pricing Order require that the annual change in PoM's weighted average price not exceed a prescribed limit, which is the growth in CPI over the year to March prior to the commencement of the pricing year. In this circumstance, prices are simply set at the level that is consistent with the TAL. However, the Pricing Order allows the depreciation allowance for the regulatory period to be reduced from the standard amount to the level that would be allow the Aggregate Revenue Requirement to be recovered (i.e., given the TAL-constrained forecast revenue).

    i. We note that a wide range of alternative depreciation methods may be consistent with creating an aggregate revenue requirement over the regulatory period that equates to the revenue expected under the TAL-constrained prices.

    ii. In our view, an appropriate method would be to simply scale down the standard (straight-line) depreciation amounts until the aggregate revenue requirement equates to the forecast revenue under the TAL-constrained prices. We set out our detailed views regarding the calculation of alternative depreciation when the TAL binds in Appendix B

33. If the TAL is not binding, then only the first of these sets of provisions are relevant. In this case, the relevant principles are consistent with applying the standard version of price cap regulation referred to above. That is, to fix the price for the regulatory period at a level that is expected to allow the recovery of the Aggregate Revenue Requirement, which in turn is based on forecasts of expenditure, other building-block cost items and demand for that period. We discuss the specifics of this calculation further in section 3.3.2.

34. Where the TAL is binding, however, the same incentives as those under a simple price cap can be created, although a different mechanism is required. The same incentives as a simple price cap can be generated by locking-in the calculation of the depreciation allowance for a regulatory period based on the forecasts of expenditure, other building block costs and demand as at the start of the period. By locking in the depreciation allowance based on forecasts, PoM would earn greater profits to the extent that expenditure is reduced, or demand increased, relative to what was forecast and factored into the calculation of the recoverable depreciation allowance, which is identical to the situation under a simple price cap. We discuss this mechanism in section 3.3.3 below.

3. Key implementation decisions

3.1 Introduction

35. In this chapter we consider the key implementation decisions that arise when extending the regulatory period in the context of the Pricing Order. Specifically, we address the following matters:

    a. Aligning the regulatory period with the ESC's compliance review

    b. The method for setting prices during the regulatory period

    c. Methods for forecasting expenditure requirements, and

    d. Service regulation to maintain service and quality performance outcomes.[17]

3.2 Aligning the regulatory period with the ESC's compliance review

36. The ESC assesses on a five-year basis whether PoM has complied with the Pricing Order over the relevant five-year period. In undertaking the five-year review it is required to also take a view on whether any non-compliance is significant and sustained. Given this assessment cycle for the ESC it makes sense to time the start of the regulatory period to limit the scope for continuation of non-compliance by PoM.[18]

37. Essentially, the start of a regulatory period should be timed so that ESC advice can be incorporated into the approach taken to implementing the Pricing Order for the period. The objective being to limit how long PoM is non-compliant.

38. It is our view that commencing a 5-year regulatory period from the commencement of the forthcoming regulatory period (i.e. 1 July 2023) provides the best timing for incorporating the ESC's findings into PoM's regulatory approach from now and on an ongoing basis. This is because this timing allows for the procedural steps that PoM must necessarily undertake to consider and implement the ESC's findings.

39. In order for PoM to properly implement the ESC's findings we consider it is necessary for it to undertake the following steps:

    a. properly consider the findings and how to respond to them

---

[17] We note that one additional implementation matter that typically arises in regulatory regimes with multi-year regulatory periods is the choice about the form of price control. That is, whether a price cap, revenue cap or some other control is applied to give effect to the cost building blocks. We assume in this report that a price cap form of control is to be applied and note that, if a revenue cap was to be considered, confirmation would be required as to whether this is permitted under the Pricing Order.

[18] We note that the ESC also commented that it considered it was important that PoM address the five-yearly review results and reset the aggregate revenue requirement as soon as feasibly practicable after a compliance review. See: ESC, 'Statement of Regulatory Approach – version 3, Port of Melbourne Pricing Order', 20 December 2022, pp.39-40.

b. prepare and publish a detailed proposal of its regulatory approach and building block components taking into account the ESC's findings

c. consult with stakeholders on the contents of the proposal, noting stakeholders also need to be provided with a reasonable amount of time to review the proposal and respond, and

d. develop a final regulatory proposal and associated Tariff Compliance Statement.

40. The steps identified here cannot be practically done for the first Tariff Compliance Statement following a December decision and the expected publication of that decision (which occurred in January at the most recent review) as this only provides 3 -4 months to PoM and stakeholders. The next opportunity, therefore, is the following Tariff Compliance Statement, which is due 15 months after a January report publication from the ESC and 16 months from when it is due to make its decision and report to the relevant Minister. We note that this timeframe is less than the timeframe for ex-ante regulatory regimes, such as electricity distribution, where the process for publishing a determination commences over 30 months prior to when the new regulatory period will commence.[19]

3.3 The method for setting prices for the regulatory period

3.3.1 Introduction

41. The Pricing Order sets out a large number of detailed requirements for PoM's pricing. At its core, the Pricing Order requires that PoM set prices that provide a reasonable opportunity to recover its efficient cost (referred to as the "Aggregate Revenue Requirement"), the latter of which is to be derived for the regulatory period by "apply[ing] an accrual building block methodology over the Regulatory Period".[20] The detailed direction, or guidance, given for implementing the building block methodology is largely consistent with standard practice in economic regulation. Key inputs are specified as either required to reflect forecasts, or assume that forecasts may be applied in some circumstances. This approach, and specifically a reliance on forecasts, is consistent with the application of an extended regulatory period. For example:

a. operating expenses are required to be forecast (clause 4.1.1)

b. the rate of return (WACC) is framed in terms of the return that the benchmark efficient entity would require

c. capital expenditure may either have been incurred, or to be incurred (a forecast) (clause 4.2.1(c)), and

---

19   For instance, the Australian Energy Regulator's indicative timetable for electricity distributor, Essential Energy, commenced in November 2021 for a regulatory period due to commence on 1 July 2024. See: https://www.aer.gov.au/networks-pipelines/determinations-access-arrangements/essential-energy-determination-2024%E2%80%9329/initiation

20   Pricing Order, clause 4.1.1.

d. the indexation allowance is framed as able to reflect either actual inflation or forecast inflation (clause 4.6.1).

3.3.2 Method when the TAL does not bind

Basic model

42. We recommend applying the standard approach in infrastructure regulation to set a multi-year price path during periods when the TAL is not binding. That process involves the following:

    a. First, establish an Aggregate Revenue Requirement for the regulatory period, following the requirements of the Pricing Order. This will involve making forecasts of, amongst other things, operating expenditure, capital expenditure, the WACC and inflation.

    b. Secondly, forecast demand over the regulatory period.

    c. Thirdly, determine a price path that is expected to generate a revenue stream (given the forecast of demand) over the regulatory period that is equal to the Aggregate Revenue Requirement.

        i. Price controls are typically such that the price path is smoothed over the regulatory period (i.e., rather than following the annual components of the Aggregate Revenue Requirement) and, as discussed in paragraphs 43 and 44, to provide inflation protection.

        ii. This would imply setting a price control under which prices follow actual inflation, and possibly with a real increase or decrease (i.e., CPI ± X).

    d. Fourthly, at the end of the regulatory period, prices are reviewed, following the same process. The important features of this process are that:

        i. the RAB from the start of the last regulatory period is updated to include actual capital expenditure and indexation based upon actual inflation, and

        ii. the new forecasts of expenditure and demand take account of the actual performance over the previous regulatory period.

43. Regulated businesses are not typically exposed to greater inflation risk as the regulatory period is extended.[21] Rather, the most common forms of incentive regulation have the effect of substantially transferring inflation risk to consumers. This is different from the other inputs (like expenditure) where incentive regulation has the effect of increasing a regulated business's risk. This transfer of inflation risk is typically given effect as follows:

---

[21] We use the term "inflation" here to refer to the growth in general output prices as measured by the Consumer Price Index (CPI), except where stated expressly otherwise.

a. over the longer term by updating the RAB from regulatory period to regulatory period on the basis of actual inflation over a regulatory period (rather than the forecast), and

b. in the shorter term by specifying the control over prices for a regulatory period as one that is based on actual inflation over the period rather than the forecast (i.e., a CPI-X cap).

44. The Pricing Order provisions are consistent with this treatment of inflation risk. For example, escalation of the RAB for actual inflation is permitted by the Order,[22] and applying a control over prices during a regulatory period that is linked to actual inflation would mirror the Tariff Adjustment Limit.[23] Given these arrangements, we note also that extending the regulatory period beyond a single year will not change the risk exposure for PoM or customers.[24]

45. One less significant matter where a further decision is required is whether the depreciation applied in the roll-forward of the RAB for the preceding period should be the dollar-value (adjusted for inflation) forecast for that regulatory period ("forecast depreciation"), or a recalculation of depreciation ("actual depreciation"). The former incorporates depreciation on the forecast of capital expenditure for the preceding period, whereas the latter incorporates depreciation on actual capital expenditure during the preceding period. The actual depreciation approach provides a slightly higher incentive for capital cost reduction; however, both choices are widely applied and feasible.

46. Lastly, it is also common for price cap decisions to include the capacity for a limited re-opening of prices during the regulatory period as a mechanism for dealing with the risk associated with exogenous events. We discuss the key mechanisms that have been employed in price cap regulatory regimes in Figure 1 below.

Figure 1 – Uncertainty mechanisms

It is common in regulatory periods with a 5-year regulatory period to permit adjustments to prices where certain conditions or events that are specified as part of the price determination occur. The purpose of these adjustments is to reduce the uncertainty associated with forecasts of expenditure and demand. Four types of change events that might be applicable to PoM are:

- *Automatic pass-through of actual, exogenous cost* – it is common for an adjustment to be made to prices so that a regulated business recovers the actual cost of certain exogenous items, like government fees. The most practicable means of doing this for PoM would be to include a forecast of the cost of these items in the calculation of prices for a regulatory period, and then to make an adjustment during the regulatory period for the difference between the forecast and actual amounts.

---

22   Clauses 4.2.1(b) and 4.6.1.
23   The tariff adjustment limit – which is discussed in the next section – is specified in terms of a measurement of actual inflation (Pricing Order, clause 14).
24   There are sound reasons in our view for seeking to substantially shield regulated utilities from inflation risk, which include that, while this risk can be extremely material to regulated utilities, it is something that customers can generally manage as incomes tend to bear a relationship to inflation.

- *Change events* – it is also common for a list of events to be specified that, if observed, would permit prices to be changed by the incremental cost increase or decrease associated with the event. As an example, a change in specific regulatory obligations could be a change event.

- *Contingent projects* – where regulated businesses have very large but uncertain capital expenditure projects, it is common for these to be omitted from the base regulated price, and to be added if and/or when a trigger for the project is passed. We use the term "base capital expenditure" to refer to the capital expenditure that is forecast and included in the base prices, and hence that excludes any contingent projects.

- *Re-openers* – whereby a reopening (i.e., early review) could be triggered if either a pre-specified outcome occurs (e.g., returns are outside of a band, or demand is higher or lower than a threshold) or a major event occurs (for example, a very large repair bill after a natural disaster). These outcomes or events would trigger an early review of the prices.

The effect of the first three change clauses would be to alter the price from the path that had been set during the price review, whereas the last change event would trigger an early review of prices.

We note that a decision would need to be made about whether the Pricing Order permits such adjustments to the Aggregate Revenue Requirement. The uncertainty measures identified here are beneficial to both the regulated business and customers. Therefore, if the Pricing Order does not permit such adjustments, we believe PoM should consider advocating for a change to the Pricing Order so that they can be included.
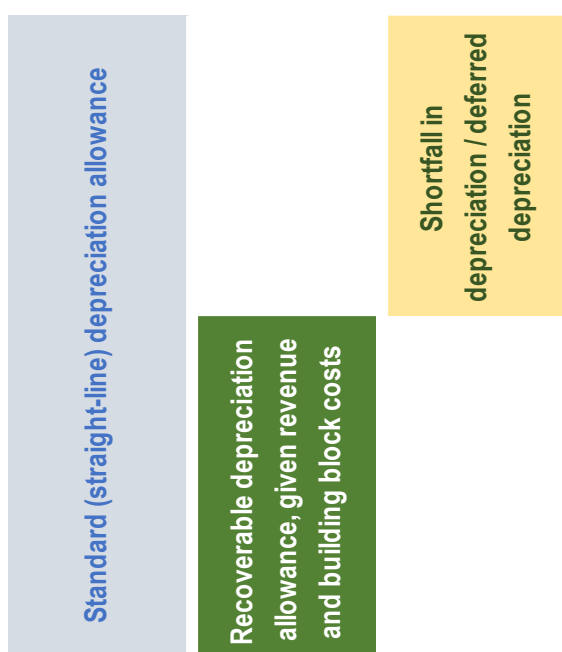
3.3.3   Method when the TAL binds

47.   During the period when the TAL binds, the Pricing Order authorises the application of a different method for calculating the depreciation allowance that is to be included in the Aggregate Revenue Requirement and then applied when rolling-forward the RAB. Whilst the Order does not provide additional specific guidance about the precise nature of the alternative depreciation method, in our view it is logical for the new depreciation allowance to be chosen such that the new Aggregate Revenue Requirement is able to be recovered (we provide our further thoughts on the mechanics of this method in Appendix B). Importantly, the depreciation allowance that is able to be recovered under the TAL constrained prices will therefore depend on all of the other components of the building block costs, namely expenditure levels, the RAB, WACC and demand.

48.   As indicated in the previous chapter, the same incentives that would be created under a simple price cap once the TAL is not binding can be created whilst the TAL is binding. This is achieved through a careful calculation of the amount of depreciation that is applied when rolling-forward the RAB at the end of a regulatory period in preparation for the next period. Before explaining the calculation that is required, we first clarify the terminology that we use.

a. In terms of the depreciation allowance that is able to be recovered during the regulatory period, observe that there will be a depreciation allowance that is <u>forecast</u> to be recoverable for a regulatory period given the forecasts of these inputs prior to the start of a regulatory period, as well as a value that reflects the <u>actual</u> observations for these inputs at the end of the period. Thus, we distinguish between the (*ex ante*)

forecast recoverable depreciation allowance, and the (*ex post*) actual recoverable depreciation allowance for the regulatory period.

b. In addition, two further depreciation-related concepts can be defined, namely:

   i. the depreciation allowance for the regulatory period that would be calculated under the standard method, namely straight-line depreciation, and

   ii. the difference between the standard (straight-line) depreciation allowance and the recoverable depreciation allowance, which we refer to in this report interchangeably as the "shortfall in depreciation" and "deferred depreciation" (this latter name reflects the fact that this component of standard depreciation is deferred until future periods).

c. Both the "standard depreciation allowance" and the "shortfall in depreciation" will also have values that are forecast (*ex ante*) for a regulatory period (i.e., dependent on the other forecasts for the period), and actual values that can be calculated *ex post* based upon actual observations for the period.

d. These three depreciation-related concepts are illustrated in Figure 2.

Figure 2 – Concepts of depreciation when the TAL is binding

49. The same incentives as a simple price cap can be achieved when the TAL is binding by locking-in an aspect of the depreciation allowance that is used to roll-forward the RAB to the end of the regulatory period. However, the precise aspect of depreciation that needs to be locked in will depend upon the choice that is made between the "forecast

depreciation" and "actual depreciation" approaches that were discussed in paragraph 45.[25]

a. *Forecast depreciation approach* – if the "forecast depreciation" approach is to be applied, then the RAB should be rolled-forward using the <u>forecast</u> of the recoverable depreciation allowance for the regulatory period, with this depreciation adjusted only for the difference between forecast and actual inflation.[26] Thus, the depreciation allowance is locked-in at the <u>forecast</u> (real) value. That is, when the RAB is updated (rolled-forward), the RAB is:

    i.   reduced by the <u>forecast</u> of recoverable depreciation, and

    ii.   increased by <u>actual</u> capital expenditure, and

    iii.   indexation is based on actual inflation.

b. *Actual depreciation approach* – alternatively, if the "actual depreciation" approach is to be applied, then instead of locking in the "recoverable depreciation" at the forecast level, the "shortfall in depreciation" is locked-in at the forecast level instead (subject to being adjusted for the difference between forecast and actual inflation). The depreciation that is applied when rolling-forward the RAB would then be the <u>actual</u> standard (straight-line) depreciation allowance, less the <u>forecast</u> shortfall in depreciation.

    i.   The difference in the closing RAB between locking-in a forecast of "recoverable depreciation" and locking in the "annual shortfall" will be the depreciation-effect of the difference between forecast and actual depreciation.

    ii.   This is consistent with the intended difference between the "forecast depreciation" and "actual depreciation" approaches discussed in paragraph45 .

3.4   Forecasting methods

3.4.1   Importance of robust forecasts

50.   The assessment of expenditure and demand forecasts used to establish the required revenue is a key aspect of the building block approach. The objective of the forecasts under the building block approach is that they reflect the expenditure that would be incurred by a prudent and efficient operator in the position of the business.[27] When forecasts, and the associated allowance, reflect the efficient costs of supply the motivation for continued investment will be maintained while also promoting efficient use of the services by customers.

51.   The natural incentive is for the regulated business to "talk-up" the expenditure forecast. This is because a higher expenditure forecast, and subsequent allowance, means that

---

[27]   That is, an operator that has the same assets and is subject to the same obligations as the regulated business.

there is a greater potential to benefit from outperformance of the expenditure allowance. Similarly, under a price cap form of control, the natural incentive is to "talk-down" the demand forecast. This is because this results in a higher price that is then held independent of outturn demand for the regulatory period.

52. Under this regime there is no *ex ante* assessment of the prudency and efficiency of forecasts. Therefore, there is a challenge about how PoM demonstrates that its forecasts are prudent and efficient without an *ex ante* assessment by a regulator. We note that the ESC has identified the accuracy and reliability of forecasts as a key issue where a longer regulatory period is imposed. It identified that the longer the regulatory period, the more difficult it will be to ensure that forecasts are accurate.[28]

53. In Australia it is standard for operating and capital expenditure to be assessed and provided for separately, and this structure is followed in the Pricing Order.[29] As such, in the remainder of this section we consider forecasting operating and capital expenditure separately. We also consider the approach to demand forecasting.

3.4.2 Operating expenditure

54. Based on operating expenditure tending to be recurrent in nature, the standard approach to forecasting is to rely on past expenditure to forecast future expenditure. This means establishing a "base" expenditure amount, and then assuming a trend in that value into the future. To the extent that genuine step changes in cost exist, these can also be added to the forecast. This approach is commonly referred to as the "base-step-trend" approach.

55. Establishing the "base" is the most significant component of the "base-step-trend" approach. The method used to establish the "base" typically depends on perceptions of the strength of the incentives the business has faced to minimise cost.

   a. Where a strong incentive has existed, then actual expenditure undertaken in the base year can be accepted as approximately efficient. This is because it can be inferred that the business responded to incentives and only incurred efficient expenditure. Where financial incentives are applied, relying on actual operating expenditure to establish the base year has become the dominant approach to setting the operating expenditure allowance in Australia.

   b. However, where there have been deficiencies in the incentives to reduce cost, additional investigations may be made to test the efficiency of actual expenditure in the base year.

56. Determining the "trend" factor requires taking into account volume growth, the potential for productivity improvements and expected input price inflation. The "step" factor

---

[28] ESC, 'Statement of Regulatory Approach – version 3.0, Port of Melbourne Pricing Order', 20 December 2022, p.40.

[29] Conversely, in the United Kingdom it has become common to assess capital and operating together, with this referred to as an assessment of total expenditure, or TOTEX.

represents the costs of new things, or things that will no longer be done, relative to what was included in the base allowance.[30]

57.   The TAL and the inability to apply negative depreciation means that, to date, PoM would have had a strong financial incentive to minimise costs, even though it has applied single-year regulatory periods. Given this, we consider it is reasonable for PoM to rely on its actual costs to forecast operating expenditure under a longer regulatory period. Where benchmarking data is available,[31] and supports the efficiency of the revealed cost, it would be appropriate for PoM to use this information also.

58.   We note that the ESC's view that its approach to assessing operating expenditure will be based on the materiality of the forecast and how it compares with historical levels is consistent with the "base-step-trend approach set out here. In particular, the ESC identifies that it may undertake more thorough review where step changes are proposed.[32]

59.   In the future, however, PoM's incentive to minimise operating expenditure is likely to decline over the regulatory period (this is a standard outcome of price cap regulation). Therefore, PoM will need to demonstrate that this declining incentive has not influenced its operating expenditure and caused an upward bias in the base year that is adopted. Confidence in the chosen base year can be provided in the following ways:

   a. applying trend analysis to confirm that expenditure has not been inflated (for example, through being shifted between years) as the power of the incentive declines

   b. dealing appropriately with any 'lumpy' or unusual operating expenditure in the base year

   c. providing independent expert verification of the base year cost as being prudent and efficient, or

   d. implementing an additional incentive that provides an equal incentive in each year of the regulatory period, if this is permitted under the Pricing Order.

      i.   These incentive mechanisms, commonly referred to in Australia as an "efficiency benefits sharing scheme" (EBSS) or "efficiency carry-over mechanism" (ECM) carry-over the rewards or penalties from one period to the next to ensure that all efficiency changes receive the same gain or penalty. This, therefore, removes any benefit from the base year being non-representative.

---

[30]   For instance, the inclusion or removal of an obligation that impacts on operating expenditure.
[31]   In electricity distribution, economic benchmarking has been used for this purpose; however, the quality and quantity of information needed to apply robust benchmarking techniques often does not exist and so constrains the conclusions that can be drawn from these techniques.
[32]   ESC, 'Statement of Regulatory Approach – version 3.0, Port of Melbourne Pricing Order', 20 December 2022, p.36.

3.4.3 Capital Expenditure

60. It can be more difficult to demonstrate that a forecast for capital expenditure is prudent and efficient than is the case for operating expenditure. Reasons for this include:

    a. The need for costs to be incurred can be based on factors that are difficult to observe, or audit in a robust way, such as asset condition and asset performance

    b. Trend analysis is only partially useful for capital expenditure given much of it tends to be discrete one-off expenditure

    c. The costs of large capital expenditure projects can be significant and so the margin for error when forecasting expected costs may also be high, and

    d. Even if within-period incentives are applied for capital expenditure (such as an EBSS), it can only encourage an efficient starting RAB and so past expenditure is not a good guide for future expenditure.[33]

61. It is our opinion that the key measures that PoM could adopt to provide confidence that the capital expenditure forecast is prudent and efficient include:

    a. Where appropriate, explicitly linking capital expenditure to service obligations and objectives

    b. Linking the capital expenditure forecasts to the Port Development Strategy, the Asset Management Plan, and other planning reports

    c. Obtaining independent external verification of the forecasts, noting it is common for regulated businesses to provide this evidence to regulators even where the forecasts are assessed on an *ex ante* basis, and

    d. Where appropriate, consulting with customers beforehand in order to get sufficient buy-in on the capital program.

62. We note that the ESC commented on its expectations for demonstrating the prudency and efficiency of capital expenditure in its Statement of Regulatory Approach. It advocated measures consistent with those identified above for material and lumpy capital expenditure. It noted, however, that where capital expenditure is low or stable that trend analysis by capital expenditure category combined with an overview of asset management governance procedures may suffice.[34]

63. It is our view also that the inclusion of a contingent project mechanism, where it is found to be permitted under the Pricing Order, would remove a substantial amount of the issues

---

[33] We note an exception to this would be routine maintenance capital expenditure.
[34] ESC, 'Statement of Regulatory Approach – version 3.0, Port of Melbourne Pricing Order', 20 December 2022, p.26.

that can arise for capital expenditure (this was one of the uncertainty mechanisms discussed in Figure 1). This is because it would remove the capacity to include major projects in the forecast and then either defer them or avoid them entirely.

3.4.4   Demand forecasts

64.   The demand forecast is used to translate the expenditure requirement into prices. The incentives with respect to demand forecasting will depend on the form of control that is adopted. As discussed above, a natural incentive exists to "talk down" forecasts when a price cap is applied, whereas a regulated business should be largely indifferent to demand forecasts if a revenue cap is applied.[35]

65.   It is our opinion that PoM can demonstrate robust demand forecasts by relying on the following types of information:

  a. External and independent demand forecasts for the port or port demand generally in Australia

  b. A robust and transparent modelling method that is based on testing various scenarios with justification provided for the choice of scenario adopted for the forecast, and

  c. Putting forecast demand into the context of historical demand and trends, including explaining any variations from past forecasts to actual outcomes.

66.   We understand that PoM's current approach to demand forecasting is consistent with what we have set out here.

3.5   Service regulation

67.   Service performance measures counter the incentive to avoid expenditure at the expense of service performance. There are typically two forms of service performance measures in economic regulation, namely:

  a. Service obligations, which prescribe a minimum performance level that must be achieved, and

  b. Service incentives, which reward or penalise a business for performance relative to a benchmark level.

68.   Service obligations tend to be used where performance outcomes are critical to the proper functioning of the service. Conversely, service incentives are commonly used to motivate service improvements beyond minimum requirements where the benefits of that improvement outweigh the costs. The service performance measures that apply to PoM, which are contained in the Port Lease and Port Concession Deed, are in the form of obligations rather than incentives.

---

[35]   Indeed, an incentive may instead exist to "talk up" demand forecasts as this may justify a higher expenditure allowance.

69. Our review of the regulatory instruments reveals that a distinction can be made between the obligations that relate to existing assets and service levels, and the obligations relating to meeting future growth requirements.

70. The Port Concession Deed imposes specific obligations that relate to matters such as channel depths, maintenance and repair of assets, and also the remaining asset life for each Asset Class. These obligations appear focused on ensuring that existing levels of service are maintained. The level of prescription for these obligations, which include technical parameters for matters such as channel depths and asset lives, would appear to leave little room for PoM to reduce cost at the expense of service performance. Therefore, we see little concern from an increase in financial incentives from a longer regulatory period with respect to those prescribed service performance obligations in the Port Concession Deed.

71. Conversely, the Port Lease includes less defined obligations focused on meeting future growth demands. This includes obligations to develop the Leased Area to cater for reasonably anticipated future growth and demand for port services. The approach differs to a sector such as electricity networks where it has been common to require that a prescribed level of contingency be built to meet forecast maximum demand.

72. The less prescriptive obligations focused on developing the Leased Area mean that PoM may have the opportunity, and incentive, to inefficiently avoid or defer major capacity expansions to meet future growth demands where the expenditure for these projects is included in the *ex ante* allowance. That is, there would be a financial reward to delay projects beyond the efficient timing. This would either be towards the end of the regulatory period, into the following period, or to avoid the project entirely. However, we note that:

    a. the capacity to profit by deferring a major augmentation would be removed if the cost of the project is not included in the calculation of prices, but instead is treated as "contingent" as we discussed above, and

    b. even for projects that are included in the base price, the incentive to defer projects inefficiently could also be reduced through transparency at the time of setting prices (for example, about what will trigger projects proceeding, and what may lead them to be deferred).

A.   Length of the regulatory period

73. In section 2.2, we identified that choosing the length of the regulatory period requires a view about the level of incentive that is required to encourage efficiency gains, as well as other risks that increasing the incentive may create. Specifically, we identified the following considerations:

    a. identifying the minimum incentive needed to induce efficiency-improving behaviour,

    b. the prospect of windfall gains and losses, and so risk being imposed, caused by material differences between forecasts and actual outcomes (for instance, due to poor forecasting) or exogenous events, and / or

    c. the increase in incentive to reduce cost at the expense of service performance (quality) where possible.

74. In Australia, regulatory precedent has established that a five-year period is appropriate for balancing the various interests involved in the regulation of large infrastructure assets. This period is seen as long enough to encourage efficiency gains, while not over-rewarding regulated businesses at the expense of customers. Additionally, a five-year period is considered to be sufficient to provide confidence in the accuracy of expenditure forecasts for these types of assets.

75. While five years represents the precedent, we note that in some regimes additional measures are applied to manage forecasting risk and these measures can differ across sectors. Thus, sectors with inherently greater forecasting risk, or where the consequences from divergence from forecast are material (for instance, due to the size of the expenditure program or volatility in demand) tend to make greater use of risk-ameliorating measures. We discussed these measures in Figure 1 above.

76. It is notable that the regulatory regime that is most similar to that imposed on PoM – the regime of major airports in NZ – imposes a five-year term as the standard approach.[36] We observe that, like the case of PoM, the NZ airports are required to set their own prices and are subject to *ex post* regulatory oversight and operate under principles whereby prices are tested against a building block calculation of cost.[37]

77. It is our view that a five-year regulatory period would be consistent with PoM's regulatory regime. However, we consider that when applying a five-year period to PoM it would be appropriate that:

---

[36] The major NZ airports are required, under the Airports Authority Act, to review their prices and consult at least once every five years. The maximum period has been applied in most cases, to the extent that the templates the Commerce Commission has prepared for airports disclose the assumptions underpinning their pricing assume a five-year period.

[37] The Commerce Commission frames its test as one where the internal rate of return from the pricing proposal is compared against the Commission's view of the WACC; however, this is mathematically identical to comparing the forecast revenues to the building-block cost.

a. there is sufficient confidence that a robust method is applied to forecast expenditure and demand

b. measures are applied to manage specific areas of expenditure and demand forecasting risk, and

c. there is confidence that a material incentive – and ability – is not provided to reduce cost at the expense of service performance (quality).

B. Calculating alternative depreciation when the TAL binds

B.1 Introduction

78. Where the TAL-constrained price path is found to be below the unconstrained price path discussed above, then the prices that PoM would be required to charge would be expected to generate revenue that is lower than the Aggregate Revenue Requirement. In this circumstance, clause 4.4.2(a) authorises the use of an alternative depreciation method. In this chapter we identify an appropriate method for depreciation under a multi-year regulatory period and why this is consistent with the requirements of the regulatory framework.

B.2 Relevant parts of the Pricing Order

79. Before turning to the potential methods, we make a few observations about the relevant clauses in the Pricing Order.

    a. Aside from clause 4.4.3 (which precludes depreciation from being negative in any year), the Order does not provide further specific direction as to the precise form of alternative method for depreciation. Instead, there are general principles that relate to the life of the asset, and that assets only be depreciated once (clause 4.4.1).

    b. The objective for the alternative depreciation method should be to reduce the Aggregate Revenue Requirement to a level for which there is a reasonable opportunity of it being recovered, given the constraint applying to prices (at least to the extent that clause 4.4.3 does not apply). This would be consistent with the objective for pricing when the TAL is not binding (clause 2.2.1(a)), and also consistent with the objective of the regime to promote efficient investment.[38]

    c. The item that is to be adjusted is the depreciation allowance component of the Aggregate Revenue Requirement, the latter of which is the aggregate efficient cost for the regulatory period. Thus, achieving the objective in paragraph 19 would mean adjusting down the aggregate allowance for depreciation until the Aggregate Revenue Requirement equates with the aggregate revenue forecast for the period when the TAL is binding.

B.3 Alternative depreciation method

80. In principle, a wide range of alternative depreciation methods may be consistent with creating an aggregate revenue requirement over the regulatory period that equates to the revenue expected under the TAL-constrained prices. In our view, one appropriate method would be to simply scale down the standard (straight-line) depreciation amounts until the Aggregate Revenue Requirement equates to the forecast of revenue for the regulatory period under the TAL-constrained prices. The benefits of this approach include that:

---

38   Section 48, clause (a) of the PMA.

a. it would be simple to implement and explain to stakeholders,

b. It is consistent with the standard approach to regulation we outlined in section 3.3.2, whereby a total revenue allowance is set (in this case the Aggregate Revenue Requirement) and then separately a price path is determined having regard to objectives such as price stability (and so smoothed prices over a regulatory period) that may be unrelated to when costs are actually incurred, and

c. it would generate a depreciation allowance for a regulatory period that is either positive in every year, or negative in every year (in which case, depreciation would be set to zero, as per clause 4.4.3).

    i. This latter feature would avoid the potential for a positive depreciation allowance to be generated in some years and a negative depreciation allowance in others, and so minimise the extent PoM would not be afforded a reasonable opportunity to recover efficient costs and the consequent detrimental incentives for investment from such an outcome.

81. Regarding the second benefit listed above, namely adopting the standard approach of smoothing prices based on a total Aggregate Revenue Requirement for the regulatory period, we are aware that, to date, PoM has simply set the depreciation allowance at the amount of capital that is recoverable given the revenue that is forecast under the TAL-constrained prices and building block costs.[39]. It would be possible to apply the same method in a multi-year regulatory period so that the depreciation allowance for each year would reflect the difference between revenue and building block costs in that year. That is, essentially setting the depreciation allowance for each year equal to the capital that is able to be recovered given the revenue and building block costs in that year. Our views on such a method are as follows.

    a. First, we cannot see anything in the Pricing Order that would require depreciation allowances to be set equal to the recovered capital values for each year of a regulatory period.

        i. As discussed above, the standard building-block calculations comprise two steps, which are (i) the calculation of a revenue requirement over the regulatory period, and (ii) the setting of a price path that is expected to deliver revenue equal to the revenue requirement over the regulatory period.

        ii. As indicted earlier, this second step normally involves a degree of smoothing of the annual contributions to the revenue requirement, which has the effect that the allowance that was made for any cost item in a particular year may be materially different to the recovery for that item that is available under the price path in a particular year. Rather, the prices are set so the aggregate revenue forecast for the regulatory period is expected to allow the recovery of the aggregate revenue requirement for the period.

---

[39] We refer to this as the "recovered capital method" and the depreciation above to be recovered in a year given the revenue and costs as the "recovered capital.

iii.   Thus, it is normal for the depreciation allowances for any given year to depart – and potentially depart materially – from the recovered capital in the corresponding year.

b. Secondly, a consequence of tying the depreciation allowances for each year to the recovered capital for the relevant year is that it increases the potential that a mix of positive and negative depreciation allowance may be calculated for the regulatory period (i.e., rather than depreciation nbn being either positive or negative in all years). As noted above, this outcome will increase the extent to which efficient costs are unable to be recovered and so the incentive to undertake efficient investment. To the extent this occurs it would be inconsistent with the objective of the regime to promote efficient investment. Therefore, if the "recovered capital" depreciation method generates a mixture of positive and negative depreciation allowances, then in our view this method would be inferior to the simple scaling down of the standard straight-line depreciation allowances.