covec

Report | 9 March 2016

Airport WACC:
Comments on Emerging Views and Professor Yarrow

Prepared for

BARNZ

Authorship
John Small
john.small@covec.co.nz | (09) 916 1966

© Covec Ltd, 2016. All rights reserved.

Disclaimer
Although every effort has been made to ensure the accuracy of the material and the integrity of the analysis presented herein, Covec Ltd accepts no liability for any actions taken on the basis of its contents.

Contents

Executive summary **i**

1 Introduction **1**

2 Features of the Regulatory Regime **2**

2.1 Timing 2

2.2 Granularity 3

2.3 Sanctions 5

3 Implications for Regulation **6**

3.1 Improving the Efficiency of ID Regulation 7

3.2 Answers to Questions 7

Executive summary

This report comments on the emerging views of the Commerce Commission and advice it received from Professor George Yarrow regarding airport regulation and specifically the treatment of WACC for the purpose of information disclosure regulation. It was commissioned by BARNZ but represents the independent views of the author.

As Professor Yarrow has reminded us, the cost of capital for a regulated airport depends on many factors including the way regulation works and the rights and responsibilities of airports, their customers (airlines) and the regulator. One cannot reasonably respond to the Commission's emerging views or form a view on the questions it poses without considering these wider factors.

Accordingly, this report starts by reviewing three important features of the regulatory regime:

- The timing, as reflected in the mix between ex ante and ex post information disclosure
- The granularity, which analysis draws on Professor Yarrow's discussion of an investment demand curve; and
- The sanctions, which in the short-run are limited to unfavourable comment but which include an implicit longer-run threat of more severe regulation.

This review suggests that the regime may be biased towards excessive investment and/or excessive risk taking by airports.

Against that background we comment favourably on Professor Yarrow's view that information disclosure (ID) regulation can only do so much. However it is nevertheless true that the only changes in airport conduct that have occurred during this regime have been in response to reviews of ex ante disclosures. A strict interpretation of Professor Yarrow's views might therefore eliminate the only tool which has had any demonstrable effect since the regime began.

After weighing up these disparate perspectives, we advance some ideas about how to maintain the integrity of ID regulation while enhancing its effectiveness. Under certain circumstances, these proposals involve the Commission commenting directly on the desirability of legislative change.

The report closes with answers to the Commission's questions. Specifically, we argue that:

- The onus should be on airports to justify any challenge to the Commissions estimates of the WACC mid-point;
- There is no case for targeting returns in excess of the WACC mid-point; and
- There is consequently no reason to develop quantitative models for estimating a WACC percentile, or a probability distribution, other than the mid-point.

1 Introduction

1. The Commerce Commission is considering the way input methodologies for airport regulation deal with the weighted average cost of capital (WACC), and in particular the WACC percentile. It recently published its emerging views along with advice from Professor George Yarrow. This report was requested by BARNZ but it represents the independent views of the author.

2. The rate of return earned on an airport's assets is highly relevant in the regulatory regime because of its effects on both the short and long-term interests of end-users. In the short term it is an indicator of whether prices are excessive or not and in the longer term it affects the willingness of airports to undertake efficient investment.

3. However as Professor Yarrow has helpfully emphasised, there is an important distinction between the WACC estimated by the Commission and the actual cost of capital for an airport, and another important distinction between *ex-ante* targets for these values and their *ex-post* realisations. In so doing, Professor Yarrow recognises the need for a broad-based approach to this topic, which requires that we take account of the actual commercial position of airports and the way the regulatory regime influences that position.

4. We agree with the Commission that three aspects of the regulated airports are relevant to this broad-based assessment,[1] namely that the regulated airports:

    a. Are subject to information disclosure requirements only, not direct regulation of prices, and therefore have more commercial freedom than price-regulated firms;

    b. Are treated using a dual-till structure for the purpose of information disclosure and therefore retain the freedom to earn unregulated revenue from retailing, car-parking and other activities intimately connected with airports; and

    c. Are in regular contact with a small number of aeronautical customers (airlines) with whom capital investment plans are frequently discussed.

5. All of these factors mitigate the risk of the Commission deterring efficient investment by inadvertently under-estimating the WACC. However they are not the only aspects of the regulatory regime that should be considered. In this report, we review the most important features of the regulatory regime and analyse investment demand by airports to draw further inference. We then address the questions posed by the Commission.

[1] We noted the relevance of each of these factors in our first report on this topic, "Estimating WACC for Airports in New Zealand", Covec report for BARNZ, 30 April 2014.

2 Features of the Regulatory Regime

6. As noted above, the absence of price control regulation, the dual-till structure and discussion of investment with a small number of informed buyers all mitigate the risk of airports under-supplying efficient investment. In this section we discuss and draw inference from several other relevant facts, concerning

    a. Timing, motivated by Professor Yarrow's distinction between ex-ante and ex-post assessments;

    b. Granularity, motivated by Professor Yarrow's discussion of an investment demand curve; and

    c. Sanctions, including the implicit threat of more intrusive regulation.

2.1 Timing

7. As Professor Yarrow has emphasised, there can be a material difference between the rate of return an airport may target in advance and the rate it subsequently realises. Many factors affect this difference, such as unexpected variations in demand and in costs.

8. The regulatory regime for airports has ex-ante and ex-post components. Airports must disclose ex-post information annually, not less than 5 months after the close of each financial year. Among other things, this ex-post disclosure allows interested parties to assess their financial performance and compare this with the purpose of regulation under Part 4 of the Commerce Act.

9. Airports must also disclose ex-ante information within 20 working days of a price setting event occurring and in any case at least once every five years. Investment incentives for airports are most directly linked with these ex-ante disclosures. This is partly because investment decisions (for any firm) always require a forward-looking assessment of expected costs and incremental revenues. More directly however, the regime (at Schedule 18) requires airports to

    a. disclose the expected cost and timing of "key capital expenditure projects";

    b. explain why these are needed and what alternatives have been considered; and

    c. disclose the consultations airports have undertaken.

10. The regime places no limits on the number, scale or nature of "key capital expenditure projects" an airport may schedule. Nor does it require that consulted customers endorse or approve of such projects. These matters are entirely within the airports' control.

11. Airports may also target any overall rate of return in these five year ahead disclosures. The incentive to target high rates of return may however be affected by public

disclosure itself. That is, airports may limit their targeted returns on aeronautical activities in order to avoid a degree of public embarrassment. It is also possible that airports perceive a threat of more intrusive regulation that might be triggered by ex ante targeting of high rates of return, a point we discuss further below.

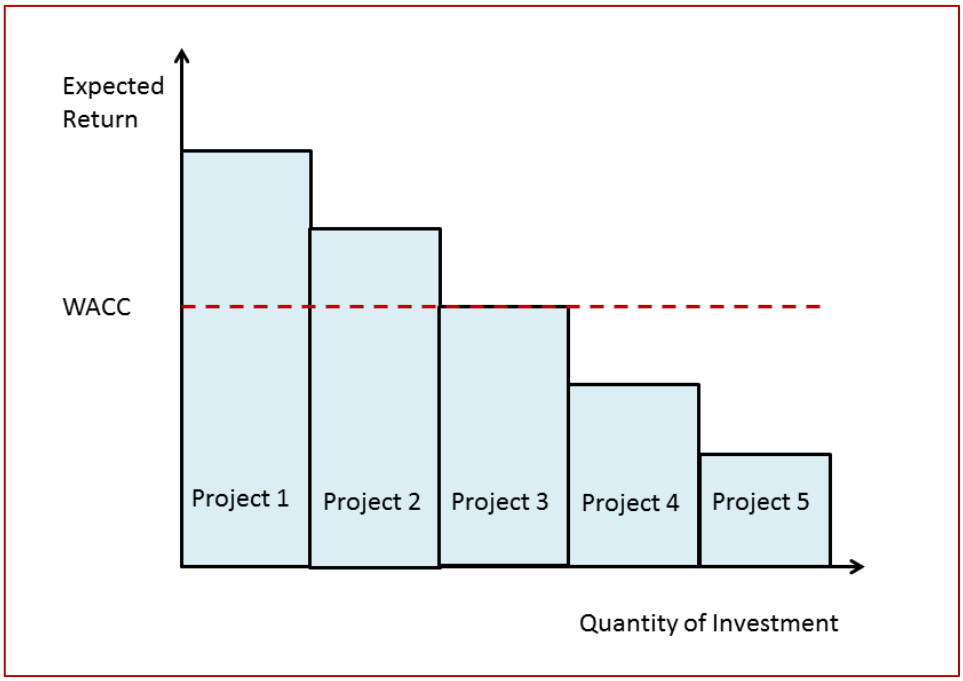
2.2 Granularity

12. Professor Yarrow provides a helpful discussion of the 'investment demand curve' of an unregulated business operating in a competitive market. He notes that total investment (i.e. the value of new capital installed in any period) will tend to increase as the cost of capital falls, other things being equal. He also explains that rational firms will continue to invest until the NPV of the marginal project is zero, from which it follows that expected profitability of the whole investment program will exceed the cost of capital.

13. Since there is no direct constraint on the earnings of the relevant airports, this general proposition can be considered to apply to them. Moreover, when airport profitability is assessed on the basis of disclosed information, the assessment occurs at the aggregate level of the firm's aeronautical activities. The fine grained detail associated with particular investment projects is subsumed into this overall assessment, so it is not possible to inspect marginal profitability at the level of individual projects.

14. This has important implications for interpretation of the ex ante disclosures. Consider for example the fairly common situation in which an airport's ex ante disclosures show an expected rate of return for the whole programme that is broadly equal to the Commission's estimate of WACC.

Figure 1: Hypothetical Expected Investment Schedule



15. Since the profitability of individual projects varies, this situation implies that some projects will have returns above WACC and others will have returns below WACC, as illustrated in Figure 1 above using stylised and hypothetical investment schedule.[2]

16. This analysis suggests that in its practical operation, the regime may simultaneously promote two outcomes that are undesirable when viewed against the s52A purpose statement. One is excessive investment in the sense that projects are undertaken that would not proceed in a competitive market; this undesirable outcome is illustrated by projects 4 and 5 in Figure 1. The other is excessive pricing in the sense that some investment projects have higher rates of return than would be achieved in competitive markets, as illustrated by projects 1 and 2 in Figure 1.

17. The revenue/price implications associated with excessive pricing (projects 1 and 2 in Figure 1) are well understood. However there are also revenue and price implications of excessive investment. Even though (when viewed in isolation) these projects would not earn a WACC return, they nevertheless enter the airport's asset base and therefore increase the revenue an airport may earn without appearing to have excessive prices.

2.2.1 Effect of Risk and Uncertainty on Investment

18. Capital investment always requires the commitment of funds now, in return for the hope/expectation of good and sufficient returns later. Rational investors therefore compare the total incremental cost of a project with its total incremental return, both sides of which comparison are forecasts/expectations and therefore have risks and uncertainties associated with them.[3] It follows that

    a. each investment project has its own cost of capital;

    b. that cost of capital depends on the nature of the project; and

    c. if a firm takes on increasingly risky projects, its aggregated cost of capital will increase.

19. It may be that customers (airlines) are happy for some or all of these projects to proceed, but there is no mechanism in the regime that ensures such an outcome.

2.2.2 Expected vs Actual Returns

20. Before leaving this investment analysis a brief comment is required on Professor Yarrow's discussion of the difference between expected and actual returns on investment, which immediately follow his description of the investment demand curve.

---

[2] Figure 1 shows five projects of equal size with project-level rates of return that are evenly spaced so that (by construction) the average expected return on the whole programme is equal to the expected return on project 3.

[3] There is a substantial academic literature on these issues, not least of which is the real options approach formalised by Dixit and Pindyck (1994) and the subsequent developments of dynamic investment theory. Our analysis relies on this literature.

While we agree that there are many factors which could lead to differences between expected and actual returns, it is also clear that public investments differ from private investments on this point. In particular, public investment decisions are likely to be more vulnerable to political lobbying and have benefits that are widely diffused and often unpriced. The empirical evidence cited by Professor Yarrow appears to be mainly focussed on public investment projects.

2.3 Sanctions

21. As noted above (¶11) the prospect of more intrusive regulation may constrain airports even without direct constraints on pricing. Moves in this direction could in theory be triggered either on the basis of high targeted rates of return in the ex ante disclosures or high return outcomes showing up in the ex post disclosures.

22. While there is always a possibility of more intrusive regulation, there are several hurdles in the way of that outcome. Most notably, the Part 4 regime does not currently include a mechanism by which an extra form of regulation could be imposed. The Commerce Act would therefore need to be amended, which we understand MBIE is currently considering and which would include a process by which change to the form of regulation could occur by order in council following an inquiry and recommendation by the Commission to the Minister. In either case (whether or not the Act is amended as outlined above,) the need for legislative amendment limits the effectiveness of any implicit threat of more intrusive regulation because it provides time to develop and deploy alternative strategies that would undermine the case for change.

23. Nevertheless, since the threat of further regulation is implicitly present for airports it is worth briefly noting that this need not involve direct price regulation by means of price-quality paths as is used for electricity and gas networks. Indeed, at the time provisions in Part 4 were being developed it appeared more likely that "negotiate arbitrate" regulation would be the next step for airports, should any further regulation be warranted.

3 Implications for Regulation

24. One of Professor Yarrow's most powerful insights is his suspicion that

> *"too much weight is being placed on one set of numbers, deriving from exercises to estimate the cost of capital, and too little weight is being placed on the contextual factors that can influence the interpretation of disclosed information. Put another way, there is an implicit assumption that the cost of capital to be published should itself be based on judgments that, in effect, reflect views on how the information should be interpreted"*

25. This leads Professor Yarrow to recommend creating a more distinct separation between the disclosure of information by airports and the subsequent interpretation of it by the Commission, and to recommend that the Commission simply publish its views on the cost of capital "with no further judgements added". Though Professor Yarrow does not put it in these terms, these recommendations would have the effect of shifting the Commission's role somewhat closer towards that of an ex post referee rather than an ex ante regulator.

26. There is considerable theoretical merit in this approach in the context of information disclosure regulation alone (i.e. without further constraint) however we are reluctant to endorse any weakening of the ex ante incentives currently acting on regulated airports.

27. By statutory design, the only real constraint in the current regime occurs ex post, either through unfavourable comment and resulting public embarrassment or by moves to increase the intensity of regulation. Nevertheless, it can be reasonably argued that in practice the only occasions where airport conduct has actually changed in response to Commission concerns have occurred in response to ex ante disclosures.[4] A strict interpretation of Professor Yarrow's views might therefore eliminate the only tool which has had any demonstrable effect since the regime began.

28. It does not follow however that the Commission should issue "guidance" to airports. No benefits have been articulated for this approach and it is not difficult to imagine costs. To begin with, any such guidance would be highly qualified in the context of airport regulation: there is no apparent opportunity for the simple rules that can be used for predatory pricing cases.

29. Moreover, there is a risk that providing guidance would actually weaken, rather than strengthen, the regulatory constraint as perceived by airports. There are at least two reasons for this, both of which would accompany attempts to provide guidance in advance. Firstly, the more guidance is provided, the easier it is for airports to avoid the only sanction available in the short-run which is unfavourable comment on disclosed information. Secondly, there is a risk that the process of developing guidance is itself used as an opportunity to drag regulatory parameters in directions favourable to airports.

---

[4] Following the ex ante reviews in 2013 WIAL reset its charges, CIAL corrected for its tax error and AIAL committed to treat any revaluations undertaken at the conclusion of its moratorium as income.

30. These considerations have influenced our answers to the Commission's questions which are presented below.

31. Before addressing the questions however, it is appropriate to balance the above discussion of how the regime might usefully evolve by broadening it to include comment on how the Commission might seek to improve the efficiency of the information disclosure regime for airports.

3.1 Improving the Efficiency of ID Regulation

32. We agree with Professor Yarrow that the Commission should simply publish its views on WACC, with no further judgements added. The onus should be on airports to justify their plans and their expectations of profit. Compared to the alternatives, this makes the Commission's role somewhat easier in advance of information disclosure. However the Commission still has two crucial roles. One is undertaking what amounts to a public audit of the disclosed information, including the rationales advanced by airports for their plans.[5]

33. In addition, if the Commission reaches the view that the purpose of Part 4 regulation is *not met* in respect of *any* given disclosure, it should outline measures that could improve the efficiency of the regime.

34. That might include discussing the merits of adding "negotiate/arbitrate" regulation. However it may also be that there are other options for improvement, such as finding a way to make consultations with customers more meaningful. If the regime is indeed biased towards excessive investment and/or excessively risky investment as suggested in section 2.2 above, then there may be a case for allowing customers to veto investment projects.

35. To be clear, it is understood that the Commission does not have the authority to unilaterally change the form of regulation or grant extra rights to airport customers. Both of those changes would require legislative amendment. There is nevertheless a case for commenting on them because:

    a. doing so would enhance the only currently available sanction by outlining the potential benefit of other sanctions; and because

    b. in its capacity as a neutral referee, the Commission is well placed to understand the potential benefits and costs of such changes.

3.2 Answers to Questions

36. We now address the specific questions posed by the Commission at paragraph 29.

---

[5] We note that MBIE is currently consulting on amendments to s53B concerning whether the Commission should or may use disclosed information to report on whether the purpose of Part 4 is being achieved.

3.2.1 Different WACC estimates

37. The Commission has asked for factors that should or should not allow airports to estimate a different mid-point WACC from that estimated using the WACC methodology specified in the IMs.

38. Because the WACC is built up from several different parameters, there are many potential ways in which two estimates of WACC for the same firm can differ. The IMs specify how the WACC should be estimated, and we see no reason why airports should not follow that process.

39. If airports wish to argue over the Commission's WACC analysis they should do that alongside their information disclosure. The Commission should then allow airport customers an opportunity to comment, unless the Commission intends to reject the airport's argument.

40. It would be unwise to attempt in advance to set out possible good reasons that airports might have for disagreeing with the Commission's WACC analysis.

3.2.2 Target Returns other than WACC Mid-Point

41. The Commission has asked for factors that should or should not allow airports to target something other than the mid-point of the WACC estimate. We are not aware of any sound reasons for targeting a value above the mid-point and consider that doing so would not be consistent with the purpose of Part 4 regulation.

42. The three facts cited by the Commission at paragraph 16 and further discussed in this report at paragraph 4 are directly relevant to this question. The absence of direct price control, the use of a dual-till structure and consultation with a small number of informed customers all undermine the case for targeting returns above the mid-point.

43. Additionally, as discussed in section 2.2 above, if airports target the mid-point of the WACC estimate and have several investment projects some of these will earn more than the mid-point of WACC and some will earn less. One could interpret the former projects as reflecting excessive pricing and the latter as reflecting excessive investment. A target of the WACC mid-point strikes a balance between these two forms of excess.

3.2.3 Estimating a Percentile

44. The Commission has asked for submissions on how one might estimate the appropriate percentile of the WACC distribution for airport information disclosure.

45. Because there is no case for departing from the mid-point of the WACC distribution we see no merit in attempting to empirically estimate an appropriate percentile. If the Commission is nevertheless minded to pursue this line of inquiry we recommend that the Commission provide interested parties with the opportunity to comment on any specific proposal developed by the Commission.