COMMERCE COMMISSION
NEW ZEALAND
Te Komihana Tauhokohoko

ISBN 978-1-869455-15-6
Project no. 17.01/15081

Public version

Input methodologies review draft decisions

Topic paper 6: WACC percentile for airports

Date of publication: 16 June 2016

Associated documents

Publication date	Reference	Title
16 June 2016	978-1-869455-08-8	Input methodologies review draft decisions: Summary paper
16 June 2016	978-1-869455-09-5	Input methodologies review draft decisions: Introduction and process paper
16 June 2016	978-1-869455-10-1	Input methodologies review draft decisions: Framework for the IM review
16 June 2016	978-1-869455-11-8	Input methodologies review draft decisions: Topic paper 1 – Form of control and RAB indexation for EDBs, GPBs and Transpower
16 June 2016	978-1-869455-18-7	Input methodologies review draft decisions: Topic paper 2 – CPP requirements
16 June 2016	978-1-869455-12-5	Input methodologies review draft decisions: Topic paper 3 – The future impact of emerging technologies in the energy sector
16 June 2016	978-1-869455-13-2	Input methodologies review draft decisions: Topic paper 4 – Cost of capital issues
16 June 2016	978-1-869455-14-9	Input methodologies review draft decisions: Topic paper 5 – Airports profitability assessment
16 June 2016	978-1-869455-17-0	Input methodologies review draft decisions: Topic paper 7 – Related party transactions
22 June 2016 (expected)	978-1-869455-16-3	Input methodologies review draft decisions: Report on the IM review
22 June 2016 (expected)	1178-2560	Draft amendments to *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26
22 June 2016 (expected)	1178-2560	Draft amendments to *Gas Distribution Services Input Methodologies Determination 2012* [2012] NZCC 27
22 June 2016 (expected)	1178-2560	Draft amendments to *Gas Transmission Services Input Methodologies Determination 2012* [2012] NZCC 28
22 June 2016 (expected)	1178-2560	Draft amendments to *Commerce Act (Specified Airport Services Input Methodologies) Determination 2010* (Decision 709, 22 December 2010)
22 June 2016 (expected)	1178-2560	Draft amendments to *Transpower Input Methodologies Determination 2012* [2012] NZCC 17

Commerce Commission
Wellington, New Zealand

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Executive summary

Purpose of this paper

X1. The purpose of this paper is to explain in relation to the airports weighted average cost of capital (**WACC**) percentile topic:

X1.1. the problems we have identified within this topic area;

X1.2. our proposed solutions to these problems;

X1.3. the reasons for our proposed solutions; and

X1.4. how we have taken stakeholders' submissions into account in considering the above.

X2. This paper relates to regulated airports but will also be of interest to airlines and other airport stakeholders.

Overview of the airports WACC percentile topic

X3. The existing Input Methodologies (**IM**s) approach includes a WACC percentile range for airports based on the 25th to 75th percentile estimates of a probability distribution of the WACC estimate.

X4. The High Court commented that the use of the 50th percentile is a suitable starting position for information disclosure regulation. However, as part of this review we have identified two problems with the application of the existing IMs:

X4.1. The upper limit of any range may become the de facto benchmark when assessing airport profitability.

X4.2. There is limited and weak rationale for the use of the 75th percentile as the upper limit of the current WACC percentile range.

X5. Table X1 summarises the areas in this topic where our analysis has led to changes in the IMs. There are other issues that we have considered in relation to this topic which have not resulted in changes; these issues are discussed as part of the following chapters in this paper.

Table X1: Summary of proposed changes in relation to this topic

Proposed change	Outcomes of the proposed change	Chapter
Our draft decision is to remove a specific WACC percentile range for information disclosure. Therefore, we will no longer publish the 25th and 75th percentiles. Instead we will publish the 50th percentile together with a standard error of the WACC estimate so that any required percentile can be calculated. This change will apply to all regulated airports.	We consider that our proposed change is likely to contribute to an information disclosure framework that is best able to allow interested parties to assess whether airports are extracting excess profits or not. As a result, this approach best promotes the long-term benefit of consumers. Our proposed solution enables flexibility in assessing the acceptability of airport returns and will reduce the focus of any assessment on the upper limit of the WACC percentile range. It will also provide flexibility to enable any assessment to take into account different contextual factors affecting the airport's required return expectations, or the expectations of a particular project.	This proposed change is discussed in Chapter 4.

X6. This topic paper forms part of our package of draft decisions papers on the IM review. As part of the package of papers, we have also published:

X6.1. a summary paper of our draft decisions;

X6.2. an introduction and process paper which provides an explanation of how the papers in our draft decisions package fit together; and

X6.3. a framework paper which explains the framework we have applied in reaching our draft decisions on the IM review.

X7. We invite submissions on this paper by **5pm on 28 July 2016**. We then invite cross submissions by **5pm on 11 August 2016**.

X8. Please address submissions and cross submissions to:

Keston Ruxton
Manager, Input Methodologies Review
Regulation Branch
im.review@comcom.govt.nz

X9. Please clearly indicate within your submission which aspects of this paper it relates to.

Chapter 1: Introduction

Purpose of this paper

1. The purpose of this paper is to explain in relation to the airports WACC percentile topic:

   1.1 the problems we have identified within this topic area;

   1.2 our proposed solutions to these problems;

   1.3 the reasons for our proposed solutions; and

   1.4 how we have taken stakeholders' submissions into account in considering the above.

Where this paper fits in to our package of draft decisions papers

2. This topic paper forms part of our package of draft decisions papers on the IM review. For an overview of the package of papers and an explanation of how they fit together, see the Introduction and process paper published as part of our draft decisions package.[1]

3. This paper explains our proposed solutions to problems identified within the WACC percentile for airports topic. All other areas of cost of capital are covered by Topic paper 4,[2] and Topic paper 5 is focussed on how we assess airports profitability.[3]

4. To the extent our preferred solutions involve changes to the IMs, this paper identifies how we propose to change our existing IM decisions to account for our preferred solutions to problems within this topic area. The report on the IM review then collates our proposed changes to the existing IM decisions.[4]

5. Our proposed drafting changes to the IMs, including any resulting from this topic area, are shown in the draft determinations, which we expect to publish on 22 June 2016.

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1 Commerce Commission "Input methodologies review draft decisions: Introduction and process paper" (16 June 2016).

2 Commerce Commission "Input methodologies review draft decisions: Topic paper 4 – Cost of capital issues" (16 June 2016).

3 Commerce Commission "Input methodologies review draft decisions: Topic paper 5 – Airports profitability assessment" (16 June 2016).

4 We expect to publish the Report on the IM review on 22 June 2016.

6. The framework we have applied in reaching our draft decisions on the IM review is set out in a separate framework paper, published alongside this paper.[5] The framework paper explains that we have only proposed changing the current IMs where this appears likely to:

    6.1 promote the Part 4 purpose in s 52A more effectively;

    6.2 promote the IM purpose in s 52R more effectively (without detrimentally affecting the promotion of the s 52A purpose); or

    6.3 significantly reduce compliance costs, other regulatory costs or complexity (without detrimentally affecting the promotion of the s 52A purpose).

7. The framework paper also describes key economic principles that can provide guidance as to how we might best promote the Part 4 purpose.

Structure of this paper

8. This paper focusses on the WACC percentile range for airports topic and is split into the following chapters:

    8.1 Chapter 2 explains the WACC percentile range, the issues with the current range for airports and why we have identified it as an issue to address as part of the IM review;

    8.2 Chapter 3 explains how we envisage using a regulatory WACC in the context of information disclosure;

    8.3 Chapter 4 explains our draft decisions on the WACC percentile for airports and how they deal with the main issues that we have identified; and

    8.4 Chapter 5 explains why we consider an airport's targeted return could legitimately be above our mid-point estimate and how that might be justified.

9. In describing the problems and assessing potential solutions, we explain how we have taken stakeholders' submissions into account and how they have helped to shape our draft decisions.

Introduction to this topic

10. The WACC percentile range for airports was one of the topics we discussed in our problem definition paper.[6]

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5 Commerce Commission "Input methodologies review draft decisions: Framework for the IM review" (16 June 2016).

6 Commerce Commission "Input methodologies review invitation to contribute to problem definition" (16 June 2015), Topic 7.

11. The topic focusses on one element of the airports cost of capital IMs: the appropriateness of our current WACC percentile range for airports (ie, the 25th to the 75th percentiles) and whether the current IMs related to airport information disclosure best meet the purpose of Part 4 in the Commerce Act.[7]

12. We have focussed on the WACC percentile for airports following our previous consideration of the WACC percentile for energy businesses,[8] and our experience of undertaking ex-ante profitability assessments of airports.[9]

13. Submissions on the problem definition paper provided a range of views on the appropriate use of WACC percentile estimates and a WACC range in the context of information disclosure. We subsequently commissioned Professor Yarrow to consider the impact of our WACC percentile estimate on airports through information disclosure regulation.[10]

14. After considering Professor Yarrow's advice we published an emerging views paper in February 2016.[11] This paper outlined our emerging view that:

    14.1 we should reduce focus on specific percentile estimates, including the 25th and 75th percentiles that are used to determine the WACC range in the existing IMs; and

    14.2 the rationale for airports to set prices consistent with a WACC above our mid-point estimate appears weaker than for energy businesses.

15. Submissions on the problem definition paper and stakeholder comments on the emerging views paper and Professor Yarrow's advice have informed our draft decision.

Who does this paper apply to?

16. This paper applies to airports subject to regulation under Part 4 of the Commerce Act, being:

    16.1 Auckland Airport;

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7 Commerce Act 1986, s 52A.

8 Commerce Commission "Amendment to the WACC percentile for price-quality regulation for electricity lines services and gas pipeline services – Reasons paper" (30 October 2014); Commerce Commission "Amendments to the WACC percentile range for information disclosure regulation for electricity lines services and gas pipeline services: Reasons Paper" (12 December 2014).

9 We undertook ex-ante profitability assessments when developing s 56G reports for each of the individual regulated airports. For example, see: Commerce Commission "Report to the Ministers of Commerce and Transport on how effectively information disclosure regulation is promoting the purpose of Part 4 for Christchurch Airport – Section 56G of the Commerce Act 1986" (13 February 2014).

10 George Yarrow's expert advice on airport WACC percentile "Responses to questions raised by the Commerce Commission concerning WACC estimates for information disclosure purposes in the airports sector" (report to the Commerce Commission, February 2016).

11 Commerce Commission "Input methodologies review – Professor Yarrow report and emerging views on the airport WACC percentile" (19 February 2016).

16.2 Wellington Airport;

16.3 Christchurch Airport.

17. This paper may also be of interest to other stakeholders interested in information disclosure regulation of the airport sector. For example, exempt electricity distributors who may see some parallels with information disclosure for airports. [12]

Invitation to make submissions

18. We invite submissions on this paper by **5pm on 28 July 2016**. We then invite cross submissions by **5pm on 11 August 2016**.

19. Please address submissions and cross submissions to:

Keston Ruxton
Manager, Input Methodologies Review
Regulation Branch
im.review@comcom.govt.nz

20. Please clearly indicate within your submission which aspects of this paper it relates to.

21. The Introduction and process paper contains further details about the submissions process. This includes:[13]

21.1 explaining that material provided outside of the indicated timeframes without an extension might not be considered in reaching our final decisions;

21.2 providing guidance on requesting an extension to the submissions timeframes;

21.3 noting that we prefer submissions on our draft decisions in a file format suitable for word processing, rather than the PDF file format; and

21.4 providing guidance on making confidential submissions.

[12] This is not exhaustive. Rather it is intended to provide some guidance to readers about whether this paper might be of interest to them.

[13] Commerce Commission "Input methodologies review draft decisions: Introduction and process paper" (16 June 2016), Chapter 5.

Chapter 2: Context for our draft decision on the airports WACC percentile

Purpose of this chapter

22. This chapter explains the WACC percentile range, the issues with the current range and why we have identified it as an issue to address as part of the IM review.

WACC percentile range

23. The Cost of Capital IM requires us to annually determine a WACC for specified aeronautical services at each regulated airport. This airport WACC is included as part of an airport's information disclosure to help interested parties assess airport profitability. The airport cost of capital IM specifies how this WACC is determined.[14]

24. The WACC must be estimated since its components, for example the cost of equity, cannot be observed directly. This raises the prospect of estimation error since it is not possible to know the true cost of equity.

25. To illustrate the potential for estimation risk, the current IMs include a WACC percentile range based on the 25th to 75th percentile estimates of a probability distribution of the WACC estimate.[15] The probability distribution is determined from our estimate of the standard error of the WACC.[16]

26. The current information disclosure requirements provide WACC estimates for the 25th, 50th and 75th percentiles. However, the IMs do not specify how the WACC should be used by interested parties when assessing profitability. In the IM reasons paper we stated that the appropriate starting point for any assessment of airport profitability is the 50th percentile.[17]

Problems with the use of the WACC percentile range

27. The existing approach as outlined in the airport IMs, including the use of the 50th percentile as the starting point for profitability assessment, has been accepted by the High Court as appropriate for information disclosure regulation:[18]

> ID regulation is for disclosure only, not for the control of the Airport's prices or revenues. It remains for the Airports to determine those matters as they individually think fit. Providing them to disclose ROI by reference to the 25th and 75th percentile, in the context of the

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14 The airport cost of capital IM specifies how the WACC is calculated. The details of this IM (along with the cost of capital IMs for other regulated sectors) are being considered in a separate Topic paper as part of the IM review. Commerce Commission "Input methodologies review draft decisions: Topic paper 4 – Cost of capital issues" (16 June 2016).

15 Commerce Commission "Input methodologies (Airport Services) reasons paper" (22 December 2010), para 6.7.9.

16 *Commerce Act (Specified Airport Services Input Methodologies) Determination 2010* (Commerce Commission Decision 709, 22 December 2010), clause 5.7.

17 Commerce Commission "Input methodologies (Airport Services) reasons paper" (22 December 2010), para E11.2.

18 *Wellington Airport & others v Commerce Commission* [2013] NZHC 3289, para 1490-1492.

> Commission pointing to the starting point of the 50th percentile, in our view will promote the purpose of ID regulation …
>
> The estimation of WACC is, all accept, a complex task involving significant exercising of judgement and is open not only to the possibility of error, but also to there being a range of views. We think the Commission's approach under ID regulation reflects that reality, and will provide an appropriate level and range of information to interested persons consistent with the s53A purpose.
>
> Furthermore, there is nothing to prevent the Airports themselves reporting additionally, by reference to an alternative percentile, and disclosing their reasons for doing so.

28. We accept and agree with the Court's comments. However, we have identified two related practical problems with the application of the existing IMs. These problems are that:

    28.1 the upper limit of any range we specify may become the de facto benchmark when assessing airport profitability; and

    28.2 there is limited and weak rationale for the use of the 75th percentile as the upper limit of the current WACC percentile range.

Use of the upper limit of the range

29. Under s 56G, we were required to review how effective information disclosure regulation was in promoting the Part 4 purpose for airports, as soon as practicable after the 2012/13 price setting events. The development of these 's 56G reports' required an assessment of airport profitability.[19]

30. The existence of the WACC percentile range (25th to 75th percentile) resulted in the upper limit of the WACC percentile range (75th percentile) being used as the 'de facto' limit of an 'acceptable range' that was used to assess airport profitability. The use of the 75th percentile as a 'bright-line' limit in this way appears contrary to the purpose of information disclosure regulation.

Choice of the 75th percentile as the upper limit

31. The High Court outlined its scepticism about the use of a WACC percentile substantially above the mid-point when setting price-quality paths for electricity and gas businesses. It noted the lack of evidence for our choice to use the 75th percentile. This led us to reconsider the specific percentile used in that context.[20]

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19 For example: Commerce Commission "Report to the Ministers of Commerce and Transport on how effectively information disclosure regulation is promoting the purpose of Part 4 for Wellington Airport, Section 56G of the Commerce Act 1986" (8 February 2014).

20 *Wellington Airport & others v Commerce Commission* [2013] NZHC 3289, para 1479-1481.

32. Similarly, in our view there is a lack of evidence for the 75th percentile currently used as the upper limit for the airport WACC percentile range. We note the High Court did not take issue with our approach to the specification of a WACC range for airports.[21]

Previous consideration of the airport WACC percentile

33. We commenced a process in 2014 to consider amending the WACC percentile estimates for services regulated under Part 4 as a standalone process. We completed that process in respect of electricity lines and gas pipeline services, but not for specified airport services.[22]

34. We extended the timescale to consider the appropriate WACC percentile for airports because we wanted to consider a number of airport-specific issues raised as part of that process.[23]

35. However, given the timing of the IM review, we proposed in February 2015 to discontinue the existing standalone amendment process on the WACC percentile for airports and incorporate it into the IM review. All submissions to the original WACC amendment process from parties interested in specified airport services have been considered as part of this IM review.[24]

36. As part of the IM review process we published our initial views on this topic as part of the problem definition paper published in June 2015[25] and a further emerging views paper in February 2016.[26]

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21 *Wellington Airport & others v Commerce Commission* [2013] NZHC 3289.

22 Commerce Commission "Amendment to the WACC percentile for price-quality regulation for electricity lines services and gas pipeline services – Reasons paper" (30 October 2014).

23 Commerce Commission "Further work on cost of capital input methodologies: Process update" (23 June 2014), para 6-7.

24 Submissions on the previous WACC percentile amendment process that we have considered as part of the IM review are those from BARNZ, NZ Airports, Air NZ, AIAL, CIAL, WIAL and Infratil.

25 Commerce Commission "Input methodologies review invitation to contribute to problem definition" (16 June 2015), Topic 7.

26 Commerce Commission "Input methodologies review – Professor Yarrow report and emerging views on the airport WACC percentile" (19 February 2016).

Chapter 3: Use of WACC under information disclosure for airports

Purpose of this chapter

37. This chapter:

    37.1 explains how we envisage the use of a regulatory WACC in the context of information disclosure; and

    37.2 considers advice we received from Professor Yarrow on this topic.

How WACC operates in the context of information disclosure

38. The purpose of information disclosure regulation is to provide sufficient information to interested persons so that they can assess whether the purpose of Part 4 is being met, including whether suppliers of specified airport services are limited in their ability to extract excessive profits.[27]

39. The existing IMs require us to publish the mid-point estimate of the WACC defined by the IMs, together with the 25th and 75th WACC percentile estimates. The range covered by the 25th to 75th percentile WACC estimates form the WACC percentile range. Under information disclosure regulation airports are not required to apply our estimate of the WACC when setting prices.

40. The published WACC range is then used as a benchmark for assessing airport profitability. Interested persons can consider the WACC range together with airport profitability measures (for example, the actual or targeted return on investment) to assess whether individual airports are limited in their ability to extract excessive profits.

41. Airports do not have to apply our forecast of cost of capital when setting prices, or for disclosure purposes. The IM for the cost of capital is applied only by us in order to monitor and analyse information disclosed by the airports.[28]

42. Assessment of profitability can be undertaken on either an *ex-ante* or *ex-post* basis.

Ex-ante assessment

43. As part of the s 56G review described in paragraph 29, we were required to review how effective information disclosure regulation was in promoting the Part 4 purpose for airports. As part of that review, we undertook an *ex-ante* profitability assessment for each of the three regulated airports (ie, we sought to identify the effective returns that each airport was targeting over the forthcoming pricing period).

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27 Commerce Act 1986, s 52A.

28 Section 52T(1)(a)(i) requires the IMs relating to a particular good or service to include an IM for the cost of capital. Airports do not have to apply the cost of capital established under the cost of capital IM for Airports (s 53F(1)). However, we can use the cost of capital IM to "monitor and analyse" information made available by regulated suppliers (s 53F(2)(a)). Airports are also required to disclose our annual published WACC in ex-post disclosures of financial information.

44. Although the s 56G review was a 'one-off' exercise, we would expect to conduct similar assessments of expected profitability over the airport's pricing period (normally 5 years), as part of our general summary and analysis of disclosed price setting event information (s 53B).

45. The current IM review addresses a number of problems our s 56G review identified with the IMs and the information disclosure requirements that made expected profitability assessments difficult for interested parties.[29] In particular, to help provide greater clarity when undertaking *ex-ante* airport profitability assessments we propose to require airports to disclose a headline 'forward-looking profitability indicator'.[30] This profitability indicator is intended to represent an airport's (effective) targeted return. This targeted return can be compared against the WACC to inform an assessment of an airport's expected profitability.

Ex-post assessment

46. Airports are required to provide annual information disclosures that contain information on their realised or actual returns. For *ex-post* (or backward looking) profitability assessments interested persons will be interested in the actual profitability that the airport achieved compared to their targeted return on investment, as well as to the relevant WACC at the time that prices were set.

47. *Ex-post* returns will differ from *ex-ante* targeted returns due to differences between forecast costs and revenues and actual costs and revenues. These differences can have a reasonably large effect on returns and can vary significantly from year to year. As a result, profitability assessments based on *ex-post* returns may need to take place over a sustained period of time. We have therefore focussed to date on *ex-ante* assessments.

48. Also, as noted in the introduction to this paper, the IM review has focussed on proposed amendments to the airport IMs or information disclosure requirements on a forward-looking basis. We have currently only proposed amendments relating to *0* disclosures made by airports where those amendments are required to support our forward-looking profitability assessment.

Advice from Professor Yarrow

49. As part of the IM review, we commissioned independent expert advice from Professor Yarrow on our current use of WACC with regards to information disclosure and in particular our current publication of the WACC percentile range.

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29 For example: Commerce Commission "Report to the Ministers of Commerce and Transport on how effectively information disclosure regulation is promoting the purpose of Part 4 for Wellington Airport, Section 56G of the Commerce Act 1986" (8 February 2014).

30 Commerce Commission "Input methodologies review draft decisions: Topic paper 5 – Airports profitability assessment" (16 June 2016).

50. Professor Yarrow's advice noted that assessing *ex-ante* and *ex-post* returns are "distinct exercises that rely on different types of information".[31] He also emphasised the need to consider airport-specific contexts when making judgments about whether an airport is targeting excessive profitability.[32]

51. In considering the contextual factors (as opposed to rigidly comparing the targeted returns against the WACC), Professor Yarrow notes that:[33]

> Any assessment exercise should properly take account of a range of relevant factors, which it is reasonable to expect will be brought to the attention of the Commission by the airports themselves, as part of any information disclosure exercise.

52. On the specific question of how the WACC should be published in the IMs he suggests:[34]

> Given these points, in my view the purpose of s53A would be best served by publication of the regulator's views on the relevant cost of capital, with no further judgments added. That would involve specification of such parameters of the probability distribution of the WACC as might feasibly be estimated. If legislation or administrative expediency requires a point estimate, this would amount to a single estimate of central tendency (estimate of the mean, median or mode), but additional information on parameters such as the estimated variance, upper and lower bounds, 5th and 95th deciles, skewness, etc. would be of value and would merit publication if considered sufficiently reliable.

53. Another focus of the report is a general recommendation to act proportionately when considering the impact from any deviations from the WACC. We consider that this includes:

    53.1 a proportionate regulatory response as an airport's return diverges further from our estimate of the WACC; and

    53.2 proportionately increasing requirements on an airport to identify and explain any divergence from our WACC estimate as the magnitude of that divergence increases.

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31 George Yarrow's expert advice on airport WACC percentile "Responses to questions raised by the Commerce Commission concerning WACC estimates for information disclosure purposes in the airports sector" (report to the Commerce Commission, February 2016), p.1.

32 George Yarrow's expert advice on airport WACC percentile "Responses to questions raised by the Commerce Commission concerning WACC estimates for information disclosure purposes in the airports sector" (report to the Commerce Commission, February 2016), p.10.

33 George Yarrow's expert advice on airport WACC percentile "Responses to questions raised by the Commerce Commission concerning WACC estimates for information disclosure purposes in the airports sector" (report to the Commerce Commission, February 2016), p.20.

34 George Yarrow's expert advice on airport WACC percentile "Responses to questions raised by the Commerce Commission concerning WACC estimates for information disclosure purposes in the airports sector" (report to the Commerce Commission, February 2016), p.21.

Submissions on Professor Yarrow's advice

54. We received a number of submissions on Professor Yarrow's advice. Submissions from airports tended to agree with his view that a regulator needs to act proportionately, focus on contextual analysis and to identify why there could be legitimate differences between an airports targeted return and the WACC.

55. For example the New Zealand Airports Association (**NZ Airports**) recommend that:[35]

> In our view, if the Yarrow Report was adopted in full by the Commission, key features of profitability assessment in the context of Airport ID would include:
>
> (a) A proportionate contextual analysis, with the objective of seeking to identify clear cases where an airport's use of market power will harm the long term interests of consumers.
>
> (b) De-emphasising (in comparison to past practice) the role of the WACC IM estimate. There should be recognition in the Commission's conceptual framework that the WACC IM may not provide reliable evidence of AEEMP[36] (and, in particular, may not provide reliable evidence of whether airports are limited in their ability to extract excessive profits).
>
> (c) Maintaining a clear distinction between acceptable returns and WACC estimates. (as discussed by Sapere in the enclosed WACC v ROR Report).

56. Similar views were put forward in other airport submissions.[37] A concern from airports was that only publishing a mid-point WACC estimate would ultimately result in that estimate becoming a new 'bright-line' limit. For example, Christchurch airport suggested that:[38]

> the key risk is that in practice the current de facto price control simply moves to the Commission's mid-point estimate of the cost of capital. It will be important that the Commission avoid this scenario by publishing clear statements that any divergence between returns and cost of capital estimates does not indicate a presumption of excess returns, acknowledging a role for assessing the asymmetric risk of forecast error when estimating the cost of capital, and by taking care with any public guidance as to the factors relevant in assessing the performance of airports.

57. Submissions from airlines on Professor Yarrow's report focussed on his views that the complementary nature between aeronautical and non-aeronautical services was an important aspect of airport economics that can put downward pressure on the

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35 NZ Airports "Submission on Commerce Commission emerging views on the WACC percentile for airports" (16 March 2016), para 15.

36 Adverse effects arising from the exercise of market power (AEEMP).

37 Auckland Airport "Response to Commerce Commission's emerging views on the WACC percentile for airports" (16 March 2016), para 6; Wellington Airport "IM review: Professor Yarrow report and emerging views on the airport WACC percentile" (16 March 2016). Christchurch Airport "IM review – Professor Yarrow report and emerging views on the airport WACC percentile" (16 March 2016).

38 Christchurch Airport "IM review – Professor Yarrow report and emerging views on the airport WACC percentile" (16 March 2016), p. 1.

required return of regulated airport revenues. On this point Air New Zealand submitted that:[39]

> Professor Yarrow discusses in some detail the "crossnetwork" and "platform" effects peculiar to airports under which "…it is quite normal to find that rates of return calculated on aeronautical assets (as calculated on a dual till basis) are below estimated costs of capital." Due to the complementary nature of activities, investment in aeronautical activities and facilities improves the overall "attractiveness" of an airport to airlines and passengers, thereby increasing non-aeronautical revenues and resulting in overall returns in line with an appropriate return. The fact that the airports subject to Part 4 regulation earn a significant portion of their overall revenue from unregulated complementary services provides a substantial incentive to invest as "…in considering whether to cut back on an investment programme in the face of lower aeronautical revenues, an airport will tend to give consideration to factors such as the negative effects that cutbacks might have on complementary service revenues." This is a powerful incentive, unique to the airports sector, which is only heightened as a result of the dual till approach New Zealand airports take in their approach to pricing.

58. For this reason, airlines strongly submit we should not set the WACC at a level higher than the mid-point when undertaking an assessment of airport profitability.

59. Airlines noted other reasons for using a mid-point WACC and the limited harm that is likely to arise (in terms of under-investment). These reasons were that airports are only subject to an information disclosure regime, which gives airports commercial freedom, and that airports regularly discuss investment plans with airlines.[40]

WACC vs. allowed rate of return

60. A number of airport submissions made a distinction between WACC as specified in the IMs and an acceptable rate of return. Sapere on behalf of NZ Airports noted that:[41]

> Losing the conceptual distinction between the acceptable rate of return and the cost of capital produces at least two forms of regulatory problem. The first problem arises where regulators place too much focus on one set of numbers – an estimate of WACC – which can lead to attempts to constrain the profitability of regulated entities to a level that is no higher, or not much higher, than the estimated WACC. The second problem arises when regulators attempt to address the first problem by amending the estimate of WACC rather than turning their minds to the acceptable rate of return.

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39 Air New Zealand "Emerging views on the airport WACC percentile" (11 March 2016), p. 2.

40 Covec "Airport WACC: Comments on emerging views and Professor Yarrow" (report prepared for BARNZ, 9 March 2016), para 4.

41 Sapere "The distance between the 'allowed rate of return' and the 'cost of capital'" (report prepared for NZ Airports, 16 March 2016), p. 2.

61. Sapere also noted a number of reasons why it considers a targeted return may be above a mid-point WACC.[42] These reasons include:

    61.1 increased costs from government intervention (or the threat of government intervention);

    61.2 that investors expect to derive a positive net benefit from investment programmes; ensuring incentives to innovate;

    61.3 asymmetries arising from truncation of probabilistic distributions of future rates of return; and

    61.4 the "option values" associated with investments.[43]

62. We agree that care needs to be taken when using the WACC to assess profitability and our emerging views paper outlines how we are attempting to reduce the focus on specific WACC values.

A general uplift to WACC is not appropriate for airports

63. We consider there could potentially be legitimate reasons why the appropriate return targeted by airports is above the mid-point estimate of the WACC.[44] However the key consideration for us when assessing the appropriateness of an airport targeting returns above the mid-point estimate is the extent to which it promotes the long-term benefit of consumers. Any reasoning for setting a targeted return above the mid-point needs to consider this purpose.

64. In general, we consider that the most significant costs to consumers from us setting a WACC that is too low, arise when we use our estimate of WACC to set price-quality paths, resulting in under-investment by the regulated supplier in socially valuable investment. For businesses subject to price-quality regulation, we therefore provide an uplift because we are uncertain of the actual cost of capital of regulated businesses, and there are significant asymmetric consequences from us mis-estimating WACC.[45]

65. The uplift is set at a level that balances the costs to consumers of potential under-investment against the costs of the uplift and takes into account the asymmetric social costs from under-investment as compared to a supplier earning excessive returns or overinvesting.

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42 Sapere "The distance between the 'allowed rate of return' and the 'cost of capital'" (report prepared for NZ Airports, 16 March 2016), p. 7-10.

43 Eg, the benefits that investors derive from an investment as a result of having the ability to expand their supply of additional services at some future date at little additional cost.

44 Commerce Commission "Input methodologies review – Professor Yarrow report and emerging views on the airport WACC percentile" (19 February 2016), para 7.

45 Commerce Commission "Amendment to the WACC percentile for price-quality regulation for electricity lines services and gas pipeline services – Reasons paper" (30 October 2014).

66. For airports, the context is different. Airports, rather than us, determine both:

    66.1 the estimate of WACC that is used to set prices for the pricing period (and each subsequent pricing period of the asset's life); and

    66.2 the estimate of WACC that determines whether and when each investment will proceed.

67. Logically, an airport would use the same approach to WACC for both purposes, thereby ensuring the prices charged for airport services reflect the returns required by the airport to cover all its costs, including its cost of capital, on its investment to provide those services. As a result of using its own estimate of WACC to set its prices, it is not apparent why an airport would defer investment because the WACC (which it sets for itself) is too low.[46]

68. We acknowledge that the airport, like us, does not know the true but unobservable WACC. The airport's estimate of WACC might be an under or over-estimate of the true WACC, but the investment ought not to be deferred because the airport considers the WACC is too low. If the airport has mis-estimated the true WACC, it may experience returns that are different from the return actually required by the market, until it can reset its prices to reflect its revised estimate of WACC

69. Therefore we do not consider that an airport would be able to justify a general uplift to *its own* estimate of the WACC, on the grounds that it was uncertain about its real value and that this would deter investment to socially undesirable levels. That is, we do not consider an airport could justify a general uplift equivalent to our use of the 67th percentile estimate of WACC for setting price-quality paths.

An uplift for business-specific asymmetric risks

70. When setting the original IMs we decided not to make any adjustments to the cost of capital due to asymmetric risk to businesses. We stated that:[47]

> The IMs do not make any adjustments to the cost of capital for asymmetric risk. However, the Commission does consider that it may be appropriate to deal with asymmetric risks through some other forms of adjustment or mechanisms, such as adjustments to regulatory cash flows with the use of flexible depreciation (e.g. add front-loaded depreciation profile in the event that asset standing becomes apparent).

71. There is the potential for businesses to face asymmetric risk (eg, catastrophic risk, stranding risk) and this can be compensated for in different ways. One option would be to add a margin to the allowable rate of return to compensate for asymmetric

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[46] Some components of WACC vary over time, most notably the risk-free rate, and thus the WACC used to evaluate potential investments and that used to set prices could vary from time to time. Airports can manage this risk through their treasury interest rate policies, and by resetting prices from time to time.

[47] Commerce Commission "Input methodologies (Airport Services) reasons paper" (22 December 2010), para E12.1.

risk. This would potentially increase the targeted rate of return above the WACC estimate.

72. Although we are open to this type of approach from airports, we have often considered compensating for these types of risk through other types of adjustment mechanisms (eg, cash-flows adjustments, front-loaded depreciation, and *ex-post* pricing adjustments). Another option is to take into account asymmetric events through input forecasts (eg, adjustments to forecast demand).[48]

73. Whichever method is chosen, an airport would need to demonstrate that the compensation for any asymmetric risk is consistent with the expected costs of those risks. Namely that there is a material truncation of returns on the upside and no protection for downside risks. On the whole we consider that these asymmetric risks are limited for an airport under an information disclosure regime.[49]

74. As part of the Auckland Airport s 56G review, Auckland Airport suggested that it faced asymmetric risks due to "natural disasters, pandemics and terrorist threats".[50] Auckland Airport also provided a report from Uniservices who suggested that we make an allowance for asymmetric risks and that a 1% margin to the WACC would not be unreasonable where "the cashflows are upward "biased" and inadequate allowance is made for all asymmetric risks and other market frictions".[51]

75. We do not consider that any evidence has been presented that would justify such an uplift. A 1% margin to WACC for asymmetric risk would be broadly equivalent to there being a 10% chance that by the end of ten years all of the airport's assets would have become worthless.[52] Airports will also have insurance which covers some asymmetric risk.

76. We also note that the High Court's comments, as part of its judgment on the merits appeal to the setting of the original IMs, agreed with our view that limited evidence

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48 For example, the Civil Aviation Authority (CAA) adjusts forecast demand for expected 'demand shocks'. See: Civil Aviation Authority "Economic regulation at Heathrow from April 2014: Notice granting the licence" (February 2014), para B12-B25. Available at: http://www.caa.co.uk/Commercial-industry/Airports/Economic-regulation/Licensing-and-price-control/Economic-licensing-of-Heathrow-Airport/

49 When considering Orion's application for a CPP, we considered that the materiality of demand risk from one-off infrequent events (Type I risks) would be limited to a well-diversified investor. See: Commerce Commission "Setting the customised price-quality path for Orion New Zealand Limited" (29 November 2013), para C23.2.

50 Auckland Airport "Section 56G review of Auckland airport post-conference submission" (15 March 2013), p. 36-37.

51 Uniservices "The Commerce Commission's Section 56G Review of Auckland International Airport Ltd: Asset Beta for Aeronautical Pricing and Treatment of Asymmetric Risk" (15 March 2013), p. 12.

52 Or an equivalent partial stranding that takes place earlier. This is the implicit hazard rate for a 1% margin to WACC on the expectation of a reduced ten year asset life [10% = 1-exp(-0.01 × 10)]. See Commerce Commission, "Further draft pricing review determination for Chorus' unbundled copper local loop service" (July 2015), para 1362 and Dixit, A.K, and Pindyck, R.S., "Investment under Uncertainty" (1994) Princeton University Press, p. 205.

had been presented to date on how additional compensation for asymmetric risks would provide long-term benefits to consumers:[53]

[1742] As for Type II asymmetric risks, sight seems to have been lost of the fact that this is a risk to consumers: the risk that socially desirable investment will be delayed. No evidence was provided about how the ID regime could adversely affect the timing of airport investment. We accept the Commission's reasons, set out in [1722] above, for making no allowance in the IM. …

[1743] The challenge by the Airports is in some ways curious, since what they can charge is not directly constrained by regulation. Indeed, the AAA empowers an airport to set such charges as it from time to time thinks fit. Moreover, no case was made that the existence of asymmetric risks raises the Airports' actual cost of capital above the estimates made in the usual way.

[1744] We have two final comments. First, this is not the only instance where economic experts have proposed an adjustment, in this case 1.0% – 2.0%, where it is clear that there is no basis for that specific magnitude. We do not accept that this type of expertise provides a basis for making such an estimate or proposal. No-one, economic expert or otherwise, can credibly state that the WACC should be increased by some specific magnitude to account for a given factor except by reference to hard evidence. We consider the 1.0% – 2.0% proposal to be without foundation.

[53] *Wellington Airport & others v Commerce Commission* [2013] NZHC 3289, para 1472-1744.

Chapter 4: Our draft decisions on the WACC percentile for airports

Purpose of this chapter

77. This chapter explains our draft decisions on the WACC percentile for airports and how they deal with the main issues that we have identified.

78. It explains how and why we think we should just publish the mid-point WACC estimate together with an estimate of the standard error of the WACC. It also explains alternative solutions that could be used to fix a specific WACC percentile or continue to provide a range.

Problems with the current approach

79. As discussed in Chapter 2, we consider that there are two related practical problems with the application of the existing IMs regarding the WACC percentile for airports. These problems are that:

    79.1 our publishing of a WACC range has led to the de facto use of the upper limit of the WACC range to assess airport profitability in practice;[54] and

    79.2 there is limited and weak rationale for the use of the 75th percentile as the upper limit of the current WACC percentile range.

80. This raises the danger that the 75th percentile acts as a de facto target, so that where it is used without any justification for pricing purposes, consumers may be paying more with no resultant benefit.

Proposed solution in respect of these problems

81. Our emerging views paper outlined how we consider that the most appropriate change to the IM is to no longer focus on specific WACC percentiles other than the mid-point.[55]

82. We consider that a precisely defined WACC percentile range applied to all airports in all situations is not appropriate for the IMs. Airport-specific factors should be

[54] For example, we have stated "for the purpose of assessing the effectiveness of information disclosure regulation, we consider an acceptable range for targeted returns to lie between the mid-point and 75th percentile estimate of the airport's cost of capital, because that is generally consistent with limiting the ability of the airport to earn excessive profits, while allowing it to achieve at least a normal return. As such, information disclosure would in most cases be seen as effective for expected returns that are targeted within this range. However, even such a conclusion would still require an exercise in judgement, for instance, if a clearly inefficient airport were to consistently targeted returns at, or close to, the 75th percentile", See Commerce Commission, "Final report to the Ministers of Commerce and Transport on how effectively information disclosure regulation is promoting the purpose of Part 4 for Auckland Airport", (July 2013), para 29.

[55] Commerce Commission "Input methodologies review – Professor Yarrow report and emerging views on the airport WACC percentile" (19 February 2016), para 18.

considered when undertaking an assessment of whether individual airports are meeting the purpose of Part 4.[56]

Our proposed solution – Publication of the mid-point and standard error

83. Our preferred solution for the airport WACC percentile is to publish our mid-point estimate of the cost of capital together with our view of the standard error of that estimate. The standard error can be used to determine the probability distribution of the WACC estimate and any individual WACC percentile required.

84. Our intention is for this approach to be combined with modifications to information disclosure requirements to require airports to publish:

    84.1 their own estimate of WACC;

    84.2 the effective rate of return they targeted (ie, the new forward-looking profitability indicator);

    84.3 the equivalent percentiles of our mid-point WACC estimate; and

    84.4 evidence that provides justification for differences between their WACC and our estimate of the WACC; and their targeted return and their WACC.

85. Therefore, we propose to no longer publish the 25th and 75th percentile estimates of the WACC. Instead the IMs will provide the WACC standard error from which any WACC percentile can be calculated.

86. Changes to the timing of our airport WACC determinations are also being proposed as part of the IM review. These timing issues are considered in the separate cost of capital topic paper.[57]

Reasons for preferring this solution

87. Having considered the pros and cons of this and other solutions (including maintaining the status quo), we consider that this approach is likely to contribute to an information disclosure regime that is best able to allow interested parties to assess whether airports are limited in their ability to extract excessive profits or not.

88. This approach would enable a certain amount of flexibility in assessing the acceptability of airport returns and would reduce the focus of any assessment on the upper limit of the WACC percentile range. Such a focus on the upper limit might lead to unjustified over-pricing which would not best promote the long-term benefit of consumers or outcomes consistent with those promoted in workably competitive markets. It is also consistent with the original intentions of the IMs to start any assessment at the mid-point estimate of the WACC.

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[56] For example, taking into account their customer investment requirements, or the extent of their complementary unregulated revenues.

[57] See Chapter 8 of Topic paper 4 – Cost of capital issues.

89. This proposed solution provides flexibility to enable any assessment to take into account different contextual factors affecting the airport's required return expectations, or the expectations of a particular project. These factors could include whether the assessment is taking place on an *ex-ante* or *ex-post* basis, airport-specific circumstances, or other factors that should be taken into account in assessing airport profitability.

90. The proposed solution would not prevent airports targeting (*ex-ante*) returns above the mid-point when they have legitimate reasons for doing so. However, we consider the airports would be required to provide information and evidence to justify those reasons to interested parties. This justification could then be considered in light of the s 52A(1)(d) requirement to limit the ability of airports, as regulated suppliers, to earn excessive profits.

91. We consider that this approach is consistent with both the High Court's view provided in paragraph 27 and with Professor Yarrow's view that there should be an expectation that the airports will provide information on any relevant factors that need to be considered in a profitability assessment.[58]

92. Such evidence will also be relevant to *ex-post* assessments of airport profitability, although we recognise there are a wider range of reasons for *ex-post* profits varying from the mid-point WACC (and targeted returns).

93. Although the onus would be on airports to provide evidence on any relevant factors, ultimately we, and any interested parties, will consider whether those factors are sufficient reasons to justify a targeted return that is higher than our mid-point estimate of WACC.

94. At this stage we do not propose to provide comprehensive guidance on the type of factors that might justify a targeted return higher than the mid-point estimate. We do, however, discuss in Chapter 5, analytical approaches that the airports might adopt. This appears to be consistent with the views from submissions. For example, Wellington airport submitted that:[59]

> We do not see the need for the Commission to publish a list of factors (even if non-exhaustive) that are relevant to assessing airport returns ex ante and ex post, because the relevance of factors will vary depending on the context and over time.

[58] George Yarrow's expert advice on airport WACC percentile "Responses to questions raised by the Commerce Commission concerning WACC estimates for information disclosure purposes in the airports sector" (report to the Commerce Commission, February 2016), p.20.

[59] Wellington Airport "IM review: Professor Yarrow report and emerging views on the airport WACC percentile" (16 March 2016), p. 3.

95. Submissions from airlines suggested that there are no reasons to depart from the mid-point[60] and Covec (on behalf of BARNZ) noted that:[61]

> 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.

Assessment of other potential solutions to these problems

96. As discussed above, our proposed solution for the IMs is to publish a mid-point estimate together with a standard error. Therefore any WACC percentile can be calculated as required.

97. We consider that the two problems identified in paragraph 79 are sufficiently material to justify a change in approach. No submission suggested that we should retain the status quo. Sapere (on behalf of NZ Airports) suggested that there would be "administrative expediency from retaining the existing IM unchanged." However they ultimately proposed an alternative approach that published the WACC at regular percentile estimates.[62]

98. We also considered two alternative potential solutions to the identified problems. These alternatives were to:

    98.1 determine one specific point estimate that would act as the benchmark; and

    98.2 publish a wide range of WACC percentile estimates (eg, every 5th percentile).

Alternative option 1 – Determine a specific point estimate

99. A further option that was considered was to publish a specific WACC percentile point estimate in addition to the current WACC percentile range.

100. The specific point estimate would be the percentile that appropriately balances the relative costs to consumers of under- and over-investment, in light of the overall purpose of Part 4. This would be analogous to the use of the 67th percentile used for energy businesses but would be estimated for the airports to take into account differences between the sectors.

101. Submissions from airlines generally supported this approach on the basis that the specific percentile chosen would be the mid-point estimate. For example the Board of Airline Representatives New Zealand (**BARNZ**) suggests that:[63]

> There is no case for justifying targeting returns in excess of the WACC mid-point. Doing so would not be consistent with the purpose of Part 4.

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60 Air New Zealand "Emerging views on the airport WACC percentile" (11 March 2016), p. 3.

61 Covec "Airport WACC: Comments on emerging views and Professor Yarrow" (report prepared for BARNZ, 9 March 2016), para 40.

62 Sapere "The distance between the 'allowed rate of return' and the 'cost of capital'" (report prepared for NZ Airports, 16 March 2016), p. 12.

63 BARNZ "Emerging views on airport WACC percentile" (11 March 2016), p.2.

> Because there is no case for departing from the mid-point of the WACC distribution Covec sees no reason or merit to develop quantitative models for estimating a WACC percentile other than the mid-point, or a probability distribution.

102. However, it is not necessarily the case that the specific percentile chosen would be the 50th percentile. Any percentile would have to balance relative costs to consumers of under- and over-investment, which could result in a higher percentile than the mid-point.

103. We consider that determining a specific percentile in this way is not consistent with our view that the appropriate percentile is potentially different for each airport and potentially differs between particular projects. It is also unlikely to be consistent over time.

104. We consider that allowing flexibility in how a WACC applied to the assessment of airport profitability is determined is a more appropriate approach. Justification for adopting an estimate of the WACC above the mid-point estimate should be made on a case-by-case basis. We therefore consider that a focus on a specific percentile is not an appropriate solution for airports.

Alternative option 2 – Publishing a wider range of percentile estimates

105. We suggested in the emerging views that one potential solution would be to publish a wider range of percentile estimates. For example, we could publish every 5th percentile. (ie, 5th, 10th, 15th etc.)

106. Submissions from airports strongly agreed with this option.[64] For example NZ Airports submit:[65]

> Accordingly, NZ Airports supports the Commission's proposal to simply publish WACC estimates at every 5th percentile (eg 5th to 95th). This is the best way for the published WACC to signal that it is an uncertain estimate, while discouraging comparisons between returns and any defined percentile estimates.

107. We agree this option provides flexibility and will help convey the view that a single WACC percentile may not be appropriate for all situations. It would give us the ability to choose the most appropriate percentile estimate to use in a profitability assessment.

108. However, we have rejected this approach compared to our proposed solution because it maintains a focus on numerical percentile estimates. Consistent with Professor Yarrow's advice we wish to de-emphasise the specific WACC percentiles and encourage airports to fully disclose the specific evidence and reasoning behind

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64 Auckland Airport "Response to Commerce Commission's emerging views on the WACC percentile for airports" (16 March 2016), para 13; Wellington Airport "IM review: Professor Yarrow report and emerging views on the airport WACC percentile" (16 March 2016), p. 3.

65 NZ Airports "Submission on Commerce Commission emerging views on the WACC percentile for airports" (16 March 2016), para 22.

each divergence from the mid-point estimate. Instead we wish to focus more on the reasoning for any difference with an airport's targeted return – albeit with the ability to calculate any percentile estimate as required.

109. We note the concerns airports have around the potential for interested parties to misinterpret our approach as moving to a 'bright-line test' based on the mid-point estimate of the WACC.[66]

110. We agree with submissions that the mid-point estimate is not supposed to be a bright-line test. However, we consider that the concern about the potential for misinterpretation of our approach is overstated when compared to the disadvantages of calculating a large number of different percentile estimates. We consider that our reasoning is clear and our proposed solution that allows specific percentile estimates to be calculated when required will become embedded over time.

[66] Auckland Airport "Response to Commerce Commission's emerging views on the WACC percentile for airports" (16 March 2016), para 12.

Chapter 5: Consideration of the rationale for an uplift

Purpose of this chapter

111. This chapter explains:

111.1 why an airport's targeted return could legitimately be above our mid-point estimate and how that might be justified;

111.2 why we consider the ability of the WACC to constrain airport investment is more limited than for energy businesses;

111.3 why our consideration focusses on the potential asymmetric consequences to consumers from us mis-estimating the WACC; and

111.4 how we consider a quantitative model could be used to inform what percentile estimate appropriately balances the costs to consumers of under-investment against the costs to consumers of over-investment and/or price increases.

Airports' targeted return

112. An airport's return on investment may differ from the specified mid-point estimate of the WACC outlined in the IMs because:

112.1 an airport's own estimate of the cost of capital is different from that estimated by us; and/or

112.2 an airport is targeting returns above (or below) its estimate of the WACC.[67]

113. We also consider that a key aspect of our proposed approach is for airport disclosures to separately identify the different factors that result in an airport's targeted return on investment being above (or below) our mid-point estimate for the cost of capital.

114. In particular, airports would need to identify factors which result in different mid-point estimates of the cost of capital (eg, due to a different methodological approach) from factors that could justify an uplift to a mid-point estimate (e.g. any asymmetric risks (such as catastrophic risk) or factors that warrant a further margin to arrive at the targeted return).

115. We would also expect greater justification, reasoning and evidence to be required as any divergence from the mid-point increases. Such reasoning and evidence should be

[67] We describe in paragraph 66 why we do not consider that an airport should be necessarily targeting returns above its own estimate of the cost of capital given the information it has to inform its estimate. However as also noted it is possible that there may be other justifiable reasons for targeting a return above the mid-point (for example, a potential margin due to asymmetric risks not incorporated in the WACC calculation).

specific to the circumstances of the airport or specific project at the time of the estimate. Relying on generic arguments concerning other airports or other time periods will not be considered sufficient, in our view.

Potential for our estimate of the WACC to constrain airport investment

116. Our rationale for providing a WACC uplift for energy businesses is based on the potential for negative consequences for consumers from under-investment which arises as a direct result of the risk that our WACC estimate of the actual cost of capital of regulated suppliers used to set price-quality paths is too low.

117. The link between the WACC under information disclosure and the impact on airport behaviour is a more complex relationship. It depends on the expectation of potential future behaviour by the regulator if an airport's targeted return diverges from the mid-point estimate of the WACC.

118. ID and the potential threat of further regulation combine to potentially act as a constraint on airport behaviour. Clearly, the level of our estimate of WACC will have some effect on airport behaviour. For example, Wellington airport revised its prices following our review of its performance in the s 56G report.[68] We recognise this could, potentially, adversely affect investment where we have mis-estimated the WACC.

119. However, we do not consider the link between our mid-point estimate of WACC and investment is as strong as the case of a supplier subject to a price-quality path. Under price-quality regulation there is a specific revenue allowance based on our estimate of the WACC. Airports are only subject to information disclosure – this means that the regulated WACC is not as strong a binding constraint on the airport's pricing and investment decisions.

120. This linkage will also be related to our approach to ID and assessment of airport conduct. As we lay out in this paper, we accept there may be reasons why a departure from our mid-point WACC could be justified. We would expect the Airport would be well placed to evidence the reasons to both its customers and the Commission as to why a targeted return in excess of the mid-point WACC is required to fund investment which is to the long-term benefit of consumers.

121. Consequently we consider the risk of our estimate of WACC constraining investment, to the long-term detriment of consumers, is much lower for airports.

122. In addition, even where the regulatory WACC is a potentially binding constraint on an airport's targeted return, there are other airport-specific factors which may mean this has a more limited impact on investment than in the energy sector. These were

[68] Commerce Commission "Commerce Commission "Report to the Ministers of Commerce and Transport on how effectively information disclosure regulation is Promoting the purpose of Part 4 for Wellington Airport – Section 56G of the Commerce Act 1986" (8 February 2013).

previously outlined in the problem definition paper and emerging views paper.[69] Namely that airports:

122.1 are subject to a dual till structure (whereby they can earn significant amounts of revenue from unregulated complementary activities) – this means that aeronautical investments are likely to take place even in instances when the regulated return is too low if the difference can be made up from complementary unregulated revenue streams;

122.2 have regular consultations with a small number of engaged customers – this engagement protects against under-investment because airlines can identify investment that they are willing to pay for (which is likely to be the majority of efficient investment in regulated airport services); and [70]

122.3 there could be other regulatory requirements (such as safety) that result in the investment being made.

123. Of these reasons, the value of complementary revenue streams perhaps provide the strongest rationale for the limited ability of our estimate of WACC to constrain airport investment.

124. The value of complementary services can be illustrated by determining the relative value of unregulated revenue streams compared to regulated investments. For example, as noted by MEUG, the Auckland Airport share price implies that the value of unregulated revenue streams are equivalent to 84% of the total enterprise value of an airport.[71] However, unregulated revenue streams make up only 30% of the total operational costs and 48% of property, plant and equipment of Auckland airport.[72]

125. This illustrates there is a significant amount of Auckland airport's value that is associated with unregulated, complementary revenue streams. Given the value of these revenue streams that are associated with a significant proportion of airport investment, it is less likely such investment would be constrained by the Commission mis-estimating the mid-point WACC.

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69 Commerce Commission "Input methodologies review invitation to contribute to problem definition" (16 June 2015), para 395, Commerce Commission "Input methodologies review – Professor Yarrow report and emerging views on the airport WACC percentile" (19 February 2016), para 16.

70 Through consultation (including that required by the Airport Authorities Act), airlines can identify investment that they are willing to pay for, which is likely to be the majority of investment in regulated airport services.

71 MEUG "Comments on advice by Dr Lally to the Commerce Commission on WACC issues" (24 March 2016), para 17-18.

72 Auckland Airport "Specified Airport Services Annual Information Disclosure For the year ended 30 June 2015" (2015).

126. There may be some classes of investments in regulated services where non-regulated revenues have a limited impact on the decision to invest.[73] This could be the case where such an investment would not generate any increased passenger numbers and therefore not generate additional revenue from non-regulated services. However, we have little evidence on how significant this may be. In at least some cases where the investment provides operational benefits to airlines, but not directly to passengers, the impact on revenue from non-regulated services still appears potentially significant because it is likely to increase the attraction for airlines to use the airport and thus increase passenger numbers (or prevent a decrease).

Are there asymmetric consequences from us mis-estimating the airport WACC?

127. Under the circumstances in which our estimate of WACC *is* deemed to have an influence on investment decisions made by airports, then an uplift could be justified if the benefits to consumers from the higher WACC outweigh the costs of the higher prices that will result from an additional uplift on the WACC. This was the rationale used to determine an uplift for energy businesses.

128. For energy businesses we applied an uplift because there is a potential for us to misestimate the WACC (because it cannot be observed) and it can result in a material asymmetry of outcomes. The extent to which we expected to mis-estimate the WACC is defined by our estimate of the WACC standard error.

129. For electricity and gas businesses we concluded that there were significant asymmetric consequences from this potential mis-estimation (ie, the losses to consumers were significantly greater from underestimating the WACC than from overestimating the WACC) and so we provided an uplift to the mid-point estimate of the WACC to mitigate that effect. The WACC for price-quality paths was set at the 67th percentile.[74]

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[73] Dr Harry Bush and John Earwaker suggest some examples of investments on which unregulated revenue streams will have little or no impact. These include in: investments which deliver operational benefits to airlines or better facilitation of freight. Dr Harry Bush and John Earwaker's submission on the problem definition paper "Evidence relating to the assessment of the WACC percentile for Airports" (report prepared for NZ Airports), 21 August 2015), p. 37.

[74] Commerce Commission "Amendment to the WACC percentile for price-quality regulation for electricity lines services and gas pipeline services – Reasons paper" (30 October 2014), Chapter 6.

130. The choice of this percentile was informed by our view on how much lower than actual WACC our estimate of WACC for energy businesses under price-quality paths would need to be to constrain investment. We considered this deviation could be in the order of a 0.5% before investment was affected (this value has sometimes been called the 'margin of error').[75] The costs to consumers associated with the risk of under-investment were assumed to relate to major supply outages in particular. Therefore to determine the potential cost to consumers we estimated the cost of major supply outages.

131. For airports the context again appears different. Given the factors given in paragraphs 121–122 there are strong drivers for certain types of investment. Any under-investment that does occur is also less likely to result in major supply outages. In general we expect any under-investment to instead result in delays to capacity expansion which is likely to lead to a lower quality of service (such as delays at peak time or shifting of demand out of peak periods).

132. We note that while there is a potential for under-investment of this type to reduce service quality, we consider the costs to consumers are likely to be lower than in the energy sector. For example:

    132.1 the under-investment generally results in lower quality not complete removal of service (though increased congestion does result in additional costs to some end-users); and

    132.2 the potential for some users to adapt travel arrangements (eg, alternative timing or transport).[76]

133. The general deterioration in quality (including congestion) is likely to build up steadily over time and be visible to consumers. This provides opportunities for airports and airlines to find solutions to problems before the total cost to consumers becomes too large. This contrasts with energy businesses, where under-investment may only become apparent after an extended period of under-investment and is revealed by an event (such as a major outage) that can cause large costs to consumers.

134. As a result we consider that these considerations mean the case for an uplift seems significantly weaker for airports than for energy businesses.

Application of a quantitative framework

135. There are potentially a number of reasons why an airport's targeted return may be appropriately higher than our mid-point WACC. Similarly, there are different methods by which any uplift could be demonstrated and quantified by an airport.[77]

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[75] Ie, we assumed that underinvestment would only take place if our estimate of the WACC was lower than the true WACC by a margin of more than 0.5%.

[76] This could include alternative airports for some customers.

136. We have previously considered one possible reason for an uplift, namely the uncertainty over the estimation of the WACC which can potentially lead to under-investment with an asymmetric risk on consumers. In considering this issue, we have previously applied a quantitative framework approach to help inform us in determining the most appropriate percentile for energy businesses.[78]

137. We also considered using this type of analytical framework to help consider whether an uplift was appropriate for the cost of capital for a hypothetical telecommunications operator when setting the UCLL/UBA final pricing principle.[79] However, we ultimately determined that the link between the WACC and effect on investment was not sufficient to justify any uplift.[80]

138. If we were to apply a similar approach to airports, the steps would be to:

    138.1 Estimate the direct costs of a WACC uplift from an increase in regulated prices.

    138.2 Estimate the potential benefits of a WACC uplift using two key inputs:

        138.2.1 the potential for our estimate of the WACC to affect the airport's targeted return and for this to constrain airport investment; and [81]

        138.2.2 the size of net annual lost benefits from investments that are not undertaken in the absence of a WACC uplift.

    138.3 Using these two inputs, estimate the total net annual lost benefits to consumers from using a particular WACC percentile estimate.[82]

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77 We recognise the difference between an airport's targeted rate of return and our mid-point estimate of WACC may comprise several factors. For example, a difference in view on what the WACC is as well as a view that an uplift to the WACC is required to justify investment. We would expect each element of difference to be separately explained and evidenced.

78 This framework was originally developed by as part of the WACC percentile amendment project for energy businesses. See: Commerce Commission "Amendment to the WACC percentile for price-quality regulation for electricity lines services and gas pipeline services – Reasons paper" (30 October 2014)., para 5.18-5.29.

79 Commerce Commission "Agenda and topics for the conference on the UCLL and UBA pricing reviews" (2 April 2015), Attachment C.

80 Commerce Commission, "Cost of capital for the UCLL and UBA pricing reviews: Final decision" (15 December 2015), para 279.

81 When considering this uncertainty for energy businesses, Oxera considered that a 0.5–1.0% difference between the actual and assumed WACC would be likely to result in a move away from capital investment in energy networks. See: Oxera "Input Methodologies: Review of the '75th percentile' approach" (23 June 2014), p. 5. The 0.5-1% value was subsequently described as the 'margin of error'.

82 The 'margin of error'.

138.4 Alternatively, the framework can determine the value of total net annual lost benefits (as a proportion of the regulated asset base) that would be required to justify an uplift.

139. This quantitative framework is less applicable to airports under an ID regime. Where an airport knows the targeted rate of return it requires to undertake investment it does not follow that quantifying the cost of mis-estimating the WACC is the best evidence. Rather evidence on why the targeted return needs to be higher than the Commission's mid-point estimate of WACC in the airport's specific circumstances and evidence on the long-term benefits to consumers from the specific investment being considered is more relevant. We would then consider this evidence when forming any view about an airport's targeted returns.

140. Given the importance of contextual factors, we consider airport-specific evidence is very relevant when making judgements in this area.

Evidence from submissions

141. This section considers the evidence from submissions for the assumptions for the two key inputs outlined above that would be needed to apply the quantitative framework outlined in the section above:

141.1 the ability of the regulatory WACC to constrain airport investment; and

141.2 the size of net annual lost benefits from investments that are not undertaken in the absence of a WACC uplift.

Submissions on the potential for the airport WACC to constrain investment

142. NZ Airports submitted that they disagree with the three main reasons why we considered that our estimate of the airport WACC is likely to have a lower impact on airport investment than for the equivalent impact on energy businesses subject to a price-quality path.[83]

143. In particular NZ Airports considers that airline consultation does not guard against under-investment:[84]

> The Commission's proposition is in fact the opposite of what typically occurs in practice, as airlines may have:
>
> (a) a strong incentive to lobby against additional investment; and
>
> (b) neither the incentive, nor the ability, to encourage an airport to undertake additional investment.

[83] These are described in paragraphs 121-122.

[84] NZ Airports "Submission on Commerce Commission's input methodologies review: Invitation to contribute to problem definition" (21 August 2015), para 143 and 144.

> In other words, while airline consultation plays an effective role in guarding against over-investment, it is unlikely to mitigate the risk of under-investment. In terms of the former, there are numerous cases of where airlines have sought to delay or prevent investment from proceeding.

144. NZ Airports also outlines how it considers that the current regulation places a strong limit on returns:[85]

> The WACC IM presents a very real limit on airport pricing decisions, as the Commission has adopted the approach that all returns in excess of the WACC range are excessive. The s56G reviews also suggest that it would be unsafe for an airport to assume that there will be no adverse consequences from targeting returns in excess of those implied by the WACC IM.

145. On the dual till aspect it considers:[86]

> In summary, if such an approach resulted in the WACC for regulated activities being lower than it otherwise would (it is far from clear this is the correct outcome), then it would mean that the presence of non-regulated activities has a punitive or adverse impact on the regulated activities, contrary to the separation established by the statutory dual till.
>
> There will always be a need for airport investments that are for aeronautical facilities, and which will have no major impact on passenger throughput or flow-on effects to non-aeronautical profits. The dual till thus has limited relevance to these types of investments (ie safety-related investments such as runway-end safety areas, asset and airfield maintenance and improvements, and facilities for the servicing of aircraft).
>
> Moreover, competition will often force non-aeronautical services to be supplied at a price that reflects a normal return.

146. BARNZ cross-submitted disagreeing with NZ Airports' conclusions. On the dual till point they consider that:[87]

> In BARNZ's view, the presence of the ability for airports to earn additional revenue from the provision of these complementary services already provides additional incentive to airports to invest in maintaining or adding aeronautical capacity. It is not necessary for airports to set charges above the mid-point estimate of a normal return in order to be incentivised to innovate and invest.

147. On the impact of airline consultation, BARNZ suggest that airlines do in fact support projects when they are justified.[88]

> NZ Airports has alleged that far from guarding against under-investment, airlines actually have a strong incentive to lobby against additional investment, and have in 'numerous cases' sought to delay or prevent investment from occurring.

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85 NZ Airports "Submission on Commerce Commission's input methodologies review: Invitation to contribute to problem definition" (21 August 2015), para 149.

86 NZ Airports "Submission on Commerce Commission's input methodologies review: Invitation to contribute to problem definition" (21 August 2015), para 156.

87 BARNZ "Cross-submission on problem definition submissions" (5 September 2015), p. 5.

88 BARNZ "Cross-submission on problem definition submissions" (5 September 2015), p. 6.

> This allegation of airlines engaging in anti-competitive behaviour in order to keep facilities at a constrained level and exclude new entrants from the market is a theme which the airports have repeated in a number of their previous submissions.
>
> BARNZ strongly refutes it. In our experience, when a project is justified, current airlines operating into the New Zealand airports support it and are willing to pay the resulting charges. Congestion or capacity constraints do not just affect new entrants. They also prevent current operators from adding new services, upgauging or increasing frequencies. Moreover, even if an existing airline was not planning to increase capacity or services, congestion or capacity constraints would have negative operational impacts on all existing carriers, resulting in increased operating costs, a lower level of service or delays to on time departure.

148. There is a clear divergence of views on these issues. However, submissions on this topic have not changed our view that these factors will have a significant effect on airport investment decisions. We continue to consider that the regulatory WACC will have a lower impact on investment decisions compared to the energy sector.

149. We agree with airports that there can be *some* investments that may not be influenced by the revenue of complementary services and there may be *some* investments in which the interests of airlines and end consumers are not aligned. However, when considering the total amount of investment undertaken by airports we consider that there is only a limited amount of investment that is not subject to these factors. In addition, the nature of information disclosure regulation, and the ability of airports to set their own prices, further reduces the chances of the WACC having a significant impact on airport investments.

150. When assessing the justification for an uplift the direct costs of an uplift need to be assessed against the cost of under-investment. If only a low proportion of total investment is deemed to be influenced by the regulatory WACC then the costs to consumers of that investment not proceeding need to be higher to justify any uplift.

151. Sapere provided a report applying a similar quantitative framework approach that we have used to consider the appropriateness of an uplift in the energy and telecommunications sectors.[89] Sapere maintained the value of 0.5% as the assumed divergence between the estimated and actual WACC that would lead to under-investment. This was the value that was used for energy businesses in the model provided by Oxera. Sapere noted that:[90]

> Oxera provided no evidence to support their contention that setting a regulatory WACC up to 0.5% below actual WACC would have no impact on investment in the energy sector. There are many reasons why the relationship between the risk of underestimating WACC and the

[89] Sapere made some minor changes to the framework (ie, to the estimate of the standard error and the costs of additional investment), however we do not think these changes are sufficiently material impact on the overall conclusions. Sapere "Asymmetric impact on consumers from underinvestment by airports – an indicative view" (report prepared for NZ Airports, 17 March 2016).

[90] Sapere "Asymmetric impact on consumers from underinvestment by airports – an indicative view" (report prepared for NZ Airports, 17 March 2016), para 32.

> risk of outages may not hold in the manner assumed by Oxera. However, we carry these assumptions forward without amendment. This allows us to test the Commission's presumption that the potential asymmetric impact on consumers from underinvestment are likely to be weaker for airports compared to electricity and gas businesses using the Oxera framework. As noted earlier, we do not consider in this report the relative likelihoods of under versus over investment (that is, the second step in determining the asymmetry).

152. We disagree with this assumption. We consider that there is a strong rationale for assuming that this 'margin of error' (ie, the difference between the regulatory WACC and the true WACC that would lead to a material impact on investment) would be higher for airports than for energy businesses. In particular the complementary revenues earned on non-aeronautical activities may increase this 'margin of error' required to impact on investment decisions on aeronautical activies.

153. In other words, we consider that our estimate of the WACC would have to be lower than the true WACC by a more significant degree for airports than for energy businesses in order to significantly impact investment.

Size of net annual lost benefits from investments

154. The second key input required to assess whether an uplift is justified is an evaluation of the lost benefits (costs) to consumers from under-investment.

155. Sapere's report provides an estimate of these costs using two different methods. The first method is to use existing studies on the costs of airport delays, while the second method undertakes bottom-up analysis of estimated costs.[91]

156. The first method results in two separate estimates based on different studies:

156.1 The first estimate is derived from US studies that suggest the economic cost of air traffic delays was between 0.2-0.3% of GDP. Their conversion to an equivalent New Zealand cost results in an annual cost to consumers of $472m to $618m.[92]

156.2 The second estimate (of the first method) uses a UK study that estimates the cost of failing to alleviate capacity constraints at the UK airports. A New Zealand estimate of $90m p.a. is estimated by assuming similar costs in New Zealand as a proportion of GDP.[93]

157. The second method applies a bottom-up approach to the cost of delay. It assumes that:

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91 Sapere "Asymmetric impact on consumers from underinvestment by airports – an indicative view" (report prepared for NZ Airports, 17 March 2016), para 53.

92 Sapere "Asymmetric impact on consumers from underinvestment by airports – an indicative view" (report prepared for NZ Airports, 17 March 2016), para 55.

93 Sapere "Asymmetric impact on consumers from underinvestment by airports – an indicative view" (report prepared for NZ Airports, 17 March 2016), para 58.

157.1 under-investment in airports results in a 5 minute delay for all flights;

157.2 an estimate of the number of passengers affected; and

157.3 a Value of Travel Time (VoTT) of ~$59 per hour for each passenger affected.

158. Using these assumptions the annual cost of delay from under-investment is estimated as $350m.

159. After estimating these costs Sapere calculates the ratio between the estimated costs to consumers from under-investment against a range of different percentile estimates.

160. Two of the estimates (using the US study and the bottom-up approach) imply higher asymmetric impacts from under-investment in the airport sector. They imply that these estimated costs would justify a higher uplift than for the energy sector. The other estimate (using the UK study) results in lower asymmetric effects and therefore potentially a lower uplift.

161. From this Sapere conclude that:[94]

> Taken as whole, the illustrative estimates suggest that the asymmetry in the airport sector would appear to be stronger, rather than weaker, than the asymmetry the Commission observed in relation to electricity network investment.

Assessment of Sapere cost estimates

162. We do not consider that the evidence is sufficient to arrive at the conclusion reached by Sapere. Estimating the costs to consumers from airport under-investment is a difficult exercise that relies on a number of assumptions. However our high level consideration of the assumptions indicates reasons why these relevant costs are likely to be lower than suggested.

163. Firstly, we do not think it is appropriate to consider the total cost of airline delays without considering the reasons for the delay. Under this framework, only delays that are a direct result of airport under-investment are of interest. Many delays covered by the cost estimates are likely to be caused by airline issues (plane maintenance/replacement, staffing issues, etc.) and so would have nothing to do with airport investment.

164. This assessment is also borne out by data from the US Bureau of Transportation Statistics which suggests that in 2015 only 22.9% of delays were caused by 'National Aviation System Delays' which included (amongst other issues) airport operations.[95]

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94 Sapere "Asymmetric impact on consumers from underinvestment by airports – an indicative view" (report prepared for NZ Airports, 17 March 2016), para 82.

95 U.S. Department of Transportation, Bureau of Transportation Statistics, Office of Airline Information, Delay Cause data, available at: http://www.rita.dot.gov/bts/help/aviation/html/understanding.html (Accessed 20 May 2016).

Restricting the costs to those delays actually caused by airport under-investment would be likely to significantly reduce the cost estimates based on airline delays.

165. A more relevant method would therefore be to focus more specifically on costs directly linked back to under-investment. This is the approach taken by the UK study used by Sapere. Sapere's estimate of costs using this study implies lower asymmetric costs from under-investment in airports than for energy businesses. This is consistent with our view, but contrary to Sapere's overall conclusion.

166. Even the cost estimate derived from the UK study may need to be further refined. For example:

166.1 Airport capacity constraints in the UK are much more significant than in New Zealand (mostly due to planning/environmental issues) and have built up over a long period of time.[96] It is not clear that similar long-term under-investment would arise in New Zealand without resulting in a response from airports or wider stakeholders.

166.2 The data in the UK report refers to all UK airports and the wider economic costs of constraints - it might be less here as we are only considering three New Zealand airports and are focussed on the costs to end-users.[97] In general we consider it is important that any cost estimates of this type are shown to apply in the New Zealand context.

166.3 The costs outlined in the UK report are based on alleviating capacity constraints to increase passenger numbers and these increased passenger numbers will generate additional non-aeronautical revenue. Therefore the costs outlined are not relevant to the types of investment that NZ Airports have previously submitted require an uplift to the WACC because they will not result in complementary revenue streams.[98]

167. After considering submissions and re-assessing the rationale for a WACC uplift, we continue to consider that the rationale for applying an uplift in the airport sector on the grounds of the asymmetric costs arising from under-investment linked to our

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[96] NZ Airports have suggested that costs would likely progressively increase over time, the expected costs over the next 10-20 years are probably much lower in NZ. If this is true, it may not be in the interests of consumers to apply an uplift to prices today, but instead it should only be applied if capacity constraints become a more significant issue at some point in the future. NZ Airports "Submission on Commerce Commission's input methodologies review: Invitation to contribute to problem definition" (21 August 2015), para 135.

[97] The overriding purpose that provides context for our decision on the WACC percentile for energy businesses is promoting the long-term benefit of consumers of the relevant regulated service, and this purpose reduces the emphasis on wider economic impacts. See: Commerce Commission "Amendment to the WACC percentile for price-quality regulation for electricity lines services and gas pipeline services – Reasons paper" (30 October 2014), para 2.33.

[98] NZ Airports "Submission on Commerce Commission's input methodologies review: Invitation to contribute to problem definition" (21 August 2015), para 159.

estimate of WACC is weaker than for other sectors. We have not been provided with any evidence in submissions that changes our view on this point.

168. However, we continue to be open to reasoning from airports as part of information disclosure as to why they consider an uplift to WACC is necessary when making a comparison against their targeted or actual return.