

Input methodologies review decisions

Topic paper 6: WACC percentile for airports

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Associated documents

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20 December 2016	978-1-869455-44-6	Input methodologies review decisions: Introduction and process paper
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20 December 2016	1178-2560	<i>Electricity Distribution Services Input Methodologies Amendments Determination 2016 [2016] NZCC 24</i>
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20 December 2016	1178-2560	<i>Gas Transmission Services Input Methodologies Amendments Determination 2016 [2016] NZCC 26</i>
20 December 2016	1178-2560	<i>Transpower Input Methodologies Amendments Determination 2016 [2016] NZCC 27</i>
20 December 2016	1178-2560	<i>Airport Services Input Methodologies Amendments Determination 2016 [2016] NZCC 28</i>
20 December 2016	1178-2560	<i>Airport Services Information Disclosure Amendments Determination 2016 [2016] NZCC 29</i>

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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 identified within this topic area;
 - X1.2 our solutions to these problems;
 - X1.3 the reasons for our chosen solutions; and
 - X1.4 how we have taken stakeholders' submissions into account in considering the above.
- X2. This paper relates to regulated suppliers of specified airport services, and will also be of interest to airlines, industry representatives and other stakeholders interested in information disclosure (**ID**) regulation.

Overview of the airports WACC percentile topic

- X3. The previous input methodologies (**IMs**) approach included 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 ID regulation. However, as part of this review we identified two problems with the application of the previous 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 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 changes in relation to this topic

Change	Outcomes of the change	Chapter
<p>Remove a specific WACC percentile range for ID. 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.</p>	<p>We consider that our change will contribute to an ID framework that is best able to allow interested parties to assess whether airports are extracting excessive profits or not. As a result, this approach best promotes the long-term benefit of consumers.</p> <p>This change 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.</p> <p>It will also provide flexibility to enable any assessment to take into account different contextual factors affecting an airport's required return expectations, or the expectations of a particular project.</p>	<p>This change is discussed in Chapter 4.</p>

- X6. This topic paper forms part of our package of decision papers on the IM review. As part of the package of papers, we have also published:
- X6.1 a summary paper of our decisions;
 - X6.2 an introduction and process paper which provides an explanation of how the papers in our decisions package fit together;
 - X6.3 a framework paper, which explains the framework we have applied in reaching our decisions on the IM review;
 - X6.4 a report on the IM review, which records our decisions on whether and how to change the IMs as a result of the IM review overall; and
 - X6.5 amendment determinations, which give effect to our decisions.

Chapter 1: Introduction

Purpose of this paper

1. The purpose of this paper is to explain in relation to the airports weighted average cost of capital (**WACC**) percentile topic:
 - 1.1 the problems we identified within this topic area;
 - 1.2 our solutions to these problems;
 - 1.3 the reasons for our chosen solutions; and
 - 1.4 how we have taken stakeholders' submissions into account in considering the above and in deciding on our solutions to problems identified within this topic.

Where this paper fits in to our package of decisions papers

2. This topic paper forms part of our package of decisions papers on the input methodologies (**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 decisions package.¹
3. This paper explains our 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 solutions involve changes to the IMs, this paper identifies how we have changed our previous IM decisions to account for our solutions to problems within this topic area. The report on the IM review then collates our changes to the previous IMs and presents them as decisions to change the IMs.⁴
5. Our amendments to the IMs, including any resulting from this topic area, are shown in the amendment determinations.

¹ Commerce Commission "Input methodologies review decisions: Introduction and process paper" (20 December 2016).

² Commerce Commission "Input methodologies review decisions: Topic paper 4 – Cost of capital issues" (20 December 2016).

³ Commerce Commission "Input methodologies review decisions: Topic paper 5 – Airports profitability assessment" (20 December 2016).

⁴ Commerce Commission "Input methodologies review decisions: Report on the IM review" (20 December 2016).

6. The framework we have applied in reaching our 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 changed the IMs where this is 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 previous range for airports and why we identified it as an issue to address as part of the IM review;
 - 8.2 Chapter 3 explains how we will use a regulatory WACC in the context of information disclosure (**ID**);
 - 8.3 Chapter 4 explains our decisions on the WACC percentile for airports and how they deal with the main issues that we 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 explained with evidence.
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 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

⁵ Commerce Commission "Input methodologies review decisions: Framework for the IM review" (20 December 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 previous WACC percentile range for airports (ie, the 25th to the 75th percentiles) and whether another approach might better promote the Part 4 purpose.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 ID. We subsequently commissioned Professor Yarrow to consider the impact of our WACC percentile estimate on airports through ID 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 the 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, submissions on our draft decisions, and stakeholder comments on the emerging views paper and Professor Yarrow's advice have informed our decision.

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).

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;
 - 16.2 Wellington Airport; and
 - 16.3 Christchurch Airport.
17. This paper may also be of interest to other stakeholders interested in ID regulation of the airport sector. For example, exempt electricity distributors who may see some parallels with ID for airports.¹²

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.

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

Purpose of this chapter

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

WACC percentile range

19. 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 ID to help interested parties assess airport profitability. The airport cost of capital IM specifies how this WACC is determined.¹³
20. The WACC must be estimated because 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.
21. To illustrate the potential for estimation risk, the previous IMs included a WACC percentile range based on the 25th to 75th percentile estimates of a probability distribution of the WACC estimate.¹⁴ The probability distribution was determined from our estimate of the standard error of the WACC.¹⁵
22. The previous IMs required us to publish a WACC estimates for the 25th, 50th and 75th percentiles (WACC percentile range). However, the IMs do not specify how the WACC should be used by interested parties when assessing profitability. In the 2010 IM reasons paper we stated that the appropriate starting point for any assessment of airport profitability is the 50th percentile.¹⁶

¹³ 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 decisions: Topic paper 4 – Cost of capital issues" (20 December 2016).

¹⁴ Commerce Commission "Input methodologies (Airport Services) reasons paper" (22 December 2010), para 6.7.9.

¹⁵ *Commerce Act (Specified Airport Services Input Methodologies) Determination 2010* (Commerce Commission Decision 709, 22 December 2010), clause 5.7.

¹⁶ Commerce Commission "Input methodologies (Airport Services) reasons paper" (22 December 2010), para E11.2.

Problems with the use of the WACC percentile range

23. The approach as outlined in the previous airport IMs, including the use of the 50th percentile as the starting point for profitability assessment, was accepted by the High Court as appropriate for ID regulation:¹⁷

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 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.

24. We accept and agree with the Court's comments. However, we identified two related practical problems with the application of the previous IMs. These problems were that:
- 24.1 the upper limit of any range we specify may become the de facto benchmark when assessing airport profitability; and
 - 24.2 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

25. Under s 56G, we were required to review how effective ID 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.¹⁸
26. 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 ID regulation.

¹⁷ *Wellington Airport & others v Commerce Commission* [2013] NZHC 3289, para 1490-1492.

¹⁸ 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).

Choice of the 75th percentile as the upper limit

27. 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.¹⁹
28. Similarly, in our view there is a lack of evidence for the 75th percentile previously used as the upper limit for the airport WACC percentile range. However, as noted above, the High Court did not take issue with our approach to the specification of a WACC range for airports.

Previous consideration of the airport WACC percentile

29. 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.²⁰
30. We extended the timeframe 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.²¹
31. However, given the timing of the IM review, we proposed in February 2015 to discontinue the 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.²²
32. 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 2015,²³ and a further emerging views paper in February 2016.²⁴ We then published our draft decisions topic paper for consultation on 16 June 2016.²⁵

¹⁹ *Wellington Airport & others v Commerce Commission* [2013] NZHC 3289, para 1479-1481.

²⁰ Commerce Commission "Amendment to the WACC percentile for price-quality regulation for electricity lines services and gas pipeline services – Reasons paper" (30 October 2014).

²¹ Commerce Commission "Further work on cost of capital input methodologies: Process update" (23 June 2014), para 6-7.

²² 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 New Zealand, Auckland Airport, Christchurch Airport, Wellington Airport and Infratil.

²³ Commerce Commission "Input methodologies review invitation to contribute to problem definition" (16 June 2015), Topic 7.

²⁴ Commerce Commission "Input methodologies review – Professor Yarrow report and emerging views on the airport WACC percentile" (19 February 2016).

²⁵ Commerce Commission "Input methodologies review draft decisions: Topic paper 6 – WACC percentile for airports" (16 June 2016).

Chapter 3: Use of WACC under information disclosure for airports

Purpose of this chapter

33. This chapter:
- 33.1 explains how we will use a regulatory WACC in the context of ID; and
 - 33.2 considers advice we received from Professor Yarrow on this topic.

How WACC operates in the context of information disclosure

34. The purpose of ID 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.²⁶
35. The previous IMs required 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 ID regulation, airports are not required to apply our estimate of the WACC when setting prices.
36. The published WACC range was then used as a benchmark for assessing airport profitability. Interested persons could 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.
37. 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.²⁷
38. Assessment of profitability can be undertaken on either an *ex-ante* or *ex-post* basis.

Ex-ante assessment

39. As part of the s 56G review described in paragraph 25, we were required to review how effective ID 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).

²⁶ Commerce Act 1986, s 52A.

²⁷ 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 disclosures of financial information.

40. Although the s 56G review was a 'one-off' exercise, we would expect to conduct similar assessments of expected profitability over each airport's pricing period (normally five years), as part of our general summary and analysis of disclosed price setting event information (s 53B).
41. This IM review addresses a number of problems our s 56G review identified with the IMs and the ID requirements that made expected profitability assessments difficult for interested parties.²⁸ In particular, to help provide greater clarity when undertaking *ex-ante* airport profitability assessments, we will now require airports to disclose a headline 'forward-looking profitability indicator'.²⁹ 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

42. Airports are required to provide annual IDs 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 its targeted return on investment, as well as to the relevant WACC at the time that prices were set.
43. *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.
44. Also, as noted in the introduction to this paper, the IM review has focussed on amendments to the airport IMs or ID requirements on a forward-looking basis. We have currently only focussed on making amendments relating to disclosures made by airports where those amendments are required to support our forward-looking profitability assessment.

Advice from Professor Yarrow

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

²⁸ 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).

²⁹ Commerce Commission "Input methodologies review decisions: Topic paper 5 – Airports profitability assessment" (20 December 2016).

46. Professor Yarrow's advice noted that assessing *ex-ante* and *ex-post* returns are "distinct exercises that rely on different types of information".³⁰ He also emphasised the need to consider airport-specific contexts when making judgements about whether an airport is targeting excessive profitability.³¹

47. In considering the contextual factors (as opposed to rigidly comparing the targeted returns against the WACC), Professor Yarrow noted that:³²

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.

48. On the specific question of how the WACC should be published in the IMs he suggested:³³

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.

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

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

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

³⁰ 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.

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. 10.

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. 20.

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. 21.

Submissions on Professor Yarrow's advice

50. 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.

51. For example, the New Zealand Airports Association (**NZ Airports**) recommend that:³⁴

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 AEEMP³⁵ (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).

52. Similar views were put forward in other airport submissions.³⁶ 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:³⁷

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.

53. 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

³⁴ NZ Airports "Submission on Commerce Commission emerging views on the WACC percentile for airports" (16 March 2016), para 15. NZ Airports "Submission on Commerce Commission's input methodologies review draft decision" (4 August 2016) paras 62-63 also emphasised the need to convey to interested parties that the estimate of WACC is not precise.

³⁵ Adverse effects arising from the exercise of market power (AEEMP).

³⁶ 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).

³⁷ 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:³⁸

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.

54. For this reason, airlines strongly submitted that we should not set the WACC at a level higher than the mid-point when undertaking an assessment of airport profitability.
55. 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 ID regime, which gives airports commercial freedom, and that airports regularly discuss investment plans with airlines.³⁹

WACC vs. allowed rate of return

56. 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:⁴⁰

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.

³⁸ Air New Zealand "Emerging views on the airport WACC percentile" (11 March 2016), p. 2.

³⁹ Covec "Airport WACC: Comments on emerging views and Professor Yarrow" (report prepared for BARNZ, 9 March 2016), para 4.

⁴⁰ Sapere "The distance between the 'allowed rate of return' and the 'cost of capital'" (report prepared for NZ Airports, 16 March 2016), p. 2.

57. Sapere also noted a number of reasons why it considers a targeted return may be above a mid-point WACC.⁴¹ These reasons include:
- 57.1 increased costs from government intervention (or the threat of government intervention);
 - 57.2 that investors expect to derive a positive net benefit from investment programmes, ensuring incentives to innovate;
 - 57.3 asymmetries arising from truncation of probabilistic distributions of future rates of return; and
 - 57.4 the “option values” associated with investments.⁴²
58. We agree that care needs to be taken when using the WACC to assess profitability and our emerging views paper outlined how we are attempting to reduce the focus on specific WACC values.⁴³

A general uplift to WACC is not appropriate for airports

59. 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.
60. 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
61. 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

⁴¹ 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.

⁴² 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.

⁴³ Commerce Commission "Input methodologies review – Professor Yarrow report and emerging views on the airport WACC percentile" (19 February 2016).

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).

asymmetric social costs from under-investment as compared to a supplier earning excessive returns or overinvesting.

62. For airports, the context is different. Airports, rather than us, determine both:
- 62.1 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
 - 62.2 the estimate of WACC that determines whether and when each investment will proceed.
63. 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
64. 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.
65. 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

66. When setting the previous 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).

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.

67. 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 risk. This would potentially increase the targeted rate of return above the WACC estimate.
68. 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
69. 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 ID regime.⁴⁹
70. 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 which suggested that we make an allowance for asymmetric risks and that a 1% margin to the WACC would not be unreasonable where "the cash-flows are upward biased" and inadequate allowance is made for all asymmetric risks and other market frictions".⁵¹
71. 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.

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: $10\% = 1 - \exp(-0.01 \times 10)$. See Commerce Commission, "Further draft pricing review determination for Chorus' unbundled copper local loop

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

service" (July 2015), para 1362 and Dixit, A.K, and Pindyck, R.S., "Investment under Uncertainty" (1994) Princeton University Press, p. 205.

⁵³ *Wellington Airport & others v Commerce Commission* [2013] NZHC 3289, para 1742-1744.

Chapter 4: Our decisions on the WACC percentile for airports

Purpose of this chapter

73. This chapter explains our decisions on the WACC percentile for airports and how they deal with the main issues that we have identified.
74. It explains how and why we have decided to just publish the mid-point WACC estimate together with an estimate of the standard error of the WACC. It also explains alternative solutions that we considered.

Problems with the current approach

75. As discussed in Chapter 2, we consider that there were two related practical problems with the application of the previous IMs regarding the WACC percentile for airports. These problems were that:
 - 75.1 our publishing of a WACC range led to the de facto use of the upper limit of the WACC range to assess airport profitability in practice;⁵⁴ and
 - 75.2 there is limited and weak rationale for the use of the 75th percentile as the upper limit of the former WACC percentile range.
76. This raised 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.

Solution in respect of these problems

77. Our emerging views paper outlined how we consider that the most appropriate change to the IMs is to no longer focus on specific WACC percentiles other than the mid-point.⁵⁵
78. 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 target 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 solution – Publication of the mid-point and standard error

79. Our solution for the airport WACC percentile is to maintain our draft decision to publish our mid-point estimate of the cost of capital together with our view of the standard error of that estimate.⁵⁷ The standard error can be used to determine the probability distribution of the WACC estimate and any individual WACC percentile required.
80. This approach will be combined with modifications to ID requirements to require airports to publish:
- 80.1 their own estimate of WACC;
 - 80.2 the effective rate of return they targeted (ie, the new forward-looking profitability indicator); and
 - 80.3 evidence that provides an explanation for differences between their WACC and our estimate of the WACC; and their targeted return and their WACC.
81. Airports may now also choose to calculate and provide the equivalent percentiles of our mid-point WACC estimate for their targeted return and own WACC estimate.
82. Therefore, we will 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.
83. We have also made changes to the timing of our airport WACC determinations as part of the IM review. These timing issues are considered in the separate cost of capital topic paper.⁵⁸

Reasons for preferring this solution

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

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

⁵⁷ The standard error of the WACC is a fixed value (0.0146 for airports) in the IM determination.

⁵⁸ Commerce Commission "Input methodologies review decisions: Topic paper 4 – Cost of capital issues" (20 December 2016), Chapter 8.

85. NZ Airports submitted that our draft decision to publish just the mid-point and standard error is:⁵⁹

...likely to create a misleading impression for interested parties about the reliability and accuracy of the mid-point estimate because it fails to adequately highlight the uncertainty and judgment associated with either the mid-point estimate or the standard error estimate itself.

86. NZ Airports also considered that without statistical knowledge, interested parties are “likely to resort to the mid-point as a “hard” number”,⁶⁰ and there is a risk that “instead of the 75th percentile being the focus of any assessment, it will become the midpoint”.⁶¹

87. We consider the mid-point WACC represents our starting point when assessing returns for profitability analysis. However we continue to consider that there may be legitimate reasons for an airport to target returns that are different to our mid-point WACC estimate and, as mentioned in paragraph 80.3, we now require airports to provide evidence to explain such differences. This too will form part of such an assessment.

88. However, we do not agree that without statistical knowledge, interested parties will assume the mid-point as a hard number. To make it easier for airports and interested parties to use our published standard error to calculate any percentile estimate, we will include a formula in the WACC determination spreadsheets that automatically calculates what percentile a WACC estimate equates to.

89. We note there is nothing preventing airports from publishing other percentile increments or distribution curves as part of their pricing consultation process.

90. We consider that our approach enables a certain amount of flexibility in assessing the acceptability of airport returns and reduces 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. It is also consistent with the original intentions of the IMs to start any assessment at the mid-point estimate of the WACC.

91. This 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

⁵⁹ NZ Airports "Submission on Commerce Commission's input methodologies review draft decision" (4 August 2016), para 65.

⁶⁰ NZ Airports "Submission on Commerce Commission's input methodologies review draft decision" (4 August 2016), para 66.

⁶¹ NZ Airports "Submission on Commerce Commission's input methodologies review draft decision" (4 August 2016), para 67.

circumstances, or other factors that should be taken into account in assessing airport profitability.

92. Wellington Airport supported our decision to take into account contextual factors that may cause differences between our mid-point WACC estimate and an airport's targeted return.⁶²

The Commission has agreed it will adopt a contextual assessment. We strongly support that change. We believe this can result in well informed interested persons, which is the objective of ID regulation. We are conscious airports will have to explain their performance and the market context in a transparent and fair way, and we are committed to doing that.

93. Auckland Airport also supported the added flexibility and assessment of specific airport factors that our solution will allow.⁶³

We are therefore encouraged that the Commission has indicated that it will take a broader approach to profitability assessment in the future, and will engage with the airport-specific and wider factors that have informed our target return.

94. This solution does not prevent airports targeting (*ex-ante*) returns above the mid-point when they have legitimate reasons for doing so. However, the airports will be required to provide information and evidence to explain those reasons to interested parties. This explanation will 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.

95. We consider that our approach is consistent with both the High Court's view provided in paragraph 23 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.⁶⁴

96. 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).

97. Although the onus will 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.

⁶² Wellington Airport submission on IM review draft decisions papers "IM review" (4 August 2016), para 59.

⁶³ Auckland Airport "Review of input methodologies – Submission on commerce commission draft decision" (4 August 2016), para 48.

⁶⁴ 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.

98. In its submission on our draft decisions, NZ Airports suggested that when assessing profitability:⁶⁵

... the onus will be on the Commission to prove that targeted returns that happen to be above the regulatory WACC estimate are not in the long-term interests of consumers (ie are contrary to the purpose of Part 4).

99. We do not consider that this is correct. Airports will now be required to submit evidence that provides an explanation for differences between their WACC and our estimate of the WACC; and their targeted return and their WACC. The onus, therefore, is on the airports to provide sufficient reasoning why their targeted returns may happen to be above the regulatory WACC. As we note above in paragraph 87, our starting point for profitability analysis will be the mid-point WACC while remaining open to reasons and evidence for why returns should be above or below this.

100. Air New Zealand disagreed with the view that the onus should be on us, rather than the airports, to prove that targeted returns above the mid-point WACC are in the long-term interests of consumers:⁶⁶

Air New Zealand completely disagrees with this, and notes that this contradicts NZ Airports acceptance (at para 202 of its submission) of the need for airports to articulate reasons why a return in excess of the Commission's estimated WACC is appropriate. As noted by BARNZ, in any case, airports will need to demonstrate how their target level of returns promote the long term interests of consumers.

101. The Board of Airline Representatives New Zealand (**BARNZ**)'s cross submission on our draft decisions also agreed that the onus should fall on the airports to explain with evidence why their targeted return may be different to our mid-point WACC estimate:⁶⁷

If an airport exercising its right to set prices as it thinks fit under the AAA chooses to adopt a different target return, then the onus is on that airport, as the decision-maker, to provide sufficient information to justify either why its cost of capital differs from the Commission's estimate of a normal level of return or, alternatively, why it is in the long-term benefit of consumers using that airport, to pay that airport a return above a normal level.

102. We have not provided 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

⁶⁵ NZ Airports "Submission on Commerce Commission's input methodologies review draft decision" (4 August 2016), para 111.

⁶⁶ Air New Zealand "Input methodologies review draft decision – Cross submissions input methodologies review draft decision – Cross submissions" (18 August 2016), p. 2.

⁶⁷ BARNZ "Cross submission by BARNZ responding to airport submissions on the Commerce Commission proposed changes to the input methodology and information disclosure determinations in relation to the airport topic" (18 August 2016), p. 10.

appears to be consistent with the views from submissions. For example, Wellington Airport submitted that:⁶⁸

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.

103. Submissions from airlines suggested that there are no reasons to depart from the mid-point,⁶⁹ and Covec (on behalf of BARNZ) noted that:⁷⁰

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

104. As discussed above, our 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.
105. We consider that the two problems identified in paragraph 75 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, it ultimately proposed an alternative approach that published the WACC at regular percentile estimates.⁷¹
106. We also considered two alternative potential solutions to the identified problems. These alternatives were to:
- 106.1 determine one specific point estimate that would act as the benchmark; and
- 106.2 publish a wide range of WACC percentile estimates (eg, every 5th percentile).

Alternative option 1 – Determine a specific point estimate

107. One alternative option that was considered was to publish a specific WACC percentile point estimate in addition to the current WACC percentile range.
108. 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

⁶⁸ Wellington Airport "IM review: Professor Yarrow report and emerging views on the airport WACC percentile" (16 March 2016), p. 3.

⁶⁹ Air New Zealand "Emerging views on the airport WACC percentile" (11 March 2016), p. 3.

⁷⁰ Covec "Airport WACC: Comments on emerging views and Professor Yarrow" (report prepared for BARNZ, 9 March 2016), para 40.

⁷¹ Sapere "The distance between the 'allowed rate of return' and the 'cost of capital'" (report prepared for NZ Airports, 16 March 2016), p. 12.

energy businesses but would be estimated for the airports to take into account differences between the sectors.

109. Submissions from airlines generally supported this approach on the basis that the specific percentile chosen would be the mid-point estimate. For example BARNZ suggested that:⁷²

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.

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.

110. 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.
111. 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.
112. We consider that allowing flexibility in how a WACC applies to the assessment of airport profitability is a more appropriate approach. Evidenced explanations 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 or a distribution curve

113. We suggested in our emerging views paper 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).⁷³

⁷² BARNZ "Emerging views on airport WACC percentile" (11 March 2016), p. 2.

⁷³ Commerce Commission "Input methodologies review – Professor Yarrow report and emerging views on the airport WACC percentile" (19 February 2016).

114. Submissions from airports strongly agreed with this option.⁷⁴ For example NZ Airports submitted:⁷⁵

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.

115. NZ Airports maintained its support for this option in its submission on our draft decision.⁷⁶

Publication of regular percentile estimates (potentially from the 5th to 95th percentile, but possibly at greater intervals of, say, every 10th percentile), to provide a clear signal to interested persons that the estimate of WACC is uncertain and that it is wrong to focus on any particular percentile. We think that this provides interested parties with the most meaningful information about the distribution of the regulatory WACC estimate. It also appropriately conveys the uncertainty that the Commission acknowledges is inherent in that estimate.

116. We continue to agree that publishing a wider range of estimates provides flexibility and would 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.

117. However, we have continued to reject this approach, compared to our 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 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. It could also result in the upper limit of a wider range (such as the 95th percentile) becoming the new de facto estimate.

118. We acknowledge that estimates of WACC are uncertain, but the mid-point is the estimate that we are most confident in.

⁷⁴ 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.

⁷⁵ NZ Airports "Submission on Commerce Commission emerging views on the WACC percentile for airports" (16 March 2016), para 22.

⁷⁶ NZ Airports "Submission on Commerce Commission's input methodologies review draft decision" (4 August 2016), para 72.

119. Covec, on behalf of BARNZ, agreed with this point in its cross submission on our draft decision, and suggested that publishing a wider range of estimates would give a false impression of precision.⁷⁷

Unless separate standard errors or confidence intervals were reported for each of these percentile estimates, interested persons would be misled rather than properly informed.

120. NZ Airports also suggested that we should publish a distribution curve because our solution “requires manipulation of the data that requires a level of technical expertise and will not be straightforward for all interested parties”^{78, 79}.
121. We do not consider that publishing a distribution curve with every WACC determination would provide any more useful information for interested parties. Assuming that our WACC estimate follows a normal distribution, the entire probability distribution can be estimated using the mid-point and the standard error, without the need for us to publish a distribution curve.
122. As discussed in paragraph 88, we will include a formula which automatically calculates the equivalent percentile of any WACC estimate, in the spreadsheet that we publish with the WACC determinations. We consider that this will make it straightforward for interested parties to assess any WACC estimate against our mid-point estimate.
123. 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.⁸⁰
124. 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 solution that allows specific percentile estimates to be calculated when required will become embedded over time.
125. NZ Airports also suggested that our solution would breach the Act because “The proposed amendments require the airports to apply the WACC IM to calculate and

⁷⁷ Covec (report prepared for BARNZ) "Economic commentary on airport WACC submissions" (18 August 2016), para 22.

⁷⁸ NZ Airports "Submission on Commerce Commission's input methodologies review draft decision" (4 August 2016), para 78.

⁷⁹ We note Figure 1 in the NZ Airports submission includes a 90% confidence interval, which differs to the percentiles we have previously published, the upper bound of this confidence interval is the 95th percentile. We consider publishing confidence intervals, while potentially relevant, also has the potential to cause confusion.

⁸⁰ Auckland Airport "Response to Commerce Commission's emerging views on the WACC percentile for airports" (16 March 2016), para 12.

disclose the percentile equivalents.”⁸¹ We disagree that this is the case. Our solution does not require airports to use our mid-point estimate of WACC, simply to compare their targeted returns with our estimate. Using the standard error that we have published in our determination would appear to be the simplest way, because it allows any equivalent percentile to be calculated. We will now also include a formula in our WACC determination spreadsheets that will calculate this automatically.

126. However, we have not included a specific requirement for airports to disclose the percentile equivalent of their targeted returns when comparing it to our mid-point WACC. Airports are still required to compare their targeted returns with our mid-point WACC estimate, and may use the standard error to report the equivalent percentile, but they may also use alternative methods for the comparison.
127. BARNZ’s cross submission on our draft decisions shared our view that our solution does not require airports to apply the WACC IM:⁸²

The Commission’s proposal does not equate to requiring the airports to apply the Commission’s cost of capital IM. Rather, the Commission is proposing that the airport compare the airport’s own targeted return or IRR to the Commission’s cost of capital IM. The airport’s right to target its own individual level of desired return using its AAA right to set prices has been left undiluted and it has not been required to apply the Commission’s cost of capital IM.

⁸¹ NZ Airports "Submission on Commerce Commission's input methodologies review draft decision" (4 August 2016), para 69.

⁸² BARNZ "Cross submission by BARNZ responding to airport submissions on the Commerce Commission proposed changes to the input methodology and information disclosure determinations in relation to the airport topic" (18 August 2016), p. 9.

Chapter 5: Consideration of the rationale for an uplift

Purpose of this chapter

128. This chapter explains:
- 128.1 why an airport's targeted return could legitimately be above our mid-point estimate and how that might be explained with evidence;
 - 128.2 why we consider the ability of the WACC to constrain airport investment is more limited than for energy businesses;
 - 128.3 why our consideration focusses on the potential asymmetric consequences to consumers from us mis-estimating the WACC; and
 - 128.4 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

129. An airport's return on investment may differ from the specified mid-point estimate of the WACC outlined in the IMs because:
- 129.1 an airport's own estimate of the cost of capital is different from that estimated by us; and/or
 - 129.2 an airport is targeting returns above (or below) its estimate of the WACC.⁸³
130. We also consider that a key aspect of our 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.
131. In particular, airports will 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 (eg, any asymmetric risks (such as catastrophic risk) or factors that warrant a further margin to arrive at the targeted return).
132. We also expect greater explanation, reasoning and evidence to be required as any divergence from the mid-point increases. Such reasoning and evidence should be specific to the circumstances of the airport or specific project at the time of the

⁸³ We describe in paragraphs 62-65 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).

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

133. 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.
134. The link between the WACC under ID 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.
135. 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.⁸⁴ We recognise this could, potentially, adversely affect investment where we have mis-estimated the WACC.
136. 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 ID – this means that the regulated WACC is not as strong a binding constraint on the airport's pricing and investment decisions.
137. 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 us as to why a targeted return in excess of the mid-point WACC is required to fund investment that is to the long-term benefit of consumers.
138. Consequently, we consider the risk of our estimate of WACC constraining investment, to the long-term detriment of consumers, is much lower for airports.
139. 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

⁸⁴ 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.⁸⁵
Namely that airports:

- 139.1 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;
 - 139.2 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). NZ Airports and others have submitted that customers will seek a low WACC,⁸⁶ however, we consider such incentives will be at least partially offset by the impact on them from any resultant under-investment;⁸⁷ and
 - 139.3 there could be other regulatory requirements (such as safety) that result in the investment being made.
140. Of these reasons, the value of complementary revenue streams perhaps provides the strongest rationale for the limited ability of our estimate of WACC to constrain airport investment.
141. 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 the Major Electricity Users' Group (**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.⁸⁸ However, unregulated revenue streams make up only ~30% of the total operational costs and ~48% of property, plant and equipment of Auckland Airport.⁸⁹
142. This illustrates there is a significant amount of Auckland Airport's value that is associated with unregulated, complementary revenue streams. Given the value of

⁸⁵ Commerce Commission "Input methodologies review invitation to contribute to problem definition" (16 June 2015), para 395; and Commerce Commission "Input methodologies review – Professor Yarrow report and emerging views on the airport WACC percentile" (19 February 2016), para 16.

⁸⁶ See "Submission on Commerce Commission's input methodologies review draft decision" (4 August 2016), para 115(d), and "Wellington Airport submission on IM review draft decisions papers "IM review" (4 August 2016), para 66.

⁸⁷ 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.

⁸⁸ MEUG "Comments on advice by Dr Lally to the Commerce Commission on WACC issues" (24 March 2016), para 17-18.

⁸⁹ Auckland Airport "Specified Airport Services Annual Information Disclosure For the year ended 30 June 2015" (2015); and Auckland Airport "Specified Airport Services Annual Information Disclosure For the year ended 30 June 2015" (2016).

these revenue streams that are associated with a significant proportion of airport investment, it is less likely such investment would be constrained by us mis-estimating the mid-point WACC.

143. There may be some classes of investments in regulated services where non-regulated revenues have a limited impact on the decision to invest.^{90, 91} 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 may still be 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).

144. NZ Airports submitted that:⁹²

NZ Airports believes that using complementary revenue streams as a reason to risk setting regulatory WACC too low fails to properly apply Part 4 of the Act because:

(a) Part 4 directs the Commission to focus on incentives for regulated activities through the methodologies and Determinations that apply to those activities only;

(b) Part 4 attempts to limit the situations in (and purposes for) which the Commission can have regard to a company's unregulated businesses eg cost allocation IMs must not affect investment in unregulated businesses and where consolidated financial information is required this can only be used to monitor compliance of the regulated business with ID requirements; and

(c) Taken as a whole, Part 4 does not allow the Commission to make decisions that will not promote the Part 4 purpose statement in relation to the regulated business, on the basis that such regulatory failure will be offset by other naturally occurring incentives.

145. We disagree that we have failed to properly apply Part 4 of the Act. Complementary revenue schemes could directly impact incentives to invest in regulatory services. Accordingly, ignoring those impacts is inconsistent with our obligation to promote in regulated services, outcomes that are consistent with those that are promoted in workably competitive markets. When we are assessing airports under the ID regime and considering whether it is in the long-term interest of consumers to increase returns above the mid-point WACC, it is highly relevant that we understand the

⁹⁰ 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.

⁹¹ Wellington Airport submission on IM review draft decisions papers "IM review" (4 August 2016), para 72-78 may also be another example.

⁹² NZ Airports "Submission on Commerce Commission's input methodologies review draft decision" (4 August 2016), para 128.

actual risk of under-investment. This cannot be done if we ignore the reality that airports are dual till.

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

146. 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 outweighed 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.
147. For energy businesses we applied an uplift because there is a potential for us to mis-estimate 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.
148. 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.⁹³
149. 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').⁹⁴ 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.
150. For airports the context again appears different. Given the factors given in paragraphs 138-139 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).

⁹³ 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.

⁹⁴ 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%.

151. We note that while there is 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:
- 151.1 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
 - 151.2 the potential for some users to adapt travel arrangements (eg, alternative timing or transport).⁹⁵
152. 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.
153. 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

154. 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.⁹⁶
155. 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.⁹⁷
156. We also considered using this type of analytical framework to help determine whether an uplift was appropriate for the cost of capital for a hypothetical telecommunications operator when setting the UCLL and UBA final pricing

⁹⁵ This could include alternative airports for some customers.

⁹⁶ 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.

⁹⁷ This framework was originally developed 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.

principles.⁹⁸ However, we ultimately determined that the link between the WACC and the effect on investment was not sufficient to justify any uplift.⁹⁹

157. If we were to apply a similar approach to airports, the steps would be as follows.
- 157.1 Estimate the direct costs of a WACC uplift from an increase in regulated prices.
- 157.2 Estimate the potential benefits of a WACC uplift using two key inputs:
- 157.2.1 the potential for our estimate of the WACC to affect the airport's targeted return and for this to constrain airport investment; and¹⁰⁰
- 157.2.2 the size of net annual lost benefits from investments that are not undertaken in the absence of a WACC uplift.
- 157.3 Using these two inputs, estimate the total net annual lost benefits to consumers from using a particular WACC percentile estimate.¹⁰¹
- 157.4 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.
158. 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 most relevant 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.
159. NZ Airports submitted that airports also need to estimate their WACC and can mis-estimate this, opening the risk of failing to attract investor and shareholder support to fund investments.¹⁰² Nonetheless, we consider these risks are significantly lower than for a regulator setting direct price controls in the face of asymmetric information. Our expectations are that an airport will better know and have greater

⁹⁸ Commerce Commission "Agenda and topics for the conference on the UCLL and UBA pricing reviews" (2 April 2015), Attachment C.

⁹⁹ Commerce Commission, "Cost of capital for the UCLL and UBA pricing reviews: Final decision" (15 December 2015), para 279.

¹⁰⁰ 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'.

¹⁰¹ The 'margin of error'.

¹⁰² NZ Airports "Submission on Commerce Commission's input methodologies review draft decision" (4 August 2016), para 105.

direct regular communication with its investors and shareholders.¹⁰³ Further, 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.

160. Given the importance of contextual factors, we consider airport-specific evidence is very relevant when making judgements in this area. Nonetheless, under an ID regime it is down to the airports to decide what evidence is most relevant to support the returns they are targeting and whether this includes significant limitations of the airport's information on the returns their current and prospective investors require.

Evidence from submissions

161. 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:

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

161.2 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

162. NZ Airports submitted that it disagreed 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.¹⁰⁴
163. In particular NZ Airports considered that airline consultation does not guard against under-investment.^{105, 106}

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.

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,

¹⁰³ In either case it would not follow that the standard error in our WACC determinations is relevant here where we would expect the degree of uncertainty to be lower.

¹⁰⁴ These are described in paragraphs 138-139.

¹⁰⁵ NZ Airports "Submission on Commerce Commission's input methodologies review: Invitation to contribute to problem definition" (21 August 2015), para 143-144.

¹⁰⁶ NZ Airports "Submission on Commerce Commission's input methodologies review draft decision" (4 August 2016) reiterated this point.

there are numerous cases of where airlines have sought to delay or prevent investment from proceeding.

164. NZ Airports also outlined how it considered that the current regulation places a strong limit on returns:^{107, 108}

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.

165. On the dual till aspect NZ Airports considered:¹⁰⁹

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.

166. BARNZ's cross submission disagreed with NZ Airports' conclusions. On the dual till point it considered that:¹¹⁰

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.

¹⁰⁷ NZ Airports "Submission on Commerce Commission's input methodologies review: Invitation to contribute to problem definition" (21 August 2015), para 149.

¹⁰⁸ NZ Airports "Submission on Commerce Commission's input methodologies review draft decision" (4 August 2016) reiterated this point.

¹⁰⁹ NZ Airports "Submission on Commerce Commission's input methodologies review: Invitation to contribute to problem definition" (21 August 2015), para 156.

¹¹⁰ BARNZ "Cross-submission on problem definition submissions" (5 September 2015), p. 5.

167. On the impact of airline consultation, BARNZ suggested that airlines do in fact support projects when they are justified.¹¹¹

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.

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.

168. NZ Airports, Wellington Airport, and Auckland Airport continued to disagree that complementary revenue streams limit the ability of our estimate of WACC to constrain airport investment in its submission on our draft decisions. It stated that we are:¹¹²

... creating a regulatory risk that the monitoring point for airport returns is set too low, potentially leading to airport pricing that is too low, and is refusing to provide regulatory compensation/protection for that risk. By doing so, it is effectively requiring airports to use their unregulated businesses as a buffer or risk offset to protect itself, and consumers, against the potential consequences of a regulatory risk on investment in regulated services. This then risks constraining unregulated investment because the returns that can be achieved are not sufficient to meet commercial objectives and compensate for low regulated returns.

169. However, NZ Airports, Wellington Airport and Auckland Airport did not provide any persuasive evidence that their investment has been constrained as result of our WACC estimate. NZ Airports acknowledged that as "This should be a light-handed ID regime" and "The Commission is committed to placing less emphasis on numerical comparisons between airport returns and its estimate of WACC" that compiling such evidence would be "highly disproportionate" to the resource it would require to do so.¹¹³

¹¹¹ BARNZ "Cross-submission on problem definition submissions" (5 September 2015), p. 6.

¹¹² NZ Airports "Submission on Commerce Commission's input methodologies review draft decision" (4 August 2016), para 129; Wellington Airport submission on IM review draft decisions papers "IM review" (4 August 2016), para 5; and Auckland Airport "Review of input methodologies – Submission on Commerce Commission draft decision" (4 August 2016), para 57.

¹¹³ NZ Airports "Submission on Commerce Commission's input methodologies review draft decision" (4 August 2016), para 132.

170. As discussed throughout this paper, we recognise that there may be legitimate reasons for an airport to target returns different from our mid-point estimate of WACC. We will assess these reasons and evidence of specific circumstances, when presented by airports alongside their targeted return. We do not suggest that there is no risk that our mid-point estimate of WACC is too low (or too high), but we continue to consider, based on the evidence before us, that the case for providing an uplift above our mid-point estimate is significantly weaker for airports than for energy businesses.
171. We also 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 currently consider that there is only a limited amount of investment that is not subject to these factors. In addition, the nature of ID 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.
172. While NZ Airports, Wellington Airport and Auckland Airport pointed to examples in the UK and Australia of the impact of under-investment,¹¹⁴ it is far from clear that the cause of the under-investment has been the level of returns at the respective airports. For example the ACCC report quoted also noted.¹¹⁵
- An unconstrained monopolist would be expected to exercise its market power to increase prices and provide lower service quality outcomes over time. All monitored airports have seen their earnings increase in real terms over the past decade, while quality of service outcomes have declined slightly.
173. 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.
174. 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.¹¹⁶ Sapere maintained the value of 0.5% as the assumed divergence between the estimated and actual WACC that would lead to

¹¹⁴ NZ Airports "Submission on Commerce Commission's input methodologies review draft decision" (4 August 2016), paras 134-136.

¹¹⁵ ACCC, "Airport Monitoring Report 2014-15"(23 March 2016), p. xiv and p. 1.

¹¹⁶ 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).

under-investment. This was the value that was used for energy businesses in the model provided by Oxera. Sapere noted that:¹¹⁷

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 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).

175. 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 investment decisions on aeronautical activities.
176. 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

177. 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.
178. Sapere's report provided an estimate of these costs using two different methods. The first method was to use existing studies on the costs of airport delays, while the second method undertook a bottom-up analysis of estimated costs.¹¹⁸
179. The first method resulted in two separate estimates based on different studies.
- 179.1 The first estimate was derived from US studies that suggested the economic cost of air traffic delays was between 0.2-0.3% of GDP. Their conversion to an equivalent New Zealand cost resulted in an annual cost to consumers of \$472m to \$618m.¹¹⁹
- 179.2 The second estimate (of the first method) used a UK study that estimated the cost of failing to alleviate capacity constraints at the UK airports. A New

¹¹⁷ Sapere "Asymmetric impact on consumers from underinvestment by airports – an indicative view" (report prepared for NZ Airports, 17 March 2016), para 32.

¹¹⁸ Sapere "Asymmetric impact on consumers from underinvestment by airports – an indicative view" (report prepared for NZ Airports, 17 March 2016), para 53.

¹¹⁹ Sapere "Asymmetric impact on consumers from underinvestment by airports – an indicative view" (report prepared for NZ Airports, 17 March 2016), para 55.

Zealand estimate of \$90m p.a. is estimated by assuming similar costs in New Zealand as a proportion of GDP.¹²⁰

180. The second method applied a bottom-up approach to the cost of delay. It assumed that:
- 180.1 under-investment in airports results in a 5 minute delay for all flights;
 - 180.2 an estimate of the number of passengers affected; and
 - 180.3 a Value of Travel Time (VoTT) of ~\$59 per hour for each passenger affected.
181. Using these assumptions the annual cost of delay from under-investment was estimated as \$350m.
182. After estimating these costs, Sapere calculated the ratio between the estimated costs to consumers from under-investment against a range of different percentile estimates.
183. Two of the estimates (using the US study and the bottom-up approach) implied higher asymmetric impacts from under-investment in the airport sector. They implied that these estimated costs would justify a higher uplift than for the energy sector. The other estimate (using the UK study) resulted in lower asymmetric effects and, therefore, potentially a lower uplift.
184. From this Sapere concluded that:¹²¹

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

185. 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.
186. 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

¹²⁰ Sapere "Asymmetric impact on consumers from underinvestment by airports – an indicative view" (report prepared for NZ Airports, 17 March 2016), para 58.

¹²¹ Sapere "Asymmetric impact on consumers from underinvestment by airports – an indicative view" (report prepared for NZ Airports, 17 March 2016), para 82.

maintenance/replacement, staffing issues, etc.) and so would have nothing to do with airport investment.

187. 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.¹²² 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.
188. 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.
189. Even the cost estimate derived from the UK study may need to be further refined. For example:
- 189.1 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.¹²³ 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.
- 189.2 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.¹²⁴ In general we consider it is important that any cost estimates of this type are shown to apply in the New Zealand context.
- 189.3 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

¹²² 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).

¹²³ 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.

¹²⁴ 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.

have previously submitted require an uplift to the WACC because they will not result in complementary revenue streams.¹²⁵

190. NZ Airports, Wellington Airport, and Auckland Airport have further submitted that the impact of under-investment is less obvious and harder to evidence than for energy but is still significant and can be lengthy and difficult to remedy.¹²⁶ NZ Airports also referenced its earlier submitted report by Dr Harry Bush CB and John Earwalker.¹²⁷
191. In relation to the impact of under-investment in airports the Bush/Earwalker report noted their views on the costs of delayed investments drawing on case studies from London. As they noted, these airports differ significantly from New Zealand airports. They noted various ways under-investment may occur and the impacts that might eventuate. However none of this evidence is directly related to New Zealand airports or specific investment at New Zealand airports.
192. Wellington Airport has noted that the Commission views that power outages are more costly to consumers than airport delays:¹²⁸
- ...suggests a lack of understanding of the economic effects of under-investment in airport infrastructure. For example, rather than the cost to consumers being lower because a consumer makes alternative arrangements, the need to make alternative arrangements typically increases the cost. A consumer who catches an earlier flight (perhaps the previous evening) or who decides to overnight because they cannot be confident a flight will depart or arrive on time incurs considerably more cost than simply the number of minutes the flight is delayed multiplied by an hourly rate
193. In our view this comes down to how the costs of delays are valued. We remain open to considering any further evidence on the cost of passenger delays as part of airport IDs.
194. 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 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.
195. However, we recognise this has not been the focus of the review for airport percentile and we continue to be open to reasoning from airports as part of ID as to

¹²⁵ NZ Airports "Submission on Commerce Commission's input methodologies review: Invitation to contribute to problem definition" (21 August 2015), para 159.

¹²⁶ NZ Airports "Submission on Commerce Commission's input methodologies review draft decision" (4 August 2016); Auckland Airport "Review of input methodologies – Submission on commerce commission draft decision" (4 August 2016), para 54; and Wellington Airport submission on IM review draft decisions papers "IM review" (4 August 2016), paras 67-71.

¹²⁷ Dr Harry Bush CB and John Earwalker, "Evidence relating to the assessment of the WACC percentile for Airports", (August 2015).

¹²⁸ Wellington Airport submission on IM review draft decisions papers "IM review" (4 August 2016), para 69.

why they consider an uplift to WACC is necessary when making a comparison against their targeted or actual return. This will include further views and evidence they disclose on asymmetric social costs they consider are relevant to their pricing decisions.