



Maximum Level of Airport Charges at Dublin Airport 2014 Draft Determination

Commission Paper 1/2014

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Commission for Aviation Regulation

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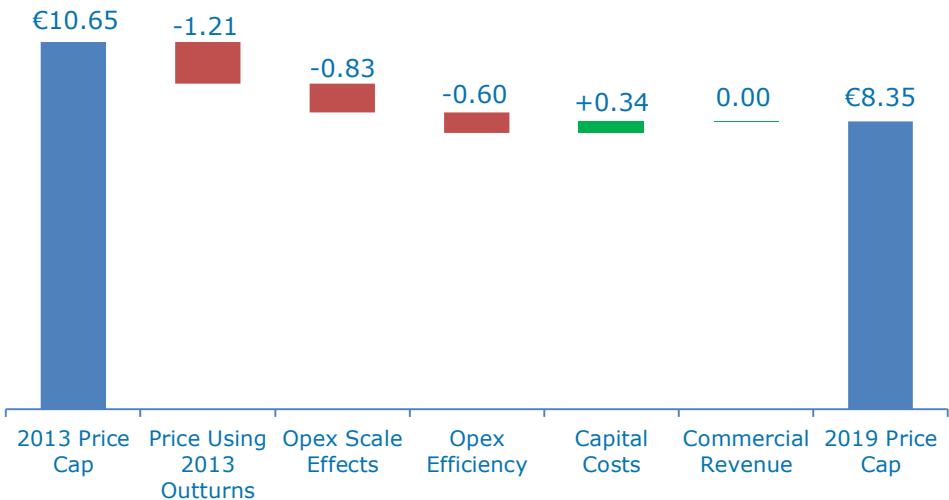
EXECUTIVE SUMMARY

Table 1: Proposed Price Cap, 2015-2019

	2015	2016	2017	2018	2019
Price Cap (€)	10.17	9.68	9.21	8.77	8.35
Annual change (%)		-4.8	-4.8	-4.8	-4.8

1. This year we are due to make a fourth Determination capping the maximum level of airport charges that Dublin Airport Authority (DAA) may levy at Dublin Airport. Airport charges include charges for taking off, landing and parking aircraft, the use of air bridges, for arriving and departing passengers, and for the transportation of cargo. The new Determination will take effect on 1 January 2015. We propose that it will last for five years. The cap will be expressed on a per passenger basis, and there will be a separate cap each year.
2. Table 1 shows the annual price caps we propose for the next five years.¹ The proposals imply a significant decline from the current levels. The main cause of that decline is simply that this Determination allows us to update the calculations to reflect actual DAA outturns on costs and revenues since we set the last Determination. As Chart 1 below shows, the 2013 price cap would have been €1.21 lower than it was had it been estimated using outturn data for operating costs and commercial revenues. The next most important component for explaining the drop is the higher passenger numbers expected in 2019 relative to 2013. Higher traffic volumes should allow DAA to realise some economies of scale. The scope for further operating efficiencies alone would have resulted in a 6% reduction in the price cap (or €0.60).

Chart 1: Getting to the 2019 Price Cap



¹ Unless otherwise stated, all costs and prices are reported in December 2013 prices using the Central Statistics Office’s consumer price index (CPI) to convert nominal values into real values.

3. There is no significant change in our general approach to regulation from past Determinations. It entails annual price caps on airport charges that DAA may levy on airport users, expressed as a maximum charge per passenger. DAA will continue to assume the risk of traffic deviating from the passenger forecast during the Determination, which will last for five years.
4. To estimate the price cap, we have generated forecasts for costs and commercial revenues at Dublin airport that might be expected if the airport is operated efficiently and economically. We estimate the revenues that DAA needs to raise from airport charges in order to recover efficiently incurred operating and capital costs, less any commercial revenues we expect it to generate. The per-passenger cap is derived by dividing this sum by the number of passengers expected to use Dublin airport in a given year. This is sometimes referred to as a building-blocks approach.
5. Passenger numbers at Dublin airport we forecast to grow during the next five years by almost 3% per annum, reaching nearly 24 million by 2019. If this forecast is correct, it will mean 2019 passenger numbers will break the record set in 2007. Our forecast is very similar to what DAA forecasts.
6. Our target for total operating costs at Dublin Airport remains broadly constant for the next five years. By 2019 we have allowed €189.6m, just 0.3% higher than 2013 despite our forecast that passengers will increase by 18% in the same period. The corollary of this is that we forecast per passenger operating costs to fall from €9.38 in 2013 to €7.94 in 2019. To achieve this, the target we have set for DAA amounts to efficiency savings of less than 2% per annum in operating costs. Instead, the downward trajectory on operating costs per passenger is largely driven by a recovery of scale effects. By 2019 we expect passenger numbers to be back at levels last experienced in 2006-2008 and, similarly, we expect operating costs to fall to levels experienced in 2006. More categories of operating expenditure will be included in the rolling-incentive scheme than were in the 2009 scheme; the scheme will also include some categories of commercial revenues.
7. Commercial revenues at Dublin airport are expected to rise because of increasing passenger numbers: by 2019 we expect them to be close to the levels seen in 2007. We forecast that they will remain broadly constant on a per-passenger basis for the next five year. Our price-cap calculations assume that they will average €6.56 per passenger during the next Determination.
8. Capital costs average €167m per annum, about 30% higher than in the last Determination. The 2015 opening regulatory asset base (RAB) is €1,518m, significantly higher than the opening RAB of €882m in 2010 since it now includes costs associated with building Terminal 2. To derive the opening RAB we have disallowed €183m of outturn capital expenditure that DAA incurred building Terminal 2 and during the period 2010-2014. In reconciling outturn capital expenditure with allowances set previously, the RAB Roll Forward Principles (set out in Annex 3 of the 2009 Determination) guided us.

9. We have allowed capital expenditure by DAA of €308m in the next five years, with a further allowance to construct a parallel northern runway of €296m if passenger numbers reach 25 million. These sums should be more than sufficient to facilitate the efficient and economic development of the airport. Only in the years when it was building Terminal 2 has DAA exceeded the average annual investment that we have allowed absent a parallel runway.
10. The return on capital allowed is 5.8% (as a pre-tax weighted average cost of capital). This is 120 basis points lower than the rate allowed in 2009, but near the top of the range of estimates that we consider reasonable today. We have reduced the allowed return on capital in response to the empirical evidence, rather than a change of approach on our part.
11. The depreciation profile used generates a price path that falls by 4.8% per annum for the next five years, given the other building blocks. To achieve this requires bringing forward about €90m of depreciation charges from what we might otherwise have allowed.
12. The quality of service regime from the last Determination has been retained, but with higher targets in most cases to reflect the generally better level of service now being offered at Dublin airport. The overall financial incentive means that up to 4.5% of DAA's revenues from airport charges are at risk if it fails to meet service quality targets. There are 12 separate targets in the scheme, one relating to security queue length, two to baggage-belt availability and nine relating to passenger survey data. The target for security queues continues to attract the biggest weighting, accounting for one-third of the total penalties in place.
13. We invite comments on all aspects of this Draft Determination by no later than 5pm on 31 July 2014. Details on how to respond are set out in Chapter 11. We will consider all comments received by this deadline prior to making our Final Determination, which we currently plan to publish in September 2014.

Notice of the Making of a Determination

In accordance with Section 32(7) of the 2001 Aviation Regulation Act, we hereby give notice of our intention to make a determination specifying the maximum level of airport charges at Dublin Airport that the Dublin Airport Authority may levy.

Pursuant to the 2001 Act, we must allow a statutory consultation period of not less than one month from the date of publication of this notice. As in previous periods, we give notice by way of publishing a draft determination. The deadline for receipt of representations is **5.00pm, 31 July 2014**. Interested parties should note the contents of Chapter 11 concerning the deadline. The conditions contained therein will be strictly applied without exception. Interested parties should also note the guidelines regarding issues such as delivery of documents and confidentiality.

1. Introduction

1.1 This document presents our Draft Determination for the maximum level of airport charges that Dublin Airport Authority (DAA) may levy at Dublin airport for a period starting 1 January 2015. Airport charges cover charges for taking off, landing and parking aircraft, using air bridges, arriving and departing passengers, and the transportation of cargo.

Draft Determination

1.2 We propose setting an annual per passenger price cap for each of the next five years. The proposed price cap in 2015 is €10.17. This is 4.8% lower than 2014's price cap of €10.68.

1.3 In subsequent years the price cap will continue to fall, in real terms, by 4.8% per annum. Additional adjustments to the price cap will be made if:

- Passenger numbers exceed 25 million in a 12-month period, to permit DAA to commence work on a second runway; or
- DAA fails to realise results in excess of a target level for various measures relating to quality of service at Dublin airport. The price cap may fall by as much as 4.5% should standards at the airport not reach the standards outlined in Chapter 8 of this report.

1.4 The proposed price cap does not include any sub caps.

1.5 Below we show a yield table for the Draft Determination. It shows the inputs used to calculate our proposed annual price caps. The table assumes that none of the events that would trigger a change in the annual price cap occur. For example, we assume DAA always meets the service-quality targets.

Table 1.1: Yield Table

	2015	2016	2017	2018	2019
Operating costs (€m)	191.3	188.6	187.0	188.3	189.6
Commercial revenues (€m)	141.4	143.3	146.3	152.3	156.4
Opening RAB	1518.0				
Closing RAB					1411.2
Return of capital (€m)	80.3	81.9	83.7	84.4	84.4
Return on capital (€m)	86.2	84.9	83.3	83.0	81.7
Total capital costs (€m)	166.6	166.8	167.1	167.5	166.1
Required revenue (€m)	216.4	212.1	207.7	203.5	199.3
Passengers (m)	21.3	21.9	22.5	23.2	23.9
Price cap (€)	10.17	9.68	9.21	8.77	8.35

1.6 The following chapters of this report provide the rationale for the numbers in the table and for the calculation used.

Consultation Process

- 1.7 We expect to publish a final Determination in September. This is consistent with the proposed timeline we first published in our 2012 Annual Report to the Minister for Transport, Tourism and Sports. Our website has maintained an up-to-date timeline since then.²
- 1.8 On 31 July 2013 we published an Issues Paper. That paper sought comments from parties on how we should proceed, specifically asking about what regulatory policies we should adopt, what methodologies we should apply and what data sources we should use. The paper contained historical data as well as a discussion of many of the issues that might be relevant based on past experience making determinations. We received four responses, from Aer Lingus, DAA, International Air Transport Association (IATA), and the development agencies (Forfás, Enterprise Ireland and IDA Ireland). Their views informed our Draft Determination, and we refer to the points the parties made in their responses throughout this document. The full responses are available on our website.
- 1.9 In the first quarter of this year we attended, in an observer capacity, a number of meetings arranged and chaired by DAA to discuss investment plans at Dublin airport with airline users. Following those meetings, in April 2014 we received from DAA a proposed capital investment program (CIP) for Dublin airport for the period 2015-2019. We have placed that document on our website. We have also seen written comments airlines provided to DAA on its investment plans following the meetings.

Consultants Retained by the Commission

- 1.10 To help with our deliberations, we commissioned two separate studies from external consultants, Steer Davies Gleave (SDG) and Ernst and Young (EY). Reports by both consultants are attached as annexes to this Draft Determination.
- 1.11 SDG reviewed the operational efficiency of DAA at Dublin airport. It met with both DAA and the airlines during its study, which it commenced in December 2013. We further refer to its report in Chapter 4.
- 1.12 EY reviewed the costs of investment projects put forward by DAA during its meetings with airline users. EY's work focussed on the proposed costings, and not on whether the proposed investments met the needs of current and future users. Chapter 5 shows how EY's work affected our Draft Determination.

Structure of the Report

- 1.13 The subsequent chapters in this document explain in more detail how we made this Draft Determination. The structure is the same as in the Issues Paper.
- 1.14 Chapter 2 describes the general approach to regulation that we have followed.

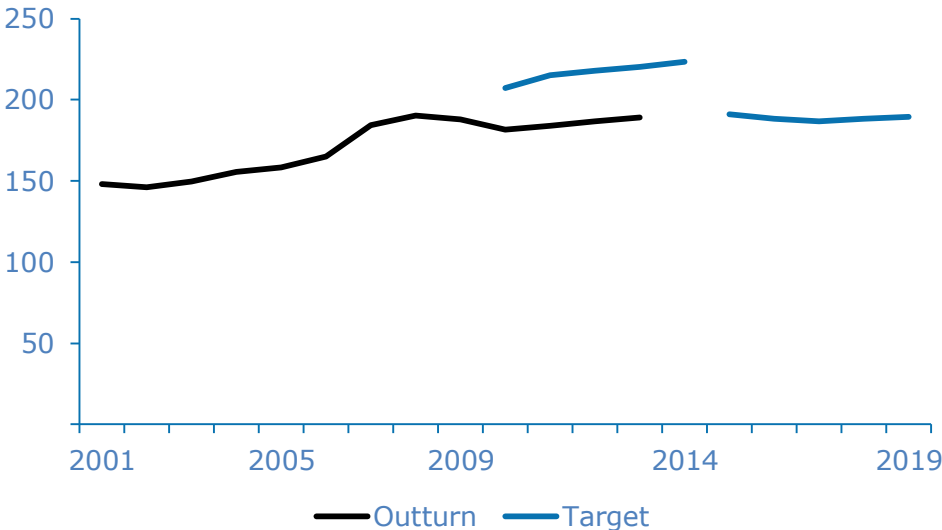
² See <http://www.aviationreg.ie/regulation-of-airport-charges-dublin-airport/2014-determination.576.html>

- 1.15 Chapters 3, 4, 5, and 6 address the traditional regulatory building blocks of passenger forecasts, operating expenditures, commercial revenues and capital costs. In each case, we set out the values we expect over the next five years and how we settled on these numbers. We also discuss briefly how our projections differ to those proposed by DAA in its regulatory proposition.
- 1.16 Chapter 7 sets out how the Draft Determination enables DAA to operate and develop Dublin airport in a sustainable and financially viable manner.
- 1.17 Chapter 8 discusses how we propose to have regard to quality of service at Dublin airport in our forthcoming Determination.
- 1.18 Chapter 9 deals with miscellaneous issues that do not fit in other chapters. The Issues Paper identified three possible issues: the separation of Shannon airport; price differentiation; and price-cap formula and compliance. We have not become aware of any additional issues to include since then.
- 1.19 Chapter 10 shows how our Draft Determination complies with our statutory objectives and how we have had regard to various statutory factors. This is typically done by referring to the preceding chapters.
- 1.20 Chapter 11 provides details for parties on how to respond to this Draft Determination. It is a statutory consultation period, so parties must respond by the deadline of 5pm, 31 July 2014.
- 1.21 There are also a number of annexes to this report, including the two reports by outside consultants. Appendices to this report provide a list of acronyms used, details on sources, and econometrics results. The spreadsheet model used to calculate the price cap is available on our website.

2. Approach to Regulation

- 2.1 There is no significant change in our general approach to regulation from past Determinations. The Determination will entail annual price caps on airport charges that DAA may levy on airport users, expressed as a maximum charge per passenger.
- 2.2 To estimate the price cap, we have generated forecasts for costs and commercial revenues at Dublin airport that might be expected if the airport is operated efficiently and economically. We estimate the revenues that DAA needs to raise from airport charges in order to recover efficiently incurred operating and capital costs, less any commercial revenues we expect it to generate. The per-passenger cap is derived by dividing this sum by the number of passengers expected to use Dublin airport in a given year. This is sometimes referred to as a building-blocks approach.
- 2.3 It is incentive-based regulation: once we have made the Determination, there are incentives for DAA to outperform the implicit targets that have been set. IATA supported such an approach as a second-best solution that should be used in the absence of competition. It is DAA that will profit or lose should outturns not correspond to the levels we have assumed when setting the price cap. By providing the regulated firm with strong incentives to manage costs, it is hoped that users will benefit in the longer run when the regulator has an opportunity to reset the price cap. This Draft Determination arguably illustrates that, transferring to users from DAA the benefits of realising lower than expected operating costs: our allowance for future operating costs has been revised down from that in place during the last Determination to reflect DAA’s actual costs in the past five years. Chart 2.1 illustrates this point, although the difference between the 2010-2014 target and outturn operating costs ignores one-off costs DAA incurred to achieve the savings, such as the Voluntary Severance Scheme. Up to end 2013, the Scheme had cost around €60m.

Chart 2.1: Revised Operating Cost Targets for Dublin Airport (€m)



Source: DAA Outturns, CAR 2009 Determination and Target

- 2.4 In the case of capital costs, our calculations have regard to a regulatory asset base (RAB). The costs of allowed investments are added to the RAB. The capital costs DAA is expected to recover in a given year constitute both a return of capital (depreciation charges) and a return on capital. The depreciation charges are subtracted from the RAB when rolling it forward; the return on capital depends on the size of the RAB and cost of capital that we allow. Variants of this "RAB-based approach" to regulation are commonly used by economic regulators outside of the communications sector.
- 2.5 We have refined our treatment of commercial revenues since the last Determination, following a consultation on the definition of the regulatory till.³ We continue to include commercial revenues in our calculations, but have left open the possibility that we may exclude some costs and revenues from the till where it protects current and prospective users from the risks associated with a commercial investment that DAA wishes to undertake. Despite the change, we think that our approach to regulation is more akin to single-till regulation than dual-till regulation since the regulation of airport charges continues to depend on the costs and revenues associated with other services at Dublin airport.
- 2.6 Aer Lingus suggested totex regulation and menu regulation as two further refinements to our approach to regulation that we might consider. We have chosen not to adopt them explicitly, although we support the regulatory goals these tools seek to realise: we are keen for DAA to have incentives to invest efficiently, with the prospect of it gaining if it is able to realise savings; we also recognise that it is the overall airport charges, and not the individual allowances for operating and capital expenditure, that users care about – DAA's incentives should be to minimise the overall level of costs for providing a given level of service over the coming years. Notwithstanding these desirable goals, we think that adopting either option would entail added regulatory complexity that may not be sufficiently compensated for by the enhanced incentives they are designed to bring.
- 2.7 Less complexity along with greater clarity was something DAA wanted. It is also something we are keen to provide, although we note that at times the simplicity or complexity can depend on how the idea is presented. For example, triggers for capital projects can complicate the building-blocks calculations. Yet they are a simple concept to understand and something DAA has itself proposed: the price cap will increase if and only if a certain condition is met that warrants a specific investment being made.
- 2.8 DAA also felt our approach needed to place more emphasis on passenger views. We are mindful that the definition of user for the purposes of making a Determination is broader than just airlines, and are interested in receiving the views of the wider airport community on this Draft Determination. We expect the generality of users will prefer a lower price cap and more demanding service-quality standards to the status quo, but would be interested to hear from parties prepared to pay more for an even better service or, conversely, those who would sacrifice service quality in return for even lower airport charges. This Draft Determination is also an

³ See Commission Papers CP4/2010, CP1/2012 and CP3/2012, <http://www.aviationreg.ie/regulation-of-airport-charges-dublin-airport/policy-papers.124.html>

opportunity for all users, and not just airlines, to comment on DAA's investment plans at Dublin airport.

Duration of the Price Cap

- 2.9 The new Determination will take effect on 1 January 2015 and last five years, ending 31 December 2019. By statute, it has to last four-plus years. We are satisfied that five years is a reasonable duration. It provides incentives for DAA to operate and develop the airport efficiently and economically and allows users to plan for a number of years with clear visibility on the likely price path for airport charges. Aer Lingus, DAA and IATA all expressed a preference for five years, and DAA's consultations with airlines concerning future investments covered the period up to and including 2019.
- 2.10 We do not have the discretion needed to follow the path suggested by the development agencies. They argued that we should defer making a new Determination until the Government has completed its review of the aviation regulatory mandate. However, by statute we have to make a new Determination by end 2014.
- 2.11 One potential downside with a five-year Determination is that the next price cap will be due in the same year as work on the third Reference Period for air traffic control charges is due. That may have resourcing implications for parties wishing to participate in both consultations, and possibly for the regulator if the Commission merges with Safety and Regulatory Division of the Irish Aviation Authority (IAA). Alternatively, parties may perceive advantages with aligning the timetable for regulating IAA and DAA prices. For example, regulatory decisions on investment allowances for a new runway and control tower could be made at roughly the same time.

Allocation of Risks

- 2.12 As in past determinations, DAA will assume all the risks that outturns deviate from the numbers assumed in the building-block calculations. As IATA argued in its response to the Issues Paper, it would not be incentive regulation if DAA did not assume the risk of costs deviating from the levels set in this Determination. The same is true for commercial revenues. In the case of traffic risk, all parties supported DAA assuming all the risk of deviations from expectation, although DAA expressed reservations about this approach if we did not adopt its traffic forecast. Since passenger numbers is something that DAA has some control over, we think it is right that DAA have financial incentives to maximise traffic. We do not think that the rationale for assigning risks in this manner is undermined if we do not use DAA's traffic forecast. Moreover, in practice there is little difference between our traffic forecast and DAA's.
- 2.13 Aer Lingus expressed interest in ensuring steady prices across determinations. It suggested a long-term annuity approach to pricing generally. We agree that a steady profile of prices is desirable, although it is not always easy to achieve. At the time of a determination we have to have regard to the facts available at that date. If there have been significant changes since the last determination was set, then the new

determination is likely to be different. For example, the 2009 price cap addressed a situation where passenger numbers were much lower than had been expected in 2005 and a new terminal had been built.

- 2.14 The background to this Determination is that operating costs have been much lower than forecast in 2009. Current and prospective users should benefit from those lower costs. The basic building blocks calculations might have yielded a price cap in 2015 of less than €9. Rather than impose such a dramatic one-off drop in the price cap, we have re-profiled the depreciation allowances so that prices fall more gradually. DAA does not gain from the re-profiling in net present value terms, since the closing RAB will be lower than it would otherwise have been.
- 2.15 We have also given some thought to how stable the price cap might be after the 2019. Obviously much can change over the next five years. Two variables that might have a significant bearing on future price caps, and which have changed significantly between determinations, are passenger forecasts and the allowed return on capital. We have considered scenarios where (a) 2020 traffic forecasts are 10% higher or lower than we forecast for 2019, and (b) the allowed rate of return is 120 basis points higher or lower than allowed in this Determination. Both scenarios are based on precedents that we have encountered in this or earlier Determinations.
- 2.16 Table 2.1 shows what the 2020 price cap might be under these scenarios. The calculations attempt to hold all else equal. For example, there is no adjustment to the opening RAB and the capital expenditure allowance is the same in 2020 as 2019. In the case of changing passenger forecasts, we do update the operating costs and commercial revenues to reflect the differing traffic levels.

Table 2.1: 2020 Price Cap Scenarios

	Cost of Capital		
	High (7.0%)	Base (5.8%)	Low (4.6%)
Passenger numbers up 10%	€7.65	€6.98	€6.31
Base case (23.8m passengers)	€8.77	€8.03	€7.30
Passenger numbers down 10%	€10.14	€9.32	€8.50

3. Passenger Forecasts

Table 3.1: Passenger Number Outturns and Forecast

	2013	2014	2015	2016	2017	2018	2019
Passengers (m)	20.2	20.7	21.3	21.9	22.5	23.2	23.9
Annual change (%)		2.6	2.8	2.9	2.9	2.9	2.9

Source: 2013 DAA outturns, 2014-2019 CAR forecasts

- 3.1 We forecast passenger numbers at Dublin airport to grow during the next five years by almost 3% per annum, reaching almost 24 million by 2019. If this forecast is correct, it will mean 2019 passenger numbers will break the record set in 2007.
- 3.2 The forecast assumes that changes in Irish gross domestic product (GDP) will prompt a change in passenger numbers that is 1.15 times greater. This relationship is based on econometric modelling that we have undertaken. Although it is our own passenger forecast, the forecast numbers do not differ significantly to those proposed by DAA during the CIP meetings.
- 3.3 DAA and the development agencies suggested that DAA was best placed to make traffic forecasts, whereas Aer Lingus and IATA expressed concerns about DAA's incentives when forecasting passenger numbers for regulatory purposes.
- 3.4 We have reviewed a version of DAA's internal passenger forecast model. The model forecasts passenger demand on route or route group levels using relative GDP weights based on the split of outbound and destination passengers for that specific route. The growth drivers include a general trend, GDP, and population growth. Hence, GDP forecasts for various European and non-European countries are included and influence the route traffic forecast. Ad-hoc changes can be done using off-model adjustments. The model also includes, for example, parameters for the load factor that can be altered.
- 3.5 There are a few reasons why using our own forecast has advantages. By design, we can keep it simple, which is something parties lobbied for. It is transparent, with all the parameters and variables in the public domain. This allows all parties responding to this Draft Determination to comment on how we might improve the forecast for the purposes of setting the price cap. Moreover, it allows parties to understand clearly how the forecast might change between the Draft and Final Determination in the absence of any refinements to the model, i.e. under what circumstances events might prompt us to update the forecast and how.

Modelling Passenger Numbers

- 3.6 As in 2009, we continue to model passenger numbers as a function of Irish GDP. However, the elasticity used is different. It is now 1.15, so a 1% increase in Irish GDP prompts a 1.15% increase in forecast passenger numbers at Dublin airport. This differs to the one-to-one relationship used in the 2009.

- 3.7 The change is prompted by updated regression results, shown in Table 3.2 below. The sample period now covers the period from Q1 1997 through to Q4 2013. The model continues to include seasonal dummies – the large positive value for the Q3 dummy is consistent with the idea that Dublin airport is busiest in the three month period covering July, August and September. The only other dummy we have included in our final model is one for the years 2006 and 2007. In those years, growth at Dublin airport was above what might otherwise have been expected and appears to have been related to a decision by Ryanair to base additional aircraft at the airport.

Table 3.2: Passenger Numbers Regression

Ln(Passengers)	Parameter
Constant	-10.12***
Ln(GDP)	1.15***
Q1 dummy	-0.06***
Q2 dummy	0.17***
Q3 dummy	0.34***
2006-2007 dummy	0.10***

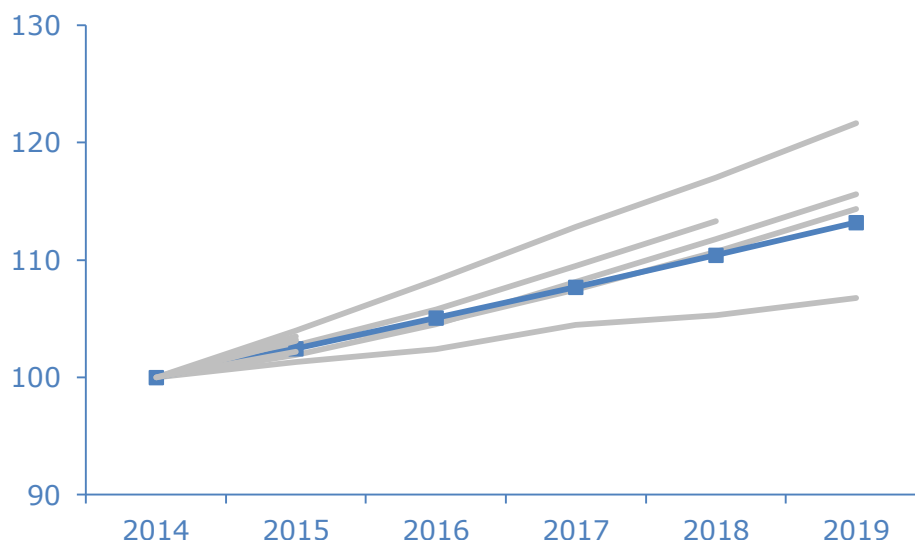
*** $p < 0.001$

Source: Central Statistics Office, DAA

Forecasts

- 3.8 Aside from the elasticity of 1.15, there are two other inputs that affect our final passenger forecasts:
- The level of passenger numbers in 2014; and
 - Annual GDP growth between now and 2019.
- 3.9 Both of these assumptions may be revised between now and the Final Determination, in which case our passenger forecast will change accordingly.
- 3.10 In the case of 2014 passenger numbers, our model currently assumes 20.7 million passengers. This coincides with the core forecast for the year in DAA's Regulatory Proposition. Prior to the final Determination, we will revisit this forecast for 2014 to reflect more up-to-date data and are likely to assume that growth in the first eight or nine months of the year will be matched in the remainder of the year. This depends on there being no exceptional events, such as a disruption that caused the airport or one of the larger airlines' operations to cease for an extended period during the summer months.
- 3.11 For future Irish GDP forecasts, we have used the latest forecasts of the International Monetary Fund (IMF). Should the IMF publish an updated forecast for Irish GDP prior to the Final Determination, we will update our passenger forecast accordingly.

Chart 3.1: Recent Real Irish GDP Forecasts (2014=100)



See Appendix 2 for more details, including sources, about the forecasts plotted in the chart above. The IMF's forecast is highlighted.

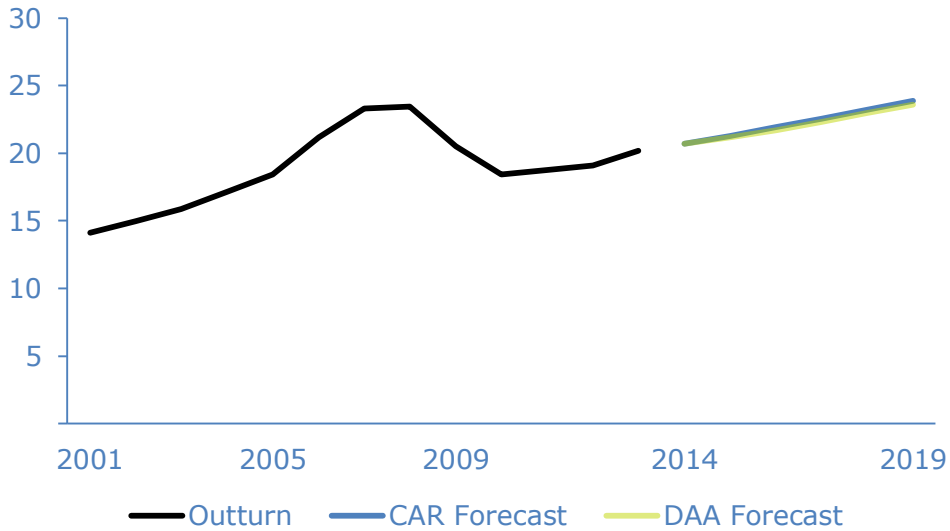
- 3.12 The IMF projects Irish GDP to grow by about 2.5% per annum. Chart 3.1 shows how the IMF's forecast compares with a number of other institutions' forecasts. Many of the forecasts do not extend beyond a couple of years – one attraction of the IMF forecast is that it provides a long-run forecast. The forecasts vary considerably. Even the same body can offer divergent forecasts: the lowest and highest GDP forecasts for 2019 are both by the Economic and Social Research Institute (ESRI) and imply average annual growth rates of 1.3% and 4% respectively.

Comparison with DAA's Regulatory Proposition

- 3.13 For this Draft Determination, we have assumed steady passenger growth such that by 2019 Dublin airport will reach the levels seen in 2007. The forecast is considerably less ambitious than the 25 million that DAA's CEO was recently quoted as targeting for 2017.⁴ Instead, the forecast for 2019 is similar to the level of traffic assumed in DAA's central forecast in its regulatory proposition, as shown in Chart 3.2 below.

⁴ Mulligan, John (2014, April 24) DAA says Cork needs Dublin air link. *Irish Independent*. Retrieved from <http://www.independent.ie/>

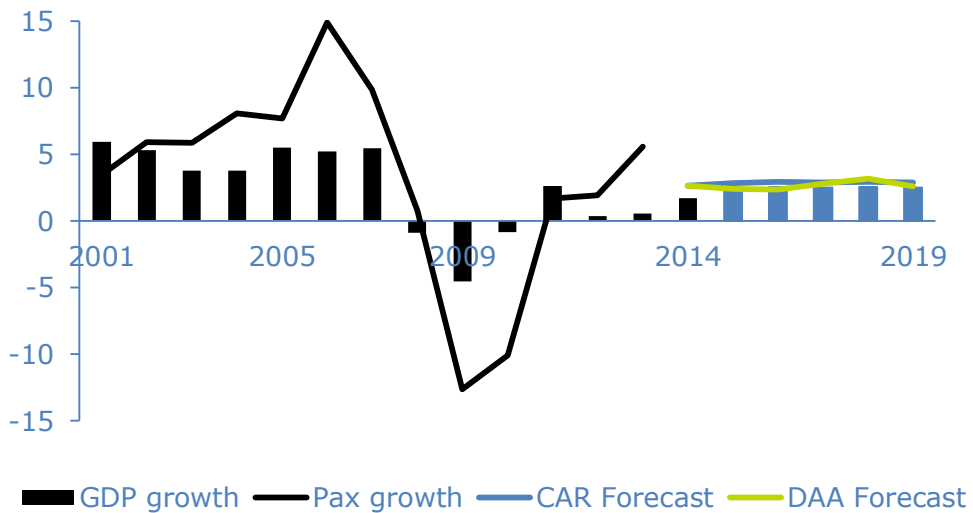
Chart 3.2: CAR and DAA Passenger Forecasts (mppa)



Source: DAA Regulatory Accounts and Regulatory Proposition, CAR forecasts

3.14 Both models assume an annual passenger growth that exceeds the growth in Irish GDP that we have assumed, as Chart 3.3 shows.

Chart 3.3: Annual Change in Irish GDP and Dublin Airport Passengers (%)



Source: Central Statistics Office, DAA Regulatory Accounts and Regulatory Proposition, CAR forecasts

4. Operating Expenditure

Table 4.1: Operating Expenditure Forecast

	2013	2014	2015	2016	2017	2018	2019
Total, €m	189.1		191.3	188.6	187.0	188.3	189.6
Per Passenger, €	9.38		8.99	8.61	8.29	8.12	7.94

Source: 2013 DAA outturns, CAR forecasts

- 4.1 We forecast that total operating costs at Dublin Airport will remain broadly flat for the next five years. By 2019 we forecast they will be €189.6m, just 0.3% higher than 2013 despite our forecast that passengers will increase by 18% in the same period.
- 4.2 The corollary of this is that we forecast per passenger operating costs to fall from €9.38 in 2013 to €7.94 in 2019. Total operating costs appear to be relatively unresponsive to passenger numbers, which would explain why per passenger operating costs increased between 2009 and 2012 as passenger numbers dropped. By 2019 we expect passenger numbers to be back at levels last experienced in 2006-2008 and similarly we expect operating costs to fall to levels experienced in 2008. The start of this effect can be seen in 2013, growth in passenger number of 6% resulted in a fall in per passenger operating costs.

General Approach to Forecasting Operating Expenditure

- 4.3 The forecasts we have used are derived from an efficiency assessment of operating costs at Dublin Airport that SDG conducted for us. Our final numbers differ from the SDG report for two reasons: we are using different passenger forecasts and a different price base. SDG's report is attached as an appendix, and we discuss the main findings below.
- 4.4 At the same time, we also looked at top-down evidence comparing Dublin Airport's overall costs with a number of possible peer groups: airlines, airports and semi-state companies. The findings from the top-down analysis could be read in different ways. They are presented later in this Chapter.
- 4.5 In responses to our Issues Paper, DAA supported a bottom-up study, an exercise we commissioned SDG to perform. In contrast Aer Lingus concluded that a similar approach in 2009 resulted in a flawed estimation of operating costs for 2010-2014. All parties supported some level of top-down, high-level benchmarking.

SDG's Bottom-up Study

- 4.6 SDG developed estimates for three scenarios. In all three scenarios SDG assumed quality of service will not fall from its current level.
- 4.7 The first scenario envisages no efficiency savings, but instead has costs responding to changes in passenger numbers and assumed wage drivers. Operating expenditure is assumed to be fairly inelastic. This is the main driver behind our forecast that per passenger operating costs will fall from €9.38 in 2013 to €7.94 in 2019. The forecast increase in passengers combined with this assumed elasticity would result in a price cap of €8.61

in 2019 even before identifying any scope for efficiency savings.

- 4.8 Although the model does not have an explicit overall operating cost elasticity, we estimate that it is around 0.1, i.e. a 10% increase in passengers would prompt a 1% increase in operating costs. The actual modelling work makes separate assumptions about the elasticities for different categories of operating expenditure, splitting between elements which are fixed and those which vary with passenger numbers (or related volume drivers.) These are shown in Table 4.2, along with the values used in the last two determinations.

Table 4.2: Summary of Operating Cost Elasticities

Category	2005	2009		2014
		T2 only	Airport (excl T2)	
Security Staff	0.75	0.33-0.64	1	0.3
Terminal Staff		0.6-0.63	0.6	
Retail Staff	0.25	0.3	0.3	0.5
Aviation Customer Support			0.95	
Maintenance		0.15-0.3	0	0
Cleaning		0.3	0	0
Other Airport	0.25			0
Other Corporate	0.25			0-1.0

Source: SDG study, CAR Determinations

- 4.9 The overall elasticity is lower than in past determinations, implying that operating costs depend less on passenger numbers than we have previously assumed. In 2009 the overall elasticity for operating costs (excluding T2) was 0.24, so a 10% increase in passengers would result in a 2.4% increase in operating costs. Had we retained this assumption, our per passenger operating cost target for 2019 would be €0.24 higher. Two large cost categories where SDG assume a lower elasticity than used previously are security and cleaning. SDG thinks that excess capacity in security during off-peak times allows this category to increase at only 0.3 times the passenger growth rate. For cleaning, the elasticity is zero because SDG thinks it is the area of space to be cleaned, and not the number of people passing through the space, that drives costs.
- 4.10 SDG allows for increasing wage levels in some staff categories. For low-skilled workers it is CPI+0.6% p.a., skilled CPI+1.6%. Higher increases are allowed for information technology (IT) workers due to skill shortages in the sector, and higher increases are allowed for Terminal 2 specific contracts due to their current lower levels. Salary levels for Terminal 1 legacy staff are not assumed to increase in real terms.
- 4.11 The second and third scenarios are labelled the low and high ambition cases. Both entail some efficiency savings being realised. In the case of the low-ambition case, SDG identifies savings that should be achievable without having to overcome significant obstacles. In the high-ambition case, SDG acknowledges that DAA would have to overcome significant obstacles to realise the savings.
- 4.12 SDG identified a number of areas where DAA could improve efficiency. A

number of these involved changing working conditions and practices. SDG have offered prescriptive methods in achieving these, largely through outsourcing, although in practice it would be a matter ultimately for DAA management to decide how to realise such savings. A large proportion of the excessive costs SDG identified relate to high salary levels for legacy staff. DAA has addressed this somewhat since the last Determination with the introduction of new conditions and flexible work contracts in Terminal 2. The average cost per employee stands at €56,800, 4% lower in real terms than the 2008 level. Both the low-ambition and high-ambition scenarios see scope for this to fall further.

- 4.13 Table 4.3 below shows the 2019 forecasts, by operating cost category, for the three scenarios as well as the level of operating costs we have assumed for our Draft Determination. For all operating cost categories, we have chosen the midpoint between the low and high ambition scenarios. Our target for 2019 is about 8% less than the operating costs SDG forecasts DAA would incur if it did not realise any efficiency savings between now and then. The target we have set for DAA amounts to efficiency savings of less than 2% per annum in operating costs, if the assumptions about passenger elasticities and wage drivers are reasonable.

Table 4.3: Total Annual Operating Costs by 2019 by Category

€m	Base	Low	High	Decision
Security staff	24.0	22.6	18.7	20.7
Central Function staff	22.7	19.6	17.9	18.8
Other staff costs	6.0	5.9	5.2	5.5
Campus Services staff	14.8	14.8	14.8	14.8
Airside Operations staff	4.3	4.3	3.8	4.1
IT & technology	14.7	13.8	13.0	13.4
Facilities & cleaning	22.8	22.5	20.3	21.4
Car Parks	5.4	5.4	4.9	5.1
Retail	12.7	12.5	11.0	11.8
Maintenance	24.0	23.1	23.1	23.1
Capital Projects	1.6	1.6	1.6	1.6
Utilities	7.7	7.7	7.7	7.7
Rent & Rates	13.7	13.7	13.7	13.7
Marketing and related costs	7.6	6.0	6.0	6.0
Consultancy services	5.9	5.9	5.9	5.9
Insurance	2.9	2.9	2.9	2.9
Other	6.4	6.4	6.3	6.3
Passengers with Reduced Mobility	6.9	6.9	6.9	6.9
Total	204.0	195.6	183.6	189.6

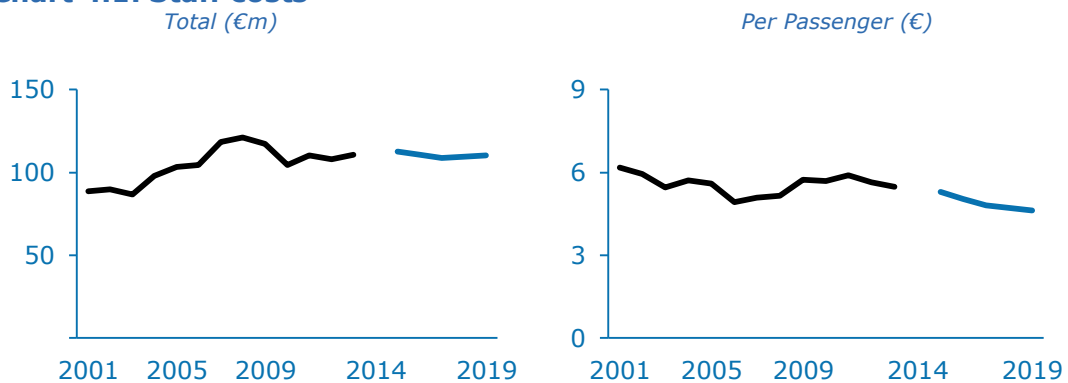
Source: SDG study, CAR forecasts

Composition of Operating Costs

4.14 Our forecasts for operating costs do not envisage its composition changing significantly between now and 2019.

4.15 In 2019 staff costs are estimated to be €110m, the same as 2013. This is 58% of total costs. Staff costs at DAA increased substantially for the period 2007-2009 but fell again for the period 2010-2013. Between now and 2019, we expect increasing passenger numbers and wage increases to put upward pressure on staff costs. The scope for efficiency savings identified by SDG largely offsets this upward pressure, such that we expect staff costs in 2019 to be at the same level as in 2013. This is despite the fact that we forecast 18% more passengers in 2019 than there were in 2013.

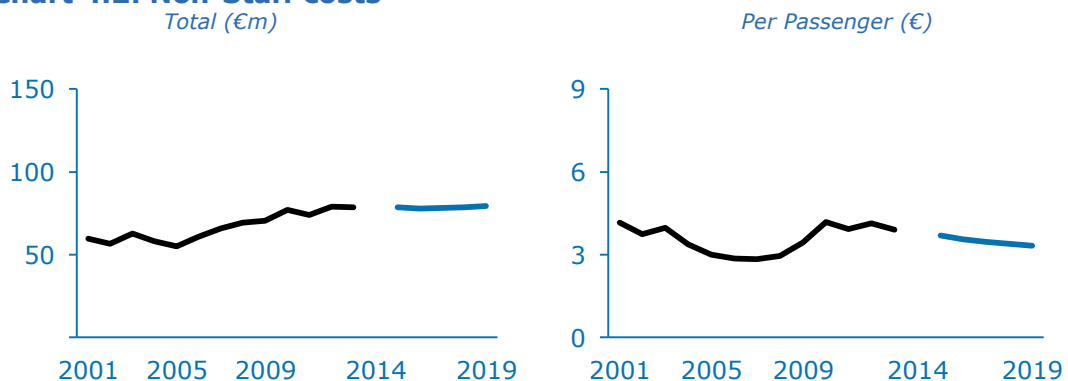
Chart 4.1: Staff costs



Source: DAA outturns, CAR Forecasts

4.16 Similarly, non-staff costs are expected to remain at their current levels despite the increased passenger numbers forecast. Non-staff costs have been steadily increasing over time. In per-passenger terms, our forecast would see non-staff costs return to the levels DAA was able to achieve from 2004-2008.

Chart 4.2: Non-Staff costs



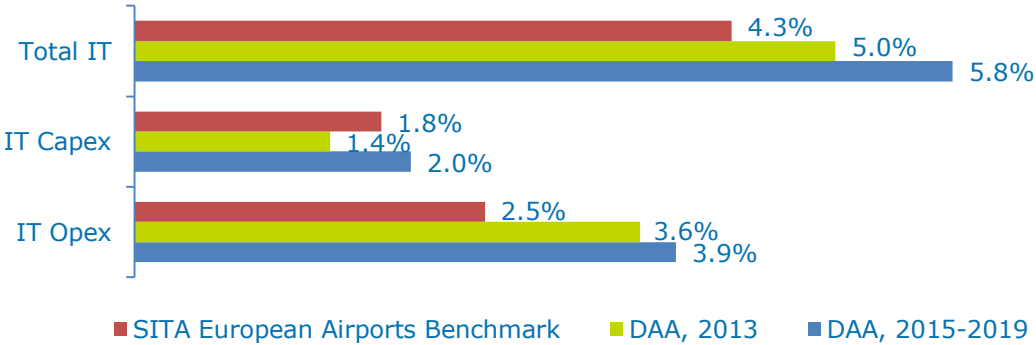
Source: DAA outturns, CAR Forecasts

Relationship with Capital Expenditure

4.17 For approximately 20 of the capital projects in its CIP, DAA makes claims of operating cost savings, primarily under the headings of energy savings or reduced maintenance costs.

- 4.18 SDG’s forecast of utility costs assumes DAA will achieve energy efficiency gains of 2% per annum. This is a target DAA has set itself, contingent on its CIP project 15.7.104 HVAC & BMS Upgrades. We have made an allowance for this project (see Chapter 6).
- 4.19 For other capital projects, the claimed maintenance savings have not been fully quantified by DAA. In addition, SDG have identified that there are only very limited efficiency opportunities in the maintenance category. For these reasons, we have assumed that any maintenance savings will be small – insufficient to justify alone any of the other investments DAA has proposed and immaterial for the purposes of our forecasts for operating expenditure.
- 4.20 The inability to quantify the savings for operations from capital investments extends to investments in IT. These investments usually have a short asset life, often shorter than the length of the Determination. Given the short asset lives, comparing IT expenditure between different entities might best be done at the aggregate level (capital and operating expenditure). The chart below shows that IT costs expressed as a percentage of revenue at Dublin Airport are higher than a European average using the same SITA survey DAA used in its CIP consultations. If you combine our average forecasted IT operating costs, IT capital expenditure and revenue for 2015-2019, total IT spend would be 5.8% of revenue compared to the European average of 4.3% (and compared to 5% for DAA in 2013). To bring total IT spend in line with the European benchmark would require DAA to reduce total IT spend by 27%.

Chart 4.3: Benchmarking IT Spend as Percentage of Revenue



Source: SITA Airport IT trends survey 2012, DAA outturns, CAR forecasts & allowances 2015-2019

Pensions

- 4.21 Pension contributions for existing staff form part of staff costs. They vary depending on the type of contract the staff member is on. SDG’s efficiency study focussed on what might constitute an efficient remuneration policy, including pension contributions, for an operator running Dublin airport.
- 4.22 We are aware of ongoing issues relating to the deficit in the Irish Aviation Superannuation Scheme (IASS). A number of current and past staff of DAA are members of this scheme. Should an agreement be reached on a funding solution we do not believe current or future airport users should have to fund this. A competitive firm would have limited scope to recover such an expense through increasing its prices, as presumably is the case

for Aer Lingus which also has been involved in the IASS discussions. Instead, it is our view that any contributions DAA makes should be funded from Shareholders' Funds, future retained earnings, foregone dividends or equity injections. Conversely, were there to be a pension surplus, we would not factor this into our calculations and lower the price cap.

- 4.23 The operating cost allowances in the 2001, 2005 and 2009 Determinations all included sums deemed sufficient to meet staffing costs necessary for the efficient operation of Dublin Airport. To increase today's operating cost allowance on account of a pension deficit would arguably be akin to revisiting those operating cost allowances, undermining the intended incentive properties of price-cap regulation. We do not intend to allow DAA to recover extra cash today where it failed to meet an operating cost target from an earlier Determination, for the same reason that we do not intend to reimburse users for the fact that DAA outperformed the operating cost target in the period 2010-2014.

Top-Down Benchmarking

- 4.24 Our price-cap calculations are based on the findings of SDG. Nevertheless, we have reviewed some top-down evidence looking at how Dublin Airport's overall costs compare with other entities.

Comparing Dublin Airport with Other Airports

- 4.25 Assessing DAA's operating performance by benchmarking against other airports is very appealing and a method supported by responses to our Issues Paper. However, despite many methods put forward by many reports, there is no agreed way to identify a group of comparable airports. And the choice of airports affects results greatly. Not only do airports differ physically, they also have different operating models, providing different products and different service levels.
- 4.26 For a sample we tried to include every European airport which Ryanair or Aer Lingus included in their March 2014 route maps as destinations from Dublin airport. For data, we sought publically available annual accounts or regulatory reports. In some case we have used accounts which cover more than one airport: for example, Rome includes both Ciampino and Fiumicino. In other cases, group accounts were too aggregated to correctly assign costs to the airport. While this trawl has been extensive, it may not be complete. It gives us data on 69 airports, including 43 of approximately 90 European destinations served by Ryanair and 47 of approximately 80 European destinations served by Aer Lingus.
- 4.27 We compare airports using operating cost per passenger. We do not apply a factor-cost adjustment, as we believe there are problems with applying a country-level adjustment: applying the same cost-level adjustment to Sheffield and Heathrow or Warsaw and Lublin would be questionable.
- 4.28 From this examination we see that in 2012 per passenger operating costs at Dublin Airport were 1% below the sample average, 7% below the average for airports in the sample with between 10 and 35 million passengers per annum (mppa), 5% below the average for destinations used by Aer Lingus, but 10% above the average for Ryanair destinations.

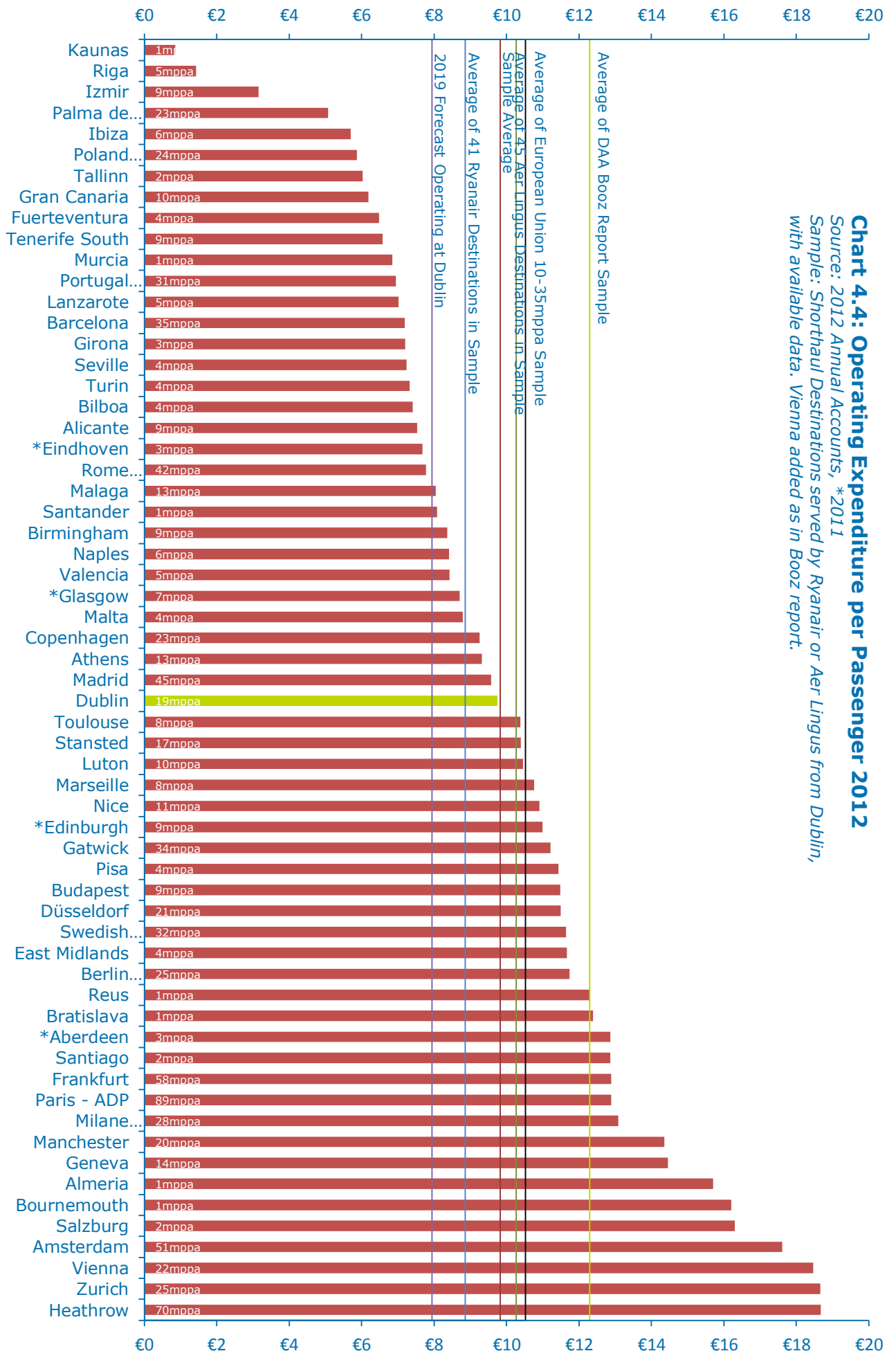


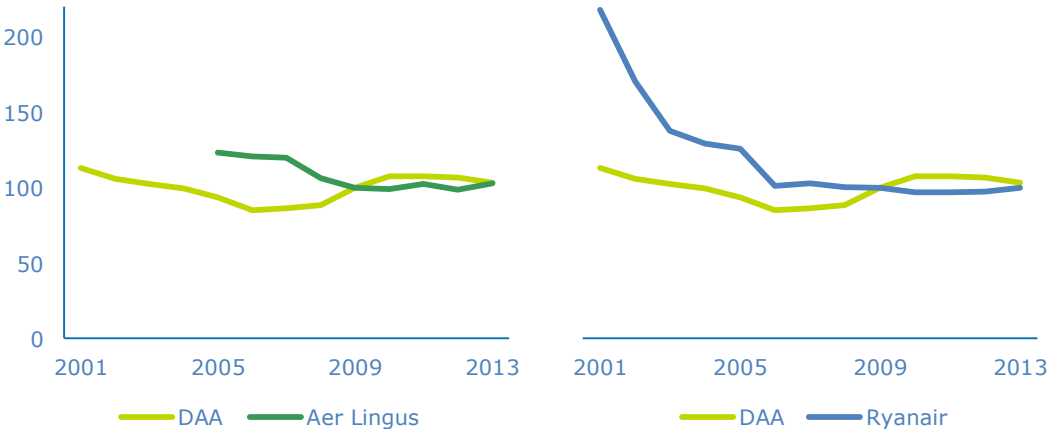
Chart 4.4: Operating Expenditure per Passenger 2012
 Source: 2012 Annual Accounts, *2011
 Sample: Shorthaul Destinations served by Ryanair or Aer Lingus from Dublin, with available data. Vienna added as in Booz report.

- 4.29 Our sample includes all airports used in the study of operating costs by DAA’s consultants, Booz. Their sample of airports has an average per passenger operating costs 25% higher than the average for all airports in our sample.
- 4.30 Chart 4.4 shows that our forecast for 2019 per passenger operating costs would put DAA significantly below the 2012 averages. While the data show that Dublin’s current operating costs are not dissimilar to the sample average, it does not mean that there are no opportunities for efficiency gains. There are many airports more efficient than Dublin. In addition, the averages will be influenced by airports which may be far from the efficiency frontier. Finally, it is unlikely that the 2019 industry average will be the same as the 2012 average; competitive firms strive to realise savings over time.

Comparing Dublin Airport with Airlines

- 4.31 To get a feel for how Dublin Airport’s operating costs have evolved over time, we have compared the evolution of per passenger operating costs with those of the two main airlines operating at Dublin Airport. For Aer Lingus and Ryanair, we have looked at controllable operating costs (excluding fuel and airport and air traffic control charges).
- 4.32 Since the last Determination, the airlines’ and airport’s per passenger operating costs remained broadly flat; per passenger costs at both Aer Lingus and DAA increased by 3% whereas Ryanair’s costs per passenger are the same as in 2009. The comparison would be less favourable for Dublin Airport if we went further back in time. Both Ryanair and Aer Lingus were able to realise cost savings in the years prior to the last Determination, whereas per passenger operating costs at Dublin were higher in 2009 than they were in 2003.

Chart 4.5: Airline and Airport Per Passenger Operating Costs, 2009=100



Source: DAA outturns, airline annual reports. Aer Lingus data only available from 2005 onwards.

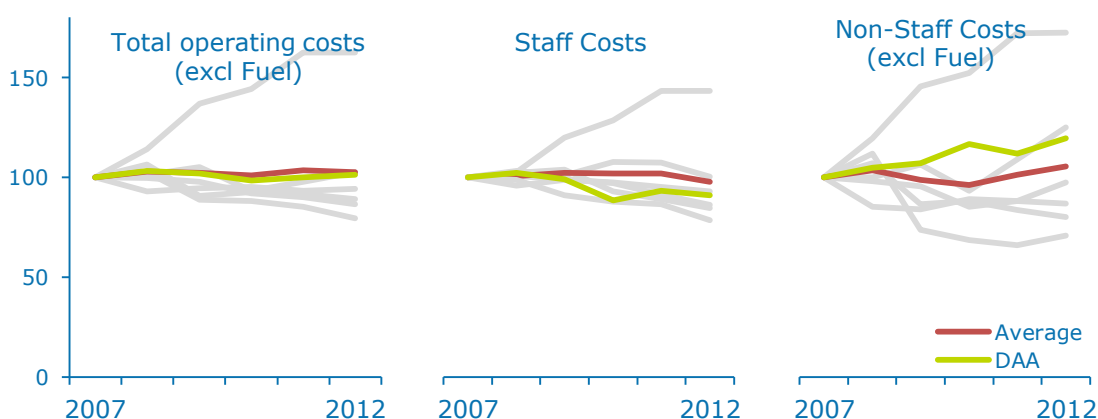
- 4.33 Obviously the value of this comparison depends on the extent to which the operations are comparable. Airlines and airports do operate in the same industry – they have the same customers, experience the same demand shocks and, in some cases, have similar regulatory and security

requirements. Moreover, Aer Lingus was a semi-state company until 2006, so faced many of the issues that Dublin Airport might face relating to conditions and work practices. Against that running an airline and running an airport are different business. Airlines are more mobile in nature, able to respond to market conditions by re-aligning supply.

Comparing Dublin Airport with Irish Semi-State Companies

4.34 As a final comparator, we have compared Dublin Airport’s operating costs with those of six other Irish semi-states. These firms operate in unique business environments; many are monopoly providers with some or all of their revenues set by a regulator. All have a common equity holder.

Chart 4.6: Operating Costs at Irish Semi-State Companies (2007=100)



Source: Annual reports, DAA outturns. Semi-state Companies: An Post, Bord Gáis, CIE, ESB, IAA, RTÉ

4.35 For this comparison, we have looked at how operating costs have evolved since 2007. The start year was chosen, as it is an opportunity to see the extent to which the companies have been able to manage operating costs since the economic downturn. The comparison has focussed on aggregate costs.

4.36 The finding suggests that Dublin Airport has managed its operating costs in line with the average of this sample. One caveat to this is that Bord Gáis influence the average and their operating costs increased by 62% over this period.

4.37 Breaking down the costs, DAA’s management of staff costs appears to have been relatively good. While the sample fell by 2%, they fell by 9% at Dublin Airport. In contrast, non-staff costs at Dublin Airport have increased since 2007 by 20% whereas they grew by an average of 5% for the peer group.

Rolling Schemes

4.38 In the 2009 Determination we introduced rolling schemes for operating costs. A number of cost categories which were thought to be unrelated to passenger numbers were included in the scheme. Rolling schemes provide DAA with strong incentives to always realise potential savings regardless of where in the regulatory cycle it is – it always keeps the gain for 5 years.

Without a rolling scheme, operating cost savings identified towards the end of the regulatory period may be deferred until the start of the next regulatory period in order to maximize the benefit to DAA.

2009 Reconciliation

- 4.39 In our Issues Paper we presented two options for adjusting operating cost allowances for the period 2015 to 2019 based on the outcome of our 2009 rolling scheme. We have adopted the approach preferred by respondents to the Issues Paper, which was to first forecast operating costs and then apply an adjustment. In our Issues Paper we referred to an adjustment for 2014 outturn, but as our forecasts are based on 2013 outturns, DAA will already keep any gains made in 2014 for six years. The 2013 outturns for operating costs included in the rolling scheme reversed the previous incremental savings. Therefore there will be no adjustments made to the operating expenditure allowance for 2015-2019 on account of the 2010-2014 rolling scheme.

Table 4.4: Rolling Scheme Targets and Outturns

Rolling Scheme adjustment	2010	2011	2012	2013
Target	23.4	23.4	23.4	23.4
Outturn	21.9	21.8	21.4	23.0
Incremental savings	1.6	.0	.4	-1.6

Source: DAA outturns, 2009 Determination.

Future Rolling Schemes

- 4.40 For 2015-2019 we propose an extended rolling scheme. Almost two thirds of operating expenditure will be included, with the categories and annual targets listed in Table 4.5 below. The proposal will require a change to the Regulatory Accounts that DAA publishes, since the costs categories in the table below do not appear in the current regulatory accounts.

Table 4.5: Rolling Scheme for Operating Costs (€m)

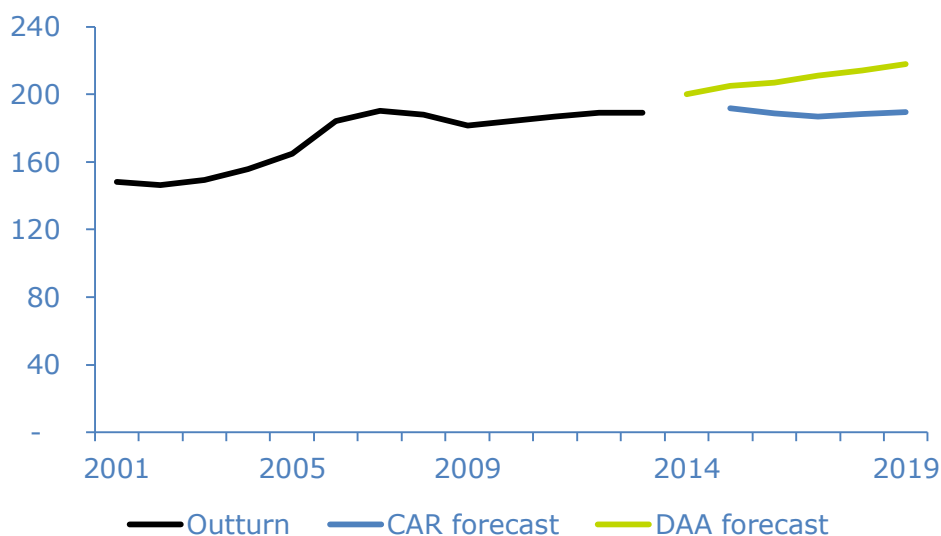
Category	2016	2017	2018
Central Function Staff	18.5	18.5	18.6
Other Staff Costs	5.6	5.5	5.5
Campus Services Staff	14.5	14.6	14.7
Airside Operations Staff	4.0	4.0	4.0
IT & Technology	13.9	13.7	13.6
Facilities and Cleaning	21.2	21.3	21.3
Car Parks	5.1	5.1	5.1
Maintenance	23.1	23.1	23.1
Capital Projects	1.5	1.6	1.6
Utilities	7.7	7.7	7.7
Rent & Rates	13.7	13.7	13.7
Consultancy	5.9	5.9	5.9
Insurance	2.9	2.9	2.9
Target	137.6	137.6	137.8

- 4.41 In extending the proposed rolling scheme, a key consideration is that the scheme should reward efficiency gains by DAA and not depend heavily on passenger outturns. We have chosen operating cost categories that we believe are largely independent of passenger numbers. For this reason the rolling scheme excludes security, retail and marketing costs. It also excludes costs associated with providing services for passengers with reduced mobility and levy contributions DAA has to make.
- 4.42 The focus is on total operating costs and not per passenger costs. DAA's total costs for these cost categories need to be lower than the target.
- 4.43 The effect of this rolling scheme will be realised at the time of the next Determination. We envisage following the same approach as used when incorporating the effects of the 2009-2014 rolling scheme into this Draft Determination. An operating costs forecast will be made, and then revised down should DAA have outperformed the rolling-scheme target. We will look at how DAA has fared relative to the overall target. To prevent gaming of the system, operating cost savings must be sustained. Those achieved in 2016 must be maintained in 2017 and 2018 to be carried forward; those achieved in 2017 must be maintained in 2018. The financial model includes a worksheet showing how we expect these calculations to work.

Comparison with DAA's Regulatory Proposition

- 4.44 Our price-cap calculations assume total operating costs staying broadly constant over the next five years. By contract, DAA envisages them increasing to almost €220m by 2019 in its base case, almost 15% higher than current levels. The difference reflects differing assumptions about where operating costs should be this year and next, and how they should evolve over time. DAA's base case assumes operating expenditure in 2014 and 2015 more than €10m higher than the 2013 outturn. We forecast similar operating cost levels in 2015 as in 2013.

Chart 4.7: CAR and DAA Operating Expenditure Forecasts (€m)

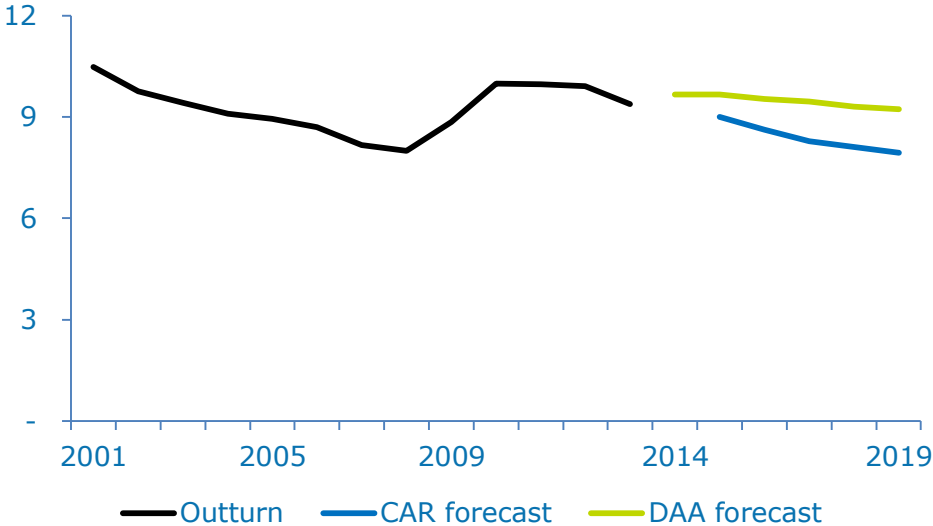


Source: DAA Regulatory Accounts and Regulatory Proposition, CAR forecasts

- 4.45 The other distinction is that DAA expects costs to rise over time, whereas we have them staying roughly constant. Given passenger numbers are

expected to increase over time, we are forecasting a more rapid decline in per passenger charges than DAA as illustrated in Chart 4.8 below. Our target has per passenger operating costs falling to below the levels achieved in 2007, whereas DAA envisages limited scope to reduce per passenger costs much below current levels suggesting limited scope for efficiencies of scale to be enjoyed.

Chart 4.8: Per Passenger Operating Expenditure Forecasts (€)



Source: DAA Regulatory Accounts and Regulatory Proposition, CAR forecasts

5. Commercial Revenues

Table 5.1: Commercial Revenues Forecast

	2013	2014	2015	2016	2017	2018	2019
Total, €m	132.2	134.6	141.4	143.3	146.3	152.3	156.4
Per Passenger, €	6.55	6.50	6.64	6.54	6.49	6.56	6.55

Source: 2013 DAA outturns, 2014-2019 CAR forecasts

- 5.1 We forecast that commercial revenues at Dublin airport will remain broadly constant on a per-passenger basis for the next five years. Our price-cap calculations have assumed that they will average €6.56 per passenger during the next Determination. Given the forecast rise in passenger numbers during this period, it means that aggregate commercial revenues are expected to rise: by 2019 we expect them to be slightly above the levels seen in 2007.
- 5.2 In deriving this forecast, we have assumed that DAA will continue to seek to maximize commercial revenues. With the exception of ground handling fees charged for access to installations (ATI fees), we do not have the power to regulate the level of commercial revenues that DAA collects. All else equal, higher assumed commercial revenues result in a lower price cap under the single-till approach to regulation we continue to use.

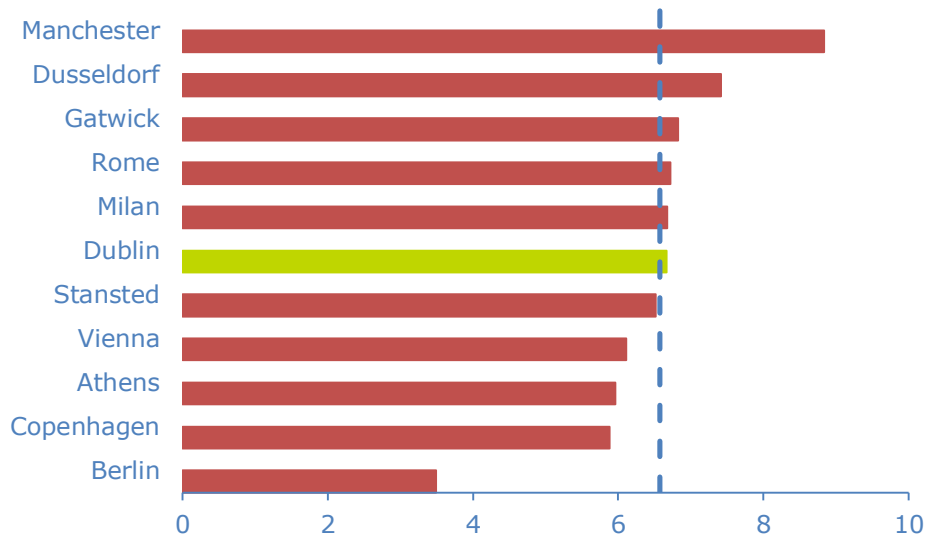
General Approach to Forecasting Commercial Revenues

- 5.3 Our overall commercial revenues target is derived by summing separate forecasts for different components of commercial revenues. In keeping with DAA regulatory accounts, we have generated forecasts for
- retail,
 - property and concessions,
 - car parking, and
 - other activities.
- 5.4 Within property and concessions and other activities, we disaggregated further before making forecasts.
- 5.5 For the various subcategories, we have used econometric modelling to estimate a relationship between passenger numbers and revenues, i.e. an elasticity, based on historical data. These elasticities are then applied to 2013 outturn data to forecast revenues for the Determination period. Adjustments are made to the forecasts where there are expectations that a subcategory will deviate from past trends. Investments in new products or capacity are the primary reason for such assumed deviations.
- 5.6 This is the same approach we used in 2009. It was supported by Aer Lingus in its response to our Issues Paper. DAA advocated a more qualitative approach. We continue to believe that the 2009 approach of basing the forecast on trends at the macro level is a better starting point. It avoids the need to assess how each development will interact with other revenue sources. A bottom-up approach may identify a particular retail unit could earn more revenue with a different use, but may not identify how that change will affect other commercial revenues at the airport. Both the 2001 and 2005 Determinations ended up with forecasts above what

DAA was able to achieve, whereas the 2009 determination was broadly in line with commercial revenue outturns.

- 5.7 As a sense check, we have compared our forecast with data on what other airports currently achieve. The available evidence from other European airports of a similar size to Dublin suggests our forecast is achievable (see Chart 5.1). Using the most recently available results, the average commercial revenue per passenger in our sample was €6.46. This compares to our target for DAA over the next five years of €6.56 per passenger at Dublin airport.

Chart 5.1: Commercial Revenues per Passenger at European Airports*



Source: Regulatory Accounts, Annual Reports, Accounts: Dec 2012, March 2013 or March 2012. Results for Berlin, Milan and Rome combine airports.

*All 10-35mppa airports in European Union with available disaggregated data.

Estimating Passenger Elasticity of Commercial Revenue

- 5.8 The elasticities we have used are shown in Table 5.2. For example, retail has an elasticity of 0.9, which implies that a 1% increase in passenger numbers should result in a 0.9% increase in retail revenues. These elasticities are based on estimates from regression analysis, which show the long-run average response to changes in passenger numbers. The elasticities used in the 2005 and 2009 Determinations are given for reference.

Table 5.2: Summary of Elasticities

Category	2005	2009	2014
Retail	1.0		0.9
Direct Retail		0.56	
Concession Retail		1.3	
Property	0.5		
Property Concessions		0.44	0.45
Property Rental		0.3	0
Advertising			0.8
Car Parking	1	0.4	1
Other	1	0.74	
Non-CBP			1.3

Source: CAR Determinations

- 5.9 All of our estimated elasticities are with respect to passenger numbers. This contrasts with the 2009 Determination, which in some instances estimated the historic relationship between a category of commercial revenues and GDP or the Central Statistic Office's retail index. All three series (passenger numbers, GDP and the retail index) are highly correlated.
- 5.10 Details of the regression results can be found in Appendix 3. The regressions use monthly data. For each of the subcategories of commercial revenues, we report the results for three econometric specifications. The first specification uses just the passenger numbers as a predictor of revenue – an uncontrolled correlation regression. The second specification introduces monthly dummies to remove seasonal effects. The third specification includes a trend variable which controls for any underlying trending in the data series – for example this controls for the observed downward trend in car parking revenues. As all variables are logged, the coefficient on passengers can be read as an elasticity. The elasticities we have used correspond to those estimated when including a trend variable.
- 5.11 Given the relative shares of the different streams of commercial revenues, our estimates imply an overall elasticity of about 0.7. A 10% increase in passenger numbers would result in a 7% increase in commercial revenues. This implies, all else equal, per-passenger commercial revenues declining as passenger numbers increase. Our target for commercial revenues does not have this property, despite forecasting increasing passenger numbers. This is because, as set out below, proposed investments by DAA are forecast to generate incremental commercial revenues.

Commercial Revenues and Capital Expenditure

- 5.12 Where DAA has proposed capital projects which are revenue generating we have uplifted our forecasts by the amount of incremental revenues DAA forecasts for the project, starting from when the project is due to come on stream. DAA identified six such projects, listed in Table 5.3. The table shows the investment we have allowed for the project. It also attempts to provide information on how these capital projects will affect the next Determination and future determinations.

- 5.13 For 2015-2019, the price cap would be marginally higher if we excluded one or more of the projects. Current users benefit from our making an allowance for these projects. All six contribute more, in terms of the incremental commercial revenues assumed, than the depreciation and return on capital costs that we have allowed in the period. For example, our commercial revenue forecast in 2019 is €1m higher than it would otherwise have been because we made an allowance for the long-term car park resurfacing project. The project also increases our capital cost allowances in that year by €0.5m, such that the overall effect is to reduce by €0.5m the amount DAA needs to recover from airport charges (about €0.02 per passenger).
- 5.14 After 2019, it is uncertain whether all prospective users will benefit from the investments in terms of a lower price cap. With the exception of the investment in digital advertising, the costs of the investment will not be fully depreciated. Indeed, in many cases more than 90% of the capital cost will remain. Assuming a RAB-based approach to regulation continues, future price cap calculations will include an allowance for return on and return of capital. Separately, the target for commercial revenues will be reset. The revenue forecasts are likely to depend on outturns, so if the projects have been successful future commercial revenues forecasts will be correspondingly higher and the net effect will be a lower price cap. However, if a project failed to generate incremental revenues, post 2019 price caps are likely to be higher than they would have been had we not included an allowance for these investments.

Table 5.3: Revenue Generating Investments

€m	Project cost	Net Contribution 2015-2019*	Amount remaining in RAB 2019	
Long Term Car Park Resurface (2019)	6.1	.5	6.0	98%
Terminal 2 MSCP (2018)	15.8	1.2	15.2	96%
Car Rental Centre (2018)	7.9	.9	7.5	94%
Commercial Hanger Infrastructure (2016)	.9	.1	.8	88%
Cargo Terminal Development (2016)	1.7	.7	1.1	67%
Digital Advertising (2015)	.6	2.9	.0	0%

Source: DAA CIP, CAR calculations

*Net contribution is assumed incremental commercial revenues less the costs of depreciation and return on capital. We have not included any allowance for incremental operating expenditure in the period 2015-19.

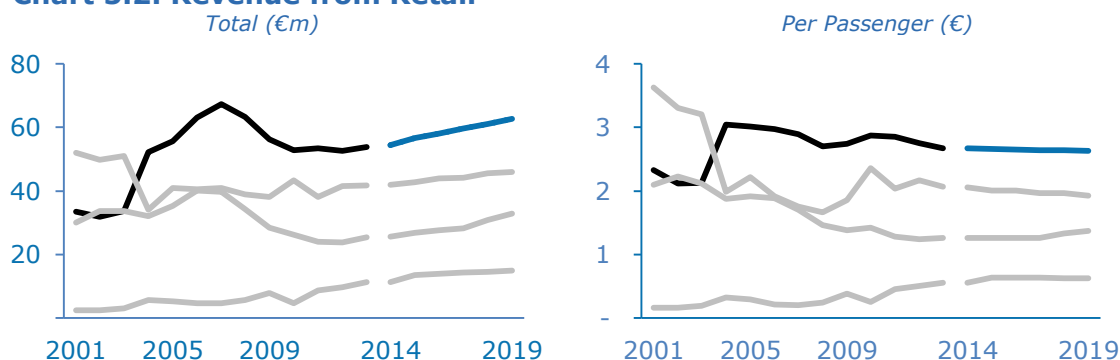
- 5.15 The table only identifies capital projects expected to generate incremental commercial revenues. There are a number of other investments motivated by the potential for commercial revenues for which we have made an allowance, such as *15.5.001 Retail Refurbishments*, but not revised up our forecast for commercial revenues. We have accepted DAA's rationale that these investments are necessary just to preserve existing levels of commercial revenue.

Till Exits

- 5.16 Since the last Determination we consulted with parties about the possibility of changes to the regulatory till. Our final proposals in this regard set out circumstances in which we would exclude revenues from the regulatory till and allow DAA to assume the risks from proceeding with the project.
- 5.17 For the Draft Determination, no such adjustment has been made: our commercial revenue forecasts have regard to the same sources of income as in past determinations. However, this may change between now and the Final Determination.
- 5.18 Proposals to build a Dublin Airport City are the most likely rationale for a change in approach. There may be a downward adjustment to the RAB to account for assets no longer contributing to the regulatory till, and thereafter any costs and commercial revenues associated with the venture will not feature in Determinations. It will be DAA that assumes all the investment risks associated with the project. This adjustment, if it does happen, would affect the treatment of revenues from non-terminal landside office and hotel accommodation. For the purposes of this forthcoming Determination, such a change in the regulatory till should not materially affect the price cap
- 5.19 Another possible change to the regulatory till relates to the treatment of hangar income. DAA has excluded hangar income from its forecasts for future commercial revenues on the basis that they should be excluded from the regulatory till. In 2009, our Final Determination made no allowance for an investment project relating to hangar maintenance and also revised down our forecast for hangar income, following opposition to such a project from users. DAA proceeded with the project anyway. However, there was no proposal at the time to remove this revenue stream from the regulatory till so our forecasts include these revenues.

Retail

Chart 5.2: Revenue from Retail



The other series plotted in this chart (in grey) are the other categories of commercial revenues.
Source: DAA Regulatory Accounts, CAR forecasts

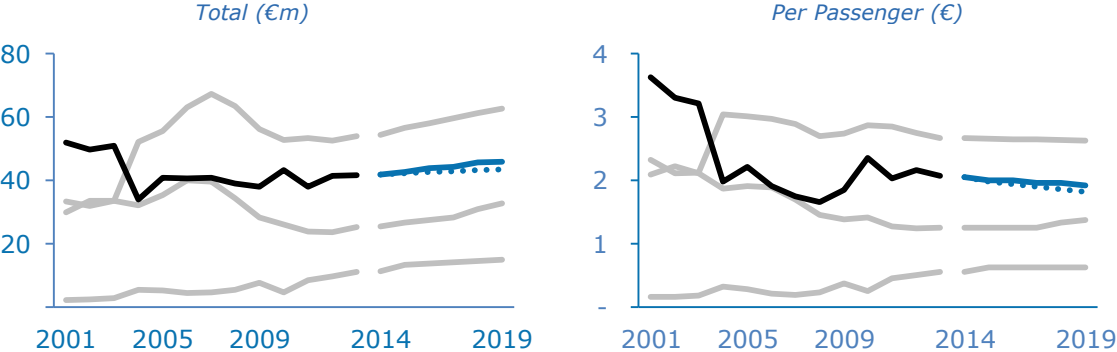
- 5.20 Retail remains the most important source of commercial revenue. We expect this to continue: in 2019 40% of our commercial revenue forecast comes from retail (net of cost of sales).
- 5.21 We estimate that total revenue from retail will increase from €53.9m in

2013 to €62.8m in 2019. We expect a slight reduction in retail revenue per passenger, from €2.67 to €2.63.

- 5.22 Our results are entirely driven by the assumed relationship between passenger numbers and retail spend. We have used an elasticity of 0.9, which accords with the historic relationship when a trend variable is included in the analysis. This is less than the one-to-one relationship used in 2005.
- 5.23 This is the first determination where we have not sought to make separate forecasts for direct retailing and concessionary retailing. We are indifferent about how much DAA relies on concessionaires to maximise its net retail revenues. Attempting to forecast the two series separately would require forming a view on the extent to which DAA might change the share of income from these two sources. More generally, we have not attempted to form a view on matters such as the optimal locations and mix of retail stores, which are management decisions for DAA.
- 5.24 There are no adjustments to the base retail forecast. DAA has not proposed any capital projects for the period 2015-2019 expected to generate incremental revenues. Nor have we been convinced that the amount of retail space in Terminal 2 warrants a step improvement in the retail revenue that DAA is generating. Aer Lingus’ response to our Issues Paper argued that there was too much retail space in Terminal 2. Comparing retail revenues per square metre of retail space across the two terminals shows that revenues per square metre of retail space are higher in Terminal 2 than in Terminal 1 across a number of classifications.
- 5.25 Finally, we have not sought to generate a separate forecast for incremental revenues from T1X. In the last Determination, our retail forecast included an uplift for T1X; outturns for retail have been broadly in line with this adjusted forecast. However, isolating the effect from opening T1X on retail revenues proves more difficult over time. Consequently, we have simplified the treatment of T1X. The remaining costs of the project (€53m) will be depreciated using a standard annuity over the next 15 years, and our overall forecast of retail revenues will implicitly include any revenues that T1X may generate.

Property and Concessions

Chart 5.3: Revenue from Property and Concessions



The other series plotted in this chart (in grey) are the other categories of commercial revenues.
 Source: DAA Regulatory Accounts, CAR forecasts

5.26 Income from property and concessions now accounts for about 30% of commercial revenues at Dublin airport. We expect this income source to increase in aggregate, although it will decline when measured on a per-passenger basis. In deriving our forecast for property and concessions income, we have separately considered income from property concessions, property rental and advertising. These are discussed in turn below. Our forecasts include uplifts for a number of different investments that DAA has proposed; the dotted line in Chart 5.3 shows what our forecast would be without these investments.

Property Rents

5.27 Property rent comprises income from the rental of office buildings, hangars, terminal office space and check-in desks. Both the outturn data and our forecasts for Property Rents include all income under this category: we have not removed any of the income, including hangar rental income, from the regulatory till.

5.28 Given the nature of income associated with property rent, it is perhaps not surprising that the data show no significant relationship between these revenues and passenger numbers. For this reason we have used an elasticity of zero for this category of commercial revenues.

5.29 Our base forecast therefore requires DAA to maintain property rental revenues at 2013 levels. We think this will be challenging. DAA has indicated that a number of leases on rental properties are up for renewal in the period of this Determination. For these renewals DAA face off-campus competition, as seen by Ryanair's recent decision to move its head office off campus. There appears to be a need for some capital expenditure just to maintain current levels of property rent: our base forecast is contingent on including an allowance for *Commercial Property Refurbishments*, which will allow DAA to refurbish office space as leases come up for renewal.

5.30 DAA has identified two investments that will generate incremental property rents from 2016 onwards. We assume the *Cargo Terminal Development* will result in additional revenue of €0.4m, and investment in *Commercial Hanger Infrastructure* will increase revenue by €0.1m. For the purposes of the price-cap calculation, these incremental revenues are partially offset by return on capital and depreciation allowances. The net effect over the five years was shown previously in Table 5.3.

5.31 Property-rental income includes revenues from ATI fees. These are fees levied by DAA on ground handlers and airlines for access to essential installations, currently check-in desk rentals. Although we regulate the level of these fees separately, they are not deemed to be aeronautical revenues and so constitute commercial revenues for the purposes of Determinations governing airport charges. Since ATI fees are regulated, we do not think it is appropriate to provide incentives for DAA to maximise this source of revenue. In 2009 we indicated that we would make an adjustment in 2014 should outturn revenues from ATI fees not correspond to the amounts assumed in the last Determination. Our price-cap calculations for the next Determination include an adjustment reflecting the fact that between 2010 and 2013 DAA collected about €1.5m more

from ATI fees than expected in 2009. Over or under collections in 2014 will be dealt with in the 2019 Determination. Our property rental forecast assumes DAA will collect €2.2m per annum from ATI fees in the next Determination; should DAA collect more or less than this, we expect to adjust the 2019 Determination accordingly. If we were to relax this approach, as advocated by DAA in its response to our Issues Paper, we would increase our forecast for revenues from ATI fees significantly.

Property Concessions

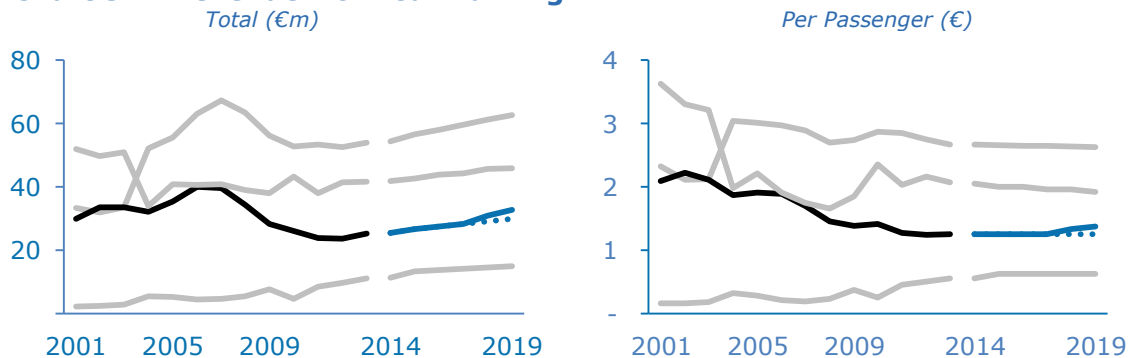
- 5.32 Property concession income consists of income from banking, busses, car hire, hotels, telephony, and other. Contracts for property concessions are generally split between a fixed component and a part that increases with the concessioners' income.
- 5.33 We do not expect income from property concessions to grow as fast as passenger numbers. We have used an elasticity of 0.45.
- 5.34 Car hire is the largest component of this income stream (60%). DAA has proposed an investment that will consolidate car rental into a single centre. The business case for the project includes an uplift in commercial revenues of €1.1m per annum from 2018, which we have included in our forecast.

Advertising

- 5.35 Advertising includes income from both interior and exterior advertising at Dublin Airport. Most of the advertising is billboard format.
- 5.36 For advertising we estimate an elasticity of 0.8. From 2016 onwards, our forecast for advertising includes an uplift of 0.8m on account of DAA's proposed investment in digital advertising pods.

Car Parking

Chart 5.4: Revenue from Car Parking



The other series plotted in this chart (in grey) are the other categories of commercial revenues.
Source: DAA Regulatory Accounts, CAR forecasts

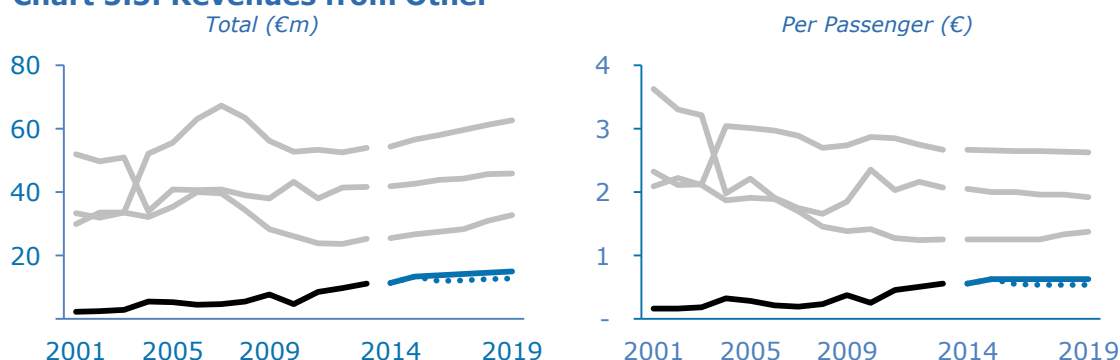
- 5.37 For the past decade per-passenger revenues from car parking have declined. Car parking now accounts for about 20% of commercial revenues, considerably less than revenues from property concessions. These two sources used to generate similar levels of revenue.
- 5.38 We have assumed that this downward trend in per-passenger car-parking

revenues will end. Our base forecast assumes a one-to-one relationship between changes in passenger numbers and car-parking revenues. This is consistent with the elasticity estimated in our regression that includes a trend variable. Our forecast, as for all our commercial revenue forecasts, assumes that the trend in per passenger revenues does not continue beyond 2013.

- 5.39 DAA has attributed the decline in these revenues to direct competition from other car-park providers and indirect competition from other modes of transport. In its response to the issues paper, DAA suggested that this situation is stabilising. It cited yield management, online selling and other measures for this reversal. In 2013 passenger numbers at Dublin Airport grew by 5.6% while revenues from parking increased by 6.6%, an increase in per-passenger revenues.
- 5.40 There are two capital projects which have prompted us to uplift our base forecast for car-parking revenues. The Terminal 2 multi-story car park results in an uplift of commercial revenues of €1.8m from 2018 onwards; the long-term car park resurfacing results in an extra €1.0m in 2019's forecast.

Other Activities

Chart 5.5: Revenues from Other



The other series plotted in this chart (in grey) are the other categories of commercial revenues.
 Source: DAA Regulatory Accounts, CAR forecasts

- 5.41 Income from customs and border protection (CBP) has contributed to other activities becoming a relatively more important category of commercial revenues in recent years. We expect other activities to account for about 10% of Dublin airport's non-aeronautical revenues in 2019. We have separately forecast CBP and non-CBP revenues.
- 5.42 Our forecast for revenues from the CBP facility has been uplifted according to the increased passenger numbers DAA forecasts will use the facility once the ongoing extension is complete.
- 5.43 Non-CBP revenues include revenues streams from executive lounges, VIP services, maintenance contracts, and ground power. The elasticity used for these revenues is 1.3, consistent with time-series estimates.
- 5.44 The combined effect is revenue from Other Activities increasing from €0.56 per passenger in 2013 to €0.62 in 2019.

Rolling Schemes

- 5.45 We will introduce a rolling scheme for commercial revenues. It will cover retail and car-parking revenues. This will strengthen the incentives for DAA to maximize these sources of commercial revenues, irrespective of where in the regulatory cycle it undertakes the initiative.
- 5.46 Rolling schemes for commercial revenues were consulted on in CP 4/2008 and also in the Issues Paper for this Determination. In responses to our Issues Paper DAA, Aer Lingus and the development agencies supported them, although IATA did not.

Setting the Targets

- 5.47 The scheme includes just retail and car parking revenues because of:
- The need for transparency, such that all parties could monitor performance against the rolling scheme target; and
 - To reward DAA for initiatives that enhanced commercial revenues rather than deviations from expected passenger numbers.
- 5.48 DAA's regulatory accounts already report the amounts from retail and car parking. Moreover, in making our forecasts for these two series, we have used elasticities close to one. For any outturn volume of passenger numbers we expect broadly the same level of per passenger income from retail and car parking. If DAA realises higher per passenger revenues from these sources, it will represent outperforming the target regardless of the level of passenger numbers. Such outperformance is exactly the scenario in which a rolling scheme is supposed to reward the regulated entity.
- 5.49 For the other two categories of commercial revenues currently reported by DAA in its regulatory accounts – property and concessions and other activities – our forecasts do not have such a straightforward relationship between passenger numbers and expected revenues. This is partly because our forecasts were built up from separate forecasts for different subcategories which DAA does not currently report in its regulatory accounts.
- 5.50 In the case of car-parking revenues, our forecast depends in part on proposed investments by DAA taking place at certain dates. To avoid rewarding DAA for rolling out the investment earlier than envisaged in its CIP, we have set the per passenger revenue targets for car parking assuming that DAA undertakes the investments immediately. This contrasts with the actual forecast used to calculate the price cap. However, it is a simple solution that avoids having to adjudicate on whether or not DAA has completed a capital project and provides a strong incentive to deliver revenue-enhancing investments promptly.
- 5.51 Table 5.4 shows the targets for the rolling-incentive scheme. In the case of car parking, the assumed target is higher than the forecast commercial revenues used to calculate the price cap because of the way we have treated possible incremental revenues from new investments.

Table 5.4: Rolling Scheme for Commercial Revenues (€)

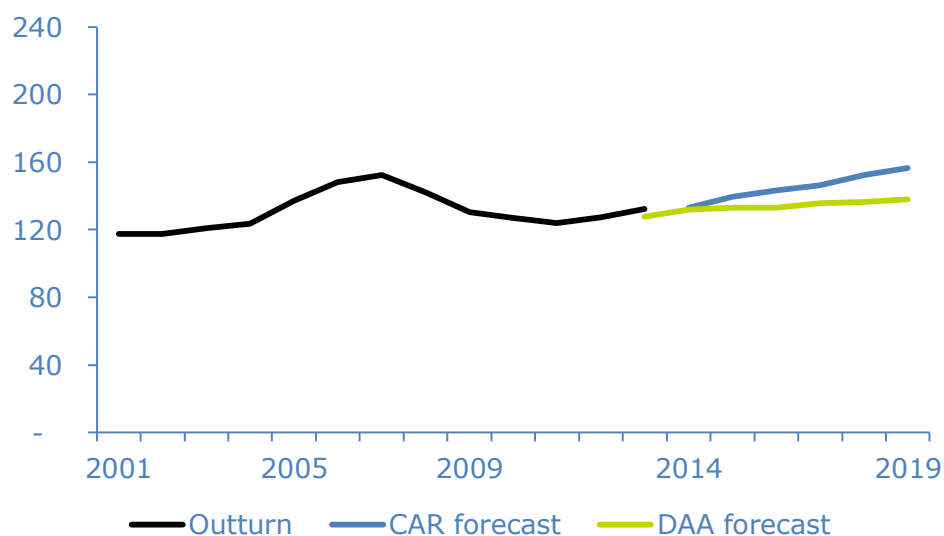
Category	2016	2017	2018
Retail revenue per passenger	2.65	2.64	2.64
Car parking revenue per passenger	1.37	1.37	1.37
Target per passenger	4.02	4.01	4.01

5.52 The targets are expressed in per passenger terms. This contrasts with the rolling scheme for operating costs. At the time of the next Determination, the size of any reward from the scheme for commercial revenues would be estimated on a per passenger basis. As with operating costs, we would envisage first deriving a forecast for commercial revenues and then adjusting it should the rolling scheme require. But unlike with operating costs, the adjustment will be done on a per passenger basis rather than an aggregate sum. A worksheet in our financial model provides worked examples showing how this will work.

Comparison with DAA’s Regulatory Proposition

5.53 DAA’s Regulatory Proposition envisages slower growth in commercial revenues during the next five years than we have assumed in our Draft Determination. The difference is over €18m in 2019. Some of this might be explained by the fact that DAA’s forecast excludes hangar income, income from the former Clarion Hotel site and property rental income.

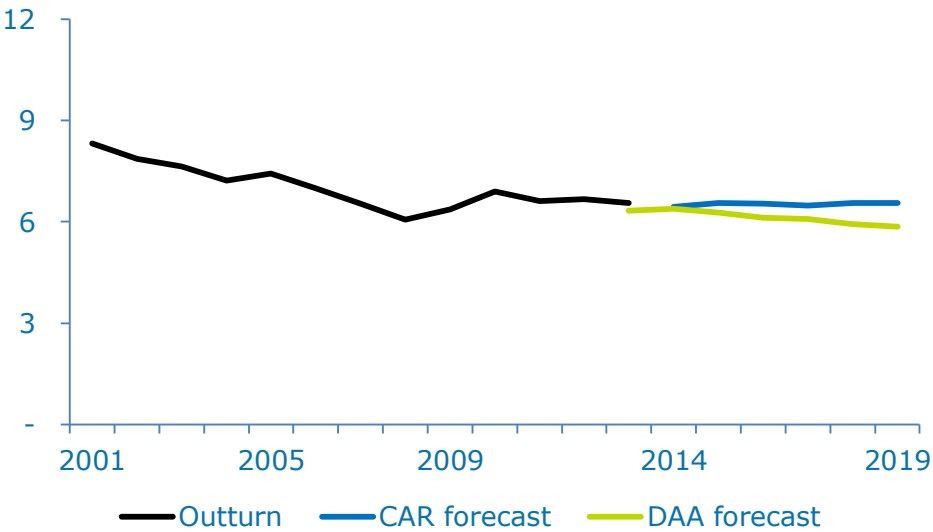
Chart 5.6: CAR and DAA Commercial Revenue Forecasts (€m)



Source: DAA Regulatory Accounts and Regulatory Proposition, CAR forecasts

5.54 The other distinction between the two series is that we are forecasting commercial revenues per passenger to remain broadly constant in real terms. In contrast, DAA envisages per passenger revenues remaining broadly constant in nominal terms, but to fall by about 8% in real terms between 2014 and 2019.

Chart 5.7: Per Passenger Commercial Revenue Forecasts (€)



Source: DAA Regulatory Accounts and Regulatory Proposition, CAR forecasts

6. Capital Costs

Table 6.1: Capital Costs

	2013	2014	2015	2016	2017	2018	2019
Total, €m	133.4	138.5	166.5	166.8	167.1	167.5	166.1
Per Passenger, €	6.26	6.19	7.82	7.61	7.41	7.22	6.96

Source: 2013 DAA outturns, 2014-2019 CAR forecasts

6.1 For capital costs, we are allowing sums higher than DAA has been able to recover during the current Determination. In arriving at this figure we have considered:

- What the opening RAB should be, given past commitments to remunerate investments at this and future Determinations;
- What allowances to make for investment in the next five years;
- What return on capital to allow DAA; and
- How rapidly to allow DAA to recover the costs of investments, i.e. what depreciation profile to assume for the purposes of setting the price cap

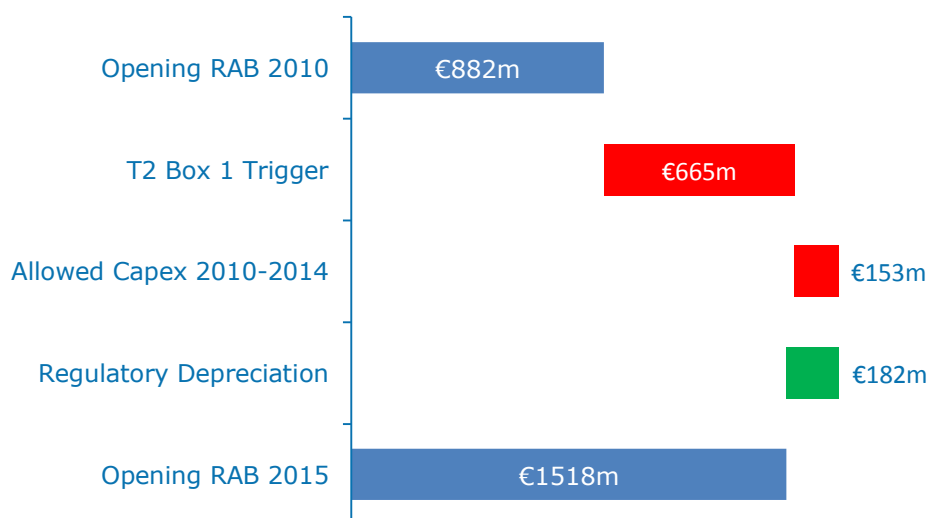
6.2 We discuss each of these topics in turn.

RAB Roll Forward

Opening RAB 2015

6.3 The 2015 opening RAB is €1,518m. This is significantly higher than the opening RAB of €882m in 2010.

Chart 6.1: Deriving the Opening RAB for 2015



6.4 As illustrated in Chart 6.1, this growth in the RAB is entirely explained by the inclusion of an allowance for the costs of building Terminal 2. The facility was not included in the opening RAB in 2010 since it had not opened at the time. We have added a further €153m to the RAB for capital expenditure from 2010-2014. Net depreciation during the period 2010-2014 of €182m has been subtracted. We have clawed back interest payments allowed for in the previous Determination for investments expected but not delivered in the period 2010-2014. These components

are discussed in more detail throughout this section.

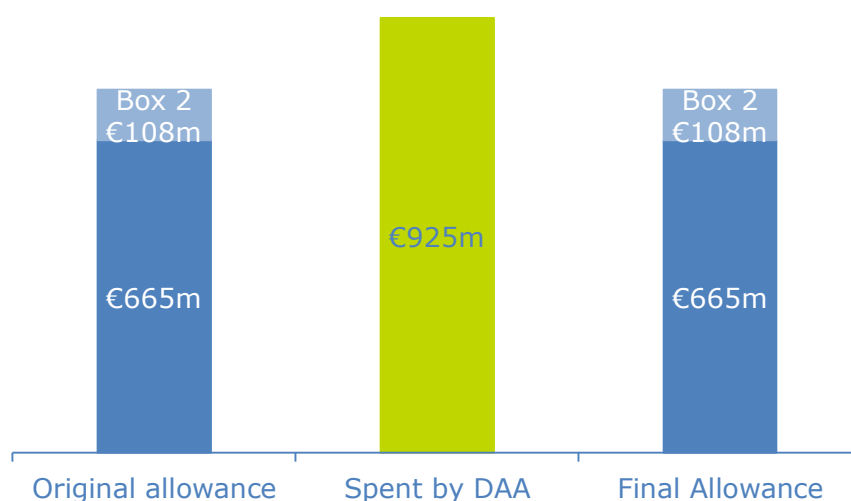
6.5 To derive the opening RAB, we have disallowed €183m of outturn capital expenditure that DAA incurred building Terminal 2 and during the period 2010-2014. In reconciling outturn capital expenditure with allowances set previously, the RAB Roll Forward Principles guided us. These were published in 2009, and we continue to believe that such principles protect current and future users from cost overruns on capital projects, while allowing the efficient development of the airport. We reject the suggestion of DAA, in its response to the Issues Paper, that we should disregard the principles as they are unduly penal. We believe that it is reasonable that expenditure above the allowance is only allowed into the RAB where:

- costs changed due to changes in user requirements, and users were aware of and agreed to the higher costs; or
- costs are strictly outside of DAA's control.

Reconciling Capital Expenditure on Terminal 2

6.6 We have allowed €773m of DAA's outturn expenditure on Terminal 2. This is the same as the 2007 allowance, but only about 83% of what DAA spent on the project.

Chart 6.2: Terminal 2 Allowance and Spend



*Box 2 only enters the RAB if passenger numbers exceed 33 million in a year.
Source: 2007 Interim Review, DAA outturn data*

6.7 The 2007 interim review set the capital expenditure allowance for Terminal 2. It also outlined the approach to remuneration using a two-box solution. When the 2009 Determination was made Terminal 2 was not yet operational so reconciling spending to allowances was deferred until this Determination.

6.8 DAA provided a report by AECOM that explains the cost variations in the Terminal 2 capital investment program. Less than 10% of the cost overrun is attributed to responding to user requirements (where the definition of user includes DAA itself); the rest is attributed to non-discretionary items.

- 6.9 The explanations provided for the cost overrun have not prompted us to revise upwards the allowance for Terminal 2 capital expenditure allowed into the RAB. There is no evidence that users, which for our purposes does not include DAA, were made aware that changes they sought would result in higher costs and still supported the work proceeding after allowing for the extra costs. Moreover, we would be looking for evidence that the generality of users supported a change in scope. It is to be expected that individual users might seek improvements if they think other users will bear most of the costs. DAA cannot agree to individual users' requests and assume the regulator will require other users to bear the costs.
- 6.10 DAA's reconciliation moves from its 2006 cost plan to a control budget onto outturn costs. Our July 2007 Interim Review Determination focussed specifically on the issue of what allowances we should make for a substantial capital investment program proposed by DAA, most of which related to the cost of a new terminal. The allowance that we ultimately made for Terminal 2 was about 5% less than DAA had sought in its original cost plan. Shortly after the Interim Review, DAA appears to have adopted a control budget for Terminal 2 18% higher than this allowance. The whole purpose of the Interim Review and setting an allowance for the project would be undermined were we to allow the regulated entity to unilaterally increase the budget like this and expect to recover the extra costs from users.
- 6.11 The outturn spend ultimately exceeded DAA's own control budget. AECOM's report claims there were over 8000 change orders and identifies a number of costs that it suggests were outside DAA's control. The question is whether any of the items identified were covered by the original allowance for project and programme contingency costs and/or whether they were risks associated with cost overruns for which the cost of capital already makes an implicit allowance. In the case of Terminal 2 overruns we have concluded that they were covered already. None of the costs identified, including those associated with unforeseen environmental costs and planning obligations, appear to have been outside what a contingency allowance might be expected to cover. This contrasts with, for example, the Pier D project where the need to build an elevated walkway following planning restrictions had implications for the overall project budget that no reasonable contingency allowance could have covered.
- 6.12 The Terminal 2 expenditure that we have allowed will enter the RAB in two phases, consistent with the 2007 Interim Review. The RAB includes Box 1, €665m, since Terminal 2 is now open. Box 2 will only enter the RAB if and when passenger numbers exceed 33mppa. In the 2007 interim review Box 2 was originally set at €108m, with DAA allowed financing costs for it up to 2018. In 2018 the accumulation of financing costs will stop, by which time the amount of Box 2 will have increased to €167m. We have rejected the demands from Aer Lingus and DAA, in their responses to the Issues Paper, to change the split between Box 1 and Box 2 – Aer Lingus wanted us to increase the size of Box 2 while DAA argued all the costs should enter the RAB immediately. The Interim Review set out clearly the basis on which we would allow DAA to recover the costs of the project if it proceeded with building Terminal 2.

Reconciling 2010-2014 Capital Expenditure

- 6.13 For outturn capital expenditure in the period 2010-2014, we have allowed €153m to enter the RAB. This is less than we provisionally allowed in the 2009 Determination, and about 83% of what DAA plans to have spent by end 2014.
- 6.14 The 2009 Determination set allowances for capital expenditure across ten groupings (including so-called trigger projects). The reconciliation was by grouping rather than with regard to overall spend.
- 6.15 For each grouping, DAA had discretion to spend up to the allowed amount subject only to delivering certain specified outputs. Where it failed to provide a deliverable, we have revised down the original allowance by the amount that the deliverable was expected to cost in 2009. DAA could increase the allowance for any of the groupings by holding interim capital expenditure consultations with users. If agreement was reached during these consultations the allowance for that grouping would increase. In contrast, allowances would decrease if DAA's investments failed to yield the specified deliverables.
- 6.16 For each grouping the amount allowed to enter the RAB is the lower of the revised allowance or the actual spend by DAA. Where underspends occur due to deliverables not being delivered the interest received by DAA from 2010-2015, is clawed back. Where DAA underspends but delivers the outcome agreed the interest received by DAA from 2010-2015 on the difference between the revised allowance and spend is not clawed back. This is in line with the RAB roll forward principles and incentivises efficient capital expenditure by DAA while protecting users if DAA fails to deliver the expected outcomes.
- 6.17 The net effect of the adjustments is that €153m has been allowed for in the RAB and €31m of capital expenditure by DAA in the period 2010-2014 is disallowed. Table 6.2 details the adjustments by category, how much DAA actually spent and our final allowances. The following paragraphs provide more detail on how we arrived at these allowances.

Table 6.2: Deriving Final Allowance for 2010-14 Capital Expenditure

€m	Original Allowance	Revision	Revised Allowance	Spent	Final Allowance
Airport Operations	45		45	45	45
Landside Infrastructure	23	-4	19	14	14
Piers and Terminals	8	+5	13	31	13
Plant and Equipment	3		3	0.5	0.5
Retail	11		11	11	11
Revenue	15	-12	3	8	3
Stands and Airfield	34	-7	27	33	27
Utilities	39	-17	22	9	9
Programme Management and Contingency	20		20	20	20
Trigger Projects		+11	11	11	11
Total	198		174	184	153

Source: 2009 Determination, DAA outturn data. The calculations exclude 2014 capital expenditure on projects included in the 2015-2019 capital expenditure allowance totals. They also exclude capital expenditure on projects DAA wants excluded from the regulatory till.

- 6.18 There were no deliverables in the category *Airport Operations*. DAA spent slightly above the allowance. No adjustment was made to the RAB for this overspend.
- 6.19 The original allowance for *Landside Infrastructure* was contingent on delivering seven projects, shown in Table 6.3. Two deliverables will not be delivered by end 2014: the external roads upgrade and metro and GTC design fees were not proceeded with and no money was spent. The revised allowance still exceeds what DAA spent on this category, so all of its spend enters the RAB.

Table 6.3: Landside Infrastructure Deliverables and Consultations

Deliverable	Delivered	€m
CIP3.035 Internal secondary campus roads	Yes	
CIP3.033 Repairs to departure roads	In 2014	
CIP3.012 Taxi holding area	Yes	
CIP1.016 Refurbishment of existing MSCP	In 2014	
CIP3.034 External roads upgrade	No	-2.2
CIP3.014 Airside/landside perimeter fence	In 2014	
CIP8.300 Metro and GTC design fees	No	-2.0
Revision to Original Allowance		-4.2

- 6.20 There was one deliverable in *Piers and Terminals*; it was delivered. There were interim consultations with users for three projects. No agreement was reached on roof repairs or Pier 3 refurbishment, so the allowance will not be increased for these projects. DAA also consulted on an expansion of the US customs pre-clearance facility. There was agreement in favour of

the project provided it would not increase airport charges. The project has increased forecast commercial revenues by €10m during this Determination; the cost of the project was €4.8m. Thus the project has resulted in lower airport charges. The allowance for *Piers and Terminals* increases by the amount indicated in the consultation, €4.8m. DAA spent considerably more on the *Piers and Terminals* category than the higher revised allowance, in large part because of expenditure re-developing Terminal 1 and introducing Pier B connectivity (users opposed the former project, while we concluded that the latter should more properly be accounted for as part of the Terminal 2 project). Of the €31m DAA spent, we have allowed €13m into the RAB.

Table 6.4: Piers and Terminals Deliverables and Consultations

Deliverable	Delivered	€m
CIP3.035 Internal secondary campus roads	In 2014	
Consulted Projects	Agreement	
TSA facility expansion	Yes	+4.8
Roof repairs, phase 1	No	
Pier 3 refurbishment	No	
Revision to Original Allowance		+4.8

- 6.21 The *Plant and Equipment* category consisted of one deliverable, to replace a combined heat and power plant. This was replaced but at a lower cost than anticipated. The amount spent will enter the RAB and there will no claw back of interest received by DAA.
- 6.22 There were no deliverables in *Retail* category. The amount spent was slightly below the allowance and will enter the RAB with no claw back of interest.
- 6.23 There were two deliverables from the *Revenue* category not delivered, the cargo works and the retail logistics centre. The allowance is revised down by €11.5m and the interest DAA received on this amount is returned to users.

Table 6.5: Revenue Deliverables and Consultations

Deliverable	Delivered	€m
CIP2.018 Cargo works	No	-8.4
CIP2.019 Retail logistics centre	No	-3.1
Revision to Original Allowance		-11.5

- 6.24 In *Stands and Airfield* three deliverables were not delivered. No money was spent on engine testing facilities and runway 11/29 refurbishment. Revised planning permission for the north runway; while DAA has spent €1.3m on this, no application has been lodged nor is an application expected before 2015. For these undelivered projects, the allowance is revised downward by €9.1m. We have considered one project for which there was an interim consultation. Airlines generally agreed on the need for *Runway 16/34 CAT I Stopbars*, although there were disagreements on the costs. The consultation ended with a number of airline questions unanswered and a refusal of DAA to extend the closing date for submissions. While there was not universal agreement on costing, based

on broad support for the safety aspect of this project, the allowance is increased up by €2m.

Table 6.6: Stands and Airfield Deliverables and Consultations

Deliverable	Delivered	€m
CIP6.017 Overlay runway 10/28	Yes	
CIP6.052 Central apron reconstruction	In 2014	
CIP6.018 North runway fees	No	-4.3
CIP6.056 Apron road reconstruction	In 2014	
CIP6.057 Airfield generator replacement	Yes	
CIP6.009 Engine testing facilities fee only	No	-0.2
Runway 11/29 refurbishment	No	-4.6
Consulted Projects	Agreement	
Runway 16/34 CAT I stopbars	Yes	+2.0
Revision to Original Allowance		-7.1

- 6.25 There were five deliverables in the *Utilities* category, shown in Table 6.7. Two were not delivered, so the original allowance is revised down by €17.1m and the interest DAA received on this amount returned to users. The revised allowance is €21.8m, DAA spent €9.3m which will enter the RAB. The interest DAA received on the difference will not be clawed back.

Table 6.7: Utilities Deliverables

Deliverable	Delivered	€m
CIP9.024 Fuel farm redevelopment	No	-14.6
CIP9.019 Divert and increase cuckoo culvert capacity	Yes	
CIP9.022 Airfield pollution control	In 2014	
CIP9.021 Airfield drainage upgrade	In 2014	
CIP9.020 MV network renewal works A	No	-2.3
Revision to Original Allowance		-17.1

- 6.26 There were no deliverables for the *Programme Management and Contingency* category. The amount spent was slightly above the original allowance. Only the original allowance will be allowed enter the RAB.
- 6.27 The last Determination included three *Trigger Projects* which could increase the capital expenditure allowance by €336m. Only the trigger for upgrading the hold-baggage screens was reached, increasing the allowance by €11m. The amount spent on the upgrade was slightly below the allowance. The trigger resulted in an increase in airport charges of €0.07 from 2012-2014. The remaining undepreciated amount will enter the RAB in 2015.

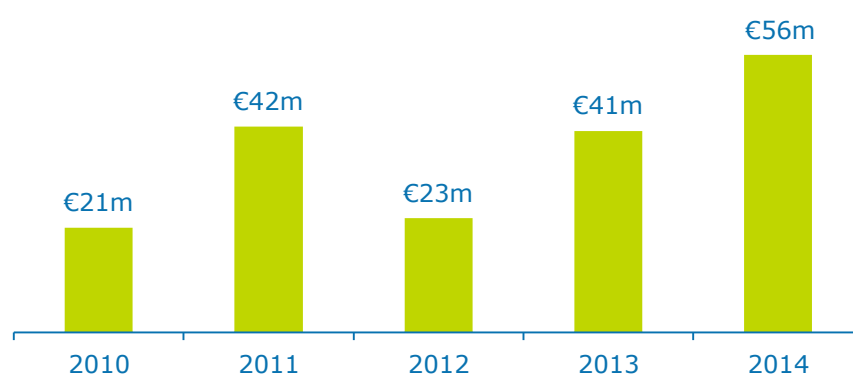
Table 6.8: Trigger Projects in 2009 Determination

Project	Trigger	Triggered	€m
North runway projects	Passenger traffic exceeding 23.5mppa	No	
New apron development	Stand availability in the peak week exceeds 74 stands	No	
Upgrade HBS	Legislation requiring HBS upgrade	Yes	+10.9
Revision to Capital Expenditure Allowance			+10.9

Source: 2009 Determination, CP4/2009

2014 Capital Expenditure

6.28 Our reconciliation of 2010-2014 spending uses DAA forecasts for 2014 spending. We also use DAA forecasts of deliverables that will be completed before end December. We may revise these forecasts of actual spend for the year between the Draft and Final Determination, since DAA should have more visibility on what its total investment for the year will be by September. These revisions may result in a marginally higher or lower price cap. Nevertheless, even at the time of the final Determination, we will not know final outturn spending for 2014. As shown in Chart 6.3, 2014 forecast capital expenditure of €56m would represent 30% of the total spend for the regulatory period 2010-2014. An even spend across the period would have been €37m in each year.

Chart 6.3: Profile of Capital Expenditure 2010-2014

Source: DAA outturn data

6.29 For the next Determination, in 2019, we will check DAA's actual capital expenditure for 2014 against what was forecast at the time of our Determination and adjust the RAB if appropriate. This check will extend to ensuring that any deliverables that DAA forecasts completing by end 2014 were delivered by that date. At the moment there are eight deliverables DAA has indicated it intends to complete but which were not ready at the time of this Draft Determination.

Table 6.9: Deliverables Expected to be Completed by End 2014

Deliverable	Allowance
CIP1.016 Refurbishment of existing MSCP	3.0
CIP3.014 Airside/landside perimeter fence	2.0
CIP3.033 Repairs to departure roads	4.4
CIP3.035 Internal secondary campus roads	5.1
CIP6.052 Central apron reconstruction	14.7
CIP6.056 Apron road reconstruction	1.8
CIP9.021 Airfield drainage upgrade (3km)	3.0
CIP9.022 Airfield pollution control	7.6
Total (€m)	41.6

Capital Expenditure Allowances 2015-2019

6.30 For our price-cap calculations we have allowed capital expenditure by DAA of €308m in the next five years, with a further allowance to construct a parallel northern runway of €296m if passenger numbers reach 25 million. These sums should be more than sufficient to facilitate the efficient and economic development of the airport. Even if passenger numbers do not reach 25 million, DAA has only exceeded the average annual investment that we have allowed for in the next five years in the years when it was building Terminal 2.

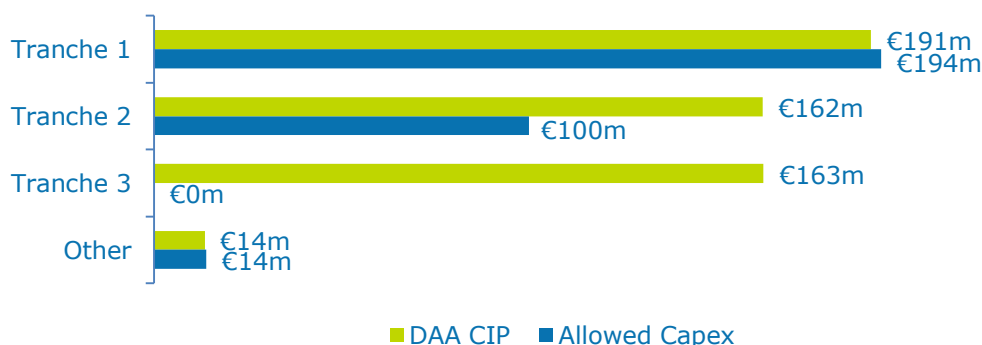
Overall Allowance

6.31 Our allowance represents just over half of what DAA proposed in the final CIP that it submitted to us in April. Most of the difference reflects a belief that the projects are not in the interests of current and prospective users. Separate work that we commissioned by EY suggests that the costings DAA proposed are generally reasonable.

6.32 In reaching our conclusions about the needs of current and prospective users, we have to this stage been limited to hearing the views of airlines and ground handlers. They had an opportunity to see an earlier version of DAA's CIP and to attend consultation meetings DAA arranged between January and March 2014 to discuss this document, as well as request clarifications from DAA on projects during the meetings and in written submissions thereafter. The comments made by airlines and ground handlers during the meetings and in subsequent written responses to DAA have informed our thinking on the efficient level of capital expenditure to allow. In building up our capital expenditure allowance, we have made an allowance that would permit DAA to proceed with 38 of the 54 projects included in its final CIP.

6.33 For the 38 projects for which we have made an allowance, we have used the costings recommended by EY. This causes our final allowance to be revised up from €307.7m to €308.0m.

Chart 6.4: DAA CIP and Allowed Capital Expenditure



Source: DAA CIP, CAR allowances

6.34 DAA split its proposed investments into three tranches. As Chart 6.4 above illustrates, most of the amount DAA sought for Tranche 1 we have allowed, whereas we make no allowance for any of the six projects in Tranche 3.

- Tranche 1 consisted of 19 capital maintenance projects totalling €191m. We have made allowances for all projects, but revised the amount to €194m.
- Tranche 2 consisted of 23 business development projects with a total cost of €162m. We made an allowance for 17 of these projects which DAA estimated would cost €103m; our allowance for them is €100m.
- Tranche 3 consisted of 6 projects costing €163m. We have allowed none of these projects.
- In addition the CIP had minor works and project management of totalling €14m which we have allowed.

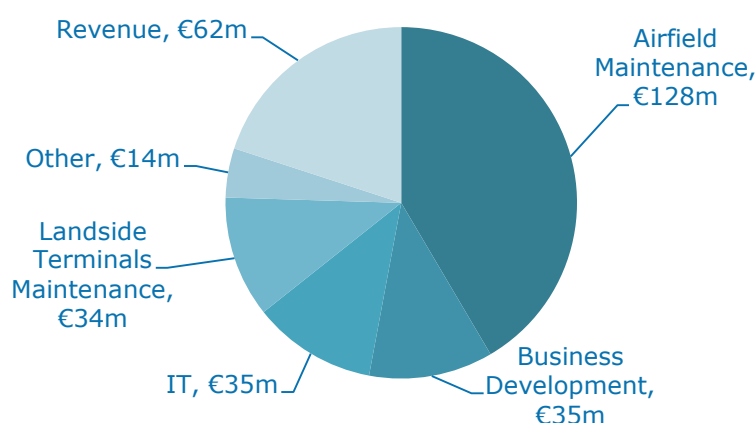
Separately, the northern runway and associated projects are included as a triggered project.

6.35 The following paragraphs provide more details on our thinking for the individual projects included in the CIP.

Grouping Projects for Delivery and Reconciliation

6.36 As in the last Determination we are grouping projects into categories. The categories follow those suggested by DAA in its CIP. There is no direct link between these groupings and the three tranches referred to above.

6.37 Chart 6.5 below shows the amounts allowed for each grouping. Airfield maintenance accounts for over two-thirds of the investment allowance.

Chart 6.5: Allowance by Grouping

Source: CAR allowances

- 6.38 In 2019 we envisage applying the RAB roll-forward principles to these groupings. For a given grouping, when reconciling outturn capital expenditure with what we allowed in 2014 we will allow all spend within a grouping providing DAA has not exceeded the allowance for that grouping. DAA will have discretion to re-assign spending priorities within a grouping provided it comes in under budget. In some categories this flexibility is subject to the delivery of certain projects (or deliverables), and the allowance will be revised down should these deliverables not be delivered. Provided DAA stay within the allowance for a group, we will not look for evidence of user support should DAA re-assign spending during the next five years.
- 6.39 Should DAA wish to invest more on one of the groupings than we have allowed, we would only expect to include it in the RAB if DAA is able to demonstrate there was user support for the breach.

Airfield Maintenance

Table 6.10: Airfield Maintenance Grouping

Code	Project, €m	DAA	EY	Allowed
15.6.001	Runway 16/34 Pavement Rehabilitation*	24.3	21.6	21.6
15.6.002	Apron Rehabilitation	21.0	22.3	22.3
15.6.006	Airfield and Apron Road	1.7	1.7	1.7
15.6.055	Airfield Taxiway Rehabilitation	16.0	12.5	12.5
15.6.017	Overlay Runway	22.3	29.6	29.6
15.9.022	Airfield Pollution Control*	20.0	22.5	22.5
15.6.004	Airfield Lighting Upgrade (Runway 10/28)*	9.1	8.3	8.3
15.6.009	Taxiway AGL Upgrade	3.9	3.6	3.6
15.4.001	Airfield Vehicles and Equipment	5.7	5.8	5.8
	Total	124.0	127.8	127.8

* Deliverable

Source: DAA CIP 2015-2019, EY assessment report.

6.40 We have allowed all projects in the *Airfield Maintenance* grouping. These are primarily projects deemed necessary for the continuing operation of the airport and for maintaining existing assets. This allowance is subject to the rehabilitation of runway 16/34, the overlay of runway 10/28 and the pollution control projects being delivered.

Business Development

Table 6.11: Business Development Grouping

Code	Project, €m	DAA	EY	Allowed
15.6.047	Apron Development 5G*	18.2	16.1	16.1
15.7.120	Bus Lounge Facilities*	13.3	12.0	12.0
15.7.122	Pier 1 Enclosed Gates	1.1	1.2	1.2
15.7.103	Fixed Electrical Ground Power Terminal 1	1.5	1.6	1.6
15.6.021	Cargo Gate Redevelopment	1.8	1.7	1.7
15.6.022	Airport Screening Centre	.8	.9	.9
15.2.017	Consolidated Staff Car Park	1.5	1.7	1.7
15.6.007	Airfield Infrastructure for large aircraft	1.5	1.6	0
15.7.116	Pier 3 Flexibility	15.0	10.5	0
15.4.004	Central Search Area – New Technologies	11.6	11.1	0
15.7.117	Terminal 2 Transfer Facility	21.5	18.7	0
15.7.121	Terminal 1 Arrivals	8.9	8.8	0
15.7.119	Terminal 1 Façade	.7	.5	0
15.4.003	Terminal 2 HBS Standard 3	13.0	12.3	0
15.6.023	Apron 300R	8.2	7.5	0
	Total	118.5	106.2	35.2

* Deliverable

Source: DAA CIP 2015-2019, EY assessment report.

6.41 We have allowed 7 out of 15 projects in the *Business Development* grouping. The allowance is subject to the delivery of apron 5G and the bus-lounge facilities. Apron development and bussing facilities should ensure improved stand capacity; in addition apron 5G should improve access to the runway in the busy hour. Given our allowance for apron 5G, we do not believe that an allowance for apron 300R is necessary. We are also unpersuaded by the need to upgrade the hold-baggage screens in Terminal 2 during the forthcoming regulatory period (should DAA find itself in a situation where an upgrade is mandatory, we would expect users to be receptive to supporting additional spend on this item.) The projects relating to large aircraft (A380s) also seems unnecessary, given the absence of firm commitments from A380 operators. There does not appear to be strong user support for the Terminal 1 redevelopment projects.

*Information Technology***Table 6.12: Information Technology Grouping**

Code	Project, €m	DAA	EY	Allowed
15.8.008	IT DAA Technology & Lifecycle Man	15.8	15.5	15.5
15.8.009	IT Business Systems Investment	15.6	16.1	16.1
15.5.002	Retail IT	1.6	1.6	1.6
15.8.009c	Business Innovation Investment	8.0	1.9	1.9
	Total	41.0	35.1	35.1

Source: DAA CIP 2015-2019, EY assessment report.

- 6.42 We have allowed all projects in the *Information Technology* grouping. There are no deliverables. Our allowance was informed both by the work of EY that we commissioned, and a report by KPMG for the airlines and DAA.

*Landside and Terminals Maintenance***Table 6.13: Landside and Terminals Maintenance Grouping**

Code	Project, €m	DAA	EY	Allowed
15.4.002	Light Fleet	2.2	2.5	2.5
15.3.004	Car parks maintenance	4.5	2.7	2.7
15.3.035	External roads	2.0	2.4	2.4
15.3.001	Landside Infrastructure Utilities	4.6	5.0	5.0
15.7.102	Terminal 1 Roof Repairs / Upgrades	7.9	7.8	7.8
15.4.005	Terminal 1 Baggage Reconciliation System	1.1	1.2	1.2
15.4.006	Terminal 1 Critical Equipment Upgrades	6.0	8.0	8.0
15.7.104	HVAC & BMS Upgrades	7.4	4.8	4.8
	Total	35.7	34.4	34.4

Source: DAA CIP 2015-2019, EY assessment report.

- 6.43 For the *Landside and Terminal Maintenance* grouping, we have allowed all eight projects. There are no deliverables in this category.

Revenue Projects

Table 6.14: Revenue Projects Grouping

Code	Project, €m	DAA	EY	Allowed
15.5.001	Retail Refurbishments	12.1	17.5	17.5
15.2.005	Commercial Hanger Infrastructure	.6	.9	.9
15.2.007	Cargo Terminal Development	2.2	1.7	1.7
15.2.010	Digital Advertising Projects	1.0	.6	.6
15.2.013	Commercial Property Refurbishments	10.5	10.9	10.9
15.3.006	Long Term Car Park Resurface	6.7	6.1	6.1
15.2.009	Consolidated Car Rental Centre*	10.0	7.9	7.9
15.2.006	Completion of Terminal 2 MSCP*	12.3	15.8	15.8
	Total	55.4	61.5	61.5

* Deliverable

Source: DAA CIP 2015-2019, EY assessment report.

- 6.44 We have allowed all eight projects in the *Revenue Projects* grouping. The allowance is subject to the delivery of the consolidated car rental centre and the extension to the Terminal 2 multi-storey car park (MSCP). A number of projects in this category are relevant for the commercial revenues forecasts we have made in Chapter 5. Consequently, removing the allowance may result in a higher price cap for this forthcoming Determination as we would also adjust the commercial revenues forecast.

Other Projects

Table 6.15: Other Projects Grouping

Code	Project, €m	DAA	EY	Allowed
15.8.001	Minor Projects	10.0	10.8	10.8
15.8.200	Programme Management	3.5	3.1	3.1
	Total	13.5	14.0	14.0

Source: DAA CIP 2015-2019, EY assessment report.

- 6.45 In the *Other Projects* grouping both projects have been allowed and there are no deliverables.

Contingent Projects

Table 6.16: Projects DAA considered Trigger Projects

Code	Project, €m	DAA	EY	Allowed
15.7.111	Pier 2 Segregation	18.0	19.0	0
15.7.101	Terminal 1 Check-in & Security	38.3	38.1	0
15.6.012	Extension to Runway	55.0	49.6	0
15.6.013	Additional line-up points	30.0	27.9	0
	Fuel Farm	25.0	n/a	0
	Total	141.3	134.6	0

Source: DAA CIP 2015-2019, EY assessment report.

- 6.46 There were a number of contingent projects in its CIP for which DAA sought an allowance. We have allowed none of them. The Pier 2 segregation project appears to be an expensive option for an aging pier which will be replaced at some stage in the future. The project on Terminal 1 check-in and security does not have the support of Terminal 1 airlines and ground handlers. The runway projects will not be needed as we are allowing the northern runway as a trigger project (albeit with a higher trigger than DAA requested). Should DAA's planned Design, Finance, Build, Operate, Transfer (DFBOT) for the fuel farm fail, we would prefer DAA re-open consultation with users rather than making an allowance now for a sum that has not been subject to any consultation with users.

Northern Runway

Table 6.17: Northern Runway Projects

Code	Project, €m	DAA	EY	Allowed
15.6.019	House buy-out (runway related)	4.3	2.3	
15.6.018	Planning and design fees (runway related)	4.0	4.0	296.3
	Northern Runway	236.8	290.0	
	Total	245.1	296.3	296.3

Source: DAA CIP 2015-2019, EY assessment report.

- 6.47 We propose to include a single "trigger" project in our Draft Determination, relating to the costs of a new runway. Should 25 million passengers or more use the airport in a 12-month period, we would allow DAA to spend €296m on three projects relating to the northern runway. The price cap would increase by €0.71 for the remaining years of the Determination after the trigger was activated.
- 6.48 Our allowance includes costs associated with planning fees and house purchases. We have not provided the advance allowance for these projects that DAA sought.
- 6.49 One possibility discussed during DAA's consultation meetings with airlines and ground handlers, was bringing forward the masterplan and building a new pier in 2018 and northern runway in 2020 (assuming traffic growth accords to the baseline traffic forecast). A user had requested analysis of this option, since it has the attraction of negating the need for some of the projects included in the CIP. DAA's analysis suggested that bringing forward the masterplan in this way increased total investment costs by €59m in net present value terms. This analysis assumed a cost of capital of 7%. We have re-visited these calculations assuming no rehabilitation of runway 16/34 would be necessary if the runway was being built in 2018 and using the 5.8% cost of capital proposed in this Draft Determination (see below). We still estimate increased costs of bringing forward the masterplan, although the amount is smaller. For this reason, we think it is prudent instead to only make an allowance for a second runway if traffic numbers grow much faster than current expectations.
- 6.50 The trigger is now set at 25mppa, up from the 23.5mppa we used in 2009. The increase reflects the fact that DAA and other stakeholders have undertaken work since then to increase the capacity of runway 10/28 in

the peak hour.

- 6.51 A second runway will not necessarily permit more movements at Dublin airport in the peak hour. There are other factors that may constrain capacity at the airport. One concerns the possible need for a new control tower for air traffic control purposes. Another risk is the ability of NATS to handle additional flights originating from Dublin as it enters UK airspace. Parties are invited to comment if these or any other factors are relevant and, if so, how they should be treated when deciding what allowances to make for the costs of building a second runway at Dublin airport.

Profiling

- 6.52 When calculating the price cap, the six revenue generating investments listed in Table 5.3 of the Chapter on commercial revenues are assumed to occur in the year stated in that table. For all other capital expenditure for which an allowance has been made, we have assumed that DAA will spend one fifth of the allowance in each year of the Determination.
- 6.53 For four projects in its CIP, DAA has indicated that it intends to start work in 2014. Our reconciliation of outturn capital expenditure in the period 2010-2014 has had no regard to these sums, which instead will fall to be considered in 2019 when we are reconciling 2015-2019 outturns. Our proposed allowances reflect this fact, i.e. they are for the full project cost and not just what DAA proposes to spend in the next five years. The four projects are
- runway 16/34 pavement rehabilitation;
 - airfield taxiway rehabilitation;
 - overlay runway; and
 - digital advertising pods.

Cost of Capital

Table 6.18: Weighted Average Cost of Capital Calculation

	Range	Point estimate
Risk Free Rate (%)	0-1.5	1.5
Equity Risk Premium	4.5-5.0	5.0
Asset Beta	0.5-0.6	0.6
Equity Beta	1.0-1.5	1.2
Gearing	0.5-0.6	0.5
Tax (%)	12.5	12.5
Cost of Equity (%)	5.1-10.3	8.6
Cost of Debt (%)	2.5-3.0	3.0
Cost of Capital (pre-tax)	3.8-5.9	5.8

- 6.54 The return on capital allowed is 5.8%. This is 120 basis points lower than the rate allowed in 2009, but near the top of the range of estimates that we consider reasonable today. The lower allowed return on capital reflects current empirical evidence, rather than a change in approach on our part.

- 6.55 As in past determinations, we have estimated a weighted average cost of capital (WACC). For the cost of equity, we have been guided by the capital asset pricing model (CAPM). The values we have used for the individual components making up the WACC calculation are shown in Table 6.18, along with the possible ranges that we consider plausible. In deriving these values, the methodology is very similar to that used in previous determinations governing airport charges and aviation terminal service charges.
- 6.56 The following subsections provide more details on our rationale for settling on the ranges for the individual components of the WACC calculation given in Table 6.18. Having identified a suitable range, we have generally opted to choose a point estimate at the top of each range. We see merit in regulatory predictability, particularly for aspects such as the cost of capital where a gradual approach to changes in the value may better enable DAA to operate in a sustainable and financially viable manner. Nevertheless, we believe the available evidence makes continuing with a 7% cost of capital unsustainable.

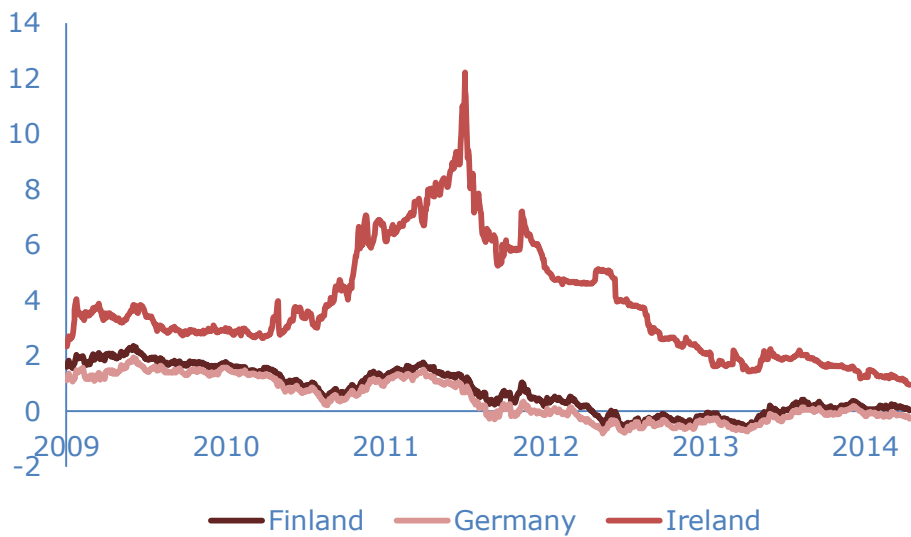
Risk-free rate

- 6.57 The risk-free rate is the return that investors would require if making a loan that was certain to be repaid in full. For this Draft Determination, we think that it should not exceed 1.5%. Current market conditions could be cited to support values around zero; our past regulatory decisions and those of other regulators would offer more support for adopting values at the top of this range.
- 6.58 The usual approach to estimating a risk-free rate is with reference to government bonds issued by governments with a strong credit rating. Such bonds are generally perceived to be as free of risk as it is possible to find in the market.
- 6.59 Chart 6.6 below shows real yields for 10 year government bonds for Finland, Germany and Ireland.⁵ Finland and Germany are two of the three Eurozone countries with a AAA rating (the other is Luxembourg).⁶ Real yields have been below 1% for German and Finnish government bonds since 2009, and were negative for much of the time between May 2012 and May 2013. The gap between Finnish and German government bond yields can be explained by the liquidity premium which is associated with frequently trading German bonds. From the start of 2009, the average real yield on German government bonds has been 0.44%. The current yield is negative. Market evidence could be used to support values around zero for the risk-free rate.

⁵ Nominal rates were transformed into real using the Fisher equation with a geometric average of one year, two year and five year ahead inflation forecasts from the European Central Bank's Survey of Professional Forecasters

⁶ Based on S&P ratings of 24 March 2014.

Chart 6.6: Real 10-Year Government Bond Yields (%)



Source: Datastream, European Central Bank, CAR calculations

- 6.60 The yield on Irish government bonds might be cited to justify adopting a higher risk-free rate for our Draft Determination. While there remains a spread between the yields on Irish and German government debt, the rate for Irish government debt is lower than it was at the time of our last airport charges Determination. Then we used a risk-free rate of 2%. Moreover, the spread is considerably lower than it was in 2011, when the Commission for Energy Regulation included a country-risk premium in its risk-free rate of between 3.5% and 5%.
- 6.61 There is significant variation in the risk-free rate different regulators in Ireland and the UK have used. Table 6.19 shows the rates various regulators have adopted dating back to May 2011, when we last formed a view on it. Almost all regulators have chosen values that are above current market rates. The upper bound for that we have assumed in this Draft Determination for the risk-free rate coincides with the top of the range assumed by the UK Competition Authority in its recent work looking at the cost of capital for Northern Ireland Electricity.

Table 6.19: Regulators' Risk-Free Rates Since 2011

Regulator	Date	Regulated Entity	Real risk free rate %
Competition and Markets Authority	Apr 14	Northern Ireland Electricity	1.5
ComReg	Apr 14	Broadcasting, mobile and fixed-line telephony	2.3
IAA	Mar 14	IAA	2.6
CAA	Feb 14	NERL	0.75
Commission for Energy Regulation	Jan 14	ESB Networks	2.0
Ofwat, UK	Jan 14	Water companies	1.25
CAA	Jan 14	Heathrow and Gatwick airports	0.5
Office of Gas and Electricity Markets, UK	Dec 12	National Grid Electricity Transmission	2.0
Office of Gas and Electricity Markets, UK	Dec 12	Gas Distribution	2.0
Commission for Energy Regulation	Nov 12	Bord Gáis Networks	3.5-5.5*
CAR	Oct 11	IAA	1.5

* Includes a "crisis risk adjustment".

Source: Regulatory decisions See Appendix 4

- 6.62 We have not added a country-risk premium to our risk-free rate. The rate only affects our calculations for the cost of equity (there is no need to estimate individual components, such as a risk-free rate and various risk premia, to arrive at a cost of debt). The theoretical basis for adding a country-risk premium to the CAPM calculations used to estimate the cost of equity is weak. Recent decisions by the Commission for Energy Regulation and ComReg do not include uplifts for a country-risk premium; nor does the UK Competition and Markets Authority in its recent determination for Northern Ireland Electricity. Moreover, we think there is little empirical evidence to support a real risk-free rate plus country-risk premium above 1.5%. This is already above the rate that Irish government debt is trading.

Equity risk premium

- 6.63 The equity-risk premium is the expected mark-up over the risk-free rate investors require to hold risky assets. For this draft Determination, we think that it should lie in the range of 4.5-5.0%.⁷
- 6.64 The equity-risk premium cannot be measured or forecasted directly. It is of interest to many researchers, with various techniques and data sets used to generate values. We continue to favour the use of long-term historical data to estimate it: Dimson, Marsh and Staunton's findings are

⁷ Chapter 2, Dimson, E, Marsh, P & Staunton, M (2014, Feb) Credit Suisse Global Investment Returns Sourcebook 2014. Credit Suisse Research Institute.

based on equity returns dating back over 100 years to 1900.

- 6.65 For the Draft Determination we have used 5%, at the top of our range. Table 6.20 below shows that this is within the range of recent regulatory decisions.

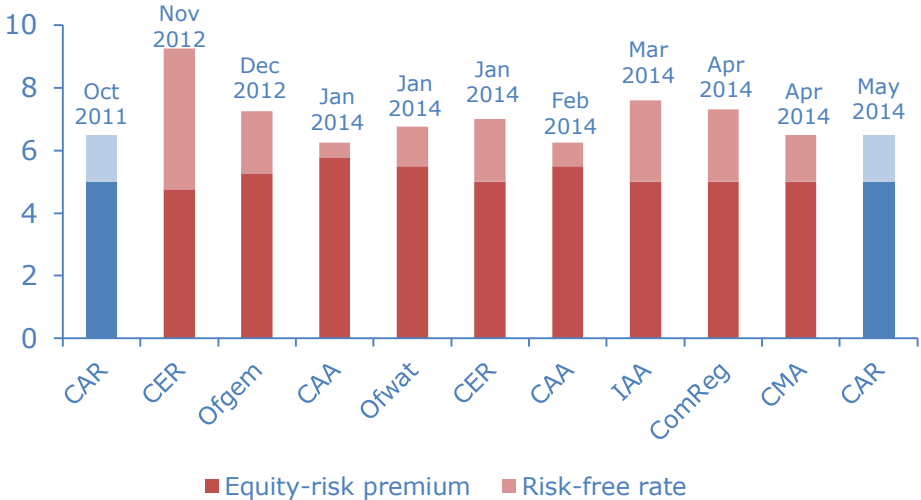
Table 6.20: Regulators' Equity-Risk Premia since 2011

Regulator	Date	Regulated Entity	Equity Risk Premium %
Competition and Markets Authority	Apr 14	Northern Ireland Electricity	5.0
ComReg	Apr 14	Broadcasting, mobile and fixed-line telephony	5.0
IAA	Mar 14	IAA	5.0
CAA	Feb 14	NERL	5.5
Commission for Energy Regulation	Jan 14	ESB Networks	5.0
Ofwat	Jan 14	Water companies	5.5
CAA	Jan 14	Heathrow and Gatwick airports	5.75
Office of Gas and Electricity Markets, UK	Dec 12	National Grid Electricity Transmission	5.25
Office of Gas and Electricity Markets, UK	Dec 12	Gas Distribution	5.25
Commission for Energy Regulation	Nov 12	Board Gáis Networks	4.5-5
CAR	Oct 11	IAA	5.0

Source: Regulatory decisions See Appendix 4

- 6.66 Our point estimates imply a total market return (the sum of the risk-free rate and the equity-risk premium) of 6.5%, the same as in our 2011 IAA Determination. This corresponds to the value used by the UK's Competition and Markets Authority in its review of Northern Ireland Electricity in November 2013. The total market return does not directly feed into our calculations for the cost of capital, but nevertheless serves as a check. Where we have adopted a lower (higher) risk-free rate, our equity-risk premium would have been higher (lower), so as to preserve a total market return that is around 6.5% for this Draft Determination.

Chart 6.7: Total Market Returns (%) Assumed by Regulators Since 2011

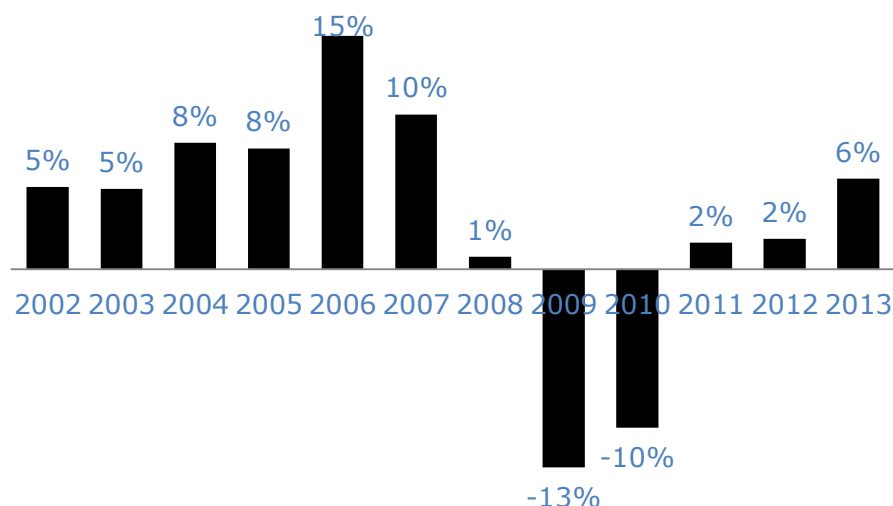


Source: Regulatory decisions See Appendix 4

Asset beta

- 6.67 The asset beta captures the systematic risk of a company that an investor cannot diversify, i.e. the extent to which the company faces risks that are correlated with general market risk. For Dublin airport we propose an asset beta in the range of 0.5-0.6, and have adopted 0.6 when deriving a point estimate of the cost of capital. Investors could reduce but not eliminate their exposure to general market risk by investing in Dublin airport. In arriving at this decision, we have looked at the risks facing Dublin airport and asked whether there are reasons why its asset beta could have increased or decreased since the last Determination.
- 6.68 Just looking at how the airport’s risk profile has changed since 2009 does not provide a compelling reason to revise the asset beta from the value of 0.61 we assumed then. On the demand side, there was a significant fall in traffic in 2009 and 2010 with adverse effects for Dublin airport’s revenues from both airport charges and commercial revenues. However, it is difficult to conclude that this has changed investors’ opinions about the exposure of Dublin airport to general market risk. The changes were no greater in percentage terms than increases experienced in 2006 and 2007, as the chart below shows. Volatility in passenger numbers was not a new thing in 2009.

Chart 6.8: Annual Change in Passengers at Dublin Airport

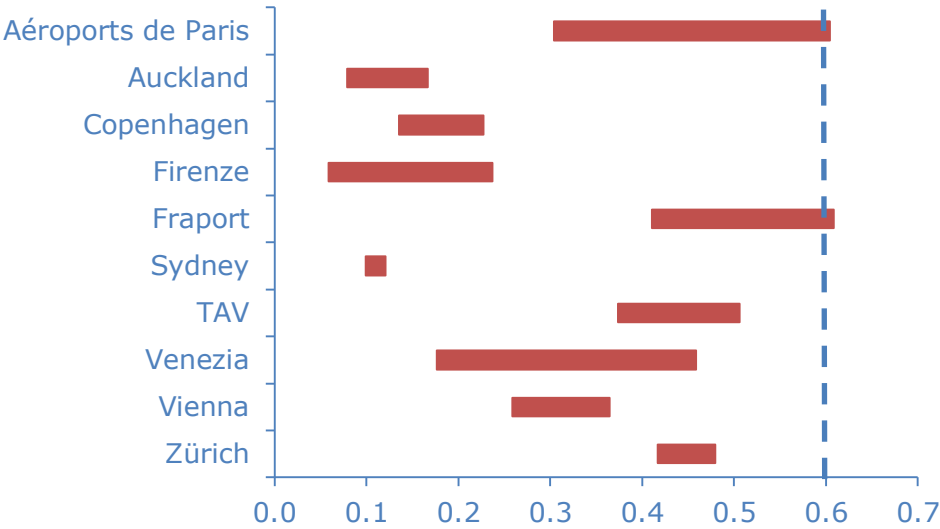


Source: DAA regulatory accounts, CAR calculations

- 6.69 On the cost side, the regulatory treatment of cost overruns remains unchanged. More generally, the regulatory regime in place is similar to that facing DAA in 2009. Perhaps the biggest change we have made since 2009 relates to the guidelines governing investments that might be excluded from the regulatory till. However, it is hard to argue that this has materially changed Dublin airport's exposure to market risk: we had signposted in 2009 that we were considering such guidelines and in practice the costs and revenues included in the regulatory till today are very similar to those present in 2009.
- 6.70 If we consider the available evidence without regard to our decision in 2009, then it tends to point towards a lower asset beta. Where share price data are available, we have estimated asset betas for individual airports. The estimates show considerable variation, but only for Aeroports de Paris and Fraport do we estimate a range that includes a beta as high as 0.6. For some of the other airports, the estimates are very low – so much so that British Airways' consultants excluded Sydney and Auckland's betas from its analysis "due to concerns over the credibility of the calculations".⁸ For most airports, the lower end of the range tends to coincide with estimates using the most recent market data, whereas we estimate higher asset betas when our data analysis includes a longer time horizon. When deciding on a suitable asset beta, we are cautious about placing too much weight on results generated over a short time horizon since they can be volatile and lead to spurious interpretations.

⁸ Page 45, Cambridge Economic Policy Associates (2013, Feb) Setting the weighted average cost of capital for Heathrow and Gatwick in Q6. Prepared for British Airways. Available under <http://www.caa.co.uk/docs/78/CEPAirportWACCEstimates.pdf>

Chart 6.9: Estimated Asset Beta Ranges for Listed Airports



Source: CAR calculations (see Appendix 5 for more details)

6.71 Table 6.21 below shows that recent regulatory decisions concerning airport asset betas have been in the range 0.5-0.6. Unlike the risk-free rate and equity-risk premium, the asset beta is company specific. Therefore, the value of looking at other regulators’ decisions depends on the extent to which the companies they regulate face similar systematic risk. This is why Table 6.21 is limited to regulatory decisions affecting airports.

Table 6.21: Recent Asset Beta Decisions

Regulator	Date	Airport	Estimated beta
New Zealand Commerce Commission	Apr 14	Auckland, Christchurch and Wellington	0.60
CAA	Jan 14	Heathrow	0.50
CAA	Jan 14	Gatwick	0.56

Source: Regulatory decisions See Appendix 4

6.72 Utility regulators have typically assumed lower asset betas. For example, the UK Competition and Markets Authority assumed an asset beta in the range of 0.35-0.4 for Northern Ireland Electricity. We think it would be difficult to argue that Dublin airport’s exposure to market risk is less than that of a utility.

6.73 For the draft Determination we have used an asset beta of 0.6. There is little evidence that might be cited to support adopting a higher value. We think there is an arguable case that for a lower beta, perhaps as low as 0.5. To go lower than this would require arguing that Dublin airport is less exposed to market risk than some utilities.

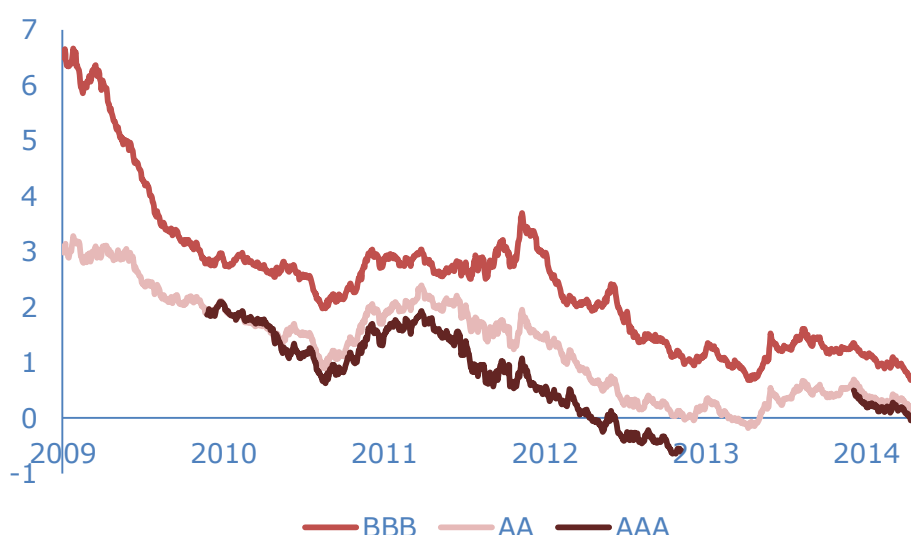
Cost of debt

6.74 We have adopted a cost of debt for Dublin airport of 3%, at the top of the range of possible values that we consider reasonable (2.5%-3%). This is more than 100 basis points lower than the 4.1% we used in the 2009

Determination. The change can be attributed to the fact that borrowing costs are generally lower in the market. Our approach to estimating the cost of debt is unchanged from 2009.

- 6.75 We continue to estimate the cost of debt with reference to cost of issuing new debt, with a focus on the rates that might be expected by investors buying corporate bonds issued by a firm with a BBB rating. The cost of embedded debt, for which DAA has already committed to a stream of payments, was not considered in our calculations. Both DAA and Aer Lingus expressed some interest in the idea of estimating a split cost of debt, although Aer Lingus suggested that any such change required consultation with all parties in advance of being introduced. More generally it favoured a consistent approach to estimating the cost of debt across determinations. While we are willing to consider an approach that places some weight on the historic cost of debt in future determinations, we think it makes sense to consult more thoroughly on the issue before adopting such a change: for this Determination we have decided to continue with just focussing on the cost of new debt.
- 6.76 The development agencies suggested introducing interim or regular reviews of the cost of debt due to the expectation that borrowing costs might decline over the period of the next Determination. We have not adopted this suggestion. We think it would add uncertainty into the regulatory framework and undermine the benefit of having a price cap set for five years.
- 6.77 To estimate the cost of new debt, we looked at the yield for corporate non-financial bonds with a target rating of at least BBB and a maturity of 7-10 years. The latest yields for European BBB bonds fluctuate around 1% in real terms (see Chart 6.10 below).

Chart 6.10: Corporate Non-Financial Eurobond Yields (%), 7-10 Year Maturity



Source: Datastream (iBoxx)

- 6.78 The evidence from yields on ESB bonds suggests that Irish corporate bonds do not give rise to a significant premium for a given rating. In March 2014, ESB showed nominal yields on its 2024 bond of 2.78%. The bonds had a BBB+ rating from Standard and Poor's (S&P). In comparison, the

average nominal yield for the European iBoxx benchmark 7-10 years maturity was 2.71% for BBB-rated companies.

- 6.79 We think that the market evidence suggests that a real cost of debt for Dublin airport (assuming a triple BBB rating) in the range 2.5% to 3% is reasonable.

Gearing

- 6.80 We propose to use a notional gearing assumption of 50%, as we did in the last Determination. This was supported by Aer Lingus in its response to the Issues Paper. In general, we believe that a notional gearing rate within the range of 50-60% would be appropriate. It is similar to what the UK's CAA suggested in its final proposals for Heathrow and Gatwick airports.
- 6.81 The choice of notional gearing is consistent with most recent regulatory decisions we are aware of. A notional gearing represents a theoretical capital structure that is taken as a base case for setting the cost of capital. It is up to DAA to choose its own gearing. For financeability considerations and modelling, we maintain the gearing rate at 50%.

Tax rate

- 6.82 We propose to continue using the same corporate tax rate of 12.5% as in our last Determination.

Overall cost of capital

- 6.83 Our overall pre-tax real cost of capital is in the range 3.9-5.8%. This is significantly lower than our previous cost of capital of 7%. It reflects current market conditions, which suggest returns are lower than they have been. We propose to allow a return on capital of 5.8%, which is in line with recent decisions by the CAA for UK airports setting a cost of capital of 5.35% for Heathrow and 5.7% of Gatwick.

Return of Capital Allowed (Depreciation)

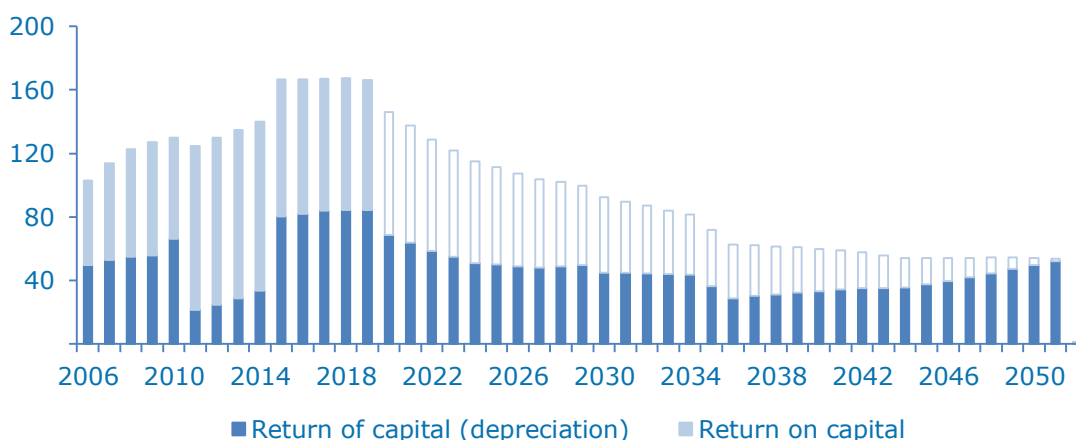
- 6.84 We have chosen a depreciation allowance over the next five years such that the price cap falls by 4.8% per annum each year. To achieve this, we have adjusted the annual depreciation allowances that we would otherwise have used. These adjustments are shown in the table. Since the rationale for the adjustment is to generate a smoother price path, we expect to update it at the time of the Final Determination if other components of the building-blocks calculations change, so as to preserve the smoother price path over the five years.

Table 6.22: Deriving the Return of Capital Allowed (€m)

	2015	2016	2017	2018	2019
Base-line depreciation	51.2	57.9	63.6	70.4	79.0
Adjustment	29.1	24.0	20.1	14.0	5.4
Final depreciation	80.3	81.9	83.7	84.4	84.4

- 6.85 The rest of this sub-section provides details on how we arrived at our baseline depreciation allowance.
- 6.86 Depreciation and return on capital for investments in the period 2015-2019 are calculated using annuities. This continues with the approach used in 2009. It means that the capital costs (return on and return of capital) for a project is the same in each year of its life, in contrast to straight-line depreciation which frontloads the capital cost. Asset lives are taken from the CIP, taking the lowest value when there is a range. The one exception to this is for the Runway 16/34 Pavement Rehabilitation project, for which we have assumed a shorter asset life of seven years because the asset will become obsolete when the new runway is built.
- 6.87 For expenditure prior to 2014, we propose continuing with the depreciation profiles previously indicated with the one exception of T1X (for reasons discussed in paragraph 5.25). The depreciation profile for expenditure from 2010-2014 continues to be calculated using annuities, but has been scaled to reflect the revised amount allowed into the RAB in 2015 compared to what was envisaged in 2009.
- 6.88 For Terminal 2, we have updated the unitisation calculation from 2015 onward, using the traffic forecast proposed in this Draft Determination and assuming zero growth in passengers after 2019. The tilt in the depreciation profile for Terminal 2 remains, although it is less than was the case in 2009.
- 6.89 Chart 6.11 below shows the level of depreciation charges into the future assumed in this Draft Determination. It also shows the return on capital allowed, so allowing parties to see the total capital costs users are being asked to pay each year. For comparison purposes, we plot the capital costs allowed in the last two Determinations. We also extend the profile into the future, so parties can see how decisions made in this Determination might affect future determinations. The cost of capital is assumed to remain at the level we have adopted for this Determination. The chart makes no allowances for investment after 2019.

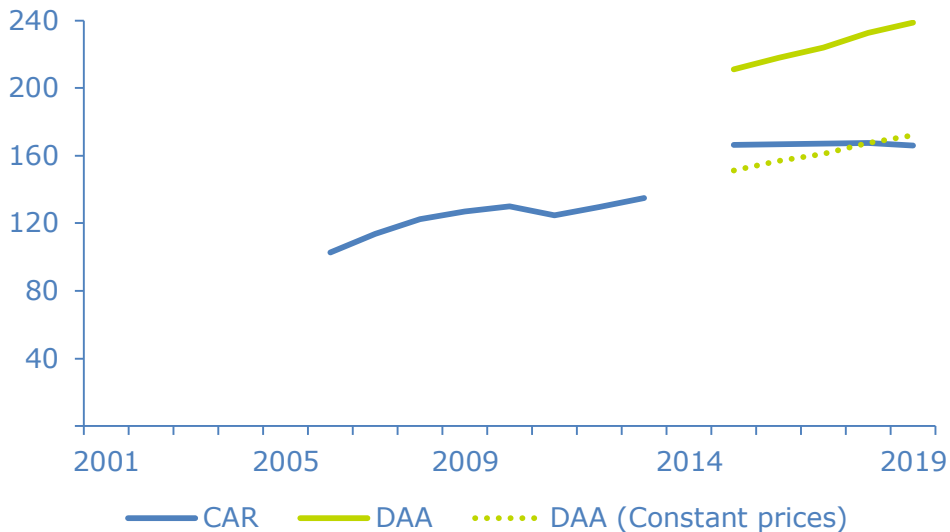
Chart 6.11: Return of Capital Over Time (€m)



Comparison with DAA’s Regulatory Proposition

6.90 The capital costs we have allowed for the period 2015-2019 in our building-blocks calculations are higher than we allowed in previous determinations. The chart below illustrates this.

Chart 6.12: Capital Costs (€m)



Source: DAA Regulatory Proposition, CAR allowances

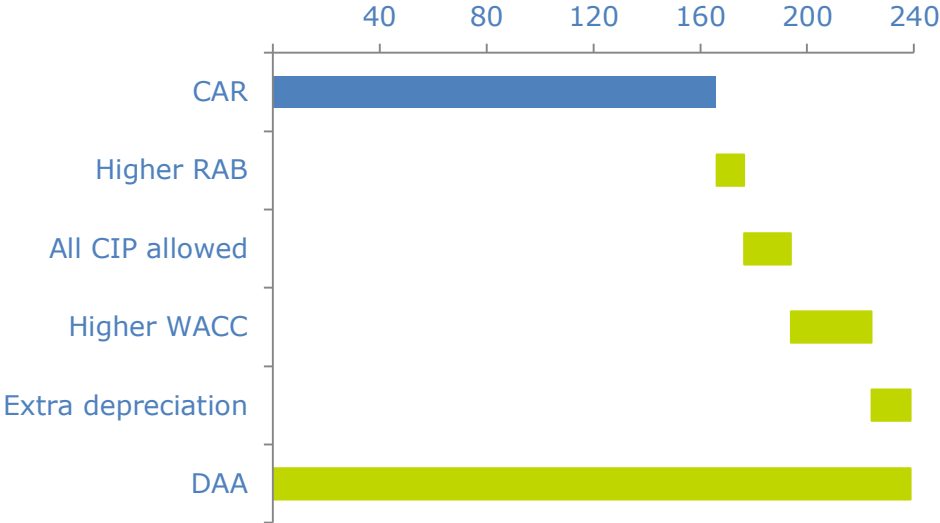
6.91 The chart also shows how much greater an allowance DAA appears to be seeking for capital costs in its Regulatory Proposition. We have inferred what capital costs would need to be using a building blocks calculation to generate the €13.50 price cap suggested by DAA, given its proposed values for passenger numbers, operating costs and commercial revenues. We have also inferred what the capital costs would be if we were to set a price cap that allowed DAA to retain pricing at broadly constant levels, something that DAA says it intends to do in its Regulatory Proposition. This is shown in Chart 6.12.

6.92 The apparent different in capital costs in our building-blocks calculations to those required to generate the cap of €13.50 suggested by DAA is broken down further in Chart 6.13. It shows how much our 2019 capital costs would increase if

- our opening RAB had not disallowed €183m of expenditure that DAA wanted included;
- our capital expenditure allowance for the period 2015-2019 corresponded to DAA’s CIP;
- our cost of capital was 7.7%, a value in the middle of the range proposed in DAA’s regulatory proposition; and
- we further increased the regulatory depreciation allowance.

6.93 The changes would have a significant impact on the price cap, adding almost €3 per passenger by 2019.

Chart 6.13: CAR and DAA 2019 Capital Cost Allowances (€m)



Source: DAA Regulatory Proposition, CAR allowances

6.94 Of these four changes, increasing the cost of capital to 7.7% would make the most difference. The extra 190 basis points on top of our allowance of 5.8% would add over €30m to capital costs. This would result in an increase in the price cap of more than €1 per passenger. It is the assumed cost of equity which explains the difference between our cost of capital and DAA’s. Our proposed cost of debt is similar to DAA’s suggested value. To get a cost of equity in the range DAA proposes would require substantial revisions to the parameters we have used, such as adding 300 basis points to the risk-free rate.

7. Financial Viability

- 7.1 The proposals in this Draft Determination enable DAA to operate and develop Dublin Airport in a sustainable and financially viable manner, for reasons we set out below.
- 7.2 This is one of our statutory objectives when making a Determination, so we have to consider DAA's financial viability and the possibility of refining our Determination. In its response to our Issues Paper, IATA saw no reason for making adjustments for financial viability in principle. To adopt such a position would be at odds with our statutory objectives. At the same time, as the development agencies observed, there is a potential tension in realising three separate statutory objectives. We have to balance the need to enable DAA to operate Dublin Airport with facilitating the economic and efficient development of Dublin Airport and protecting the interests of current and prospective users at the Airport.
- 7.3 When considering financial viability, one significant change from previous Determinations is that we now assess the financial metrics for a Dublin airport only entity. Previously we only looked at the finances for the DAA Group. Both DAA and IATA indicated that they thought that the analysis should be at the level of Dublin Airport.
- 7.4 We agree with the arguments for focussing on how a Dublin Airport only entity might fare. DAA Group should not be expected to subsidise users at Dublin Airport; and current and prospective users' interests are better protected if they do not have to pay higher prices because of losses DAA Group incurs elsewhere. If our Determination allows DAA to operate its main business (Dublin Airport) in a sustainable and financially viable manner, we have satisfied our statutory objective. It remains for DAA Group to ensure that the company is sustainable and financially viable. We cannot prevent it diversifying, in the same way we cannot stop it making investments at the airport that we do not consider meet the reasonable interests of current and prospective users. In both cases we do not think our statutory objective automatically requires us to raise the price cap should such investments create financial difficulties for DAA Group.

What Constitutes Financial Viability?

- 7.5 As in past determinations, we continue to believe that an investment grade credit rating would be consistent with enabling DAA to operate Dublin Airport in a sustainable and financially viable manner. For this reason we seek to satisfy ourselves that the price cap would allow DAA to achieve a BBB rating, using the rating terminology of S&P. This is one notch lower than the BBB+ rating DAA sought in its response to our Issues Paper.
- 7.6 Our approach is in line with CAA's assessment of financeability for its published licences for Heathrow and Gatwick. They thought that a "notionally financed airport operator would meet the requirements of a solid investments grade credit rating."⁹ According to the CAA, a solid investment grade rating is in the area of BBB/BBB+ for S&P.

⁹ Page 29, CAA (2014, Jan).

- 7.7 The UK Competition Commission, in its provisional determination for Northern Ireland Electricity, was not prescriptive in setting a specific target but rather recognized that an investment grade credit rating lies within a typical distribution of ratings in the utilities sector. It cited its earlier work targeting a Baa1/BBB+ rating for Bristol Water and, in its airports' enquiry, ratings of BBB+ for Heathrow and Gatwick and A- for Stansted.
- 7.8 To achieve an investment credit rating, we have continued to focus primarily on the FFO/debt ratio. The methodology S&P uses to rate entities has changed since our 2009 Determination. The new methodology, introduced in November 2013, left DAA Group's credit rating unchanged. S&P considers DAA to be in a strong position with regard to business risk and to have an intermediate financial-risk profile. Table 7.1 below shows various financial ratios that S&P would expect for low-volatility companies if they are to achieve an investment grade. For DAA, the intermediate financial risk profile is most relevant.

Table 7.1: Financial Risk Ratios for Low-Volatility Companies

	--Core ratios--		--Supplementary coverage ratios--		--Supplementary payback ratios--		
	FFO/debt (%)	Debt/EBITDA (x)	FFO/cash interest (x)	EBITDA/interest (x)	CFO/debt (%)	FOCF/debt (%)	DCF/debt (%)
Minimal	35+	Less than 2	More than 8	More than 13	More than 30	20+	11+
Modest	23-35	2-3	5-8	7-13	20-30	10-20	7-11
Intermediate	13-23	3-4	3-5	4-7	12-20	4-10	3-7
Significant	9-13	4-5	2-3	2.5-4	8-12	0-4	0-3
Aggressive	6-9	5-6	1.5-2	1.5-2.5	5-8	(10)-0	(20)-0
Highly leveraged	Less than 6	Greater than 6	Less than 1.5	Less than 1.5	Less than 5	Less than (10)	Less than (20)

Source: 2013 Corporate Methodology, S&P RatingsDirect®, 19 Nov 2013

Outlook Based on Draft Determination

- 7.9 We look at the same financial metrics and targets as S&P, but our analysis looks at an airport-only entity rather than for the whole DAA Group. The calculations we have used to estimate financial ratios are similar to those proposed by DAA, although we have populated the model with our own numbers.
- 7.10 Perhaps the biggest challenge from making the switch from Group level to airport finances is what level of gearing to assume. How debt should be allocated between different parts of the Group offers scope for debate. We have decided to assume a notional level of opening debt in 2015 that is 50% of the opening RAB. This is consistent with the notional gearing assumed when estimating the WACC. The decision to use notional debt accords with the approach of other regulators, including the Competition Commission in its recent decision concerning Northern Ireland Electricity. It means that the assumptions made to determine a cost of capital and assess financial viability are consistent.
- 7.11 There are other variables where we have chosen to use values consistent with the building-blocks model used to calculate the price cap: the depreciation charge corresponds to regulatory depreciation; there are no one-off exceptional charges; and the tax paid is 12.5% of estimated profits. The interest payments assumed correspond to the assumed cost of

debt and the level of net debt. Interest payments would need to be larger if we assumed gross debt exceeded net debt and that the cost of servicing debt is greater than the return DAA is able to earn on its own cash holdings.

7.12 Given these assumptions, we estimate core and supplementary coverage ratios. For all of the ratios, the baseline scenario looks healthy. The entity would achieve outturns consistent with at least an intermediate financial risk.

Table 7.2: Financial Ratios for a Dublin Airport Entity

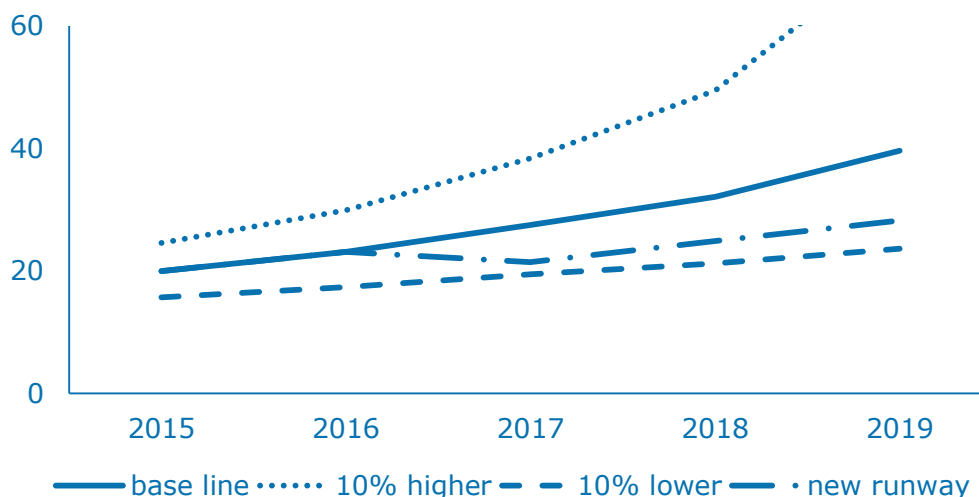
	2015	2016	2017	2018	2019
FFO: net debt (%)	20.0	23.1	27.5	32.1	39.6
Debt: EBITDA (x)	4.1	3.6	3.1	2.7	2.2
FFO: cash interest	6.0	6.8	7.9	9.4	10.7
EBITDA: interest	7.3	8.2	9.3	10.9	12.4

Source: CAR calculations

7.13 We have considered a number of scenarios around our baseline forecast. Looking at traffic, we have considered three possibilities (see Chart 7.1). The first two consider deviations from our central traffic forecast of 10%. We have adjusted our commercial and operating forecasts accordingly. With the low traffic forecast, the FFO: debt ratio be towards the bottom of S&P’s range for an intermediate financial risk rating in 2015. This is perhaps not surprising, since the entity would be responding to a significant drop in traffic overnight. Nevertheless, even under this scenario the ratio recovers over time such that by 2019 it would correspond to a modest financial rating.

7.14 Conversely, the financial position would look very healthy if traffic exceeds expectations by 10% each year. This Determination allows DAA to fund a new runway should the need arise. To illustrate this point, we have included a scenario where passenger numbers jump in 2017 to 25 million and then stay at this level. We assume DAA incurs all investment costs associated with building the new runway in 2017, but that the trigger for the price cap only takes effect in 2018. Even with these assumptions, the calculations suggest that the investment could proceed without the FFO: debt ratio falling to unacceptably low levels.

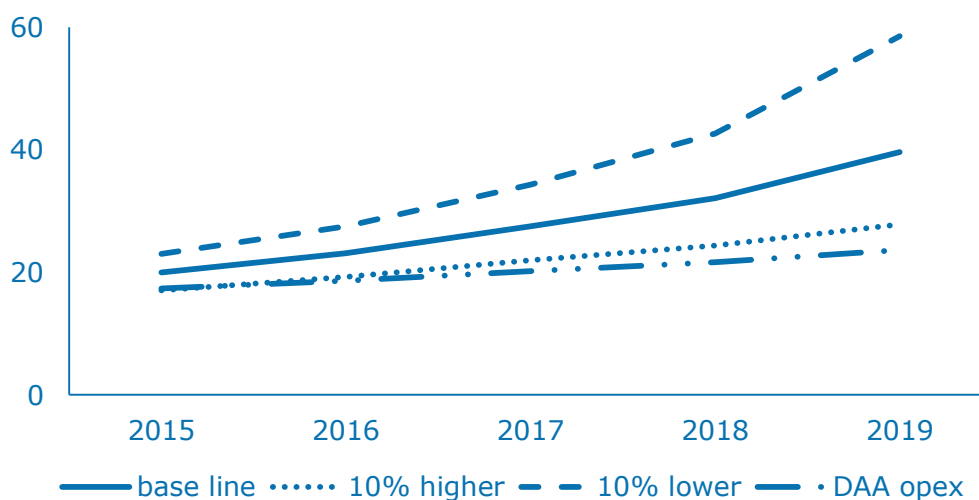
Chart 7.1: FFO: Debt Calculations for Different Traffic Scenarios (%)



Source: CAR calculations

7.15 The other scenarios we report, shown in Chart 7.2, concern operating costs. We have varied these by 10% from the levels assumed in our model. These variations have less effect on the FFO: debt ratio than varying passenger forecasts by the same percentage. Using DAA’s forecasts for operating costs leads to a marginally lower FFO: debt ratio in 2019 than a 10% drop in traffic. Nevertheless, even that scenario does not suggest the entity’s financial risks would be too great to support an investment grade credit rating.

Chart 7.2: FFO: Debt Calculations for Operating Cost Scenarios (%)



Source: CAR calculations

Concluding Comments on Financial Viability

7.16 The analysis shows that our Draft Determination allows DAA to operate Dublin Airport in a sustainable and financially viable manner. During meetings with airlines to discuss its draft CIP, DAA said that its proposed investments could be funded without an increase in airport charges from their current levels. We have disallowed over €200m of that proposed plan; this is more than double the amount of revenues from airport

charges that DAA will forego because the price cap will be lower than in 2013.

- 7.17 We have not estimated an annual return on the RAB. In its Regulatory Proposition, DAA reports that this was lower than the allowed cost of capital in both 2011 and 2012 (3.4% and 3.6% respectively). However, we do not expect the calculated return on the RAB to match the cost of capital every year. In remunerating capital investments, our calculations seek to allow DAA to recover the regulatory return on capital over the lifetime of an asset. In the case of Dublin Airport, the low reported return on capital in 2011 and 2012 arises because DAA has recently made a major investment building Terminal 2 for which most of the remuneration falls due in future years.
- 7.18 In past Determinations we reviewed financial metrics for DAA Group. While we have not undertaken such a review this time, the general outlook for DAA Group would not prompt us to consider adjusting the price cap. DAA Group's net debt is €151m lower than it was in 2010 and its latest Annual Report shows cash reserves of €538m in 2013. In terms of needing access to the capital markets, it would be to refinance rather than to raise new capital. In 2018 DAA's 2008 bond matures. DAA Group's current rating of BBB is three notches lower than its rating in 2008 of A. S&P's last update on DAA Group was 22 April 2014, when it changed its outlook from stable to positive and indicated that it might upgrade the rating if the regulatory settlement left prices unchanged. DAA debt is rated BBB foreign long-term and A-2 foreign short-term.

8. Quality of Service

Table 8.1: Service Quality Targets and Financial Incentive

Measures	Source	Target	% weight in price cap
Percentage of passengers queuing for less than 30 minutes	DAA	100	1.5
Percentage of time out-bound baggage handling system unavailable for more than 30 min during hours of operation	DAA	0	0.75
Percentage of time in-bound baggage handling system available during hours of operation	DAA	99	0.25
All Passengers (overall satisfaction)	ACI	4.00	0.25
Ease of way finding through airport	ACI	4.00	0.25
Flight information screens	ACI	4.00	0.25
Cleanliness of airport terminal	ACI	4.00	0.25
Cleanliness of washrooms / toilets	ACI	3.86	0.25
Comfort of waiting / gate areas	ACI	3.42	0.25
Courtesy, helpfulness of airport staff	ACI	4.00	0.1
Courtesy, helpfulness of security staff	ACI	3.98	0.15
Internet / Wi-Fi	ACI	3.47	0.25

ACI survey scores range between 1 and 5, with 5 being the best.

- 8.1 We propose to retain financial incentives for DAA to meet certain service quality standards. The primary purpose of the scheme is to encourage DAA to maintain a certain standard in service levels at Dublin airport, to protect the interest of current and prospective users of the airport: any cost savings DAA achieves should not come at the expense of a serious deterioration in service levels at the airport.
- 8.2 The proposed scheme is very similar to that used in 2009, with the same metrics and financial incentives, but with higher targets in most cases to reflect the generally better level of service now being offered at Dublin airport. The available evidence suggests that under the current service-quality regime DAA has sought to provide an improved service offering (as shown later, in Chart 8.1, survey evidence from passengers suggests almost continuous improvement in passengers' reported satisfaction with the various aspects of Dublin airport that DAA controls). For this reason we have concluded that a major overhaul of the system is unnecessary.
- 8.3 The overall financial incentive means that up to 4.5% of DAA's revenues from airport charges are at risk if it fails to meet service quality targets. There are 12 separate targets in the scheme, one relating to security queue length, two to baggage-belt availability and nine relating to passenger survey data. The target for security queues continues to attract the biggest weighting, accounting for one-third of the total penalties in place.
- 8.4 The scheme includes no bonuses. We believe that a determination is the time to settle on the maximum level of prices users should have to pay,

and what level of service they can expect for those prices. For this reason, we do not propose to allow DAA discretion to increase prices beyond the level proposed in this Draft Determination. It would be possible to re-define the scheme, setting a price cap 4.5% lower and then permitting increases should DAA meet the targets we have set. But since we view the targets as representing the base level of service that users should expect for the proposed price cap, the hope and expectation is that DAA will always meet the targets. In these circumstances, we think it more transparent to opt for the higher price cap and apply reductions should there be breaches.

- 8.5 DAA will be responsible for collecting data to measure service-quality performance. We will publish the results in a timely manner. Any failure by DAA to provide the results on time will be treated as a breach of the target. Should DAA advise us that it is unable to collect the data in a suitable format, we may waive the format or substitute in an alternative means for measuring the target. This precaution might apply, for example, if ACI ceased to run the passenger surveys on which many of our targets are currently based.

Security Search Queues

- 8.6 In terms of managing security queues, we propose to continue with financial incentives that encourage DAA to avoid lengthy delays: passengers should not have to wait more than 30 minutes. For each day DAA is unable to realise this goal, the price cap will be reduced by 0.05%. Should there be breaches of this target on 30 or more days in a year, the price cap will be reduced by a maximum of 1.5%.
- 8.7 There is no target for how quickly DAA should process 95% of passengers through security. Aer Lingus suggested such a target in its response to our Issues Paper. We have decided not to introduce such a target. Given the peaked traffic profile at Dublin airport, such a measure is likely to
- Be met easily if it relates to the percentage of time during the day that the queue is less than X minutes; or
 - Provide a second measure that encourages DAA to ensure that queues at the busiest times of the day do not grow too long if it relates to the percentage of passengers required to be processed in less than X minutes.

Defining and measuring queue times

- 8.8 The definition of the queue length will differ to what has applied during the current Determination. The start point will continue to be where the passenger joins the queue. However, the end point will now refer to where the passenger reaches the walk through metal detector. The current Determination refers to where the passenger hands over their boarding pass for inspection although since re-locating the security queue facility in Terminal 1, DAA has been reporting an end point corresponding to a red line in the security area. The change in the definition of the queue length was proposed by DAA and will correspond more closely to what passengers would consider to be queuing time.
- 8.9 The revised definition of the queue length means that DAA will face a more

challenging security queue target than is currently in place. This is because the defined end point of the security queue is now later. We estimate that DAA will have perhaps 10 minutes less time in which to process a passenger if it wants to avoid breaching the new security queue target. This estimate comes from looking at data from both terminals measuring queues to the current end point and to the proposed new end point across four different days.

8.10 Given the target has already become more challenging by the simple expedient of re-defining the end point of the queue, we have not been convinced of the need to reduce the target time from 30 minutes. In meetings with airlines DAA offered a more challenging target of 20 minutes, but argued that this would require additional operating expenditure of €8m over the next five years. Feedback from airlines has not suggested any enthusiasm for higher airport charges in exchange for a more demanding security queue target.

8.11 It will continue to be DAA's responsibility to arrange for the security queues to be measured and to report any breaches of the target. We recognise that in practice it is unlikely to be possible to measure 100% of passengers' queue times, so we will need to be satisfied that the sampling proposed (including any filtering of data) is reasonable. This accords with the arrangements currently in place. From January 2010 until March 2012, DAA staff manually measured a passenger's queue time once every 15 minutes. Since then, DAA has used an automated technology to report the rolling 15-minute median time taken to get from the start to end of the queue for passengers carrying Bluetooth-enabled equipment.

Exemptions

8.12 Similar to the last Determination, we will not require DAA to comply with the security-queue target in exceptional circumstances that are clearly outside its control. The examples we have in mind include situations where DAA has to satisfy new security requirements introduced at very short notice or due to severe disruption because of weather or a malicious act by a passenger, airline or airline contractor.

8.13 The definition of exceptional circumstances does not include things for which users might reasonably expect DAA to take responsibility, such as industrial action by its staff. Nor will we exempt DAA from meeting the 30-minute target on days when it is expecting a very large volume of passengers or when it is satisfying new security requirements that were notified months in advance. The purpose of this service-quality target is to encourage DAA to plan for such events so as to minimise disruption to users.

Transfer security search queues

8.14 The security queue targets will not apply to transfer security queues. This is despite Aer Lingus suggesting such a metric should be introduced and the development agencies stating the importance of transiting passengers' experience.

8.15 There are various reasons why we have decided not to introduce such a

target. We are keen for the quality of service regime to focus attention on a few key areas that benefit the generality of users. Transit passengers represent a small subset of passengers at Dublin airport. Moreover, these passengers are the segment of DAA's passenger base for which competition from other airports is perhaps greatest, arguably muting the need for regulatory intervention. Such passengers do not have to use Dublin airport if DAA fails to provide a good transfer product.

Baggage Belts

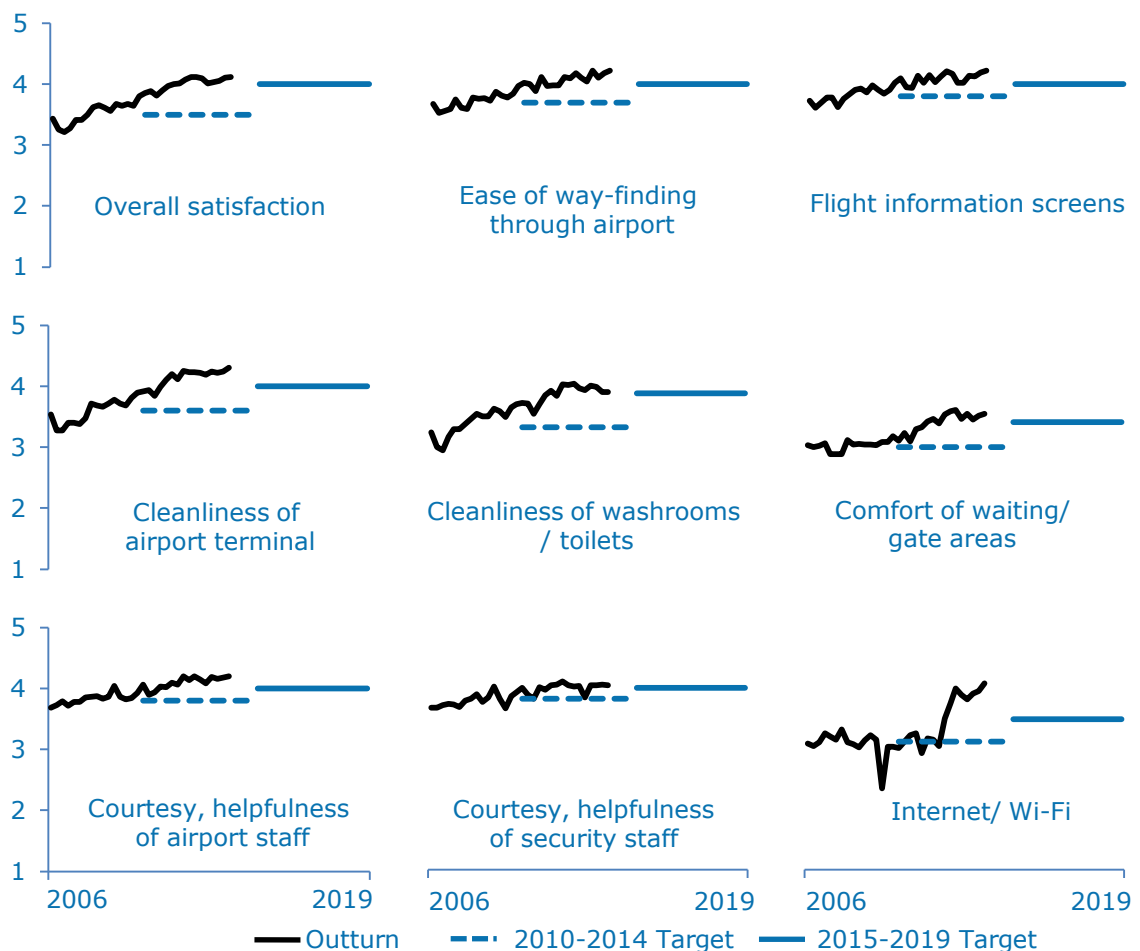
- 8.16 We propose to retain the baggage belt service quality metrics from the last Determination. DAA will have to ensure that at all times ground handlers have access to a working outbound baggage belt within 30 minutes of requesting one, while the inbound baggage belts will need to be available 99% of the time.
- 8.17 Since introducing these targets, DAA has never failed to meet them. Nevertheless, we consider it prudent to keep them since non-functioning baggage belts would seriously affect airport operations, to the detriment of users.

Passenger Survey Results

- 8.18 Getting good passenger survey results will be the final component of our service-quality regime. Using the Airport Council International (ACI) quarterly survey results, DAA will have targets to reach for eight aspects of service quality:
- overall satisfaction;
 - ease of way finding through the airport;
 - flight information screens;
 - cleanliness of the airport terminal;
 - cleanliness of washrooms and toilets;
 - comfort of waiting and gate area;
 - internet and wi-fi; and
 - courtesy and helpfulness of staff.

The price cap may be reduced by as much as 2% should DAA fail to meet its targets. The eight areas are each given the same weighting of 0.25% (in the case of courtesy and helpfulness of staff the ACI survey separately asks passengers about security staff and other staff, so we include both measures in our scheme, with weights of 0.1% and 0.15% respectively).

Chart 8.1: Updating Targets for ACI Survey Results



8.19 For all of the survey results included in our service-quality regime, we have increased the target score that DAA will need to meet. DAA has consistently beaten the targets we set in 2009, with the scores recorded increasing over time (see Chart 8.1). The one exception was satisfaction with “phone/ internet/IT facilities”, for which low scores were initially recorded until DAA responded by introducing free wi-fi. To protect users from the possibility that these improvements in service quality will be lost, we have updated the targets to correspond to the average score that DAA has achieved between 2010 and 2013. This is akin to what we did in the last Determination, when we looked at the average score between 2006 and 2009, and in line with DAA’s stated ambition to become the best in its benchmark group of airports. We have capped the target at four, the second most favourable response an individual completing the survey can give on the five-point scale.

8.20 For the next Determination, the annual price cap will be with reference to ACI scores in the same calendar year. In the current Determination there is a two-quarter lag, so the 2014 price cap depends on ACI scores from the last two quarters of 2013 and the first two quarters of 2014. This lag was in place because of the possibility that there would be a delay before the results became available. Experience suggests that there is no need for this lag, as in practice DAA has been able to provide the quarterly results within a month of the quarter ending. One effect of re-aligning

when poor ACI quarterly results affect the price cap is that there will be no financial incentive for DAA to achieve good ACI scores in the third and further quarters of this year.

- 8.21 Since the new targets are based on what DAA has been able to achieve in recent years, we do not believe that there is any need to revisit our allowance for operating costs on account of quality of service standards.

No New Metrics

- 8.22 The service-quality regime includes no additional metrics to the regime currently in place. Aer Lingus suggested that a metric relating to stand allocation should be introduced. We have rejected this suggestion. We think it could lead to perverse incentives, with airlines that most valued access to a contact stand being denied access so as to satisfy a service-quality target. Instead, we think it is best that DAA address the availability of contact stands through pricing, modulating the charges for contact and remote stands such that demand for the various types of stands can be met.
- 8.23 Nor have we introduced metrics that relate to the performance of parties other than DAA. We do not think it would be appropriate for a price cap governing the airport charges that DAA can levy to depend on the performance of other parties. It is outside the scope of a price-cap determination to consider the merits or otherwise of publishing service-quality metrics that depend on parties other than DAA, such as queue lengths at check-in desks and immigration or departure punctuality.

9. Other Issues

9.1 This section discusses the separation of Shannon airport, price differentiation, and price-cap compliance. These were three topics identified in the Issues Paper as potentially relevant for the next Determination that did not readily fit under any of the other headings used. Since the Issues Paper, we have not identified any other issues to include here.

Separation of Shannon Airport

9.2 We have had regard to the separation of Shannon Airport when making this Draft Determination, as required by statute. We agree with DAA that the separation does not have material implications for its ability to operate the airport in a sustainable and financially viable manner.

9.3 Nor do we believe our assumptions about future operating costs or commercial revenues are affected by the separation of Shannon Airport. For this Determination, SDG assessed what the efficient level of head-office costs should be at Dublin Airport alone. Given this approach, there is no need to allocate group head office costs between Dublin Airport and the other airports.

Price Differentiation

9.4 We do not propose to include any sub-caps in our determination requiring DAA to offer differentiated prices. This includes not requiring peak pricing.

9.5 Nevertheless, we continue to believe that such pricing has merit and encourage its use at Dublin airport. Current and prospective users' needs will be better met if DAA permits users to select different price and service offerings. We do not accept that the airport always has to offer all airlines the same level of service. We reject the suggestion that our response to the 2010 Appeal Panel referral ruled out differential terminal pricing; we merely concluded that it was better at that time not to include a sub cap in the determination.

9.6 One of our reasons for encouraging the use of peak and differential pricing is as a means of controlling capital costs at the airport. Where there is spare capacity, operators will understandably operate at the time of day that is most convenient to them. However, in periods when that capacity is fully utilised there are two responses available: building additional capacity or requiring some users to operate at other times. With peak pricing in place, airlines will face better price signals when deciding whether to operate at the busiest hour. When considering the need for investment to provide additional capacity, the willingness of users to pay a premium to operate in the peak hours is something that we may look for when deciding whether there is sufficient demand for the investment.

Price Cap Formula

9.7 The one change to the formula we propose to make concerns how we treat forecast and actual levies DAA has to pay the Commission. Instead of an annual adjustment to the formula to reflect any differences, we propose

deferring any adjustment until the start of the next Determination. We continue to consider that it is appropriate that DAA should not be rewarded nor penalised should the levy deviate from expectation, since the costs are largely outside of its control.

- 9.8 The time available for DAA to reimburse users should its revenues from airport charges exceed the annual price cap will be 90 days. This is up from 45 days in the current Determination. DAA requested this change. The new time period will be the same as that available for the IAA to reimburse users should its revenues from aviation terminal service charges exceeds its price cap.

10. Compliance with Statutory Requirements

- 10.1 This Draft Determination makes proposals that comply with our statutory requirements. We are not required to follow any Ministerial Directions in the exercise of our functions for the simple reason that we have not received any. Should this change, we will notify parties at the earliest opportunity.
- 10.2 Our statutory objectives, as well as the statutory factors to which we have to have regard, are set out in Section 33 of the 2001 Airport Aviation Act, as substituted by Section 22(4) of the 2004 State Airports Act. As far back as 2005 we set out our interpretation of these statutory objectives and factors.¹⁰ This interpretation is consistent with the approach taken in both the second and third Determinations, and is the approach we have taken here. We believe that our statutory objectives permit us to regulate airport charges at Dublin Airport with reference to the economic concepts of allocative, dynamic and productive efficiency. Consequently economic efficiency remains the driving principle behind this Determination, as it has been in all past Determinations.
- 10.3 The rest of this chapter sets out how this Draft Determination complies with the statutory objectives and statutory factors that apply.

Statutory Objectives

- 10.4 When making a Determination for airport charges, we have three statutory objectives. They must be read together and in light of one another.

To facilitate the efficient and economic development and operation of Dublin Airport which meet the requirements of current and prospective users of Dublin Airport

- 10.5 By allowing DAA to recover revenues sufficient to meet efficiently incurred costs of operating and developing the Airport we meet this statutory objective. Chapters 4 and 6 provide more detail on how we have determined what operating and capital expenditures to include in our price-cap calculations. In Chapter 6 we set out the allowances for investment projects that we believe are necessary to meet the requirements of current and prospective users.

To protect the reasonable interests of current and prospective users of Dublin Airport in relation to Dublin Airport

- 10.6 To protect users' reasonable interests, we have set quality of service standards that DAA must provide (see Chapter 8) and set a price cap that reflects a reasonable estimate of the costs that DAA needs to recover in order to provide the required services that users require (see Chapter 4 and 6).

¹⁰ See CP9/2004 "Commission for Aviation Regulation's conclusions on the impact of the amendments to the Aviation Regulation Act, 2001, on the regulation of maximum levels of airport charges in Ireland", http://www.aviationreg.ie/fileupload/Image/PR_Policy_PUB2_POL_CP9_2004_AVIATION_ACT.pdf

To enable Dublin Airport Authority to operate and develop Dublin Airport in a sustainable and financially viable manner

10.7 Chapter 7 sets out why this Draft Determination satisfies this statutory objective. The annual price cap is sufficient to allow DAA to recover all forecast, efficient operating costs as well as allowing for some depreciation charges and a return on capital (as measured by the RAB). Some investment costs will not be fully depreciated by end 2019, these remaining costs will be included in the closing RAB in 2019 with the intention that such costs will be remunerated through airport charges at a later date.

Statutory Factors

10.8 There are nine statutory factors that we must have due regard to when making a determination governing airport charges.

The restructuring including the modified functions of Dublin Airport Authority

10.9 In Chapter 9 we refer to the separation of Shannon Airport from the DAA Group. As set out there, we do not believe the restructuring has a material bearing on our calculations.

The level of investment in airport facilities at Dublin Airport, in line with safety requirements and commercial operations in order to meet the needs of current and prospective users of Dublin Airport

10.10 We assess DAA's CIP in Chapter 6 and arrive at an allowance that we think constitutes an efficient level of investment in airport facilities at Dublin Airport to meet the needs of current and prospective users, having regard to safety requirements and DAA's commercial operations.

The level of operational income of Dublin Airport Authority from Dublin Airport, and the level of income of Dublin Airport Authority from any arrangements entered into by it for the purposes of restructuring under the State Airports Act 2004

10.11 In Chapter 5 we set out our treatment of operational income at Dublin Airport. We continue to favour a "single-till" approach to regulation when determining the price cap on airport charges. For this reason, we have included commercial revenues in our price-cap calculations, such that DAA will be able to recover sufficient income from commercial revenues and airport charges to meet efficiently incurred costs.

10.12 We are not aware of any income arising from arrangements DAA has entered into for the purposes of restructuring under the 2004 State Airports Act.

Costs or liabilities for which Dublin Airport Authority is responsible

10.13 The Draft Determination has regard to costs and liabilities of DAA in a number of chapters, most obviously Chapters 4 and 6 where we have regard to DAA's operating and capital costs.

The level and quality of services offered at Dublin Airport by Dublin Airport Authority and the reasonable interests of the current and prospective users of these services

10.14 Chapter 8 deals with the level and quality of service to be offered by DAA. We have proposed a service quality monitoring scheme similar in design to that used in the 2009 Determination.

Policy statements, published by or on behalf of the Government or Minister of the Government and notified to the Commission by the Minister, in relation to the economic and social development of the State

10.15 We have received no such notifications to date.

The cost competitiveness of airport services at Dublin Airport

10.16 The proposed price cap is lower than currently in place, so should improve the cost competitiveness of airport services at Dublin Airport.

10.17 We continue to believe that this factor has to be read in light of statutory objective (a), which seeks the efficient operation of Dublin airport. The maximum level of airport charges are with regard to those costs that an efficient operation at Dublin airport would need to incur. In deriving estimates for future costs (both operating and capital expenditure), as well as commercial revenues, we have regard to how DAA compares with other airports.

Imposing minimum restrictions on Dublin Airport Authority consistent with the functions of the Commission

10.18 We continue to afford DAA a large measure of discretion in how it manages Dublin Airport, merely requiring it to comply with an annual per passenger airport charge and to meet certain service-quality targets. Subject to complying with the overall price cap, DAA continues to have full discretion on how it sets individual charges at Dublin Airport since we have proposed no sub caps.

Such national and international obligations as are relevant to the functions of the Commission and Dublin Airport Authority

10.19 National and international obligations evolve over time and could be subject to change during the next five years. In making this Determination, we have had regard to those requirements that are currently in place.

10.20 Since 2011 we have been the Independent Supervisory Authority for the purposes of the Airport Charges Directive. This does not change our role in determining the overall price cap within which DAA is to set its airport charges. The Directive, as it applies in Ireland, does require DAA to consult with airport users in regard to the system of airport charges, the level of airport charges and, as appropriate, the quality of services provided. We have had regard to such consultations in making this Determination.

10.21 We have had regard to DAA's safety and compliance obligations under national law, including the Air Navigation and Transport Acts, 1936 to

1998, as well as legislation relating to the IAA. We have also had regard to the security, immigration and health and safety requirements that airports are subject to because people use them to enter and exit the State.

10.22 Ireland is a signatory to the Chicago Convention, which was incorporated into domestic law by the Air Navigation and Transport Act 1946. To the extent that this creates international and national obligations, we have had due regard to it.

11. Responding to the Draft Determination

11.1 We would like to hear the views of interested parties about the proposals in this Draft Determination. Respondents are asked to support any views expressed in submissions with relevant evidence where possible.

11.2 Responses should be titled "Response to Airports Charges Draft Decision Paper" and sent

- By post to:

3rd Floor, Alexandra House
Earlsfort Terrace, Dublin 2; or

- By email to:

Info@aviationreg.ie

11.3 The closing date for receipt of submissions is **5pm, 31 July 2014**. The time of receipt of representation, whether in electronic form or otherwise, shall be the time when we actually receive the representations at or in our offices. Submissions received after the deadline will be deemed not to have been received and we will not consider them. If we receive a portion of a representation prior to the deadline, and the remainder after the deadline, we will only consider the portion received prior to the deadline.

11.4 We may correspond with interested parties who make submissions, seeking clarification or explanation of their submissions. Such correspondence will not be an invitation to make further submissions.

11.5 Respondents should be aware that we are subject to the provisions of the Freedom of Information legislation. Ordinarily we place all submissions received on our website. We may include the information contained in submissions in reports and elsewhere as required. If a submission contains confidential material, it should be clearly marked as confidential and a redacted version suitable for publication should also be provided.

11.6 We do not ordinarily edit submissions. Any party making a submission has sole responsibility for its contents and indemnifies us in relation to any loss or damage of whatever nature and howsoever arising suffered by us as a result of publishing or disseminating the information contained within the submission.

11.7 While we endeavour to ensure that information on our website is up to date and accurate, we accept no responsibility in relation to the accuracy or completeness of our website and expressly exclude any warranty or representations as to its accuracy or completeness.

Appendix 1: List of Acronyms Used

ACI	Airport Council International
ATI	Access to installations
CAA	UK Civil Aviation Authority
CAR	Commission for Aviation Regulation
CAPM	Capital asset pricing model
CER	Commission for Energy Regulation
CFO	Cash flow from operations
ComReg	Commission for Communications Regulation
CPI	Consumer Price Index
DAA	Dublin Airport Authority
DFBOT	Design, Finance, Build, Operate, Transfer
EBITDA	Earnings before interest, taxes, depreciation and amortization
ESRI	Economic and Social Research Institute
EY	Ernst & Young
FFO	Fund from operations
GDP	Gross Domestic Product
IAA	Irish Aviation Authority
IATA	International Air Transport Association
IMF	International Monetary Fund
IT	Information technology
Mppa	Million passengers per annum
MSCP	Multi-storey car park
Ofgem	Office of Gas and Electricity Markets, UK
Ofwat	UK Water Regulator
Opex	Operating expenditure
SDG	Steer Davies Gleave
S&P	Standard & Poor's
RAB	Regulatory asset base
T1X	Airside extension to Terminal 1
WACC	Weighted average cost of capital

Appendix 2: GDP Forecasts

Table A2.1: Recent Real GDP Growth Forecasts for Ireland (%)

Source	Date	2014	2015	2016	2017	2018	Long term
Central Bank of Ireland	Apr 2014	2.0	3.2				
Department of Finance	May 2014	2.1	2.7	3.0	3.5	3.5	
ESRI (Quarterly economic review)	Apr 2014	2.6	3.5				
ESRI (recovery scenario)	July 2013	3.0	4.0	4.1	4.2	3.7	2015-20: avg 4.0
ESRI (delayed adjustment scenario)	July 2013	1.9	2.7	1.9	2.7	3.0	2015-20: avg 3.3
ESRI (stagnation scenario)	July 2013	3.5	1.3	1.1	2.0	0.8	2015-20: avg 1.4
European Commission	May 2014	1.7	3.0				
Ernst & Young Economic Eye	Winter 2013	1.6	1.9	2.6	2016-2023 avg 3.4		
IMF World Economic Outlook	Mar 2014	1.699	2.466	2.521	2.513	2.522	2.513
IBEC quarterly economic outlook	Apr 2014	2.9	3.1				
OECD Economic Outlook	May 2014	1.866	2.161				

Central Bank of Ireland (2014, Apr). Q2 Central Bank Quarterly Bulletin.

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Appendix 3: Commercial Revenues Regressions

Regression Results

Table A3.1: Retail Revenue Regressions

Ln(Retail)	(1)	(2)	(3)
Ln(Pax)	0.869***	1.09***	0.91***
Trend			-0.002***
Constant	3.77***	0.55	3.33***
Monthly Dummies	No	Yes	Yes

2001-2013 monthly data, *** $p < 0.001$, ** $p < 0.01$, * $p < 0.5$, . $p < 0.1$

Table A3.2: Car Parking Revenue Regressions

Ln(Car Parking)	(1)	(2)	(3)
Ln(Pax)	0.57***	0.22*	1.00***
Trend			-0.005***
Constant	6.58***	11.46***	1.01
Monthly Dummies	No	Yes	Yes

2001-2013 monthly data, *** $p < 0.001$, ** $p < 0.01$, * $p < 0.5$, . $p < 0.1$

Table A3.3: Property Rents Revenue Regressions

Ln(Prop Rents)	(1)	(2)	(3)
Ln(Pax)	0.05	0.07	0.06
Trend			0
Constant	13.28***	13.14***	13.19***
Monthly Dummies	No	Yes	Yes

2001-2013 monthly data, *** $p < 0.001$, ** $p < 0.01$, * $p < 0.5$, . $p < 0.1$

Table A3.4: Property Concessions Revenue Regressions

Ln(Property Con)	(1)	(2)	(3)
Ln(Pax)	0.29***	0.20.	0.45***
Trend			-0.001**
Constant	9.94***	11.35***	7.96***
Monthly Dummies	No	Yes	Yes

2001-2013 monthly data, *** $p < 0.001$, ** $p < 0.01$, * $p < 0.5$, . $p < 0.1$

Table A3.5: Other Revenue (Excluding CBP) Regressions

Ln(Other Ex CBP)	(1)	(2)	(3)
Ln(Pax)	0.71***	2.05***	1.31***
Trend			0.004***
Constant	2.22	-16.23***	-6.16
Monthly Dummies	No	Yes	Yes

2001-2013 monthly data, *** $p < 0.001$, ** $p < 0.01$, * $p < 0.5$, . $p < 0.1$

Appendix 4: Cost of Capital Decisions by Regulators

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Appendix 5: Estimating Airport Asset Betas

We calculated airport asset betas using stock returns from listed airports and airport groups. From the 12 airports included in an industry overview list from Bloomberg, we ultimately used the 10 listed in Table A5.1 below: Aéroports de Paris, Auckland Airport, Copenhagen Airport, Firenze airport, Fraport (Frankfurt Airport), Sydney Airport, TAV Havalimanlari (a leading Turkish airport operator, including Ankara and Istanbul), Venezia Airport, Vienna Airport, Zürich Airport. The only European airport operators excluded from further analysis were AI Airports and Gemina SpA (Rome Airport). The former was dropped since it does not seem to be regularly traded.¹¹ The latter was taken over by Atlantia SpA in March 2013, a company with a risk profile potentially very different to that of a pure airport operator since it is also active in construction and the management of toll motorways globally.

Table A5.1: Listed Airport Stocks used for Asset Beta Estimation

Company	Ticker	Data Source
Aéroports de Paris	ADP.PA	Yahoo Finance
Auckland Airport	AIA.NZ	Yahoo Finance
Copenhagen Airport	KBHL.CO	Yahoo Finance
Firenze airport	AFI.MI	Yahoo Finance
Fraport AG	FRA.DE	Yahoo Finance
Sydney Airport Holdings Ltd	SYD.AX	Yahoo Finance
Tav Havalimanlari Holding A.S.	IST:TAVHL	Google Finance
Venezia Airport SAVE S.p.A.	SAVE.MI	Yahoo Finance
Vienna Airport	FLW.F	Yahoo Finance
Zürich Airport	FHZN.SW	Yahoo Finance

Source: Regulatory Decisions

The equity beta was calculated using daily returns compared to different indices, using data up to 17 January 2014. We estimated a range of equity betas, including the spot rate for one year, six month average spot rate, and the two- and five-year average. We compared the returns against the FTSE All Share Index, which can be considered a proxy for world equity. We are aware that some practitioners use national or regional benchmarking indices, but this is not always practical and some national indices might not be well diversified.

We considered a Vasicek adjustment to the raw equity beta series, as suggested by Aer Lingus in its response to the Issues Paper. The adjustment left our estimates unchanged to the second decimal place.

To de-lever equity betas, we used the airports latest gearing figures. We used the ratio of net debt: net debt plus market capitalization. Net debt was calculated from the latest annual reports as a book value of long term debt plus current debt, less cash and cash equivalents. Market capitalization is retrieved using the market value. We assumed a debt beta of 0.1, in line with the recent practice of

¹¹ <http://finance.yahoo.com/q?s=QDA.BE>

the CAA and the UK Competition and Market Authority.

Table A5.2: Asset betas in detail

Airports	1 year spot rate	6 month average spot rate	2 year average	5 year average
Auckland	0.17	0.10	0.08	0.12
Aéroports de Paris	0.30	0.35	0.43	0.60
Copenhagen	0.19	0.23	0.14	0.21
Firenze	0.06	0.12	0.24	0.20
Fraport	0.41	0.44	0.54	0.61
Sydney	0.12	0.11	0.10	0.11
TAV	0.51	0.47	0.37	0.44
Venezia	0.22	0.18	0.18	0.46
Vienna	0.31	0.34	0.26	0.36
Zürich	0.46	0.47	0.42	0.48
Average	0.27	0.28	0.27	0.36

Source: CAR calculations