Maximum Levels of Airport Charges at Dublin Airport

Issues Paper

Commission Paper 2/2013

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Abbreviations

	Explanation
ACCC	Australian Competition & Consumer Commission
ACI	Airports Council International
ACL	Airport Coordination Limited
ATI	Access to installations
ATRS	Air Transport Research Society
ATS	Air traffic services
CAA	Civil Aviation Authority, UK
Capex	Capital expenditure
CAPM	Capital asset pricing model
CAR	Commission for Aviation Regulation
CER	Commission for Energy Regulation
CPI	Consumer price index
CSO	Central Statistics Office
DAA	Dublin Airport Authority
EBITDA	Earnings before interest, taxes, depreciation and amortization
EC	European Commission
ECB	European Central Bank
ERP	Equity risk premium
EU	European Union
FFO	Funds from operations
FTE	Full time equivalent

	Explanation
IAA	Irish Aviation Authority
IMF	International Monetary Fund
KPI	Key performance indicator
mppa	Million passengers per annum
NPV	Net present value
OECD	Organisation for Economic Co-operation and Development
Ofcom	The Office of Communications, UK
Ofgem	Office of Gas and Electricity Markets, UK
Ofwat	The Water Services Regulation Authority, UK
Opex	Operating expenditure
PAX	Passengers
PRM	Passengers with reduced mobility
RAB	Regulatory Asset Base
S&P	Standard and Poor's
T1	Terminal 1
T1X	Airside extension to T1
T2	Terminal 2
UREGNI	Utility Regulation, Northern Ireland
WACC	Weighted average cost of capital
WLU	Work load unit

A New Determination Governing Airport Charges at Dublin Airport is Due by End 2014

This paper begins the process leading to the making of that Determination. The current price cap expires at the end of 2014.

We are making a determination that will affect what the DAA can charge at Dublin Airport for

taking-off, landing and parking aircraft;
the use of air bridges;
arriving and departing passengers; and
the transportation of cargo.

We are seeking comments from parties on how we should proceed to make that Determination

What regulatory policies should we adopt?	What methodologies should we apply?	What data sources should we use?

This will not be the final opportunity for interested parties to comment prior to the Determination. Nevertheless we encourage parties to respond to this paper, since our willingness and ability to act on suggestions will diminish over time. We will be reluctant to adopt significant changes without having had time to understand their implications fully and affording all interested parties an opportunity to comment.

Timetable Leading to the Next Determination

The new Determination will take effect on 1 January 2015, so we have to make our Final Determination by end December 2014.

We currently aim to make it a few months before then, in September 2014. This is to allow parties sufficient notice so that they can adapt their plans for 2015 in light of the Determination. This includes allowing time for the DAA to consult with parties on its planned 2015 airport charges.

For both this Issues Paper and the proposed Draft Determination in May 2014 we plan to allow parties two months to respond. Should we issue other consultation documents, we will similarly try to allow two months for responses.

We do not envisage setting aside additional time to allow parties to respond to other parties' responses.

We expect the DAA to provide forecasts for 2013 and 2014 capital spend in September 2013. We will publish those forecasts and parties will be welcome to comment on what implications, if any, they think these forecasts should have for our 2014 Determination.

In December 2013 and January 2014 the DAA plans to consult with users on its Capital Investment Plan 2015-2019. We will attend those meetings in an observer capacity. Should we conclude that there is merit in separately chairing our own capex consultation meetings, we would do so in March and April 2014.

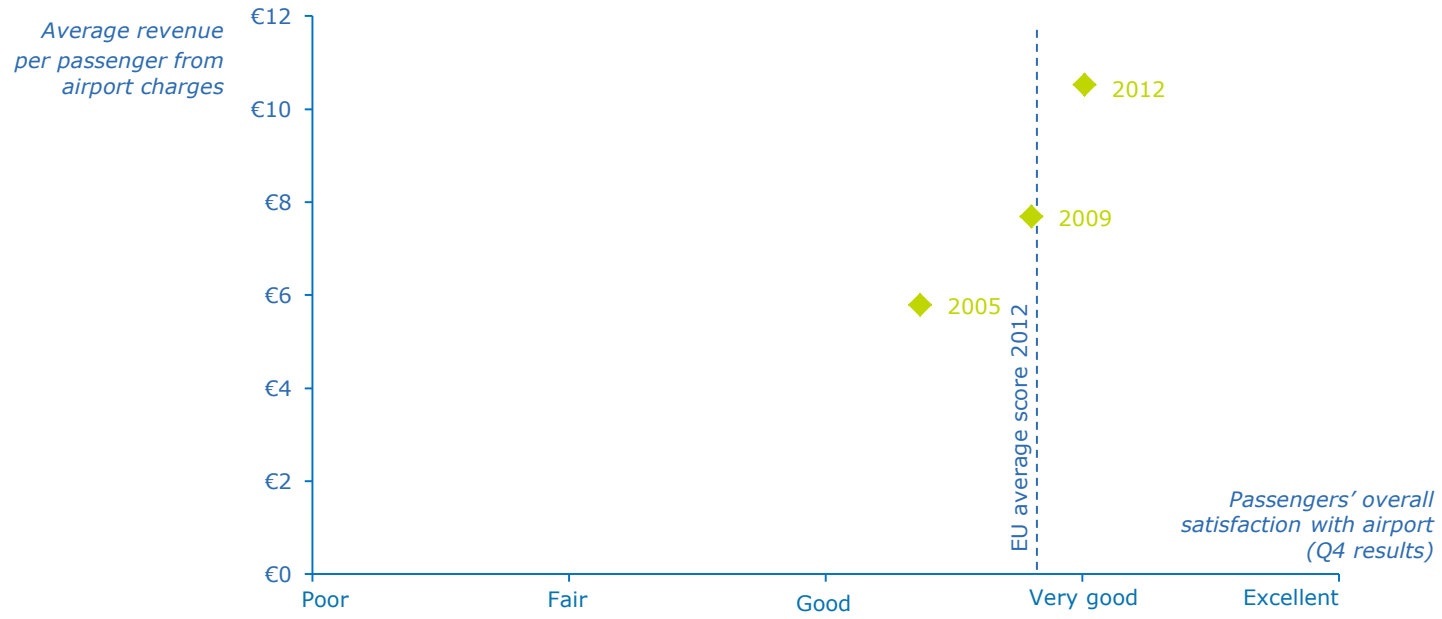
If parties wish to form working groups to discuss other aspects that might be relevant for the next Determination, we will consider requests to attend such meetings.

We no longer expect to publish the DAA's Regulatory Proposition in September 2013.

What Level of Charges Should Dublin Airport Users Pay for What Quality of Service?

The chart below shows that current users are paying higher prices and, based on survey data, receiving a higher quality of service than was the case in 2009 or 2005. The trend since 2005 has been one of higher prices and improving consumer satisfaction at Dublin airport. A fundamental question for the forthcoming price cap will be to ascertain the extent to which users would prefer to pay higher charges for a higher quality of service, or lower charges for a more basic service offering.

Chart 1: Price and quality at Dublin Airport, 2005-2012



Source: DAA, Global Airports Monitor, ACI, CAR calculations

It would be possible to compare Dublin Airport's charges and service quality (at least in some regards) with other airports and to undertake benchmarking more generally. We have largely refrained from doing so in the remainder of this paper, since we would first like to hear from parties about what airports constitute suitable comparators. Such responses might identify specific airports, or alternatively they might set out criteria that they think should guide us when developing a peer group for Dublin Airport.

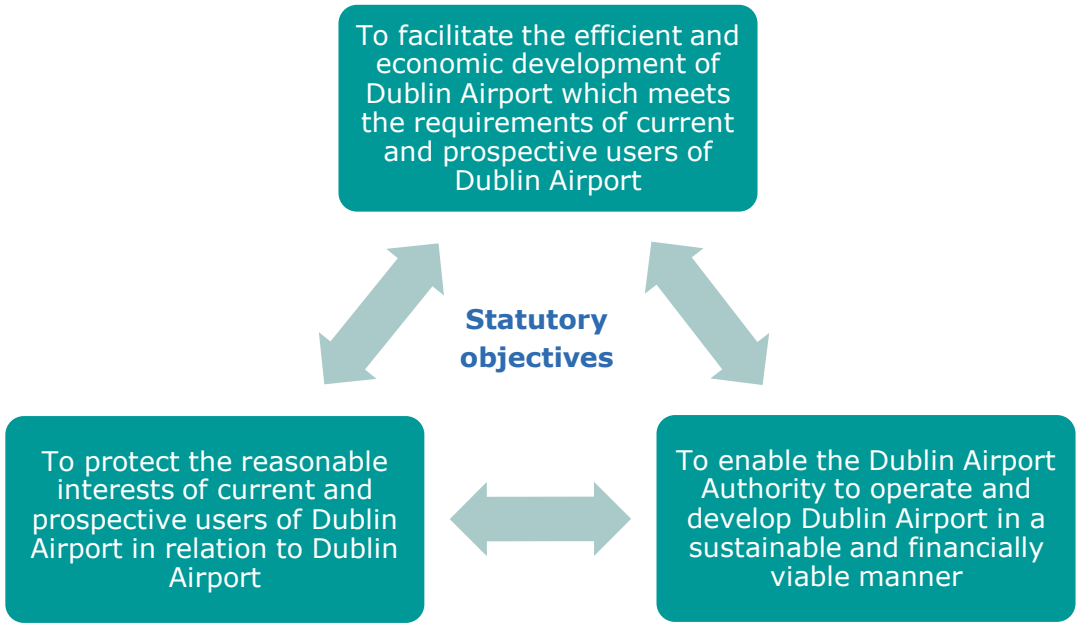
There are Eight Sections in the Rest of this Report, Raising a Variety of Questions

Approach to Regulation	•Should the DAA face incentives to beat efficiency targets? •How long should the Determination last? •What cost and demand risks should the DAA have to assume?
Passenger Forecasts	•What information should a traffic forecast for Dublin Airport include? •How should we deal with uncertainty in traffic forecasts? •What methods and external data sources should we use?
Operating Expenditure	•What is the scope for the DAA to "catch up" and realise efficient opex? •How significant are economies of scale? •Are there measures, such as rolling schemes, to incentivise efficiency?
Commercial Revenues	•What information is needed to forecast future commercial revenues? •How do commercial revenues respond to changing passenger levels? •Should the DAA always be incentivised to maximise these revenues?
Capital Costs	•What should the opening regulatory asset base (RAB) be in 2015? •What level of investment is needed at Dublin Airport in the future? •What is an appropriate cost of capital to allow?
Financial Viability	•How should financially viable operations at Dublin Airport be enabled? •Has the DAA's financial position changed significantly since 2009? •What developments in the financial markets, if any, might be relevant?
Quality of Service	•Which aspects are important and how could they be measured? •What service quality targets should be set for the DAA? •What link should there be between service quality and the price?
Other Issues	•Does Shannon airport's separation from the DAA matter? •Should we mandate differential pricing and, if so, how? •Should the price-cap formula or how we enforce compliance change?

1. Approach to Regulation

- This section discusses the approach to regulating airport charges at Dublin Airport. It summarises the statutory environment in which we operate and describes the approach we have previously taken.
- To date we have relied on RAB-based incentive regulation, an approach used by most economic regulators outside of the communications sector. We outline the rationale for using incentive regulation in the absence of competitive forces.
- Policy decisions that have to be made include the form of the price cap, its duration, and which parties should bear what risks.
- Perhaps of most interest will be how the actual cap is calculated. We describe the "building-blocks approach" we have used in past determinations, and attempt to give readers a feel for the relative importance of different components. Later sections of this report discuss each of these components in more details.
- Parties are invited to outline any changes to the general approach to regulation they would like us to adopt for the next Determination. Such suggestions should explain how the revised approach would be consistent with our statutory remit and the work that would be required to implement such an approach.

Our Statutory Remit: To Set a Cap on the Maximum Level of Airport Charges at Dublin



We give equal weight to these three statutory objectives, which must be read together and in light of each other.

We also have to comply with any general policy direction that we receive from the Minister for Transport, Tourism & Sport. To date we have not received such a direction for the 2014 Determination.

There are a further nine statutory factors to which we must have regard: the restructuring of the DAA, the level of investment in airport facilities to meet the needs of current and prospective users, the level of operational income of the DAA from Dublin Airport, the costs or liabilities for which DAA is responsible, the level and quality of services offered at Dublin Airport, policy statements published by the Government and notified to the Commission, the cost competitiveness of airport services at Dublin Airport, imposing minimum restrictions on the DAA consistent with the Commission's functions, and relevant national and international obligations.

What has Changed that Might Affect our Remit? What are we Regulating? For Whom?

Statutory developments since 2009

Since the last Determination, there have been a number of developments that may have implications for the regulation of airport charges at Dublin Airport.

Two of the more significant developments that we are aware of are:

- The EC's Airport Charges Directive came into force in Ireland in 2011. We have been designated as the Independent Supervisory Authority.
- The Government has commenced an Aviation Policy Review, publishing an Issues Paper in March 2013.

Of interest to us are comments identifying whether and how these developments should affect the approach we take when making the 2014 Determination. Do they require us to adopt a different approach to what we did in 2009?

Parties are also encouraged to identify any other developments since 2009 that they think have implications for the approach we might adopt for the forthcoming Determination. Where there are important developments, parties might outline whether they think that these developments require us to change our approach and, if so, how we might best to do this whilst realising our statutory objectives.

What are airport charges?

- Charges levied in respect of landing, parking or take-off of aircraft at an aerodrome including charges for airbridge usage but excluding charges in respect of air navigation and aeronautical communications services levied under Section 43 of the Irish Aviation Authority Act of 1993;
- Charges levied in respect of the arrival or departure from an airport by air of passengers; or
- Charges levied in respect of the transportation by air of cargo, to or from an airport.

Who is a user?

Any person

- for whom any services or facilities the subject of airport charges are provided at Dublin Airport;
- using any of the services for the carriage by air of passengers or cargo provided at Dublin Airport; or
- Otherwise providing goods or services at Dublin Airport.

This definition includes more than just airline carriers, so is broader than sometimes used in other settings.

Incentive Regulation as a Substitute for Competition

Our goal

We have interpreted our statutory remit as consistent with setting price caps that promote economic efficiency. There are three concepts of economic efficiency: productive (i.e. providing a given level of service at minimum cost), allocative (i.e. all users willing to pay for the service have access to it subject to the producer recovering efficiently incurred costs) and dynamic (investment decisions have regard to both current and future demand and costs).

Economic efficiency through competition

Competition is generally seen as promoting such outcomes, giving firms an incentive to continually strive to identify more efficient production methods than their rivals. If they can become more efficient than their rivals, they will be able to profit by undercutting their rivals to attract additional customers. As rival firms realise similar efficiency savings, the prices they all charge will be bid down until all the gains from an efficiency saving are enjoyed by customers.

Incentive regulation as an alternative

We have used incentive regulation, an approach often used by regulators when dealing with a company subject to muted or no competition. A price cap is set for a number of years at a level sufficient to allow the firm to recover what the regulator forecasts would be an efficient level of costs. Rather than having an incentive to become more efficient than competitors, the regulated firm's incentive is to outperform the efficiencies the regulator assumed when setting the price cap.

How users benefit

The opportunity for users to benefit materialises when the price cap is reset. At that time the regulator will be able to consider any efficiency savings that the regulated firm has realised and will set a revised cap accordingly. In this way, the firm's incentives to outperform the targets in a price cap lead ultimately to lower prices. Incentive regulation requires that the cap only be revised occasionally, and that otherwise the regulated firm retains any profits and incurs any losses if outturns do not correspond to the target.

Basic Decisions Required When Making a Determination

The X-Factor

The regulatory approach that the Commission has used to date is sometimes referred to as CPI-X regulation. The value of X determines the extent to which regulated prices rise more or less quickly than the consumer price index.

Past determinations

2001: CPI – 5%pa
2005: CPI + 4%pa
2009: CPI – 2.7%pa*

* The price cap formula in 2009 did not explicitly give a value for X. Had it done so, the formula would have been CPI-2.7%. The formula also featured triggers, including for the opening of T2, which explains the significant above inflation increase in 2011.

Form of the cap.

We have to set a cap, but have discretion on the form and operation of such a cap. To date, we have expressed the cap on airport charges as a maximum per passenger charge.

Duration of the cap.

The Determination must last for four-plus years.

There is an important trade-off to consider. The incentives for the DAA to become more efficient are greater if the Determination lasts longer, but users have to wait longer to realise the benefits from any efficiency savings.

The third Determination lasts for five years. A similar duration for the next Determination would have it ending at the same time as the second Reference Period governing IAA charges.

Allocation of risks.

The Determination will have implications for who bears what risks.

A guiding principle in past determinations has been that the DAA should bear those risks that it is best able to control. For example, it bears the risks associated with cost outturns deviating from those forecast at the time of a determination.

There is currently no mechanism in place to "claw back" any profits the DAA has realised from outperforming Commission's forecasts, nor any compensation for unexpected shocks to costs or demand.

Estimating the Price Cap using a "Building Blocks Approach"

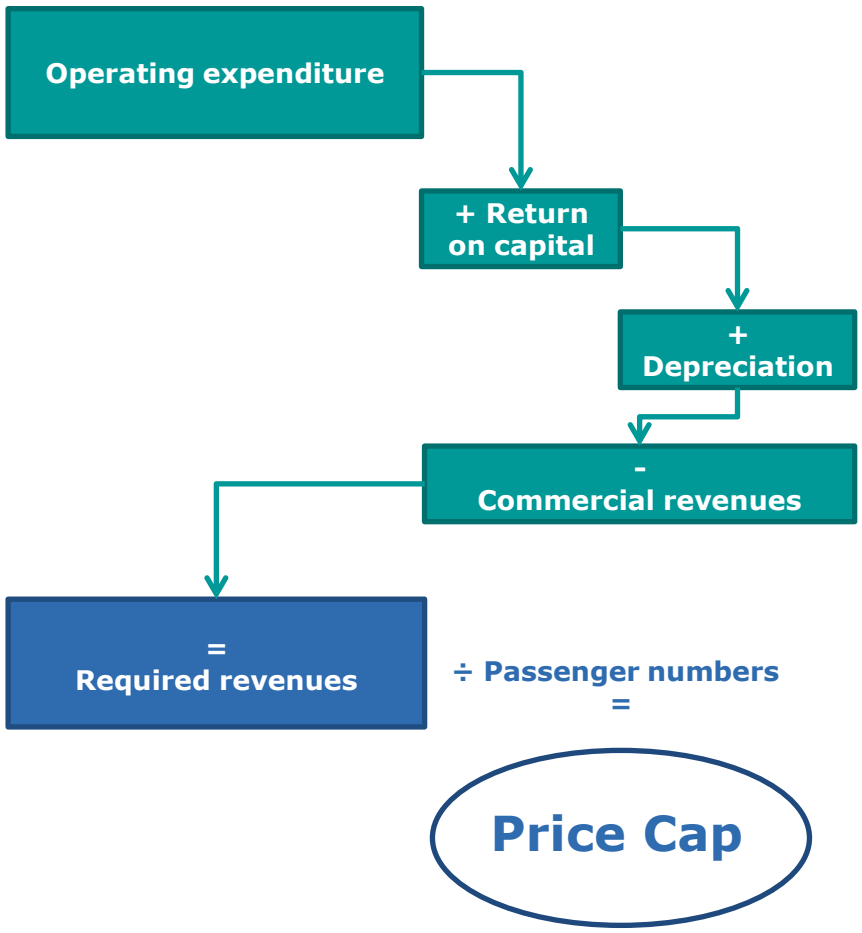
In past determinations, we have derived the price cap from a series of "building blocks". These building blocks, and how they combine to affect the price cap, are illustrated in the diagram on the right.

The calculations require forecasts of future operating expenditures, commercial revenues and passenger numbers. They also require decisions on amounts to allow for a return on capital and for depreciation.

Our approach of including commercial revenues (and also costs associated with providing these non-aeronautical services) in the calculations is sometimes referred to as "single-till regulation". We consulted on possible changes to the regulatory till in 2011 and 2012, deciding to generally retain a single-till approach, so we do not expect to revisit this matter for our forthcoming Determination.

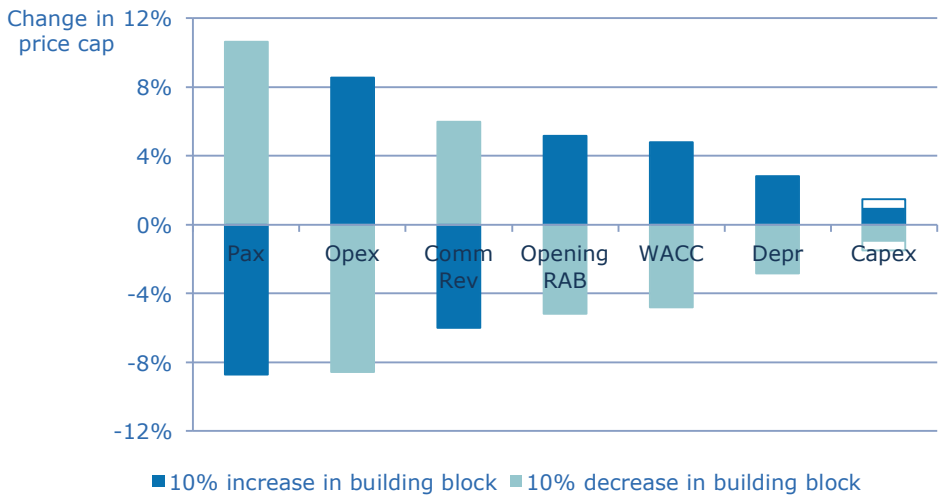
We have used a RAB-based approach to date when considering capital costs. The return on capital and depreciation allowances will depend on capital expenditure allowances in both the current and previous determinations. The return on capital also depends on the cost of capital (interest rate) that we allow.

Later sections of this report provide more details on each of these building blocks. That is not intended to preclude parties from suggesting alternative approaches to deriving the price cap. Parties wishing to advocate significant changes in approach are encouraged to provide as much detail as possible on what calculations and data might be required. We would be reluctant to change approach without giving all parties an opportunity to understand fully all the implications and to comment accordingly.



Not All Building Blocks are Equally Important

Chart 1.1: Changing the average 2010-2014 price cap

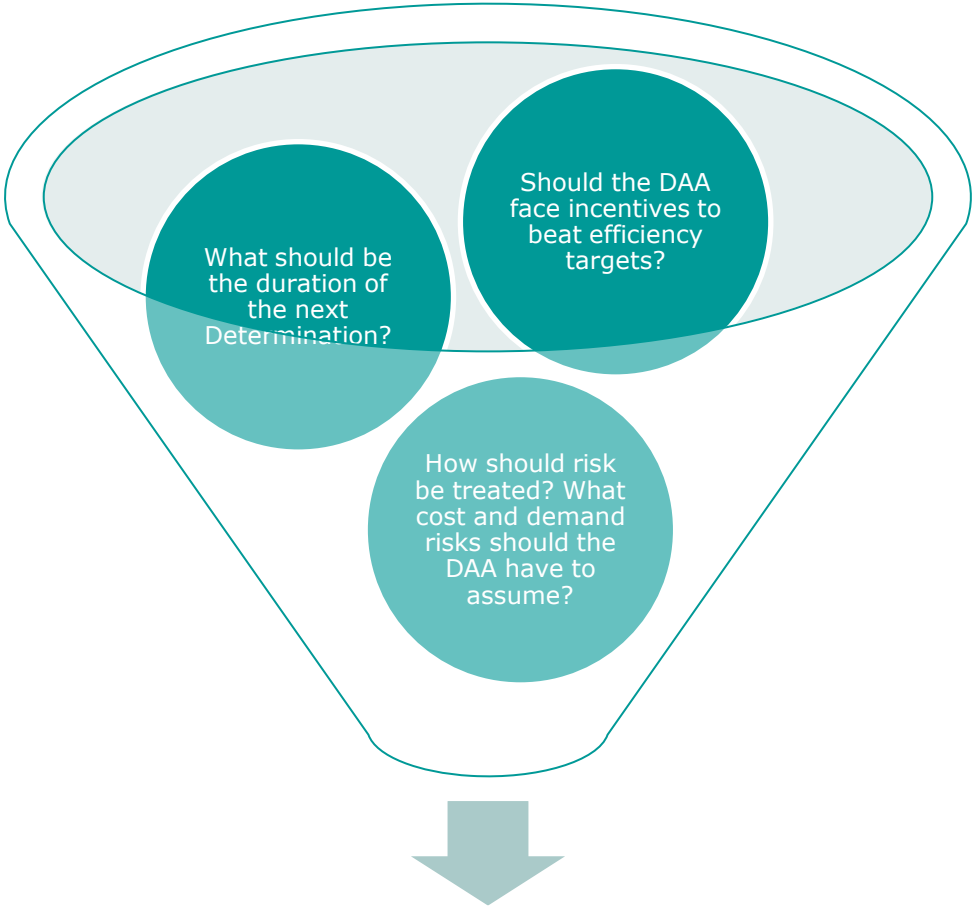


The chart above shows estimates of how the average annual price cap (in real terms) would have responded to changes of 10 per cent in various building blocks used to estimate the 2010-2014 price cap. For capital expenditure, the solid bar assumes only the 2009 allowance is varied; the outline shows the effect of changing both the 2007 T2 allowance and the 2009 allowance.

The calculations assume that a change in passenger forecasts alters the forecasts for other variables, such as commercial revenues and operating expenditure. The calculations also preserve the relationship between the elements that make up capital costs. For example, a change in the depreciation allowance is assumed to have consequential implications for the return on capital allowed in subsequent years.

- In both 2005 and 2009, the calculations underlying the price cap were most sensitive to changes in passenger numbers and operating costs.
- An increase in forecast passenger numbers or commercial revenues would have resulted in a lower price cap (and vice versa). For other building blocks, the relationship with the price cap is reversed.
- The sensitivity to passenger numbers is consistent with the idea that there are significant economies of scale associated with operating an airport, at least for the volumes of traffic experienced at Dublin.
- Changes in the opening RAB or allowances for capital expenditure and depreciation will affect future price caps (since such changes will affect the closing RAB). In the case of the opening RAB and capex allowances, higher allowances in 2009 would point to a higher price cap in future determinations, all else equal. In contrast, accelerated depreciation charges should mean lower charges at later determinations.
- The effect of T2 opening might be expected to result in a much larger RAB in the forthcoming Determination. So the same percentage change in the opening RAB in 2014 is likely to affect the overall price cap more than a similar change in 2009.
- There are no estimates for how changing the quality of service expected at Dublin Airport might have affected the price cap calculations.

Approach to Regulation Issues



What changes, if any, should be made to the approach to regulation that the Commission adopted in 2009?

2. Passenger Forecasts

- This chapter looks at passenger numbers at Dublin Airport. Passenger forecasts have been very important in calculating the price caps set in past determinations. They affect various components of the regulatory building blocks simultaneously; they also act as the denominator when setting the per-passenger price cap.
- Outturn passenger numbers have been lower than we forecast in 2009. The mix of traffic is broadly similar to 2009, although the relative peakiness of traffic during the day has increased since 2009 with relatively more flights in the early morning period.
- Changes in annual passenger numbers have been more pronounced than changes in Irish GDP outturns, the one variable we included in our model for passenger numbers in 2009. We discuss whether we should continue to generate our own forecast for traffic, and the possibility of including additional drivers in any such model for the forthcoming Determination.

Passenger Outturns Were Below Forecasted Levels and Are Only Slowly Recovering

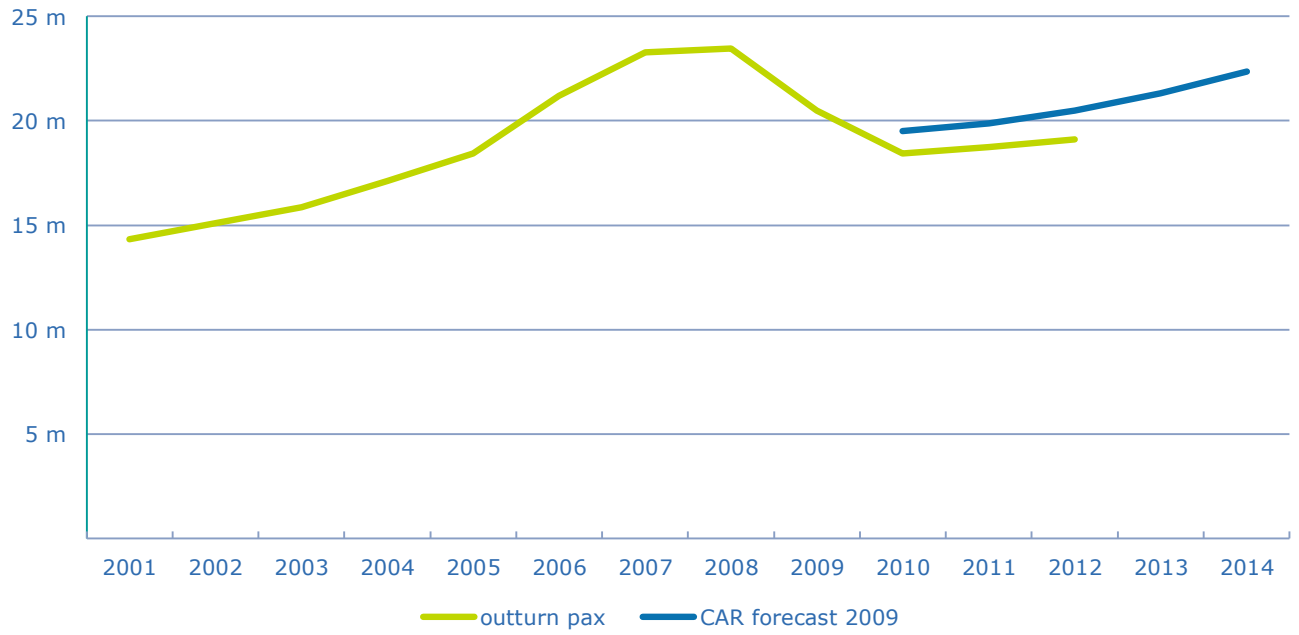
Since the 2009 Determination, outturn passenger numbers have been below the level forecasted. This difference cannot be entirely explained by the lower than expected growth in GDP since 2009 (our forecast was largely driven by forecast changes in Irish GDP). The difference is about 1 million passengers per annum.

The DAA is not compensated for this lower than expected outturn.

The current level of passenger numbers at Dublin Airport is similar to the level seen in late 2005/6. This is considerably down on the numbers using the airport in 2007 and 2008. In 2007, the DAA was forecasting 2012 passenger numbers more than 40% higher than has subsequently been realised.

In the following pages, we provide a breakdown of total traffic by passenger type, time of day, and airline. We then discuss possible approaches to forecasting future demand.

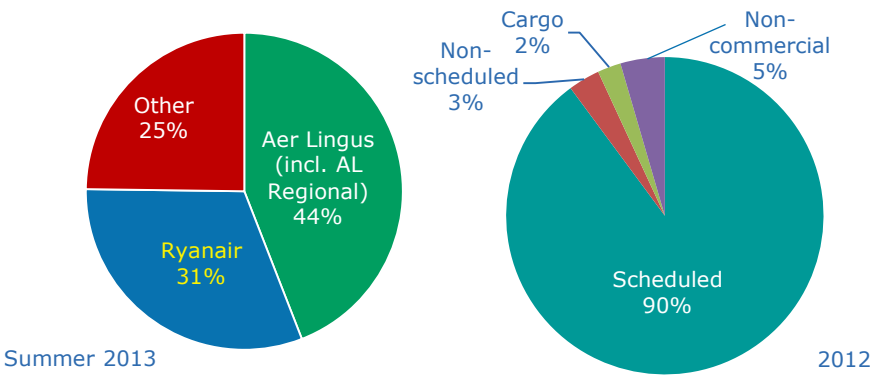
Chart 2.1: Outturn vs. forecast passenger numbers at Dublin Airport



Source: DAA regulatory accounts, CAR

Traffic at Dublin Airport: Dominated by Two Airlines and Short-Haul Destinations

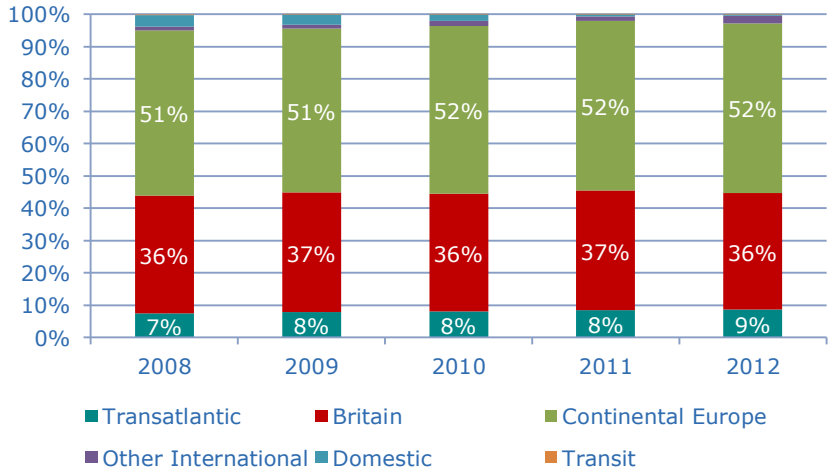
Chart 2.2: Movements by airline and category



Source: ACL

Source: DAA

Chart 2.3: Movements by destination



Source: ACL

Dublin Airport continues to feature two airlines with a considerable presence. In summer 2013 Aer Lingus and Ryanair are expected to account for three-quarters of air traffic movements. No other airline at Dublin Airport is expected to account for more than 4% of traffic.

The mix of airlines at Dublin Airport means that most travel is not "full service".

Short-haul destinations continue to dominate, with 88% of passengers in 2012 Europe bound (36% to the UK and 52% to continental Europe), little changed from five years ago.

The share of long-haul traffic has increased, while domestic traffic has collapsed. Transatlantic flights accounted for 9% of movements in 2012, up from 7% in 2008, while flights to destinations outside Europe and North America increased by 85% in 2012 alone and accounted for 2.5% of all movements (their share was 1.1% in 2008). In contrast, domestic flights have fallen significantly in the last five years, accounting for just 0.3% of flights in 2012, down from 4% in 2008.

About 10% of flight movements are not commercial scheduled traffic. This includes cargo flights which account for 2% of movements. In 2009, we ended the sub-cap on charges that the DAA could levy on cargo flights.

The mix of traffic, and expected trends in this mix, may have implications for the forthcoming Determination. For example, we may conclude that it is relevant for judgements about investment requirements at the airport or suitable service standards.

Demand for Departure Slots Has Become More Focussed on the Early Morning

Chart 2.4: Summer 2009 departure movements

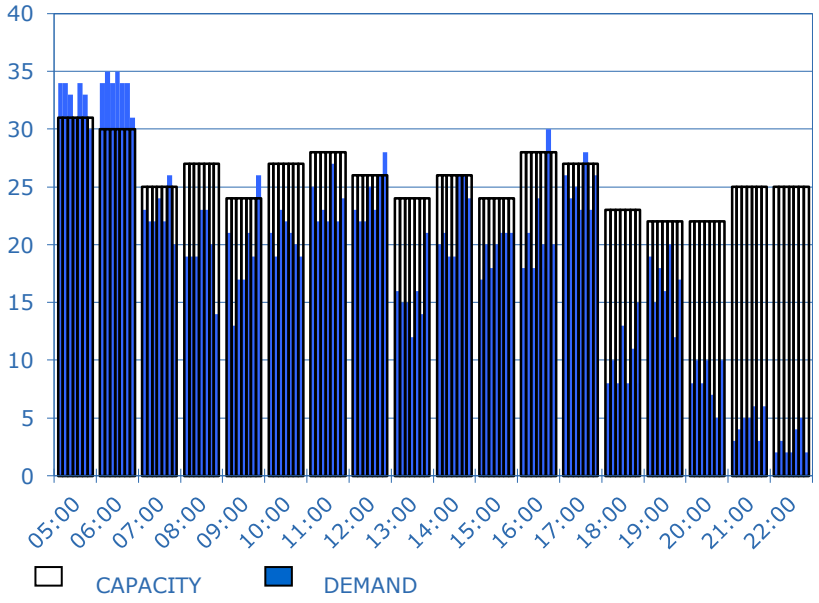
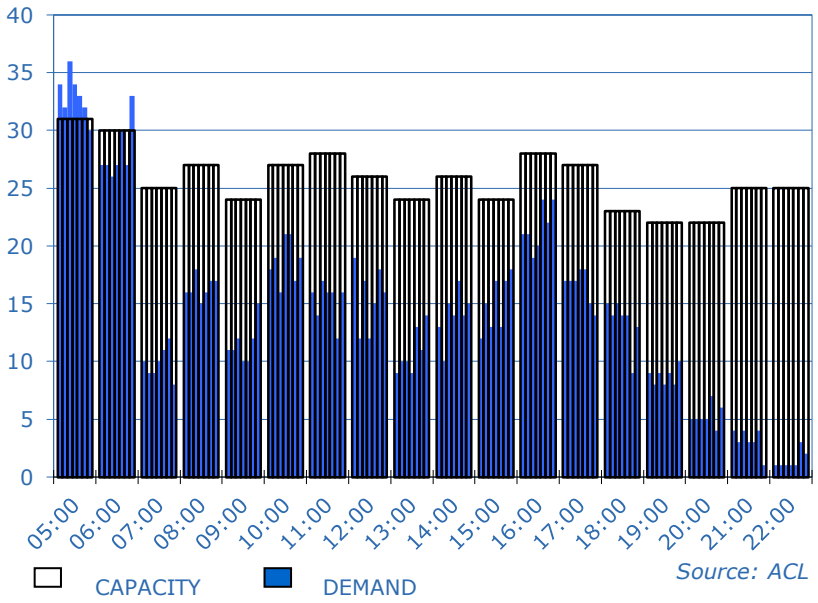


Chart 2.5: Summer 2012 departure movements



Source: ACL

Since the last Determination, and the opening of the second terminal, demand at Dublin Airport has become more concentrated on the busiest hours of the day, i.e. the earliest hours of the day. Currently the ability to permit additional flights at these hours is constrained by runway capacity. The graphs show airlines' initial demand for departure slots in Summer 2009 and 2012. As the initial demand is submitted in October of the previous year, the graphs do not reflect final demand.

One question that our forthcoming Determination might consider is whether we need to allow the DAA additional revenue from a higher price cap so as to permit it to increase capacity at this time of the day. If we do conclude that such funding is warranted, a further consideration is whether all users should be required to pay higher charges, or whether our Determination should require peak-hour pricing so as to protect users departing later in the day from paying for this increased capacity.

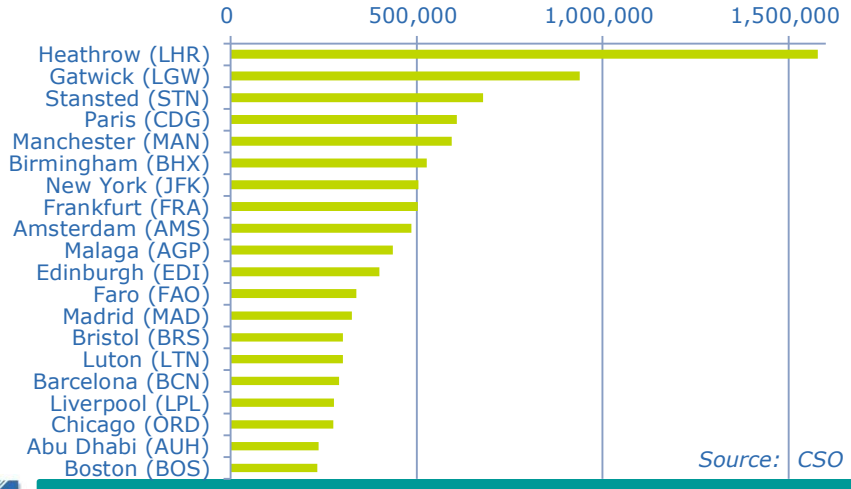
What Passenger Forecasts are Needed and How Should They Be Generated?

In 2009 we developed our own model for forecasting traffic. This contrasted with the 2001 and 2005 Determinations when we adopted the DAA's forecast.

Our understanding of the DAA forecasting model in 2009 was that it entailed a series of forecasts for each individual route. These forecasts used assumptions about future GDP growth and elasticities, and the composition of origin and destination passengers. The data analysis was complemented by some "off-model" adjustments that might reflect, for example, knowledge that an airline was going to abandon a particular route. The forecasts for the individual routes were summed to generate an overall forecast.

The chart below shows the most popular routes (by passenger) from Dublin in 2012. Dublin-London routes continued to be the most popular.

Chart 2.6: Top destinations pax movements 2012



Our interest has typically been on forecasting aggregate passenger numbers for the next five to seven years. So in 2009 we did not attempt to generate forecasts on a route-by-route basis. It is possible that a more granular approach to forecasting would yield better aggregate forecasts.

It is also possible that more disaggregated forecasts are necessary because they will matter for the future cost base of Dublin Airport, or the appropriate level of service quality that the DAA should be targeting. For example, the investment needs may differ if a 20 million passenger per annum airport has 5% or 25% long-haul traffic.

If we decide to develop our own forecasts, either because we conclude that it is inappropriate to rely on the DAA's aggregate passenger forecast or because we conclude that we need to develop more detailed forecasts than the DAA is able to provide publicly, then available approaches include:

- Naïve forecasts (simple, backwards looking time-series forecasts)
- Causal forecasts (complex forecasts that look at causal relationships stemming from explanatory variables)
- Judgment-based forecasts (not necessarily data based, done by experts)

The DAA's 2009 model was arguably a combination of causal forecasts and judgment-based forecasts. In contrast, our model ended up including a single explanatory variable (changes in Irish GDP) and time-series trends.

There are Numerous Candidate Variables That Might Explain Passenger Numbers

Irish GDP is not the only factor that might have predictive value when forecasting future passenger numbers at Dublin Airport.

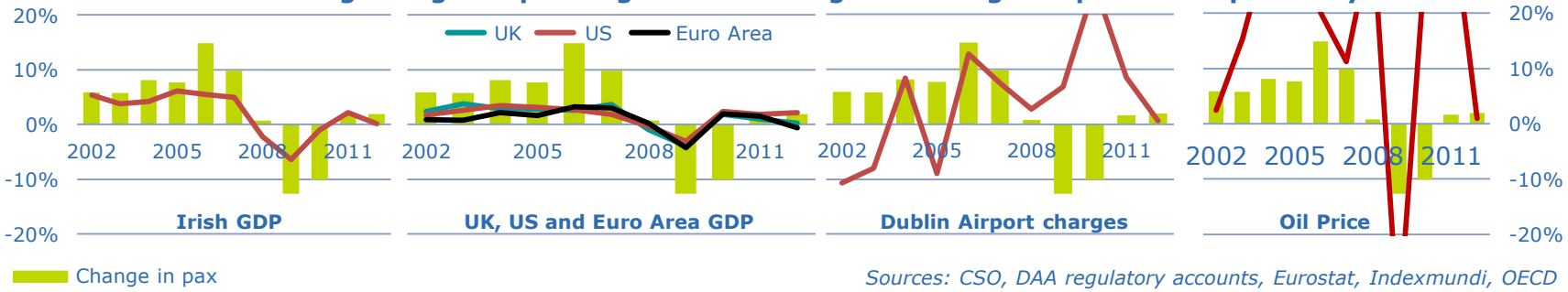
In 2009, we also considered GDP for the UK, US and Eurozone and airport charges as possible explanatory variables. Movements in GDP measures for different economies were closely related up until 2009, such that it was hard to isolate the relative importance of changes in Irish and global GDP. We found little evidence that the level of airport charges significantly affected passenger numbers at Dublin Airport. Other factors that we are aware of as possibly relevant include consumer expenditure, the level of trading activity, and oil and carbon prices.

The charts below plot annual changes in some of these variables and how they compare with the annual change in passenger numbers at Dublin Airport.

Parties proposing factors that they think are important are welcome to offer evidence on what the quantitative relationship might be and/or suggest possible data sources we might use.

Possible Drivers of Passenger Demand

Chart 2.7: Plotting changes in passengers numbers against changes in possible explanatory variable



Sources: CSO, DAA regulatory accounts, Eurostat, Indexmundi, OECD

Including GDP in Traffic Forecasts Requires Assumptions About Future GDP Growth

Traffic forecasts may depend in turn on forecasts for other variables. If we concluded that the level of Irish GDP, oil prices and the number of days lost to volcanic ash will materially affect passenger levels at Dublin Airport, then a 2017 passenger forecast could only be completed once we have (forecast) values for these variables.

This is a downside to including many variables in a forecasting model. Including lots of variables may help explain past outturns, but may not help with forecasting if there is great uncertainty about future values for all the explanatory factors included in the model.

The options are either to generate our own forecast for these variables (how?), or to rely on third parties (who?).

Even just including forecasts for future Irish GDP gives scope for considerable disagreement. The European Commission found that forecast errors for Irish GDP over the period 1973-2011 were greater than for any of 15 EU economies included in a study it published last year, a result that held true even before the recent economic downturn.*

The table below provides the most recent forecasts for Irish GDP from a variety of organisations. There is not much guidance on how the series might evolve in the latter years of our next Determination. Nor are the different forecasts always aligned. The EC study referred to above found that the OECD's forecasts were generally better than those of the IMF, ECB, or EC, especially for the year ahead.

Table 2.1: A selection of recent Irish GDP growth forecasts

Source		2013	2014	2015	2015+
Economic and Social Research Institute	July 2013	1.7-1.8	1.9-3.5	1.3-4.0	1.4-4.0
European Commission	May 2013	1.1	2.2		
Irish Business and Employers' Confederation	May 2013	1.8	2.5		
Organisation for Economic Co-operation and Development	May 2013	1.0	1.9		
Standard & Poor's	May 2013	1.2	2.2		
Central Bank Ireland	April 2013	1.2	2.5		
International Monetary Fund	April 2013	1.1	2.2	2.7	2.7
Department of Finance	April 2013	1.3	2.4	2.8	2.7
Davy Research	Mar 2013	1.3	2.1		

Sources: EC, ESRI, IBEC, OECD, Central Bank, IMF, DKM, Davy, S&P, Department of Finance

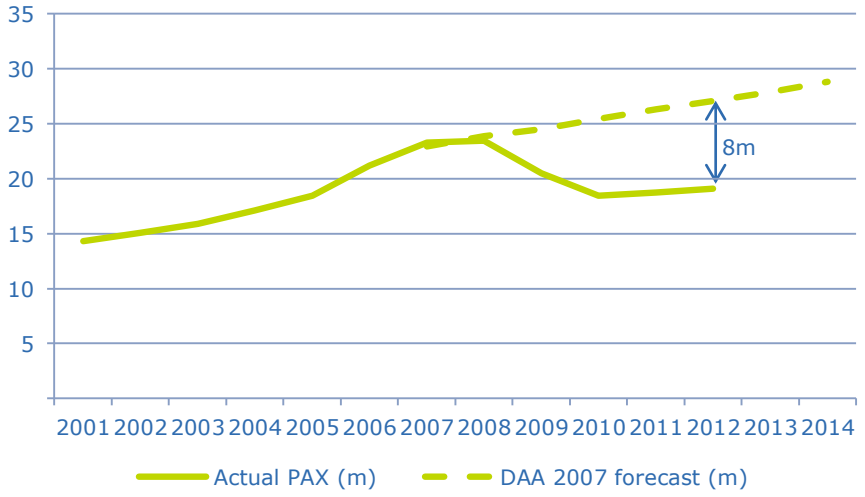
** See : González Cabanillas, L. & Terzi A. (2012). The accuracy of the European Commission's forecasts re-examined. European Economy. Economic Papers. 476. December 2012*

Traffic Forecasts are Difficult but Important - Is Traffic Risk Assigned Reasonably?

The preceding material has identified some of the considerations that are relevant when trying to forecast passenger numbers. But outturn passenger numbers are likely to differ from even the best forecast models by potentially significant amounts given year-on-year changes in passenger numbers are sometimes large. This is particularly true for forecasts four or five years into the future. The chart below illustrates this point, contrasting 2007 forecasts with subsequent outturns. Five years on from the forecast, outturn traffic levels are almost one third less than was expected.

At the same time, in past determinations changes to the traffic forecast would have had the biggest effect on the price cap.

Chart 2.8: Passenger forecasts and outturns



Source: DAA

Currently the DAA bears the risks associated with traffic deviating from the forecast level during the period of a determination: it gains if traffic is higher than expected and loses if traffic is lower than expected.

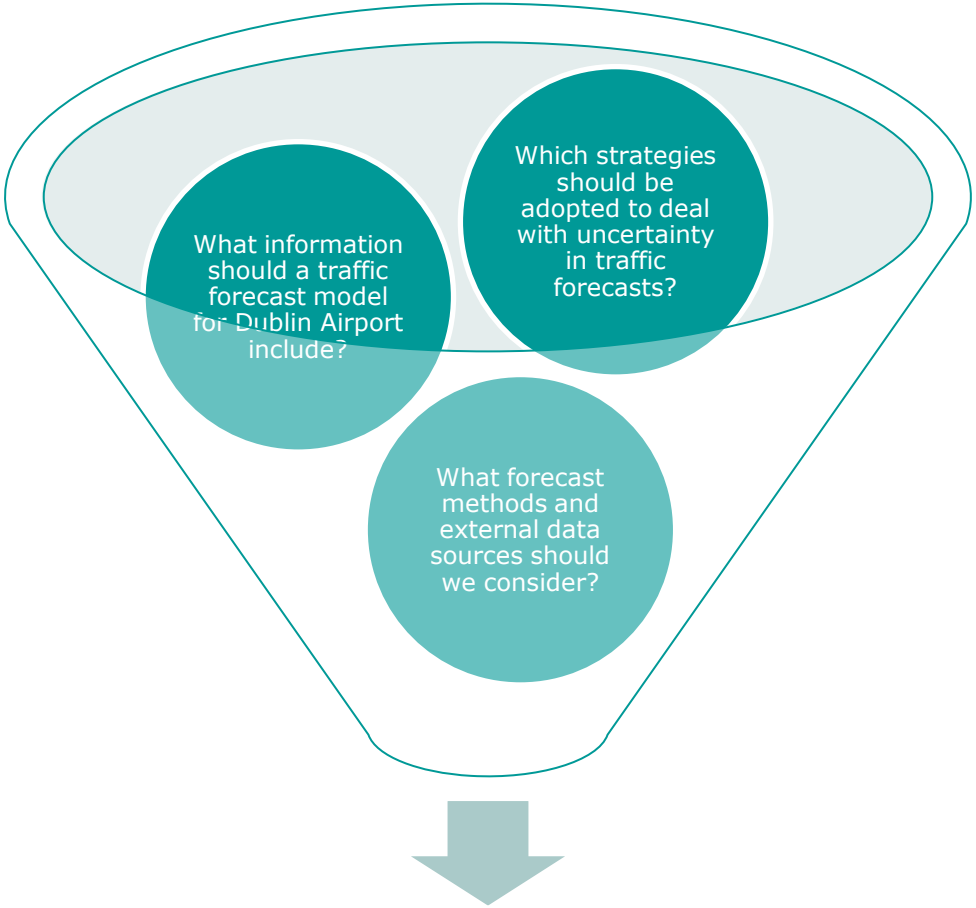
For investments with long asset lives for which the costs are recovered over a number of determinations, users bear much of the traffic risk since we reset the calculations at each determination. They gain from traffic growth and vice versa.

One rationale for asking the DAA to assume traffic risk is that it has some control over the level of traffic and therefore it is appropriate to provide it with incentives to maximise traffic levels. Nevertheless, there may be reasons to refine how much traffic risk the DAA is asked to assume:

- Should the DAA have to assume more risk of longer-term traffic projections not coinciding with expectations at the time of an investment?
- Should the DAA have to assume the risk within determinations that factors influencing traffic levels evolve differently to assumptions made at the time of the traffic forecast? For example, is it right that that the DAA bears the risks of outturn Irish GDP numbers differing to what was expected at the time of the traffic forecast?
- Is there a way of structuring the price cap so that it allocates traffic risk in a manner that provides a strong incentive for the DAA to provide an unbiased traffic forecast that all parties can have confidence in?

Refinements to traffic-risk sharing could result in sizeable changes in the annual price cap, given traffic's relative importance in past price-cap calculations.

Passenger Forecast Issues



What is the appropriate approach we should adopt for making passenger forecasts at Dublin Airport?

3. Operating Expenditure

- We want to form a view on the level of operating expenditure that the DAA will need to provide a given level of service at Dublin Airport.
- In price-cap regulation, decisions about an opex allowance have regard to two basic questions:
  - How are the efficient costs of running an airport likely to evolve during the forthcoming regulatory period, i.e. what *frontier shift* should be assumed?
  - How efficient is the regulated entity, i.e. what is the scope for *catch-up* with the frontier by the DAA and over what time frame?
- This section looks at how the DAA has performed over recent years. This includes comparing outturns with the opex assumed at the time of the 2009 Determination.
- We then discuss possible approaches that might be used to help decide what level of opex to allow in our calculations for the next Determination. The rolling scheme, introduced in the 2009 Determination, is also reviewed.

Total Operating Expenditure Is Approaching the Same Level as in 2008…

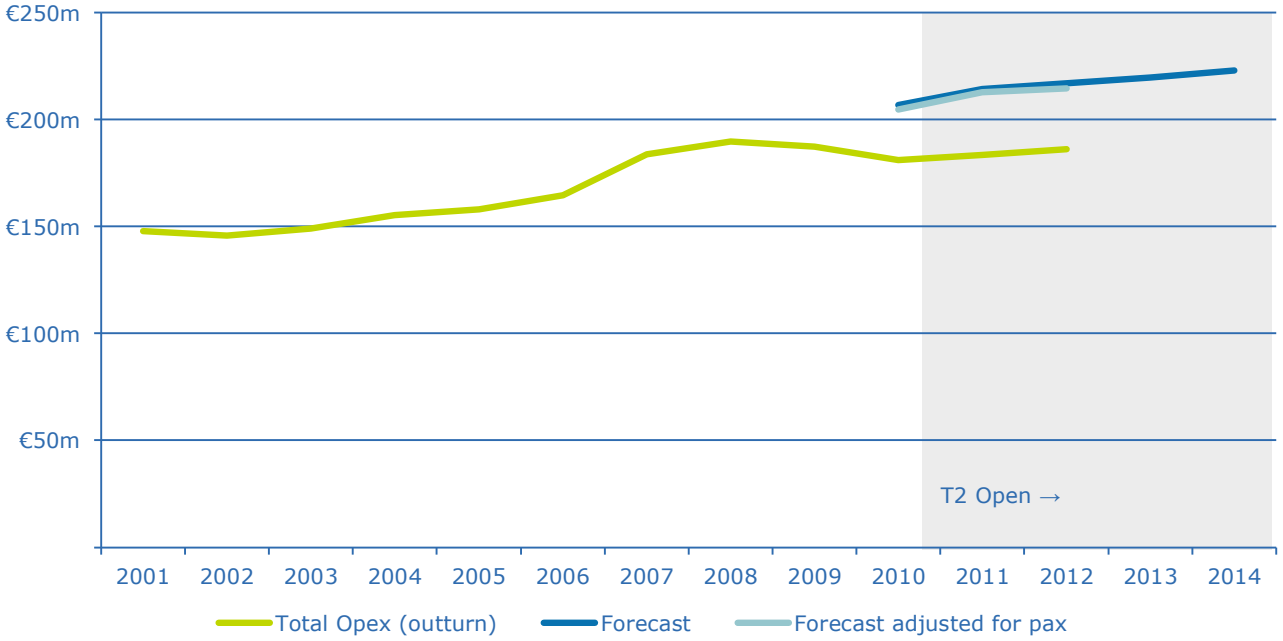
The DAA's total operating expenditure had fallen since the time of the last Determination, but since 2011 has started to increase again.

- Total operating costs peaked in real terms in 2008 at €189.7m
- In 2012, total operating costs at Dublin Airport were €186.2m

The level of opex is lower than assumed in the last Determination by about €30m p.a.

Only a small portion of this discrepancy can be attributed to the lower than expected traffic outturns – the model underlying the 2009 Determination did not assume significant responsiveness of operating costs to passenger numbers

Chart 3.1: Total operating costs at Dublin Airport, 2001-2012



Source: DAA regulatory accounts, CAR calculations

…But Per Passenger Operating Costs Are at a Level Last Seen a Decade Earlier

In percentage terms, the fall in total operating expenditure has been less than the fall in passenger numbers. Consequently, per passenger opex is higher than it was in 2008.

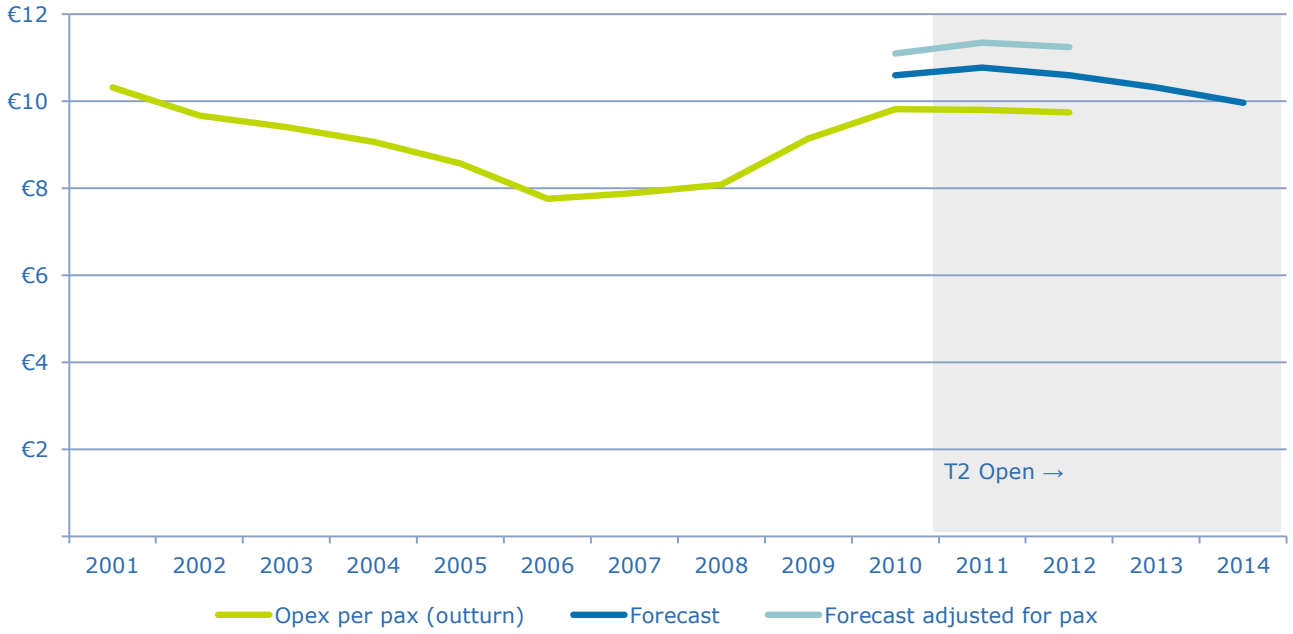
- In 2008 per passenger opex was €8.09
- In 2012 per passenger opex was €9.75, which is similar to the level recorded in 2002

These outturns were as much as €0.85 per passenger less than assumed at the time of the last Determination.

The margins would be even greater if the model in 2009 had used outturn passenger numbers.

The comparisons control for the fact that Terminal 2 opened in November 2010. The last Determination assumed that operating two terminals, all else equal, would result in higher operating costs.

Chart 3.2: Per passenger operating costs at Dublin Airport, 2001-2012



Source: DAA regulatory accounts, CAR calculations

Staff Costs Have Fallen in Absolute Terms and as a Share of Total Opex Since 2008

- Staff-related costs have fallen since 2008 by about €13m, while non-staff related costs have risen by €9m. The respective totals for these categories of opex in 2012 were €108m and €79m (or €5.63 and €4.12 when measured on a per passenger basis).
- Consequently, the share of staff costs has fallen since 2008. It is now 58% of total opex, compared with 64% in 2008. The current split in staff/non-staff opex is similar to the split in 2001.
- Although staff costs account for the majority of opex, more of the increase in per passenger opex between 2008 and 2012 is attributable to non-staff related opex. While per passenger staff costs have risen by €0.49 since 2008, non-staff related operating costs have increased by €1.17.
- Both staff and non-staff costs are lower than assumed in calculations leading to the last Determination. On a per-passenger basis, the discrepancy was greatest for non-staff costs. The DAA has outperformed the target for this category of opex by €0.46 (the difference is €0.70 if controlling for the lower than expected passenger numbers). Staff costs are also lower than forecast, by €0.39 per passenger (€0.79 controlling for traffic).

Chart 3.3: Share of operating costs 2012

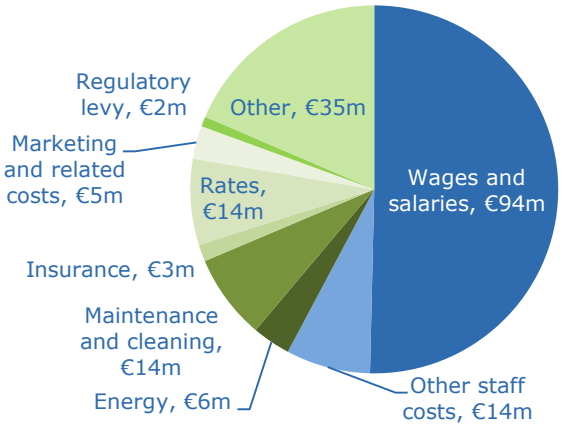
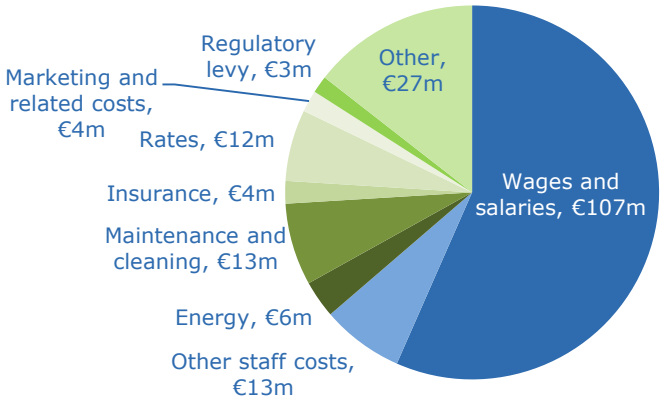


Chart 3.4: Share of operating costs 2008



Source: DAA regulatory accounts, CAR calculations

Lower Overall Staff Costs Due to Both Lower Staff Numbers and Lower Per-Staff Costs

The DAA has reduced both the number of staff, and the real cost per staff member, since 2008. In doing so, it has beaten the targets set for both of these categories at the time of the last Determination.

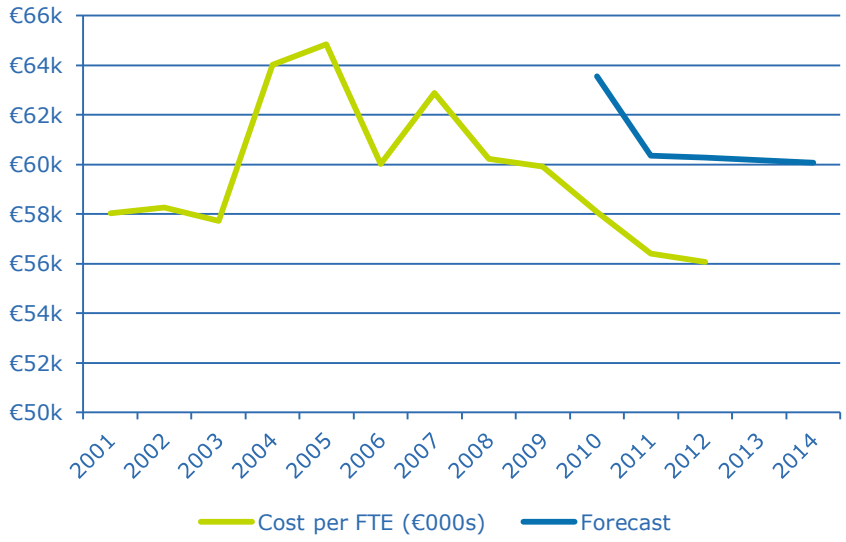
In 2012 the average cost per FTE at Dublin Airport was just over €56,000. This is the lowest it has been, in real terms, since Dublin Airport became subject to price-cap regulation.

The target had assumed payroll costs for existing staff would remain constant (in real terms) at 2008 levels, but saw some scope for lower average FTE costs once T2 opened.

In 2012 the DAA employed 1,919 FTEs, compared with 2,004 in 2008.

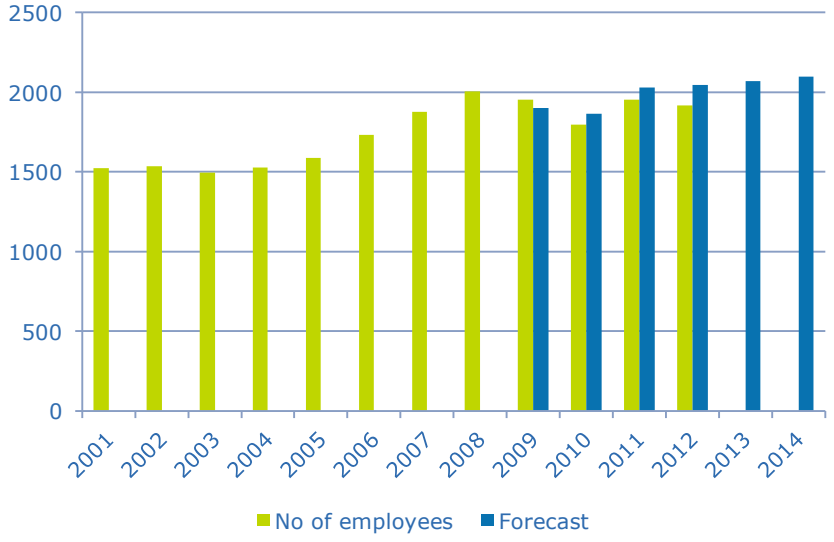
The last Determination had assumed that the DAA would need over 2,000 FTEs after T2 opened. It identified scope for a 6% reduction from 2008 FTE numbers (holding traffic constant), but this was more than offset by the assumed increase in FTEs that would be needed to operate two terminals.

Chart 3.5: Average cost per FTE at Dublin Airport



Source: DAA regulatory accounts, CAR calculations

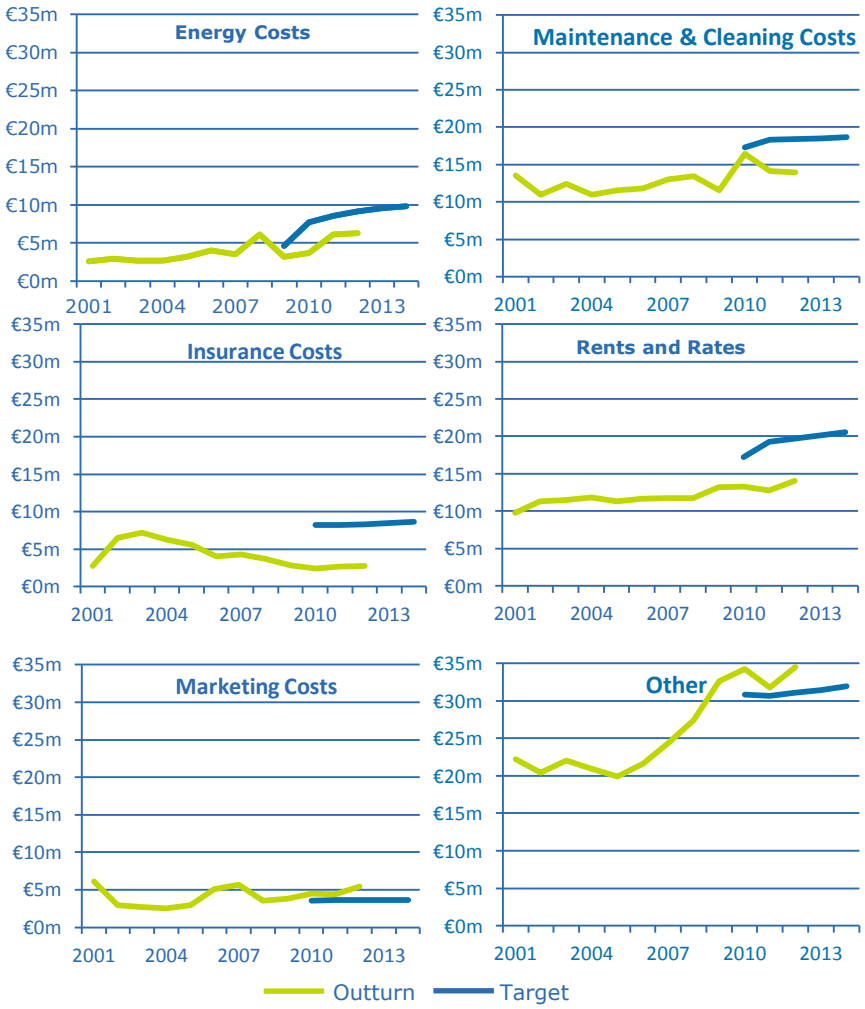
Chart 3.6: Number of FTEs at Dublin Airport



Source: DAA regulatory accounts, CAR calculations

Increase in Non-Staff Costs Not Due to Insurance and Rates Rises After T2 Opened

Chart 3.7: Non-staff costs at Dublin Airport



Source: DAA regulatory accounts, CAR calculations

The rise in non-staff costs since 2008 could be attributed entirely to the category of "other non-staff costs". This category of costs steadily increased between 2005 and 2010, and now accounts for over 40% of non-staff costs. The costs covered by this category include the costs of providing services for passengers with reduced mobility (PRM services), car-parking overheads and fees and professional services. They also include most of the share of non-staff DAA head office costs allocated to Dublin Airport (in 2009 this was 78.5% based on the share of DAA passengers at Cork, Dublin and Shannon airports using Dublin Airport).

Most other non-staff costs were lower than expected at the time of the last Determination. In the case of insurance and rents & rates, the opening of T2 did not result in a step change in these cost categories.

The DAA's energy costs have been lower than expected at the time of the last Determination. This is despite the fact that in the energy market unit rates have tended to exceed the levels implied by the October 2009 forward prices referred to at the time of the 2009 Determination.

Opex Rolling Scheme Sought to Increase the DAA's Incentives to Realise Efficiencies

Table 3.1: Outturn opex versus 2009 rolling scheme targets

€m	2010	2011	2012	2013	2014
2009 Determination	23.393	23.393	23.393	23.393	23.393
Outturn	21.815	21.781	21.338	A	B
Incremental saving	1.577	0.035	0.443	Y	Z

Source: DAA, CAR calculations

How did the DAA do?

The DAA's outturn opex for costs included in a 2009 rolling incentive scheme have been below the target set. The 2009 scheme included:

- staffing costs for car parking,
- airfield services,
- commercial and support services (at both Dublin Airport and head office).

How do we reward this performance?

The 2009 Determination committed to allowing the DAA to realise the benefits from any savings in cost categories included in the rolling scheme for five years. How should we honour that commitment?

- *Option 1*: set opex targets equal to the level realised five years earlier, so in 2015 the target opex for the DAA is equal to its costs in 2010. The DAA is competing with itself over time.
- *Option 2*: estimate an opex forecast as for other categories of opex, but then make an upward adjustment where the DAA has beaten the rolling scheme target within the last five years.

A further consideration is whether to implement these proposals at the aggregate level, or to treat each of the cost categories included in the rolling scheme separately. This matters since we committed to only consider outperformance when determining a rolling allowance, i.e. there is an asymmetry in the way we said we would treat outturns above and below the target.

Table 3.2: Possible treatment in 2014 Determination

€m	2015	2016	2017	...
Option 1	21.815	21.781	21.338	
Option 2	Forecast costs +0.035 +0.443 +Y +Z	Forecast costs +0.443 +Y +Z	Forecast costs +Y +Z	

Do we retain or alter the rolling scheme post 2014?

The 2009 rolling scheme was limited to cost categories that were considered to depend primarily on the actions of the DAA, and that were unlikely to be affected by the opening of T2 or changing passenger numbers.

What cost categories, if any, should we add to or remove from the scheme after 2014?

There Are Many Techniques Regulators Can and Have Used to Assess Opex Needs

Overview of techniques used by regulators

Regulators typically use a mix of "top-down" modelling and "bottom-up" process or activity benchmarking

Top-down models tend to use statistical or econometric evidence. Reference may be made to accounting data. The work may also look at trends in the wider economy. Under this heading, we might include benchmarking of simple accounting ratios, stochastic frontier and data envelopment analysis, total and partial factor productivity studies, and nature of work studies

Bottom-up models focus on individual activities and processes of the regulated entity. The findings of such exercises will depend in part on judgments by experts familiar with the activity being reviewed. Such exercises can make reference to data on similar activities performed by other companies, or the modelling may attempt to develop an idealised cost-structure for the activity under review.

A top-down study might be criticised for ignoring factors peculiar to the cost-base of the regulated entity, while bottom-up studies are vulnerable to the criticism that the sum of the parts from such an exercise bears no relationship to what is achievable in the real world.

How much weight to place on each technique, and what efforts to make to reconcile the findings, requires regulatory judgment.

In 2009 CAR used bottom-up modelling

CAR commissioned two bottom-up studies relating to opex for the last Determination. These studies heavily influenced the final Determination.

In the case of existing operations, consultants reviewed the DAA's costs on a process-by-process basis. For staff costs, their study focused on possible FTE savings that a more efficient operator might be able to achieve. The study suggested that there was scope for the DAA to realise efficiency savings on its 2008 operations of about 4% in real terms (or 10% in nominal terms).

Because T2 was expected to open soon after the 2009 Determination, with potentially significant implications for opex at Dublin Airport, an additional bottom-up study developed estimates of what costs would be necessary to run the new terminal. The study provides an example of how a bottom-up model can be constructed without reference to actual operations in the activity under review. The study also formed a view on what cost savings might be possible in the existing facility once some traffic moved into the new terminal.

The charts in the preceding pages allow a comparison between outturn levels of opex and the level assumed at the time of the Determination. The DAA has generally outperformed the level of opex assumed when making the last Determination.

There Have Been Many Attempts at Benchmarking Airports, Including by CAR

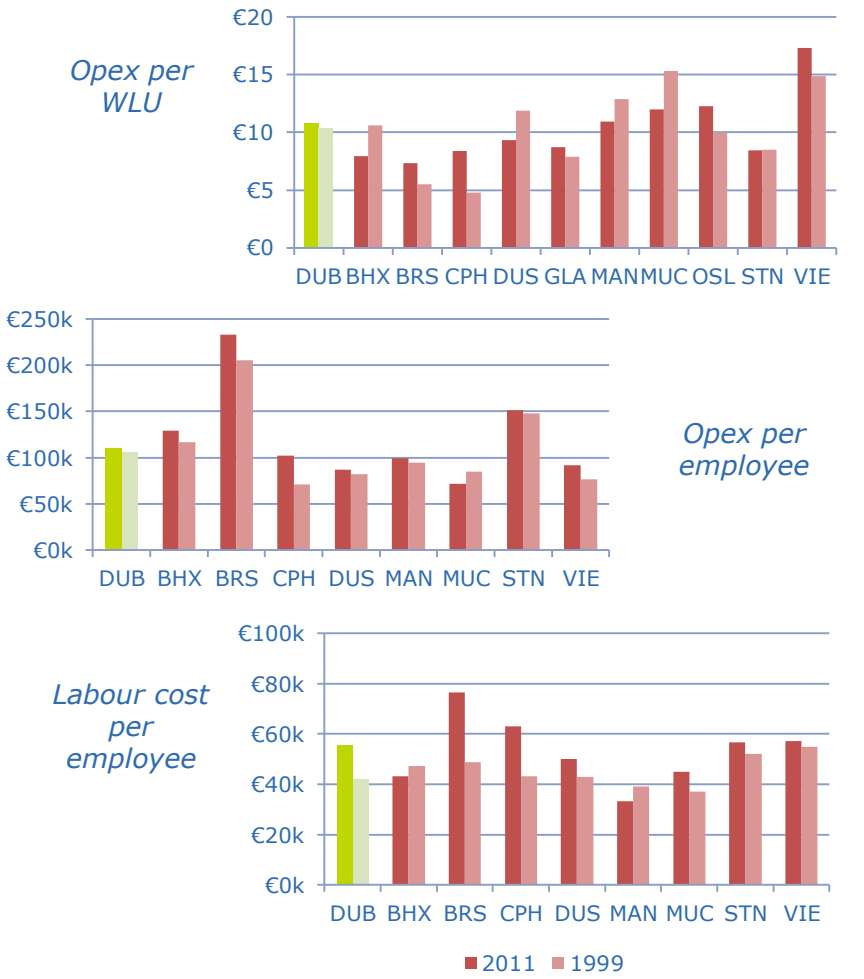
Examples of recent studies benchmarking airports that are in the public domain include

- the 2011 ATRS Global Airport Benchmarking project which had Dublin as the 9th most efficient of 21 European airports with more than 15 mppa after controlling for airport size, average plane size, the shares of cargo, international traffic and transfer passengers, and congestion delays (www.atrsworld.org)
- the 2012 review of Stansted's opex and investment consultation by Steer Davies Gleave that included key performance indicators (KPIs) for 10 UK airports (http://www.caa.co.uk/docs/5/SDGStanstedReport.pdf)

The studies vary in the airports included in their sample and the data sources used (some rely exclusively on published accounts, others are able to collect survey information from the airports). There are also variations in how the airports are compared, with some studies relying on relatively simple financial ratio analysis, while others use regressions or linear programming.

The charts on this page update the benchmarking exercise that CAR commissioned prior to the 2001 Determination. That study presented simple KPI results which informed the assessment of the DAA's opex needs. In subsequent determinations, partly based on feedback from stakeholders, we have placed relatively more weight on other approaches.

Chart 3.8: Updating KPIs Used in 2001 Determination



Source: Transport Omnibus 2011, regulatory and statutory accounts, CAR calculations

Note: Charts in nominal prices

We Can Also Compare Dublin Airport Opex with Developments in the Wider Economy

An alternative approach to comparing DAA opex with that at other airports is to consider how the performance compares with the rest of the Irish economy. The choice of, and even the availability of, suitable data to permit a comparison is a challenge.

Looking at labour costs, the chart below compares the evolution since 2001 in costs per FTE at Dublin Airport with the change over that time in industrial earnings (with both series normalised to 100 in 2001). We have used CSO data on remuneration and employment numbers by sector to estimate average industrial earnings.

Over the course of a decade, average industrial earnings have fallen by about 6% more than the DAA's per FTE costs. In both 2008 and 2009, the DAA's costs per FTE fell less than the fall in average industrial earnings. Since then, the two series have tracked one another relatively closely.

For productivity, we have defined Dublin Airport's labour productivity as the number of passengers served per FTE. Over the period 2001-11, the compound annual growth rate was 0.2% per annum.

This compares with a 2.1% annual growth in gross value added per employee in industry (excluding building and construction), using CSO data on gross value added and employment numbers by sector to get an estimate of productivity per employee.

Between 2007 and 2011, passengers per FTE fell by 6.2% per annum. In contrast, the annual change in gross value added per employee rose slightly for industry. If we instead compare Dublin Airport with productivity changes under the heading Transport and Storage, we see that the DAA measure of productivity is worse than in the wider Irish economy. This contrasts with the results prior to 2007.

Chart 3.9: Labour cost trends, DAA and Ireland

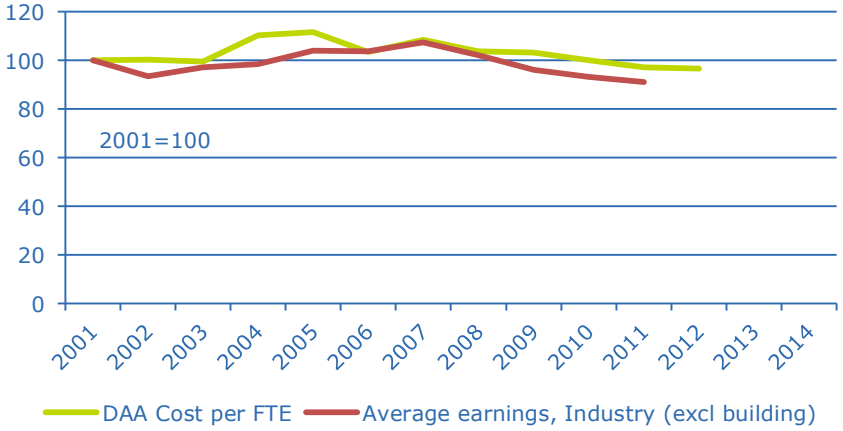


Table 3.3: Labour productivity trends, DAA and Ireland

Sector	2001-7	2007-11
Annual Change in Passengers Per FTE		
Dublin Airport	4.7%	-6.2%
Annual Change in Gross Value Added Per Employee		
Industry (incl building)	0.7%	9.9%
Industry (excl building)	3.5%	0.1%
Transport and Storage	2.5%	-1.9%

Source: DAA regulatory accounts, CSO National Income and Expenditure Tables and Quarterly National Household Survey, CAR calculations

How Responsive is Opex to Changing Passenger Numbers? Does it Matter?

The results comparing opex levels over time or across airports are both subject to the criticism that they need to control for passenger numbers: airport operations may enjoy economies of scale.

Controlling for scale effects is necessary when attempting to identify genuine efficiency savings over time. It also matters when deciding how findings about the current level of efficiency at Dublin Airport should affect future opex allowances in a determination, given that forecast passenger numbers may differ to the reference year.

The 2009 Determination implicitly assumed an opex elasticity of approximately **0.24** in existing facilities, i.e. the facilities in place prior to T2 opening. So for a 10% increase in passenger numbers, the model implied total opex would rise by 2.4%.

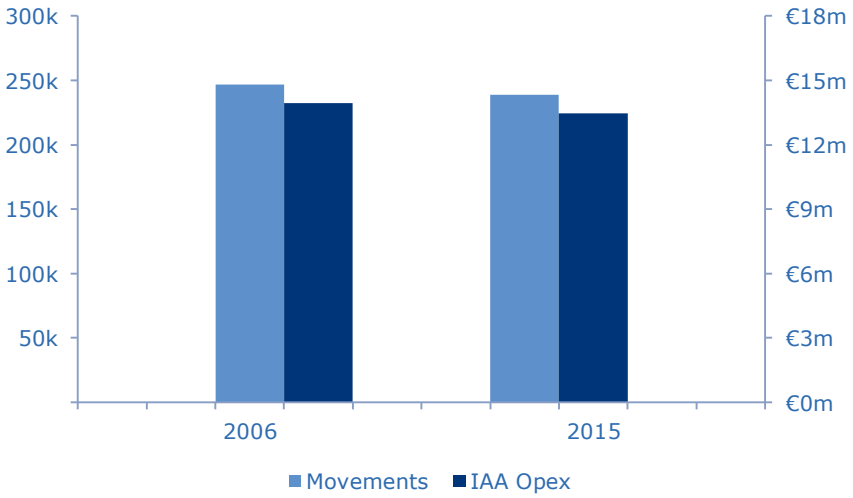
Over the period 2008 to 2012, the change in the DAA's opex given the change in passengers would imply an elasticity of **0.1** if no change in operating efficiency was assumed.

This estimate does not control for the fact that T2 opened during the period. The 2009 Determination implicitly assumed that this would increase opex by about 17% (all else equal). If we assume T2's opening did affect opex in this manner, and that otherwise operating efficiency at Dublin Airport is unchanged, this would imply an opex elasticity of **0.87**

Perhaps arguments about the responsiveness of opex to traffic can be avoided. In the 2011 Determination for aviation terminal service charges, we observed that the number of movements forecast for 2015 was broadly in line with 2006 levels and asked if there was any reason why opex should differ in real terms.

Given the traffic downturn at Dublin Airport, it is likely that a similar thought experiment may be possible. So aside from passenger numbers, what factors should we consider? We have identified a second terminal as one possibility. Are there others?

Chart 3.10: IAA ATS Traffic and Opex, 2006 & 2015



Source: CAR

How do Individual Operating Costs Respond to Passenger Levels and Other Factors?

In previous determinations, we have not assumed an explicit overall opex elasticity. Instead, we have made assumptions about the responsiveness of different opex components to changing passenger numbers.

The table on the right shows past assumptions about opex-passenger elasticity for various categories of staff costs. It shows that the assumed responsiveness of different staff-cost categories to traffic levels varies significantly. It also shows that our assumptions about the appropriate elasticity for a given staff cost category have changed. Only the assumed responsiveness of retail staff costs has stayed broadly constant.

Table 3.4: Staff cost elasticity assumptions

Staff category	2005	Ind-Jacobs 2009	Booz 2009
Terminals		0.6	0.6-0.63
Security	0.75	1	0.33-0.64
Retail	0.25	0.3	0.3
Maintenance		0	0.15-0.3
Cleaning		0	0.3
Other airport	0.25		
Other corporate	0.25		

Source: CAR

Only a limited number of non-staff categories were assumed to vary with passenger numbers in the 2009 Determination.

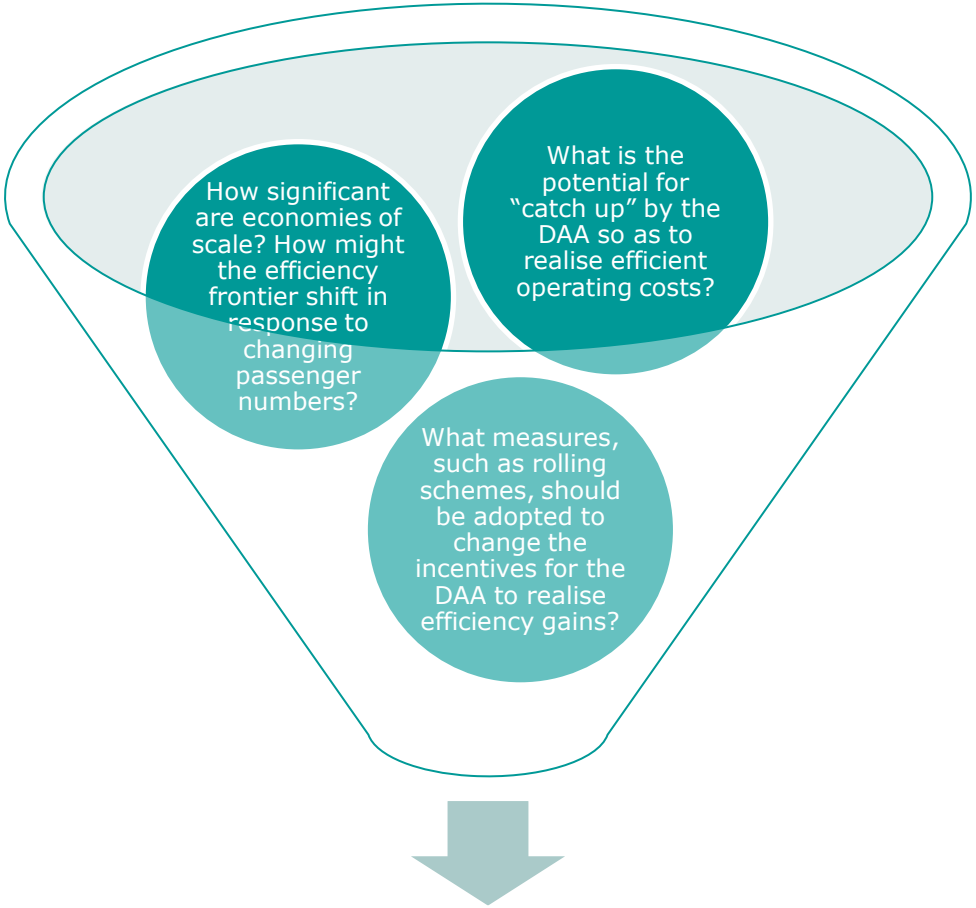
For many of the larger categories of non-staff opex, such as rents and rates, energy and insurance costs, we assumed a cost driver other than passengers. Consequently, we assumed an elasticity with respect to passenger numbers of zero. These categories accounted for over 80% of non-staff costs in the 2009 Determination.

Where we did assume a relationship between passenger numbers and non-staff opex, we typically assumed an elasticity of one.

For the 2009 determination, there were a variety of different elasticities assumed for the same staff-opex category. A consultancy report by Indecon-Jacobs suggested elasticities in the context of an airport with 20mppa processed in a single terminal; a later report by Booz & Co suggested elasticities when two terminals are operated.

The sensitivity of costs to changing passenger numbers may change at different traffic levels. For example, at lower levels of passenger throughput, existing security staff may be able to handle small increases in passenger throughput without additional numbers.

Operating Expenditure Issues



What allowance should we make for operating costs at Dublin Airport after 2014?

4. Commercial Revenues

- Commercial revenues encompass all the revenues the DAA collects at Dublin Airport from sources other than airport charges.
- The single-till approach to regulation that we have used to date means that higher forecasts of commercial revenues, all else equal, will result in a lower price cap for airport charges.
- In the past we have been interested in ascertaining the future scope for commercial revenues at a well-run airport and whether the DAA is currently maximising commercial revenues at Dublin Airport. However, there is a question of whether it is in the interests of all users for the DAA to maximise commercial revenues from some sources. For example, should the DAA be encouraged to maximise car parking revenues or income from ground handling facilities?
- This section looks at how the DAA has performed over recent years. This includes comparing outturns with the commercial revenues assumed at the time of the 2009 Determination. That forecast was based primarily on time-series modelling. Other possible data sources and approaches are mentioned.
- We also discuss the possibility of introducing a rolling-incentive scheme and the treatment of revenues from T1X and fees from access to installations for ground handling (ATI fees).

Commercial Revenues Have Stabilised After Falling From a Peak in 2007

Total commercial revenues at Dublin Airport have stayed broadly constant since the last Determination.

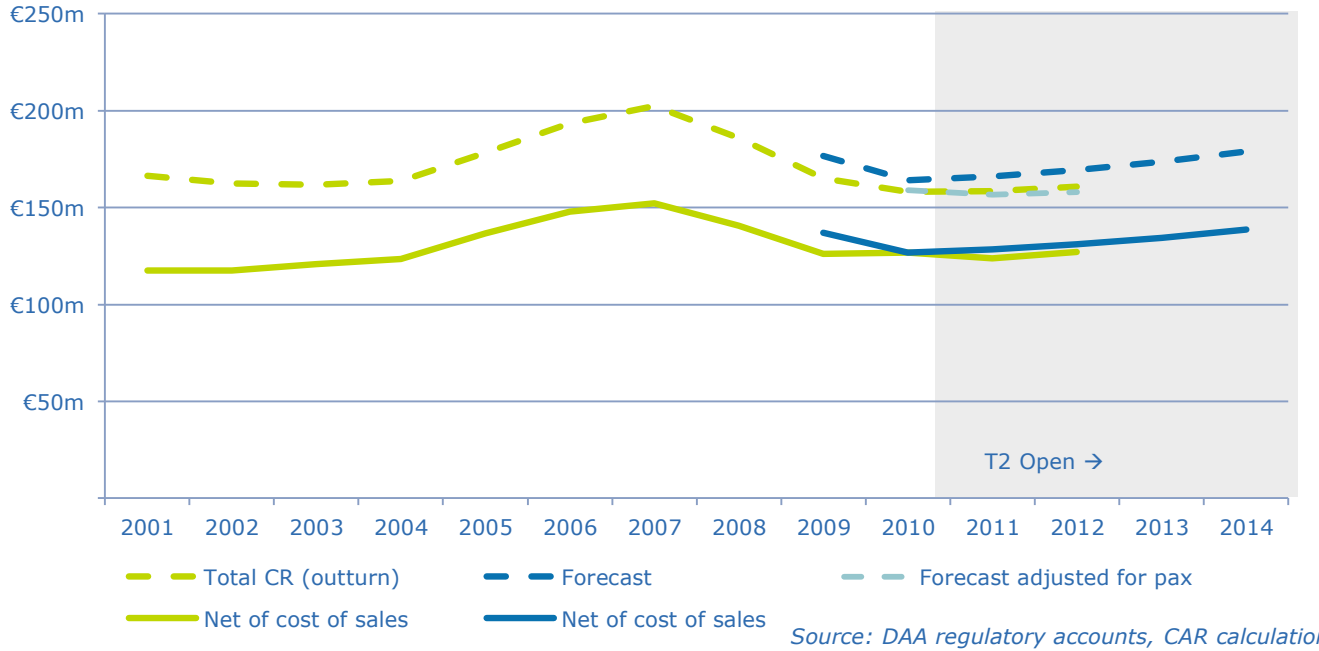
- They peaked in 2007, when net commercial revenues exceeded €150m (and gross commercial revenues, which include the cost of sales, exceeded €200m).
- In the last three years, they have hovered around €130m (€160m gross)

The level of commercial revenues is slightly lower than forecast at the time of the last Determination, when looking at total commercial revenues.

The discrepancy can be largely explained by adjusting the forecasts to reflect actual passenger and GDP numbers. The difference between forecast and outturn is smaller when the cost of sales are netted off.

The opening of T2 has not had a noticeable impact on total commercial revenues.

Chart 4.1: Total commercial revenues at Dublin Airport, 2001-2014



Source: DAA regulatory accounts, CAR calculations

The Downward Trend in Per Passenger Commercial Revenue Appears to Have Ended

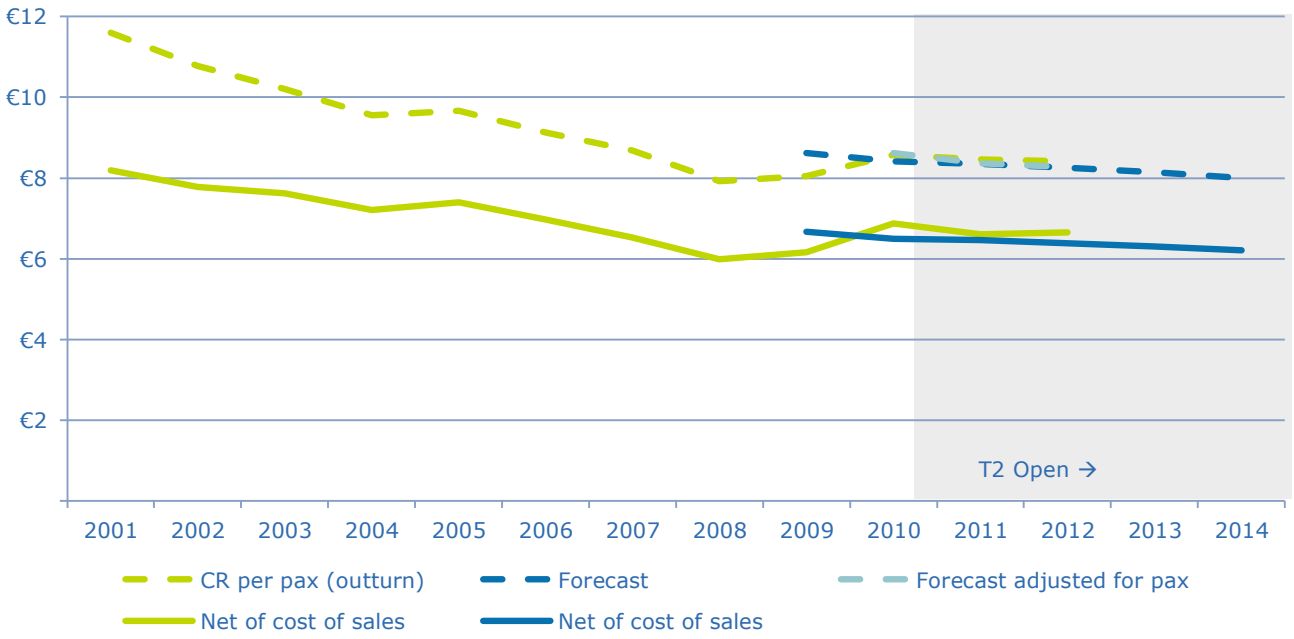
For most of the last decade, commercial revenues per passenger fell at Dublin Airport year on year. This downward trend appears to have been partially contained.

- In 2008 net commercial revenue per passenger was €5.99 (€7.92 gross); this was the lowest they have been since CAR started regulating the DAA.
- In 2012 net commercial revenue per passenger was €6.65 (€8.41 gross.)

These outturns are broadly in line with what we assumed at the time of the last Determination. This conclusion is unchanged if we control for the deviation between forecast and outturn passenger numbers.

The relationship between forecast and outturn commercial revenues for the third Determination contrasts with the experience in the first two Determinations, when forecast per passenger commercial revenues exceeded the outturn.

Chart 4.2: Per passenger commercial revenues at Dublin Airport, 2001-2014



Source: DAA regulatory accounts, CAR calculations

Commercial Revenues Account for a Declining but Significant Share of Total Revenues

Chart 4.3: Total revenue shares at Dublin Airport

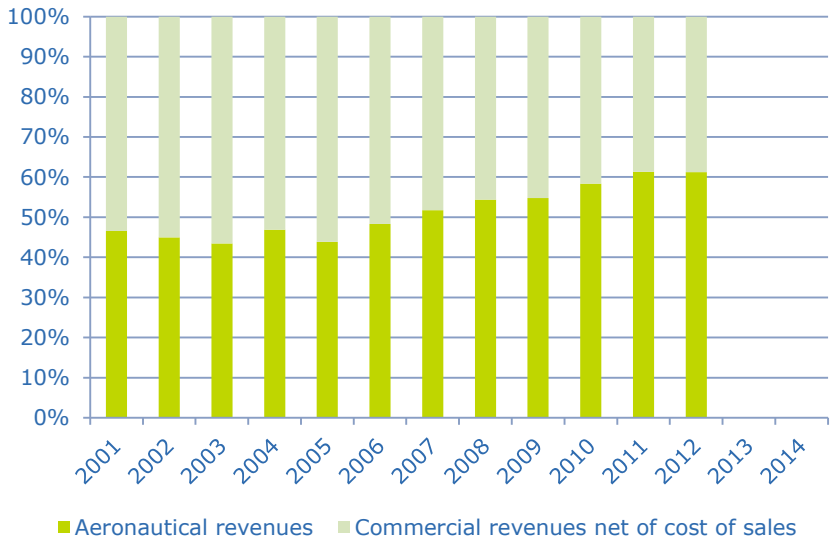
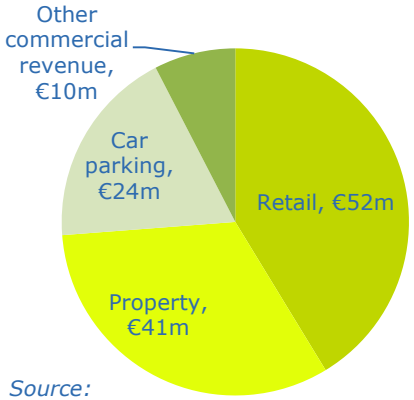


Chart 4.4: Commercial revenue share by type, 2012



Category	Dublin	ACI*
Retail	41%	35%
Property	32%	23%
Car parking	19%	13%
Other	8%	29%

**European airports 2010*

Source:
DAA regulatory accounts, ACI Europe Economics Report 2011, CAR calculations

In recent years, revenues from airport charges have come to represent an increasing share of the total revenues collected by the DAA at Dublin Airport.

Net commercial revenues now account for about 40% of total revenues at Dublin Airport – a decade earlier these had exceeded 55% of total revenues. As a share of total revenues at European airports, ACI Europe reported that commercial revenues accounted for 48% of total revenues in 2010.

The European trend appears to contrast with the experience at Dublin Airport. ACI Europe reported a 7% year-on-year increase in commercial revenues in 2010.

Breaking down the shares of commercial revenue at Dublin Airport, revenues from retail are the most important. Property and car parking are the next two most important categories.

Shares of income from retail, property and car parking at Dublin Airport are in similar proportions to the average for European airports reported by ACI Europe. Where Dublin differs is the relatively low level of income it collects from other sources, which can include fuel concessions, ground transport, divestments, and exceptional items at some airports.

Breaking Down Commercial Revenues We See a Fall in Car-Parking Revenues

Chart 4.5: Retail revenues

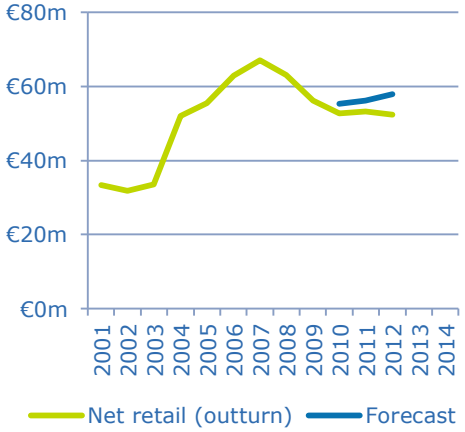
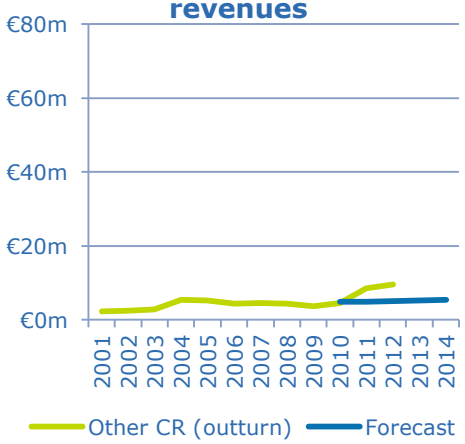


Chart 4.6: Other commercial revenues



Commercial revenues from retail include both DAA's own direct retailing activity and, since 2004, income from retail concessions. In 2009, we made separate forecasts for these two series and assumed a further €4m-€5m of retail income from T1X (discussed later). The forecasts assumed a direct link with passenger numbers at Dublin Airport.

Revenues from property concessions (excluding retail), property rental, and property advertising, as well as income from ground handlers for access to installations (ATI), are all included under the heading of property revenues. This revenue source has been fairly constant for the past decade.

Car parking revenues include both long and short-term car parking revenues. Competition from other car park operators, other modes of transport and the economic downturn were all cited in 2009 as reasons for the decline in this revenue source. The decline has continued: car parking revenues are now more than 40% less than their 2006 peak.

Activities at Dublin Airport generating income classified as other commercial revenues include executive lounges and VIP services, taxi permits, and US Customs and Border Protection. In 2011 this revenue source almost doubled, but still accounts for less than 10% of total commercial revenues.

Chart 4.7: Property revenues

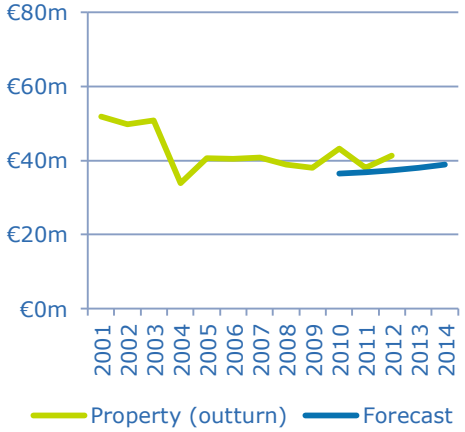
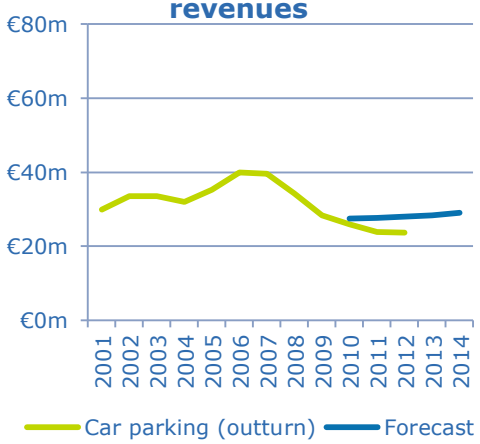


Chart 4.8: Car-parking revenues



Source: DAA regulatory accounts, CAR calculations

Techniques for Forecasting Commercial Revenues Similar to Those for Assessing Opex

In 2009 CAR relied a lot on time-series modelling

As with assessing opex needs, estimates of future commercial revenues can be informed by a variety of techniques.

Our approach to generating forecasts shifted in 2009 to more reliance on simple time-series modelling and away from attempts at second-guessing how well the DAA was managing each commercial activity at the airport.

In 2009 our estimates of income from direct and concession retail, property concessions, property rental, car parking and other commercial revenues were all informed by past trends, controlling for changes in passenger numbers or GDP. These series accounted for over 90% of the overall level of net commercial revenues forecast at the time of the last Determination.

Our overall retail revenue forecast included an upward adjustment to account for T1X's opening (discussed later). Conversely, the overall property forecast included a downward adjustment because we had not permitted the DAA funds for hangar refurbishment. It also included forecasts for property advertising and ATI fees that corresponded to the DAA's forecasts rather than those from time-series models. In the case of property advertising the DAA itself had identified scope for improvement, with evidence showing that historically it had generated relatively fewer revenues from this source than other airports. The treatment of ATI fees is discussed later.

Elasticity assumptions remain important

The approach in 2009 contrasts with the approach used in both 2001 and 2005, when we retained consultants to advise on the scope for improving the DAA's commercial revenue yield. Our starting commercial forecast in 2009 depended more on what the DAA had achieved in the past than on what a consultant advised was theoretically possible.

For later years of all three Determinations, the final commercial revenue forecast has depended on assumptions about how commercial revenues vary with passenger numbers. The table below shows the elasticity assumptions made in 2005 and 2009.

Table 4.1: Assumed commercial revenue elasticities

Category	2005	2009
Retail	1.00	
Direct retail		0.56
Concession retail		1.30
Property	0.50	
Property concessions		0.44
Property rental		0.30
Property advertising		0
Car parking	1.00	0.40
Other	1.00	0.74

Source: CAR

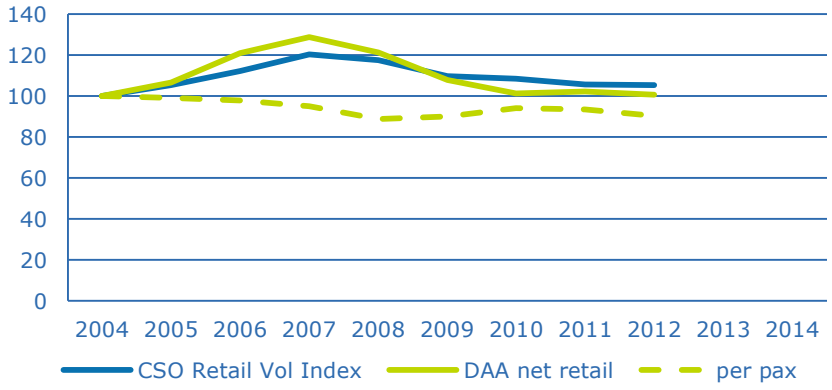
Sources To Benchmark the DAA's Commercial Revenues Not Limited to Other Airports

If trying to benchmark commercial revenues at Dublin Airport, comparators are perhaps not limited to just other airports. Examples on this page illustrate the possibility of comparing the DAA's performance with developments in the wider Irish economy as well.

Up until 2007 the growth in the DAA retail sales (28%) outpaced Ireland's retail industry, which experienced growth of 20% in the same period. Since 2007, the decline has also been faster. Within 3 years DAA sales dropped 21% whereas overall Irish retail sales dropped 10%. In contrast to the wider economy, sales at the DAA are now starting to recover.

While the patterns may look similar, the changes in total retail sales at Dublin Airport are largely driven by passenger numbers. Per passenger retails sales declined slowly between 2004 and 2007, and have been flat since.

Chart 4.9: DAA retail and economy wide retail



Sources: DAA, CSO, CAR calculations

Despite collapsing property markets in the Irish economy the DAA has realised increases in property income since the 2009 Determination. Whereas the DAA's property income has increased 12%, the Jones Lang LaSalle index records a fall of 17% in actual income from properties in the index over the same period. The situation for property in the wider economy is even worse if just looking at rental income from new leases.

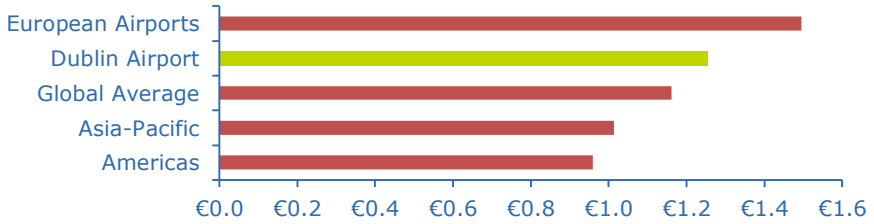
Table 4.2: Rental income changes [nominal]

	Change 2009 to 2012
DAA property income	+12.4%
JLL rental income	-16.7%
JLL Expected Rental Value (for new leases)	-33.0%

Sources: DAA, Jones Lang Lasalle, CAR calculations

The importance of which airports to include in any benchmarking sample is highlighted in the chart below looking at car parking revenues for airports with 10-30 million passengers. In 2011 Dublin Airport's per passenger parking revenues were 16% lower than the average for European airports but 8% higher than the global average.

Chart 4.10: Parking revenue per passenger in 2011



Sources: DAA, Moodie airport commercial revenues study 2012, CAR calculations.

We Do Not Have To Treat All Commercial Revenues the Same

Rolling schemes

Increasing incentives to maximise commercial revenues

- It would be possible to introduce a rolling incentive scheme for (some) commercial revenues, similar to the scheme in place for certain opex categories.
- The DAA would benefit from a regulatory commitment to allow it to retain the extra revenues from outperforming the targets in a determination for four-plus years instead of until the time of the next Determination. This would increase the incentives for the DAA to maximise commercial revenues across all dates. In a single-till environment a mechanism that increases commercial revenues could ultimately benefit users by feeding through to lower airport charges.
- We would need to identify categories of commercial revenues for which such a scheme might be suitable. We would also have to address practical questions, such as what and how to control for other factors that might affect such commercial revenues. For example, the rolling scheme might want to control for changing levels of passenger numbers.

ATI Fees

Reducing incentives to maximise certain revenues

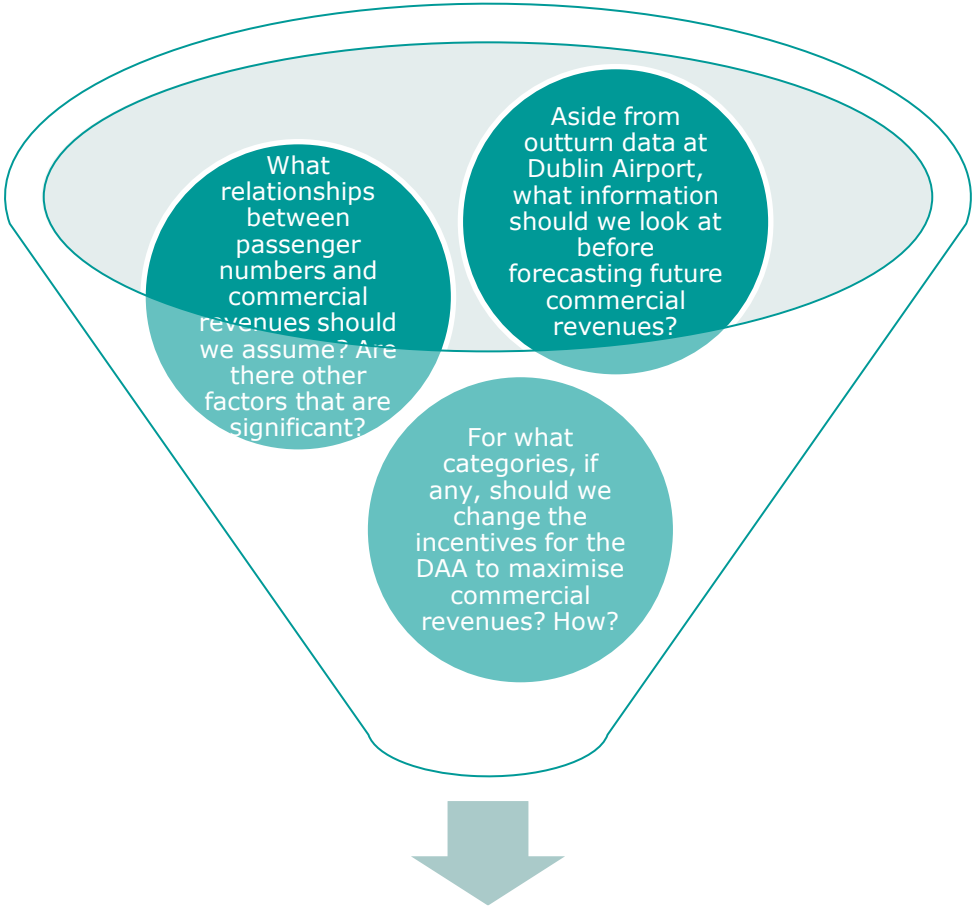
- There may be an argument that users do not benefit from the DAA having incentives to maximise some commercial revenues. For example, users paying both airport charges and car park fees or airside office rents arguably care about their total payments to the DAA. But since we do not directly regulate these other revenue sources, the calculations underpinning past Determinations have tended to assume that the DAA will seek to maximise them, which results in a lower cap on airport charges.
- In the case of ATI fees, in 2009 we actually reduced the DAA's incentive to maximise commercial revenues from this source. We indicated that for the period 2010-2014, our price-cap would be calculated assuming the DAA collected €8.7m from this source, with the 2014 Determination correcting for any deviation from this sum.
- For the next Determination, we have to decide whether to continue with this approach for ATI fees after 2014, or whether we should re-introduce incentives for the DAA to maximise such revenues.

T1X

Protecting users from commercial investment risks

- In 2007 we indicated that should the DAA invest in T1X, the investment would only be included in future price-cap calculations if we concluded the project was generating sufficient incremental commercial revenues. The DAA had claimed that the investment would be self-financing.
- In the last Determination we forecast that T1X would generate incremental commercial revenues of about €5m per annum (or €0.26 per passenger), based on an analysis of outturn retail revenues before and after it opened. We adjusted capital cost allowances so that T1X had no effect on the prevailing price cap. The 2014 closing RAB includes €53m arising from the T1X allowance. We have to decide whether and how to reassess T1X's incremental contribution and recalibrate the depreciation profile.
- For future non-aeronautical investments, CP3/2012 indicated circumstances in which we will exclude the revenues from the regulatory till and allow the DAA to assume all the risks from proceeding.

Commercial Revenue Issues



What assumptions should we make about commercial revenues at Dublin Airport after 2014?

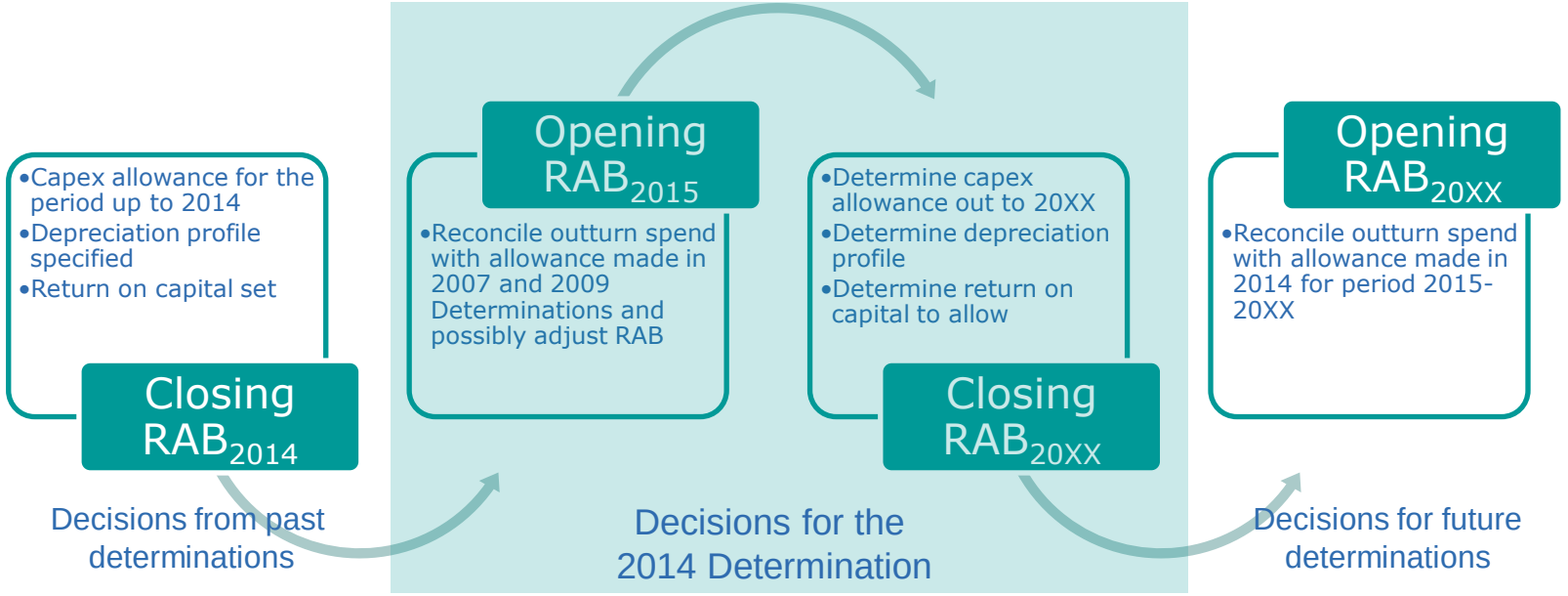
5. Capital Costs

- For capital expenditure, we will consider what the investment needs at Dublin Airport are for the next four-plus years. The price-cap calculations will depend on how we decide such investments should be reimbursed. We will also need to decide whether and how to reimburse earlier investments by the DAA whose costs to date it has not been allowed to recover fully through airport charges.

- There are four basic questions to address under the heading of capital costs:
  - What should the opening RAB be? This will require reconciling actual spending by the DAA with earlier allowances the Commission made for capex.
  - What constitutes a suitable level of investment at Dublin Airport in the next four-plus years, and what outputs should the DAA deliver?
  - How rapidly should we allow the DAA to recover investment costs, i.e. how should we structure depreciation charges?
  - What is an appropriate rate of return to allow the DAA to collect on any capital expenditure which is not reimbursed immediately?

- This section addresses each of these areas in turn. It provides outturn data up to and including 2012, and also identifies different approaches that might be used to estimate the return on and return of capital.

Capital Costs: the RAB, Past & Future Investments, Depreciation and Cost of Capital



A RAB-based approach to regulation means that for capital costs, unlike for other building blocks, decisions in one determination depend on decisions made in previous determinations and will have implications for future determinations. The graphic above illustrates this.

We want to encourage the DAA to incur efficient investment costs meeting the needs of current and future users. Our price-cap calculations do not immediately recompense the costs of these investments, but instead potentially allow the DAA to recover such costs over a number of years. This addresses the fact that the investment profile is potentially lumpy and that users may benefit for many years.

The RAB represents future investment claims of the airport that we intend to allow for in future determinations, by means of a depreciation charge.

We value the RAB on the basis of indexed historic costs. If the DAA invested €10m and following a review of outturn spend we decided to allow it to recover €9m, then this €9m in the RAB will only change on account of depreciation charges and changes in the consumer price index.

The fact that we index the RAB and do not automatically allow the DAA to recover all investment costs means that the RAB does not correspond to a fixed-asset account.

Opening RAB Likely to be Much Larger than in 2010 Given Past Capex Allowances

Table 5.1: Updating the RAB

Opening RAB 2010	**€879m**
Allowed capex 2010-14*	€208m
T2 Box 1 Trigger	€663m
Regulatory depreciation	(€173m)
Closing RAB 2014	**€1577m**

**Includes allowance for the hold baggage screen trigger*
Source: CAR calculations

We currently expect the closing RAB at the end of 2014 to be €1577m. A further €430m could be added to the 2014 closing RAB in the unlikely event that a number of triggers are met prior to December 2014. If passenger numbers in a 12-month period exceed 23.5 million, the runway trigger would add about €300m; if annual passenger numbers exceed 33 million, the T2 box 2 trigger would add over €100m; and if the weekly demand for contact stands exceeds 74, the apron development trigger would add over €20m. None of these outcomes are likely, and the rest of this report proceeds on the basis that these triggers will not be met.

To determine the opening RAB in 2015, we may adjust the 2014 closing RAB up or down as we reconcile outturn capital expenditure by the DAA with the allowances made in 2007 and 2009. The DAA has spent about €150m more in real terms than was allowed for on the T2 projects, but outturn capital expenditure for the period 2010-2014 will be less than the allowance by about €64m if the experience of the first three years is a guide.

Regulatory depreciation in the period 2010-2014 was lower than in the period 2006-2009. This reflects a regulatory policy shift away from straight-line depreciation to (tilted) annuities when remunerating investments, deferring much of the return of capital until later determinations.

Principles for Rolling Forward the RAB

Scenario 1: Investment delivers expected output at lower cost than allowed	• RAB revised down • No clawback of revenues previously collected by DAA on basis of higher capex spend
Scenario 2: Investment delivers expected output at higher costs than allowed	• RAB revised up only if evidence shows the DAA was responding to revised user requirements or changes in costs outside its control
Scenario 3: Investment not made	• RAB revised down • Clawback of any return on or return of capital previously included in past determinations
Scenario 4: Investment made but delivers outputs different to those expected	• RAB revised down (with clawback of sums already recovered) unless DAA can demonstrate it was responding to user requirements
Scenario 5: Investment abandoned prior to completion	• RAB revised down, but monies spent prior to abandonment not clawed back
Scenario 6: Existing asset in RAB becomes obsolete before end of asset life	• RAB unchanged
Scenario 7: Existing asset in RAB sold	• RAB revised down according to the value asset sold at (assuming it was at or close to prevailing market prices)

This Determination provides an opportunity to reconcile outturn capex with allowances for capex made in the 2009 Determination, and also allowances made for T2-related investments in the 2007 Interim Review. We do not expect to reconcile outturn capex from earlier determinations that has already been reconciled.

When reconciling the outturn capex with past allowances, we expect to be guided by the RAB roll-forward principles summarised in the table on the left. A comprehensive discussion of these principles can be found in Annex 3 of the 2009 Determination. We will consider possible changes to the RAB roll-forward principles to take effect after 2015, but we expect to reconcile pre-2015 capex with regard to the principles announced in 2009.

On the next page, we provide a breakdown of actual expenditure on T2-related investments and the associated allowances made in the 2007 Interim Review. Parties may wish to comment on what adjustments, if any, we should make to the RAB given these out-turns.

For non-T2 capex, we have outturn expenditure only for the years 2010-2012. The currently available data are summarised in the table on page 52. In 2009, we made capex allowances for eight groupings. Subject to delivering certain outputs, we granted the DAA discretion on what it invested under each heading. The table outlines what deliverables were expected and indicates which ones the DAA claims to have already provided. The table also includes the allowance and outturn expenditure on hold-baggage screens, the one "trigger" project for which the trigger event has occurred.

Reconciling Outturn Capital Expenditure for T2 with the Allowance in 2007

Table 5.2: T2 capital expenditure, allowance and outturn

T2 Total Expenditure	Allowed	Spent (2007-12)	
T2 Main and Associated Projects	€771m	€923m	120%

T2 Main Project	Allowed	Spent (2007-12)	
T2 Enabling and External	€38m	€97m	254%
T2 Professional Support	€49m	€108m	223%
T2 Construction	€344m	€427m	124%
Pier E	€114m	€127m	112%
T2 Project Contingency	€76m	€0m	0%
Total	**€620m**	**€759m**	**122%**

Source: DAA, CAR calculations

T2 Associated Projects	Allowed	Spent (2007-12)	
Temporary Forward Lounge	€6m	€2m	38%
Utilities Reconfiguring	€51m	€29m	56%
Customs & Border Protection	€22m	€22m	97%
Landside Road Reconfiguring	€28m	€70m	254%
Short-term car parking	€29m	€19m	66%
Programme Management	€14m	€18m	133%
Other	€0m	€4m	n/a
Total	**€151m**	**€164m**	**109%**

The largest capex allowance yet to be reconciled dates back to the 2007 Interim Review allowance for the T2 investment. The decision to defer reconciliation was to enhance the incentives for the DAA to manage the costs carefully.

Deferring the reconciliation also has the advantage that the project is complete. It is now possible to form a view on whether the investment has delivered the facilities that were expected at the time the allowance was made. The DAA claims to have delivered an output broadly consistent with what was proposed at the time we made an allowance for €771m in 2007. In doing so, it has spent about 20% more in real terms than the 2007 allowance.

In 2007 we introduced a "two-box" treatment for T2 costs because we judged that the proposed size of T2 was unnecessarily large. Part of the costs (€108m) – the "Box 2" amount – would only be added to the RAB if and when annual passenger numbers exceed 33 million.

However, for the purposes of reconciling outturn capex with the allowance, we will consider the total amount including Box 2. We invite parties to comment on the circumstances, if any, under which the size of Box 2 should change. Should it move in proportion to changes in the allowance for T2 Main Projects, or in proportion to changes in total T2 allowance, or on some other basis?

Reconciling Outturn Capital Expenditure for 2010-2014 with the Allowance in 2009

Table 5.3: 2010-2014 capital expenditure, allowance and outturn

Capex Grouping	Deliverables Specified	Allowed	Spent (2010-12)	
Airport operations		€44m	€26m	59%
Landside infrastructure	• Taxi holding area • Designed and costed ground transportation centre • Refurbished multi-storey car park • Upgraded roads and perimeter fence	€23m	€1m	4%
Piers and terminals	**Upgraded T1 fire-alarm system**	€8m	€24m	297%
Plant and equipment	**New 2-3MW combined heat and power plant**	€3m	€0m	0%
Retail		€11m	€2m	22%
Revenue	• Cargo facilities • Retail logistics centre	€15m	€3m	18%
Stands and airfields	• **Overlaid runway 10/28** • Reconstructed central apron • Reconstructed apron road • Planning permission for new runway and engine-testing facility • **Airfield generator** • Reinstated runway 11/29	€34m	€14m	42%
Utilities	• Two 5,000m^3 tanks in the fuel farm • Drainage and pollution works • Renewed airport wide MV network	€39m	€6m	15%
Programme Management and Contingency		€20m	€6m	31%
Hold Baggage Screen Trigger	**Hold Baggage Screens**	€11m	€3m	25%
Other		€0m	€1m	n/a
Total		**€208m**	**€86m**	**42%**

Where the DAA claims to have already completed the capital project, the "deliverable specified" is in bold font

Source: DAA, CAR calculations

How Should Future Investment be Regulated at Dublin Airport?

Future investment needs at Dublin Airport are an important consideration when making a determination, given our duty to facilitate the efficient and economic development of Dublin Airport. Historically, annual investment at Dublin Airport has varied more than other cost and revenues series. The chart below shows this variability in annual capex.

For the forthcoming Determination, we need to decide what level of investment to assume for the next four-plus years and what conditions, if any, to attach to such allowances.

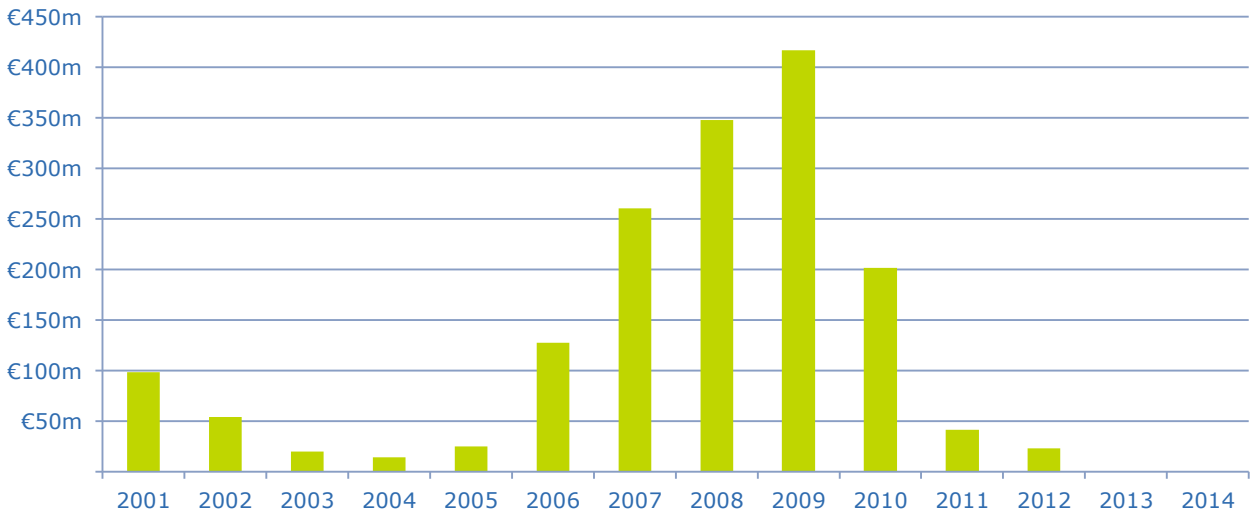
The DAA has indicated that it intends to consult with users later this year and in early 2014, with a view to finalising an investment plan by March. Such discussions should inform debate about the level of capex to allow.

Time profiling. Should we attempt to specify how much capex the DAA should spend each year or, as in 2009, make an equal allowance for each year of the Determination?

Aggregation. How much discretion should we allow the DAA in how it invests any capex allowance? Should we continue with the approach in 2009, and set allowances under eight different capex headings and allow the DAA discretion subject to delivering certain specified outputs?

Triggers. Under what circumstances, if any, should we make use of trigger allowances for capex? For example, should we retain, modify or abandon the current runway and apron triggers if they have not been met by end 2014?

Chart 5.1: Capital expenditure at Dublin Airport, 2001-2014



Source: DAA, CAR calculations

Depreciation Profile Choices Determine How Allowed Capex is Recovered Over Time

It is a policy decision as to how promptly our calculations allow the DAA to recover capital investments, having regard to both the interests of current and prospective users and enabling the DAA to operate the airport in a sustainable and financially viable manner.

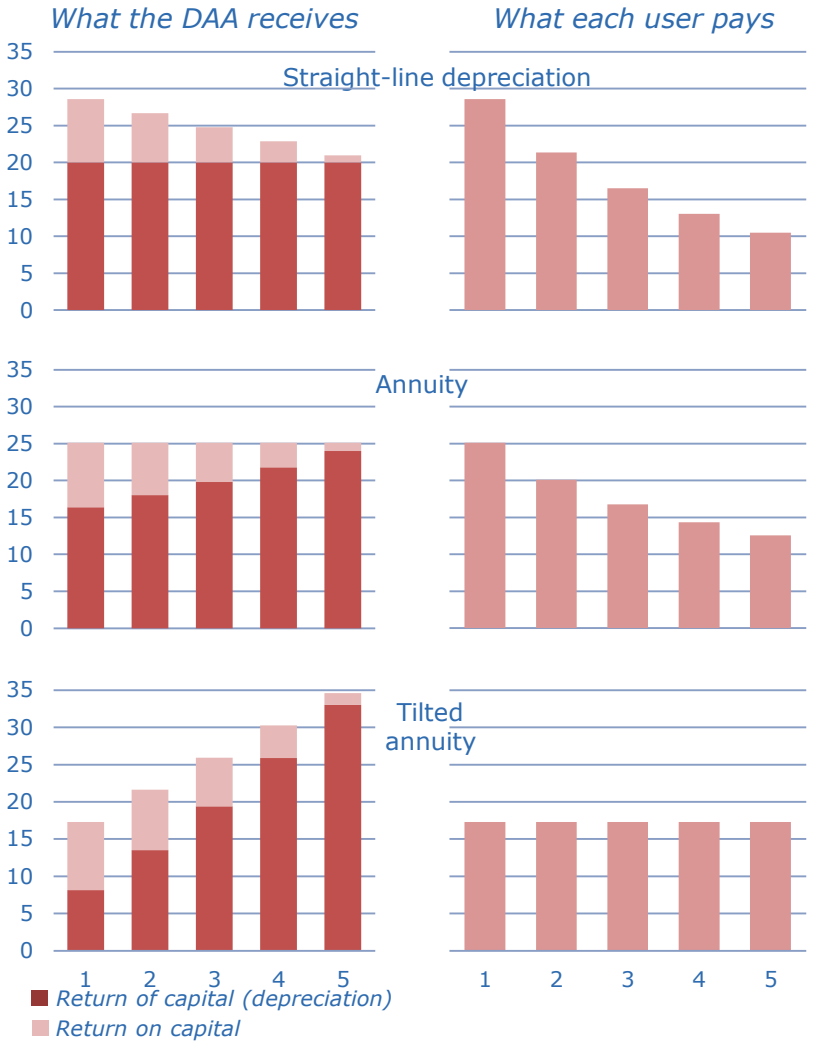
Typically, we have adopted the same asset lives as the DAA assumes in its statutory accounts. These are currently 10-50 years for terminal complexes and airfields; 2-20 years for plant and equipment; and 2-50 years for other property.

Where we have differed to the DAA's statutory accounts is in making less use of straight-line depreciation. Instead, recent determinations have estimated (tilted) annuity profiles.

The thinking behind this switch is perhaps best explained with reference to the charts on the right. They show three different remuneration profiles for an expenditure of 100 that is to be recovered by the DAA over 5 periods. All of the approaches are, in net present value terms, equivalent for the DAA. The charts showing what each individual user pays assume passenger numbers increasing over time.

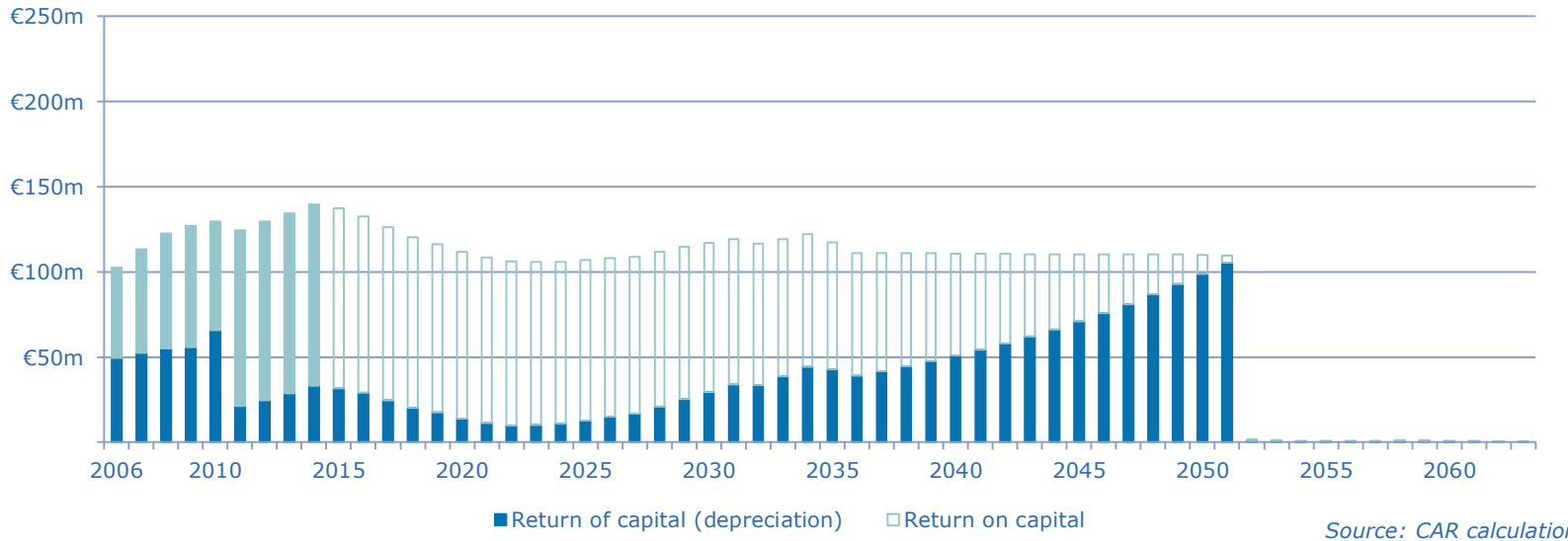
If the calculations are based on straight-line depreciation, each period the return of capital is 20 while the return on capital declines because of a smaller principle. An annuity calculation instead allows the DAA to receive the same total sum each period. However, the per passenger contribution differs across periods unless demand remains constant. A tilted-annuity calculation might equalise per-passenger contributions across time with the consequence that the DAA will recover more (less) in later years if passenger numbers are expected to grow (decline). For (tilted) annuity calculations, the depreciation amount is inferred once the total capital contribution has been estimated each period.

Chart 5.2: Different depreciation profiles



Previous Determinations Have Deferred a Significant Amount of Depreciation Charges

Chart 5.3: Return of capital over time at Dublin Airport



Source: CAR calculations

The chart above shows the level of depreciation charges that would apply in calculations for the next price cap if we

- Adopt the same depreciation profiles as assumed at the time of the last Determination;
- Make no adjustments to previously allowed capex when reconciling outturns with past allowances; and
- Allow for no new investment at Dublin Airport.

To give some visibility on the overall capital costs we include what the return on capital would be if we also assume the same 7% cost of capital applied at the last Determination. Given these assumptions, it is return on capital rather than return of capital that constitutes the larger portion of capital costs for the next decade.

For the forthcoming Determination, we have already discussed in this paper

- reconciling outturn capex spend with 2007 and 2009 allowances and
- making an allowance for post 2014 capex;

These policy decisions will have implications for the return of capital allowed after 2014.

Parties might also want to argue for re-profiling the depreciation schedule. This could be done in an NPV neutral manner.

Finally, parties might want to comment on the cost of capital, with the implications that will have for the return on capital that we allow in the next Determination.

We Allowed 7% Cost of Capital in 2009 Using an Approach Regulators Commonly Use

Table 5.4: Past CAR cost of capital calculations for DAA

	Cost of Capital Component	2001	2005	2009
R_f	Risk-free rate (real)	2.6%	2.6%	2.5%
ERP	Equity-risk premium	6.0%	6.0%	5.0%
	Asset beta	0.50	0.61	0.61
β_e	Equity beta	0.93	1.10	1.22
T	Corporate tax	13.5%	12.5%	12.5%
R_e	Cost of equity (pre-tax)	9.5%	10.5%	9.9%
	Debt premium	1.1%	1.1%	1.6%
R_d	Cost of debt (pre-tax)	3.7%	3.7%	4.1%
G	Gearing	50%	46%	50%
	Real WACC (pre-tax)	**7.00%**	**7.40%**	**7.00%**

$$WACC = r_d * g + \frac{1}{1-t} * r_e * (1-g)$$

$$r_d = r_f + debt\ premium \qquad r_e = r_f + \beta_e * ERP$$

We calculated the cost of capital in 2009 using the pre-tax real weighted average cost of capital (WACC). This was the same approach as we used in 2001 and 2005.

The calculation was a weighted average of the return on debt and return on equity that we estimated the DAA would need to offer investors. The weighting depended on assumptions about gearing, i.e. the relative share of debt and equity.

To estimate the cost of debt we have applied a mark-up (or debt premium) to what the DAA would have to pay if there was no risk associated with its debt. For the cost of equity, we have relied on the capital asset pricing model (CAPM) that most regulators use.

The table on left shows the values we used for the individual variables that make up the WACC calculation. In the following pages we discuss further the individual components and what factors might influence the values they might take in 2014 (assuming we continue with this general approach to estimating the cost of capital).

The WACC calculation depends on a mix of macroeconomic variables and firm-specific estimates. For example, both the risk-free rate and the equity-risk premium are variables that can be estimated without reference to either the DAA or Dublin Airport. In contrast, the betas are particular to the DAA.

Yields on Less Risky Assets Have Fallen Since We Set the Risk-Free Rate in 2009

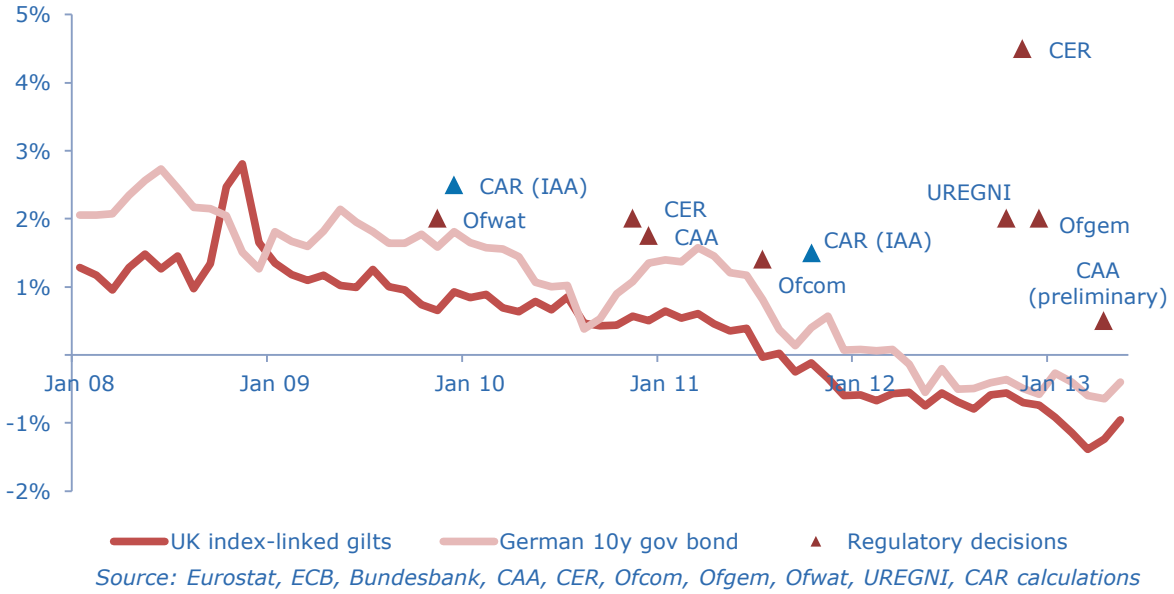
The risk-free rate refers to the rate of return that investors would require to lend money that they were certain to receive back at a later date. It is an important component for both the cost of debt and the cost of equity.

The returns on AAA-rated government bonds are usually used as a proxy for the risk-free rate. Issues that have to be considered in identifying suitable proxies include the jurisdiction(s) used, the maturity of the bond and whether to use index-linked or nominal bonds. In past determinations we have tended to focus on Irish and Eurozone nominal government bonds with a 10-year maturity, forming a view about expected inflation to convert this into a real rate.

In 2009 we settled on a risk-free rate of 2.5%. Since 2009, developments in the financial markets have led to the yields on government bonds falling (for governments considered to be a good credit risk). The chart below shows the real yields for ten-year German and UK government bonds.

It also plots a number of decisions by regulators since our 2009 Determination (including our decision to assume a risk-free rate of 1.5% for the IAA in 2011). For regulators that only cited a range, we have taken the midpoint. The only regulator to have set a risk-free rate higher than 2% since 2009 is the Commission for Energy Regulation, but their risk-free rate included a country-specific adjustment.

Chart 5.4: Real risk-free rates chosen by Irish and UK regulators



Source: Eurostat, ECB, Bundesbank, CAA, CER, Ofcom, Ofgem, Ofwat, UREGNI, CAR calculations

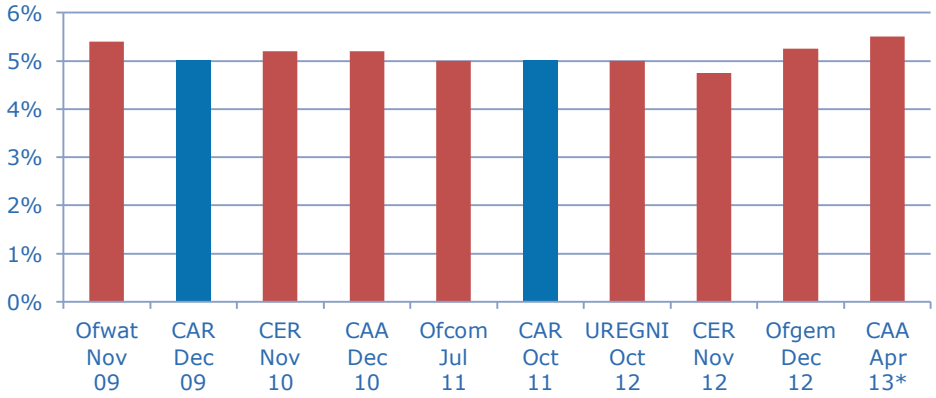
We Need Estimates for the Equity-Risk Premium and the DAA's Beta if We Use CAPM

To form a view on the cost of equity, we have previously used CAPM which requires estimates for the equity-market risk premium (the ERP) and the DAA's "beta", along with the risk-free rate.

The ERP captures the additional return investors require to hold equity rather than a risk-free asset. Since it cannot be directly observed, authors have tried to approximate it using historical data on equity returns, surveys about investors' expectations, or using ex-ante deterministic models such as the dividend discount model.

In 2009 we assumed an ERP of 5% based on evidence from historical equity mean returns (in particular the Credit Suisse Global Investment Returns Sourcebook), academic studies, and other regulatory decisions. The chart below shows regulatory decisions concerning the ERP since our 2009 Determination.

Chart 5.5: Recent ERP estimates by regulators



**Provisional. Midpoint of current and long-term market estimates*

Source: CAA, CAR , CER, Ofcom, Ofgem, Ofwat, UREGNI

The DAA's beta captures the extent to which the DAA faces risks that are correlated with the general market. A low beta implies less correlation with market risk.

We need to estimate a beta specifically for the DAA. Would investing in the DAA increase or decrease an investor's exposure to the risk that the wider economy will improve or worsen in the next year?

One commonly used approach to estimate a company's beta is to compare its share price with overall market returns, an option not available when looking at the DAA. Instead, we have reviewed the evidence on estimated betas for other airports, particularly those used by the CAA and the Competition Commission in the UK, and looked more generally at the available evidence on the extent to which the DAA is exposed to market risk.

Has Dublin Airport's exposure to wider economy risks increased or decreased since 2009?

In 2009 we estimated that the asset beta for the DAA was in the range 0.5-0.7, and decided to retain the point estimate of 0.61 that we had used in 2005.

A basic question that might be asked, if we continue to estimate the cost of equity using CAPM, is whether there is a compelling reason for revising the asset beta from the level used in 2009? Is there evidence that the airport sector is more or less exposed to general economic risks than previously thought? Is the fact that Dublin Airport is based in Ireland relevant? Do changes in the mix of airlines at Dublin Airport matter?

There are Other Issues to Consider When Estimating the Cost of Capital…

Cost of debt

We have estimated a cost of debt in the past that assumes that the DAA has to pay an interest rate on borrowings that exceeds the risk-free rate. The implication is that we have not to date thought that investors view Dublin Airport as a risk-free investment.

In 2009, we estimated a range of 3.5-4.5% for the pre-tax cost of debt. We used a point estimate of 4.1% implying a DAA debt premium of 1.6%.

Our estimate for the cost of debt in 2009 was largely influenced by the current interest rates being paid on European corporate bonds with a BBB rating. We chose this credit rating as the minimum credit rating consistent with enabling the DAA to operate Dublin Airport in a sustainable and financially viable manner. We also looked at the spread on bonds issued by the DAA.

An alternative approach would be to look at the cost of the DAA's embedded debt. Once the DAA has issued bonds, it is committed to paying that stream of income to holders of the debt. The fact that the bonds are subsequently trading at a higher or lower interest rate does not directly affect what the DAA pays. It would be open to us to estimate the cost of capital having regard to past commitments the DAA has made to investors, rather than taking a purely forward-looking approach and assessing what it would cost the DAA to raise the capital if it went into the market now.

Gearing

The level of gearing determines the weights given to the cost of equity and the cost of debt when we estimate the WACC.

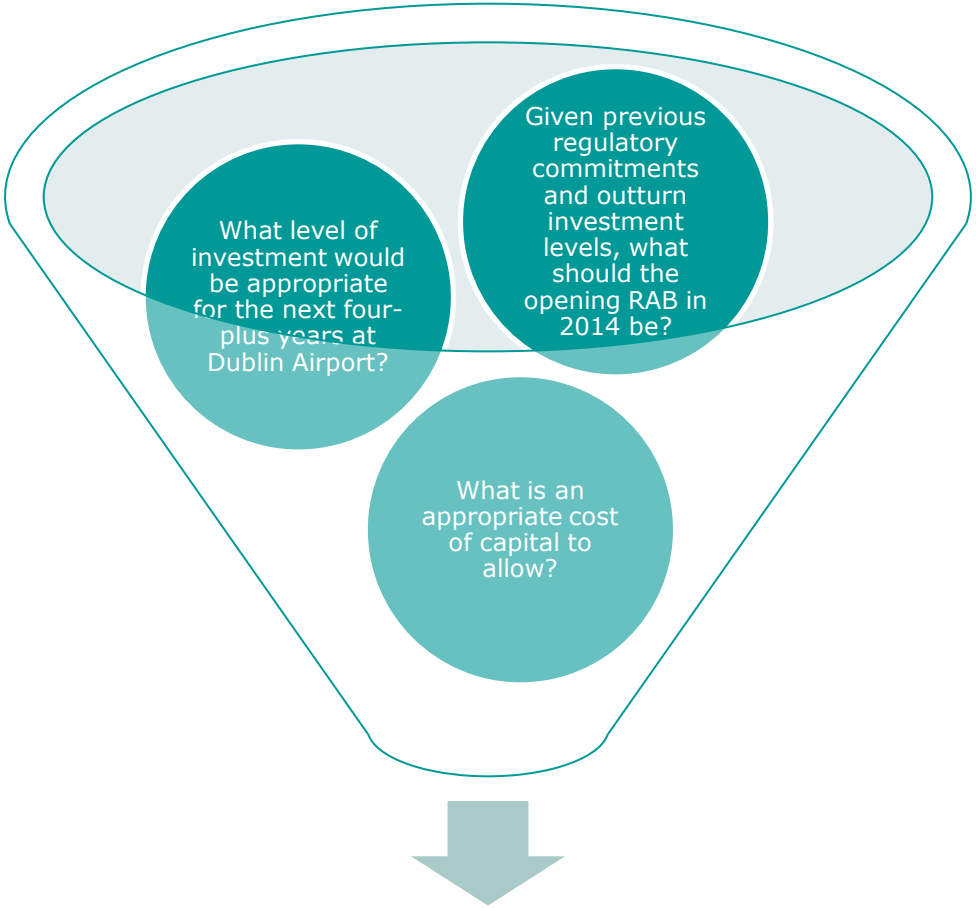
In 2009 we assumed a 50% gearing ratio, i.e. an equal mix of equity and debt. This was a notional value, based on what we considered to be a reasonable mix, rather than based on the actual structure of the DAA's finances. This contrasted with the approach in 2005, when an attempt was made to estimate the actual gearing of the DAA. There are both theoretical and practical arguments that might be raised when choosing whether to use a notional or actual gearing rate.

Corporate tax rate

The treatment of interest payments and dividend payments is typically different for the purposes of calculating tax liabilities. The pre-tax cost of capital refers to the return that the company has to generate prior to paying any corporate tax on profits.

In 2005 and 2009 we have assumed a tax rate of 12.5%, consistent with the Irish government's corporate tax rate. We have not previously sought to estimate an effective tax rate, taking the view that it is unlikely to differ significantly from the headline rate for Dublin Airport, nor affect materially the overall cost of capital we allow.

Capital Costs Issues



What return on and return of capital should we permit?

6. Financial Viability

- This chapter deals with one of our statutory duties which is to enable the DAA to operate and develop Dublin Airport in a sustainable and financially viable manner. We want to form a view on DAA's financial viability in the context of our price Determination.
- In the 2009 Determination, we were keen to enable the DAA an investment grade rating but we also underlined that general business risk cannot be mitigated. In this chapter we compare the forecasts with the outturn for various financial ratios commonly used, including the FFO/debt ratio that has attracted much of the focus during past determinations.
- The chapter also discusses judgments to be made when assessing financial viability and the factors that are important for lender confidence.
- Parties are invited to provide comments about changes in the DAA's business and financial risk since the last Determination and their implication for the DAA's financial viability. Parties are also invited to outline changes to the approach to financial viability they would like us to adopt consistent with satisfying our statutory duties.

The DAA's Financial Situation Appears Healthier Today than in 2009

The DAA's financial situation appears to be better in 2012 than we expected it to be at the time of the 2009 Determination. The table below shows the forecast and outturn values for a number of financial ratios analysts often look at when assessing a company's financial health.

We expected the DAA Group's finances to remain relatively weak throughout the duration of the current Determination, although improving year on year. For 2010, we included a one-off upwards adjustment to the price cap specifically designed to help enable the DAA to operate Dublin Airport in a sustainable and financially viable manner.

Looking at some of the financial ratios in 2012 compared with their corresponding values in 2009, the DAA's financial position appears healthier. How important individual ratios measured at a point in time are is open to debate. Many investors and rating agencies would argue the outlook matters at least as much.

The last update that Standard & Poor's (S&P) published on the DAA was on 14 May 2013. It affirmed its rating at "BBB/A-2" and revised its outlook to stable. It cited lower future investment requirements and forecasts for increasing passenger levels as reasons behind its decision.

Table 6.1: DAA Group financial ratios

Financial Ratio	2009 Outturn	2012 CAR'09 forecast	2012 Outturn
FFO/Net debt	19%	14%	19%
Net debt/EBITDA	4.9x	5.6x	4.0x
Return on average equity	4%	3.5%	4%
EBITDA/net interest charge	11.4x	2.6x	3.5x
EBITDA/turnover	23%	19%	29%

Source: DAA, Davys, CAR

The Building-Blocks Approach Alone May Not Enable Financial Viability

At first glance it might seem that an approach to setting the price cap that is calculated with reference to forecast revenues and costs for an efficient company should suffice for enabling the DAA to operate Dublin Airport in a sustainable and financially viable manner.

However, a possible mismatch may exist between the short-term cash-flow requirements of investors and the proposed price path set by the regulator. This might arise if the regulator sets prices based on a depreciation profile that defers recovery of the costs of some investments a long time into the future. More generally, investors may be wary about investing in a company that has assumed a lot of debt which it will not be able to repay in the short term.

Given our three statutory objectives, we have been mindful of the need to strike a balance and not set the price cap either too high or too low. The reasonable interests of current and prospective users might better be served by lower prices (all else equal), whereas the DAA's financial viability would improve with greater freedom to raise airport charges via a higher price cap.

To date we have taken the view that a price cap that enables the DAA to achieve an investment grade credit rating would suffice for enabling it to develop the airport in a sustainable and financially viable manner. This should give would-be investors general confidence in the regulatory environment governing the DAA, permitting it to roll-forward any debts as they mature and issue new debt to fund large investments needed to meet the requirements of current and prospective users.

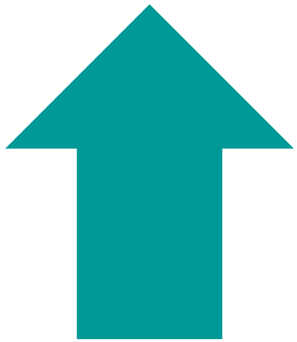
Balancing our regulatory objectives

Protecting Users

- Interests of current and prospective users are not served by ever-increasing prices
- Determinations should not seek to protect investors against general business risk
- Users should not have to underwrite projects by the wider DAA Group, nor unwanted investments at Dublin Airport

Enabling Financial Viability

- Prices need to be sufficient to permit the DAA to operate the airport as a going concern
- The DAA should be able to raise new capital to fund needed investments at Dublin Airport
- It should be able to roll forward its existing debt
- Investors should have confidence in the regulatory regime



Various Factors Might Affect the Ability of the DAA to Raise Capital

The focus on what factors would be necessary to achieve an investment grade has been motivated by the belief that if the DAA had a BBB or better credit rating it would likely be able to borrow money from investors.

The rating agencies provide some guidance on the criteria they use when assigning a credit rating to a company. These vary by rating agency and over time.

S&P currently rates the DAA's debt (the timeline below plots changes in its DAA ratings in recent years). It announced in June 2013 that it plans to revise its criteria for corporate issuers of debt in the next 12 months, but that it expects any changes to be modest.

S&P currently claims to look at both business and financial risks to generate a credit rating. Business risks looks at the firm's performance in the relevant country, industry and market and the competitive position. Financial risk assesses the firm's financial position, especially with reference to cash flows and liquidity. Companies with very stable and resilient cash flows, for instance, are likely to receive a favourable financial risk assessment.

Prior to the 2009 Determination, the DAA submitted to us a table showing ratios for two financial indicators that it thought would be consistent with different credit ratings. We understood these numbers as indicative, bearing in mind that they do not address business risk assessments nor other factors such as qualitative evaluations, but accepted that the suggested numbers appeared to be consistent with what investors and ratings agencies expected. The numbers are summarised in the table below. Is there any evidence that they need to be updated given the passage of time?

Table 6.2: Financial ratios and associated credit ratings

Rating	FFO/net debt	FFO/interest coverage
AA and higher	25%+	5.0x
A	20%+	3.8x
A-	16%+	3.5x
BBB+	15%+	3.2x
BBB	13-14%	3.0x
BBB-	11-12%	2.6x
BB	10%+	2.3x

Source: DAA 2009

Source: DAA

How Do We Decide if Our Price Cap Satisfies a Financial Viability Requirement?

In past determinations, we have tended to focus much of our attention on the FFO/debt ratio for the DAA Group. Our understanding has been that this is an important ratio that the ratings agencies look at, and that a ratio greater than 15% is normally associated with an investment-grade credit rating.

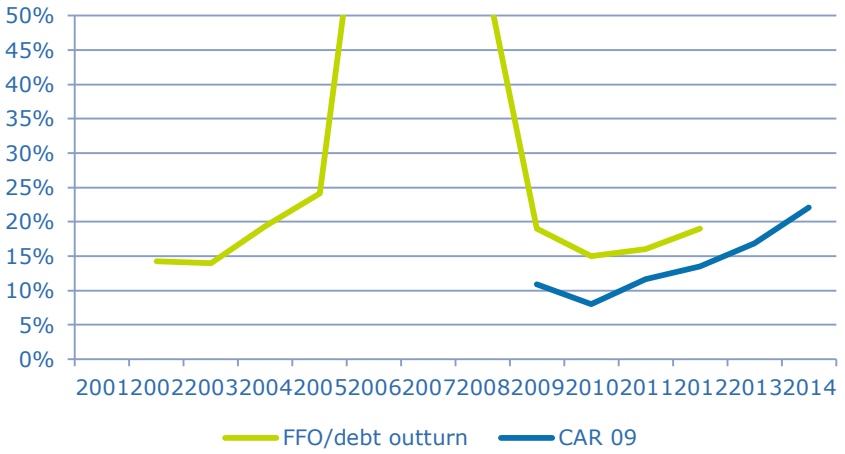
Despite forecasts of a precarious financial position, outturn FFO/debt ratios have exceeded expectations following our decisions in 2005, 2007 and 2009. Deviations from forecasts for Dublin Airport alone cannot explain this outperformance.

Our analysis has previously looked at the financial position of the DAA Group, rather than limiting itself to the financial position of Dublin Airport. One rationale for this is that it is the DAA Group in its entirety that raises capital on the market, and therefore it is the financial strength of this body that investors consider when deciding whether to lend to the DAA Group. Also, any attempt to narrow the focus of an analysis of the DAA's financial viability would require judgments on how to allocate debt between Dublin Airport and the rest of the DAA Group.

Against that, there is an argument that since a determination regulates charges at Dublin Airport we should ignore the assets and liabilities of the rest of the DAA Group. Conclusions about whether our price cap proposals enable the DAA to operate Dublin Airport in a sustainable and financially viable manner arguably should not be influenced by profits generated or debts and losses incurred by other DAA business ventures.

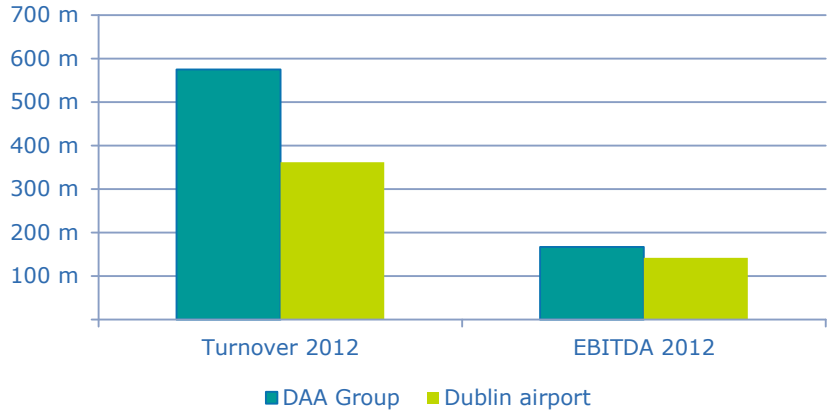
Chart 6.2 gives some feel for the relative importance of Dublin Airport to the overall DAA Group.

Chart 6.1: FFO/debt outturn and forecasts



Source: DAA, CAR calculations

Chart 6.2: Dublin Airport and the DAA Group



Source: DAA, CAR calculations

Policy Options to Enable Financial Viability

At a general level, we understand that lender confidence is enhanced by a well-functioning regulatory regime that exhibits the following characteristics:

- Consistency
- Clarity and transparency of the price determination
- Stability
- Predictability

Such an approach alone does not mitigate potential financial difficulties. What specific actions might we take to enable the DAA to operate the airport in a sustainable and financially viable manner?

At the last Determination, we made a one-off adjustment of €0.68 to the 2010 price cap calculations because of concerns about the DAA Group's finances. We effected this adjustment by adding an extra €13.3m depreciation charge into our 2010 calculations, an approach intended to make the adjustment net present value neutral from the perspective of the DAA. Increasing the price cap to a level higher than it would otherwise be is a very stark and direct means of helping to enable financial viability.

Other measures might seek to avoid financial difficulties at an unknown future date. For example, the price-cap formula might reduce the amount of risk that the DAA assumes, such that a downturn in demand or certain unexpected increases in costs result in an upward revision to the price cap. Alternatively, rather than wait for the DAA's financial situation to deteriorate, measures might be put in place that encouraged the DAA to maintain a healthy balance sheet able to withstand subsequent adverse shocks, e.g. a higher price cap if the FFO/debt ratio was above some threshold, such as 50%.

Reprofile DAA's cash flow

- Provide an immediate boost to the DAA's finances.
- Increase the current cash flow, possibly committing to reduce future cash flows so as to make the adjustment net-present value neutral to the DAA.
- Examples: shorter asset lives, pay-as-you-go capex.

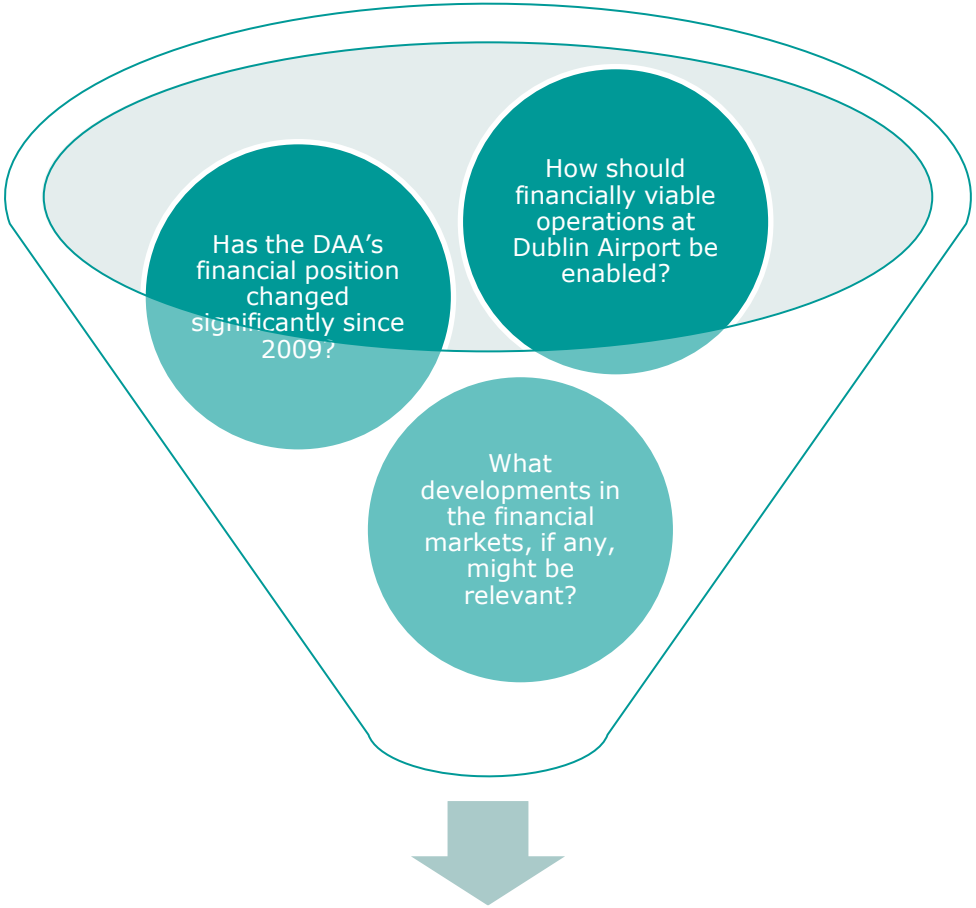
Reduce DAA's risk profile

- Protect the DAA against shocks that might otherwise adversely affect its financial viability.
- Remove some of the risks that the DAA has to assume.
- Examples: Permit more cost pass through for when costs deviate from expectation, introduce a traffic risk sharing component.

Create behavioural incentives for the DAA

- Provide DAA incentives to have a buffer that allows it to withstand any subsequent adverse shocks.
- Discourage the DAA from attempting to increase its leverage.
- Examples: Adjust the price cap if certain financial ratios breach a threshold or dividends are paid while debt is above a certain level.

Financial Viability Issues



What is the appropriate approach we should adopt to assess financial viability of the DAA?

7. Quality of Service

- This section discusses the quality of service that the DAA provides at Dublin Airport. It presents an overview of how the DAA has fared against the current metrics included in the quality of service regime. It then discusses policy issues that will be relevant when thinking about whether and how to refine the current approach.
- The current service-quality regime consists of a mix of measures, including some survey evidence from passengers giving their subjective views on how satisfactory various aspects relating to service at Dublin Airport are. Whether the current mix of measures captures what is important about service quality is open to debate. Do we need to change what and how we measure service quality?
- There may also be a price-quality trade-off that users have to make. Do parties want Dublin Airport to improve its service offering and, if so, are they willing to pay more? Alternatively, parties may prefer lower charges even if that means receiving a more basic service offering.
- Finally, what financial incentives should the DAA have to realise a given level of service quality? Under the current Determination failures to meet the targets could reduce the price cap by up to 4.5%.

Is the DAA Currently Providing a Suitable Quality of Service at Dublin Airport?

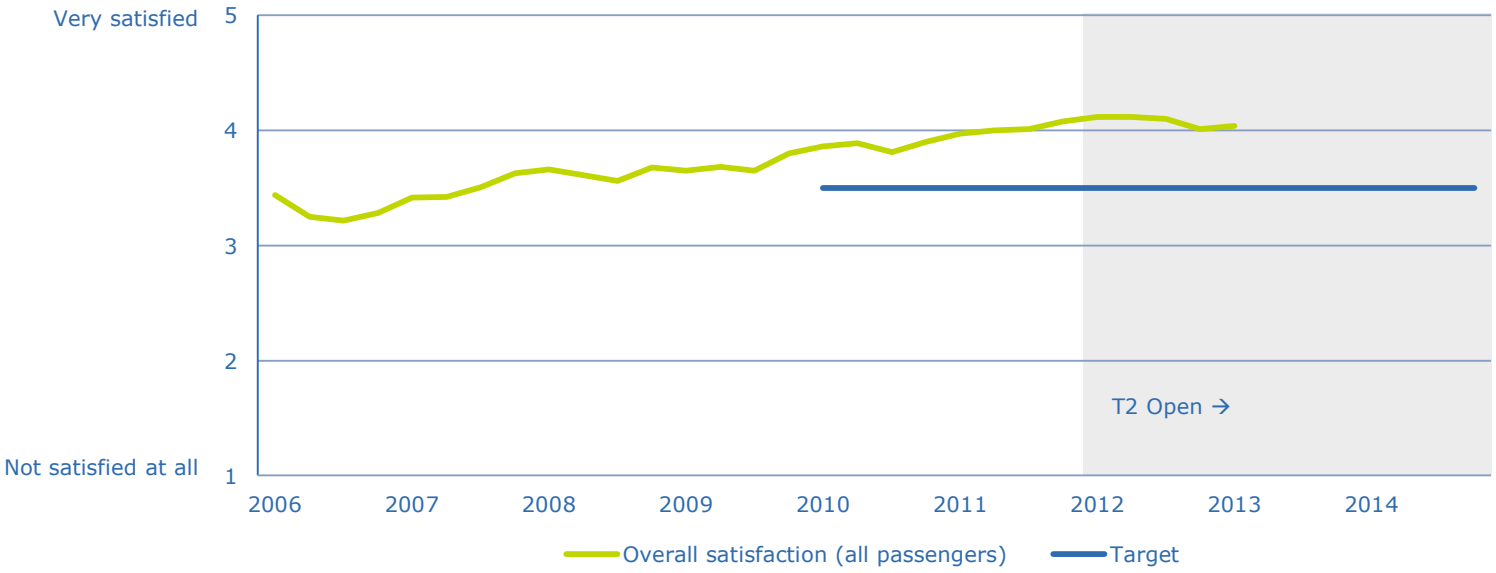
The chart below shows that passengers' reported overall satisfaction with Dublin Airport has increased since 2009. Since T2 opened, quarterly survey responses to this question have been better than in all quarters dating back to 2006. The DAA has realised scores comfortably in excess of the target we set in the 2009 Determination.

This survey result was one of a number of measures for which we set targets in the last Determination with the price cap being reduced if the DAA failed to meet these targets.

But do survey results reporting higher levels of overall satisfaction with Dublin Airport mean that service quality at Dublin Airport has improved or is at an appropriate level?

Parties who think Dublin Airport has not improved may believe that there are some other measures that we should be looking at when assessing service quality. Views are also welcome on whether we should be encouraging the DAA to improve on existing service levels or whether a more basic service for a lower cost would be more desirable.

Chart 7.1: Overall satisfaction with Dublin Airport



Source: DAA

Missed Service Quality Targets Will Have Cost the DAA Over €1m by End 2013

Table 7.1: Service quality measures 2010-2014

Service quality measure	Source	Target	Weight in cap
Security passenger queue no longer than 30 minutes	DAA	100%	1.5%
Days when outbound baggage belts unavailable for more than 30 minutes	DAA	0%	0.75%
Amount of time inbound baggage belts available	DAA	99%	0.25%
Ease of way finding	ACI	3.7/5	0.25%
Flight information screens	ACI	3.8/5	0.25%
Cleanliness of airport terminal	ACI	3.6/5	0.25%
Cleanliness of washrooms/ toilets	ACI	3.3/5	0.25%
Comfort of waiting/gate areas	ACI	3.0/5	0.25%
Courtesy, helpfulness of airport staff	ACI	3.8/5	0.1%
Courtesy, helpfulness of security staff	ACI	3.8/5	0.15%
Overall satisfaction, all pax	ACI	3.5/5	0.25%
Phone/internet/IT facilities	ACI	3.1/5	0.25%
Feeling of being safe secure	ACI	3.8/5	0

Our 2009 Determination set a price cap that was conditional on the DAA meeting a number of targets relating to service quality, including overall satisfaction with the airport. Up to 4.5% of the revenues allowed from airport charges was at stake, should the DAA fail to meet any of the targets.

The table on the left lists the 13 measures included, the targets we set and the maximum amount by which the annual price cap could fall if one of these measures was not met.

We included a number of different measures, consistent with the fact that different users identified different aspects of service quality that were important to them. This meant that the DAA did not have incentives to focus on a single measure of service quality.

User feedback informed the weights given to the different service quality measures in the price cap. The "objective" measures were given a weighting of 2.5%, with most of that being assigned to meeting security queuing time targets, while the weighting for "subjective" survey results was 2% split equally between eight categories (albeit courtesy of staff was split in two).

To date, there are only two of the service quality measures for which the DAA has failed to meet the target set: security passenger search times have on occasion exceeded 30 minutes and survey results have not always indicated adequate satisfaction with Phone/Internet/IT facilities.

These failures are likely to result in the DAA having to forego revenues from airport charges of about €1.1m as a consequence of the resulting reductions in the price cap.

Security Queues Have Increased Recently and Passengers Typically Wait Longer in T1

Chart 7.2: Security queues, Jan 2010-May 2013

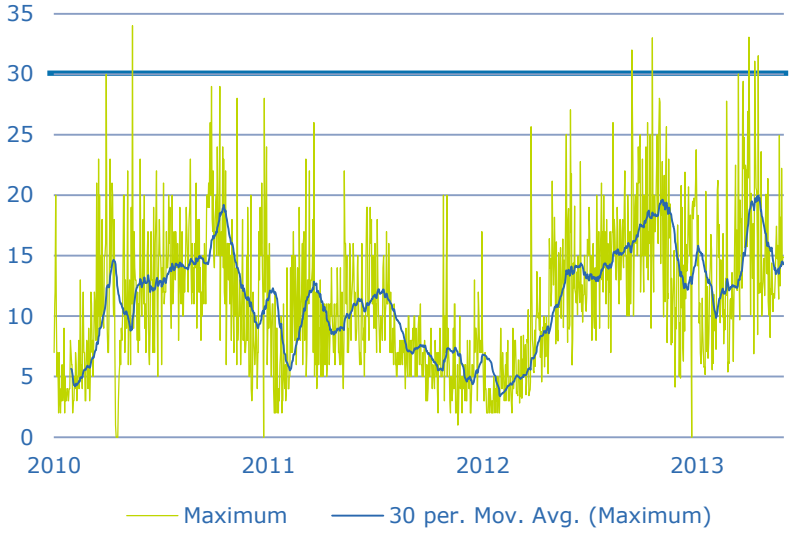
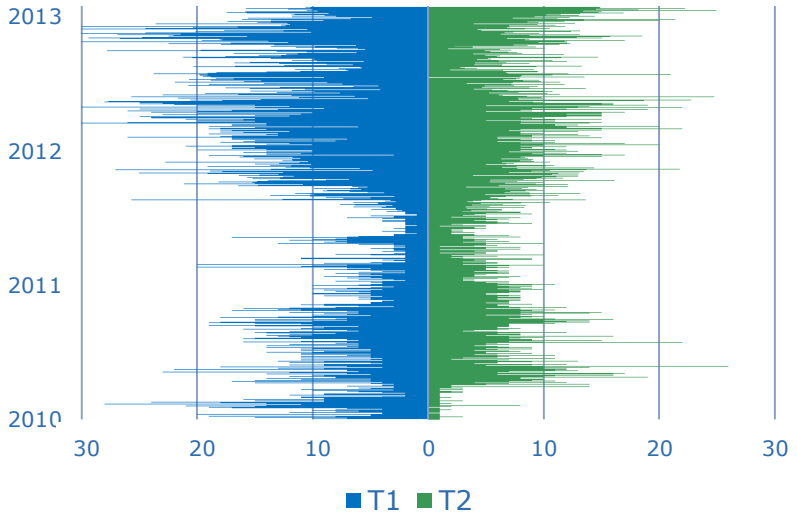


Chart 7.3: Security queue differences by terminal



Source: DAA, CAR calculations

There have been six breaches of the 30-minute maximum for waiting in the security queue. There was one breach in 2010, two in 2012, and three in 2013.

As the chart above shows, longer security queues have become more common at Dublin Airport in the past year. The 30-day moving average for the maximum daily queue time has not fallen below ten minutes since May 2012, except for a few days in February 2013.

Since T2 opened, the longest security queues have tended to occur in T1. On average the longest queue in T1 has been three minutes longer than in T2.

The current quality of service regime sets an overall target for security queue lengths at the two terminals. When there is a breach the price cap is lower, but there is currently no mechanism in place that attempts to recompense specifically those users who have been adversely affected by the breach of the target.

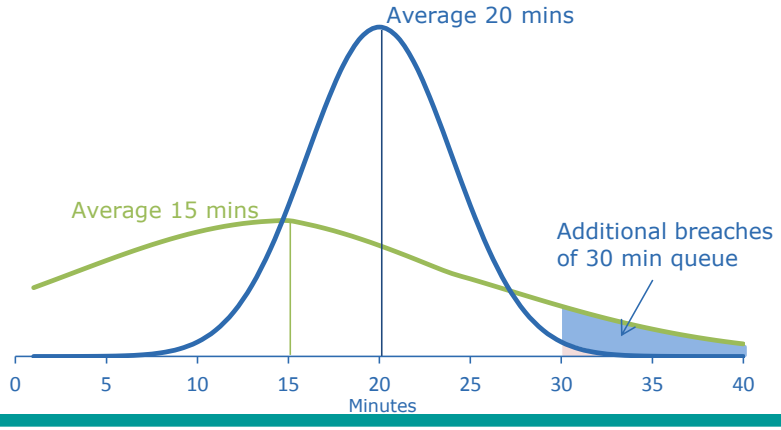
Is Service Improved by Reducing the Average or the Number of Tail Events?

Agreeing that shorter security queues are desirable only partially addresses the question of how to assess whether the DAA is managing the queues better. In 2009, the feedback we received suggested that the biggest concern of users was passengers having to wait a very long time, rather than reducing the average waiting time for passengers.

Consequently, we adopted a target that no passenger should have to wait more than 30 minutes. Previously, the DAA had been reporting the percentage of passengers having to wait more than five minutes, with a target that for 95% of the time the queues should be less than five minutes.

The graph below gives two queuing scenarios, one with an average queue length of 15 minutes the other 20 minutes. However, the one with the lower average has a higher level of variance and breaches 30 minutes more often. This illustrates that averages can hide variances.

Chart 7.4: Averages and tails



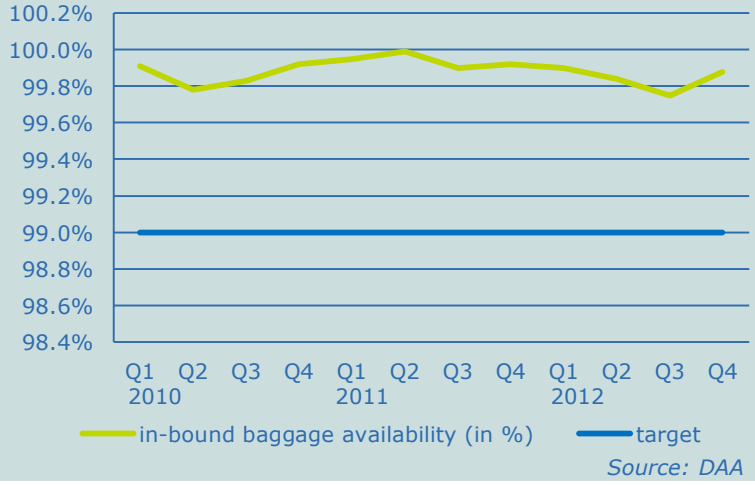
Baggage belt availability

The existing Determination also has targets for baggage belt availability. As with security queues, decisions about whether to focus on averages or tail events may matter.

For **outbound baggage belt availability,** the target is to avoid lengthy delays. To date the DAA has not failed to meet the target of always being able to provide airlines with access to a working outbound baggage belt within 30 minutes.

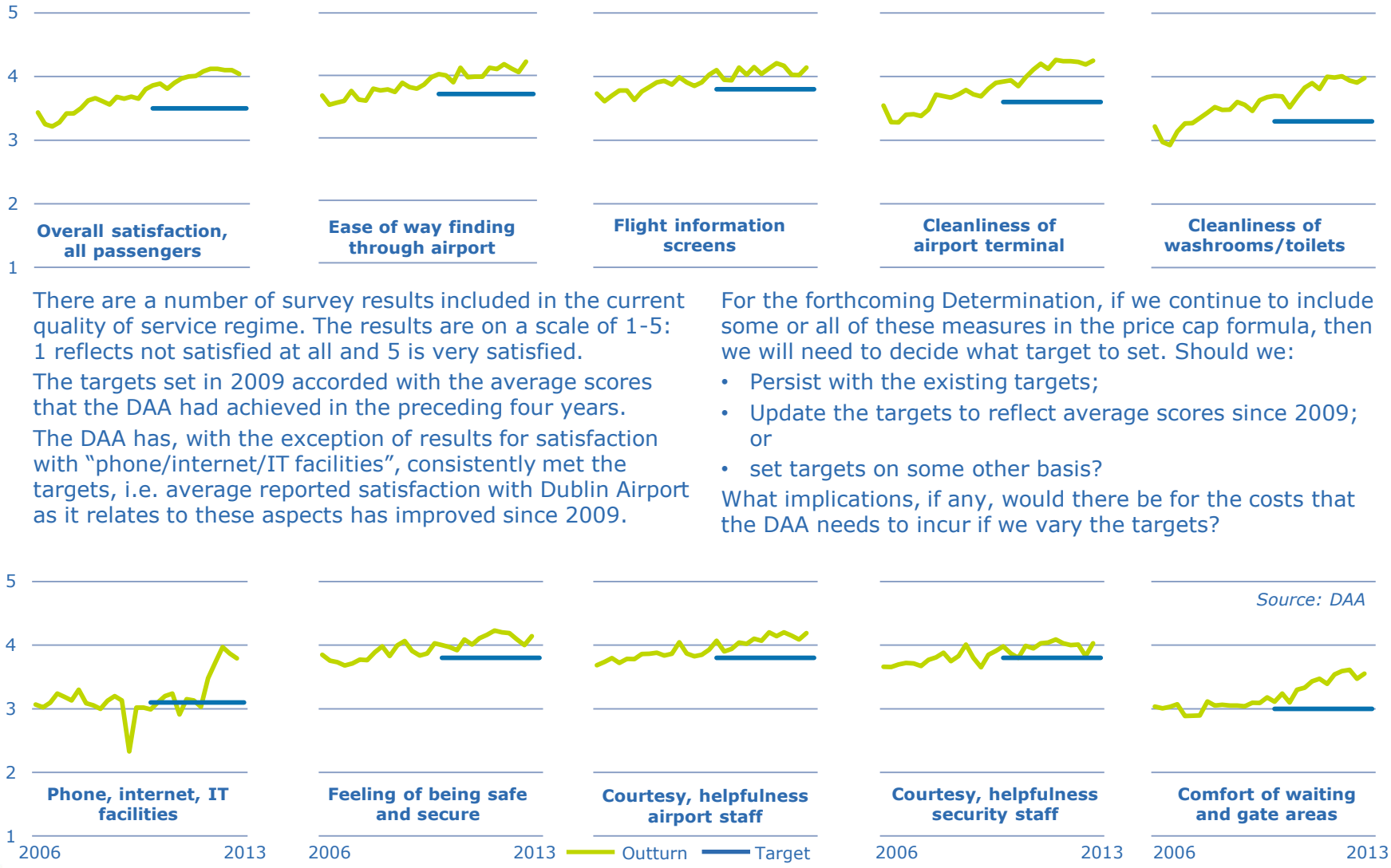
For **inbound baggage belt availability,** the focus instead is on ensuring that the belts are working for more than 99% of operational hours. As the chart below shows, the DAA has met this target every quarter so far.

Chart 7.5: Inbound baggage availability



Source: DAA

Dublin Airport is Receiving Better Survey Results than It Did Prior to 2009



There are a number of survey results included in the current quality of service regime. The results are on a scale of 1-5: 1 reflects not satisfied at all and 5 is very satisfied.

The targets set in 2009 accorded with the average scores that the DAA had achieved in the preceding four years.

The DAA has, with the exception of results for satisfaction with "phone/internet/IT facilities", consistently met the targets, i.e. average reported satisfaction with Dublin Airport as it relates to these aspects has improved since 2009.

For the forthcoming Determination, if we continue to include some or all of these measures in the price cap formula, then we will need to decide what target to set. Should we:

- Persist with the existing targets;
- Update the targets to reflect average scores since 2009; or
- set targets on some other basis?

What implications, if any, would there be for the costs that the DAA needs to incur if we vary the targets?

Source: DAA

Should We Refine or Drop the Service-Quality Regime?

With the experience of the existing scheme, is there a case for the next Determination also including a service-quality component in it? If so, are there any changes that we should make to the existing scheme?

The preceding pages, looking at outturns for the measures currently included in the scheme, allude to some of the things that might be changed and relevant considerations. In the next few pages we outline more generally factors parties might consider when proposing a change:

- How does our approach compare to the regulatory treatment elsewhere?
- What aspects of service quality matter?
- How might these be measured?
- What should be the target level(s) of service quality?
- What financial incentives should the DAA have?

If we do decide to continue with a service-quality component in the price cap, we would also be willing to consider whether there might be scope to introduce more flexibility into the scheme.

Would there be interest in a regime that permitted some combination of the measures, targets and weights to be updated during the life of the Determination to reflect either changing tastes or changing technologies? Such arrangements exist at some other airports, with scope for the airport and airlines to agree a revised set of performance targets for the forthcoming period.

Whether and how such flexibility could be incorporated into a determination for Dublin Airport is uncertain. Supporters of such an arrangement might comment on how such flexibility could work in practice at Dublin Airport.

Scope of Scheme	✓ Which aspects are relevant for airport quality of service? ✓ Do users want to change the focus of the scheme? ✓ Are there items included in the 2009 scheme which are no longer relevant? ✓ Are there any recent developments in the aviation industry that require new criteria?
Targets	✓ On what basis should targets for 2015 be set? ✓ Do all targets have to be met or can they compensate for each other? ✓ Should targets be fixed for four-plus years or should they evolve with time?
Link with Price Cap	✓ Should there be financial incentives associated with meeting the targets? ✓ Should there be a system of bonuses and/or penalties? ✓ What are basic standards and what are users willing to pay for additional services?
Administration	✓ Who should be responsible for collecting the data? ✓ How, where and with what frequency should results be published?

Some Examples of How Other Regulatory Regimes Treat Airport Service Quality

- 7% of revenue at risk
- Security queue: 95% less than 5 minutes; 99% of passengers wait less than 10 minutes (LHR).
- 9 asset availability targets, including baggage belts
- 4 passenger survey measures

Heathrow & Gatwick

- 5% of revenue at risk
- Security queue target, subjective measure
- Asset availability targets, including baggage belts
- 15 passenger survey measures

Budapest airport

- 4.5% of revenue at risk
- Security queues: 100% of passengers wait less than 30 minutes
- Inbound and outbound baggage belt availability targets
- 10 passenger survey measures

Dublin Airport

- 1% of revenue at risk if targets below lower bound, 1% bonus if above upper bound
- No security queue target
- 4 asset availability targets, including baggage belts
- 5 passenger survey measures

Aéroports de Paris

- 1% bonus available (0.5% of which is for environmental measures, e.g. waste management.)
- Security queue: 90% of passengers wait less than 10 minutes
- Inbound baggage availability targets
- No subjective measures

Rome Fiumicino

- No revenue at risk – ACCC monitors results
- No security queue target
- No asset availability targets
- Numerous passenger, airline and landside operator survey measures

Australian airports

What Matters for Service Quality?

There is no unique way to try and capture the concept of service quality at an airport; the different mix of measures used in other regulatory service-quality schemes illustrates this point.

For the next Determination, it is open for us to change the mix of measures that we look at. We might decide that there are other aspects of service that should be added, or that some of the existing measures should be dropped as users would be better served from the DAA concentrating its efforts elsewhere.

In choosing what aspects of service quality to include, guiding principles might be:

- The extent to which the DAA can control that aspect;
- The availability of a suitable metric to measure it; and
- User preferences.

A service-quality monitoring regime should ideally generate results such that if people think Dublin Airport offers the best airport experience, it will receive the best results. The table on the right ranks the various ACI survey results according to how highly the airports receiving the best "overall satisfaction" scored in each of the categories. It arguably indicates the features of an airport that are most important to passengers' overall experience – clean terminals matter, value for money in restaurants less so. (The items in bold font are currently included in our service quality regime.)

The preferences of users other than passengers also matter. We are keen to learn if airlines and ground handlers, for example, want the service quality regime to continue to focus on security queue times and baggage belt availability.

	What the best airports do best?
1	**Cleanliness of airport terminal**
2	**Overall satisfaction**
3	Ambience
4	**Cleanliness of washrooms**
5	**Courtesy, helpfulness of airport staff**
6	Availability of washrooms / toilets
7	**Feeling of being safe and secure**
8	**Comfort of waiting / gate areas**
9	Efficiency of check-in staff
10	Courtesy, helpfulness of check-in staff
11	Availability of baggage carts
12	Thoroughness of security inspection
13	**Ease of finding your way**
14	**Courtesy of security staff**
15	Waiting at ID inspection
16	Waiting at check-in
17	**Flight information screens**
18	Waiting at security inspection
19	Courtesy of ID inspection staff
20	Ground transportation
21	Arrivals passport inspection
22	Business lounges
23	Customs inspection
24	Ease of making connections
25	Speed of baggage delivery
26	Bank facilities
27	Parking facilities
28	Shopping
29	**Internet access/Wi-Fi**
30	Restaurants
31	Walking distances
32	Value for money of parking facilities
33	Value for money of shopping
34	Value for money of restaurants

Source: www.Airport-World.com

How Should We Measure Quality of Service?

If we identify an aspect of service quality that is important to users, we also need to identify a means of quantifying how well the DAA is providing that service.

We currently use a mix of metrics, including survey results. Some parties have previously argued that survey results are too subjective, preferring more objective metrics such as length of time in a queue.

Feasibility is a factor when assessing what metrics to use to measure an aspect of quality. Certain features, such as the cleanliness of the airport, do not appear to lend themselves readily to direct measurement. Users' stated perceptions of how good the service at Dublin Airport is maybe the least bad way to capture whether standards have improved.

Even where alternatives to survey responses seem possible, careful thought to exactly how the metric will be defined and estimated is warranted.

The DAA is currently responsible for arranging for all the service-quality results to be collected. The current regime specifies that the DAA should use the ACI survey results; for baggage belt availability and security queues there is no requirement for the DAA to use a specified third-party to oversee data collection.

Suggested alternative data sources that might be used to measure service quality are welcome. Such suggestions might also advise on what we should do in the event that the third party ceases collecting the data prior to the end of the next Determination.

One important trade-off we will be mindful of is ensuring that the administrative costs associated with collecting the data do not become disproportionate.

For measures that the DAA collects, the ability to audit the results will be an important consideration.

Security queues: Defining metrics that stand the test of time

The experience with measuring security queues since 2009 illustrates the importance of carefully defining service-quality metrics. As a determination lasts for four-plus years, it needs to be as robust to unforeseen changes as possible.

For security queues, the current Determination defines

- ☐ *"The queue start position […] as where the passenger joins the back of the queue (which may or may not be inside the security queue area). The queue end position is where the passenger hands over their boarding pass to be checked."* (Final Determination, para 4.29),

This permitted measuring T1 queue lengths manually from the landside of the airport. Subsequently, the DAA completed T2, re-designed T1's security area and introduced an automated solution for measuring queue times. Since T1's refurbishment, the DAA has voluntarily reported times for queuing to a point beyond the boarding-pass check that formally defines the queue end-point in our Determination. For the next Determination it should be possible to adopt a definition that accords more closely with what people would commonly associate with security queue times.

How Should We Set Any Targets for Service Quality After 2014?

Should we set targets that require improved service?

The existing quality of service targets were influenced by the levels that the DAA had been achieving in the years leading up to 2009; they were not intended to represent a departure from the pre-existing service levels at Dublin Airport. For the most part, the DAA has outperformed the targets set in 2009.

In thinking about the targets to set for the forthcoming Determination, questions that will be of interest include:

- What level of service quality do users want? Have their demands changed since the last Determination?
- How does service quality at Dublin Airport compare with other airports?
- Have there been any technological developments that might be expected to affect the service quality that can be provided?
- How able is DAA's management to affect different aspects of service quality? What are its incentives to provide good service absent any regulatory target?

There may be a trade-off between service quality and price.

Users wanting revised targets should indicate how much extra they are willing to pay for improved standards (or how much airport charges would need to fall for them to support lower targets).

There is also a question about the extent to which revising the quality standards targeted would have implications for the DAA's costs.

Chart 7.5: Passenger satisfaction & airport charges

Source: Copenhagen airport annual report 2011, CAR calculations

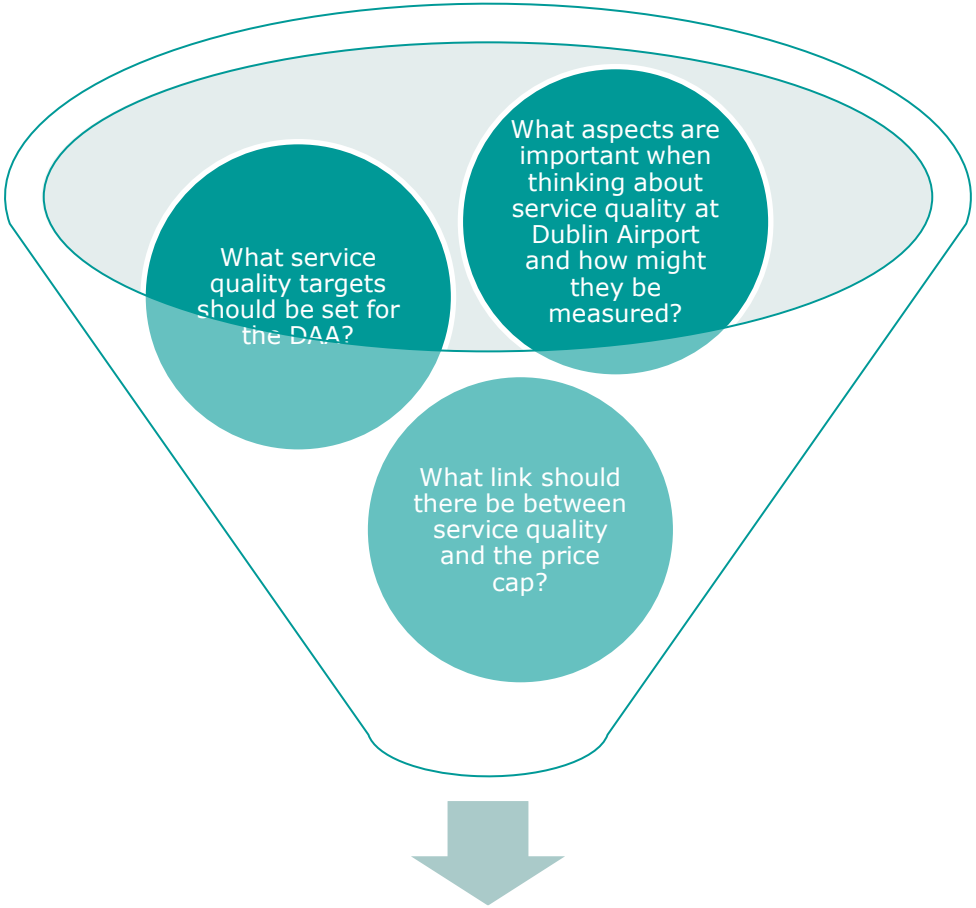
The chart above shows overall passenger satisfaction and airport charges for a sample of European airports in 2011.

At that time there was not a statistically significant relationship between price and quality for this grouping of airports: some airports achieved higher levels of quality without charging higher prices, while other high-priced airports achieved below average quality levels.

What Incentives Should the DAA Face Relating to Service Quality?

Quantum at risk	Up to 4.5% of the DAA's revenues from airport charges currently depend on the DAA meeting service-quality targets. With the scheme now established, is there a case for varying the quantum of money at risk if service quality deviates from a given standard?
Penalties or bonuses	Currently the price cap falls if the DAA fails to meet a target. Are there any advantages or disadvantages to permitting the price cap to rise if the DAA meets a target?
Weighting of different measures	What relative weights should we attach to the different items included in any service quality regime? Currently the security queue target alone accounts for one-third of the DAA's financial incentives to provide a good service.
Frequency of assessment	We publish quarterly reports on how the DAA has fared against the various service-quality metrics. The financial implications of any breach are reflected in the annual price cap. Should we alter the frequency of monitoring reports and/or how quickly deviations from the target affect the DAA financially?
Compensating affected users	The current service-quality regime does not require the DAA to recompense those users directly affected by poor service standards, e.g. passengers who have to queue for more than 30 minutes. Instead we allow the DAA to collect lower airport charges from the generality of users. Should this change? If so, how?

Quality of Service Issues



How should we treat service quality when making a determination for Dublin Airport?

8. Other Issues

- The preceding material in this document has focussed on the traditional "building blocks" that we have used when calculating past price caps, along with material on financial viability, quality of service and a more general discussion on the approach to regulation.
- It is possible that there are issues that parties want us to consider prior to making a determination that do not readily fit into one of those sections.
- We have identified three possible issues:
  - The separation of Shannon airport
  - Price differentiation and
  - Price-cap compliance
- There may be other topics that we have not identified here or elsewhere in the paper that parties consider important. The omission of a topic from this Issues Paper does not mean that we have decided to have no regard to the matter.

The DAA has Restructured Since 2009 with the Shannon Airport Separation

On 31 December 2012 Shannon airport was separated from the DAA Group.

Our determinations only govern airport charges at Dublin Airport, but nevertheless we are required to have regard to restructuring, including the modified functions of the DAA. The separation did not result in any revision to the prevailing price cap at Dublin Airport, and we have no plans to make any changes to our current Determination. The box on the right shows that Shannon airport did not feature prominently in calculations in 2009.

For the 2014 Determination, we are aware that the DAA Group:

- made a €105.5m dividend in specie and transferred various assets, employees and businesses to Shannon Airport Authority, with the FFO/debt ratio for the Group in 2012 going from 19% with Shannon to 18% without
- incurred a one-off restructuring charge of €5m in 2012 under exceptional items
- would have recorded a 2012 Group profit after tax (pre-exceptionals) of €48m, €5m higher than with Shannon
- may provide some services, such as back-office support, to the Shannon Airport Authority.

We will consider whether and how these and other aspects of the separation should affect the 2014 Determination.

Shannon airport in the 2009 Determination

We are aware of two ways in which the DAA's ownership of Shannon airport was considered in the 2009 Determination:

1. *The treatment of head-office costs*. We allocated 78.5% of these costs to Dublin Airport when calculating a price cap. The allocation rule was based on Dublin Airport's share of total passengers at Cork, Shannon and Dublin airports. If DAA Group had not operated Shannon airport it is possible that we would have allowed a different amount for head-office costs and/or altered the share of these that we allocated to Dublin Airport.

2. *Assessing whether the DAA was able to operate Dublin Airport in a sustainable and financially viable manner*. We looked at various financial metrics for the DAA Group, using estimates that included historic and forecast data for Shannon airport. How removing Shannon airport numbers from those calculations would have affected our conclusions in 2009 is uncertain, given the need to make assumptions about how the Group's income, cash flow and balance sheet would change. The counter-factual of no Shannon airport may have caused us to set a higher or lower price cap for 2010; for the years 2011 through to 2014 a separate Shannon airport is unlikely to have generated a lower price cap since we had already concluded that the DAA Group's financial position would be satisfactory.

Is There a Need for Us to Mandate Differential Pricing? If so, How?

Differential prices appear to have a number of attractions, allowing the airport operator to offer a more tailored service to users and making airport users more aware of the (opportunity) costs that their operations give rise to at the airport.

For example, there may be a case for asking:

- users who want to make use of air bridges to pay higher charges to cover the costs of installing and maintaining such bridges, as is currently the case; and
- users who want to fly at the busiest times of the day to pay more as a means of rationing demand at that time of the day and to contribute to the cost of providing additional capacity at those times.

Previous experience with sub-caps

Off-peak runway charges. The 2001 Determination specified a lower price cap for users operating at off-peak times. This sub-cap was not retained in 2005. During its existence, the time of the day when there was peak demand for the runway had moved such that the sub-cap had ceased to apply to the busiest time of the day.

Cargo. In 2001 and 2005 there was a sub-cap limiting the charges that the DAA could levy on cargo users. This was relaxed in 2009 with the support of cargo users, who felt it served no useful purpose. The DAA was not levying cargo-specific charges at the time.

If differential pricing has merit, is there a case for the Determination to be structured so as to encourage or mandate it? For example, should the Determination:

a. Offer scope for users to agree with the DAA to pay for additional aeronautical services without the DAA having to worry about how this will affect its compliance with the price cap; or
b. Mandate a sub-cap on what the DAA can collect from users wanting a more basic service or wanting to fly at less popular times?

Or should we continue to grant the DAA flexibility to structure its charges as it sees fit, subject to complying with an overall per-passenger price cap?

Practical problems exist that need to be addressed if including a differential pricing component to the price cap.

- What should the quantum of the differential be? Should it be estimated with regard to demand characteristics and users' willingness to pay or with regard to costs? If the latter, which costs? Should capital costs be included using indexed historic costs?
- The wording used in the Determination may need careful attention to avoid creating perverse incentives or allowing the DAA to circumvent the intention of the sub-cap. For example, a sub-cap on charges paid by users in a given terminal would have to be robust to changes in things such as the runway charges the DAA levies or the fleet mix of users in a terminal.
- What should happen if, for example, all airlines want to use remote stands because of a determination for four-plus years mandating lower charges for these stands?

Reviewing the Mechanics of the Price-Cap Formula and Price-Cap Compliance

This year's provisional price cap of €10.67 is calculated from the following formula specified in the 2009 Determination:

$$P_{2013} = [(€7.70 + T2_{2013} + Triggers_{2013}) * (1 + CPI_{2012}) + k_{2011} + w_{2011}] * QS_{2013}$$

$T2_{2013}$ and $Triggers_{2013}$ describe trigger events that prompt an increase in the price cap to remunerate past or future capital expenditure. The merits of retaining such features is discussed in the section on capital costs.

CPI_{2012} refers to the change in the consumer price index between October 2009 and October 2012. The price cap controls for unexpected inflation or deflation in the general consumer price index. There might be an argument that the price cap should be linked to some other index, possibly one that more closely aligns with the cost base of the DAA or the discretionary income of current and prospective users of Dublin Airport.

W_{2011} is a small adjustment made annually to reflect differences between what we expected to levy the DAA to fund the office and what we actually levied the DAA. The rationale for this adjustment is that the cost is largely outside the control of the DAA. There may be other costs for which a similar explicit adjustment to the price cap should apply. Alternatively, such adjustments could be deferred until the next Determination rather than correcting for them annually. There are precedents for this latter approach: there is no annual reconciliation between expected and outturn revenues from ATI fees; and the 2011 aviation terminal services charges Determination has deferred reconciling expected and outturn CAR levies on the IAA until the time of the next Determination.

K_{2011} deals with situations where the DAA collected less than the allowed cap in an earlier year. The possibility of not collecting a sum exactly equal to the cap each year arises in part because the DAA chooses not to levy solely a charge per passenger. Instead it applies a range of airport charges, some of which are not perfectly correlated with passenger numbers, e.g. landing and take-off charges. The DAA complies with the price cap if total revenues divided by passenger numbers are less than that year's price cap.

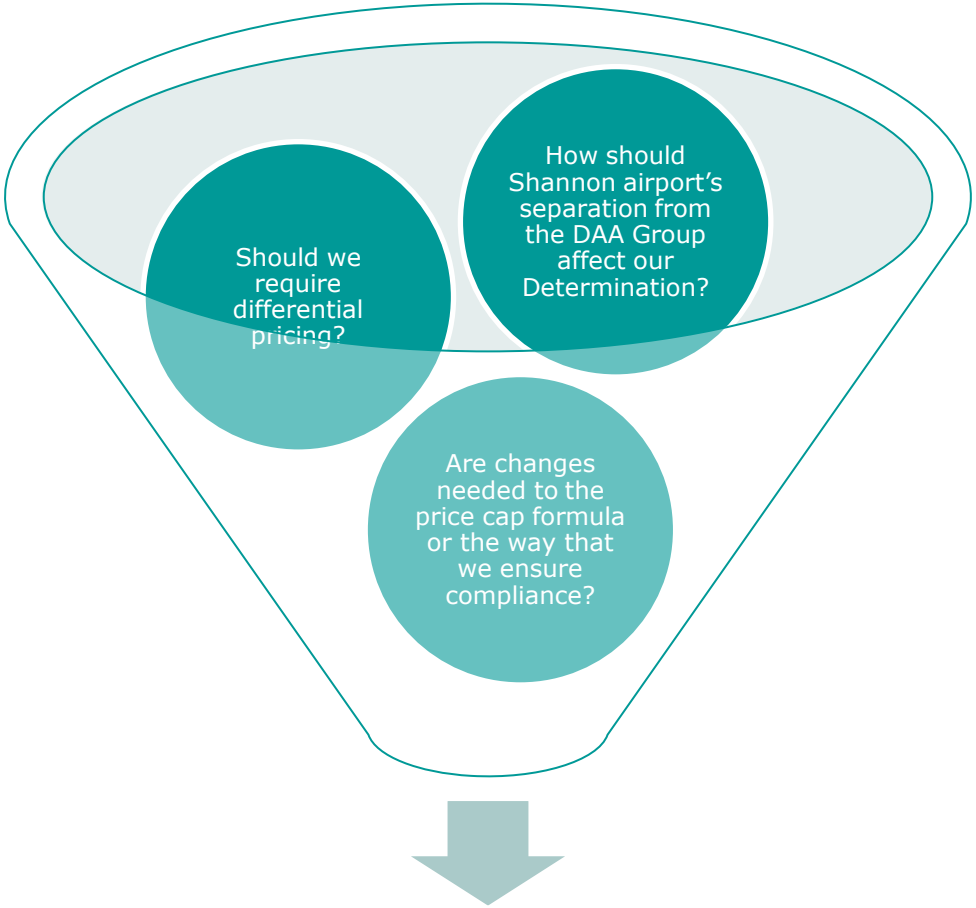
The current Determination allows the DAA to roll-forward past under-collections into future price-cap calculations, subject to the under-collection not exceeding 5% of the revenues that the DAA was allowed to collect that year.

Over-collections cannot be rolled forward. Instead, the DAA has 45 days in which to reimburse users (in a manner at its discretion) should it find that its per passenger revenues in a calendar year exceeded the level specified in the price cap. In contrast, we allow the IAA 90 days in which to reimburse users after the year end should it have breached the past year's price cap.

QS_{2013} adjusts the price cap down should the DAA fail to meet quality of service targets. The price-cap formula means there is no requirement for the DAA to reimburse those users specifically affected by a breach of the service standards.

We invite comments on possible changes to the formula.

Other Issues



What other factors should we consider, and how, when making the 2014 Determination?

Responding to this Consultation Paper

We would like to hear the views of all interested parties in relation to any of the issues discussed in this report, and more generally on matters that parties think are relevant for the forthcoming 2014 Determination. Respondents are encouraged to support their views and comments with relevant evidence where possible.

Responses to this consultation paper should be titled "**Response to Airport Charges Issues Paper**" and emailed to

info@aviationreg.ie

or sent by post to

Commission for Aviation Regulation
3rd Floor, Alexandra House
Earlsfort Terrace
Dublin 2

The deadline for responses is **5pm Friday, 27 September 2013.**

We expect to publish on our website all responses received shortly after this deadline. If submissions contain confidential material, parties should clearly mark the material as confidential and provide a separate version that can be used for publication. Where possible, parties should strive to provide responses that do not rely on confidential information; we are likely to place more weight on material that can be exposed to public scrutiny. Parties should also be aware that we are subject to the provisions of the Freedom of Information legislation, which may capture material marked as confidential in certain circumstances.

Any party that submits information to us shall have sole responsibility for the contents of such information and shall indemnify us in relation to any loss or damage of whatsoever nature and howsoever arising that we suffer as a result of publication or dissemination of such information in whatever media. We do not ordinarily edit responses received.

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