

Response to the Q6 Policy Update

CAA/Q6/31

July 2012

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Overview

The CAA's review presents an opportunity for a further improvement. It is an opportunity to align the regulatory framework with passenger priorities and take a further step towards achieving Heathrow's vision of becoming 'Europe's hub of choice and the UK's direct connection to the world by making every journey better'.

We plan to publish an Initial Business Plan for Q6 towards the end of July 2012, and envisage that it will provide the basis for consultation with Airlines and other stakeholders on our service proposition, priorities for Q6 and potential development scenarios.

In this response to the CAA's "Policy Update", we focus on the policy aspects and the mechanisms which would enable alignment of the regulatory framework with the passenger priorities.

Our response is structured as follows:

- Introduction
- Section 1 Context for the Review
- Section 2 discusses the Government's reforms and licensing strategy;
- Section 3 addresses the issues raised in consultation on passenger outcomes and service quality;
- Section 4 considers the impact of the CAA's competition assessment and the rationale for regulation;
- Section 5 provides comments on the proposed form of price regulation at Heathrow;
- Section 6 considers the CAA's review of incentive mechanisms and the regulatory framework; and
- Section 7 sets out Heathrow's policy on WACC and related issues.

Introduction

Putting the passenger at the heart of the system

We are encouraged by the CAA's analytical framework, and the general approach toward developing an evidence-based work programme around passenger outcomes. Similarly, the CAA's proposed approach to encouraging commercial outcomes, through constructive engagement and other mechanisms is welcome. This will encourage greater commercial collaboration between airports and airlines, and help positively shape the regulatory and commercial landscape in Q6 - to the overall long-term benefit of the passenger.

In terms of legal context, we acknowledge the CAA's desire (and need) to develop future economic regulation in line with the Government's intended reform of the legislative framework (Civil Aviation Bill). We are particularly keen to see the benefits arising from the proposed new primary duty putting passengers at the heart of the regulatory system. The introduction of a more targeted, efficient and proportionate economic regulation framework will bring benefit to all.

Aligning regulatory policy with (passenger) outcomes

While the CAA's consultative approach and proposed analytical framework is welcome, Heathrow is keen to see the CAA start to more clearly align its policy intentions with passenger interests - how would the CAA's intended policy on airport charges at Heathrow directly impact the downstream aviation market and consequently the passenger?

We note that in considering the alignment of passenger interests the CAA refer to passenger "affordability" and choice, while ensuring that passengers' basic needs are met (Fig.3.3), it will be important for all stakeholders to understand how the CAA's intended regulatory policy at Heathrow will actually give effect to these types of passenger outcomes. In short, a clear evidence-base should be developed such that a tangible link exists between CAA's regulatory policy at Heathrow and how this policy enables the CAA to meet its statutory duties.

Ensuring the regulatory framework is stable, proportionate, practicable and economic

Further to the regulatory principles set out in our earlier response to the CAA's Setting the Scene consultation, stability and certainty are key to any company's ability to effectively

and efficiently manage the business, and Heathrow is no exception (where shareholders have invested patiently for several years with minimal return).

In terms of proportionality, an appropriate balance is required as between economic regulation and competition. Economic regulation should only be considered where there is an enduring market failure and be determined according to a “theory of harm”, whereby any potential detriment is first defined in terms of the possible implications for users, and an assessment made as to whether this can (or should) be remedied by a form of economic regulation.

These are extremely challenging times for both Heathrow and Airlines, and we continue to operate in a turbulent economic climate. It is difficult to predict with any degree of accuracy the likely economic environment over the next six to twelve months, much less the potential economic climate throughout Q6. Moreover, Heathrow continues to bear the financial burden of the under-forecast of passenger volumes - through a lower return on capital relative to the determined level of WACC.

Investor confidence will continue to be a key issue; economic regulation must be therefore proportionate, and maintain an appropriate balance between investor returns and proposed outcomes.

1. Context for the Review

Economy

The CAA's regulatory policy will be taken forward at a time of considerable economic uncertainty, although we note that the CAA's consultation makes no reference to the wider economic environment, or its potential influence on airport regulation. If the risks to a deeper European recession materialise, this will have wider economic impacts and will almost certainly affect demand at Heathrow and elsewhere.

While we would not expect the CAA to give detailed consideration to macro-economic factors, and to an extent these uncertainties will be reviewed to help inform the CAA's thinking on WACC and passenger forecasts, there is a concern that a significant economic contraction may have a wider and potentially severe impact on the wider aviation market.

Capacity

Heathrow continues to be capacity constrained. In a recent Insight Note the CAA commented that, "... *increasing capacity constraints in the South East, which will increasingly limit the choice and value of available flights. Limited supply means the price of air travel is likely to rise*", and; "*the lack of available capacity at Heathrow is already beginning to affect the UK's air services agreements with foreign states*".

It is clear that policy on the economic regulation of airports cannot be considered in isolation - the issue of capacity is central to the economics of supply at Heathrow. While the CAA cannot anticipate the outcome of the Government's review of aviation policy, the significance of capacity to supply dictates that the CAA must give some consideration to the relevance of constrained capacity on any future proposed price control settlement.

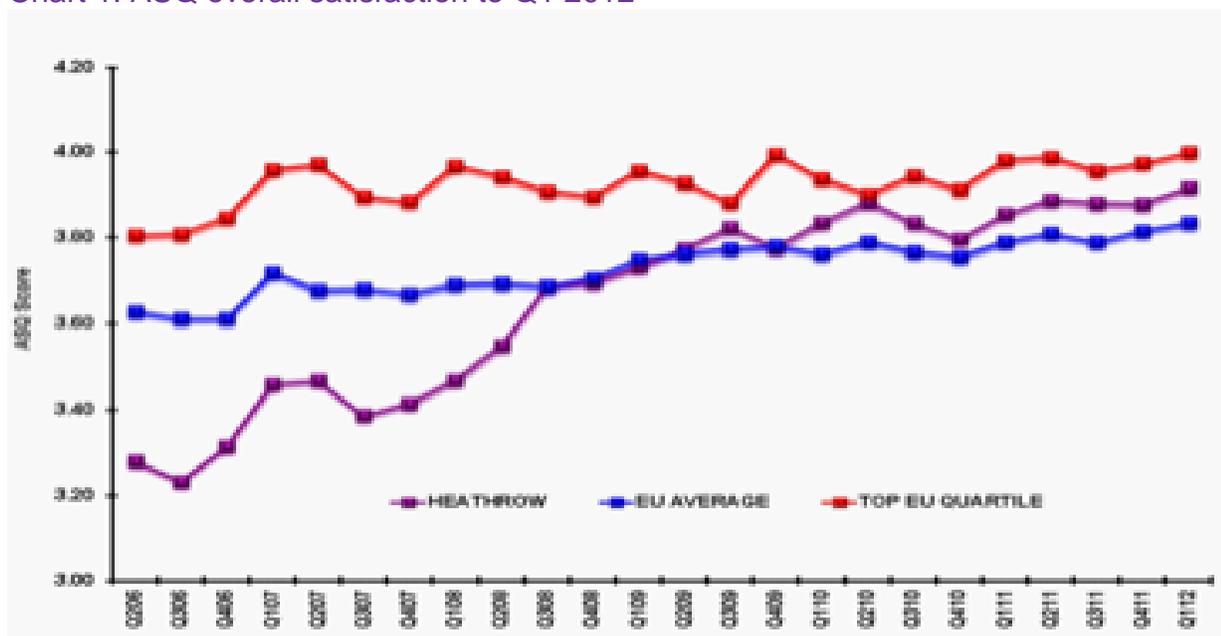
Heathrow continues to improve

Putting passengers first is at the core of Heathrow's strategy and we continually strive to maintain standards and improve service where it matters for passengers in a cost-effective way. As noted in more detail in Section 6 below, investment at Heathrow is broadly set to meet the initial Q5 forecast and this will continue to help improve passenger experience and levels of satisfaction. 72% of passengers now rate the airport experience as excellent or very good, with all journey steps closing in on the EU top quartile - this compares to the 54% measured in late Q4.

These improvements in service have also been underpinned by the airlines' efforts with the airport playing a key supportive role, for example, on punctuality and baggage-misconnect rates, both of which have improved considerably since the start of Q5.

Heathrow's continuing improvement is illustrated in Chart 1 below; in Q1 2012 Heathrow scored 3.92 which represents the highest measure for Heathrow to date and is illustrative of the general upward trend in the ASQ at Heathrow.

Chart 1: ASQ overall satisfaction to Q1 2012



“Affordability”

Airlines have identified “affordability” of Q6 aeronautical charges as a key issue. Clearly, it is in Heathrow’s interests to remain competitive relative to the European and other major hub airports, particularly when it is becoming increasingly difficult to compete on destinations.

Whereas competitiveness is a criteria that can be used to assess Heathrow, affordability is more difficult to define, and indeed can only be done so particular to an individual airline. The potential for different airline passenger profiles, different airline cost structures and inter-temporal considerations all serve to illustrate the challenge Heathrow faces in seeking to balance a number of competing interests and priorities. This also logically points to very different affordability boundaries for each airline.

The concept of affordability captures a number of potential issues. The Q6 settlement cannot be simply based upon a principle of *universal service*. It should be recognised that there may be a range of “affordability” which more properly reflects differing levels of investment and service by Heathrow (and which reflects inherent trade-offs), e.g., something related more to the economic concept of willingness to pay.

While the principle of “affordability” will continue to help inform Heathrow’s business planning process, we are keen to ensure that any proposed settlement is based upon a rigorous assessment of the efficient forward-looking costs, investments and other relevant components (including an estimated reasonable required rate of return), in addition to consideration of the wider market dynamic and a clearer understanding of what “affordability” means downstream of Heathrow.

2. Government Reform and the future Licensing Framework

While the CAA is correct not to anticipate Parliament's consideration of the proposed reforms (the Bill), Heathrow agrees that the CAA should develop future policy under the terms of the proposed Bill.

Given the continuing progress of the legislative reforms, it is reasonable to expect that Royal Assent would be achieved early in 2013. It is therefore reasonable to assume that the new regulatory framework will begin to take effect from 2013 (with the implementation of secondary legislation); an interim period will apply until Q5 expires, and the new framework will then provide the basis for economic regulation at Heathrow from April 2014.

In light of the above, the CAA's programme of work for the Q6 review provides a real opportunity to ensure there is greater coherence between regulatory policy and the overarching statute. Reducing regulation where possible, and in the long-term creating a more flexible and agile regulatory framework that reflects the systematic nature of service delivery at the airport are key to passenger experience improvements. This will be essential to ensuring that the regulatory framework remains current and responds appropriately to the market dynamic without being so erratic as to become unpredictable.

There is clearly a strong inter-dependency between the work on developing the licence and the CAA's consideration of the economics on any future price control at Heathrow. The proposed programme of work on licensing, in terms of the timescales, process and content, will therefore be central to Heathrow's consideration of any proposed "settlement" for Q6.

With regards to the CAA developing a strategy for airport licensing, we note the CAA's intention to conduct extensive stakeholder discussion - and to consult alongside the Q6 review. We set out below some initial observations on the process and make a number of observations for further consideration.

Establishing an appropriate foundation for licence conditions

The draft Civil Aviation Bill sets out a framework whereby the CAA can regulate through a new licence regime. We note however that the CAA's consultation does not distinguish between the types of licence condition envisaged by clauses 18(1) (a) market power conditions; and (b) other conditions. The consultation is extremely wide-ranging, and much of what is considered is likely to fall within 18(1) (b) rather than (a). The Act specifies in detail the analysis which must be undertaken for market power conditions.

However, very similar levels and types of analysis are likely to be required for other conditions in order to comply with better regulation requirements (including proportionality).

We believe the CAA will need to undertake a fundamental review of how it intends to evidence and justify the imposition of each licence condition. Along with its primary duty, the CAA has a wide set of subsidiary duties and it is not clear at this stage how the CAA intends to balance these various duties, or how it intends to ensure consistency in its policy decisions. For example, the current consultation does not appear to assess how the CAA might exercise its primary duty through the promotion of competition in the provision of airport operation services (as required by section 1(2)).

The consultation appears to be informed by a presumption that the state of competition in relation to the services is effectively static – this is obviously not the intention of regulation or the Act, which specifically refers to the need to “promote” competition. There is no indication that the CAA is considering how it intends to use the licence framework to encourage the development of competition; rather, where competition is considered (often indirectly) it seems to be in relation to downstream services – i.e., competition between airlines.

It is also not clear how the CAA is intending to approach ‘other’ conditions that do not have a relationship with market power. In some areas of the consultation, the CAA appears to adopt the Government’s licensing policies (for example, in relation to the proposal to impose financial resilience conditions). However, Heathrow understands that the new statutory framework will require the CAA to set out an informed decision as to whether a condition is necessary and proportionate.

The passenger perspective

Heathrow strongly supports the primary duty which will put passengers at the heart of the system. As the CAA is aware, we continue to work constructively with all airport users to provide a better passenger experience.

In our response to “Setting the Scene” Heathrow did not accept the CAA’s assertion that the interests of airlines can be taken as a proxy for those of passengers (which are primary under the Bill). In our view, the CAA must follow the terms of the Act and form an independent view on passengers’ interests (see discussion above on the context for the review), as well as assess the airlines’ interests insofar as they may indicate passenger preferences.

Heathrow understands that the CAA now intends to adopt an approach based on the following working assumption(s):

- Firstly, that competition in downstream markets deliver better outcomes for consumers; and
- Secondly, that the interests of airlines will largely align with those of the passengers.

While the first assertion is reasonable; the second is less persuasive¹. For example, in the event the CAA were to publish more information on the complaints it receives, this type of information, along with visible evidence that airlines are fully complying with other consumer related regulation would give the CAA a firm basis for justifying this type of assertion. The CAA Consumer Panel and other external bodies (including airports and airlines) will also be able to assist the CAA in developing an evidence base that supports its decision making.

Content and scope of the proposed licence

On the approach to licensing strategy, we broadly agree that it may be difficult to design a licence to cover all eventualities; the CAA should only adopt conditions in the first licence where it has determined it has sufficient evidence to require its imposition. This should ensure there is a clear and predictable framework from the outset by setting out a core set of requirements that proportionately target a specific regulatory issue.

Over time there may be a range of issues where the CAA considers further intervention may be required. We do not expect, however that there will be the need for major intervention once a core set of requirements have been determined in conjunction with the Q6 price control.

In relation to securing requirements from third parties through contract, Heathrow notes that it is content to continue to work with all stakeholders, and where possible and necessary, coordinate activities. However, we also note that licences under the new Act cannot compel the licensee to take any kind of responsibility for the behaviour of third parties if that could give rise to some kind of legal jeopardy for the licence holder. The CAA will need to clearly identify the basis of any such approach, and whether it is warranted (under the statutory framework).

¹ For example, there is likely to be a conflict between the more short-term decision making characteristics in the “downstream airline market” relative to the long-term perspective required to ensure current and future passenger interests are met.

Opportunity for greater flexibility

The licence should only be prescriptive in areas where there is clearly a requirement to do so – for example the proposed price control condition. Heathrow considers that the CAA should not view the licence as a means to prescribe, in detail, a broad set of obligations. Indeed, we believe such an approach to licensing is likely to act against the very purpose of the future regime in terms of targeted but flexible regulation.

In the event that an overly prescriptive approach is adopted the CAA will then be required to navigate the statutory licence modification process (and potentially appeals) to amend conditions. The CAA's licensing strategy should consider how to maximise the ability of the market to work dynamically.

The CAA should therefore focus on setting high level conditions that are supported by and encourage the development of subsidiary plans, contracts and agreements. These subsidiary documents would typically need to be agreed through a collaborative process and would be judged in the context of the condition. They would still provide for the protection of users of air transport services and would be also used by the CAA in determining whether or not the airport was effectively compliant.

The advantage of such an approach is that the airport can then work dynamically with all stakeholders to deliver better outcomes for passengers within the broad regulatory constraints articulated in the licence. Heathrow believes this will be particularly relevant to any proposed regulation of service quality at the airport (see section 3).

Simultaneous consultation and review

Heathrow is keen to ensure that the development of proposals on the structure of the licence and its content proceed simultaneous to the development of CE and the wider Q6 review. It is critical for all stakeholders to have an early and clear understanding of how the CAA's regulatory policy is intended to be given effect through the licence.

As we move through the legislative and consultative processes, it will be important to ensure that regulatory uncertainty is minimised; uncertainty and risk will directly impact market and investor confidence in what is a highly capital intensive business. We note for example that there may be potential for inconsistencies between the proposed legislation (and related definitions etc.), and the current regulatory construct. Early and definitive guidance is required on all of these issues in order to avoid confusion and to mitigate unnecessary risk and uncertainty.

Also, we note that the CAA has introduced a wide range of potential regulatory interventions, some of which may be considered to go beyond a principle of targeted regulation (and which focuses on mitigating the effects of substantial market power). Given the potential scope of issues under consideration Heathrow encourages the CAA to narrow the scope of the types of interventions it may make, or at the very least, seek to 'close down' as many of the prospective issues as possible such that all stakeholders have a clear understanding and expectation of where and how the CAA will intervene (whether *ex-ante* or *ex-post*). This will enable Heathrow and other stakeholders to properly consider and more effectively manage both risk(s) and cost.

3. Passenger Focus and Service Quality

Heathrow is encouraged by the CAA's review of service quality issues, and also the consideration of how best to ensure outcomes are in the passenger interest; we note the proposed evidence-based approach and the intended review of all relevant data sources (including the CAA's proposed review of the current SQR regime).

Putting passengers first is at the core of Heathrow's strategy and we continually strive to maintain standards and improve service where it matters for passengers in a cost-effective way. Moreover, service quality at Heathrow is clearly not just about the current SQR, rather there are a number of incentives acting upon on the airport to improve service, not least the competitive pressure from alternative European hubs.

This section outlines Heathrow's on-going performance on service quality, and sets out views on a general approach to service quality in Q6. The CAA's consultation suggests that, "*one size [of regulation] may not fit all*", we believe this principle is equally applicable to service quality. The multiplicity of operations and business models at Heathrow indicates that demand for service could be variable across stakeholders (and over time).

Heathrow considers that, while the CAA clearly has a role in helping to establish a level of service quality that is consistent with its assessment of market power, it is not necessarily an area in which the regulator should adopt too prescriptive an approach, for example, by determining a "full set" of passenger and/or airline oriented measures and the related metrics. To the extent that demand for service will differ across stakeholders and evolve over time, any proposed regime should also avoid fixing the period of operation or setting too rigid a framework, this may well stymie collaboration or the emergence of more commercially oriented outcomes

Service quality at Heathrow has improved markedly and continues to improve. We believe there is still scope for further improvements as well as efficiencies, yet we are keen for the CAA to adopt a proportionate approach to service quality regulation. Heathrow service satisfaction levels are now consistently at levels comparable to the best in Europe. At the same time new service issues have emerged in Q5 for passengers – for example the importance of wi-fi provision would not have been predicted ten years ago.

In terms of specific regulation therefore, we believe that the Q6 SQR approach, in contrast to Q4 and Q5, need not focus on driving radical change in basic service levels. Rather we suggest a focus on maintaining standards, and on improvements in areas of the greatest benefit to passengers that balances the cost/benefit of investment in these areas.

Additionally, Heathrow's extended experience of the SQR scheme, plus sustained levels of service, offers scope for some evolution in the composition and operation of the scheme to ensure maximum flexibility and an appropriate alignment of incentives.

Heathrow's high-level service quality proposals

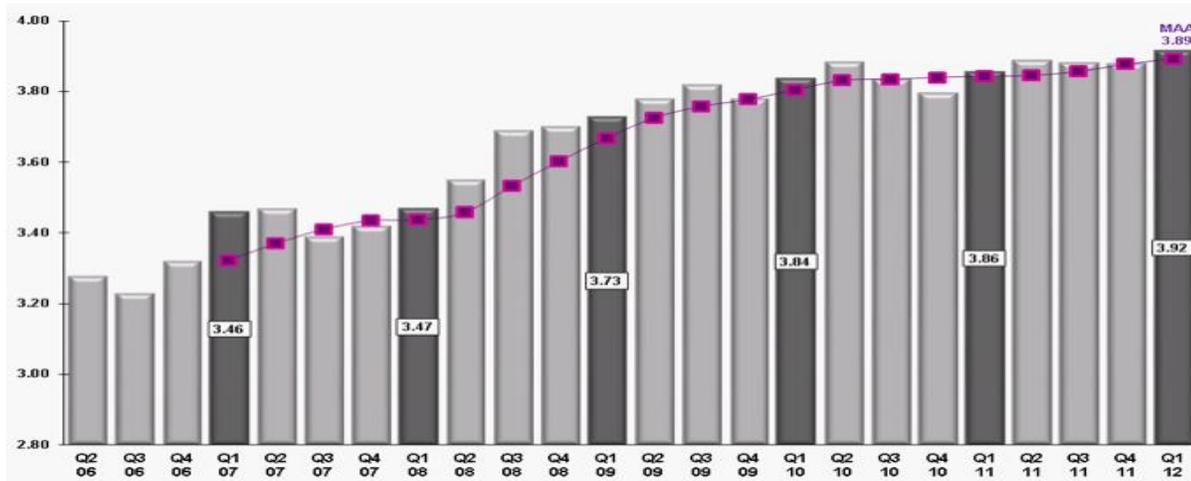
In taking work forward, Heathrow has developed a broad set of service quality proposals around an SQR type scheme. These broad proposals are set out below, and capture the key tenets of the CAA's thinking on service quality, for example, the principle of continuous improvement and the need for financial incentives. The objectives are also intended to help focus service quality and ensure even greater alignment between service, cost and price.

- Ensure Heathrow Airport has appropriate focus on quality of service and service levels for passengers and airline customers;
- Provide a framework which financially incentivises Heathrow to deliver the service for which customers are paying and improve in the future;
- Drive behavioural change at Heathrow and the Heathrow Community to incentivise delivery of a noticeably better passenger experience; and
- Over time, foster an environment for airline and passenger benefit that more closely resembles a market based commercial relationship.

Continuous improvement at Heathrow

The chart below illustrates the continuous trend of improvement at Heathrow. This is the overall satisfaction measure from the ASQ survey, and shows that Heathrow scored 3.92 for Q1 2012 (the highest result to date for Heathrow). Improvements in service continue to be made across all service categories, with 72% of passengers rating the airport experience excellent or very good, with all journey steps closing on the EU top quartile.

Chart 2: Passenger satisfaction with Heathrow's service



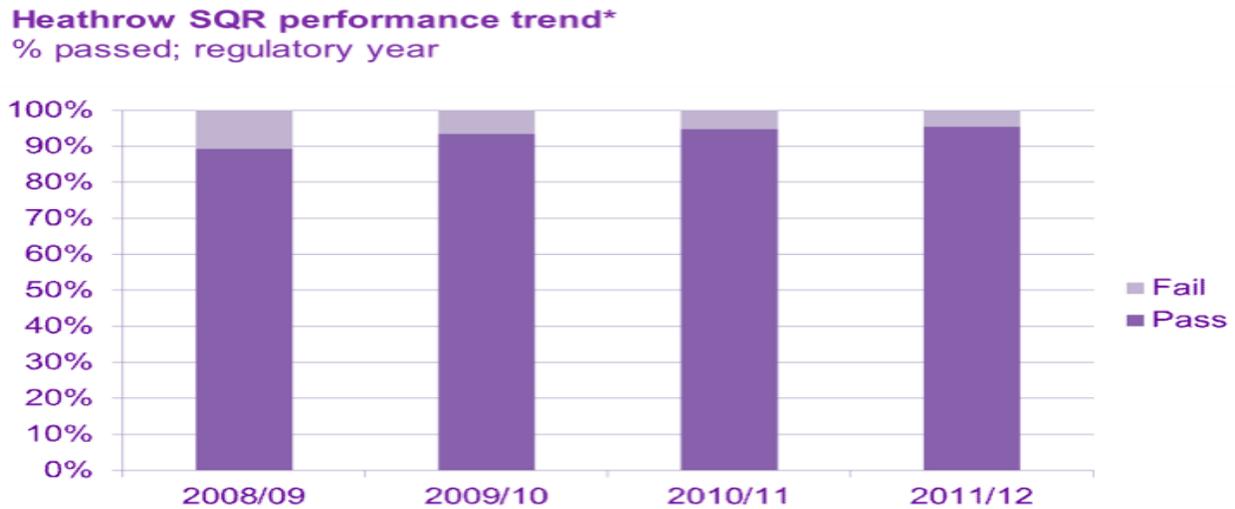
In addition:

- Passenger complaint-to-compliment ratios have improved substantially – roughly halving in the last 2 years alone.
- Heathrow works to the shortest passenger security queue standards (5 minutes) of any major hub in Europe.
- Many other aspects of service – from asset availability to staff courtesy have also improved though Q5.
- Indeed, Heathrow has so far passed 93% of all the service quality standards set in Q5, with the success rate increasing from 89% in the first year of Q5 to 95% in the latest year.

The development of the SQR regime

In its consideration of the SQR regime the CAA indicate that there may be scope for re-alignment and improvement to the scheme. Heathrow agrees that changes to the current regime are necessary, if for no other reason than to ensure there is alignment between the proposed measures and passenger priorities. This is discussed in more detail below.

Chart 3: Trend in SQR performance



*Includes T5 pier service measure for 2011/12 for stand allocation not under direct Heathrow operational control

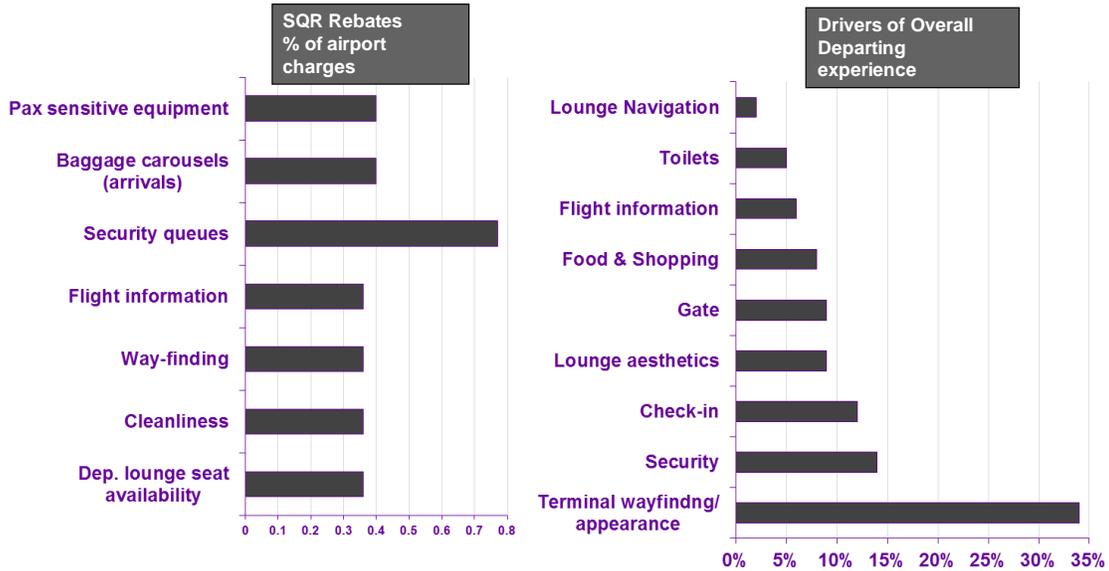
Airlines have emphasised their role in understanding and defining passenger priorities as being largely captured in the existing Q5 SQR metrics. While Heathrow agrees that the current scheme captures the essence of the basic services, we believe any Q6 proposed regulatory service quality incentives should be tested against directly revealed passenger priorities.

Taking such an approach ensures the correct focus, and investment, where it most matters for passengers while enabling Heathrow to respond to evolution in passenger needs (and emerging issues).

We observe two key features of the Q5 SQR measures when considered in the context of passenger priorities and a potential evolution of the scheme.

- Firstly, incentives in the form of “money at risk” through rebates, are not weighted to reflect what matters most to passengers (this is illustrated in Chart 4 below).

Chart 4: SQR relative to Passenger priorities



- Secondly, a number of the service standards are already at or close to levels where the majority of passengers appear satisfied – for example average security queue times already appear satisfactory to the vast majority of passengers. This matches a qualitative shift in recent passenger feedback on security queues to focus on service, care and procedures over waiting times.

Evolution to the SQR regime

In light of the observations above Heathrow is proposing some changes that build upon the current SQR scheme. We believe these changes ensure an effective alignment with passenger priorities, and also ensure that incentives are appropriately balanced and directed toward the most relevant and key areas. The proposed amendments and related comments are set out in table 1 below.

Table 1: Proposed evolution of Service Quality

	Proposed amendment	Comment
Metrics	Remove those measures proven to be less relevant to passenger priorities	Focus on what matters to passengers since too many measures dilute business attention. Aligns metrics to current priorities for passengers.
	Move to a per passenger measure (i.e., percentage of passengers versus 15 minute slices) for queue metrics, once reliable, supported technological solutions are in place.	More accurately reflects actual passenger experience, and additional transparency, simpler to understand or review. Promotes correct business behaviours – each passenger equally important and no arbitrary time slices.
	Require Heathrow to report measures important for the end-to-end passenger journey (immigration queues, punctuality, baggage performance)	Captures important elements of passenger basics at the airport not currently or formally captured. Gives airport a clear role in helping make wider performance visible without financial incentives for airport or implying an obligation to the airport from others. Encourages airport to focus on supporting improvement in key areas it does not directly deliver to passengers.
Service levels	Improve transfer security queue times to an agreed standard (subject to sufficient capacity)	Reflects evidence on passenger standards – <5 minute average queues represent a good versus merely satisfactory service. Further supports hub competitiveness.
	Maintain standards at baseline level (at least to current Q5 standard)	Passenger feedback indicating that Q5 standards are the acceptable minimum (should not be reduced significantly); and, Cost of uprating all standards likely to outweigh passenger benefit – where possible, efficiency gains should be used to reduce the charge.

	Ensure any change in standards is fully and carefully costed in terms of the opex and capex	Changes in regulatory standards require a compelling benefits trade-off.
Incentives	Move to a per passenger or less 'knife edge' incentive type scheme	More passenger-centric in treating all passengers the same. Incentivises airport to achieve success equally in each case regardless of previous performance.
	Consider the introduction of a minimum QSM satisfaction threshold (on passenger security queuing)	Tests a 'technical' pass/fail to ensure actual satisfaction levels are maintained.
	Balance incentives symmetrically	Requires that any ability to earn a bonus is matched by risk. Bonuses give the Heathrow an incentive to continue improvement over basic level linked to rebates.
	Weight passenger facing and non-passenger facing incentives equally	Ensures measures more closely reflect revealed passenger priorities.
	Pay rebates at a monthly rate, with no cap on number of months a year	Equalises incentives for each month and incentivises even after 6 failures in a year.
Structure	Split the scheme between a core CAA-led direct passenger metrics, and a Service Charter for all other measures	Allows more flexible review, revision and management of delivery via direct Service Charter structure with assurance of CAA intervention if required.
	Place part of bonus or rebate payments into a joint fund for passenger improvements	Uses resources to address the passenger issue and reduces incentives on all sides to focus on financial outcomes.

The cost-benefit trade off

If the CAA were minded to give consideration to a different scheme (as outlined above), there are likely to be further implications for the overall costs within Q6. These would include but are not limited to:

- Increased opex spend for shorter transfer passenger queues – a very first estimate is of £5m - £10m per year whether funded either from reinvested efficiency gains or increased overall opex. There could also be the need to further expand security lane capacity T5 and T2.
- Moving to a per passenger measure is dependent upon identifying and then deploying a robust IT solution that is acceptable to the airline community and regulator – the costs of this are as yet difficult to estimate
- Reduced spending in management of the scheme (e.g. manual timeslice measurement) – saving perhaps £3m - £5m in opex over Q6.

A general increase in other SQR service levels would imply further capital investment in some key assets. Raising the percentage of passengers queuing less than 5 minutes from current levels (i.e. shorter average queues) is estimated to impact opex by up to £10m per year, with harder to estimate and potentially exponentially higher costs at higher percentages.

As discussed in outline above, and something that it is widely understood by all stakeholders, is the trade-off between higher service levels and cost. In terms of progressing work on Q6, Heathrow's working assumption is that current service levels - as evidenced by SQR and ASQ measures - represent a cost-efficient level of service; for example, additional service measures or higher levels of service will require additional opex or capex (or some combination of both).

Other issues for consideration

Service Quality and the proposed licence

Further to the points raised in Section 2 above, Heathrow expects the future licensing regime to be sufficiently flexible to allow for amendments and future improvements. For example, service quality commitments which are not directly passenger-facing or which evolve over time might in due course be replaced by a form of service charter with measures agreed between airlines and airports rather than formally determined and imposed by the regulator (and set out in the licence).

Therefore, Heathrow would not expect a prescriptive licence condition whereby any proposed amendments (to reflect a change in demand or new requirements etc.) are at least time consuming, or at worst impossible, as a consequence of the proposed modification and appeals processes. Where possible, service quality must be market-led and not crowded out by regulation. This is arguably best achieved by an over-arching

licence obligation to ensure the provision of service quality on fair and reasonable terms, not by means of detailed and intrusive intervention.

Service quality and 3rd party participation

Recent experience and research shows that a number of touch points within a passenger's end-to-end journey is extremely important to the current and future passenger interest, e.g., immigration. We note that the proposed future licensing regime cannot necessarily require the licensee to engage in agreement or otherwise with 3rd parties in order to give effect to certain outcomes, or hold the licensee accountable for 3rd party service quality performance. However, where information is available and there is scope - and a need - for measurement of these different areas, Heathrow accepts that the passenger interests would clearly be better served if it were to assume a role in the collation, measurement and publication of key service quality data.

"Competitive Equivalence"

The CAA's document makes brief reference to "competitive equivalence" and differential charging. Given the CAA's proposals for a continuation of a RAB-based single till construct at Heathrow, which we believe is instrumental in helping to deliver the appropriate economic outcomes, we would be concerned about the impact of differentiated regulatory charges on the single till, and question it is practicable in an environment of long-term capital investment. For example, and notwithstanding the obvious complexity arising from airline moves and different models of occupancy, differentiated charges would presumably also require some disaggregation of the till and the RAB (by asset) implying a fundamental change of policy.

4. Rationale for Regulation

The CAA consultation reviews the three-stage test contained in the new Act. In discussing Test C the CAA correctly highlights the difficulty of applying the test in the abstract, as it is only possible to weigh the costs and benefits of an actual set of remedies applied in specific circumstances.

In fact, however, the CAA's discussion demonstrates the dangers generally of analyzing potential regulatory policy at a high-level. In this section of the response, we reiterate some of the points that we have made to the CAA in earlier submissions as well as providing comments on other issues raised by the CAA's consultation document.

Applying a four-step approach to regulation

BAA has set in previous submissions its four-step approach; the four essential steps are:

- Market definition;
- Assessment of market power;
- Assessment of potential harm; and
- Imposition (if appropriate) of relevant remedies.

This approach is entirely consistent with the three-stage test required under the new Act. Taking such an approach highlights that it is only possible to discuss appropriate forms of regulation following a detailed assessment of the market(s); any attempt to determine whether and how an airport should be regulated without this detailed assessment is extremely difficult. The CAA's discussion of the three tests is, therefore, potentially only of limited value at this stage.

The CAA reviews the application of Test A on the basis of its preliminary market analysis and the views of respondents. It must be stated that the CAA's analysis of the market(s) in which Heathrow operates have to date been insufficiently rigorous to establish that Heathrow has substantial market power (SMP), and most importantly, to establish the necessary connection between any finding of SMP to potential forms of harm, and then how regulation is to be designed to remedy that potential harm (assuming both that competition law would be insufficient and that the benefits would outweigh the costs of the regulation).

Defining economic markets: competition in the “transfer market”

A particular area of concern for Heathrow is that the CAA's analysis has so far failed to take sufficient account of the different markets in which Heathrow operates, and hence the different competitive pressures that it faces in these markets. Although the CAA's analysis discusses market segments, it is arguable whether the CAA's approach to market definition and market power assessment has been sufficiently rigorous as to be consistent with requirements of the new Act.

In its response to the CAA's consultation on the Initial Competition Assessment Heathrow provided both qualitative and quantitative analysis evidencing that Heathrow competes with other European airports to provide services to transfer passengers. It was argued that given both the different switching options for these passengers compared to O&D (surface) passengers and the higher price sensitivity of this former group of passengers, it is quite reasonable to conclude that there could be a separate economic market for aeronautical services to transfer (connecting) passengers.

Further to this, the preliminary analysis suggested that Heathrow may not hold a dominant position, even in the context of long-haul or transfer (connecting) passengers. This analysis showed, for example, that Heathrow's share of transfer passengers from UK airports to China had fallen from 33.4% in 2005 to 28.6% in 2009, with Paris' share rising during the same period from 9.6% to 29.9%. A similar pattern of competition was observed on the other routes analyzed.

It is essential that the CAA's analysis is forward-looking and not constrained by the historic approach to regulation at Heathrow. Heathrow is already competing with other European hub airports and we believe this must be reflected in the way that Heathrow is regulated in the future, although it is not possible at this stage to say how precisely this might be accounted for - by the CAA - in the forthcoming regulatory regime.

Illustrating the need to apply a four-step approach to regulation

Although the issue of competition for transfer passengers is a crucial issue for Heathrow it also illustrates the more general problem, highlighted above, of determining how an airport should be regulated, when operating at a high-level of policy. Without applying the necessary four steps in the analysis it is extremely difficult to make any assessment of what form economic regulation of Heathrow should take, as the following bullet points highlight:

- Heathrow has previously argued and the CAA has recognized to some extent that Heathrow competes (to some degree) with other hub airports; when imposing any remedy it is essential that the CAA is mindful of the need to facilitate greater competition rather than retard it.
- It is clear that different forms of potential harm require different remedies; a concern that Heathrow could charge excessive prices would not be addressed by the imposition of service quality regulation.
- The CAA discusses the issue of taking some activities out of the single till; it is only possible to make a rational decision on this based on a detailed assessment of the market(s) within which Heathrow operates and hence the different competitive constraints that it faces in the market(s).
- It is also the case that the CAA's earlier work on alternative approaches to regulation highlighted that different forms of regulation should be imposed to reflect the different levels of competitive pressure in a market.

Competition law and incentives

The CAA's consideration of Test B appears to underplay the importance of the incentive effects of fining powers (and competition legislation more generally). The discussion focuses on the harm that could result to consumers from the delay in enforcement under competition law. This appears to ignore the fact that a rational operator would choose to behave competitively to avoid the significant fines that could ultimately be imposed.

Potential impact of (de)regulation of other airports on Heathrow

The CAA has argued that there is some competitive overlap between Heathrow and Gatwick and its various forms of Catchment Area Analysis has argued that passengers would be willing to use any of Heathrow, Gatwick and Stansted.

In light of the above, it is important for the CAA to explore the interactive effects of regulation of each of the airports. For example, how would a less intrusive form of regulation on Gatwick affect the competitive dynamics between the two airports? If the CAA's analysis leads it to conclude that there is competitive overlap between Heathrow and Gatwick then it must recognize that the regulation of one could have implications for the operation of the other.

Implications for the regulation of Heathrow

The main thrust of the preceding discussion has been to question the usefulness of the CAA's preliminary analysis of the three stage test for imposing regulation. Heathrow

considers that it is difficult to apply the tests outside of a detailed market assessment and that each must be considered against the defined markets and the scope for harm, if any.

Relatedly, Heathrow is also keen to understand how the CAA intends to translate the work on the initial competition assessment (and associated preliminary market definitions) into the formal “dominant area” and “dominant airport” tests as set out in the proposed new Act.

A number of issues were also raised about the CAA's analysis, most important of which is the need for the CAA to recognize that Heathrow operates in competition with other European hub airports to provide services to transfer passengers. It is not clear what the precise implications of this might be, indeed, it may only be possible to understand the implications for the regulation of Heathrow following a detailed market assessment based on the four step approach set-out above, and as described in Heathrow's earlier submissions.

5. The Form of Price Regulation

Maintenance of a RAB-based approach

Notwithstanding comments in Section 4 above, Heathrow recognises that the CAA is required to determine an appropriate form of regulation based on a detailed assessment of market power, and also that any regulation be designed to help ensure the CAA meets its statutory duties.

If the CAA considers that Heathrow's market position is "strong" (relative to LGW and STN), and that continued price regulation is required at Heathrow we acknowledge that a RAB-based approach may be considered proportionate.

While Heathrow believes there may be scope for a form of negotiated settlement (certainly at the margin), and a more proportionate set of remedies based on the outcome of competition assessments, there is considerable value in continuing to apply RAB based regulation at Heathrow. Many other options have been reviewed over time and found wanting in one aspect or another whilst the RAB based approach offers both regulatory certainty and policy consistency (impacting all stakeholders).

A fundamental shift in regulatory policy toward a new model, particularly in a period of legislative and economic turbulence would further increase uncertainty and risk, distort incentives to investment, and create an unnecessary burden on the regulator and the market participants, while adding no additional value. Moreover, a shift in policy, which had a material adverse effect on the RAB and by definition, BAA's financing structure and business, is likely to also have an adverse effect across the value chain.

Price control duration

We note the CAA's consideration of alternative price control durations, and we welcome the opportunity to engage further with the CAA and other stakeholders on this matter. While current regulatory practice shows that a price control period of four to five years is generally adopted by sector regulators, presumably largely on the basis of balancing the respective interests and incentives, there is clearly scope for reviewing this on a periodic basis to ensure it continues to make economic and commercial sense for all parties to do so.

In our view, there are a number of important considerations. In the first instance, the proposed Bill is intended to allow for a more flexible (and yet targeted) approach to economic regulation, particularly through the introduction of a licensing regime. To the

extent that an extended price control period were considered proportionate and appropriate in the circumstances, then the proposed new regulatory framework would provide a legal basis for alternative price control periods.

In terms of the policy aspects, Heathrow submits that it will be economic factors that determine whether the price control period should be extended or indeed shortened. For example, we note that the investment horizons, and the very significant nature of existing and immediate forecast investments at Heathrow, may effectively preclude a shorter price control period than the current five years. In addition to the likely price impact, a shorter period is likely to negatively impact upon Heathrow's incentives and ability to undertake infrastructure investment.

Key to any consideration of this issue is the different incentive properties associated with the duration of the price control. It will be important to ensure that incentives are balanced and maintained if a longer price control period was contemplated. Firstly, the incentive acting on Heathrow to utilise the greater regulatory certainty and take forward significant infrastructure investments; secondly, for Heathrow to be able to undertake efficient investments in the knowledge that these will be appropriately treated and reflected in any existing and future price control settlements.

Notwithstanding, it might be argued that price control duration could be considered a "second order" consideration and essentially a function of other variables in the model. For example, if the regulatory regime provides sufficient policy certainty, a balance of incentives and appropriate forecast returns over a period of 5 years, there would appear to be little merit in extending the duration. We note that a longer price control period would also expose Heathrow to additional levels of traffic risk.

Scope of the Till

In respect of the single till, we note that the CAA's is not minded to consider a change to the basic regulatory construct, but remains open minded as to the precise scope of the till. To the extent that non-designated airports subsidise aeronautical activities with retail income - this effectively mimics a competitive process or outcome. However, non-designated entities are unconstrained by regulation and free to determine the level of (any) subsidy, the optimal mix and commercial strategy. We note this is not the case for designated airports though it is important to recognise some of the dampening effects the single till has on innovation incentives.

In terms of the scope of the till, the Q6 review process could be used as a vehicle for considering the precise composition of the till. For example, there may be a number of

services contained within the general aeronautical ‘basket’, the costs of which are recovered through the “subsidised” aeronautical charge, which it might be more appropriate and proportionate to regulate separately (or even expose to commercial forces). For example, for some services contained within the general aeronautical ‘basket’ and for which costs are recovered ‘upfront’, absent a definitive cost and price mechanism Heathrow has no ability to encourage more efficient behaviours and use of these services. This is discussed in more detail below.

NRCs (Non-Regulated Charges)

Firstly, going forward we propose that NRCs are redefined and referred to as *Other Regulated Charges*.

When considering opex risk and gain sharing, it is appropriate to review the current scope of airport services remunerated as a cost pass through under the banner of Non-Regulated Charges (NRCs). Heathrow believes that where users’ consumption of airport provided services is not clearly related to passenger volumes and/or airlines and other users have choice over the volume of a service that they consume, then the current cost pass through mechanism remains the most appropriate.

When reviewing the services currently remunerated as NRCs, Heathrow believes it is appropriate that they continue as NRCs in Q6 with two potential exceptions. Firstly, PRM costs which are directly related to passenger numbers and therefore should probably be remunerated through airport charges. However, it is recognised that the particular characteristics of the PRM service may make it appropriate that they continue as an NRC in Q6, e.g., an outcome based tariff which helps drive best practice to the benefit of passengers. Secondly, staff car parking in terminal adjacent public car parks which may not be considered as operationally essential and which could be reviewed for transfer to a commercially priced service in Q6.

When reviewing services that have been remunerated through airport charges in Q5 but which might be reclassified as NRCs for Q6, Heathrow considers that there are very few material services for which such a change should be considered. In engagement with airlines, the provision of staff search, control post facilities and common IT infrastructure have all been considered. Discussions are continuing on the practical aspects of such a change; Heathrow’s current view is that administrative issues and potential unintended consequences may outweigh the potential benefits of a change in remuneration mechanism.

P₀ adjustment

In planning for Q5 all stakeholders over-forecast the passenger numbers, this has clearly had a significant and on-going impact on the current settlement. We estimate that the cumulative shortfall between the Q5 forecast and actual to be ~30m to 35m - the determined maximum average allowable yield for Q5 is therefore below that which would be the case given actual passenger numbers. All stakeholders are in some way impacted by the 'undershoot' in passenger forecasts. While Heathrow continues to bear the financial burden of the under-forecast - through a lower return on capital relative to the WACC – to an extent airlines and passengers have indirectly benefitted, e.g., from the continued capital investments at the agreed Q5 levels.

As we move toward Q6, an adjustment to the price is required to account for the significant shortfall in passenger numbers at the start of Q6 as against the Q5 forecast. This would be consistent with regulatory practice in previous quinquennia, and is also consistent with regulatory practice in other industries. The initial price adjustment could be calculated to allow for the impact of the shortfall in passenger volumes at the start of Q6, leaving the 'X' factor to take account of Q6 factors only. It can be shown that the return on the RAB over the Q is the same whether a price adjustment is made or not (and it does not imply a higher overall charge over the period).

Heathrow considers that an initial P₀ adjustment also helps maintain the correct balance of incentives in that it recognises that the Q5 investments have already been made, or at least committed to, while also helping to encourage all stakeholders to constructively engage on passenger forecasts and not simply view the passenger forecast as the denominator in the price control.

6. Regulatory Framework and Incentives

As noted above Heathrow is keen to ensure that any future regulatory framework is proportionate, and maintains an appropriate balance of incentives both within the construct of the price control and as between Heathrow and all other stakeholders. And, in light of the forthcoming statutory framework there is a real opportunity to achieve this objective and ensure that policy is clearly aligned with passenger interests and desired outcomes.

Heathrow is keen to see the CAA start to align its policy intentions with passenger interests, for example, how would the CAA's intended policy on airport charges at Heathrow directly impact the downstream aviation market and subsequently the passenger.

It will be important for all stakeholders to understand how the CAA's intended regulatory policy at Heathrow will actually give effect to passenger interests. In short, a clear evidence-base should be developed such that a tangible link exists between CAA's regulatory policy at Heathrow and how this policy enables the CAA to meet its (new) statutory duties.

While Heathrow welcomes the CAA's discussion of the various incentive options, particularly the CAA's proposals in respect of "two tier" Capex, the CAA's analysis is necessarily high-level and does not appear to address any specific concerns, or material issues that may have arisen during Q5 or previously. More generally, the current price control construct contains powerful incentive properties and it is not clear how these basic incentive properties could be strengthened without added complexity and/or without distorting the underlying purpose of incentive regulation.

Heathrow does not see any need for a (fundamental) overhaul of the incentive schemes underpinning the current price control construct. In the event that the CAA does take further work forward on various incentive mechanisms, Heathrow recommends that the CAA adopt a framework for analysis which enables a detailed consideration of the relevant alternatives and which also considers the relative materiality and practicability of each potential option.

Additionally, we note that the regulatory construct is already relatively complex and we would encourage the CAA to consider the principles of better regulation; where possible, avoid complexity in favour of transparency, proportionality and consistency.

Overview of Capex and Opex

Capex

The CAA's analysis sets out a trend in capex (Figure 6.1 of the CAA's document), which indicates that Heathrow's actual expenditure is significantly lagging Q5 forecasts; the CAA's analysis does not however contain any commentary on the underlying reasoning for the profile of spend through Q5.

Firstly, it should be noted that part of the reasoning for the development of "two tier" capital stems from a recognition that certain projects cannot be specified up to 7 years in advance of the close of a quinquennium. Secondly, Heathrow has previously clarified the reason for the profile of capex in Q5, as part of the mid-Q review and otherwise. Briefly, at the time of the Q5 settlement it was acknowledged that the investment plan would need to be updated to reflect and respond to evolving demand.

It is widely understood that the profile of capex in Q5 was revised primarily as a consequence of delayed and extended airline moves (into T5 and its consequential effects on all other terminals). This delayed the planned closure of T2 by 12 months, which in turn delayed significant parts of the overall CIP.

Throughout this period Heathrow worked with the airline community on a comprehensive review of the impact on Q5 capex in terms of cost, schedule and scope; the Integrated Baseline Review in December 2009 led to a major re-phasing of works. The profile of capex spend in Q5 does not reflect Heathrow either gaming or deliberately stalling capex investment.

We note also that going forward Heathrow expects to meet the Q5 forecast levels of cumulative investment. Heathrow's forecast for Q5 capital expenditure (in outturn prices) of £4.7bn compares to the CAA's outturn Q5 capital expenditure forecast of £5.1bn. The variance is mainly a result of unallocated PSDH funds and the transfer of Q5 funds from Q5 into Q5+1. Additionally, Heathrow has also agreed with the airline community that it will work to ensure that the overall Heathrow Q5 capital expenditure does not exceed the CAA's outturn Q5 capital expenditure forecast.

Opex

Much of the context for the CAA's consideration of Opex is provided by Figure 6.7 in the CAA's document, and the assumed "under-performance" relative to the Q5 forecast. Again, the CAA's analysis is relatively high-level and does not accurately reflect the

profile of adjusted and real opex costs throughout Q5. The variances between forecast and actual Q5 opex costs are clarified immediately below. Further below, Figure.1 illustrates the profile of Opex in real terms from 2008/09 to 2010/11 (adjusted to account for exceptional items and excluding depreciation).

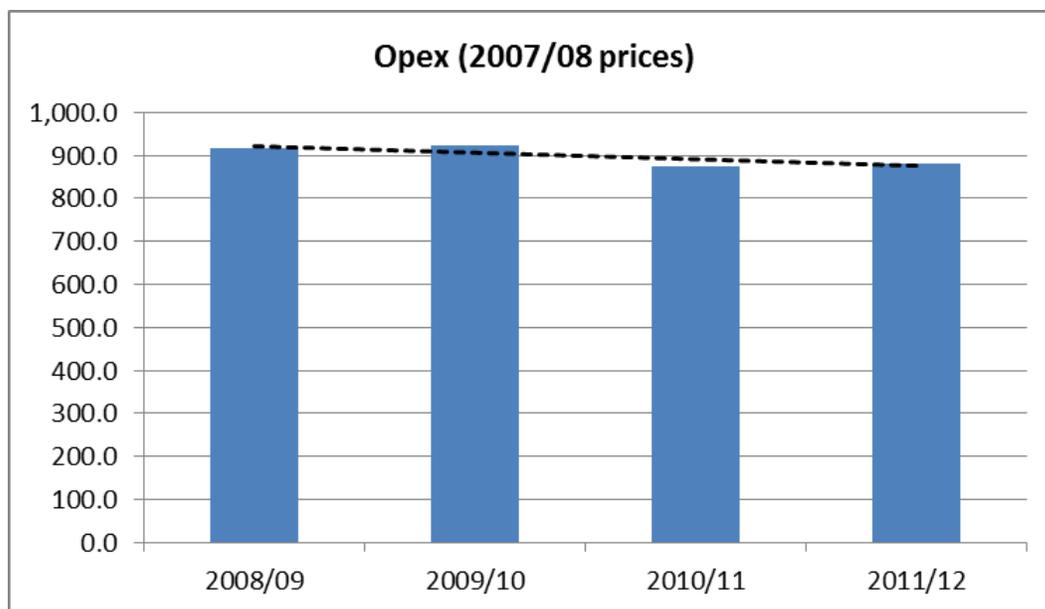
Explanation of CAA’s graph and the movement in opex

Of the total variance in 2008/09, £36m was not attributable to operating performance and represent costs disallowed by the CAA (£17m), costs omitted in error (£7m), and costs not contained in the CAA’s Q5 decision (£12m – PRMs). The underlying variance of ~£60m was due largely to the higher than forecast costs of running and maintaining a five terminal airport (see discussion of capex profile above), and in meeting the new Q5 SQR targets across a number of cost headings.

In 2009/10, the adverse variance was ~£96m. In addition to £33m for the non-performance items described above, the delayed closure of T2 imposed a further £9m. The underlying variance fell by £8m to £54m which reflected the implementation of a number of successful cost saving initiatives.

In 2010/11, the adverse variance reduced significantly to ~£38m. Non-performance items amounted to £37m, and the underlying variance fell by £53m to £1m reflecting both the full year effect of 2009/10 initiatives and further cost savings.

Figure 1 – The profile of Opex in real terms (excludes exceptional items and depreciation)



The operating costs presented above are sourced from the Heathrow Regulatory Accounts for the first four years of Q5 and have been deflated into 2007/08 prices to show the trend in real terms. The operating costs shown exclude exceptional items.

The actual operating cost performance in real terms is relatively flat but there is a peak in 2009/10, which primarily reflects the additional operating costs due to the delay of T2 closure. Since 2009/10, operating costs have reduced reflecting on-going management action, e.g., cost decreases on maintenance and utilities costs, and a continuing general trend of cost reduction.

More generally, the CAA's consideration of opex going forward must also have regard to the principle of cost-causation. In particular, where costs are incurred outside of Heathrow's control but for which Heathrow continues to bear the risk, e.g., airline consolidation and/or changes to market structure which effect the operation and efficiency of the airport. It is not clear how such costs would be addressed by the future price control settlement.

“Two-tier” Capex and an enhanced RAB-based price control

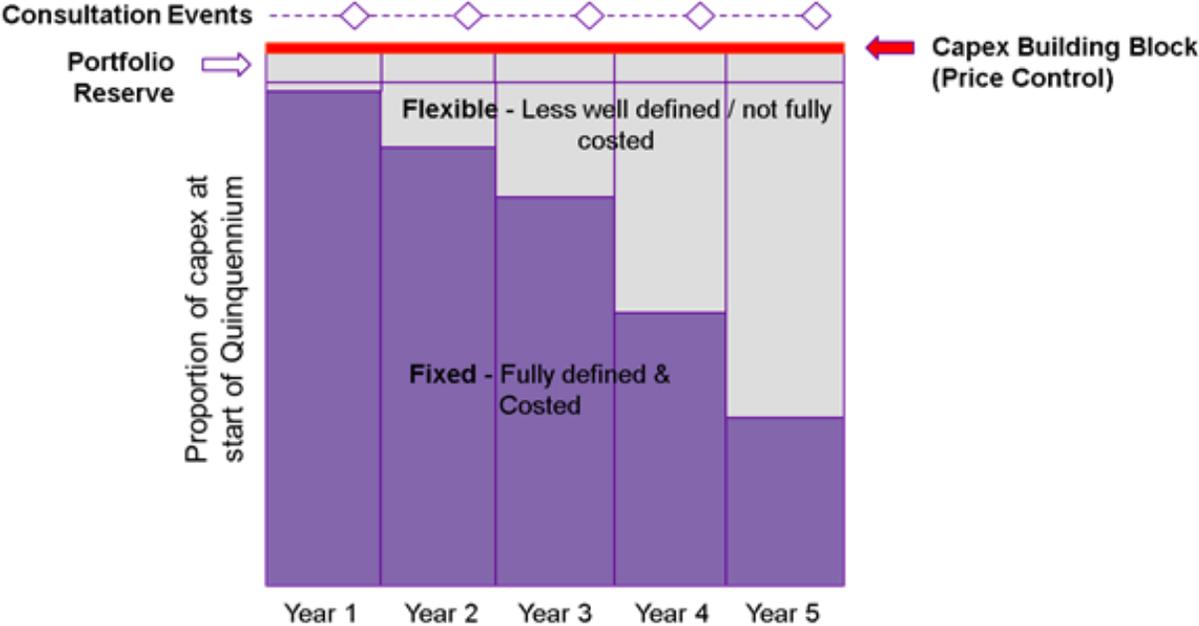
Heathrow welcome's the CAA's objective that regulation better reflects the commercial realities of capital expenditure planning, and general acceptance of a more flexible and proportionate approach to capex.

The duration of the regulatory process and the length of the price control settlement mean that the settlement incorporates forecast costs for projects which may only be in the early stages of a project life-cycle, and consequently have a relatively high degree of uncertainty attached to them. It is also likely that events and requirements will change during Q6, meaning it may be inappropriate to deliver the capital plan in exactly the same way as originally conceived.

To address these types of issues and the uncertainty, we continue to support a fixed/flexible approach to capital planning in Q6. Fixed capital expenditure can be categorised as expenditure associated with projects that can be predicted with a high degree of certainty, in terms of scope, cost and timing.

Flexible capital expenditure can be categorised as expenditure associated with projects that have not yet been developed to the point where the scope, cost and timing are fully defined. We would submit that an element of contingency is also included within the capital expenditure plan.

In accordance with the above, the price cap would be set at the start of Q6 based on the projected total of fixed (core) plus flexible (development), and an element of contingency (portfolio reserve). This is shown in the diagram below.



The regulatory building blocks, and therefore the price cap, would include both fixed and flexible capital expenditure (and contingency). Charges to Airlines within Q6 could be adjusted to reflect expenditure from the (flexible) plan; the airport charge could – with agreement - be adjusted downward to reflect any under-spend relative to the forecast flexible element of capital expenditure.

Heathrow considers that such an approach to capital expenditure planning would facilitate more commercial engagement between Heathrow and Airlines, and enable Heathrow to respond more efficiently and appropriately to the evolving needs of passengers and airlines.

Capital Triggers (Incentives)

Heathrow acknowledges that capital triggers can play an important role in incentivising timely and cost effective completion of large scale projects. In addition, while it may also be reasonable to assume that triggers should form part of any proposed Q6 regulatory framework, Heathrow is concerned that the CAA appear minded to amend what is an already complex (but practicable) set of regulatory arrangements on capex.

Furthermore, Heathrow recognizes there are potential imperfections in the system of capex triggers, we are not however persuaded that any of the changes proposed by the CAA will necessarily materially impact on incentives, and at worst, may in fact result in perverse incentives.

Table 2 below responds to the potential amendments to incentives for capex triggers as set out in the Figure 6.5 of the CAA’s consultation document.

Broadly, Heathrow’s view is that a RAB-based single till (subject to RPI +/- X) focuses correctly on the ‘regulation of outputs’, with the company effectively being subjected to a set of incentives to outperform toward achieving certain outputs. Increased regulation of inputs, for example, by means of the regulator setting the scale or level of certain inputs and/or determining the timescales, may have the effect of blunting or distorting the basic incentive properties associated with incentive regulation.

Table 2: Capital Triggers and Incentives

Potential Change	Comments
Remunerate capex only when benefits are realised	<p>Notwithstanding the likely issues relating to the definition of the realisation of benefits, and the fact that benefits may actually materialise over the period of a project, such an arrangement would directly impact BAA’s financing. For example, BAA would presumably have a reduced incentive to raise finance - on which interest is payable - well in advance of the initiation and completion of projects, particularly for large scale projects that are forecast to take a number of years.</p> <p>In addition to the likely price effects (stepped price changes) and the potential impact on the cost of capital, such an approach may also encourage a “contractor” type approach whereby the only incentive is to complete the project irrespective of standards and benefits.</p>

Adjust for capitalised interest costs	<p>Heathrow understands that the CAA already has a certain degree of discretion in respect of allowable costs at the end of a control period (whether capitalised interest or otherwise). In the event the CAA consider and can evidence that costs have been incurred inefficiently, it may be in a position to exercise its discretion in terms of the RAB or assumed cost levels going forward (into the next Q).</p> <p>We note also that a “two-tier” approach to capex, with fixed and flexible elements of capital, is likely to give effect to an even more efficient capex profile and spend.</p>
Triggers based on expenditure during construction	As stated by the CAA, this approach is already in operation for certain large scale projects, and on which such an approach may be considered suitable.
Increasing the payment rate from triggers	It is clear that the payment rate should both reflect the weighted average cost of capital and be set to incentivise timely and efficient delivery, not to ‘penalise’ late delivery.

Bias toward capex

Heathrow considers that in the absence of certainty in respect of achieving a determined level of return on the RAB (both within Q and in the future periods), there will be no bias toward capex (relative to opex). Moreover, such a bias can only effectively occur where there is some ability to substitute capex for opex; for many of the current projects at Heathrow this is simply not the case.

Totex incentives

Heathrow understands that such an incentive scheme is designed to help eradicate any potential bias toward capex and to simplify the overall regulatory regime; we address the question of capex bias immediately above. While Heathrow would welcome a

simplification of the regulatory regime, we are not persuaded by the application of totex incentives.

Firstly, it is arguable whether such an approach would be at all compatible with the nature of business at Heathrow and the on-going – and required - capex investment programme. In a capacity constrained airport, investment will be driven at least initially by capex programmes, e.g., new and more capacity efficient terminal facilities (and otherwise). These types of large scale capex investments cannot be simply replaced by opex initiatives.

Furthermore, a totex incentive regime may even distort the incentive to invest in large scale capacity and efficiency enhancing capex programmes, and would almost certainly weaken the incentive on opex efficiency. We note also that a totex regime must imply the removal of triggers and all other capex related incentive schemes currently in place at Heathrow.

Rolling incentive mechanisms (RIM)

A rolling incentive mechanism would in theory have the effect of empowering incentives to efficiency at all stages of the quinquennium, to the extent that Heathrow may be equally incentivised across the duration of the price control (subject of course to the exact design and 'rules' of any proposed scheme). The incentives from any such scheme will only be binding and effective if the process governing the measurement and retention of efficiency (cost savings) are both transparent and certain.

As noted by the CAA there would be considerable (and additional) complexity in applying a RIM at airports, not least in respect of the identification, measurement and audit of opex items, and how this relates to the – level of – the price control. While Heathrow is of course prepared to explore any reasonable innovation to the current regulatory construct, absent more detail on a proposed RIM, Heathrow would support continuation of the current price control construct whereby a powerful incentive acts upon the business through the basic properties of the price control.

Notwithstanding, Heathrow will continue to consider whether there is a viable construct that secures further innovation and efficiency, but which respects the inherent incentive properties of the current price control.

Opex “gain-sharing”

If the properties within the current incentive based price control regime are intended to drive efficiencies in operating expenditure, it is questionable whether these can also be reconciled with a form of “gain-share” arrangement across the entire operating expenditure cost-stack. For example, to what extent would the price control incentive properties effectively be blunted by a “gain-share” arrangement, and would such an approach misalign the balance of effort and incentive.

The CAA will be aware of the potential trade-offs involved, e.g., an operating expenditure efficiency might actually require additional capital expenditure or technology spend. Equally there may be actions Heathrow can take to improve airlines’ operating costs with potentially little impact on our own cost base. We must achieve a more detailed understanding of the airlines’ operating cost base and cost drivers in order that we can also focus on these opportunities (respecting commercial confidentiality). Heathrow believes there may be some scope for potential benefit where both Airlines and Heathrow have the ability and incentive to jointly influence the outcome. This is clearly more likely under NRC and/or commercial and bilateral arrangements.

There are likely to be a number of reasons why the principle of “gain-share” cannot be easily applied to the entire Opex cost-stack. For example, the approach to NRCs dictates that each individual cost item is easily identifiable and measurable, e.g., annuity, allocated and direct costs; this is not something that can be readily applied to all other opex items (or the opex cost-stack as a whole). For example, it would require detailed consideration (and disclosure of) allocation methodologies for all common costs and their relative proportions.

Also, the likely administrative burden of applying the principle to opex would be very significant indeed. Each element within the Opex cost-stack would need to be disaggregated, separately costed and actively monitored (in some detail). While it might be argued that this is current business practice, this is quite different to an additional layer of regulatory activity that requires a comprehensive assessment, further transparency, cost measurement and more detailed reporting.

Therefore, while Heathrow remains open to ideas on innovation and efficiency, our consideration of “gain-share” must be subject to:

- Ensuring policy does not impinge upon or distort the incentives underpinning the price control: - a RAB-based RPI price control is designed to mimic competitive process and incentives to efficiency; it is structured such that Heathrow has a clear

incentive to outperform in that it is able to retain all the efficiency gains over the period of the cap.

- Any policy must not disturb incentives to cost minimization or dampen innovation: There may be a concern that such a policy could actually deter or defer cost minimisation and efficiency. For example, if the business is required to annually pass on a proportion of any saving, to what extent is it actually incentivised to realise additional efficiencies early, or incur (investment) cost toward efficiency.
- More fundamentally, if the price cap is set such that efficiencies have to be realised to be able to meet the (price) cap, would Heathrow then be also required to pass on a proportion of all cost savings, this must imply Heathrow needing to achieve an even greater level of efficiency (than that determined as part of any settlement).
- The principle of reciprocity should apply: - if opex is effectively to be viewed as a cost-pass through Heathrow would then presumably have the opportunity to pass on and share any potential cost increases.
- Relatedly, consideration would also need to be given to the principle of cost-causation. Where costs are incurred outside of Heathrow's control but for which Heathrow bears the risk, e.g., airline consolidation and/or changes to market structure which effect operation of the airport.

Security cost pass-through

The Q5 pass through of security cost as a result of additional security requirements imposed by the Government increased to 90% above a threshold of £16.5m (essentially the Q4 threshold uplifted to nominal prices). Therefore, 90% of security costs associated to new security requirements above £16.5m is subject to a pass-through mechanism.

This cost pass through is permitted under the current formula in setting airport charges. The costs are added cumulatively and when these costs exceed the threshold the airport can recover 90% of these costs. It should be noted that the CAA can and does audit these costs, and seeks to verify the (new) Government requirements before allowance can be made for these in airport charges.

Where costs are imposed on Heathrow as a result of external requirements we believe it would be unreasonable for Heathrow to also bear the full risk of all costs, indeed, it is also questionable whether any threshold should be applied to such costs.

7. Risk and WACC

Introduction

This section comments on a number of issues relevant to Heathrow's Q6 WACC:

- Systematic asymmetry of returns for Heathrow, due to constrained capacity;
- “split WACC”;
- indexation of the cost of debt;
- The factor applied in Q5 by the CAA to adjust the cost of capital to an accounting rate of return (6.2% to 6.014%).

Systematic asymmetry of returns for Heathrow

Unlike other utilities, the upside potential of Heathrow is limited by a combination of capacity constraint and the price cap. In 2002 Heathrow's ATM's first exceeded 95% of the cap. In 2003, 95.2% of ATM cap was utilised whilst in 2004 and 2005 it moved to 97.9% and 98.3% respectively. Not even the global financial crisis caused utilisation to fall below 95% and this has only effectively happened since 2003/04 in months when there have been major incidents such as volcanic ash underlining the negative skewness and that the CAA could not have anticipated.

In the absence of regulated prices, Heathrow could benefit from an unexpected rise in demand by prices that reflected the scarcity of capacity. However, the combination of a capacity constraint and regulated prices means that Heathrow is unable to benefit from any unanticipated increase in demand, but is asymmetrically exposed to unanticipated reductions in demand.

By taking account of the expected magnitude of downside shocks in forecasts we are trying to correctly estimate the mean of the forecast's distribution. However, this does not take account of the “downside riskiness”. For example, if we believe there is a 10% probability of 10 mpax shock, the forecast will be moved down by 1 mpax – say from an unshocked 70 mpax to 69 mpax. However, the distribution of risk around this forecast may still be skewed, since the upside potential is 1 mpax (if the shock does not occur), but the downside risk is 9 mpax (if the shock does occur)².

² We note that passenger charges will be based on the median (P50) forecast, which will in any event be higher than the mean (expected volume of passengers).

Table 3 shows a simple statistical analysis of the change in skewness³ of monthly international passengers at Heathrow, compared to other hubs (e.g. Amsterdam and Frankfurt). We show results for two 10 year periods. In the period 1992-2001 none of the three airports had significant negative skewness – and in fact Amsterdam and Frankfurt had positive skewness. This has changed in the most recent decade, with all airports showing negative skewness – especially in the case of Heathrow corresponding to the time that Heathrow approached the 40k ATM cap. Similarly to Heathrow, Frankfurt has also shown significant skewness, but capacity has now been relieved by the opening of its fourth runway. The continuing binding capacity constraints at Heathrow mean that skewness will continue.

Table 3: Statistical skewness on monthly passenger numbers⁴

	Amsterdam	Frankfurt	Heathrow
1992-2001	0.5	0.5	-0.1
2002-2011	-0.5	-0.9	-1.2

Initial response to the CAA’s specific questions

The CAA raises a number of questions concerning the potential implication that asymmetry in the returns might have on Heathrow’s cost of capital. We address in outline terms each of the CAA’s questions below; a more detailed response will be submitted separately.

- Can skewness be diversified?

It is normally assumed in finance theory that, if investors have preferences over skewness, then they dislike negatively skewed assets (those with more downside risk).⁵ A consequence of this is that, if market returns are systematically and negatively skewed (i.e. if the negative skewness cannot be diversified away) then investors should require a skewness premium for holding such assets.

Whether or not skewness can be diversified away depends on whether aggregate market returns (i.e. the returns of a fully diversified portfolio) display systematic skewness. If aggregate market returns are not skewed, the effect of holding a negatively (positively)

³ Skewness is a statistical measure of the asymmetry of the distribution of a dataset, derived from the third moment about the mean.

⁴ The data was de-trended and seasonally adjusted prior to calculation of skewness.

⁵ Investors having preferences about skewness is more compatible with Arrow-Pratt risk aversion than the usual two-moment CAPM assumption that investors care only about returns’ mean and variance.

skewed asset upon total portfolio skewness can be diversified away by holding another asset (or portfolio of assets) with opposite and offsetting skewness.

If, in contrast, aggregate market returns are systematically skewed, then the effect of holding skewed assets cannot be fully diversified away by holding other assets without a cost in terms of mean return or variance or mean-variance trade-off. Academic research has found evidence of skewness in equity returns and this forms the basis for seminal work such as Kraus and Litzenberger (1976)⁶ and Harvey and Siddique (2000).⁷ For example, Harvey and Siddique compared the return on three portfolios of US equities – positively skewed stocks, stocks with no substantial skew, and negatively skewed stocks. They found that returns on the negatively skewed portfolio were 3.6% above that of the positively skewed portfolio. The fact that the portfolio with negative skewness attracts a higher return shows that this skewness can't be diversified.

The UK equity market is treated as a fully diversified market in all standard regulatory cost of capital analysis — indeed, UK regulators generally estimate the Market Risk Premium from the Equity Risk Premium and betas are calculated with reference to variance and covariance relative to the UK equity market. In the attached report Europe Economics has analysed the returns from the UK equity market since 1990 and found evidence of statistically significant negative skewness.

- Is skewness a short-term feature and immaterial in terms of the long-run cost of equity?

Europe Economics found that UK equity market skewness may be positive or negative, depending on the market conditions at the time. For instance, evidence from the FTSE All Share index suggests that the UK market is negatively skewed in times of stable economic growth, whereas the market is positively skewed or un-skewed during recessions and the early part of subsequent economic recoveries.

The correlation between economic cycles and the sign of market skewness implies that it is possible to identify periods in which market skewness is zero as times of positive and negative skewness cancel out. However, even if periods of zero skewness can be easily identified, it would be wrong to consider this strong evidence of the absence of systematic skewness overall. This is the case for two main reasons:

⁶ Kraus, A. and Litzenberger, R.H. 1976. "Skewness Preference and the Valuation of Risk Assets". *The Journal of Finance* Vol.31 No.4.

⁷ Harvey, C.R. and Siddique, A. 2000. "Conditional Skewness in Asset Pricing Tests" *Journal of Finance* Vol. 55, No. 3.

- a) First, there is abundant empirical evidence that (at least over a sufficiently long period) aggregate market skewness is negative;^{8,9}
- b) Second, the time frame of a price control review (i.e. five year) is likely to be short enough for market returns to display systematic skewness. In fact, over the period Jan-2000-March-2012, the five year rolling skewness of the FTSE ALL Share was consistently negative and statistically significant (at the 90 per cent level) until the end of 2008. This suggests that the returns of the UK equity market are, at least in normal times, systematically and negatively skewed.

We note that there is abundant empirical evidence that (at least over a sufficiently long period) aggregate market skewness is negative and therefore not immaterial in the long-run. Moreover, whilst noticing that it is possible to identify periods in which market skewness is zero (because correlation between economic cycles and the sign of market skewness implies that times of positive and negative skewness cancel out), the returns of the UK equity market are, at least in normal times and when calculated over a 5-year time windows, systematically and negatively skewed.

- Can returns' skewness be measured and the cost of capital effect quantified?

The potential effect of skewness on the cost of capital of that asset is best modelled by the third moment CAPM framework. The third moment is a natural extension of the standard CAPM model which assumes that investors (besides having preference over returns' mean and variance) also have preferences over the symmetry (skewness) of returns.

The third moment CAPM was first introduced in a seminal paper by Kraus and Litzenberger (1976).¹⁰ The key idea behind the Third Moment CAPM is that, if market skewness is systematic (i.e. non-diversifiable), then the expected returns on a risk asset i (in excess of the risk-free rate R_f) can be disaggregated into two different components:

- (a) A volatility-risk premium.

⁸ See e.g. Albuquerque, R. (2012) "Skewness in Stock Returns: Reconciling the Evidence on Firm Versus Aggregate Returns", *Review of Financial Studies*; Bris, A., Goetzmann, W. N., and Zhu, N., (2007), "Efficiency and the Bear: Short Sales and Markets Around the World", *Journal of Finance* 62, 1029-1079; Chen, J., Hong, H., and Stein, J. C., (2001), "Forecasting Crashes: Trading Volume, Past Returns and Conditional Skewness in Stock Returns", *Journal of Financial Economics* 61, 345-381; Kon, S., (1984), "Models of stock returns — A comparison", *Journal of Finance* 39, 147—65.

⁹ We also conducted an analysis of the returns for the FTSE 100 Index since 1984 (this index was used because, for the FTSE 100 Bloomberg data is available for a longer period than for the All Share Index), shows that, over a period of 27 years (which includes boom periods and recessions in the early 1990s and late 2000s) market skewness is -0.31 and statistically significant at the 10 per cent level.

¹⁰ Kraus, A. and Litzenberger, R.H. 1976. "Skewness Preference and the Valuation of Risk Assets". *The Journal of Finance* Vol.31 No.4.

(b) A skewness-risk premium.

Mathematically, this corresponds to the following equation:

$$E(R_i) - R_f = \beta_i * V + \gamma_i * S$$

Where V is the volatility-risk premium, S is the skewness risk premium, β_i is the asset beta (which denotes the co-variance of the asset returns with market returns), and γ_i is the asset gamma (which denotes the co-skewness of the asset returns with market returns).¹¹

The co-skewness of an asset indicates the skewness of the asset's returns in relation to that of the entire market. More specifically, under the Third Moment CAPM specification of Kraus and Litzenberger, an asset with a positive co-skewness has returns that are skewed in the same direction of the market skewness.

Therefore, if the market portfolio is negatively skewed, the inclusion of a positively co-skewed asset contributes to the negative skewness of the market portfolio and the investor would require a positive risk premium for that asset. If, in contrast, the market is positively skewed, the inclusion of a positively co-skewed asset contributes to the positive skewness of the market portfolio and therefore, the investor is willing to give up some returns.

- How, and to what extent, do skewed volumes result in skewed returns? And does a combination of substantial market power, unsatisfied demand and a capacity constraint imply robustness to volume which could make the issue second order in practice?

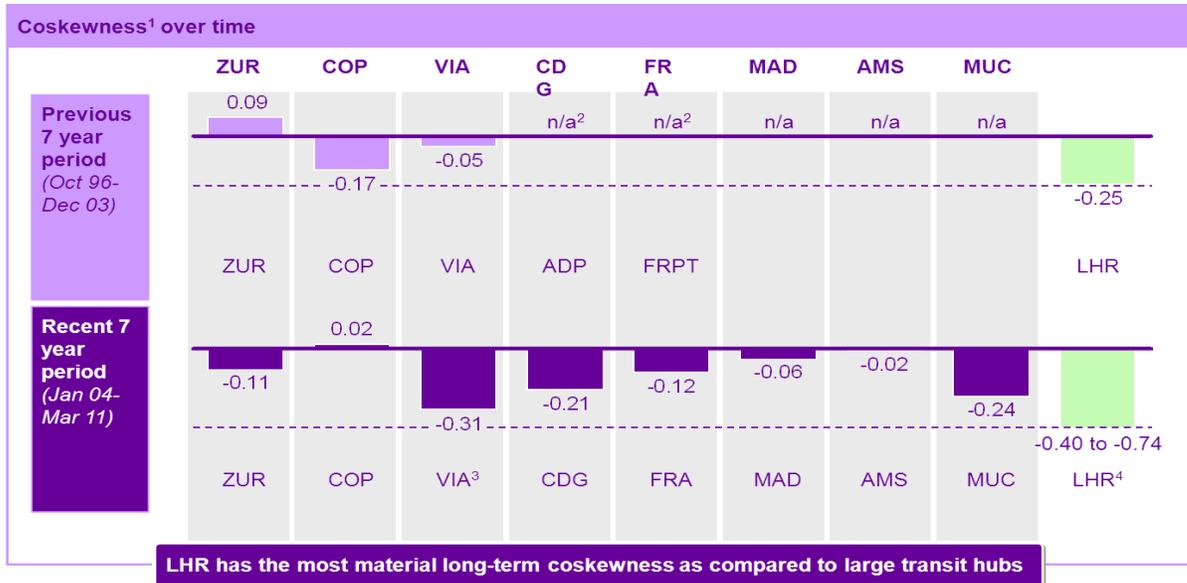
We take these two questions together, as the same answer covers both issues.

Heathrow has conducted an analysis of Heathrow's skewness by regressing passenger number (used as a proxy for returns because of the likely correlation between numbers and revenues) on the UK market index and found that airport volumes are negatively skewed and Heathrow's volumes are more negatively skewed than other airports. This analysis shows that (see Figure 2):

- a) Historically, although Heathrow has had the most negative co-skewness compared to other comparator airports, the absolute degree of co-skewness was relatively modest.

- b) However, the co-skewness of Heathrow's volumes has become substantially more negative since 2003.

Figure 2: Heathrow's Harvey and Siddique co-skewness based on volume (passenger number) data



1 Based on country-specific market indexes and volumes or stock-prices depending on availability, most negative measure used where both available
 2 Fraport (2001) and Aeroports de Paris (2006) filed for a market listing after this period
 3 Heavy dependence on Austrian airlines (with sub-scale network and no low-cost) meant slow recovery from recession
 4 -0.40 represents volume-driven coskewness and -0.74 represents EBITDA-driven coskewness
 Source: Bloomberg, Datastream, BAA, Airport reports (from company websites) for other airport PAX volumes

Source: Heathrow.

Skewed volumes should be expected to result in skewed returns for a capacity-constrained airport subject to a price cap, in particular because a capacity-constrained airport subject to a price cap has variability in returns closely correlated to variability in volumes. A capacity-constrained airport subject to price cap regulation would be expected to have skewed returns, in particular because its upside risk would be limited, creating an asymmetry.

Upside risk would be limited by the interaction of the capacity constraint and the price cap. A capacity-constrained supplier would normally be able to react to “good” times by raising prices — for a capacity-constrained supplier “increased demand” means increased willingness to pay; however, a price-capped capacity-constrained supplier cannot raise prices in response to increased demand.

- By selecting a point estimate towards the top of the range for the cost of capital has the CAA previously implicitly taken this into account?

In Figure we see that the skewness of Heathrow's returns has increased markedly since the data period of the last price review. Thus, it would not be safe to assume that even if previous approaches have implicitly absorbed the effects of skewness without explicit consideration thereof, that this would continue to be the case in Q6.

Notwithstanding, Heathrow does not propose that a third moment CAPM approach - including explicit calculation of the impact of skewness - should serve as the main methodology for cost of capital estimation at Q6, rather it should be used as a cross-check and as a basis for selection of the cost of capital from within the range.

Heathrow risk relative to network utilities

Like the network utilities (and NATS) Heathrow is subject to economic regulation, requiring the regulator to make a determination on the company's WACC. All UK regulators use the Capital Asset Price Model methodology, and this allows direct comparison of Heathrow's risk with that of other utilities. The most critical risk factor for these companies is the way that fluctuations in demand impact on the return that the companies make on their regulated asset bases. This is in turn dependent on two factors:

- The volatility of underlying demand: The way that the company is protected against volatility in underlying demand by the nature and operation of its regulation price or revenue cap.

Although demand at Heathrow may be considered resilient compared to other airports, it goes without saying that its demand is more volatile than demand for connections to a utility network. For example, demand for water or electricity connections is driven by the number of housing starts that is in turn linked to the economic cycle, but compared to the overall stock of connection this volatility is small. Air passengers, however, is a flow rather than a stock, and so by its nature is more volatile.

- A more material issue, however, is the way that this volatility feeds through to a financial return on assets. Table 4 summarises the mechanism used in each sector, ordered by the implied risk.

Table 4: Regulatory Mechanisms and Risk

Risk	Sector	Price control mechanism	Risk impact
High	Heathrow	Yield / passenger	Full exposure to volume risk within Q
	NATS	Yield / ATM with risk sharing mechanism	Partial exposure to volume risk within Q
Medium	Water	Price per connection adjusting for any forecast/actual variances in next Q	Temporary exposure to volume risk (repaid in next Q)
	Electricity distribution	Hybrid revenue and connection price cap	Partial volume risk
Low	Electricity transmission	Hybrid revenue and capacity price cap	Partial volume risk
	Gas distribution	Revenue cap	No volume risk

“Overall, it would appear that BAA designated airports are more exposed to asymmetric risks from competition, quality of services and capex incentive mechanisms than companies in the other sectors.” Cost of Capital for PR09: A Final Report for Water UK, NERA, January 2009

Airports stand out as the most risky of the regulated assets since they are the only ones that are fully exposed to volume risk within the price control period. Indeed, airports have a “double exposure” from not only passenger numbers, but also commercial spend per passenger which is also strongly linked to the economic cycle. NATS and Royal Mail fall into the next category down, in that although they have similar volume exposure this is mitigated by risk sharing mechanisms whereby the price cap is modified if volumes deviate by certain amounts.

Below this, and with considerably less risk, are the network utilities, starting with water. The water companies are exposed to volume risk (measured by the number of connections) within the price cap period, but under the existing price cap regime (PR09), there is a claw-back mechanism in the subsequent price cap for any deviation in actuals from forecasts in the current period.

Below water are the electricity distribution and transmission networks. These operate under hybrid price and revenue caps. The price cap component (per connection in the case of the distribution companies, and capacity for the transmission companies) give some volume exposure. However, the revenue cap element provides an income stream with no volume exposure. Least risk is carried by the gas distribution companies that are wholly regulated under revenue caps.

The clear implication of this comparative analysis is that airports carry the most risk of all the regulated companies, and we would naturally expect this to be reflected in the relative WACCs, and in particular in the asset beta’s used in the Capital Asset Pricing Models.

Relatedly, we note the CAA’s high-level consideration of more formal traffic risk-sharing arrangements. Heathrow’s initial view is that traffic risk is more appropriately captured

through accurate determination of the WACC (and in the assessment of the passenger forecast). Notwithstanding, Heathrow will continue to consider the viability of a traffic risk sharing mechanism.

Split WACC

Summary of the scheme

The split cost of capital scheme envisages a notional split of the regulated company into two components: a business responsible for the on-going operations and capital development in the forthcoming price cap period, and a business containing the historical RAB. In the case of Heathrow we would have (nominally):

- A “RAB Business” responsible for financing the pre-Q6 RAB which, bearing a lower level of risk, depending on the extent to which the historic RAB is underwritten by the “regulatory contract”. Professor Helm suggests that the RAB Business could be entirely debt funded. This would seem to require it to be risk free;
- A “Q6 Business” responsible for operating the airport and investing in new capital up until the end of Q6, at which point new investment would be handed over (nominally sold) to the RAB Business.

Under the proposals, all license obligations to maintain the operational and service capability of the airport would reside with the Q6 Business. If the Q6 Business were ever to breach it’s license (and in the extreme case were to lose its license), the RAB Business would be unaffected.

The critical attraction of this scheme is that it allows a high cost of equity for the Q6 Business, in order to encourage new investment where there is an executional and operational risk, whilst not contaminating a lower cost of capital for the existing historic RAB.

In the extreme case the cost of capital for the RAB business may approach a risk free cost of debt (which it would have to be if it were to be entirely debt funded). However, in order for this to be the case, there must be a significant change to the regulatory contract whereby the RAB is made genuinely “risk free”. In particular:

- There must be a “cast iron” government guarantee underwriting the full value of the RAB. This means that there would need to be a mechanism for the government to make up any shortfall in revenue following from a downturn in traffic and/or

market conditions that meant that Heathrow was unable to charge to the full regulated price cap in respect of the historic RAB;

- There must be a firm undertaking from the regulator that the historic RAB will never be written down, or have items removed, without full compensation being given;
- The element of the regulatory price cap that covers the return on the historic RAB must be of the form that provides no forecast volume risk. This is not the case with the existing cap of yield per passenger. Essentially a separate price cap formula would be required for the historic RAB that allowed any revenue shortfall (or overpayment) as a result of variance between forecast and outturn volumes to be clawed back (or refunded) in the next period with adjustment for the appropriate discount rate.

In order to achieve what Dieter Helm suggests (100% or close to 100% debt funding due to a 'risk free' business) there would most likely be a need for explicit contracts with airlines (where none exist today) who commit to a usage/infrastructure fee that is independent of traffic volumes..

Contractual arrangements with airlines are unlikely to be sufficient to have a meaningful impact on making the arrangement 'risk free'. This is effectively because creditors would ultimately look to the ability of the airlines to make good on the terms of the contract (this is unlikely to be entirely risk free).

Additionally, the practical implications are very significant. There would be significant complications in allocating an 'infrastructure' fee between airlines given the dynamic nature of individual airline's use of the infrastructure, for example, the constant operational requirements (of both airlines and airport) to move airlines and the implications for their usage of infrastructure.

Evaluation of the scheme

Although the scheme may have a theoretical appeal – providing the correct incentives for new investment whilst not over-rewarding historic RAB - we are not sure that it translates well into practice. Indeed the scheme has been considered in previous CC investigations into airports, with the conclusion:

Members of the CC's Cost of Capital Panel met with Professor Helm during our review to make sure that they had properly understood Professor Helm's ideas and to discuss with him some of the questions that they had about his proposals. The main difficulty that they had with the split cost of capital framework was the idea that Stansted's revenues could somehow be separated into two component parts with very different risk profiles. In practice, airlines pay one set of regulated charges, capped according to a formula set by

the CAA, and an airport delivers one overall profit to one set of investors—a return that, by definition, varies according to all the risk factors that Professor Helm has identified.

This regulatory design means that the return that investors earn on historical investment (as reflected in the RAB) is inextricably linked to the demand at the airport, the cost of operating, maintaining and renewing built assets, and the on-going service quality provided to customers. The convention of using the RAB as an input into the calculation of price caps gives investors the opportunity to recoup their investments, but deliberately puts that return at risk (i.e. it is conditional upon the efficient and competent operation of the assets that are built). As such, it is entirely conceivable (and, indeed, desirable) that the actual return on the RAB will turn out to be higher or lower than the expected return seen in the WACC x RAB calculation.

Professor Helm was not able to persuade Panel members that the return of and on Stansted's RAB is somehow 'safe' and capable of being disentangled from an airport's performance against its price cap, or that the financiers of historical investment included in the RAB would not see the value of their capital increase or diminish in line with the fortunes of the regulated business. As a consequence, it was not appropriate for us to use a split cost of capital in this review.¹²

From a practical point of view, estimating the WACC for the individual Q6 and RAB businesses, quantifying the residual volume, market, regulatory and political risk in the RAB Business, would be extremely difficult, and we doubt whether sufficient information would be available to do this. Indeed quantifying the additional risk in the Q6 Business, once the historic RAB has been removed would also be extremely difficult. By contrast information does exist to benchmark the average WACC for Heathrow (for example, against other large European hub airports).

We have asked Professor Ian Cooper of the London Business School to review Professor Helm's proposal. Professor Cooper concludes that on balance the split WACC proposal does not offer additional assistance in estimating the cost of capital of an airport or represent the best approach for a regulator to take:

- While the idea of splitting the cost of capital between low and high risk parts of a business can be helpful (and indeed it is already used in a number of standard ways in UK regulation for splitting different regulated entities, e.g. BT Openreach) Professor Helm's particular way of splitting the cost of capital is not standard. It involves a hypothetical split which is unrealistic, in the sense, noted by the Competition Commission, that it separates operating expenditure and on-going

¹² Competition Commission, Stansted price control review: Final report, Appendix L, Cost of capital, para9-11.

capital expenditure from the assets with which they are intrinsically connected in the running of the business and the regulatory framework;

- Professor Helm seems to suggest that the hypothetical split changes the overall asset beta of the firm, even though it does not change the fundamental risk of the business. This is inconsistent with standard finance theory and inconsistent with regulation delivering a return commensurate with the cost of capital of regulated firms with traded equity. The asset beta (and hence cost of capital) can only be reduced by other changes to the regulatory contract not necessarily associated with the split WACC per se (e.g. government guarantee underwriting the full value of the RAB irrespective of future market, economic or political conditions).

Another consideration is that up to this point shareholders have invested in Heathrow on the expectation that it will receive the same WACC applied to both the historical RAB and the ongoing business. In earlier years the RAB will have been relatively low compared to the ongoing business and so if the split WACC approach had been adopted the WACC would have been higher. Therefore, just supposing for the moment that the split WACC approach were conceptually correct investors have been “under-compensated” for investment in Heathrow – a situation that it must be assumed they were prepared to tolerate in the expectation that under the single WACC approach they will be “over-compensated” in future years. Therefore, a sudden change to a split WACC approach would mean an immediate taking of shareholder value (equivalent to a windfall loss).

In conclusion, therefore, we remain of the view that the CAA should adopt a single value of WACC for the whole of the Heathrow business.

Indexation of the cost of debt

The idea behind indexation is that it would reduce risks for investors, by allowing pass-through of relevant interest rate changes. However, there are a number of issues that the CAA will need to consider if this objective is to be achieved:

- Firstly, for risk to be reduced, the CAA would need to provide assurance that, over the course of a number of quinquennia, the indexation regime would apply equally in those periods where interest rates were expected to rise, as in those where they were expected to fall;
- Second, the CAA would need to take a view that, over the long term (many quinquennia), airlines were in a better position to absorb interest rate risk than Heathrow;
- Thirdly there would be a number of significant challenges to the construction of the control index:

- How would it reflect the pattern of Heathrow's new debt requirements in the future? To do this the CAA would need to take a view on the capital expenditure requirements for the next 20 years or so, and find a method of adjusting the control index as capital plans mature;
- What particular type of corporate bonds (sector, tenor and risk rating) would be included in the index. Even after adjusting for risk rating, corporate bond yields in the airport sector differ in level and trend from those corporate bonds more generally in the non-financial sector, and from those more specifically in the utilities sector. For example, over the last 2 years the basket of BAA's medium and long dated sterling senior bonds has traded with an average spread premium of approximately 120 basis points relative to average of the analogous baskets of Anglian Water and Thames Water bonds.

Looking forward, in the event of major future expenditure such as a third runway being announced there is substantial risk that the cost of debt would diverge meaningfully for a significant period of time from any pre-determined formula at the very time that the need to raise debt would probably escalate materially. This would transfer greater risk to equity.

Finally, would pass-through of the risk associated with the cost of debt (but not equity) result in an unintended bias towards debt compared to equity financing? At this present point of time we do not believe that debt indexation would be a viable option for Q6.

Financing Duty and price caps

The CAA's consultation comments on the purpose and intention of the proposed 'financing duty' in the new Bill. While Heathrow's interpretation of this proposed duty may differ slightly to the CAA's interpretation, we are neither advocating the reallocation of risk (as appropriately held by shareholders), nor that allowance be made for any inefficiency, rather any price control settlement should be set at a level at which an efficient airport operator can unambiguously expect to finance itself with an appropriate notional capital structure; this might be interpreted as returns consistent with the determined cost of capital (WACC).

That is not to suggest that Heathrow would expect the CAA to intervene, or in any way seek to determine BAA's capital structure, or the manner in which it manages its finances. Indeed, the currently accepted CAA methodology of adopting a notional capital structure, while assuming efficient and economic operation of the airport, is we believe broadly consistent with a view that this should enable an airport to properly finance its (licensable) activities. As a minimum, however, any price control settlement should help to ensure

that the efficient airport operator is reasonably robust to any downside shock, while also ensuring that any settlement in itself, does not affect the credit rating of the business.

In addition, the CAA clearly plays a key role in helping to ensure policy consistency and financial predictability. Therefore, in the context of the ‘financing duty’, Heathrow expects the CAA to adopt essentially the same principles and methodology as previously, in respect of the notional capital structure, the forecast statutory tax rate etc.

Relatedly, the principle that there is an asymmetry of consequences between those of setting the WACC too low and those of setting it too high is now well-established by regulators (and the Competition Commission). Too high a cost of capital and consumers today pay a little more than would occur in a competitive market. Too low a cost of capital, and consumers tomorrow miss out on the benefits of investment and innovation that does not occur. The latter costs are recognised as significantly exceeding the former. Consequently, it is now typically accepted that the regulatory cost of capital should be set above the central estimate of the market cost of capital.

Adjustment between WACC and accounting rate of return

In Q5 the CAA applied an adjustment factor for a perceived difference between the cost of capital and the accounting rate of return on assets (in Q5 this amounted to 6.2% to 6.014%).¹³ We believe the CAA should review the logic for this adjustment.

Suppose we have a firm that begins the year with a £1,000 asset that does not depreciate, is 100% equity-financed, pays no dividend, at the end of the year its asset valuation is £1,100, and the asset valuation rises smoothly at a constant percentage rate throughout the year. Then the WACC is 10%, but the average return on assets is a little over 9.5%.

But note that the gain in asset value appears within the RAB. Thus the 9.5% return will only achieve a 10% WACC if it is applied not only to the RAB, but also to the cost of capital earned by the RAB throughout the year.

To bring this to life in the context of the Q5 calculations, consider Table 13-1 of the CAA’s “Recommendations to the Competition Commission for Heathrow and Gatwick Airports”, March 2007 (reproduced below).

¹³ The formula used was $WACC/(1+WACC/200)$.

Table 13-1 Revenue requirement in Q5 for Heathrow (2006/07 prices)

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Opening RAB		8,424	8,981	9,564	10,017	10,089
Capital expenditure		753	827	750	423	256
Depreciation		-391	-388	-399	-427	-462
Q4 / Q5 profiling adjustment		195	144	101	76	-13
Closing RAB		8,981	9,564	10,017	10,089	9,870
Operating costs		698	684	686	685	683
Depreciation		391	388	399	427	462
Cost of capital		523	558	589	605	600
Total revenue requirement		1,612	1,630	1,673	1,717	1,745
Commercial revenues		-407	-415	-421	-427	-438
Non-regulated revenues		-150	-159	-159	-161	-181
Other revenues		-148	-151	-149	-146	-146
Q4 / Q5 profiling adjustment		-195	-144	-101	-76	13
Net revenue requirement		712	762	842	907	993
Passengers (millions)		71.7	73.2	74.8	76.4	78.5
Yield per passenger		9.9	10.4	11.3	11.9	12.6
Profiled yield per passenger	9.5	10.0	10.6	11.2	11.8	12.5

Note 1: Other revenues include £2.1m per annum of assumed revenue from non-passenger flights. The CAA will obtain updated forecasts for non-passenger flight revenues from BAA as the review progresses.

Note 2: Cost of capital on the average balance of the RAB, at a rate of 6.014 per cent (equivalent to a yield of 6.2 per cent)

Notice that in each year the “cost of capital” is calculated by:

$$6.014\% \times (\text{Opening RAB} + \text{Closing RAB})/2$$

For example, in 2011/12, when the RAB stayed roughly constant throughout the year, the 6.014% was applied to the RAB value only, in this case giving a “cost of capital” of:

$$6.014\% \times (10,017+10,089)/2 = \text{£}605\text{m}$$

However, the logic of using 6.014% (rather than the WACC of 6.2%) is that it applies not only to the RAB but also to compounded returns earned throughout the year. In the context of Table 13-1, this must mean that the true cost of capital must include a return on the actual RAB and a return on the average (estimated by half) compounded return on the RAB throughout the year:

$$6.014\% \times (10,017+10,089)/2 + 605/2 = \text{£}623\text{m}$$

This can now be reconciled back to use of the 6.2% WACC applied only to the average of the opening and closing RAB:

$$6.2\% \times (10,017+10,089)/2 = \text{£}623\text{m}$$

So Table 13-1 contains an arithmetic inconsistency. There would be two correct ways that Table 13-1 could be calculated:

- Apply 6.2% to the average RAB; or
- Apply 6.014% to the (RAB + half year cost of capital).

Both give approximately the same correct answer, but it is not correct to simply apply 6.014% to the average RAB. The simplest correct option for the CAA would seem to be to apply the WACC to the average RAB value.