

Response to CAP1940: Financial issues

London (Heathrow) Airline Consultative Committee (LACC)

18 August 2020



FINAL REPORT

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EXECUTIVE SUMMARY

CEPA has been appointed by the London (Heathrow) Airline Consultative Committee (LACC) to provide support on financial issues in relation to the H7 price control. This report focuses on the CAA's June 2020 policy update (CAP1940), including the accompanying cost of capital analysis undertaken by the CAA's adviser, Flint Global. The timing of the Flint report means it could not consider the impact of the covid-19 pandemic.

Overview

While we support many aspects of Flint's approach to estimating the cost of capital (prior to the covid-19 pandemic), we consider that the evidence it presents does not support a proposed increase in the WACC relative to PwC's advice to the CAA. In particular, a more comprehensive and nuanced analysis of beta and cost of debt evidence is required.

International airport group relevance should not be assumed in any assessment of the beta, rather relevance should be systematically and transparently assessed based on robustness and riskiness and on group level characteristics rather than those of constituent individual airports. This assessment should take into account both operational aspects (notably capacity constraints, economic status of markets served, demand volatility and hub status) and regulatory status (including exposure to volume risk and treatment of commercial revenues). The use of evidence from three diverse airport groups without risk adjustment – and exclusion of evidence from other groups which are not demonstrated to be less relevant – has not been justified and greater transparency of Flint's analysis is required. We also conclude that the proposed cost of debt is too heavily influenced by HAL's actual debt structure and costs, particularly given that its high level of gearing reflects choices that it has made.

The impact of the covid-19 pandemic is still developing. The CAA adopting a long-term perspective on the cost of capital, consistent with other UK regulators, would limit the implications of the pandemic. Equity market return estimates are based on historic data relatively unaffected by the addition of a single year of data, and market data on the risk free rate and cost of debt will naturally incorporate movements driven by covid-19. Evidence on beta is varied: while some airport groups are showing elevated short-term betas, others do not appear to have been affected. There is no strong evidence that betas are unprecedented relative to previous market downturns. As part of a long-term cost of capital assessment the key issues are likely to be: (a) establishing an appropriate pre-covid reference point for beta and (b) accurately reflecting any changes in the allocation of risk. On the cost of debt, evidence of elevated spreads for HAL's actual debt is likely to reflect, at least in part, HAL's very high actual gearing, rather than the assumed gearing of the notional entity. The CAA's analysis should account for HAL's gearing, as well as recognising the fluctuation over time in HAL's debt spreads compared with market indices.

Our more detailed comments on these two key areas of focus are provide in the sections below, followed by our more limited comments on other aspects of the cost of capital.

Beta

The choice of beta comparators in recent work on behalf of the CAA does not reflect a rigorous and objective selection process. With international airports exhibiting varying beta estimates, comparator selection is a critical component of establishing a robust beta estimate. Failure to consider and rationalise comparator selection in detail would be a material omission in process on the part of the CAA.

Our indicative comparator selection analysis demonstrates that further consideration should be given to a broader evidence base. It is not clear that the proposed airport groups – which include a diverse collection of international airports – are more informative than other airports that have been excluded from consideration. Ferrovial itself could be considered for analysis, and evidence from other GB regulated assets is also relevant.

In the absence of any independently listed close comparators, it is not possible to draw robust conclusions without fully considering relative risk. Flint's proposed estimates of HAL's asset beta are not supported by rigorous relative risk analysis. We highlight the following issues and gaps in the evidence base:

- Little consideration appears to have been given to the diverse activities covered by the three proposed comparator airport groups. The most relevant airports within each group – Paris CDG, Frankfurt and Madrid – represent only a minority of group operations, and the risk of other group airports cannot be assumed to be similar to these three or to HAL.
- Heathrow’s low volatility in passenger numbers – relative to other large airports and to an even greater extent relative to AdP, Fraport and AENA groups – does not appear to have been considered.
- The use of single till regulation for Heathrow also merits proper consideration.

Overall, Flint’s estimate of asset beta for H7 does not appear to reflect the fact that Heathrow is an established hub airport that has been running at capacity, serving developed economies and with a predictable and well developed regulatory and legal framework in place. This is a material departure from principles established in relation to previous price control periods and reflected in PwC’s analysis for H7, in which HAL was judged to be lower risk than the main proposed comparator airports and airport groups.

The proposed range for H7 appears inconsistent with regulatory precedent. The CAA’s view of beta at Q6 was informed by AdP and Fraport’s group level betas. Flint’s beta estimate is higher than for the Q6 price control. This is despite evidence of lower empirical betas for comparators and potentially a greater downwards adjustment being required from comparators to take into account changes in risk profile.

Since the Q6 price control each group has added to its portfolio of smaller airports operating in non-European regions under different market conditions. Measured beta evidence for each group is no higher than observed prior to Q6 – and may even be lower, at least before the impact of covid-19.

Despite this Flint appears to have adopted a view that HAL’s risk is now higher relative to these comparators. This view has not been justified with reference to relative risk evidence or analysis.

Focusing on short-term estimates risks under-representing evidence from a wide range of market conditions. Empirical beta estimates change over time and are impacted by current events. This does not necessarily imply that the fundamental beta risk of a business is changing, especially by the extent observed from some empirical beta estimate changes. Consistent with the UKRN expert report, we consider that longer term beta estimates are likely to be more robust and that overemphasising short-term estimates would be inappropriate and lead to significant volatility in regulatory estimates of the cost of capital.

This is particularly important in light of the emergence of covid-19. The range of movements in measured betas is wide but the evidence indicates that some airports have continued to have relatively low betas. Even for those airports showing elevated betas, it is not clear that the resulting estimates are unprecedented relative to previous economic downturns.

The analysis in our paper suggests that the CAA should revisit the beta estimate or at least more fully address the methodological points that we raise to ensure that there is appropriate transparency over the rationale adopted by Flint in its report.

Cost of debt

The choice of a longer assumed tenor is over-reliant on Heathrow’s tenor at a single point in time. Flint’s work has increased the assumed debt tenor to around 20yrs, relative to c.12.5yrs applied at the Q6 determination. This is materially longer than debt tenors at comparator airports and appears over-reliant on Heathrow’s most recent average tenor at issue for its bond debt. Heathrow acknowledges that the increase in its tenor for bonds was driven by expansion considerations. Reliance on Heathrow’s actual debt mutes the incentive properties of a notional approach and if applied would lead to an allowance significantly above Heathrow’s actual debt costs. This is inconsistent with protecting the consumer interest.

The trailing average and the weight on new debt is driven by the new assumed tenor, creating gaming opportunities and lacking regulatory consistency. The longer assumed tenor forms the basis for extending the trailing average period and placing lower weight on new debt. A longer trailing average would include periods of

relatively high rates that do not reflect either HAL's or the notional entity's debt costs. The relationship between debt tenor and the assumed weight on new debt also necessitates further consideration. The current approach leads to greater scope for gaming as windfall gains are possible by sculpting debt maturity profiles.

Covid-19's impact on the cost of new debt should continue to be monitored. The impact of covid-19 on debt yields is most relevant to the cost of new debt. It is too early to conclude whether changes relative to benchmark indices are likely to be persistent and whether there are impacts on benchmark tenor. If there are persistent changes, the CAA could consider adjustments to benchmarks or alternative benchmarks. This assessment should take into account the effect of Heathrow's leverage sitting materially above the notional gearing level.

Our analysis suggests that CAA should review the rationale for the tenor assumed by Flint taking into account tenor at other airports that are not expanding and monitor the impact of covid-19 on debt yields.

Gearing and WACC interactions

Flint's report provides one interpretation of how to consider the interaction between gearing and the cost of capital. This interpretation leads to a higher vanilla WACC than would be estimated for its proposed comparator airport groups on a like-for-like basis. Flint's report to the CAA does not present any arguments why this materially higher WACC estimate would be in the consumer interest.

Our analysis suggests that the CAA should consider comparator WACC estimates more directly in the overall cost of capital assessment.

Market parameters

For market parameters we broadly agree with the approach adopted by Flint and our suggested changes are more incremental than fundamental.

Analysis of market valuation

Market valuations, in particular, the use of Market Asset Ratios, can be useful as cross-checks on regulatory cost of capital determinations. Recent evidence from GB water networks is hard to reconcile with materially higher estimates of market-wide parameters, in particular the TMR. This should give the CAA comfort that Flint's proposed market parameters are broadly appropriate for H7. Further analysis of Ferrovial's market valuation may also provide more specific insights for the airports sector.

Risk allocation

Our analysis, and therefore the points made above, assume a similar risk allocation to Q6. However, the covid-19 pandemic means it may be necessary to investigate alternative risk allocations. Where the CAA chooses to do this, it should be driven by the notional entity, rather than changes necessitated by Heathrow's actual financing structure. HAL's ability to manage risk under the highly geared structure it has adopted is a matter for its shareholders, not the consumer.

The approach should take into account each party's ability to bear risk, the impact on incentives faced by Heathrow and the suitable cost of capital. However, if passenger volumes at Heathrow airport are depressed for an extended period of time, HAL's historic cost structure is unlikely to be consistent with feasible passenger charges.

1. INTRODUCTION AND BACKGROUND

CEPA has been appointed by the London (Heathrow) Airline Consultative Committee (LACC) to provide support on financial issues in relation to the H7 price control. This report contains analysis relevant to the CAA's June 2020 policy update (CAP1940), including the accompanying cost of capital analysis undertaken by the CAA's adviser, Flint Global.

1.1. COVERAGE

The CAA has invited views on two principal issues, namely:

- the approach taken by Flint to estimating the cost of capital (prior to the impact of the covid-19 pandemic being felt); and
- the impact of the covid-19 pandemic on Heathrow's cost of capital.

This represents the basis for our report and advice to the LACC. As such, we have not prepared an independent estimate of the cost of capital, nor have we considered the CAA's approach on financeability.

1.2. ASSUMPTIONS FOR OUR ANALYSIS

The following assumptions underpin our analysis:

- H7 will be a five-year price control starting in January 2022.
- No expansion activity is taking place during the H7 price control.
- The CAA will set an RPI-real cost of capital, while other elements may be linked to CPI inflation¹.
- Indexation will be used for the cost of new debt, but no other components of the cost of capital.
- No changes to risk allocation are considered at this stage of our analysis.

We understand that changes to risk allocation could take place and these changes would need to be reflected within the cost of capital settlement. Examples may include the treatment of volume risk or the introduction of ex-ante capex incentives. At this stage, we discuss these issues only at a very high level but this is clearly a material consideration that merits more thought as the price control progresses.

1.3. STRUCTURE OF THIS REPORT

Following this introduction, the report is structured as follows:

- Sections 2-4 present our comments on the key issues affecting HAL's beta, HAL's cost of debt and the relationship between gearing and the WACC.
- Section 5 briefly considers the market parameters (risk free rate and total market return (TMR)), where our comments are more limited in nature.
- Section 6 introduces analysis of market valuations, which could serve as a cross-check.
- Section 7 briefly discusses potential issues with respect to risk allocation.

¹ We note the joint consultation by the HM Treasury and UK Statistics Authority on reforming RPI. Changes have been discussed as taking place between 2025 and 2030. Other GB regulators have changed their approach on inflation indexation to CPI or CPIH, from RPI, in light of shortcomings of the RPI index as a measure of inflation.

2. BETA

In this section we focus on the key issue of beta estimation. HAL is not independently listed and so its beta cannot be measured directly. It is therefore necessary to judge its asset beta by reference to other listed companies that share similar exposure to systematic risk. Such estimates are inevitably very sensitive to the selection of comparators and to the assessment of their relative risk exposure. We comment on these issues in Sections 2.1 and 2.2 respectively. The CAA's consultation invites comments on the approach to estimating the cost of capital. We therefore present selected evidence in Section 2.3 with a view to highlighting methodological issues rather than informing an overall judgement on the appropriate beta estimate for HAL. Section 2.4 summarises our main conclusions.

2.1. APPROACH TO COMPARATOR SELECTION

The issue of comparator selection is crucial for assessments of beta when the regulated company is not independently listed. The purpose of the comparator selection exercise is to identify companies that investors in the notional regulated entity (in this case HAL) would consider to be reasonably close investment substitutes in terms of their exposure to systematic risk. The eventual size of the comparator set may need to reflect the availability of close comparators: if a 'pure play' independently listed single airport with similar characteristics to HAL is not available, drawing on a wider group of comparators may help to make conclusions less dependent on any one reference point.

A robust approach to comparator selection should include the following steps:

- clear definition of the scope and systematic risks faced by the notional regulated entity;
- discussion of factors relevant for selection of comparison; and
- justification for selection of comparators and respective weights within the analysis.

Flint's advice to the CAA focuses on three comparator airport groups: Aeroports de Paris (ADP); Fraport; and AENA. The airport groups have a portfolio of assets, rather than being single listed airports. While the first two are commonly used comparators for HAL's beta, the latter is a new addition to the analysis for H7. It is not clear that Flint has followed a systematic and objective process to identify these comparators, as only one line on this process appears.

2.1.1. Selection criteria

Flint does not propose its own criteria for selecting close comparators. Its approach is based on the three diverse airport groups – Fraport, ADP and AENA – considered by the CMA. Flint "*considers Fraport, ADP and AENA the most relevant comparators to HAL*", but does not explain how it reaches this conclusion. We assume that its view has been based on the selection criteria referred to by the CMA and (perhaps to a lesser extent) PwC.

Both the CMA and PwC refer to the **size** and **geography** of an airport's operations as relevant characteristics. The CMA also considers the **exposure to demand risk** (both price and volume), **operating margins** and **liquidity of the listed entity** as relevant considerations, though the inclusion of operating margins in particular may reflect its focus on assessing the beta for NERL, which has quite different structural characteristics to airports and airport groups. PwC also considers the status of an airport as an **international hub** and its **traffic mix** more generally as relevant characteristics.

We do not have a fundamental issue with an approach to comparator selection that considers:

- the scale and scope of an airport's operations;
- the applicable regulatory framework; and
- the likely robustness of beta estimates obtained from each comparator.

The inclusion of size as a criterion appears to have carried considerable weight given the focus on large airport groups and the exclusion of smaller airports (such as Copenhagen, Zurich and Vienna in Europe). While this may be relevant at a high level, it is worth noting that the CAPM is scale-free. Risk exposure is not necessarily governed by the size of an investment. The CMA has based its determination for NERL on airport groups that are orders of magnitude greater in scale than its own operations, and in other regulated sectors in the UK adjustments for the size of the regulated entity are not typically made. We would therefore suggest placing less emphasis on this particular criterion.

2.1.2. Use of airport groups as comparators

Much of the analysis of comparator selection (and indeed of relative risk – discussed in the following section) presented in relation to airport betas focuses on the characteristics of individual airports. The comparators ultimately available and chosen, however, are not individual airports but diverse groups.

Table 2.1 summarises selected statistics for the three airport groups presented by Flint as being most comparable to Heathrow. It shows airport-level data for each of the three ‘core’ individual airports (Madrid for AENA, Paris CDG for AdP and Frankfurt for Fraport) and group-level data. It is clear that none of the three airport groups resembles a ‘pure play’ comparator for Heathrow.

Table 2.1: Selected airport group characteristics

	HAL	AENA	AdP	Fraport
‘Core’ airport	Heathrow	Madrid	Paris CDG	Frankfurt
% pax	100%	21%	32%	42%
Regulatory framework	Five-year price control, 2022-26	Five-year price control, 2022-26	Five-year price control, 2021-25 (abandoned)	Annual review in absence of multi-year airline deal
Volume risk	Yes – price cap	Yes – price cap	Yes – risk sharing	Yes – risk sharing
Capacity constrained	Yes	No	Tbc – expansion ongoing	Tbc – expansion ongoing
Weighted # pax, 2019	81m	293m	235m	169m
Group ownings and interests	Single airport	69 airports, 23 internationally ²	125 airports in 50 countries ³	31 airports ⁴
% domestic flights	6%	34%	16%	13%
% low cost carriers (LCC)	2%	54%	20%	5%
% long-haul	52%	9%	39%	37%
% connecting flights and transfers	35%	7%	23%	54%

Source: Barclays, CAA passenger survey 2018, Bloomberg, investor reports, various

² <http://www.aena.es/csee/Satellite/Accionistas/en/Page/1237570030585/1237568524692/Fact-Sheet.html>

³ <https://www.parisaeroport.fr/en/homepage-group>

⁴ <https://www.fraport.com/en/our-group/our-airports-and-subsidiaries.html>

Despite using size (in terms of passenger numbers) as a relevant selection criterion, the three comparator groups are all significantly greater in scale than HAL, reflecting their diverse operations. AENA’s airports carried 293m passengers in 2019, which is 3.6 times the 81m carried by HAL. For reference, any airport or airport group carrying more than 22.5m passengers in 2019 would be closer in scale to HAL than AENA.

None of the three main individual airports for each group represents a majority of passenger numbers. Paris CDG, for example, accounted for less than one-third of AdP’s passengers. The result of this is that the majority of each group’s operations and therefore beta estimates are driven by smaller, more geographically diverse airports that may bear little resemblance to Heathrow in terms of their risk exposure or regulatory framework⁵.

It is particularly instructive to consider a direct comparison between AENA and Copenhagen airport. Though it is not independently listed, Copenhagen airport accounts for the majority of its listed parent’s operations, with just one other airport (Roskilde). Copenhagen had 30m passengers in 2019 with only 6% of those travelling domestically. AENA is less comparable to HAL in scale than Copenhagen – it differs by a factor of 3.6 compared with a factor of 2.7 for Copenhagen – and its portfolio of mainly Spanish airports have a significantly higher proportion of domestic flights (34%) and are dominated by LCCs.

While we do not seek to conclude on the issue of comparator selection here, the statistics for the three airport groups above do not appear to justify Flint’s complete reliance on them as beta comparators.

2.1.3. Comparator liquidity

One point discussed in the CMA NERL PFs was the liquidity of different airport stocks. Bid-ask spreads are one way to measure trading liquidity. A threshold approach may be used to identify and exclude illiquid stocks. No threshold has been discussed in relation to H7.

We note that NERA on behalf of Ofcom used a 1% average bid-ask spread threshold⁶. Using the five-year period up to 31 March 2020, no comparators in the broader sample considered by PwC for the Q6 price control has a bid-ask spread above that 1% threshold (as shown in Table 2.2 below).

Table 2.2: Five-year average bid-ask spreads for broader comparator airport groups

Comparator	Bid-ask spread	Comparator	Bid-ask spread
Zurich	0.10%	Auckland	0.78%
Copenhagen	0.86%	Sydney	0.73%
Vienna	0.55%		

Source: Bloomberg

While we do not comment on preferred comparators, it is not clear to us that any airport shown above in Table 2.2 should be excluded from consideration on liquidity grounds.

2.1.4. Cross-checks

Ferrovial

In addition to comparator airports and regulatory determinations, we may be able to use evidence on Ferrovial, an owner and leader of the consortium that owns Heathrow. There are two different types of evidence that we consider might be useful as cross-checks on the cost of equity and cost of capital:

- Beta decomposition analysis: using estimated betas for different sectors of the Ferrovial group to draw inferences on the implied Heathrow beta.

⁵ For example, AdP operates an airport in Madagascar, while Fraport operates Fortaleza in Brazil.

⁶ NERA (2019) Cost of Capital: Beta and Gearing for the 2019 BCMR – Update, April 2019

- MAR analysis: using evidence on the market value of the Heathrow asset to draw inferences on the favourability of the regulatory package.

Reports from Barclays and JP Morgan in June 2020 found Heathrow to equate to 29% of the Ferrovial enterprise value⁷.

NERL

The Flint report emphasises the CMA’s analysis in support of the NERL determination. It does not, however, consider in detail the use of the NERL determination as a reference point for the H7 WACC. The analysis that the CMA carried out and its view on NERL’s relative risk exposure may be informative for the purpose of estimating HAL’s WACC. Given the different operating characteristics of NERL, its use as a reference point would need to be supplemented by relative risk analysis. This is discussed in the following section.

2.2. APPROACH TO ASSESSING RELATIVE RISK

None of the comparators under consideration is a pure comparator for HAL. As a result, it is not possible to conclude on HAL’s beta without carrying out an assessment of relative risk. With the main airports under consideration representing only a minority of operations for their respective parent companies, it is essential that this relative risk analysis is carried out at the level of the comparator group.

In its report to the CAA Flint acknowledges that it has not carried out its own analysis of relative risk:

“Following discussion with the CAA, we have not considered the assessment of relative systematic risk between HAL and its comparators in detail – there is already material uncertainty over asset beta estimates, and the lack of clear evidence of materially different risk presented either by PwC or HAL.”

This approach risks framing the issue as one of mediation between PwC and Heathrow – despite the former having been appointed as an independent advisor to the CAA. The existence of uncertainty does not preclude analysis being undertaken. Despite its lack of relative risk analysis, Flint in fact reaches a relatively strong position on Heathrow’s risk relative to established precedent in the sector: Flint’s lower bound pre-covid vanilla WACC is above PwC’s central case from August 2019 and implies that Heathrow airport has become materially riskier than AdP and Fraport since the Q6 determination.

These conclusions cannot be considered robust. In this section we highlight the key additional relative risk issues that the CAA should have regard to in order to reach a robust view on HAL’s beta.

2.2.1. Regulatory precedent

Relative risk analysis has been a key part of previous work undertaken by the CAA and competition authorities in several previous price controls:

- A comparison of airports within BAA was undertaken for the Q4 price control. For example, the CAA noted that ‘low frills’ airlines were likely to lead to greater beta risk for Stansted Airport itself, relative to Heathrow Airport in light of the airlines operating there⁸.
- The Q5 price control saw BAA disaggregated into component parts more explicitly than for Q4. Heathrow (0.47 asset beta) was considered to be lower risk than Gatwick (0.52) and the rest of BAA (0.61). The CC

⁷ Barclays (2020), 24 June 2020. JP Morgan Cazenove (2020), 25 June 2020.

⁸ CAA (2003) Economic Regulation of BAA London Airports, 2003-2008. CAA Decision. Paragraph 4.78.
<https://webarchive.nationalarchives.gov.uk/20140605063754/https://www.caa.co.uk/default.aspx?catid=78&pageid=11827>

also indicated that non-aeronautical commercial activities, e.g. real estate, had higher systematic risk than core airport activity⁹.

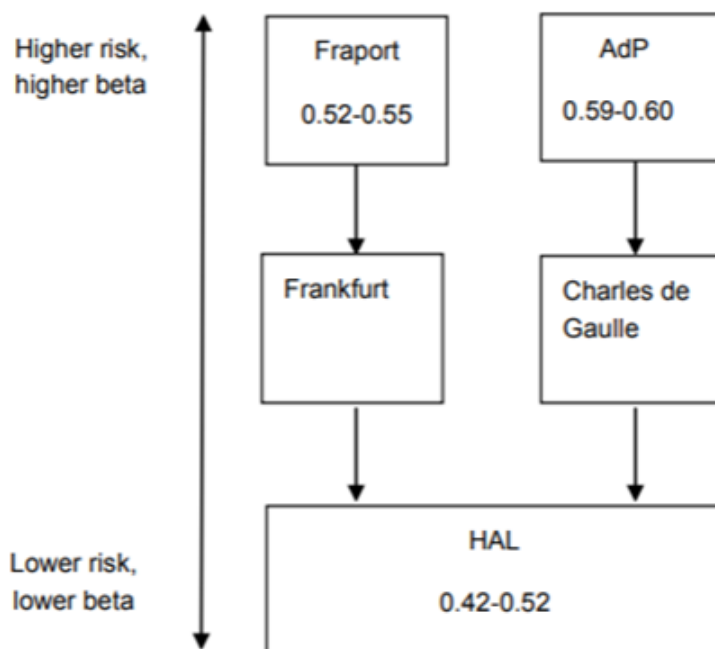
- For the Q6 price control, with BAA no longer listed, greater weight was placed on comparators. In particular, Aeroports de Paris (AdP) and Fraport listed group betas were used.

At Q6 the CAA considered carefully the relative risk of HAL, Frankfurt and Paris CDG airports, and Fraport and AdP groups. It concluded that:

- HAL has lower systematic risk than Frankfurt and Paris CDG airports; and
- “Frankfurt is likely to be lower than the average risk of the Fraport group and [Paris CDG] lower than the average risk of the AdP group”.

Figure 2.1 summarises the CAA’s view.

Figure 2.1: CAA’s Q6 assessment of relative risk



Source: CAA

2.2.2. Evolution of airport groups

The CAA’s assessment for Q6 therefore recognised that AdP and Fraport are the listed entities, rather than the two hub airports within the broader groups. We have identified a number of reasons that the risk characteristics of AdP and Fraport may have changed since the Q6 price control. Two of these relate to the composition of each group’s activities:

- 1) AdP and Fraport groups have invested in international airports and have higher activities outside of Paris CDG and Frankfurt respectively.
- 2) AdP and Fraport have a decreasing proportion of regulated aviation activities.

These changes – discussed further below – are likely to have increased each group’s empirical beta over time, affecting their risk exposure relative to HAL.

⁹ Competition Commission (2008), Q5 recommendations for Heathrow and Gatwick, Appendix F: Cost of Capital.

Volatility of passenger numbers

For context, Table 2.3 below shows data on passenger growth rates for AdP’s Paris and Fraport’s domestic airports compared with each group’s international airports. Equivalent figures are provided for Heathrow airport for comparison. The international airports show considerably more variation in passenger growth rates.

Table 2.2: Airport and airport group passenger growth rates, 2012-19

	AdP – Paris only	AdP - international	Fraport – domestic	Fraport - international	Heathrow
Average	2.6%	8.2%	2.3%	7.6%	1.3%
Standard Deviation	1.2%	10.8%	3.1%	9.7%	1.7%
Lower Quartile	1.8%	4.2%	-0.1%	3.5%	0.8%
Upper Quartile	3.2%	12.1%	3.5%	12.2%	2.2%

Source: Annual reports

By contrast, a Moody’s report¹⁰ on Heathrow indicated that:

“LHR traffic has grown at reasonably constant growth rates over the past 10 years. The standard deviation of the long term average annual passenger growth rate for LHR is less than 2% which evidences low volatility compared to most rated airports in Europe.”

Geographic mix

A key factor behind the selection of AdP and Fraport as comparators is linked to the characteristics of Paris CDG and Frankfurt airports. While the comparator groups were not ‘pure play’ for the Q6 price control, increasing investment has taken place in international airport investments. As the analysis in Table 2.3 indicates these airports in general have had more variable growth rates in passenger numbers.

Table 2.4 below summarises the proportion of passengers from the respective ‘home airports’ in each group’s portfolio. In assessing this, we use the equity stakes that AdP and Fraport hold in their respective airports¹¹. We consider the period 2011-13 for the most relevant data prior to the Q6 determination and the period 2017-19 to reflect more recent data.

Table 2.4: Airport group geographic mix

Metric	Airport Group	2011-13	2017-19
Proportion of passengers – French airports, stake weighted	AdP	69%	43%
Proportion of passengers – German airports, stake weighted	Fraport	61%	45%

Source: Bloomberg, annual reports.

In both cases the importance of ‘home’ airports has diminished over time. International airports, i.e. non-home country airports, represent twice the share of overall AdP group passengers now than they did prior to the Q6 price control. By passenger volumes, German airports now represent less than half of the Fraport group.

Examples of countries in which each group operates include:

- Mexico, Saudi Arabia, Jordan, Guinea and Chile for AdP; and

¹⁰ Moody’s (2020), 27 April 2020

¹¹ For example, if AdP held a 100% stake in Charles de Gaulle with 100m flights and a 50% stake in Airport X, also with 100m flights, there would be a weighted number of total flights of 150m. The domestic proportion would be 2/3 i.e. 100/150.

- Peru, India, China, Russia and Brazil for Fraport.

Risk profiles of airports in these countries should not necessarily be assumed to be the same as for airports in France and Germany.

In addition, snapshots based on current figures may underrepresent the relevance of Paris and Frankfurt airports to longer term value of the two airport groups. AdP suggests that by 2025, 35-40% of the group's EBIT will be generated outside of the Parisian airports, compared to 27% in 2018¹².

Business mix

We have focused above on passenger volumes by airport and highlighted the diversification by geography of AdP and Fraport groups. We now move on to discussing the extent to which aeronautical activities (across all airports) contribute to the overall comparator businesses. Table 2.5 below summarises the relevant data for AdP and Fraport.

Table 2.5: Airport group business mix

Metric	Airport Group	2011-13	2017-19
Aviation services, % revenue	AdP	60%	43%
Aviation services, % revenue	Fraport	34%	30%
Aviation services, % EBITDA	AdP	35%	35%
Aviation services, % EBITDA	Fraport	25%	24%
Aeronautical fees, % revenue	AdP	33%	27%

Source: Bloomberg

In terms of the aeronautical fees, the latest annual report from AdP (in relation to 2019) indicates passenger fees represent just 15% of revenues. The corresponding proportion across Fraport was already relatively low and has remained so.

Other perspectives on group relative risk

We can also use secondary sources, such as credit rating or equity analyst reports, to understand changes in risk profile over time.

Statements from Standard and Poors confirm the view that increasing international operations have led to greater risk. Our first quote is from 2018:

“In the last 12 months, Aeroports de Paris (ADP) has acquired controlling stakes in the Amman Airport Concession in Jordan and the Turkish Airport Operator Tav. As a result, we believe ADP's operational risk has increased due to higher country and currency risks exposure as well as integration risk.”¹³

Then earlier this year, further commentary by Standard and Poors highlighted that:

“ADP has completed several acquisitions that resulted in significant changes in consolidation and the group's business mix.”

Standard and Poors further discuss increasing risk within the AdP group, including their rationale:

“Although international expansion is part of the group's long-term strategy, we think ADP's business risk will increase because the group's diversification involves increased exposure to lower quality assets that entail higher country and currency risks.”

¹² AdP (2019) Investor Day 2019 – Business Model and Financial Outlook.

¹³ Standard and Poors (2018), 27 April 2018

More recently, AdP has invested significant amounts in GMR airports and in Kazakhstan. For more recent estimates, the changing business mix and risk profile will be a driver of the empirical beta:

“ADP’s acquisitive strategy, which saw it purchase India-based GMR airports earlier this year for €1.3 billion, followed by Almati airport in Kazakhstan for about €400 million, contributed to eroding its credit metrics prior to the pandemic and increased its exposure to high risk countries.”

These international activities with the AdP and Fraport group and the impact on the risk profile should not be ignored in setting the asset beta for Heathrow airport.

2.2.3. Capacity constraints and demand volatility

PwC, on behalf of the CAA, conducted updated relative risk analysis for Heathrow’s H7 price control, relative to comparator airports. PwC considered three metrics:

- the impact of the economic downturn on traffic volumes;
- the relationship between economic growth and passenger numbers; and
- historic revenue variability (using Fraport and AdP as comparators).

Under all three measures, PwC found that Heathrow was less risky than the two comparator airports. We noted above that both Frankfurt Airport and Charles de Gaulle were likely to be lower risk than the groups.

A Moody’s report on Heathrow Finance supports the relative risk assessment made by PwC in relation to traffic volatility in downturns, relative to other airports:

“Much of the airport’s historical resilience is underpinned by the capacity constraints LHR operates under. The pent-up demand it faces means that traffic at the airport tends to suffer lower declines than other comparable airports when economic activity weakens.”

A Fitch (2020) report discusses resilience with respect to the current covid pandemic¹⁴. *“In the case of LHR, we additionally account for Heathrow’s primary hub status together with its capacity constraint and consequent demand for airline slots in significant excess of supply, which should support a quicker recovery than other airports.”*

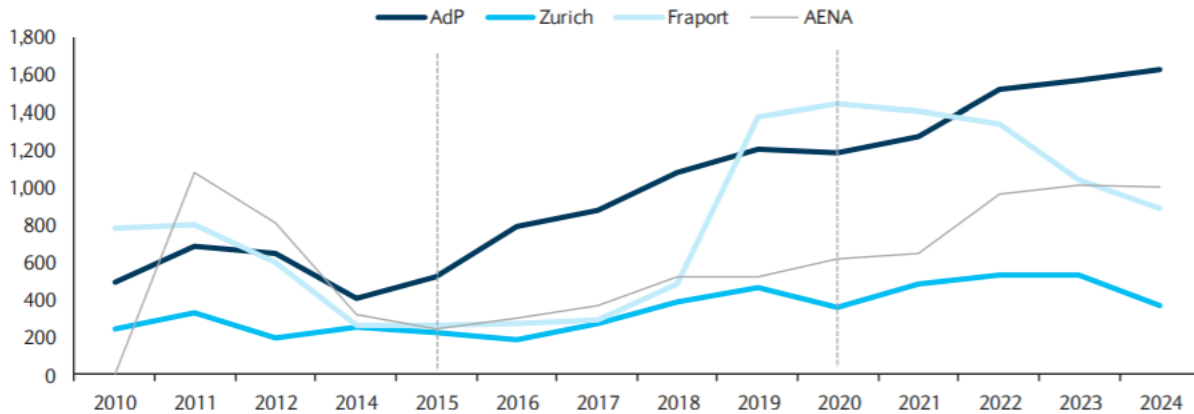
2.2.4. Investment programmes

Larger capex programmes in relative terms have been assessed in recent GB regulatory precedent to be a source of increased systematic risk. Airports with more significant capex programmes are likely to be less representative for a more modest Heathrow investment programme without expansion.

Figure 2.2 presents information on expected capex profiles, as of March 2020. The covid-19 pandemic has affected plans; however, this would have been tied to expectations of beta at this point in time.

¹⁴ Fitch (2020) EMEA Airports Show Mixed Resilience Amid Coronavirus; Long-Term Visibility Limited, 9 April 2020.

Figure 2.2: Capex profiles at selected airports



Source: Barclays. Note: Zurich figures are in CHFm, others are in €m.

Relative to prior to the Q6 price control, AdP and Fraport have increased the size of the capex programmes with the construction of new terminals.

2.2.5. Single vs. dual till

Airport investments are generally made with a view to generating cash flows both directly from passenger movements (through passenger charges) and indirectly through commercial activities such as retail. The latter source of value and cash flows is generally considered to be more exposed to risk than the former, since expenditure at an airport is discretionary in nature.

The regulatory treatment of airport and commercial investments can give rise to differences in the extent of exposure to commercial risk. Two approaches to regulation are possible:

- Under *single till* approaches both aeronautical and commercial revenues and costs are utilised in setting passenger charges.
- Under *dual till* approaches aeronautical revenues and costs are kept separate from commercial revenues and costs.

The CAA operates single till regulation for Heathrow airport. Forecast commercial revenues are deducted from total required revenues over the price control period to arrive at an estimate of the revenue to be generated from regulated passenger charges. While HAL is exposed to the risk of deviations in commercial revenue *during* a price control period, the periodic reset of allowances (and commercial revenue forecasts) considerably reduces its risk exposure in relation to commercial investments.

Consider a scenario in which commercial revenues fall by 10% relative to forecasts during a price control. Under HAL's single till framework this reduction (were it to be permanent) would be reflected in the subsequent price control as an *increase* in revenue to be recovered through passenger charges. By contrast, under a dual till regime the reduction in revenue would not affect passenger charges and (were it to be permanent) would represent a permanent loss of income to the airport operator.

The regulated airports considered as comparators by Flint operate under dual till regimes (or hybrid regimes that closely resemble a dual till). As a result, their beta estimates will reflect the greater overall exposure to systematic risk that a dual till regime produces. Furthermore, the enhanced exposure to upside potential under a dual till regime may incentivise greater investment in commercial activities, further shifting the balance of risk exposure towards commercial activities.

The de-risking effect of HAL's single-till regulatory regime should be an important consideration in assessing its risk relative to comparators operating under dual till (or unregulated) regimes.

2.2.6. HAL vs. NERL

The examples above are relevant to analysis using listed comparators. The Flint approach has also used the CMA NERL PFs and the previous Q6 determination, regulatory precedent.

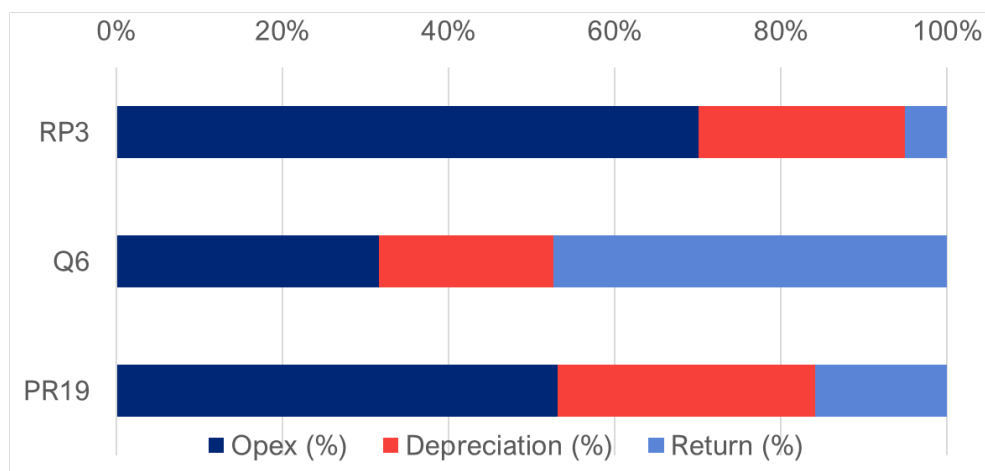
The CMA has used relative risk analysis in making an assessment of the appropriate asset beta for NERL. This indicates that the CMA perceives differences in risk between the three airport comparators relative to NERL. AdP is seen as being comparable in risk to NERL, with Fraport comparable to or slightly less risky than NERL and AENA comparable to or slightly more risky than NERL. This suggests that AENA is the riskiest of the three comparators.

If we extend this to the CAA precedent on Heathrow, the CAA has previously found AdP and Fraport to be riskier than Heathrow, by around 0.1 on the asset beta. The CMA asset beta mid-point for NERL is 0.55 with a zero debt beta. This implies an asset beta of 0.45 would be consistent with regulatory precedent (with zero debt beta). We have discussed in comparator selection that AdP and Fraport have changed their group composition and this is likely to have increased risk. This would imply a larger downwards adjustment is required for H7 relative to Q6. This implies an asset beta below 0.45. This is significantly lower than the Flint estimate of the asset beta for H7.

We would want to ensure that the CMA NERL PFs are not mischaracterised as implying that the NERL asset beta is equivalent to the Heathrow beta for H7. We discussed in the previous sub-section how operational gearing and totex to RAV suggested greater risk for NERL in RP3 than for Heathrow in Q6.

A factor considered by the CMA in the NERL PFs was the operating margin of different entities. Low operating margins reduce scope to absorb revenue or cost shocks. As shown in Figure 2.3 below, NERL has especially low operating margins relative to more asset-intensive regulated sectors (including Heathrow for Q6).

Figure 2.3 Review of operational cashflows across regulated sectors



Source: CEPA analysis of regulatory determinations, company documents and Ofwat data

2.2.7. Recent empirical indications

Flint’s approach to estimating HAL’s (pre-covid) asset beta leads to an asset beta that is 0.08 higher for H7 than at Q6. This conclusion cannot be supported by changes in measured betas for either Fraport or AdP groups during the period concerned. Table 2.5 below summarises changes in measured betas reported by Flint compared with the CAA’s equivalent summary of the asset beta evidence for Fraport and AdP groups in support of its Q6 determination. In general, the recent asset beta evidence for the two groups is *lower* than it had been prior to Q6.

Table 2.3: Approach to estimating the asset beta

	CAA Q6 - low	CAA Q6 - high	Flint H7 - low	Flint H7 – high
Fraport	0.52	0.55	0.47 (-0.05)	0.58 (+0.03)
AdP	0.59	0.60	0.53 (-0.06)	0.59 (-0.01)
Heathrow	0.42	0.52	0.50 (+0.08)	0.60 (+0.08)

Source: Flint for H7, CAA for Q6. Note: figures in brackets are relative to Q6 equivalent figures.

Applying a consistent risk differential from Q6 would have led to an asset beta for H7 around 0.02 lower than at Q6. Flint's adoption of a range 0.08 higher than at Q6 therefore corresponds to a significant shift in judgement on HAL's beta: its central estimate of 0.55 is around 0.10 higher than an estimate consistent with Q6. This is despite the potential increases in risk associated with each group's geographic and business mix noted in Section 2.2.2 above.

Flint has not set out its assumed reasons for such a significant shift in judgement. Were the CAA to rely on this unsubstantiated judgement in its determination for H7 this would reflect an important omission in the regulatory process.

2.3. BETA ESTIMATION AND INTERPRETATION

In this section we briefly highlight certain methodological issues and selected beta evidence. The purpose of this is to inform our response to the CAA's consultation questions – which focus on the approach to estimating the cost of capital – rather than to inform an overall judgement of HAL's beta at this stage.

2.3.1. Methodological issues

Time horizon

Beta estimates fluctuate over time. Even prior to the emergence of covid-19 betas for AdP and Fraport had each covered a range of 0.4 over the decade to 2020. (See Figure 2.4 below.) Whilst some trends in beta may reflect changes in risk exposure over time, a significant amount of this volatility is likely to be noise. Beta estimates themselves rely on changes in market conditions: beta is the coefficient reflecting the sensitivity of an individual stock to changes in conditions relative to the market as a whole. Measured betas may therefore be elevated or depressed over specific periods, depending on the direct relevance of factors that have recently changed.

Forming a judgement on beta over long time horizons can help to reduce the impact of noise on beta estimates. The use of long time horizons is supported by the UKRN expert report on the cost of capital. The UKRN has provided the following quotes in relation to the appropriate time horizon for considering beta:

“Crucially, there is strong historical evidence that short-term shifts in volatility and correlations do not persist indefinitely.”¹⁵

“Regulators should make more use of econometric estimates of equity beta. They should derive these estimates from sound econometric evidence and practice, utilising all available data for relevant listed companies.”¹⁶

There are two implications from this advice relevant to Flint's approach: i) periods longer than 5 years are relevant to capture changes over an economic cycle, and ii) relatively little weight should be placed on short-term estimates, such as the spot two-year estimates. Flint's explanation of its approach appears to agree with this perspective on the robustness of the short-term estimates:

“We would not, therefore, support using asset beta estimates based only on the most recent 2-year daily spot rates in this instance.”

“We do not consider that reliance on a spot, 2-year daily, estimate is a robust basis for asset beta estimation. The 2-year estimate would implicitly disregard three years' worth of share price data entirely, at each 5-year periodic price control review, potentially without good reason. It would also potentially give rise to less stable regulatory outcomes.”

¹⁵ UKRN (2018) Estimating the cost of capital for implementation of price controls by UK Regulators, p52.

¹⁶ UKRN (2018) Estimating the cost of capital for implementation of price controls by UK Regulators, p55.

However, when establishing a range, it is clear that Flint use the higher spot estimates in establishing a range. Flint estimates ranges of 0.47-0.58 for Fraport, 0.53-0.59 for AdP and 0.52-0.60 for Aena, as reproduced in Figure 2.4 below. In the case of both Fraport and AdP the upper end estimates are based entirely on recent spot estimates.

Figure 2.4: Asset beta ranges for Fraport, AdP and AENA

	Fraport	ADP	AENA
2-years, daily frequency			
Spot	0.58	0.59	0.57
2-years average	0.56	0.56	0.60
5-years average	0.49	0.54	
5-years, daily frequency			
Spot	0.50	0.56	0.52
2-years average	0.47	0.53	
5-years Average	0.48	0.53	

Source: Flint analysis of Thomson Reuters data as of 28 February 2020.

Source: Flint

The impact of the time horizon is material. Were Flint to set aside its shorter-term estimates as its proposed approach suggests – as a result focusing on the 5-year averages of the 2-year daily betas and the 5-year averages of the 5-year daily betas – the resulting asset beta ranges would be 0.48-0.49 for Fraport and 0.53-0.54 for AdP.

Other methodological choices

There is no single accepted specification for estimating betas. Different stakeholders may present evidence using:

- daily, weekly or monthly data on returns;
- local, regional or world returns indices; and
- OLS or more sophisticated econometric techniques.

In each case there is no clear consensus in favour of a single approach – though the use of monthly returns data is perhaps less reliable in terms of the resulting sample size and it is not clear that the use of more sophisticated (and complex) techniques has improved the robustness of the evidence base.

Flint has focused on daily data relative to a European index of returns as the basis for its beta estimates and has focused on OLS as its estimation technique. The only point of difference here relative to recent UK regulatory determinations is the sole use of a regional index of returns. Other UK regulators have also had regard to evidence relative to national return indices such as the FTSE 100. This would be a helpful addition to the evidence base – and we note that the FTSE 100 in particular has a somewhat international outlook.

2.3.2. Selected evidence

In this section we briefly comment on beta evidence for comparators. The purpose of this is not to inform or justify an overall judgement as to HAL's asset beta. Rather we use this evidence as a means of informing our view of the appropriate approach to take in interpreting beta evidence. To the extent possible we seek to differentiate between pre-covid and post-covid implications.

Figure 2.5 below shows beta estimates for AdP and Fraport groups. As noted in the preceding section, prior to the emergence of covid-19 both airport groups had actually produced lower beta measurements over the 2014-19 period than prior to the Q6 price control. Following the emergence of covid-19 neither airport group has recorded unprecedented beta measurements – though we emphasise that the evidence base is still developing – and indeed Fraport's asset beta appears to have remained in line with its range over the past few years.

Figure 2.5: Rolling asset beta estimates for AdP and Fraport¹⁷

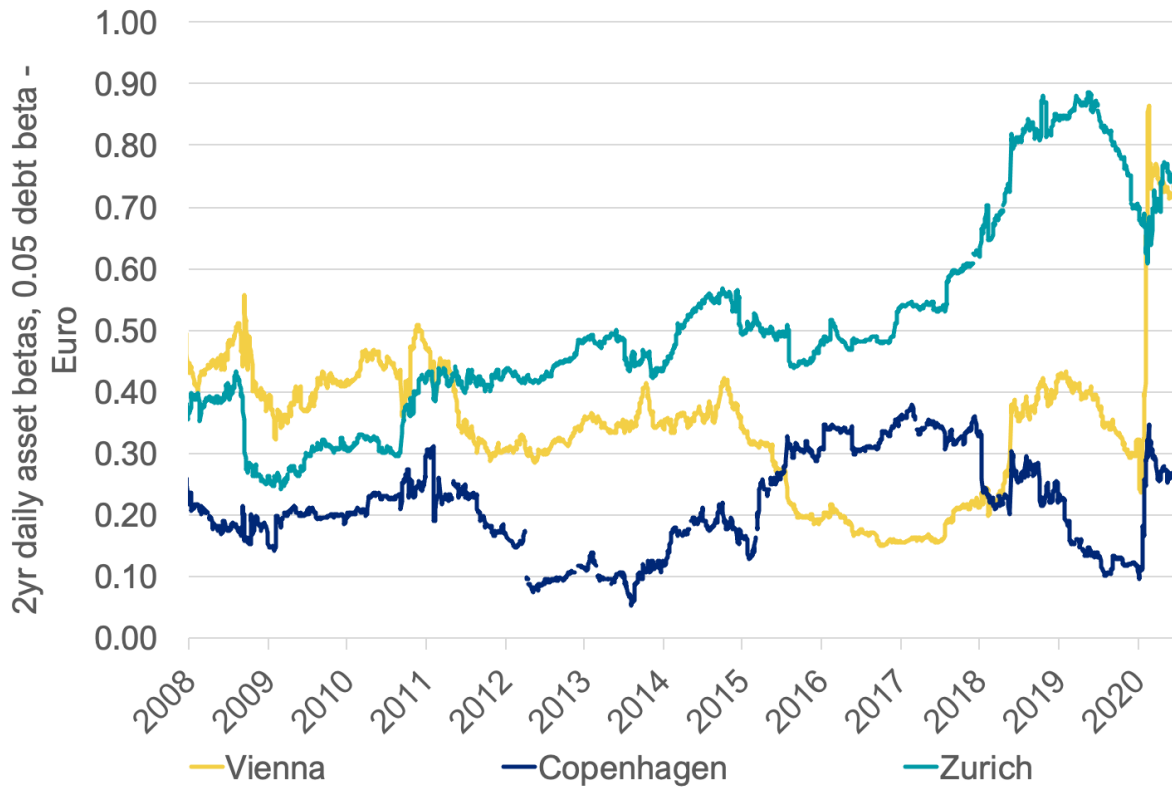


Source: Bloomberg.

Figure 2.6 below shows equivalent estimates for other European airport groups. This evidence demonstrates the wide range of beta estimates that can be obtained for international airports. Prior to the emergence of covid-19, both Vienna and Copenhagen airports demonstrated that international airport betas can be observed in the same broad range as regulated network assets. There is no reason to regard the Q6 determination or the evidence from AdP or Fraport airport groups as a low-end constraint on HAL's beta.

¹⁷ We have excluded evidence for AENA in the interests of clarity. It was first listed in 2015 and had volatile beta estimates for the first few years of its listing.

Figure 2.6: Rolling asset beta estimates for other European airport groups



Source: Bloomberg.

The evidence base regarding the impact of covid-19 on airport betas is still developing. Based on the evidence in Figures 2.5 and 2.6 above, however, we make the following observations:

- Not all airports have recorded elevated beta estimates in recent months. It is not clear that beta estimates for Fraport or Zurich have deviated from their recent values.
- Among airports with elevated recent beta estimates, with the exception of Vienna airport group, none of the comparators under consideration has recorded unprecedented beta estimates in recent months.
- Evidence for Copenhagen airport indicates that even in the current period of uncertainty it is possible for international airports to record relatively low beta estimates.

While there is still uncertainty over the impact, beta estimates should be put into longer term context. The CAA should retain a focus on longer term trends in beta rather than short-term estimates. If the covid-19 pandemic is considered to be a tail risk i.e. a very low probability event, placing substantial weight on the resulting beta during this period alone is unlikely to be representative of the probability-weighted expected outcomes over a longer horizon including periods of downturns and of growth.

2.4. CONCLUSIONS

The choice of beta comparators does not reflect a rigorous and objective selection process

With international airports exhibiting varying beta estimates, comparator selection is a critical part of establishing a robust beta estimate. Failure to consider and rationalise comparator selection in detail would be a material omission in process on the part of the CAA.

Our indicative comparator selection analysis indicates that further consideration should be given to a broader evidence base. It is not clear that the proposed airport groups – which include a diverse collection of international

airports – are more informative than other airports that have been excluded from consideration. Ferrovial itself can be considered for analysis, and evidence from other GB regulated assets is also relevant.

In the absence of any independently listed close comparators, it is not possible to draw robust conclusions without fully considering relative risk

Flint's proposed estimates of HAL's asset beta are not supported by rigorous relative risk analysis. We highlight the following issues and gaps in the evidence base:

- Little consideration appears to have been given to the diverse activities covered by the three proposed comparator airport groups. The most relevant airports in each group – Paris CDG, Frankfurt and Madrid – represent a minority of operations, and the risk of other group airports cannot be assumed to be similar to these three or to HAL.
- Heathrow's low volatility in passenger numbers – relative to other large airports and to an even greater extent relative to AdP, Fraport and AENA groups – does not appear to have been considered.
- The use of single till regulation for Heathrow does not appear to have been considered.

Overall, Flint's estimate of asset beta for H7 does not appear to reflect the fact that Heathrow is an established hub airport that has been running at capacity, serving developed economies and with a predictable and well developed regulatory and legal framework in place. This is a material departure from principles established in relation to previous price control periods and reflected in PwC's analysis for H7, in which HAL was judged to be lower risk than the main proposed comparator airports and airport groups.

The proposed range for H7 appears inconsistent with regulatory precedent

The CAA's view of beta at Q6 was informed by AdP and Fraport's group level betas. Flint's beta estimate is higher than for the Q6 price control. This is despite evidence of lower empirical betas for comparators and potentially a greater downwards adjustment being required from comparators to take into account changes in risk profile.

Since the Q6 price control each group has added to its portfolio of smaller airports operating in non-European regions under different market conditions. Measured beta evidence for each group is no higher than observed prior to Q6 – and may even be lower, at least before the impact of covid-19.

Despite this Flint appears to have adopted a view that HAL's risk is now higher relative to these comparators. This view has not been justified with reference to any relative risk evidence or analysis.

Focusing on short-term estimates risks under-representing evidence from a wide range of market conditions

Empirical beta estimates change over time and are impacted by current events. This does not necessarily imply that the fundamental beta risk of a business is changing, especially by the extent observed from some empirical beta estimate changes. Consistent with the UKRN expert report, we consider that longer term beta estimates are likely to be more robust and overemphasising short-term estimates would be inappropriate and lead to significant volatility in regulatory estimates of the cost of capital.

This is particularly important in light of the emergence of covid-19. The range of movements in measured betas is wide and the evidence suggests that some airports have continued to have relatively low betas. For those airports showing elevated betas, it is not clear that the resulting estimates are unprecedented relative to previous economic downturns.

3. COST OF DEBT

Flint's approach to setting the cost of debt looks at the cost of embedded debt and new debt separately, blending these together for the all-in cost of debt. The allowances are based on iBoxx benchmark indices, with specific assumptions made on the debt characteristics of the notional entity and how the approach should be calibrated. We highlight four specific issues in relation to the cost of debt approach, namely:

- choice of debt tenor;
- weight on new debt;
- trailing average characteristics; and
- the impact of the covid-19 pandemic.

3.1. DEBT TENOR

On debt tenor, we discuss two issues – firstly, the choice of debt tenor itself, and secondly, how this is incorporated into the development of a cost of debt allowance.

3.1.1. Choice of debt tenor

The Q6 price control had considered that the iBoxx 10-15yr indices represent the most appropriate tenor for Heathrow's debt. The CEPA report for CAA and Ofwat found that the 10-15yr indices still represented the most appropriate tenor for Heathrow for the upcoming H7 price control.

Since these reports, Heathrow's actual average tenor at issue for bond debt has increased to 17yrs¹⁸. Heathrow's increase in average debt tenor at issue appears to be driven by not refinancing short-term bonds that have matured recently, while also issuing longer term bonds e.g. 33yr and 40yr bonds.

Flint have proposed using a 10yr+ index, with average tenor for these indices around c.20yrs. We have listed below a number of issues with the proposed Flint approach:

- Debt of comparator airports is materially shorter than for Heathrow. Based on a simple average of current bonds, we find an average tenor at issue of 11yrs for AdP and 9yrs for Fraport. AENA relies on loans rather than bonds, so it is more challenging to estimate, but the average term remaining of current loans appears to be 12yrs. This compares to an assumed tenor from Flint of around 20yrs.
- The assumed tenor is clearly driven by Heathrow's actual debt profile and, compared to analysis in 2016, an increase in the assumed tenor of 7.5yrs in a short period of time shows that there is significant reliance on Heathrow's actual bond debt, muting the incentive properties of a notional approach. Excessive weight appears to be placed on evidence at one point in time.
- A driver of the increase in Heathrow's actual bond tenor is expansion financing strategy. This does not align with the characteristics assumed for the notional entity in H7.
 - In their Q4 2019 Investor presentation¹⁹, Heathrow discussed 'setting the foundations to finance expansion.' Heathrow notes that it is 'successfully maximising duration in each active market.'

¹⁸ Flint (2020) Business as Usual WACC for H7, April 2020.

¹⁹ <https://www.heathrow.com/content/dam/heathrow/web/common/documents/company/investor/reports-and-presentations/financial-results/2019/Heathrow-Limited-Q4-2019-Presentation.pdf>

- Flint does not appear to consider non-bond debt finance. This represents c.20% of Heathrow (SP) Ltd's debt and would be expected to bring down the average maturity²⁰.
- The use of a 20yr assumed tenor remains longer than Flint's estimate of Heathrow's actual average tenor at issue for bond debt. The longer assumed tenor increases the cost of debt allowance.
- By issuing longer dated debt recently, at a time with a flatter yield curve, the additional cost faced by Heathrow is relatively limited relative to shorter tenor debt. However, applying this assumption to the full trailing average period leads to a significant difference in the embedded debt allowance.
- The longer assumed tenor is matched to a longer trailing average by Flint. This leads to a significant mismatch (103bps) between the embedded cost of debt and Heathrow's actual cost of debt²¹:
 - Heathrow (SP) Limited reports a nominal cost of debt at end-June 2020, including index-linked accretion, of 4.03%, or 2.88% when excluding accretion.
 - This compares to a 20yr trailing average of the A/BBB 10yr+ non-financial indices of 5.06% at the same date; this is equivalent to the Flint approach.
 - Using a shorter 15yr trailing average still leads to a difference, with a 4.67% average for the iBoxx indices used above.
 - A 12.5yr trailing average of A/BBB 10-15yr non-financial indices gives a yield of 4.25% nominal, still 22bps higher than Heathrow's actual cost of debt including accretion.

In our work for the CAA and Ofwat in 2016²², we noted that an allowance based on a notional benchmark is favoured over a pass-through of actual debt costs. There are stronger incentives placed on the regulated entity from a notional approach, although the notional approach needs to be well calibrated and independent. Through an excessive reliance on Heathrow's actual debt tenor at a single point in time, the incentive properties for efficient debt costs are removed and the approach to setting other parameters incentivises regulatory gaming.

3.1.2. Implications for setting a cost of debt allowance

We do not consider that the Flint report includes sufficient discussion of the impact of the change in assumption for debt tenor. Flint change the trailing average length and weight of new debt to reflect the longer assumed debt tenor. These two characteristics are discussed separately below.

This is linked to consistency with assumptions on the notional entity. We consider that changes to assumptions do not necessarily need to apply to both the cost of embedded debt and the cost of new debt. Failure to do this can create scope for windfall gains and losses. Regulatory consistency relates to making the same decision when faced with the same data, so we do not believe that adopting different assumptions for the cost of embedded debt and the cost of new debt is necessarily inappropriate. We consider it more appropriate to reflect the new assumptions in the cost of new debt and keep the approach to embedded debt consistent with a view on efficient debt financing.

As an example, let us take the notional credit rating. If for the H7 price control, the CAA assessed that a BBB credit was consistent with the notional entity from the start of H7, it would be inappropriate to assume that embedded debt was also BBB-rated, if the notional credit rating had previously been A.

The same applies to assumed tenor. There is scope for regulatory gaming if Heathrow can have short-dated debt mature before the regulatory determination and issue long-dated debt with a flatter yield curve to increase the tenor of their debt.

²⁰ For example, if 80% of debt has a 17yr average tenor and 20% of debt has a 1yr tenor, the effective weighted tenor is 14yrs.

²¹ This is based on Heathrow's presentation of its interest costs including accretion. The CAA is considering Heathrow's debt costs in the context of a real cost of debt allowance, so should ensure that the figure produced is consistent with that basis.

²² CEPA (2016) Alternative approaches to setting the cost of debt for Ofwat and the CAA, August 2016.

3.2. TRAILING AVERAGE

There are two issues we highlight with respect to the trailing average – the length and whether it is ‘rolling’ or not. With respect to length, the tenor is not necessarily equivalent to the trailing average length, when there has been a change in the assumed debt tenor.

In a simplified example, let us assume that a regulated firm has typically issued 10yr debt (this represents an efficient financing approach). However, the firm now expects to rely on 20yr debt. Based on the firm’s previous debt strategy, all embedded debt is from 2010-2020. However, if we based the trailing average length on the current assumed debt tenor of 20yrs, the trailing average covers the period 2000-2020. This creates a material risk of deviations between allowed and actual costs, driven by an inappropriate trailing average period.

Further analysis should consider whether the trailing average period for Heathrow should be closer to the previously assumed tenor.

With respect to a ‘rolling’ approach, Flint appear to agree that this is appropriate. We would be concerned if such an approach was not adopted due to complexity. The risk-free rate approach uses a forward adjustment to reflect changes over the price control. For embedded debt, all data is also known. Updating a trailing average also seems to be less complex than many items in cost of capital estimation e.g. topics in beta estimation.

3.3. WEIGHT ON NEW DEBT

In our view, an assumption that zero debt is issued in H7 is inconsistent with regulatory precedent and comes at a cost to consumers. We discuss the issue of interaction between gearing and the cost of capital in Section 6, however a key factor to note is that the situation is different to the CMA NERL PFs. Heathrow sustains gearing levels materially in excess of notional gearing, while comparator airports have significantly lower gearing than notional.

In the Q6 price control, the CAA assumed a 30% weighting for new debt. Flint has said 52.5% is the lowest level Heathrow can achieve during H7 without debt buyback. This assumes zero new debt is issued. In a historically low interest rate environment, this comes at a cost to consumers and creates future issues for calculating trailing averages for embedded debt appropriately.

We are not aware of other regulatory precedent that has changed the weighting of debt to reflect a different notional gearing assumption prior to the previous price control. The assumption of the -75% weighting on new debt at 30% gearing should lead to further scrutiny of this assumption.

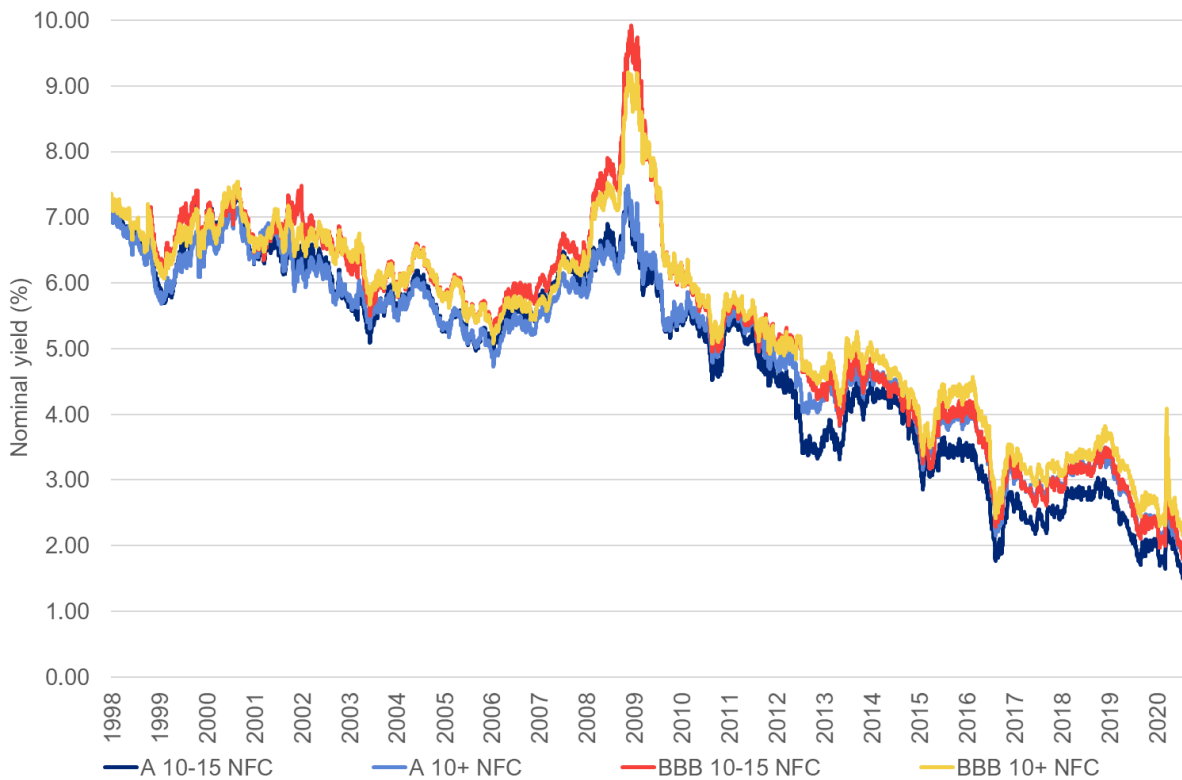
3.4. IMPACT OF COVID-19 ON BENCHMARK INDICES

Evidence from Markit iBoxx benchmark yields shows a spike in yields in early 2020, followed by a return to below pre-covid levels. This is shown below for different GBP non-financial corporate (NFC) indices.

For setting the cost of new debt, the CAA will continue to monitor benchmark yields and Heathrow’s performance relative to the benchmark. Ofwat for PR19 made a downwards adjustment to the cost of debt to reflect expected outperformance²³; if levels are persistently different to a benchmark, an adjustment is possible. We would note that Heathrow’s actual gearing level should be considered here and that additional time will help understand any deviation.

²³ Ofwat (2019) PR19 Final Determinations: Allowed Return on Capital Technical Appendix.

Figure 3.1: Benchmark yields



Source: Markit iBoxx

3.5. CONCLUSIONS

The choice of a longer assumed tenor is over-reliant on Heathrow’s tenor at a single point in time

Flint has increased the assumed debt tenor to around 20yrs, relative to c.12.5yrs for the Q6 determination. This is materially longer than debt tenors at comparator airports and appears over-reliant on Heathrow’s current average tenor at issue for its bond debt. Heathrow acknowledges that the increase in tenor was driven by expansion considerations. The reliance on Heathrow’s actual debt mutes the incentive properties of a notional approach and leads to an allowance over 100bps above Heathrow’s actual debt costs.

The trailing average and the weight on new debt is driven by the new assumed tenor, creating gaming opportunities and lacking regulatory consistency.

The longer assumed tenor forms the basis for extending the trailing average period and placing lower weight on new debt. A longer trailing average would include periods of relatively high rates that are not reflective of either HAL’s or the notional entity’s debt costs. The relationship between debt tenor and both the trailing average and weight on new debt also necessitates further consideration. The current approach leads to greater scope for gaming as windfall gains are possible by sculpting debt maturity profiles.

Covid-19’s impact on the cost of new debt should continue to be monitored

The impact of covid-19 on debt yields is most relevant to the cost of new debt. It is too early to conclude whether changes relative to benchmark indices are likely to be persistent. If there are persistent expected changes, the CAA could consider adjustments to benchmarks or alternative benchmarks. This assessment should take into account Heathrow’s gearing level.

4. GEARING AND WACC INTERACTIONS

4.1. BACKGROUND

In UK regulatory determinations on the cost of capital, the cost of capital is generally presented as an estimate consistent with the selected notional gearing assumption. Evidence on gearing from comparators often deviates from that notional assumption. In order to address this issue regulators typically adjust estimates of the beta term for the effect of gearing by ‘de-levering’ estimated equity betas to obtain asset beta estimates and ‘re-levering’ those asset betas to obtain equity beta estimates at the notional gearing level. The cost of debt is typically estimated separately and not specifically adjusted with reference to gearing.

In its NERL determination, the CMA highlighted a challenge in interpreting evidence based on this approach. If the notional gearing assumption is similar to the gearing for comparators on which beta estimates are based, then the effect of the de-levering and re-levering process will be minimal. Where gearing differs, however, the resulting notional equity beta will be quite different from the comparator equity betas.

According to a strict interpretation of the Modigliani-Miller theorem, this should not affect the overall vanilla WACC (excluding the impact of tax). The theory proposes that as gearing increases, the impact of a higher cost of equity is offset by downward pressure on the WACC from a greater proportion of (cheaper) debt²⁴. The CMA’s approach to estimating NERL’s cost of capital, however, implied a WACC that was increasing in the level of gearing. This made the selection of a relatively high notional gearing assumption – with an implied relatively high WACC – problematic.

4.2. IMPLICATIONS FOR H7

Flint acknowledges this issue in its report to the CAA, noting that “similar companies should exhibit a similar WACC... regardless of how the WACC calculation is undertaken”. Indeed, the issue presents arguably an even greater challenge in the context of H7 as a result of the wide range of gearing levels under consideration:

- The three airport groups chosen as close comparators for Heathrow have gearing in the region of 20-40%.
- The notional gearing assumption historically adopted by the CAA and CMA for Heathrow has been 60%.
- HAL itself has a gearing rate in the region of 68-78% on current estimates, depending on whether only Class A or also Class B debt is included in the definition.

The wider the range of financial structures under consideration, the greater the sensitivity of the WACC to the proposed approach to de-levering and re-levering.

Flint’s WACC range therefore incorporates a scenario in which the CAA begins an adjustment process to the notional gearing assumption. Beginning from an opening level of 60%, consistent with that used for Q6, it assumes that no new debt is raised, this bringing the notional gearing assumption down to 52.5% over the course of H7. Its lower bound for the H7 WACC is based on this lower notional gearing assumption.

Table 4.1 below places the different implied airport vanilla WACCs in context. The table shows:

- the WACC for each comparator airport based on its own measured equity beta and gearing combined with Flint’s estimates for other parameters;
- Flint’s proposed central WACC estimate based on a notional gearing assumption of 56.25%; and

²⁴ This effect applies to *current* estimates of the WACC, i.e. those that incorporate a *current* estimate of the prevailing cost of debt. It would not be appropriate to apply this theoretical framework to a WACC that incorporates an embedded cost of debt.

- for reference, the WACC at HAL’s actual gearing implied by Flint’s approach (though Flint does not present this scenario in its report).

The WACC estimates shown in Table 4.1 are illustrative, since they combine gearing and equity beta measurements directly taken from comparators with other parameters (the risk free rate, TMR and cost of debt) estimated by Flint in the context of HAL. However, this does not affect the analysis that follows.

Table 4.1: Illustrative airport vanilla WACCs without re-levering and Flint/HAL re-levered WACCs

Component	AdP	Fraport	AENA	Flint (central)	Flint implied (HAL actual gearing)
Gearing	20.4%	37.0%	28.0%	56.25%	78%
Equity beta	0.67	0.77	0.70	1.14	2.18
Cost of equity	3.0%	3.8%	3.2%	6.5%	14.5%
Cost of debt	1.6%	1.6%	1.6%	1.6%	1.6%
WACC	2.7%	3.0%	2.8%	3.8%	4.5%

Table 4.1 highlights the significant challenges posed by Flint’s interpretation of the data. The three comparator airport groups have similar estimated vanilla WACCs, reflecting their similar equity beta measurements and gearing levels. Should these airports be judged suitable benchmarks for HAL, then HAL’s own vanilla WACC should fall in a similar range. Flint’s central estimate of HAL’s vanilla WACC, however, is 80-110 bps higher than the vanilla WACCs for the comparator airports. It is not clear that such a material discrepancy is in the consumer interest.

Flint’s analysis does acknowledge this, and so the central estimate is in part based on a lower-gearing scenario. This lower-gearing scenario implies that the cost of capital is indeed lower at the levels of gearing observed for the three comparator airport groups. The effect of including it is to pull Flint’s central estimate down towards those of the comparator airports – though by a relatively small amount as a result of Flint’s assumption that the speed of adjustment of notional gearing is heavily constrained.

The underpinning assumption behind Flint’s approach, however – that the cost of capital may indeed be lower at lower levels of gearing – is hard to reconcile with HAL’s actual financing choices. Its actual gearing is currently 78%, including both Class A and Class B debt. As shown in Table 6.1, based on Flint’s approach this would imply a vanilla WACC of 4.5%, 150-180 bps higher than for the comparator airports.

This discrepancy is revealing. Given its portfolio of debt HAL has periodic opportunities to reduce its leverage; that it has not chosen to do so suggests that the illustrative WACC differential in Table 4.1 may not in fact reflect HAL’s financing costs. One alternative interpretation is that the vanilla WACC of an airport with similar risk characteristics to the three airport groups shown in Table 6.1 is constrained to be in a similar range, i.e. 2.7-3.0%. Under this interpretation, a more defensible approach would simply be to calibrate the allowed WACC based on observed WACCs for comparable airports. In doing so the natural choice for the ‘balancing’ parameter would be the equity beta, though we note that the CAA is not in fact obliged to select any specific equity beta assumption. To the extent that HAL’s gearing partly reflects tax advantages of debt, its choice would appear to strengthen the rationale for introducing a gainsharing mechanism in relation to gearing.

Applying a theoretical re-levering relationship over such a wide range appears to be problematic and inconsistent with the evidence available from HAL’s own financial structure. Any deviation from the range implied by the three airport groups referred to would need to be well-justified.²⁵ **Flint’s report to the CAA does not present any arguments why its materially higher WACC estimate would be in the consumer interest.**

²⁵ As noted in Section 4, based on relative risk analysis there may be reasons that the three airport groups discussed here overstate HAL’s exposure to systematic risk.

5. MARKET PARAMETERS

We have discussed cost of capital issues in relation to individual parameters. The purpose of the report is to provide views on the approach taken by Flint in setting the cost of capital for H7 and consider the impact of covid-19. For market parameters we broadly agree with the approach used by Flint and suggested changes are more incremental than fundamental.

5.1. RISK-FREE RATE

The approach taken by Flint on market parameters is clearly informed by the CMA’s Provisional Findings (PFs) with respect to NERL. On the risk-free rate this involves the use of current Index-Linked Gilts (ILGs).

We understand that Flint has used 3-month and 6-month averages of 10yr ILGs, cross-checked against 15yr and 20yr ILGs, as per the CMA NERL PFs. There is a forward adjustment made to the middle of the H7 price control, reflecting an adjustment based on 3m and 12m averages of ILGs.

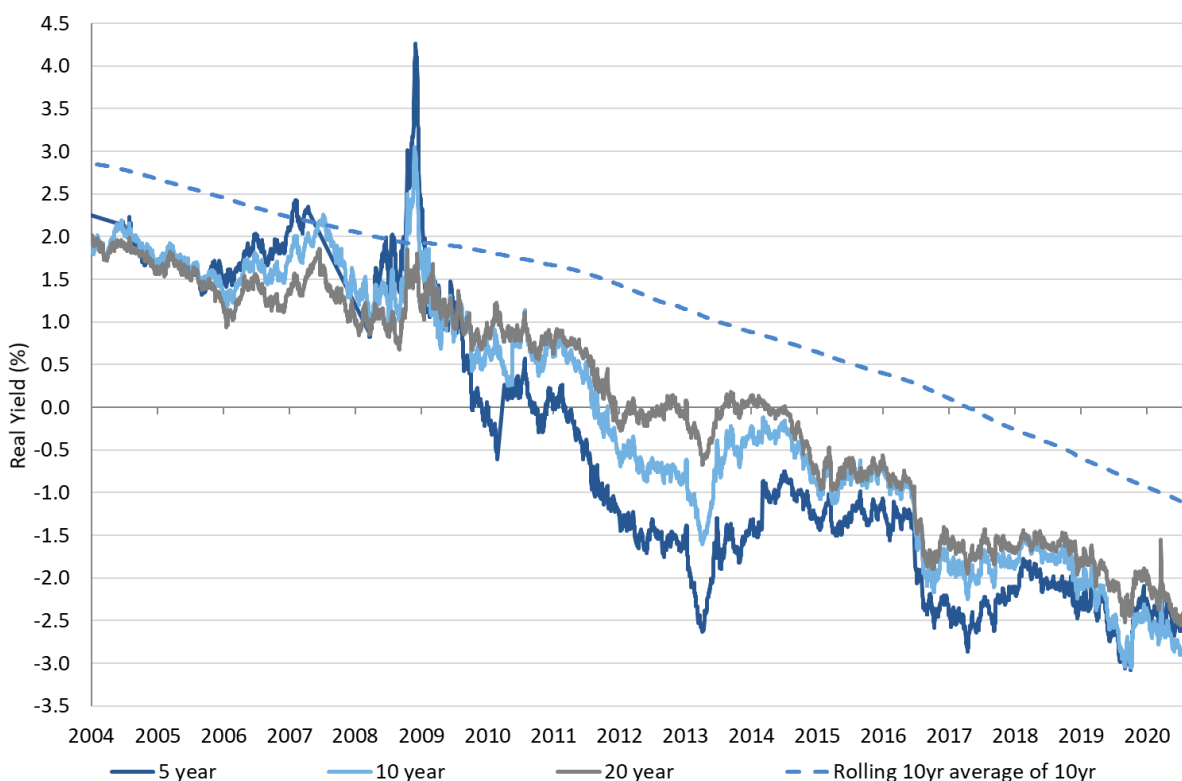
There are no immediately apparent fundamental errors in the application of this approach, however there is limited information for us to reconcile their figures and check whether the adjustments are internally consistent.

We would note the following two comments in relation to the risk-free rate approach:

- The accuracy of forward curves has been limited in previous years; it is unclear than an adjustment leads to a better outcome than simply using current yields, in the absence of indexation.
- We are not convinced that the approach to the risk-free rate leads to a varying cost of capital with the level of gearing. The Modigliani-Miller irrelevance theorem is based on a current cost of capital. Basing the risk-free rate on a historical average is not an appropriate response.

While there was an uptick in ILG yields earlier in the year, rates have since fallen and continued to fall further. Forwards continue to suggest limited and gradual increases to yields are expected to market participants.

Figure 5.1: Benchmark ILG yields



Source: Bloomberg

Overall, we do not consider that covid-19 should lead to a proposed change in approach, though we recognise that greater uncertainty can be associated with greater volatility. Cost of equity indexation is an option available to the CAA.

5.2. TMR AND ERP

As with the risk-free rate, the approach taken by Flint is consistent with the CMA NERL PFs. This leads to a range of 5.0-6.0% (RPI-real), consistent with a number of UK regulators. This is driven predominantly by long-run historic evidence; other sources of evidence do not appear to have affected the proposed range.

We would expect that forward-looking evidence through a Dividend Discount Model (DDM) is not likely to be representative at this time, given the current dividend yield is calculated using committed nominal figures relative to a lower market capitalisation value. Forecast GDP growth or equity analyst forecasts are also likely to exhibit material volatility at this time.

We note that Ofgem's RIIO-2 draft determinations included Step 2 analysis on the cost of equity that considered broader market evidence, including infrastructure fund discount rates and Market Asset Ratio (MAR) analysis. This acted as a cross-check on their CAPM-derived Step 1 cost of equity. Similar analysis by the CAA could be useful for H7. We discuss analysis of market valuations in the following section of the report.

6. ANALYSIS OF MARKET VALUATIONS

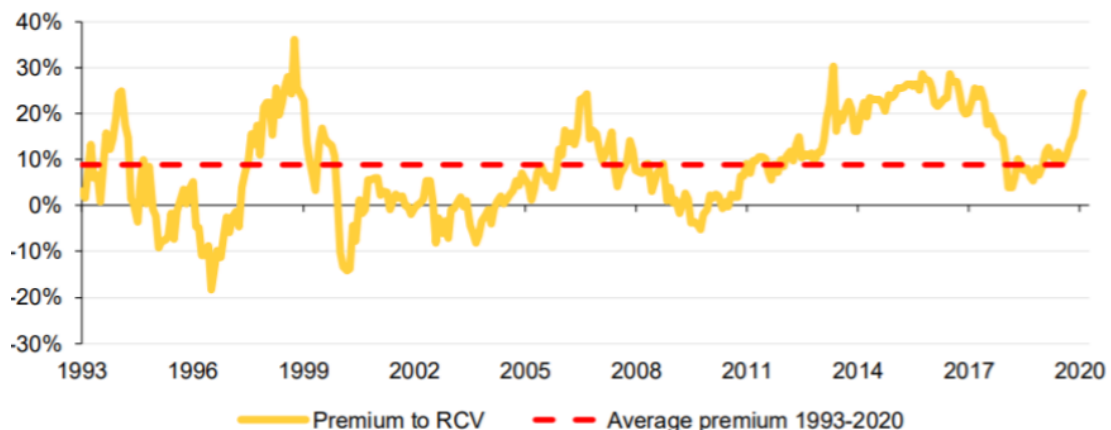
We briefly discuss market valuations in this section, as a further piece of analysis that can inform the CAA’s setting of the cost of capital. Market Asset Ratio (MAR) analysis measures the market valuation of a company relative to the RAB. A higher valuation could be driven by more positive cashflows or a lower discount rate, relative to the regulatory assumptions.

We consider that the premia observed in the GB water sector following the PR19 determinations are hard to reconcile with Ofwat underestimating the cost of equity and that analysis of energy networks may be informative for the RIIO-2 price control. Inferences can be drawn in relation to the risk-free rate and TMR estimates; market parameters that will be used by the CAA in H7. Evidence from Ferrovial may be informative for the H7 price control, although there are methodological challenges.

6.1. MARKET-ASSET RATIOS IN GB WATER AND ENERGY SECTORS

In the water sector there are two largely pure-play listed GB water companies. MAR analysis was undertaken by Ofwat in relation to the PR19 CMA appeal. This analysis consistently indicated a sector premium over recent years, as shown in Figure 6.1 below. This premium appears to have persisted following acceptance of Ofwat’s Final Determinations for the upcoming price control period by the majority of GB water companies (including all three listed companies).

Figure 6.1: Average MAR premia for listed GB water companies



Source: Ofwat.

Ofwat had determined (in RPI real terms) a -2.35% risk-free rate and a 5.5% TMR. It is challenging to reconcile the observed premia with the notion that these are under-estimates of the main economy-wide parameters. Ofgem has published RIIO-2 draft determinations and MAR analysis from companies there may be informative for the CAA in estimating market-wide parameters for H7.

6.2. APPLICATION TO FERROVIAL

MAR analysis can also be carried out on groups with a diverse range of distinct business interests – though the challenges in computing and interpreting such estimates are greater than for ‘pure play’ comparators.

Equity analyst reports often include Sum of the Parts analysis that allows the valuation of Heathrow, one part of Ferrovial’s portfolio, to be isolated. As such, Ferrovial’s market value could be informative to the CAA as a cross-check on the cost of equity.

7. RISK ALLOCATION ISSUES

The bulk of this paper examines the cost of capital based on a broadly conventional approach to risk allocation, with HAL fully exposed to volume risk and operating cost risk over the duration of a price control, and partially exposed to capex cost risk through the ex-post efficiency review process. This implicitly assumes a substantial degree of recovery of demand.

However, any future recovery is uncertain and we expect that the CAA may be considering options for alternative risk allocations following the Covid-19 pandemic. Here, we explore issues related to potential alternate formulations of the balance of risk between HAL and airlines.

It is important to preface this by noting that, regardless of the balance of risk, the 'business as usual' WACC still remains an important reference point and as we argue, it may be considerably lower than Flint has estimated. Similarly, the Covid-19 pandemic does not necessarily imply a changed beta or an increased WACC, and as we highlighted earlier, it is still possible that long-term betas for comparator airports remain unchanged following the pandemic. This is particularly the case if CAA considers measures to provide greater security to HAL.

Nevertheless, it may be efficient to consider approaches that give HAL greater security than envisaged, particularly in the face of substantial short-term uncertainty around passenger numbers and potential effects on commercial revenues. However:

- These changes should be motivated by an efficient notional financial structure and not by HAL's actual financial structure. HAL's ability to manage risk under the highly geared structure it has adopted is a matter for its shareholders, not the consumer.
- There should be read across to the implied WACC from actions taken to provide HAL with greater security, to the extent that these limit HAL's risk exposure. For example, if HAL is provided some protection from future volume risk, then this needs to be considered in the context of beta estimation.
- Any alteration of the balance of risks would need to consider whether the incentive implications for HAL are in the passenger interest. For example, any security against lower passenger volumes should not come at the expense of HAL taking action to reduce its cost base to reflect the likely scale of the airport during H7.
- Any action taken to place greater risk onto airlines and ultimately passengers, would need to consider their ability to bear that risk. There is a tension between providing HAL protection against reduced passenger volumes and the amount airlines can underpin HAL's cash flow. Volumes significantly below pre-covid forecasts are likely to lead to charges that are too high to be underpinned by airlines. At such levels, charges are likely to hamper any recovery in ATMs and passenger levels at Heathrow, and as such, any attempt at altering the balance of volume risk exposure between airlines and HAL is likely to be ineffectual.

Ultimately the approach taken should reflect each party's ability to bear risk, the impact on incentives faced by Heathrow and the suitable cost of capital. Should passenger volumes at Heathrow airport be depressed for an extended period of time, HAL's historic cost structure is unlikely to be consistent with feasible passenger charges. In this scenario a greater degree of pressure is likely to be required from the CAA on HAL's opex efficiency. Should this be insufficient, another option would be to defer cash flows by, for example, delaying RAB depreciation which offers an NPV-neutral way to flex charges.

8. MAIN CONCLUSIONS

While we support many aspects of Flint's approach to estimating the cost of capital (prior to the covid-19 pandemic), we consider that the evidence it presents does not support a proposed increase in the WACC relative to PwC's advice to the CAA. In particular, a more comprehensive and nuanced analysis of beta and cost of debt evidence is required.

International airport group relevance should not be assumed in any assessment of the beta, rather relevance should be systematically and transparently assessed based on robustness and riskiness and on group level characteristics rather than those of constituent individual airports. This assessment should take into account both operational aspects (notably capacity constraints, economic status of markets served, demand volatility and hub status) and regulatory status (including exposure to volume risk and treatment of commercial revenues). The use of evidence from three diverse airport groups without risk adjustment – and exclusion of evidence from other groups which are not demonstrated to be less relevant – has not been justified and greater transparency of Flint's analysis is required. We also conclude that the proposed cost of debt is too heavily influenced by HAL's actual debt structure and costs, particularly given that its high level of gearing reflects choices that it has made.

The impact of the covid-19 pandemic is still developing. The CAA adopting a long-term perspective on the cost of capital, consistent with other UK regulators, would limit the implications of the pandemic. Equity market return estimates are based on historic data relatively unaffected by the addition of a single year of data, and market data on the risk free rate and cost of debt will naturally incorporate movements driven by covid-19. Evidence on beta is varied: while some airport groups are showing elevated short-term betas, others do not appear to have been affected. There is no strong evidence that betas are unprecedented relative to previous market downturns. As part of a long-term cost of capital assessment the key issues are likely to be: (a) establishing an appropriate pre-covid reference point for beta and (b) accurately reflecting any changes in the allocation of risk. On the cost of debt, evidence of elevated spreads for HAL's actual debt is likely to reflect, at least in part, HAL's very high actual gearing, rather than the assumed gearing of the notional entity. The CAA's analysis should account for HAL's gearing, as well as recognising the fluctuation over time in HAL's debt spreads compared with market indices.



UK

Queens House
55-56 Lincoln's Inn Fields
London WC2A 3LJ

T. +44 (0)20 7269 0210

E. info@cepa.co.uk

www.cepa.co.uk



cepa-ltd



@cepald

Australia

Level 20, Tower 2 Darling Park
201 Sussex St
Sydney NSW2000

T. +61 2 9006 1307

E. info@cepa.net.au

www.cepa.net.au