

# 1. WAY FORWARD – TECHNICAL APPENDIX

## Introduction

CEPA is working with the London Airlines' Consultation Committee (LACC) in relation to the upcoming H7 price control. This technical appendix supports the airlines' response to the CAA's 'Way Forward' document, CAP2139.

We address those points which we consider are most important for the CAA to consider ahead of the H7 Initial Proposals. We note that there remains significant uncertainty on what position the CAA may arrive in those Initial Proposals at on the cost of capital and other policy choices impacting on risk and return e.g. traffic risk sharing (TRS).

### Summary

At this point on a price control it is usual to have more detail on the regulator's approach to calculating the cost of capital, including indicative ranges and guidance on point estimates (as was the case in both Ofwat's and Ofgem's most recent price control determinations). The CAA has provided some high level insight into its policy positions but these lack sufficient detail to facilitate detailed engagement. As a consequence we are inferring how the CAA might implement policy in order to comment. Noting this problem, we have elected to focus on Beta estimation. Reflecting on engagement with the CAA team and the Way Forward document, our key points are summarised below.

- **The CAA must now undertake a proper analysis of the relative risk faced by Heathrow.** The CAA has not been willing to undertake this challenging and necessary analysis at a time when other stakeholders are resource constrained. As a result its work to date on the relative risk of Heathrow utilises assumptions and implicit assertions rather than detailed analysis. This is insufficient given the central importance of weighing Heathrow's risk exposure relative to other airports when setting the WACC.
- **We support CAA's conclusion that it will utilise a larger group of to assess risk;** no one airport is a perfect comparator and commonly referenced airport groups are too diverse to use in isolation.
- **Key now is how the CAA intends to use the wider group of comparators.** The Way Forward is unclear on this. We are clear that the average of this group is not a proxy for Heathrow. In fact our analysis suggests that Heathrow faces the lowest risk exposure of all.
- **We are supportive of the CAAs view that pre pandemic data remains important to beta estimation.** Even so, care must be taken not to over-represent the impact of the current shock on a parameter intended to be assessed over the long term. CEPA's analysis suggest that even taking an extreme example the long term impact on beta is small. At this point the evidence does not clearly make the case for a beta adjustment.
- The paper comments on setting the cost of debt, reiterating points from our previous work.
- **In relation to financeability, suitable assumptions are important and we find the CAA's direction of travel concerning.** Gearing for Heathrow should be based on the established regulatory precedent of a notional company. The CAA should not accept the view that the only option for Heathrow in current circumstances is to raise debt. We have provided evidence of others subscribing equity and we would expect any properly managed company facing financial pressure to draw on its own cash reserves and limit dividends.
- **We agree with the CAA that there is no place in H7 for aiming up.**
- Looking forward we request that the CAA:
  - **Sets out the basis of and rationale for the RAB adjustment** already made. A decision such as this made by a regulator should be transparent, underpinned by a formal impact assessment and open to scrutiny.
  - **We would also ask that the CAA move quickly to flesh out the TRS options/proposals.** The Way Forward document does not provide a sufficient basis from which to assess impact on the cost of capital. This is an important gap in the work undertaken by the CAA to date given that airlines will require time to scrutinise the analysis that the CAA puts forward.

## Beta

Within the cost of capital, the beta parameter appears to be the area where additional analysis would be most beneficial. We consider that the three-step framework proposed by the CAA should ensure that all relevant issues are covered, though this needs to be undertaken in a consistent way.

### *Pre-covid beta assessment*

Within the pre-covid beta assessment, we welcome the move to a broader comparator set, consistent with the recommendations in previous CEPA reports<sup>1</sup>. The CMA has set out an empirical approach to estimating beta that focuses on longer-term evidence, which we support. The key issue in our view is how that empirical evidence is used. The starting point has to be comprehensive qualitative relative risk assessment. The CAA's statements to date do not recognise this, implying that relative risk assessment has been undertaken (see Table 1.1 below).

*Table 1.1: CAA statements on relative risk assessment*

A report from PwC on behalf of the CAA in October 2017 for the H7 price control assessed that HAL has lower systematic risk than Fraport and AdP. This drew on quantitative analysis on three metrics. We note that Aena has been judged by the CMA around the RP3 determination to have higher systematic risk than Fraport and AdP.

CAP1940 in June 2020, included a consultancy report from Flint Global. It is clear that relative risk assessment was not considered: "*Following discussion with the CAA, we have not considered the assessment of relative systematic risk between HAL and its comparators in detail.*"

The CAA in CAP1940 compares the approach adopted by Flint with the CMA, suggesting that there is "*consistent relative risk assessment, namely, that HAL exhibits similar risk exposure to Aéroports de Paris; a greater level of risk exposure than Fraport and lower risk exposure than AENA.*"

This statement is incorrect:

- The CMA RP3 decision does not discuss Heathrow's risk relative to these three listed comparator airport groups.
- Flint Global has not undertaken relative risk assessment at a level of detail sufficient to make a decision, instead it uses what equates to an unfounded simplifying assumption that Heathrow is equivalent risk to the average of the three comparators.

The CAA in CAP2139 state that in CAP1940 "*We presented an emerging view that HAL exhibited greater risk than Fraport, similar risk to Aeroports de Paris and lower risk than AENA.*" This builds on the mischaracterisation of the previous paper turning it into an emerging view.

No reference is made to PwC's earlier quantitative analysis, nor previous price controls where the CAA has concluded that HAL is lower risk than both AdP and Fraport.

The CAA has to date declined to engage in detail with our own relative risk analysis, partly as a consequence of choosing not to include relative risk assessment in the scope of work of its finance and cost of capital consultants. Our report looked in detail at several factors that impact on systematic risk for Heathrow and the comparators, including the traffic mix, home market, capacity constraints and the single till regulatory framework. Our assessment showed that these factors and the risks linked with airport groups led to Heathrow being the lowest risk airport out of the eight comparators considered, after taking into account the impact of traffic risk sharing mechanisms.

The CAA in CAP2139 stated that it "*intend[s] to evaluate a broader sample of airports, to ensure that company specific factors do not exert undue influence on our overall estimate.*" While it is correct that the broader sample reduces the impact of any individual company specific factor, it should not be used to imply that Heathrow is simply the average of the eight comparators relied upon. The larger comparator group should also not be used as a proxy for a critical piece of analysis required when estimating beta; the implications of comparator choice and rationale are material and the CAA should now set out and argued case for its policy position.

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<sup>1</sup> Our recommendations had excluded Auckland International Airport (AIA) due to concerns around beta values varying significantly using local and regional indices.

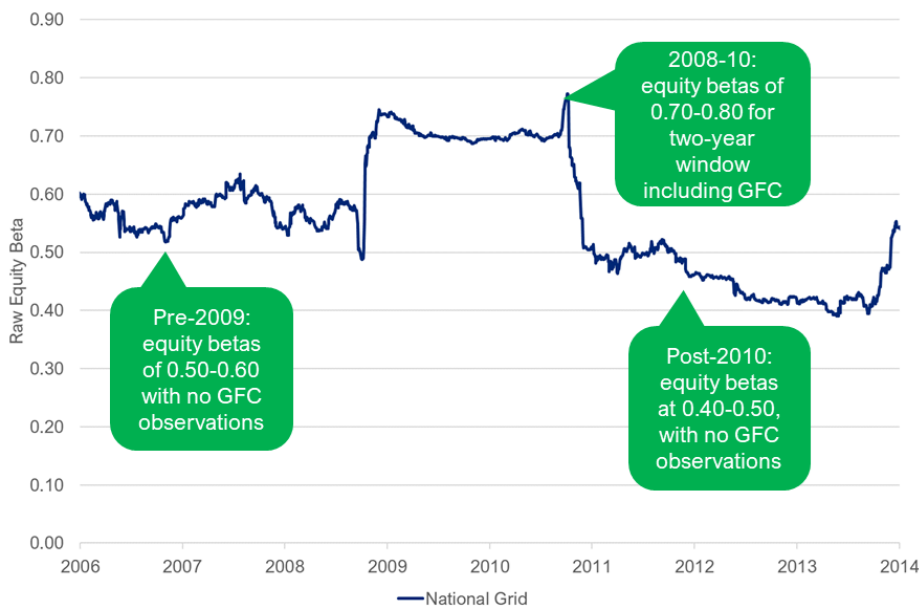
We previously noted that there are no perfect comparators. The three large airport groups under consideration as part of the comparator set (AdP, Fraport and AENA), in particular, have diverse business interests. In order to make use of beta evidence from these groups it is essential that analysis is undertaken to understand each group’s full portfolio of airport risk in a beta context. If this is not possible, then those airport groups may be best utilised as cross-checks.

*Impact of covid on beta*

We agree with the CAA that data prior to March 2020 should not be disregarded (in fact, we think that this provides the cleanest evidence base from which to draw inferences<sup>2</sup>). There remains a risk that data from the pandemic is over-represented in market evidence used to assess Heathrow’s forward-looking risk exposure. The CAA has indicated a potential frequency of a covid magnitude event occurring once every 20-50yrs. We find this assertion to be unsupported. The lower bound of this range appears unsupported; we would not expect an event of this magnitude every fourth price control.

In our November 2020 report to the CAA, we highlighted the impact of ‘shocks’ on beta and how these events can act as reference points for the time horizon over which beta is calculated (e.g. a two-year window). The effect was shown for both Fraport in the airlines space and for National Grid as a UK regulated utility. Figure 7.6 of the earlier CEPA report is replicated below in Figure 1.1.

*Figure 1.1: National Grid raw equity beta during the GFC*



*Source: Bloomberg, CEPA analysis.*

In light of the particularly high recent volatility of some airport betas, and as we do not have the benefit of time, ahead of the H7 Initial Proposals or Final Proposals, to assess post-covid betas for the comparator airports, we suggest the CAA considers the following in assessing the forward-looking covid impact<sup>3</sup>:

- Shorter beta estimation windows.
- Winsorisation.

<sup>2</sup> For investors with long holding periods, volatility in one year of data does not carry a high weighting.

<sup>3</sup> This should not imply that we advocate using short periods of data as the exclusive or even primary basis for beta estimation; in this case, we are trying to understand the effects of a single event as part of a longer time series. The time period requires us to use daily data, given sample size considerations. AdP is used as an example of beta trends and volatility, notwithstanding its limitations as a comparator for Heathrow.

For shorter beta estimation windows, we have looked at 90 working days (i.e. approximately three months) as a contemporaneous estimate of beta. Based on two-year daily year beta estimates, AdP was the comparator with the largest (absolute) change in the asset beta since the covid pandemic began – with upward spikes in beta in February 2020 and November 2021. The evolution of AdP’s asset beta is provided in Figure 1.2.

*Figure 1.2: AdP daily asset beta – 90 working day estimation window*



*Source: Bloomberg, CEPA analysis.*

This initial, exploratory analysis shows that:

- There are periods of higher and lower sensitivity to market factors over the time period shown. At times these periods are separated by only a few days, with regular fluctuations as well as periods of relative stability.
- The average 90-day asset beta from the beginning of 2009 to the end of 2019 is 0.55. This sits exactly in the middle of the CMA’s estimate of AdP’s asset beta of 0.50-0.60 at RP3 (based on pre-covid evidence)<sup>4</sup>.
- The average asset beta for the thirteen months since 1 March 2020 for AdP is 0.96. The average since has been below the CMA’s lower bound of 0.50. These low beta estimates have been measured after the onset of the covid pandemic and challenge the idea that investors now view airports entirely differently.

The process of Winsorisation can be used to limit the impact of outliers or extreme values on the overall beta. The approach has the potential to improve the predictive power of forward-looking estimates (see Welch 2020<sup>5</sup>). The approach involves capping daily data to reduce the influence that any one observation has on the estimate.

We have demonstrated a process on the 90 working day AdP asset beta shown above. We have applied this to values that are +/- 3 times as large as the daily stock return (implying a raw equity beta of above 3.0). Again, this analysis is intended as an initial, exploratory contribution to the CAA’s thinking.

<sup>4</sup> See Table 13-10.

<sup>5</sup> Welch, I (2020) Simply Better Betas. The approach of winsorisation was used in the ECA/ Imrecon beta study for the RIIO-1 price controls in GB.

Figure 1.3: Winsorised asset betas for AdP



Source: Bloomberg, CEPA analysis.

Winsorization can lead to higher or lower values than the unadjusted series. What Figure 1.3 demonstrates is that much of the spike observed in late 2020 is driven by a small number of extreme values that have a large proportional impact (due to the statistical properties of beta estimation).

Bringing this together, we can look to understand how a covid-specific beta adjustment might be calibrated within the CAA's framework. Such an adjustment will be a function of the comparator(s) used, the measured change in beta, any adjustments based on evidence from short estimation windows or using Winsorisation, and the assumed frequency of shocks of a similar magnitude. The following steps might indicate an upper bound – though we emphasise that this relies on assumptions that are unsupported:

- We refer only to the asset beta of AdP – which exhibits the highest increase in beta amongst our comparator airports.
- We assume that the full difference of 0.41 (i.e. a recent, covid-affected beta of 0.96 minus a pre-covid beta of 0.55) represents the covid impact on beta for a 13 month period<sup>6</sup>, with no weight placed on Winsorization.
- We assume that the covid impact is experienced every 20yrs (i.e. 240 months) to the same magnitude.

An illustrative calculation of a long-term beta adjustment would then be 0.02 (i.e.  $0.41 \times 13 / 240$ ).

As noted, many airports have actually exhibited much smaller changes in empirical asset betas and a 20yr frequency seems unlikely in reality. As such, we would expect a smaller adjustment on a forward-looking basis if any adjustment were considered necessary at all.

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<sup>6</sup> The covid pandemic effects are still ongoing, but the beta has returned to pre-pandemic levels in this example. As such, the impact should be commensurate with the period upon which beta is impacted, not the effects of the event. For example, the Global Financial Crisis (GFC) had effects impacting much of the 2010s with respect to growth, yet impacts on beta tended to be relatively isolated to the start of the crisis.

### *Impact of changes in the regulatory framework on beta*

The introduction of a TRS mechanism and a RAB adjustment would each reduce systematic risk faced by Heathrow. Volume risk has been used to justify differences in allowed asset betas between revenue cap and price cap regulated companies in GB. It would be inconsistent and incorrect not to recognise this for the H7 asset beta. In our view Heathrow's systematic risk is lower than its comparators and getting lower as a result of regulatory interventions. The CAA should also consider that its risk reducing policies impact Heathrow both in 'normal' periods and around shock events.

### *Other*

We note that the CAA has made statements impacting on beta in previous publications, for example around the asset liability mismatch point raised on the cost of debt (see below) and on the endogeneity bias. The estimate of beta should take into account these qualitative factors in an assessment, even where direct estimation of the impact is challenging.

## **Cost of Debt**

On the cost of debt, we reiterate a number of points from previous reports and discussions with the CAA including:

- The CAA has continued to dismiss evidence from other comparator airports with much shorter debt tenors, suggesting that these comparator airports have adopted an inefficient treasury strategy and created risk for equity holders through an asset-liability mismatch. This position is not supported by evidence, and more plausible explanations for the divergence between Heathrow and comparator airports would be the impact of Heathrow's higher gearing necessitating that debt be more spread out (to avoid bunched redemption dates), or that Heathrow can issue longer term debt as it is lower risk than those comparators.
- We would be wary of relying on Heathrow's own debt costs for setting a cost of debt allowance, given their opaque nature and the incentive properties from doing so. Heathrow's high level of gearing and lack of headroom around debt covenants in our view contributed to the larger increases relative to a benchmark index than for other European airports.
- Heathrow has not reconciled the information provided in its RBP on its nominal debt costs and the debt costs contained in their quarterly debt reporting to investors and stakeholders. The March 2021 debt summary indicates a nominal cost of debt with accretion of 1.43%.
  - If Heathrow's interest costs are truly lower, then this raises into question the suitability of the notional benchmark. If interest rates are artificially lower due to profiling and the use of derivatives, this implies higher interest costs in future. In either case, the CAA needs to understand the implications of this now. If profiling affects interest costs after H7, the CAA needs to set out that Heathrow will not be compensated for these higher costs in future, irrespective of whether expansion is taking place.
- With respect to deflating nominal yields, we had used market-based inflation measures. The CAA has noted that it has stripped out the inflation risk premium from estimates for inflation. This creates an opportunity for the regulated company to arbitrage and gain at the expense of the consumer.
  - For example, let us assume that breakeven inflation is 3.50% and that 50bps is assumed to represent an inflation risk premium<sup>7</sup>. Let us assume that the nominal cost of debt is equivalent to the market benchmark, at 5.00%. Heathrow's real interest cost will be 1.50%, yet the CAA's approach means Heathrow's allowed real cost of debt is 2.00%.

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<sup>7</sup> The principle is irrespective of the tenor.



- We support the CAA's proposed approach on embedded debt with respect to use of the 'collapsing average'; this is more reflective of how the notional entity's embedded debt costs would evolve over time.

## **Notional gearing & financeability**

We continue to assume that certain common features of regulatory financeability assessment will be applied and do not comment on these further:

- The CAA will focus on the notional, not the actual, company.
- The CAA will apply a holistic 'in the round' approach that does not, for example, require all credit metrics to be maintained above investment grade thresholds in each and every year.
- The CAA will adopt assumptions consistent with prevailing market returns and expectations and will take note of the behaviour of airports (and airlines) in raising equity.

On notional gearing, we would expect the CAA to utilise a symmetric and consistent approach. We reject that the assumption that any shortfalls in revenue for the notional entity should be assumed to be addressed through issuing debt. Such an approach has never previously been adopted, we are not aware of regulatory precedent supporting a change, and the CAA does not include the period of outperformance earlier in Q6 when assessing notional gearing levels. The approach goes against long-held regulatory principles of additional financing being raised with a pre-defined mix of debt and equity.

We have previously provided examples of airports (and airlines) raising equity. The H7 price control will be almost two years since the initial covid outbreak, with airports having the opportunity to raise equity in order to strengthen their position. Heathrow itself has stated that it has raised £750m in equity, so it is not the case that equity cannot be raised. In other regulated sectors (energy and water), we have seen significant RAV premia achieved in recent (i.e. post-covid) equity transactions, reflecting the availability of capital and the UK's strong track record in economic regulation.

It is appropriate that dividends are restrained during periods of stress; having firms free to take larger dividends in strong periods mean that lower dividends need to be accepted where returns are poorer (especially in light of the equity injection provided on existing shareholders' behalf through the Q6/ iH7 RAB adjustment).

Suitable input assumptions will be important for financeability assessment, which should be considered in the round and draw upon notional assumptions (for example on gearing). The CAA's statement around a higher cost of capital supporting faster de-levering misses the point and implies that paying higher charges today will help to avoid paying higher charges in future. The point we make is that the higher notional gearing assumption is not justified in the first instance. When it reaches a final notional gearing decision the CAA should demonstrate that it represents an efficient notional capital structure.

## **Aiming up**

We agree with the CAA that no clear rationale exists for aiming up, and that where required, any adjustment should be minimal. The sector has a more informed set of customers relative to other sectors, given the airlines' role and mechanisms in place to support engagement e.g. capex governance.

## **RAB adjustment**

From a process perspective, we would want to see how the CAA has justified the Q6 RAB adjustment. Given the precedent this sets, a cost-benefit analysis would appear to be proportionate. At present we are unclear on the justification (though the CAA has presented its assessment framework), with clear implications for the H7 price control and for competitive effects more broadly.

In our view, where a RAB adjustment is applied, as for modelling any shortfalls in revenue for the notional entity, we do not think that a RAB adjustment should be assumed to reflect additional debt. Indeed, it may be appropriate to view it as being equivalent to an equity injection. This can be reflected within any review of notional gearing.

## **TRS**

With the uncertainty over the calibration of any traffic risk sharing, we would expect that the Initial Proposals will demonstrate that the CAA has considered a full range of options and their implications. This should be possible on a standalone basis and we would expect the CAA to set out a range for the impact on the asset beta. Assuming perfectly offsetting effects would not be transparent and it would hamper efforts to engage with the Initial Proposals.

We agree with the CAA (and disagree with Heathrow) that the TRS mechanism would impact on risk, irrespective of whether a RAB adjustment is applied. The approach will be set on an ex-ante basis and adhered to during the price control. A RAB adjustment was not set out on an ex-ante basis and has changed the risk allocation that operates in the sector (pushing risk previously properly allocated to Heathrow onto airlines and their customers).



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