



# Response to CAA consultations on RP3 and H7 WACC

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International Airlines Group (IAG)

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## INTRODUCTION AND SUMMARY

This note contains CEPA's comments, on behalf of International Airlines Group (IAG), in response to two consultations issued by the CAA:

- one covering draft proposals for (among other things) the weighted average cost of capital (WACC) for NATS (En-Route) plc, referred to throughout as NERL, during the upcoming RP3 price control period<sup>1</sup>;
- another considering the implications of those proposals for Heathrow Airport Limited (HAL)<sup>2</sup>, supported by an updated analysis of HAL's WACC prepared by PwC<sup>3</sup>.

In both cases we comment only on the WACC.

We previously prepared a report on NERL's WACC in November 2018. We have also reflected on NERL and its consultants NERA's comments on this report, which the CAA also took into account in its draft proposals, but do not provide a detailed response.

The first section contains our comments on the market parameters of the cost of capital, i.e. the risk-free rate and equity market returns. In general our comments apply equally to both RP3 and H7, but we note where particular points relate to the later start date of H7. **Overall we support the CAA's proposed estimates, though we make some further comments on the proposed ranges for both the risk-free rate and total market return (TMR).**

The second section contains our comments on the company specific parameters for NERL in RP3. **In our view the allowance for the cost of new debt risks over-compensating the efficient cost of debt for NERL.** This is primarily a result of the CAA taking into account evidence from notional cost of debt indices. Whilst we do not disagree with the principle of drawing on index-based evidence, in this case such evidence can be used as a cross-check rather than as an input into the CAA's estimates. We make only limited comments on gearing and beta.

For RP3 we continue to recommend the parameter ranges in our November 2018 report, subject to appropriate updates for new data in relation to the risk-free rate and cost of debt. Such updates are not covered in this note.

Finally, the third section contains our comments on the company specific parameters for HAL in H7. The H7 process is at an earlier stage, with the CAA due to continue work on the regulatory framework over the course of the year. We therefore do not include in this note any parameter estimates for H7, and focus our comments on key methodological points. **We suggest that the CAA ensures it considers a sufficiently broad range of comparator companies and risk categories. We also suggest cross-checks on beta and the overall cost of equity.**

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<sup>1</sup> 'Draft UK Reference Period 3 Performance Plan proposals', CAA 2019 (CAP 1758).

<sup>2</sup> 'Working paper on the cost of capital: the implications of the RP3 draft performance plan for Heathrow Airport Limited (HAL)', CAA 2019 (CAP 1762).

<sup>3</sup> 'Estimating the cost of capital for H7 - Response to stakeholder views', PwC February 2019.



## 1. MARKET PARAMETERS

### 1.1. RISK-FREE RATE

The CAA has proposed a real risk-free rate estimate of -1.4%<sup>4</sup> based on current yields on 10-year index-linked gilts (ILGs) adjusted for market-derived expectations of interest rate changes to the mid-point of RP3. The CAA's proposed range was -1.5% to -0.9%. Our November 2018 proposed range was -1.84% to -1.34%.

The CAA itself noted that the use of deflated nominal gilts to support an estimate of 0.9% is a departure from the recommendation of the recent UK Regulators' Network (UKRN) cost of capital study. We continue to prefer the approach based on ILGs only, and therefore support the CAA's use of ILGs in selecting its point estimate.

Market-derived data on the expected path of ILG yields is a reasonable source for making forecasts. However, the recent performance of market data in predicted the outturn path of ILG yields has been poor: throughout the majority of the past decade market data has predicted an upturn in yields rather than the declines that have been seen in practice. This could be a source of concern.

In its analysis of the risk-free rate for H7 PwC notes that:

*"The current yield on a 10-year gilt is -1.8% and the market expectation is that this will increase to between -1.6% and -1.5% over the H7 period. Taking account of this, and factoring in a degree of uncertainty, we recommend a range for the real risk-free rate of -1.5% to -1% for the H7 period."*

There is inevitably uncertainty around future projections of the risk-free rate. However, PwC appears to recommend that that uncertainty should result in the addition of a degree of headroom to the upper end of its evidence-based range. We do not agree. Recent trends in ILG yields demonstrate that this uncertainty has manifested in rates *below* market-implied forecasts.

We suggest that – for both RP3 and H7 – the CAA could place some weight on current unadjusted spot rates. These have in practice proved a better guide to subsequent ILG yields than market data over the past decade. The CAA could also consider the use of indexation to update a risk-free rate estimate based on unadjusted spot rates over the course of the price control period.

### 1.2. MARKET RETURNS

The CAA has proposed a TMR estimate of 5.4% in RPI-deflated terms, with a proposed range of 5.0% to 6.25%. Our November 2018 proposed range was 5.0% to 6.0%. We therefore support the CAA's proposed point estimate.

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<sup>4</sup> In real terms relative to RPI inflation. Unless otherwise stated in this report figures in real terms are relative to RPI inflation.



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The CAA appears to have used its judgement in selecting its point estimate from this range. It does not specifically state how much weight is placed on different sources: though the use of forward-looking estimates informs the low end of the range it is not clear whether this evidence influences the CAA's point estimate; and it is not clear how much, if any, weight is placed on investor surveys. As it develops its view of market returns for H7, greater clarity from the CAA on the weight attached to each source of evidence would allow stakeholders better to understand the potential sensitivity of its proposed TMR range to developments in the underlying evidence base.

The broad parameters of the debate over TMR are becoming increasingly well-established, with the issue having now been considered recently in detail by Ofgem and Ofwat. The CAA's summary of each individual category of evidence is clear, concise and helpful. We therefore do not provide further comments on the various sources of evidence.

The upper end of the CAA's range of 6.25%, however, does not appear to correspond with that evidence. The CAA notes that "most sources suggest a TMR of no more than 6%", and the use of 6.25% appears to be based on its use for the RP2 and Q6 price control periods. Other sector regulators have tended to move away from regulatory precedents: reinterpretation of historical evidence means that these precedents are less relevant now.

In its analysis of TMR for H7 PwC suggests that:

*"As financial market indicators gradually return to longer-term norms, then the difference between historical measures of expected equity returns and forward-looking measures should narrow."*

We agree with the need to update all sources of evidence closer to the start of H7 – and this might be expected to impact evidence from forward-looking measures more than long-term historical evidence. Should there be little movement in forward-looking measures, however, the CAA should remain open to the possibility that the mean-reversion of expected equity market returns implied by PwC does not materialise.

## **2. NERL COMPANY SPECIFIC PARAMETERS**

### **2.1. GEARING**

The CAA has proposed a notional gearing estimate of 60%, in line with that used for RP2. Our November 2018 proposed figure was 55%, taking into account that NERL's actual capital structure has been and is expected to remain until 2024 below the notional figure.

In setting a notional cost of capital allowance there is no requirement in principle for the CAA to reflect actual gearing. We therefore have no further comment to make.

### **2.2. COST OF DEBT**

We focus our comments here on the cost of new debt. The CAA has proposed a nominal cost of new debt of 3.1%, or 0.1% in RPI-deflated terms, with a proposed range of -0.4% to 0.5% in RPI-



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deflated terms. This draws on evidence from both NERL's existing debt (adjusted for differences in term and timing) and published indices of debt costs for comparator companies.

Our November 2018 proposed RPI-deflated range was -0.80% to -0.36%. This was based on an adjusted version of NERL's business plan proposal, based on the cost of NERL's existing debt. We did not consider evidence from notional cost of debt indices – though we have no objection in principle to the use of such evidence if appropriately calibrated.

We comment on the two different categories of evidence in the following sections.

### **2.2.1. Evidence from NERL's existing debt**

We broadly agree with the principles being applied in order to translate NERL's existing debt costs into a figure that will be applicable to a new debt issuance midway through RP3. The approach set out by NERL and its consultants NERA in its business plan is:

1. Begin with the yield on NERL's existing debt, which has a weighted average remaining life of around 5 years.
2. Apply an adjustment to translate that into a current 15-year cost of debt.
3. Apply an adjustment to project the current rate to mid-RP3.

These steps are also applied by the CAA's consultants Europe Economics. NERL and NERA (and Europe Economics) proposed a further adjustment to account for the debt term extending beyond NERL's licence notice period. We agree with the CAA's rejection of that premium and do not consider the issue further. Europe Economics also applied a further adjustment for liquidity and inflation risk in longer term bonds. The CAA has also rejected this adjustment and we do not comment on it further.

We, NERA and Europe Economics have used different data sources to produce a range of different adjustments for steps (2) and (3) above (see Table 1 below). Regarding the first step, extending the term from 5 to 15 years, we do not object in principle to the use of corporate bond data to inform the size of the adjustment. However, we would continue to place weight on the adjustment implied by ILG and nominal gilt yields.

Regarding the second step, however, projecting rates forward to mid-RP3, we consider that there is a potential inconsistency in NERA's approach. Its forward adjustment of 63 bps is based on 10yr nominal gilts: it is effectively a calculation of how much higher markets expect 10yr gilts to be in 2022. Europe Economics' approach too is grounded in projecting forward a 10yr cost of debt. For consistency the CAA should ensure that the gilt yield data it uses to project rates forward corresponds to the assumed term of NERL's new debt. The risk in using, for example, 10yr gilts to project forward a cost of 15yr debt is that future rate changes are double-counted.

Our approach, based on yield curve data for the implied cost of 15yr UK Government debt now and mid-RP3, is consistent. We also note that in its analysis of the cost of debt for HAL the CAA's advisors PwC recommended the use of index-linked bonds to calculate forward-looking adjustments. This provides further support for our lower proposed adjustment of 15 bps.



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Table 1: Proposed cost of debt adjustments

Source	Adjustment	Comments
<b>Extension of term from 5 years to 15 years</b>		
CEPA (based on ILG yields)	+0.32%	
Europe Economics (based on nominal gilt yields)	+0.40%	Extends term to 10 years only
CEPA (based on nominal gilt yields)	+0.62%	
NERA (based on corporate debt indices)	+0.78%	We have sought to replicate NERA's approach and arrive at a similar estimate
<b>Projection to mid-RP3</b>		
CEPA (based on ILGs)	+0.15%	
CEPA (based on nominal gilts)	+0.33%	
Europe Economics (based on nominal gilt yields)	+0.52%	Underpinned by extension of term to 10 years only
NERA (based on nominal gilt yields)	+0.63%	Based on a projection of implied 10yr gilt yields

**2.2.2. Evidence from cost of debt indices**

The CAA has also placed weight on evidence provided by Europe Economics based on analysis of iBoxx cost of debt indices. We do not disagree in principle with the use of index based evidence in setting a notional cost of debt allowance. Its use, however, needs to be cross-checked to avoid systematically under- or over-compensating the company's actual cost of debt.

Europe Economics bases its analysis on A-and-above rated Utilities bonds. It calculated an estimated yield on these at the time of the data cut-off of 3.24%. This can be compared to the prevailing cost of NERL's debt at the same point in time. Taking into account the full range of adjustments summarised in Table 1 above, NERL's existing debt implies an equivalent 15-year nominal cost of debt of between 2.05% and 2.51%. The latter figure is effectively NERL's own assessment of its current cost of 15-year debt. This suggests that the proposed index has been well above NERL's actual and required debt costs.

Figure 1 below shows how the yield on NERL's debt has developed relative to comparable iBoxx indices. The yield shown for NERL's debt is the yield to average life, reflecting its sinking fund nature. This is compared with the iBoxx Utilities and Non-financials A-rated index of most comparable duration. For example, in the years where NERL's bond has an average remaining life of between five and seven years we compare it with the 5-7 year Utilities and Non-Financials A-rated indices. In 2008 the comparison is with the 5-15 year Utilities and 10-15 year Non-Financials A-rated indices.



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For the majority of the period the yield on NERL's debt has been similar to or below both iBoxx indices. It has generally tracked the Non-financials A-rated index of similar maturity most closely. We interpret this as providing support for NERL's proposed approach of benchmarking the cost of new debt based on its own bond yield data. There is no indication in Figure 1 that providing an allowance based on NERL's actual prevailing cost of debt would risk systematically under-allowing for a notionally efficient cost of debt.

Figure 1: Comparison of nominal debt costs



### 2.2.3. Summary

As noted we do not disagree with the principle of using evidence from cost of debt indices to set a notional cost of debt allowance. In doing so it is possible that the notional allowance and the actual cost of debt might diverge. This on its own is not necessarily a cause for concern.

We suggest, however, that if index-based evidence is used a broader range of options should be considered. One option would be to use index-based evidence as a cross-check only: the evidence in Figure 1 should provide the CAA with comfort that the prevailing cost of NERL's debt is similar to other commercial debt of comparable rating and duration. If a cost of debt index is used directly, the evidence in Figure 1 suggests that the Non-financials A-rated indices have been a closer comparator to NERL's prevailing cost of debt, particularly in recent years.

We make a final comment in relation to transaction costs. The evidence base on transaction costs in UK regulation is generally thin. In this context Europe Economics' additional evidence is useful and we consider the CAA should attach significant weight to this.



### **2.3. BETA**

The CAA has proposed an asset beta estimate of 0.46, with a proposed range of 0.46-0.505. Our November 2018 proposed range was 0.43-0.50. We therefore support the CAA's proposed point estimate.

We continue, however, to consider that there is evidence consistent with an estimate below 0.46. Europe Economics presents a wide range of evidence for ENAV, supporting an estimate of 0.29-0.54, with a midpoint of 0.415. Europe Economics also notes that UK utilities represent a relevant comparator for the lower end of the range, estimating recent average asset betas for these companies of 0.38-0.43. This is slightly higher than our November 2018 evidence, though we attribute this primarily to the inclusion of Centrica in the comparator set. It is not clear that this evidence as a whole implies a hard constraint of 0.46 on the lower end of NERL's beta range.

We also note that the proposed debt beta range used in the calculations is well above zero. Whilst the figures used are consistent with recent assumptions in UK regulation, in other jurisdictions (such as Australia and New Zealand) an assumption of zero is used. While the use of a debt beta is better than not in theory, debt betas are difficult to estimate accurately and, if used consistently in both the de-levering and re-levering steps, add complexity but little additional value to the final answer. There may be scope for the CAA to simplify its approach – or, if using a debt beta, to consider cross checks on the cost of debt implied by the debt beta assumption.

## **3. HAL COMPANY-SPECIFIC PARAMETERS**

### **3.1. GEARING**

Our main comment in relation to gearing concerns consistency. The CAA's proposals for RP3 set a notional gearing assumption for NERL that differs from its actual capital structure. In principle a similar approach could be taken for HAL despite its current gearing being well above the Q6 notional assumption. In this case it is important that the risks, as well as the rewards, of different actual financing choices sit with investors. The CAA should seek to satisfy itself that this balance would not be disturbed by the introduction of a sharing mechanism.

We also suggest that the CAA and its advisors consider any read-across from HAL's chosen capital structure to its view of underlying business risk. Other things being equal, highly geared financial structures might be expected to be associated with relatively low-risk, stable and predictable cash flows.

### **3.2. COST OF DEBT**

As for gearing, our main comment relates to consistency. In its draft proposals for RP3 the CAA has demonstrated it is comfortable drawing on evidence from notional cost of debt indices that may differ from the regulated company's underlying actual debt costs. We would expect a similar principle to apply in relation to H7, and that company-specific adjustments to cost of debt indices



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are not necessarily required. PwC suggests that such adjustments would require “consistent and material discrepancies” in order to be justified, and we consider that this provides a suitable test.

We also acknowledge that our previous comments on the averaging of embedded debt costs have been taken into account in PwC’s updated analysis of the H7 cost of debt.

### 3.3. BETA

In support of the CAA’s consultation PwC has provided detailed analysis and responses to issues that have previously been raised. We have not carried out our own analysis of HAL’s beta, and do not seek to comment on the full body of PwC’s analysis. Rather we have sought to focus on potential additions to the analysis and how it is interpreted for the CAA to consider.

We comment separately on the following questions:

- On what basis should HAL’s risk be assessed relative to potential comparators? How should different comparators be weighted to reach a view on HAL’s relative risk?
- How has comparator evidence evolved?
- How might developments in other sectors influence how that evidence is interpreted?

It is helpful to consider separately the ‘as-is’ view of HAL’s beta from any adjustments necessary to reflect the specific approach to allocating risks in relation to capacity expansion once this has been decided. In forming an ‘as-is’ view, however, the CAA should consider the available evidence on its merits: it need not be constrained by parameter ranges selected for Q6. For example, it may consider adjusting the weights placed on different comparators, updating its evidence base in relation to those comparators and reconsidering how best to interpret that evidence. We pick up on each of these issues in the short sections that follow.

#### 3.3.1. Relative risk

PwC’s analysis of HAL’s beta is grounded in an assessment of its risk relative to potential comparators. We make two observations regarding how that analysis might be further developed by the CAA and its advisors:

- *Risk categories.* PwC focuses in its February 2019 report on assessing volume volatility and risk exposure of different airports. We expect that this will be one of several risk categories considered, including:
  - both short-term (within price control) and longer-term (between price controls) volume risk exposure;
  - treatment of costs and exposure to cost risk;
  - operating leverage;
  - asset value risk, including the degree of investment protection afforded by the RAB;
  - exposure to financing, inflation and tax risks; and



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- treatment of non-aeronautical revenues.

In each case it is theoretically appropriate to assess the extent to which HAL is exposed to systematic (i.e. non-diversifiable) risk – though we recognise that few if any risks are either purely systematic or purely company-specific.

- *Comparators.* PwC focuses on two comparators often considered to be closest in risk profile to HAL, Fraport and AdP. The list of potential comparator airports is much broader than this though, and it would not be prudent to ignore other comparators even if only as cross-checks on the core analysis.

The potential read-across from analysis of NERL's beta to HAL should also be considered. The use of listed airports as inputs into the analysis of NERL's beta for RP3 suggests that ENAV, for example, might also have some merit as a comparator for HAL.

The CAA cites Europe Economics' view that "NERL's asset beta should be expected to be lower than for UK airports given greater demand diversification and partial protection from demand risks". If the CAA were to apply this logic in the context of HAL it should recognise that HAL's risk exposure is likely to be significantly below that of other UK airports. Europe Economics uses Gatwick Airport's Q6 asset beta of 0.56 as a proxy for non-Heathrow UK airports, and estimates a proxy for HAL's beta of 0.54. These figures were used by Europe Economics in order to place an upper limit on NERL's asset beta. They were not calculated as estimates to inform HAL's beta for H7 – and it is not clear that the figure of 0.54 that proxies for HAL's beta is sufficiently differentiated from the 0.56 used to represent other UK airports, given HAL's more limited exposure to risk.

### 3.3.2. Comparator evidence

In its final proposals for Q6, the CAA were of the view that "*there had been no material change in the risk of HAL (...) relative to the economy and thus there was no change in the asset beta.*"<sup>5</sup> The CAA based their assessment on a report by PwC, which analysed whether the betas for designated airports had changed since Q5. PwC assessed the movement in equity and asset betas for comparator airports since Q5 and assessed the evolution of systematic risk drivers for the designated airports. They concluded that overall, average equity and asset betas of comparator airports were broadly similar and potentially even lower than at the time of the Q5 decision.<sup>6</sup>

This indicates an approach based on examining the long term evolution of betas. In Figure 2 below we show how asset betas have developed for eight international airports over the past decade. This is intended as context for discussion rather than to serve as the basis for a formal estimate of HAL's asset beta. There is evidence of volatility both in the short-term and the long-term, and the

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<sup>5</sup> CAA (2014): Estimating the cost of capital: technical appendix for the economic regulation of Heathrow and Gatwick from April 2014: Notices granting the licences.

<sup>6</sup> PwC (2013): Estimating the cost of capital for designated airports – a report prepared for the Civil Aviation Authority (CAA).



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average across all airports appears to fluctuate within a range. Betas for some airports appear higher now than over the period leading up to Q6 (notably Auckland and Zurich) whereas others appear lower (including ADP).

Figure 2: Asset betas of comparator airports over time



### 3.3.3. Read-across from other sectors

Over the course of the year we expect that the CAA will continue to reflect on beta estimation work carried out in other sectors. In particular, in developing its approach for the upcoming RIIO-2 energy network price controls Ofgem and its advisors have considered the following factors:

- *Econometric technique.* Ofgem commissioned several studies evaluating the performance of Ordinary Least Squares (OLS) regressions when estimating betas. These have concluded that generalized autoregressive conditional heteroskedasticity (GARCH) models might prove a more suitable statistical technique than OLS. Others have reviewed the use of GARCH models and found them to provide similar conclusions to those produced by OLS.
- *Time horizon.* Ofgem's advisors on beta estimation techniques, Indepen, recommended using data spanning long time periods to the extent that this is possible and justifiable. We consider this an appropriate response to the instability in beta estimates shown in Figure 2. It also allows beta estimates to reflect a wider range of economic conditions. This does, however, necessitate evaluation of potential structural breaks.
- *Data frequency.* While high frequency (e.g. daily) data is often used to calculate beta estimates, low frequency data (e.g. monthly) may also have merits in terms of a lower signal to noise ratio. Ofgem expects to consider both.



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- *Approach to de-levering and re-levering.* When applying betas estimated from one company to another any differences in gearing should in theory be accounted for through de-levering and re-levering the observed betas. For a notional regulated company the gearing to which the beta is re-levered is typically a measure of debt to RAV. For a comparator company gearing is typically measured relative to a company's enterprise value (EV, defined as debt plus market capitalisation). This use of a book value (RAV) and a market value (EV) may risk introducing a discrepancy into the calculation.

### 3.4. CROSS CHECKS

Finally, we suggest that a suitable range of cross-checks are considered. We highlight two:

- Evidence from transactions can indicate the riskiness of an asset class. There remains strong demand for airport assets: for example, a stake in Gatwick Airport was sold towards the end of 2018 at a relatively high multiple of EV to EBITDA. This buoyant demand is consistent with a low cost of capital.
- The magnitude of the reward earned by HAL through the beta component of the cost of capital can be compared to the magnitude of the key risks that it faces. For example, based on recent passenger number forecasts and outturn volumes what might be a plausible downside shock in terms of earnings? Based on recent allowed and actual costs what degree of cost underperformance might HAL have to absorb?



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