H7 financial issues: CAP1876 response

IAG

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CONFIDENTIAL REPORT

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EXECUTIVE SUMMARY

Scope

On 13th January 2020, the CAA opened a new consultation (CAP1876) on the regulatory and financial issues for the economic regulation of Heathrow Airport Limited (HAL).[2] In December 2019, HAL shared its Initial Business Plan (IBP) with the CAA, and published a summary.[3] IAG has retained CEPA to respond to the issues that CAP1876 discusses in relation to the cost of capital for Heathrow Airport Limited (HAL), it has also shared a copy of the IBP. In this report we consider:

- The appropriate approach to determining allowed return (WACC). We update our view of HAL's WACC based on the arrangements in place for the most recent regulatory determination (Q6) to determine an 'as is' range for H7, i.e. a range without allowing for expansion.
- Financeability in the context of expansion. Importantly, we assess whether the Q6 approach remains appropriate for H7, or whether the risks presented by expansion might justify different mechanisms for addressing risk – including consideration of some points raised by parties to the CMA RP3 appeal,[4] which represent several different positions.
- The regulatory cycle, evolution of project risk and what this says about the early years of the programme.

Context

In coming months there will be additional decisions that have relevance for the H7 cost of capital, in particular, the CMA will publish its decision on the RP3 appeal by NERL in May (with provisional findings in mid-March),[5] and four water companies have appealed Ofwat's recent determination. As a consequence, we update the market components of the WACC for new evidence, but we focus the analysis on HAL-specific parameters which are less likely to be affected by decisions elsewhere.

We also note that the position of the project has shifted in recent days following the Court of Appeal judgement. We consider that planning and political risk, which were already substantial, have increased and this undoubtedly impacts costs, including the cost of finance. In its plan HAL proposes an exceptionally long control period (15 years) and the CAA asks for views in CAP1876 on extending the term over which it gives certainty on aspect of the cost of capital. In the current circumstances we suggest that a shorter control than that proposed by HAL might better serve consumer interests. It would focus on the achievement of key milestones, e.g. the DCO, and place some risk with HAL that would force it to consider what it is willing to spend prior to planning permission being achieved. This potentially short regulatory period would focus on establishing a firm foundation for the project and on reducing programme risk. In response to CAP1871 IAG has already provided thoughts on an incentive mechanism that could be used in this period.

Baseline cost of capital range

Our analysis of the issues related to setting the cost of capital for expansion starts from an estimate of the 'as is' position i.e. the cost of capital without the capacity enhancement project. The results of this are set out in Table 1, alongside the estimates put forward by HAL. Please note that our estimates are based on market information to the

[2] CAA (Jan 2020) *"CAP1876: Economic regulation of Heathrow Airport Limited: further consultation on regulatory framework and financial issues"*, available on caa.co.uk

[3] Heathrow.com (Accessed February 2020) "Economic regulation: H7 update"

[4] HAL (2019) "Heathrow Airport Limited: Third party submission in the CMA RP3 redetermination"

[5] Gov.uk (Accessed February 2020) "NATS En-route Limited (NERL) Price Determination"

end of January 2020. We would expect the value of key parameters to be refreshed as the CAA approaches its final determination.

[Table 1: Comparison of CEPA initial roll-forward range and HAL IBP 2R cost of capital]

We consider that the above range provides useful context for the assessment of the cost of capital for capacity expansion. Our key conclusions comparing our range with HAL's range are:

- Heathrow's exposure to risk is low compared with other international airports.
- Heathrow is able to broadly match available cost of debt indices – despite high gearing.
- Having updated our analysis, we continue to support the CAA's position on market parameters.

We conclude that HAL's assessment of the 'as is' cost of capital is overstated prior to the issues of expansion being considered. HAL's figures do not provide an appropriate starting point from which to consider the change in risk that could arise out of expanding the airport.

Regulatory framework and financeability

As the expansion project is somewhat different from business as usual – it substantially changes the balance between steady state operation and capital investment – there is a case for ensuring the regulatory approach to financeability is clear before seeking to assess the allowed return. We suggest that the CAA considers financeability earlier in its decision-making process, and considers the target financing structure carefully.

Construction projects can proceed at a sub-A- rating (e.g. Thames Tideway Tunnel, TTT) though we acknowledge the logic of targeting a strong rating in order to facilitate access to diverse markets. However, the current notional gearing assumption of 60% is relatively debt-focused for a privately financed construction project and may be more appropriate for a steady-state network business than one that is expanding. An A- rating may require either significant de-risking or unwarranted cash flow adjustments to be feasible. As demonstrated in our analysis of the Q6 roll-forward, the regulatory regime for HAL warrants an equity return that is close to the overall market return, significantly lower than HAL has assumed. This presents a challenge to quantitative credit metrics under a relatively debt-focused financing approach.

Options for equity investors then are twofold:

- Manage weak metrics during the construction period. This may be reasonable – credit ratings are not only based on quantitative cash flows; they will draw on visibility of future returns.
- Invest sufficient equity to generate quantitative metrics consistent with an A- rating.

The CAA should consider both options carefully, noting that the latter helps minimise debt interest costs and is more consistent with the role of equity finance in a project such as this.

The CAA has specifically asked whether a stronger long-term commitment to the price control package would be required to support financeability. We consider that the perceived stability of economic regulation in the UK, combined with merit-based appeal rights for airports to an independent body, provide considerable comfort for investors that future decisions will be taken in a consistent manner. Credit rating agencies, for example, generally view the UK regulatory regime as credit positive. In this context a longer-term commitment on specific price control parameters from the CAA may add relatively little value. If such commitments would require longer-term forecasts or pre-judgement price control parameters they may even add to the risk of a mismatch between regulatory allowances, economic variables and the allocation of risk.

Allowed return

As demonstrated by the recent Court of Appeal ruling, material risks remain around the political process and Development Consent Order (DCO). While HAL's IBP treats the construction phase as a single homogenous

programme of work, in reality some components of work are riskier than others and the overall risk is front-end loaded. The CAA should not accept HAL's characterisation of risk as a fact.

The CAA suggests that it will roll forward the 'as-is' WACC and then make an adjustment because doing so is transparent and makes use of existing thinking and analysis. While we agree with this approach in principle, we would caution that it is more appropriate to think in terms of an adjustment, not an 'uplift' to the WACC. Thinking of an uplift prejudges the answer to the question of whether HAL's exposure to risk will increase, which is a function of the regulatory regime as well as any inherent volatility in cash flows.

Contemplation of the need for an adjustment should start from an appropriate base. Our Q6 roll-forward represents the WACC for a private airport with significant market power and a well-understood regulatory framework. Despite the size of the proposed expansion project it is not clear that the fundamental proposition for HAL's investors will be materially different from this. The evidence for individual parameters will of course continue to change. Irrespective of that, our Q6 roll-forward presents a view that is similar to that put forward by the CAA's own advisors, PwC. It also demonstrates the wide gap between HAL's proposals and the evidence.

Any adjustment should be grounded in an assessment of how risk exposure has changed, and should recognise that without a dramatic shift in the single till approach, exposure to volume risk or cost incentives HAL's risk exposure is likely to remain below that of typical private airports. The experience of TTT shows that risk exposure for large, complex projects can be tightly controlled. If required, an adjustment ought also to be computed within the common regulatory language of the capital asset pricing model (CAPM), not added arbitrarily as is the case in HAL's IBP.

Evidence from HAL's actual debt costs (at a gearing materially above notional) indicates standard cost of debt indices are sufficient to remunerate HAL's notional debt costs. Provided that the CAA sets a cost of debt allowance commensurate with the target credit rating, it should set a high bar for any adjustments to notional indices. Both the CAA and HAL have adopted an assumption of an A- credit rating; if retained, this should be reflected in the cost of debt benchmarks applied.

We do not comment on tax but are broadly supportive of the CAA's approach to provide a separate tax allowance based on transparent modelling of the notional entity.

1. INTRODUCTION

1.1. CONTEXT

On 13th January 2020, the CAA opened a new consultation (CAP1876) on the regulatory and financial issues for the economic regulation of Heathrow Airport Limited (HAL).[6] In December 2019, HAL shared its Initial Business Plan (IBP) with the CAA, and published a summary[7] – this provides some indication of what we can expect from HAL's response to CAP1876. The CAA notes that its CAP1876 consultation does not yet consider HAL's IBP, but that it will respond to the IBP in April.

In this report we consider:

- The appropriate approach to determining allowed return (WACC) as discussed in CAP1876 Section 2 – we update our view of HAL's WACC based on the arrangements in place for the most recent regulatory determination (Q6) to determine an 'as is' range for H7, i.e. a range without allowing for expansion.
- Financeability, in the context of expansion and as discussed in CAP1876 Section 3. Importantly, we assess whether the Q6 approach is appropriate for H7, or whether the risks presented by the expansion might justify different mechanisms for addressing risk – including consideration of some points raised by parties to the CMA RP3 appeal,[8] which represent several different positions.
- The regulatory cycle and evolution of risk and what this says about the early years of the programme.

In coming months there will be additional decisions that have relevance for H7, but these will not be available in time for IAG responding to CAP1876. In particular, the CMA will publish its decision on the RP3 appeal by NERL in May (with provisional findings in mid-March),[9] and four water companies have appealed Ofwat's determination for the upcoming price control period – although only one of these four raised finance as an important part of its grounds for appeal. As a consequence, we update the market components of the WACC for new evidence, but we focus on HAL-specific parameters.

1.2. APPROACH AND REPORT STRUCTURE

We have taken the following approach:

- In **Section 2** we discuss how the project to expand Heathrow Airport, and in particular, its key risks, may progress over time, how this impacts the regulatory cycle and the resulting implications for the cost of capital.
- In **Section 3** we calculate a current range for the cost of capital on an 'as is' basis – taking into account new data and broader thinking on the cost of capital.
- In **Section 4** we consider how the CAA might adapt its regulatory framework and approach to fit the context of capacity expansion.

[6] CAA (Jan 2020) *"CAP1876: Economic regulation of Heathrow Airport Limited: further consultation on regulatory framework and financial issues"*, available on caa.co.uk

[7] Heathrow.com (Accessed February 2020) "Economic regulation: H7 update"

[8] HAL (2019) "Heathrow Airport Limited: Third party submission in the CMA RP3 redetermination"

[9] Gov.uk (Accessed February 2020) "NATS En-route Limited (NERL) Price Determination"

2. EXPANSION PHASING AND THE REGULATORY CYCLE

In its IBP, HAL says that the capacity constraint at Heathrow Airport has led to lower consumer choice. Through expansion it will remove the current supply constraint and this will permit airlines to offer new routes. We can see that there are strong arguments for progressing the expansion project rapidly. But, doing so results in a heavily front-end loaded programme of work. HAL illustrates this point clearly in its IBP, as shown in [Figure 2.1.

[Figure 2.1: redacted]

It goes on to say that:

> *[Redacted]*

Arguably a benefit of substantial early work being undertaken by HAL within a stable regulatory environment is that it can be undertaken at all. The project is currently being pursued by HAL in a way that would be unacceptable to commercial organisations in other forms of transaction e.g. in a PFI type structure. In these alternative transaction structures bidders and lenders would not expend significant cost prior to the DCO being granted and before understanding any additional risks that might emerge from the DCO decision itself. They would also expect HAL to be in a position to quantify the risk of early works in some way that can be priced.

To the extent that the CAA is willing to support pre-DCO costs through remuneration within the regulatory regime, HAL is making progress when others would be unable or unwilling to do so. But there is a consequence; risk is being transferred via airlines to consumers without the guarantee of an expanded airport being delivered. It is not clear at this stage that the risk of significant delay or even the project being abandoned can be quantified since planning consent is not within any of the main parties' control. There is therefore a question as to whether pressing ahead at the pace HAL proposes can be justified. More broadly, the likely delay impact of the recent court ruling serves to illustrate the wider uncertainties facing the project as a whole.

With this background (and prior to the recent court ruling), HAL's IBP seeks an exceptionally long H7 control period (15 years) and the CAA indicates in CAP1876 that it might be willing to consider giving certainty over some aspects of the cost of capital for a longer period than would normally be the case. At the current time there may be stronger arguments for a control period not necessarily set in time but rather by achievement of key milestones; DCO consent being key.

In thinking about the length of control we would point out that, while the Heathrow Airport expansion is both large and complex, it is a portfolio of projects that are not homogenous in terms of risk. In the same way that the overall expansion plan is front-end loaded we would argue that the risk profile of its early component projects is similarly distributed. A standard length or even short control which focuses HAL's efforts on removing risk and establishing a more developed design for expansion may have substantial merit in terms of cost reduction and should be considered as an alternative to the longer control that the IBP suggests that HAL would prefer.

We would suggest that the cost of capital for the main construction phase of the project should not be set until the planning and wider political uncertainty that now surrounds the project has been removed and ideally not until some of the earliest risky components of the project have progressed to a point where their risk can be quantified and addressed objectively. This would likely adversely impact the timing of delivery of key assets but there would be upside in reducing risk and consequently the cost of borrowing for the main construction phase. In taking a view the CAA will need to consider whether value for money is best served by pressing ahead or by slower but more certain progress towards additional capacity. Current uncertainty underlines the need for the CAA to have good reason to depart from commercial norms in exercising its duty to protect the consumer interest. The recent court case perhaps provides the opportunity to take a step back and reflect on some of the assumptions that underpin HAL's IBP and the CAA's consultation.

In terms of financing for an initial pre- main construction control period, we would suggest that the CAA creates an incentive on HAL to consider how much it is willing to spend in a period of inherent uncertainty i.e. if it bears some

risk in relation to stranding or abandonment. IAG has put forward a proposal for remuneration in this period in its response to CAP1871 which deals with early costs. We do not comment on that further other than to reiterate that the commercial disciplines that exist in transactions outside of the regulated sector have relevance to considering how much cost might reasonably be incurred pre DCO and in the early preparatory phases of the project. Current uncertainty underlines the need for the CAA to have good reason to depart from commercial norms in exercising its duty to protect the consumer interest. The recent court case perhaps provides the opportunity to take a step back and reflect on some of the assumptions that underpin HAL's IBP and the CAA's consultation.

Post-DCO (and assuming that the issues raised by the recent court decision can be addressed), we consider that the risk of stranding substantially diminishes. At that point HAL would continue to benefit from the stable and relatively benign regulatory environment that it enjoys now. We tend to agree with the CAA's overall position that incentives for delivery in the main construction phase are required but should be proportionate to avoid a significant adverse impact on the cost of capital. Setting incentives (e.g. in terms of identification of delivery obligations or triggers for the incentive) will become more straightforward if the focus is on the main construction period and a firm design is in place.

3. ROLLING FORWARD THE Q6 COST OF CAPITAL

In this section we set out our view on the appropriate approach to determining allowed return (WACC) as discussed in CAP1876 Section 2. We update our view of HAL's WACC based on the arrangements in place for the most recent regulatory determination (Q6) to determine an 'as is' range for H7, i.e. a range without allowing for expansion. We agree with the CAA's broad approach to consider this 'as is' range as a starting point from which to assess any required adjustments to the cost of capital to reflect capacity expansion.

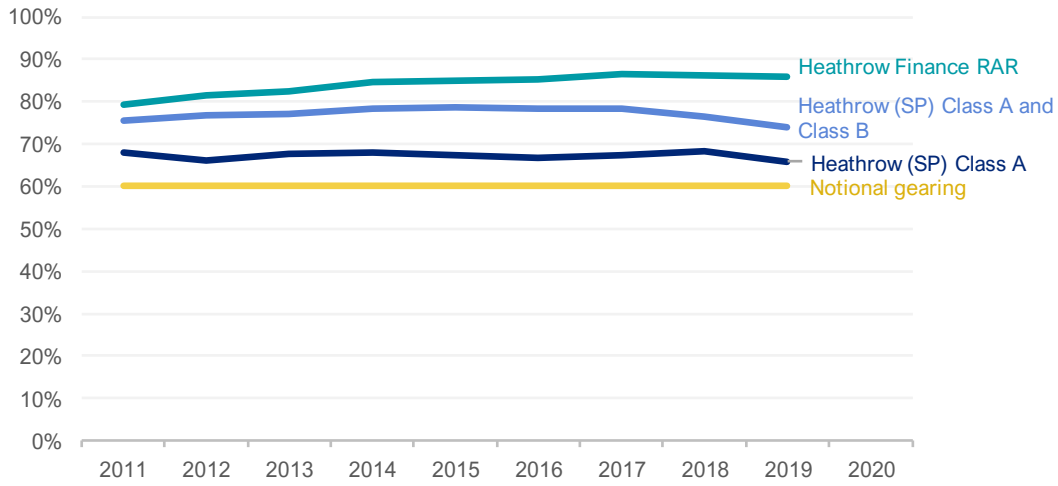
As RPI has been de-designated as a national statistic, our view is that the transition to CPI (or CPIH) indexation should take place from the start of the next price control. However, we have presented figures in this report relative to RPI inflation for ease of reference.

3.1. GEARING

The notional gearing assumption is an input into the cost of capital calculation in two places. Its primary function is to describe the relative proportions of debt and equity finance in the weighted average cost of capital. It is also used as an input in determining the cost of equity itself: the equity risk to which investors are exposed is a function of underlying business risk for the asset concerned (captured under the CAPM in the asset beta) and the financing risk introduced through debt finance (captured under the CAPM in the equity beta).

We have assumed a notional gearing level of 60% in relation to the Q6 roll-forward WACC, in line with the CAA's Q6 determination for HAL[10] and HAL's IBP. For a mature regulated business operating in steady-state this level of gearing, while high relative to most corporates, is a common assumption on the part of regulators. In making this assumption we note that HAL's actual gearing is materially above that level – as shown in Figure 3.1.

Figure 3.1: HAL's gearing[11]



Source: Heathrow Finance plc (2019) "September Investor Update" p.32

We have previously discussed in a report for the CAA and Ofwat that despite its high gearing, HAL has still been able to achieve a cost of debt at or even below A/BBB iBoxx index, a solid investment grade credit rating.[12] It is worth noting that there may be some read-across from HAL's chosen capital structure to its view of underlying

[10] p35, CAA (Oct 2013) *"CAP 1115 - Estimating the cost of capital: a technical appendix to the CAA's Final Proposal for economic regulation of Heathrow and Gatwick after April 2014",* available on caa.co.uk

[11] Please note that care may be needed when comparing the measures of gearing shown here to listed companies. For example, the market value of debt for HAL may include a premium to the nominal values used here.

[12] CEPA (2016) "Alternative approaches to setting the cost of debt for PR19 and H7"

business risk—other things being equal, highly geared financial structures require relatively low-risk, stable and predictable cash flows.

3.2. COST OF DEBT

As our focus is on rolling forward the proposed Q6 approach, in this report we consider the 'as is' cost of debt, rather than a cost of debt inclusive of expansion. We discuss principles around our approach to the cost of debt and then discuss the cost of embedded debt and cost of new debt separately. We consider in Section 4.2 whether changes in the composition of HAL's debt portfolio during a period of capacity expansion would be likely to warrant an adjustment to the cost of debt approach.

3.2.1. Overall approach to the cost of debt

We consider that the cost of debt allowance should compensate for embedded debt and new debt. In setting allowances for the two components of the cost of debt:

- The focus should be on a notionally efficiently financed airports, with benchmark indices used rather than HAL's actual interest costs.
- Non-financial iBoxx indices are most appropriate for estimating the cost of debt and are used by other regulators in Great Britain.
- Weight should be placed on iBoxx indices with broad A and broad BBB credit ratings.
- iBoxx indices with a tenor of 10-15yrs are appropriate to reflect HAL's debt, noting the increasing tenor of the iBoxx 10yr+ indices.
- GBP iBoxx indices should be used as a benchmark unless HAL can demonstrate that non-GBP debt needed to be issued due to a saturation of the GBP market (rather than opportunistically considering issuances in other currencies based on market conditions).
- HAL's actual debt costs and profile should not be used to set the allowance. Actual debt costs should be used to select appropriate benchmark indices and the trailing average approach. When considering actual debt costs, HAL's gearing has been materially higher than notional gearing assumptions and this should be considered within any analysis.
- We also note that HAL issued bonds in 2008 that reflect incentivised re-financings.[13] Care is required if those bonds are to be considered.
- Nominal yields should be deflated using market estimates of the cost of debt, covering the same time period as the tenor of debt to be issued. We use breakeven inflation to deflate nominal iBoxx indices.
- We estimate a real cost of debt relative to RPI inflation.

We discuss the cost of embedded debt and the cost of new debt separately. We then discuss the weight to be placed on both debt categories and appropriate debt issuance costs to arrange at a suitable range for the cost of debt.

Comparison of primary yields

The CEPA report for the CAA and Ofwat in 2016[14] considered the cost of Heathrow's actual bonds, relative to the iBoxx non-financial GBP A and BBB rated corporate indices on the day of issue. The analysis found that Heathrow

[13] Please see British Airways (2013) 'Economic Regulation at Heathrow Airport from April 2014. A Response to the CAA's Final Proposals by British Airways. Technical Appendices.' Available here. p23-26.

[14] CEPA (2016) *"Alternative approaches to setting the cost of debt for PR19 and H7. A report for Ofwat and the CAA"*

nominal GBP bonds, when adjusted for tenor, had outperformed the benchmark indices – as demonstrated in Table 3.1. This evidence is based on yields at issuance, so does not change over time. Heathrow Funding Ltd has not issued bonds fitting with this categorisation since the publication of the CEPA report.

Table 3.1: Estimated outperformance of Heathrow GBP nominal bonds, based on CEPA (2016)

Bond issuance date	Outperformance of benchmark indices
9 August 2016[15]	+23bps
12 June 2014	+81bps
31 October 2013	+22bps
3 December 2009	-80bps
15 February 2006	+18bps
27 November 2003	+35bps
30 January 2002	+82bps
10 December 2001	+48bps

Source: CEPA 2016report for Ofwat and the CAA on the cost of debt

We consider that this supports the idea HAL can perform in-line or outperform the chosen benchmark indices, based on an 'on the day' comparison.

Comparison of secondary yields

The CEPA 2016 cost of debt report showed secondary yields on Heathrow bonds with an average time to maturity of 10-15yrs. In early 2016, the bonds were outperforming the iBoxx GBP A and BBB non-financial corporate 10-15yr index.

There is only one nominal GBP bond that would be included based on our criteria to conduct updated analysis. We compare the nominal yield on this Heathrow bond (a 6.45% coupon bond issued in 2014, maturity in 2031) to the nominal spot yield on the iBoxx GBP A/BBB indices of 10-15yr tenor. No adjustment is made for tenor, as the Heathrow bond has c.12yrs time to maturity over the period of comparison.

[15] Note that this calculation had been based on the announcement date in the original report, as it had been publicised close to the date of release.

Figure 3.2: Comparison of secondary yields on Heathrow bond to iBoxx benchmark

Source: Markit iBoxx, Bloomberg, CEPA analysis.

Figure 3.2 shows that secondary yields, albeit based on a limited evidence base, also support the principle that HAL should be able to at least match the preferred benchmark indices under an 'on the day' comparison.

Our analysis for the cost of embedded debt and the cost of new debt uses the identified benchmark indices, with a focus on a notional approach rather than HAL's actual debt costs.

3.2.2. Cost of embedded debt

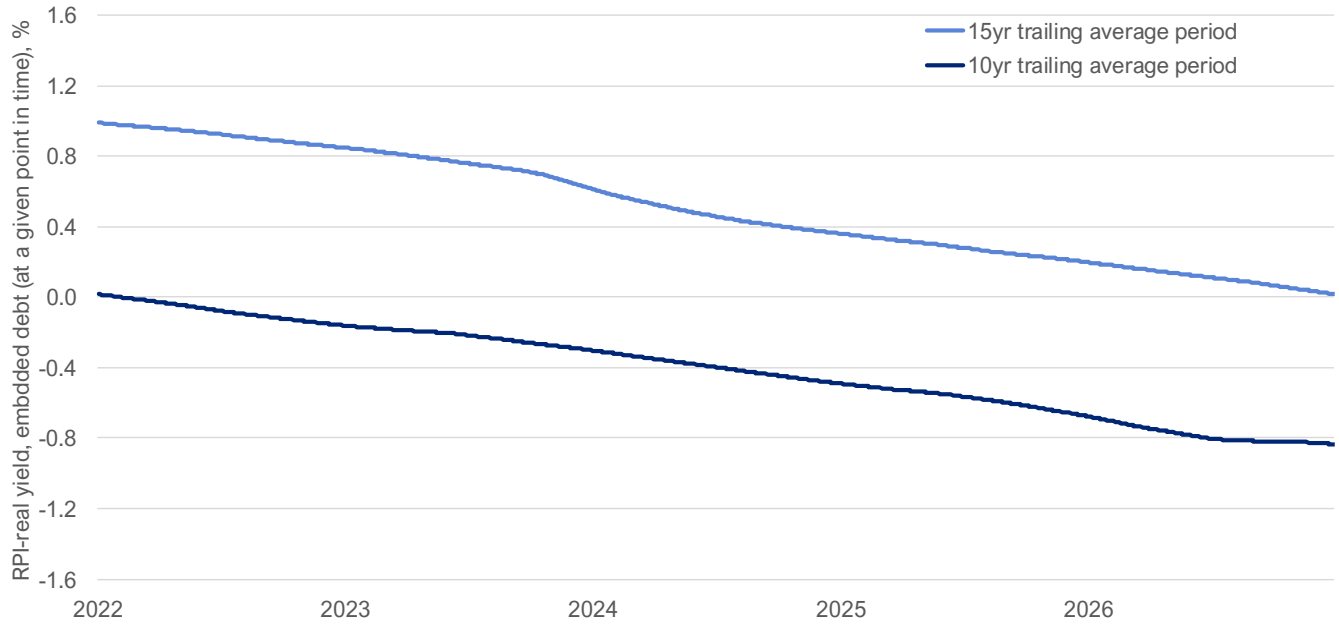
The cost of embedded debt should be estimated in line with the principles discussed above. When selecting an approach for the trailing average under a notional approach, we look to match the tenor of the selected benchmark indices and the duration of the trailing average. We use a simple trailing average, rather than adopting weights linked to Heathrow's issuance.

The cost of embedded debt is not fixed through the price control, as existing debt will mature during the price control. The cost of embedded debt should reflect the average cost over the price control period.

To provide an overview of how debt costs evolve over time, we present in Figure 3.3 below expected embedded debt costs at different points in time using 10yr and 15yr trailing averages for the iBoxx GBP non-financial corporate A and BBB indices of 10-15yr tenor.[16] We use 10yr and 20yr breakeven inflation to derive a real estimate; placing 75% weight on 10yr breakeven inflation and 25% weight on 20yr breakeven inflation to proxy a 12.5yr breakeven inflation measure. We refer to embedded debt as debt issued prior to 1 January 2022, our indicative price control start date. Debt issued after that point would fall under new debt.

[16] We use 50% weight for the A rated index and 50% weight for the BBB rated index.

Figure 3.3: Embedded cost of debt at a given date, using preferred methodology[17]



Source: Markit iBoxx, Bloomberg, Bank of England, CEPA analysis

For example, using a 15yr trailing average would give a 1.48% cost of debt as of 31 January 2020. However, if you were setting an embedded cost of debt for the period 2022 to 2026 (calendar years), the cost of embedded debt using a 15yr trailing average would be **0.51%**. This is based on a simple average of the embedded debt cost for each day of this five-year period. A 10yr trailing average gives a cost of embedded debt of **-0.41%** over the same time horizon.[18]

We consider that it is most appropriate to use the embedded debt costs calculated over the price control itself to reflect debt maturing. This makes a significant difference to estimating a trailing average today and using that to reflect embedded debt.

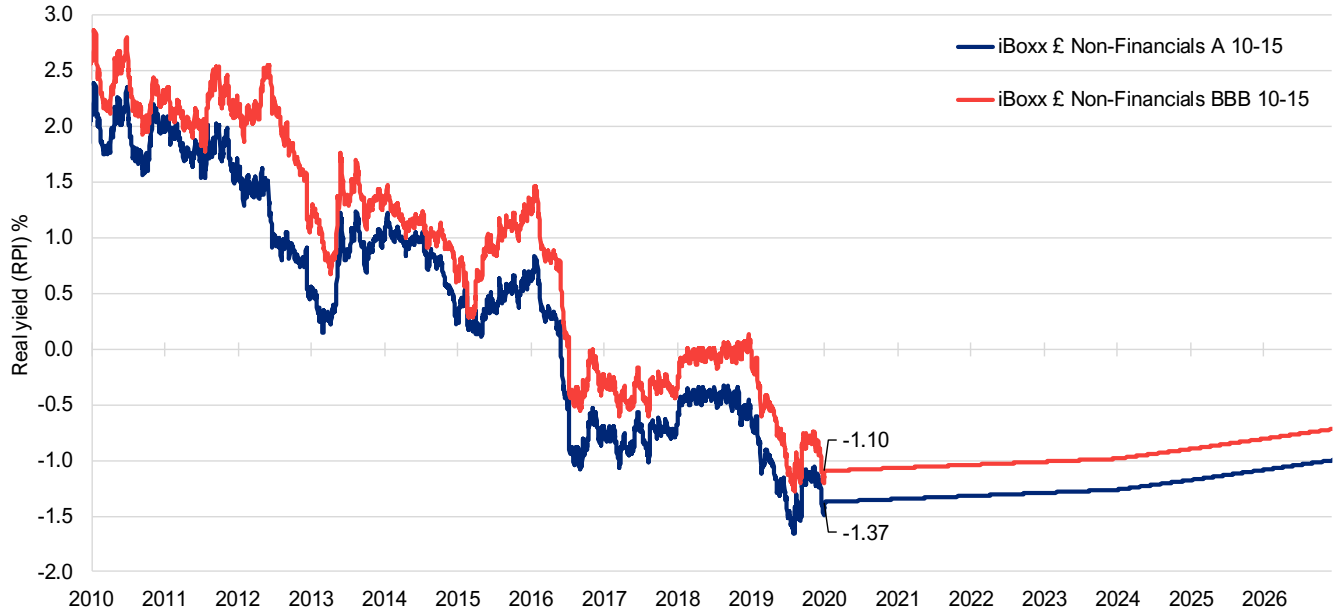
3.2.3. Cost of new debt

We consider that the same indices should be used to estimate a cost of new debt. Our approach uses forward curves on Index Linked Gilts (ILGs) to model the expected change in the real cost of new debt. As we are looking to proxy a 12.5yr tenor, we place 75% weight on expected changes in 10yr ILGs and place 25% weight on expected changes in 20yr ILGs. Our approach implicitly assumes that the current spread over ILGs remains constant in future.

[17] The embedded debt cost over time differs to a rolling trailing average that combines both embedded and new debt. For the 10yr trailing average, for example, all embedded debt would be assumed to drop off by 31 December 2031, ten years after the start of the price control.

[18] Relative to a value of 0.65% as of 31 January 2020.

Figure 3.4: Historic and projected iBoxx indices



Source: Markit iBoxx, Bloomberg, Bank of England, CEPA analysis

The spot cost of debt as of 31 January 2020 is -1.24%. The expected increases in yield are relatively modest, such that a simple average of spot yields over 2022-26 results in a **-1.06%** cost of new debt.

3.2.4. Weight on new debt

The weight on new debt should reflect the length of the trailing average assumed and the length of the price control. For longer trailing averages, the weight on new debt should decrease. For longer price controls, the weight on new debt should increase.

We maintain our proposals to include a **20%** weight on new debt to calculate an illustrative overall cost of debt.

3.2.5. Issuance costs

Companies often incur transaction costs related to the issuance of debt and liquidity provisions in financing their activities. Regulators have recognised these costs for many years but have not always made explicit allowances on the basis that the cost may be offset by outperformance against the corporate bond index.[19]

A wide range of regulators are now signalling that they will include explicit allowances for issuance and liquidity costs, typically adding ten basis points to the cost of debt.[20] This aligns with the CMA's 2015 Bristol Water determination. The Utility Regulator in Northern Ireland has recently set values above that level, allowing a 20bps adjustment for Northern Ireland Electricity. We reflect this change in practice by incorporating a **10bps** issuance and liquidity costs adjustment into our "Low" cost of debt value and a **20bps** adjustment into our "High" values.

3.2.6. Use of Heathrow's actual data

As discussed above, we consider that Heathrow's actual data should be used to help inform the selection of appropriate benchmarks to use as part of a notional approach. This applies for both embedded debt and for new debt.

[19] See Section 4.8 *"Transaction costs"*, pp39-40 CEPA (Feb 2018) *"Review of cost of capital ranges for Ofgem's RIIO-2 for onshore networks"* available on ofgem.gov.uk.

[20] Including, Ofcom for WLA, Ofwat for PR19, and the CAA for RP3 NATS and Heathrow airport's H7 price control.

The most relevant data around Heathrow's debt portfolio depends on the analysis being undertaken. Where the analysis is considering 'on the day' yields from actual debt to benchmark indices (for both yield at issuance and traded yields), we will want to ensure that the comparison is like-for-like. Where the analysis is focusing on the overall cost of debt, having reference to the entire debt portfolio would lead to a more complete output.

For analysis of 'on the day' yields, we would suggest the analysis should focus on debt with the following characteristics:

- publicly traded bonds (i.e. not bank finance);
- GBP denominated debt;
- bullet payment structure;[21]
- nominal bonds as a primary source;[22]
- debt issued by the ring-fenced regulatory entity; and
- senior debt (Heathrow's A- rated debt) only, given the gearing levels observed.

Caution should be applied to those Heathrow bonds that involve incentivised re-financing. Adjustments should be made to reflect the tenor of debt and where possible, accounting for gearing. Higher gearing levels could increase the cost of debt.

Our proposed approach involves applying equal weight to A and BBB indices. As such, the appropriate point of comparison is with the combined A and BBB indices, rather than focusing solely on the A index.

For analysis of the overall cost of debt, more evidence can be considered. Heathrow's actual cost of debt will reflect both the 'on the day' performance relative to the benchmark and the profile of debt issuance. We note that Heathrow SP Limited's debt cost (including accretion) has increased from 4.55% in March 2016 to 4.75% in December 2019,[23] an increase of 20bps. In the same period, there has been a material fall in the benchmark indices. Table 3.2 below provides information on Heathrow (SP) Limited's nominal cost of debt relative to a trailing average of our iBoxx indices.

Table 3.2: Comparison of nominal cost of debt

Date	iBoxx A/ BBB 10-15yr indices, spot yield	iBoxx A/ BBB 10-15yr indices, 10yr trailing average	iBoxx A/ BBB 10-15yr indices, 15yr trailing average	Heathrow (SP) Limited, cost of debt including accretion
December 2019	2.23%	3.82%	4.62%	4.75%
March 2016	3.40%	5.23%	5.50%	4.55%
Change	**-117bps**	**-141bps**	**-88bps**	**+20bps**

Source: Markit iBoxx, Heathrow Investor Reports.

In March 2016, Heathrow SP Limited was outperforming the 15yr trailing average of the selected iBoxx benchmark indices by 95bps. However, with the increase in Heathrow's actual cost of debt, while the trailing average of the benchmark has fallen, Heathrow now appears to be underperforming the index by 13bps. We consider that some intertemporal differences are to be expected and support the proposed notional approach. The figures in Table 3.2

[21] We have not included Heathrow's zero-coupon bonds for comparing 'on the day' yields.

[22] Index-linked bonds can be used where a suitable adjustment can be made for inflation.

[23] Based on Heathrow Investor Relations Debt Information reports.

may suggest that neither a 10-year nor a 15-year trailing average perfectly mirrors the profile of HAL's debt costs at all times.

If Heathrow's actual debt costs are given more weight, the CAA should be especially cautious around whether the increase in efficient debt costs is consistent with an efficiently financed airport. The CAA should only have reference to the profile of HAL's debt issuance where this reflects the behaviour of a notionally efficient company – where debt issuance has been lumpy due to shareholder concerns, this should not be reflected in the approach taken by the CAA

3.2.7. Summary for cost of debt

We use the figures in bold in the subsections above to estimate a real cost of debt for HAL, based on data available to the end of January 2020 and the assumption of a price control from 2022-26. This would point to an RPI-real cost of debt of -0.44% to +0.40%.[24]

Table 3.3: Illustrative RPI-real cost of debt range, 2022-26

	Low	High
Cost of embedded debt	-0.41%	+0.51%
Cost of new debt	-1.06%	-1.06%
Weighting of new debt	20%	20%
Issuance costs	+0.10%	+0.20%
Cost of debt	**-0.44%**	**+0.40%**

We would expect that any estimates of the cost of debt would need to be refreshed as the CAA approaches its next final determination of the cost of capital for HAL.

3.3. RISK-FREE RATE

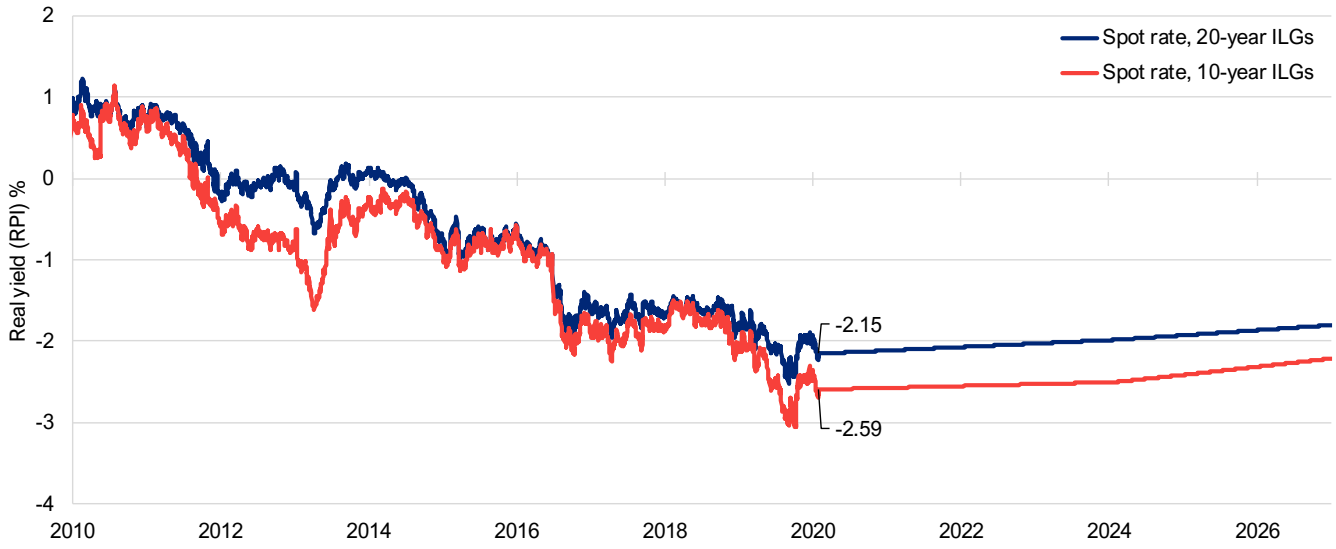
We have recently set out our view on the appropriate approach to the risk-free rate in our submissions to the CAA on behalf of IAG in relation to the NERL RP3 determination. We have not changed our overall approach in this paper, and so we briefly summarise its main features and the resulting updated evidence. Our approach of using ILGs is in line with latest thinking in the UKRN report,[25] which recommends that the risk-free rate is directly estimated from yields on inflation-indexed gilts. Ofwat and Ofgem have each adopted broadly this approach in their most recent regulatory proposals, and the CAA has been advised by its consultants to adopt this approach in relation to the H7 price control.

Figure 3.5 and Table 3.4 present our analysis of historic yields on ten-year and 20-year UK Government ILGs from the start of 2010 to the end of January 2020. We project forward rates to the end of 2036 using the Bloomberg UK Index-Linked Curves on 31st January 2020.

[24] As a crosscheck to this range, a rolling trailing average over the calendar years 2022-26 using iBoxx GBP non-financial corporate A and BBB indices of 10-15yr maturity gives an RPI-real all-in cost of debt of -0.55% to +0.27%, using 10yr and 15yr trailing averages respectively, excluding issuance costs. This is a cross-check and uses different weights on embedded and new debt to how we have constructed our range.

[25] Wright, Burns, Mason & Pickford (2018) *"Estimating the cost of capital for implementation of price controls by UK regulators – an update on Mason, Miles & Wright (2003)"*, available on bbk.ac.uk. We refer to this report throughout as the "UKRN report".

Figure 3.5: Historic and forward UK RPI-index linked bond yields



Source: Bloomberg, CEPA analysis

Table 3.4: Evidence on current and forward rate adjusted ILGs

	Spot rate 31st Jan 2020	Averaged forward rate		
		2022-26	2027-36	2022-36
10-year bond	-2.59%	-2.43%	-1.93%	-2.10%
20-year bond	-2.15%	-1.95%	-1.66%	-1.76%

Source: Bloomberg, CEPA analysis

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, but we do not consider this as grounds to include headroom in the risk-free rate estimate. In fact, recent trends in ILG yields demonstrate that this uncertainty has manifested in rates *below* market-implied forecasts. As such, we suggest that for H7 the CAA could even consider placing 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.

We note that an academic paper submitted to the CMA as part of NERL's price control appeal argued that negative risk-free rates are unlikely to be sustainable beyond a short-term investment horizon.[26] This argument is particularly relevant in the context of a potentially very long price control period for H7, but we argue that the UK has now sustained negative long-term ILG gilts for nearly a decade. It is far from clear that rates will return to their pre-financial crisis levels even over the timeline of an extended H7. Recent experience provides no grounds for such an assumption. Since ILGs – and UK Government gilts more generally – are an important reference point for other, riskier asset classes in the economy we do not recommend deviating from observed and market implied yield data as a forward-looking estimate of the risk-free rate.

[26] pp20-23, Gregory (Jan 2020) *"Setting the Cost of Equity in UK Price Controls, by Professor Alan Gregory"*, available on assets.publishing.service.gov.uk

Over the near-term the risk-free rate could plausibly remain as low as -2.6% (based on current yields on **10-year ILGs), with a range of -2.0 to -2.4% capturing forward evidence for both 10- and 20-year ILGs**. Over the longer-term, a range of -1.8 to -2.1% captures the current evidence for a 15-year price control period beginning in 2022. HAL estimates a real risk-free rate of [redacted].[27]

Forecasting the risk-free rate over such long time horizons will inevitably be imprecise, however, as the recent performance of market implied forecasts relative to outturn rates shows. We would recommend that if the CAA applies a decision on cost of capital parameters over a period of 15-years it builds in periodic reviews of the evidence or gives consideration to a form of cost of equity indexation.

3.4. TOTAL MARKET RETURNS

To estimate the TMR, GB regulators draw on both historic evidence (based on long-run averages of realised equity market returns) and forward-looking evidence (e.g. based on dividend growth models (DGMs) using recent market evidence and expectations).

By definition, given the long-run nature of these approaches, there is little movement in the historic evidence base over time. Recently, however, regulators have revisited their interpretation of this historical evidence in light of an influential academic paper that the UK Regulators Network (UKRN) published in 2018.[28] Regulator views have shifted on the most suitable averaging methodology, the length of holding periods, adjustments for inflation, and on introducing adjustments that account for past episodes of "good fortune" that are unlikely to be repeated in the future. The overall effect of these changes has led to lower estimates of equity market returns based on historic evidence.

At the same time, regulators have increasingly placed a larger weight on forward-looking evidence, including estimation through DGMs and views of experts and market participants, which allows for a "live" view of forward-looking return expectations based on the latest market data and forecasts. The combination of these shifts in regulators' thinking has led to lower values of the TMR across sectors, with regulators converging around 5.5% real (RPI). The CAA adopted a 5.40% real (RPI) TMR for NERL's price control and Ofwat used a 5.47% real (RPI) TMR for its PR19 determination. That a number of water and sewerage companies accepted their PR19 determinations that included this new lower TMR demonstrates the credibility of those recent determinations. The CMA's determination on this parameter both for RP3 and PR19 will provide clear precedent for H7.

As for the risk-free rate, we have recently set out our view on the appropriate approach and available TMR evidence in our submissions to the CAA on behalf of IAG in relation to the NERL RP3 determination. We have not changed our overall approach in this paper, and so we briefly summarise its main features and the resulting updated evidence.

We form our own view based on three categories of evidence:

- **Historic evidence.** We focus on nominal returns taken from the Dimson, Marsh and Staunton (DMS) sourcebook, a standard reference for assessments of historic market returns. Given the de-designation of RPI as a national statistic,[29] we prefer to deflate these nominal returns by either DMS' own inflation data series (using CPI inflation since 1988),[30] or the Bank of England "Millennium" inflation data series, as preferred in the UKRN report. The low end of our range is driven by a geometric mean, while the upper end reflects an arithmetic mean. While there is scope for discussion regarding the precise weight to be attached to each, we acknowledge that the use of the geometric mean alone is unlikely to best reflect the

[27] p298, HAL (Dec 2019) *"Heathrow's Initial Business Plan - Detailed Plan"* (Confidential)

[28] Wright, Burns, Mason & Pickford (Mar 2018) *"Estimating the cost of capital for implementation of price controls by UK regulators – an update on Mason, Miles & Wright (2003)"* available on ukrn.org.uk.

[29] We understand that a consultation on RPI is upcoming, but that re-designation would not be possible prior to 2025.

[30] Adjusted to be consistent with an RPI indexed price control.

expectations of investors over typical investment time horizons. A TMR assumption below 5% is therefore less well supported by the unadjusted historic evidence.

- **One-off factors.** The return historically achieved by investors can be decomposed into a component reflecting expected or required returns and a component reflecting unanticipated factors that are unlikely to be repeated. Various sources, including the CC/CMA and the UKRN report, have sought to assess the potential adjustment; such an approach is often labelled a "historic ex ante" approach. The adjustment to historic evidence is generally found to be negative, with estimates ranging up to 100 bps.
- **Forward-looking.** We are comfortable placing weight on forward-looking assessments of the expected market return. Our own recent DGM evidence, completed as part of our work on the cost of capital for NERL, indicated that dividend yields would require high expected dividend growth rates over the long-term – significantly above GDP growth – in order to support a market return assumption in line with the upper end of the range for historic evidence. We consider that a DGM incorporating dividend growth in line with GDP growth is the most defensible specification for the purpose of projecting long-term market returns. We have not changed our view that this evidence supports a range for the TMR of 4-5%.

We also consider two important cases of regulatory precedent. An important reference point remains the CMA's determination for NIE in 2014 (though this will soon be supplanted by its determination of the cost of capital for RP3). It referred to a wide range of 5.0-6.5% for the TMR, but at the time considered that the evidence better supported the upper end of that range. More recently, the UKRN report concluded that the lower part of the range is better supported, proposing a range of 5.0-6.0% (or 6-7% relative to CPI inflation).

Table 3.5 below summarises these sources of evidence.

Table 3.5: Evidence on TMR

Source	Range (RPI)
CMA NIE (full range)	5.0-6.5%
UKRN	5.0-6.0%
Historic evidence	4.35-6.0%
One-off factors adjustment	Up to 100bps
Forward-looking	4.0-5.0%

Source: CEPA analysis, CMA 2014 determination for NIE, and UKRN

We conclude that the evidence currently supports a TMR assumption of 5-6%, in line with our November 2018 analysis for IAG on the cost of capital for NERL and consistent with the recent regulatory precedent – including the CAA's decision for RP3. [Redacted]

Our range, though lower than regulatory determinations prior to the price control periods currently under consideration, does not necessarily imply that market expectations of returns have fallen recently. One driver of the reduction is a reinterpretation of historic evidence to more robustly capture long-term inflation, given the de-designation of RPI as a national statistic. We have discussed above our preference to adopt an approach consistent with the UKRN's recommendations on inflation.

Indeed, the sources of evidence we refer to that capture potential changes in investors' expectations indicate a TMR at the low end or even below our proposed range. In particular our DGM our recent estimates indicate a TMR estimate below 5%. Such estimates at times are naturally more volatile than long-run historic evidence. It can therefore be challenging for regulators to consider their results as part of the wider evidence base alongside assessments of long-term expected returns. However, the assumption that future returns will precisely match historic realised returns is arguably an arbitrary one, and the CAA should remain open to the possibility that DGM evidence indicates a shift in return expectations. Evidence collected by Ofgem on infrastructure fund discount rates and stated market return expectations of investment managers in support of its methodology decision for the upcoming RIIO-2 price controls should also be considered.

Echoing our comments on the CAA's RP3 cost of capital consultation, as the CAA develops its view of market returns for H7, we would like to highlight the value of the CAA being clear on the weight attached to each source of evidence to allow stakeholders better to understand the potential sensitivity of its proposed TMR range to developments in the underlying evidence base. We would also encourage the CAA to update all sources of evidence on the TMR closer to the start of H7.[31]

3.5. BETA

3.5.1. Debt beta

Debt betas measure how the value of cash flows to debtholders change with market conditions.[32]

Practitioners often assume a zero debt beta, particularly for investment grade companies and, historically, regulators took the same approach, arguing that debt betas are likely very close to zero for the regulated companies with investment grade credit ratings. Recent regulatory precedent, however, suggests a shift in approach, with regulators now typically assuming a small positive debt beta. Ofcom set a 0.10 debt beta in its final determination for WBA, while Ofgem and the CAA have set a 0.10 debt beta lower bound.[33] Some regulators have proposed even higher debt beta point estimates in the region of 0.13.[34]

We have assumed a 0.10 debt beta for this exercise consistent with the CAA's NERL determination and have incorporated it into the analysis presented below for our full beta range.

3.5.2. Asset beta

In this section we begin by characterising the risk exposure of Heathrow relative to relevant comparators. We then present evidence from comparators based on this relative risk analysis, as well as evidence based on HAL's parent company and inference drawn from its financial structure.

Relative risk

Here we set out a structure for assessing relative risk and some key considerations in this area. HAL combines characteristics of privately managed airports with some regulatory protections. We see both airports and regulated networks as relevant comparators – noting that international airports form quite a diverse group of comparators with a broad spectrum of risk exposure. Rather than comparing HAL directly with a small number of specific companies – whose asset beta estimates may be quite volatile – we look to position HAL on this spectrum. Table 3.6 below highlights the key areas of risk exposure that would drive the positioning of HAL's risk relative to airports and regulated networks.

Table 3.6: Key areas of risk exposure for HAL

Risk category	Heathrow risk exposure	Risk relative to regulated networks	Risk relative to international airports spectrum
Asset value	Mitigated by RAB-backed regime	Similar	Low end
Demand	Mitigated by periodic reset of volume forecasts	Higher	Similar to those operating under a regulatory regime

[31] CEPA on behalf of IAG (Apr 2019) *"Response to CAA consultations on RP3 and H7 WACC",* available on caa.co.uk

[32] The beta of a portfolio is equal to the weighted average of the betas within that portfolio. As a firm's assets can be considered a portfolio of its debt and equity holdings, the asset beta can be thought of as the weighted average of the equity beta and the debt beta. The relative weight is captured by the gearing.

[33] In the RIIO-2 methodology decision and the RP3 NATS draft determination respectively.

[34] Ofgem (for RIIO-2) and Ofwat (for PR19) have proposed a 0.125 point estimate, while the CAA has put forward a 0.130 debt beta in its draft determination for RP3.

Commercial revenue	Low-risk single-till approach	N/A	Low end
Cost	Historically weak cost incentives	Lower	Low end

Overall, our view of HAL's relative risk is higher than for regulated networks, as the exposure to volume risk is likely to be more significant a driver of systematic risk than the weaker cost incentives. HAL is likely to be towards the low end of airport risk exposure.

Comparator evidence

We have calculated asset betas for three groups (airports, European regulated utilities, and ENAV), based on Bloomberg data as up to 31 January 2020. We show beta estimates based on both 2-year and 5-year estimation windows for the utility and airport comparators, based on spot evidence (as at 31 January 2020), a rolling 2-year average, and a rolling 5-year average. For ENAV, we present 1y and 2y estimates only (as ENAV was first listed in 2016 and less data is available).

All estimates presented below are based on daily data and using a 0.10 debt beta assumption. Gearing is based on net debt and market capitalisation.[35] Re-gearing and de-gearing of empirical betas are estimated using the same approach to gearing. Betas are calculated relative to local stock market indices.

Table 3.7 below shows a broad sample of international airports.[36] We note that Fraport and ADP empirical betas are broadly similar to the simple average of all airports included in the table.

Table 3.7: Airports – 2y and 5y asset betas (with adjustment for debt beta of 0.10)[37]

Airport	2y Asset Beta			5y Asset Beta		
	Spot (31 Jan 2020)	2-year average	5-year average	Spot (31 Jan 2020)	2-year average	5-year average
ADP	0.53	0.56	0.55	0.57	0.52	0.54
Auckland	0.89	0.98	1.00	0.90	1.01	0.88
AENA	0.58	0.61	0.53	0.58	0.56	0.81
Copenhagen	0.13	0.20	0.32	0.48	0.51	0.52
Fraport	0.52	0.54	0.48	0.56	0.60	0.62
Sydney	0.60	0.53	0.51	0.42	0.44	0.39
Vienna	0.31	0.35	0.27	0.58	0.52	0.49
Zurich	0.76	0.82	0.69	0.64	0.72	0.64
Average	**0.54**	**0.57**	**0.54**	**0.59**	**0.61**	**0.61**

Source: Bloomberg data, CEPA analysis.

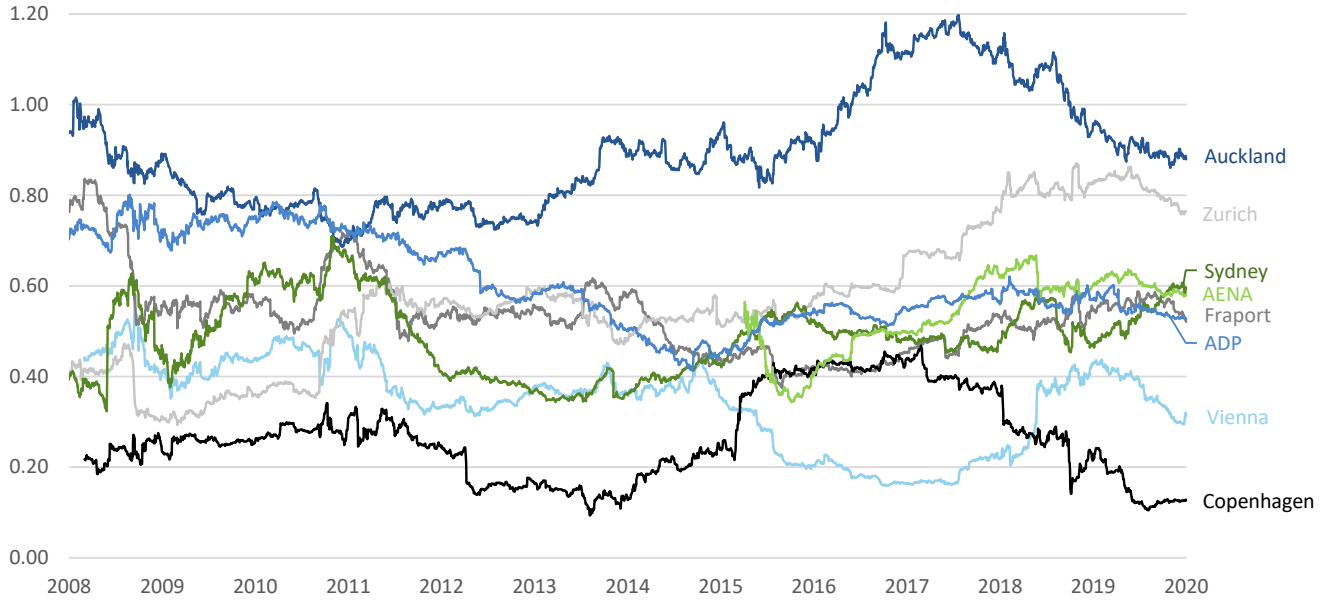
The evolution of these estimates over the past decade is shown in the figures below.

[35] We note discussions by regulators around a consistent basis for re-gearing and de-gearing, in particular Ofgem for RIIO-2. Our approach for this report uses the approach typically used by GB regulators in price controls, however this issue may be revisited closer to the price control determination as more information is available.

[36] We note that not all comparators should be weighted equally in determining a beta.

[37] By considering a five-year average of a five-year asset beta, we are including ten years of evidence.

Figure 3.6: Airports – 2yr asset beta (with adjustment for debt beta of 0.10)



Source: Bloomberg, CEPA analysis.

We note the variability in individual airport asset beta measurements over time, however the group as a whole has typically averaged a beta of 0.5-0.6, with the lowest risk airports in the 0.2-0.4 asset beta range – albeit that values as low as 0.2 are arguably outliers, particularly relative to the sample as a whole.

The second set of comparators we consider are regulated utility networks, with a key focus on UK regulated networks, plus reference to European regulated networks. The figures derived are lower than the asset betas for international airports.

Table 3.8: UK regulated utilities and networks– 2y and 5y asset betas (with adjustment for debt beta of 0.10)

	2y Asset Beta			5y Asset Beta		
	Spot (31 Jan 2020)	2-year average	5-year average	Spot (31 Jan 2020)	2-year average	5-year average
United Utilities	0.38	0.32	0.37	0.38	0.32	0.37
Severn Trent	0.37	0.33	0.38	0.38	0.33	0.38
Pennon	0.43	0.37	0.41	0.45	0.37	0.41
National Grid	0.37	0.38	0.41	0.39	0.38	0.41
UK average	**0.39**	**0.35**	**0.39**	**0.40**	**0.35**	**0.39**

Source: Bloomberg data, CEPA analysis.

ENAV is the third reference point for empirical beta analysis. We present a summary of their asset beta below.

Table 3.9: ENAV[38] – 1y and 2y asset betas (with adjustment for debt beta of 0.10)

	1Y Asset Beta	2Y Asset Beta

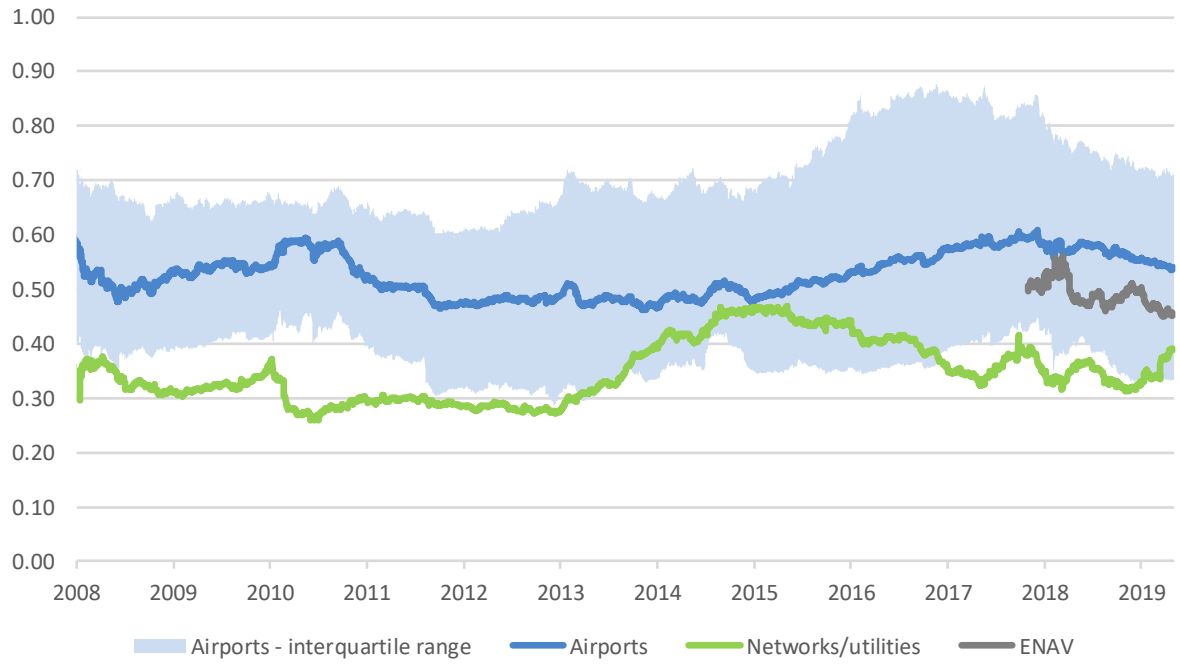
[38] ENAV is responsible for Italian air traffic control services. Data only exists back to 2016, when ENAV was listed.

	Spot (31 Jan 2020)	2-year average	2-year high	2-year low	Spot (31 Jan 2020)	3-month average
ENAV	0.41	0.52	0.67	0.30	0.45	0.46

Source: Bloomberg data, CEPA analysis.

In Figure 3.7 below we summarise the empirical estimates of the asset beta for our three comparator groups.

Figure 3.7: 2y asset betas - Airports, networks and ENAV



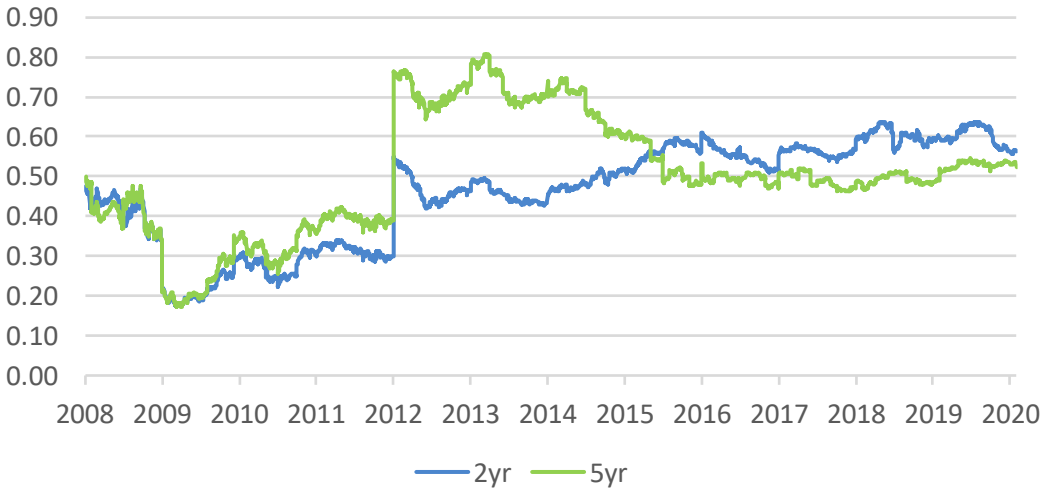
Source: Bloomberg data, CEPA analysis.

Overall, these estimates indicate that asset betas fluctuate within the range of 0.4-0.7 for most airports, with the lower risk airports tending to fall in the 0.4-0.5 range (excluding outliers with exceptionally low asset betas). This supports our interpretation of the riskiness of airports as falling on a relatively broad spectrum. UK regulated network betas tend to fluctuate around the 0.3-0.4 range, though there have been periods where betas have been measured below 0.3 and above 0.4 for sustained periods. Finally, the limited data available for ENAV suggests an asset beta of just below 0.5. We prefer to take a long-term view of each comparator group rather than focusing only on the latest evidence or a fixed averaging period, and avoid estimates from the extremes of the range.

Parent company evidence

Ferrovial's asset beta – which incorporates HAL's beta risk – appears to be around 0.5-0.6. Its other activities, toll roads and construction, are arguably considered riskier than airport operation. This supports our view that HAL's asset beta is likely to sit below most international airports.

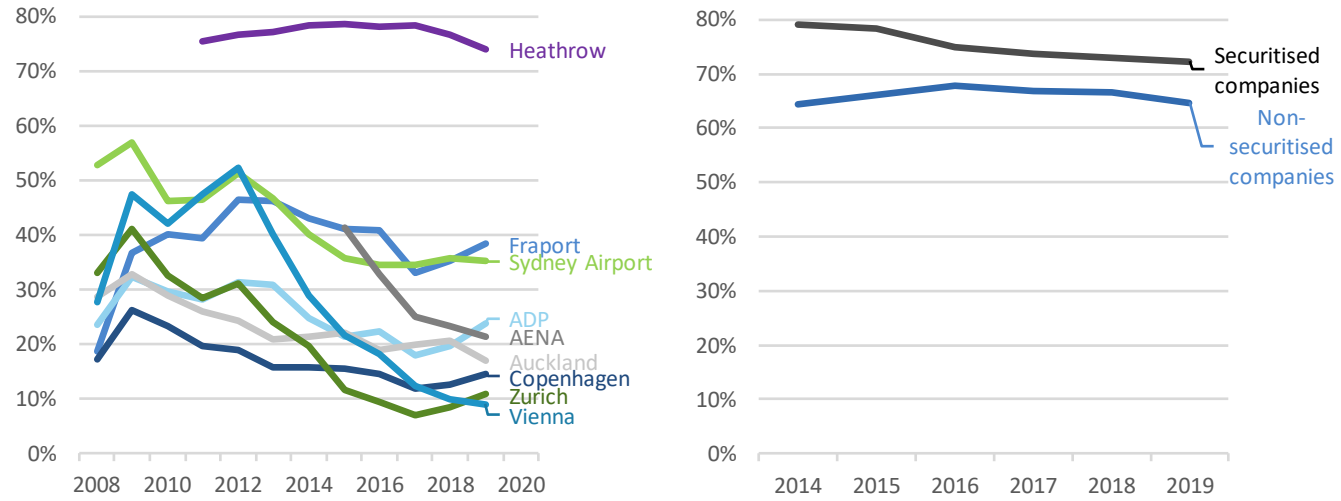
Figure 3.8: Ferrovial – 2-year and 5-year asset betas [39]



Source: CEPA analysis of Bloomberg data

HAL's gearing of 70-80% (Class A and Class B) is significantly higher than other airports and airport groups, and sits closer to securitised water networks – these comparators are displayed in Figure 3.9 below. For HAL to be able to raise such levels of debt suggests that its underlying risk is more comparable to water networks than to other international airports (in the absence of additional explanation for the high gearing).

Figure 3.9: Airport (left) and water networks (right) [40] gearing levels



Source: CEPA analysis of Bloomberg data, Heathrow's self-reported gearing (Class A and Class B), and Ofwat's publications on monitoring financial resilience

[39] Please note that the jump in the Ferrovial beta estimates in January 2012 is related to a reduction in financial gearing from 75% to 44.6%.

[40] We have included South Staffs in the 'non-securitised' companies average.

Summary

In light of this analysis:

- An upper bound for HAL's beta is likely to be around 0.50. This is based on our judgement that HAL is likely to be towards to lower end of the range of airport risk exposure; an asset beta of 0.50 or above would place it in the upper part of the range.
- A lower bound is likely to be around 0.40. This is based on our judgement that HAL is likely to be riskier than regulated networks.

Overall, we consider that a range of 0.40-0.50 best reflects the evidence as a whole.

3.6. BASELINE COST OF CAPITAL RANGE

The results of our analysis are set out below, alongside those put forward by HAL, for the purpose of comparison. Please note that our estimates are based on market information to the end of January 2020. We would expect the value of key parameters to be refreshed as the CAA approaches its final determination.

[Table 3.10: Redacted]

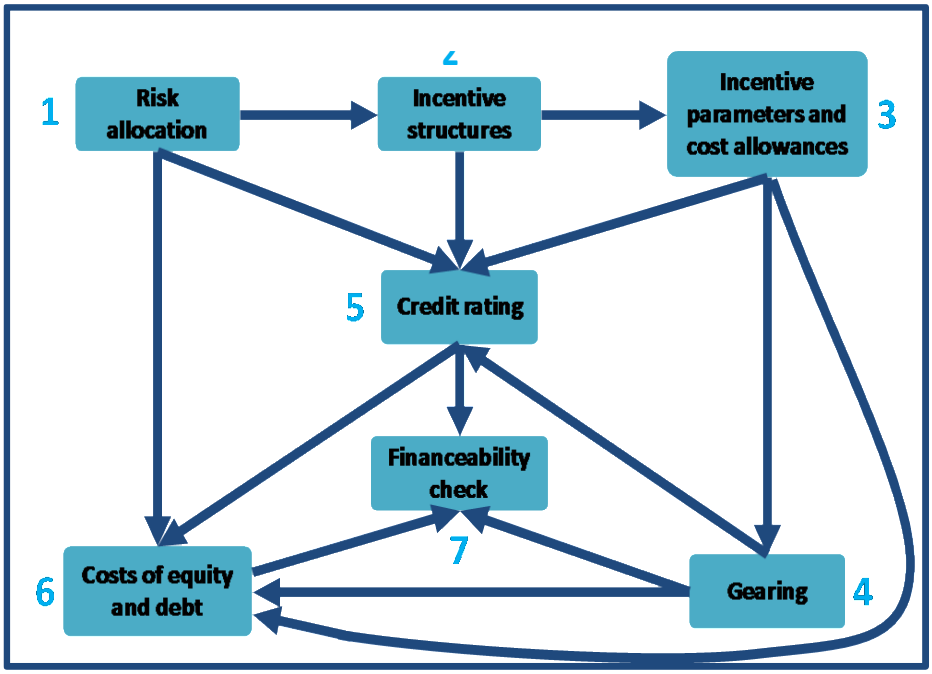
Although the CAA's consultation does not specifically call for estimates of the rolled forward cost of capital for Q6, we consider that the above range provides useful context for the assessment of the cost of capital for capacity expansion. Our key conclusions comparing our range with HAL's IBP 2R range are:

- **HAL's exposure to risk is low compared with other international airports.** Our assessment of asset risk results in an asset beta range of 0.40-0.50: Heathrow Airport is riskier than regulated networks, but less risky than most international airports. The CAA should ensure that any adjustment to the cost of capital for capacity expansion is applied transparently from an appropriate starting point. Many of the features of its risk exposure that support our assessment – the stable, RAB-backed regulatory regime, single-till approach and periodic volume forecast resets – are unlikely to change in the regime for capacity expansion. The adjustment required may therefore be small, and the CAA should remain open to the possibility that the regulatory framework and notional financing structure assumed for capacity expansion is of similar or even lower risk than the present regime.
- **We find evidence that Heathrow is able to broadly match available cost of debt indices despite its high gearing.** Provided that the CAA's choice of cost of debt index (or indices) and approach to financeability is consistent with its assumed target credit rating, the approach to setting a new cost of debt allowance that we outline in Section 3.2.3 should be capable of accommodating a range of scenarios including steady-state operations and capacity expansion. We are therefore supportive of the 'Debt indexation' approach proposed by the CAA (paragraphs 2.42-2.43, CAP 1876) but, as noted in Section 3.2.1, we consider that the CAA should not use HAL's actual debt costs in setting allowances. In Section 4.1 we assess whether there is evidence HAL would need to change its financing approach such that the notional cost of new debt would be materially affected.
- **We continue to support the CAA's position on market parameters.** We have previously set out our view of the prevailing risk-free rate and total market returns in relation to the NATS (En Route) Ltd (NERL) price control.
- **We conclude that HAL's assessment of the 'as is' cost of capital is overstated prior to the issues of expansion being considered.** There is little to no overlap between the parameters that comprise our proposed range and HAL's assessment. Only with respect to notional gearing, debt beta and debt issuance costs do we reach similar views – but those parameters are relatively inconsequential for the overall cost of capital estimate.

4. REFLECTING CAPACITY EXPANSION IN THE WACC

In this section we consider how the CAA might adapt its regulatory framework and approach to fit the context of capacity expansion. The CAA sets out an organising framework for its consideration of financeability issues as Figure 3.1 in CAP 1876. We reproduce this as Figure 4.1 below.

Figure 4.1: CAA's framework for financeability



Source: CAA

The implied sequencing of analysis and decisions – building up to a final check on financeability labelled as step 7 in the process – reflects a common approach in regulatory cost of capital decisions. The various components of the regulatory package are treated as inputs into this financeability check.

The capacity expansion programme will entail investment on a large scale. The balance of capital expenditure and steady-state operation of existing assets will change, and HAL's RAB will more than double. In this context we suggest there is a case for placing greater emphasis on an initial assessment of financeability. This analysis should be used directly as an input into other parameters, rather than a final check after those parameters have been determined.

Section 4.1 provides a structure for considering changes in HAL's risk exposure resulting from capacity expansion. As noted above we consider that the Q6 regime can be characterised as relatively low risk compared with other international airports. Unless clearly indicated by material changes in HAL's exposure to risk we would recommend that analysis of financeability and appropriate assumptions for the target credit rating and notional gearing proceed on the basis of such a regime. Section 4.2 considers whether HAL's access to debt finance is likely to be sufficiently constrained as to justify alternative assumptions regarding credit rating or debt costs.

Section 4.3 then addresses the issue of financing approaches and financeability including, in particular, the appropriate assumptions regarding the target credit rating and notional gearing.

4.1. Impact of expansion on the cost of capital

Underlying risk exposure is the fundamental driver of a firm's cost of capital. Expansion would have a major impact on HAL's business and activities during H7, but it is not right to assume that it would lead to a higher cost of capital. Many aspects of HAL's business model will remain intact, not all changes in risk will affect the cost of capital and some changes that would affect it may be mitigated by the regulatory regime.

In the sections that follow, we highlight the key risk mitigants that would remain in place for HAL even with expansion (Section 4.1.1), discuss the key changes in risk arising from expansion (Section 4.1.2) and set out our view on the potential net effect at this early stage in the process (Section 4.1.3).

4.1.1. Key risk mitigants remaining in place

It is important to recognise that key aspects of HAL's risk profile would remain unaffected by expansion. As such, international airports and regulated utilities should remain the key comparator groups when considering HAL's relative risk. These benefits are well understood by HAL and are a key part of its offering to investors.[41]

HAL would retain key risk mitigants relative to other airports

International airports remain a key reference point as HAL will fundamentally remain an airport business and face similar risks and pressures it has faced through recent price controls. It is and shall remain as Moody's describes *"one of the world's most important hub airports and the largest European airport"*.[42] HAL will also retain key factors that differentiate it from others and that would tend to reduce our push downwards our judgement of its relative riskiness: (i) capacity constraints; and (ii) a single till.

Expansion will ease capacity constraints at Heathrow Airport, but that will be a long process. As such, this feature will continue to protect HAL's from exposure to lower passenger volumes following macroeconomic shocks, reduce its non-diversifiable risk and so its asset beta relative to other airports.

The single till will continue to put downward pressure on HAL's beta relative to other airports with a dual till system. Those arrangements reduce HAL's exposure to commercial revenues, a highly non-diversifiable risk that would otherwise increase the asset beta. They also allow the aeronautical activities to be subsidised by income from non-aeronautical activities including retail, car parking, the Heathrow Express and property rental. The CAA noted in CAP1876 that it has no plans to change those arrangements.[43]

HAL would still have much in common with regulated utilities

Regulated utilities also remain a key reference point – HAL will remain a regulated business with market power, with its regulated charges set in a well-established RAB-based regime. HAL's investors will continue to benefit from the CAA's regulatory framework that is backed in legislation, and that has a transparent framework that gives investors confidence that they can earn a reasonable return on their capital invested. The CAA's model is reinforced by HAL's appeal rights to the CMA in the case of dispute, which provides protection against hold-up risk by the CAA should it try to reduce HAL's equity returns once it has committed to the project.

These key features will continue to be shared with UK regulated utilities and so make them a relevant benchmark for HAL's asset beta. They will also continue to boost rating agencies' qualitative assessments HAL, enabling it to achieve a given credit rating with greater leverage and weaker coverage ratios and covenants than might otherwise be the case.

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[41] See for example pp6-8, HAL (Sep 2019) *"Heathrow September Investor Update",* available on heathrow.com.

[42] p1, Moody's (Apr 2019) *"Heathrow Finance plc Credit Opinion (Annual update)",* available on heathrow.com

[43] p53, CAA (Jan 2020) *"CAP1876: Economic regulation of Heathrow Airport Limited: further consultation on regulatory framework and financial issues"*, available on caa.co.uk

4.1.2. Key risks affected by expansion

Expansion will undoubtedly change aspects of HAL's risk profile for H7, but it may be premature to determine that the impact will always be an increase in risk. Even if the underlying risk of HAL's business increases, it will only affect HAL's investors risk if they bear that risk—the CAA may allow the regulatory regime to pass on a range of risks to airlines and passengers. Indeed, the scale of some risks or adjustments required to address the financeability challenge may even mean that in certain scenarios HAL's risk could even decrease in order to allow the expansion to go ahead.

We have identified a set of key factors related to expansion that might affect the cost of capital:

- capex intensity;
- interface risk;
- asset stranding;
- volume risk; and
- financeability constraints.

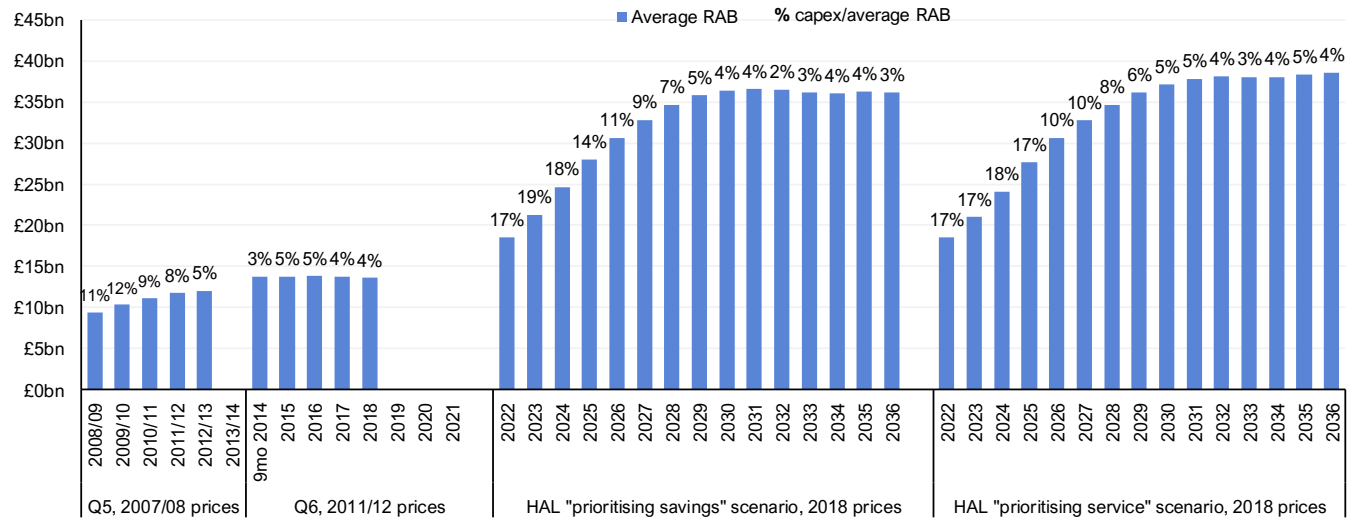
These are not the only risk factors that might be affected by expansion, but they are the primary ones that we would expect to affect the allowed cost of capital.

Capex intensity

Capex intensity is often gauged for regulated businesses as the ratio of capex to the RAB. A high capex intensity puts pressure on financeability metrics, but it may also have an impact on the cost of capital through the cost of equity. When capex intensity is high, the level of capex is large relative to the company's regulated return. If the company is exposed to some capex performance risk and that risk is to some degree non-diversifiable, then capex intensity may increase the asset beta.

HAL's IBP indicates that expansion would increase its capex intensity for a period of time. Capex intensity was relatively low in Q6 at four to five percent of RAB, even lower than Q5, which experienced capex to RAB ratios as high as twelve percent. HAL's IBP indicates that expansion would result in a capex to RAB ratio higher than that but only for the first four years, after which it would follow a profile similar to the one it has followed since the start of Q5.

Figure 4.2: HAL average RAB (blue bars) and capex to average RAB (percentages)



Source: CEPA analysis of CAA determinations for Q5 and Q6, and HAL's Initial Business Plan Summary. Gaps at the end of Q5 and Q6 relate to extensions to these price controls years beyond the original five-year regulatory period.

HAL's projected capex intensity suggests that it is only the initial few years of expansion when capex intensity is materially higher than it has experienced in its own recent history. As such, any adjustment for capex intensity should be focused on that period alone. It would not be reasonable to apply such an adjustment to the later years as while capex outlays may still be large, the RAB (and associated return) will have grown and the capex risk relating to earlier periods will have already crystallised. Capex intensity should only affect the cost of capital when capex is high relative to the RAB within a given year.

When considering the initial capex intense period, it is relevant to consider whether the expenditure forecast is credible. HAL may forecast a capex to RAB ratio as high as 21 percent in one year but if that level of capex is not deliverable and needs to be spread over a number of years, the impact on the cost of capital should be commensurately lower. A smoother capex profile should lead to a lower average capex intensity.

Table 4.1 shows some capex to RAB ratios and asset betas.

Table 4.1: Summary of capex to RAB and asset beta determinations (with a zero debt beta)

	Capex to RAB	Asset beta
HAL, H7 R3	16.8%	0.43 to 0.64
NGET, RIIO-T1	13%	0.38
SHETL, RIIO-T1	27%	0.43

**Note: asset beta for H7 includes uplift of 0.04 to 0.15*

Even if HAL's forecasts are accurate, it would be appropriate for the CAA to take into account how the treatment of capex differs from earlier periods. We note that the CAA is considering changes in that area, potentially strengthening some incentives, bringing them closer into line with regulated utilities.

Interface risk

In taking forward the expansion programme it will be important for HAL to ensure it does not disrupt or unintentionally reduce the capacity of its operational assets. HAL is clearly best placed to manage such risk (and incentivised to do so through its price cap) so we would expect that measures to mitigate that risk would be in its plans.

It is not clear, however, that interface risk is a non-diversifiable risk that would affect the asset beta, but it may be a factor that could influence the level of gearing as a potential downside scenario. It is also not clear that the cost of capital is the best place to capture this risk as the ultimate likelihood or magnitude of such an event is difficult to gauge. It may be more efficient to consider alternative ways to capture this risk, such as through incorporating some an estimate of the impact of disruption into the volume forecasts used to set the price cap for H7.

Asset stranding risk

The RAB acts as a guarantee to recover capex expenditure and be funded for investment, but where the asset created is not used and associated revenue is not recoverable, asset stranding can occur.

As noted in Section 2, we would suggest that the cost of capital for the main construction phase of the project should not be set until the planning and wider political uncertainty that now surrounds the project has been removed, and ideally not until some of the earliest risky components of the project have progressed to a point where their risk can be quantified and addressed objectively.

Post DCO (and assuming that the issues raised by the recent court decision can be addressed), we consider that the risk of stranding substantially diminishes. At that point HAL would continue to benefit from its stable and relatively benign regulatory environment and strong underlying traffic characteristics that it enjoys now, removing any case for adjustments to the cost of capital.

Volume risk

HAL currently operates under a price cap regulatory regime, which includes volume risk around the number of passengers within a price control period. The regime for H7 will need to consider the extent to which it compensates HAL for any change risk in relation to new capacity (which is inherently harder to estimate) and whether any buffers are built into passenger volume forecasts to mitigate against downside risk.

HAL's regulated revenue cap is set per passenger, and so lower-than-expected demand reduces HAL's ability to recover its allowed costs. HAL may profit when demand exceeds forecast. Passenger numbers were below the CAA's Q5 passenger forecast but HAL outperformed the forecast for Q6.[44]

Heathrow Airport's current capacity constrained position currently protects it from this risk, so if expansion were to relieve the constraints, we would expect HAL's volume exposure to increase slightly as it expands its market to include more marginal, price sensitive airlines and consumers. That impact, however, is unlikely to materialise until later in the expansion programme when the new capacity is fully available, and even then it is to some extent mitigated by the phased approach to development, which means that any excess capacity may be temporary. Furthermore, capacity constraints are only one factor shielding HAL from volume risk. It also benefits from the following traffic market features:[45]

- London's profile as a major global city provides balanced outbound and inbound demand;
- greater exposure to intercontinental long-haul traffic, with long-term prospects for demand from emerging markets; and
- transfer traffic, with traffic tending to concentrate towards hubs during downturns.

A key point to note is that the impact of volume risk is substantially mitigated by the presence of periodic volume resets. HAL is only exposed to volume risk within each regulatory period. As such, volume only affects the level of remuneration in the years until the next reset. Only a portion of the remuneration of HAL's sunk investments are exposed to volume at any one time—there is a substantial terminal value in the opening RAB value at the start of the next control period.

Financeability constraints

Financeability issues arise when credit metrics are stretched when the regulated company is financed at the notional gearing. One possible reason for this is that the cost of capital estimate applied to the price control is too low, and that increasing it returns comfortable metrics that are consistent with the assumed credit rating. However, there are other possible causes of stretched credit metrics, even if the cost of capital assessment is correct. A rapidly expanding RAB is a common cause of such issues.

Other ways to influence the credit metrics include:

- Increasing allowances for non-cash costs, and in particular depreciation. This brings forward cash flows, improving near term credit metrics.
- Reducing the underlying risk exposure of the regulated company. With lower risk, the company can sustain a rating despite poor expected credit metrics.
- Reduce the gearing. The regulator may be explicit about this, reducing the notional gearing, or alternatively company management may choose to reduce gearing below the notional gearing.

We consider that the cost of capital is not the correct tool for addressing financeability constraints. The cost of capital should reflect the underlying risk that HAL faces and should not be inflated to address a financeability issue.

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[44] p27, HAL (Sep 2019) *"Heathrow September Investor Update",* available on heathrow.com

[45] p7, HAL (Sep 2019) *"Heathrow September Investor Update",* available on heathrow.com

Inflating the WACC would represent poor value for money for passengers. Alternative solutions that are better value for money should always be available.

4.1.3. Net impact on the H7 cost of capital

When considering the overall impact of expansion on HAL's cost of capital, we find it possible to see a wide range of outcomes, arguably wider at both ends of our Q6 roll-forward range.

There are many arguments that could be put forward as to why HAL faces greater risk than before, but we find that in nearly all cases that risk is easy to overplay, restricted to a limited set of circumstances or may be offset by policies put in place by the CAA. Overall, that there are relatively few clear and substantial WACC impacts.

It is essential to underline that three major drivers of long-term value for HAL's investors would remain in place and help mitigate the impact of any changes:

- **Strong market status:** Heathrow will remain a major world airport with a diverse and stable traffic base.
- **Regulatory regime:** HAL enjoys a well-established and predictable RAB-based regime with appeal rights to the CMA.
- **Commercial risk limited:** The single till system insulates HAL's investors from commercial revenue risk.

The genuine changes in risk, however, should not be ignored. They should just be considered in a proportionate manner and recognise that a more targeted adaptation of the regime elsewhere may improve the clarity and precision of the regime.

- **Capex intensity:** HAL forecasts the first four years of expansion to be capital intense, which may imply a temporary increase in HAL's exposure to non-diversifiable beta risk. However, the case for change would be limited if HAL were to ultimately follow slower build profile, and needs to be considered in the context of changes to capex performance risk from new incentives.
- **Interface risk:** HAL disrupting its own activities is a risk that HAL is well-incentivised to reduce. We would expect this to be captured in its project planning and volume forecasts rather than an imprecise adjustment to the cost of capital.
- **Asset stranding:** We do not consider that the CAA should set a cost of capital for H7 until after the DCO decision and the project's legal status is clear. With HAL's strong market position there should be no basis for capturing this risk in the cost of capital.
- **Volume risk:** Expansion may eventually relieve some constraints that suppress HAL's exposure to volume risk, but robust underlying traffic characteristics and a phased development programme would dampen any impacts on the cost of capital. Any impacts may be best considered as part of later price controls when their nature is better understood.
- **Financeability constraints:** We consider the cost of capital should reflect HAL's underlying risk and not be used as a tool to address financeability problems. However, it may be appropriate to consider some reduction to the notional gearing assumption, as we discuss further in Section 4.3.

As much as it could be possible to argue that expansion could increase the cost of capital, we can imagine scenarios to the contrary. Indeed, with enough protections in place, the expansion project could begin to look more like a regulated network than an international airport. There is precedent for such an outcome in the treatment of the Thames Tideway Tunnel, which demonstrates that the design of a regulatory regime can give a cost of capital below something considered business-as-usual.

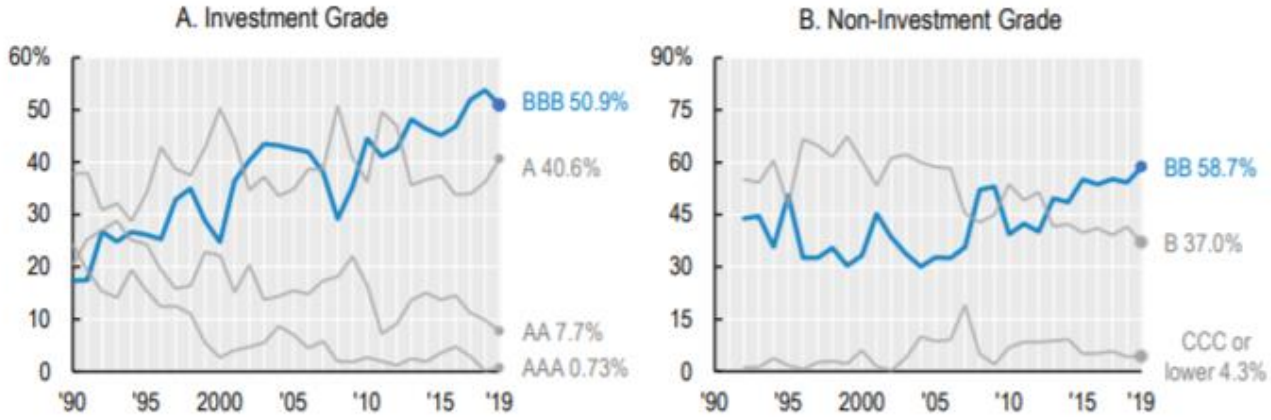
4.2. COMPOSITION OF DEBT FINANCE

The CAA's narrative around financing set out in its CAP 1876 consultation is one of an exceptionally large financing challenge, with a requirement for HAL to raise debt of £16 billion over 2019 to 2026, an average of £2.3 billion per year. Further, it is argued that there are rating and currency constraints to HAL's issuance. Our starting point for assessing the required remuneration for new debt under capacity expansion is that provided the CAA is consistent in its use of a target credit rating, notional gearing assumption and cost of debt benchmarks, there ought to be no reason that capacity expansion in and of itself would require an adjustment to the cost of debt allowance. However, in this section we consider whether the *composition* of the debt finance raised by HAL to finance capacity expansion might warrant an adjusted approach.

The evidence that is presented by CAA to emphasise the scale of the debt financing challenges and constraints relate to issuance by a few selected infrastructure companies in energy and water. However, an analysis of bond market conditions as a whole suggests that HAL's issuance could readily be absorbed:

- First, the aggregate requirement by HAL is modest in the context of the corporate bond market as a whole. In 2019, UK issuance amounted to £260bn (gross) or £45.4bn net.[46] HAL's average debt requirement is 0.8% of gross issuance or 5% of net.
- Second, there has been a sustained increase in the amount of paper issued at lower investment grade ratings. Figure 4.3 below shows trends in the composition of debt issuance reported by the OECD.

Figure 4.3: Global composition of debt issuance by credit rating



Source: OECD

In the latest OECD report on the global corporate bond market, over half is now issued at BBB grades rather than A, AA, or AAA.[47] Out of a total of approximately $2 trillion issued in 2019, about $1 trillion was issued at the lower end of investment grade. This statistic is not consistent with a low investor appetite suggested in the CAA report. The OECD data is consistent with UK data reported on the Bank of England blog "Bank Underground".[48]

[46] Based on the Bank of England's capital issuance statistics.

[47] OECD (Feb 2020) *"Corporate Bond Market Trends, Emerging Risks and Monetary Policy"*, available on oecd.org

[48] Bank Underground (May 2019) *"What happens when 'angels fall'?"*, available on bankunderground.co.uk

- Third, non-sterling issuance by UK corporates is already a substantial proportion of overall issuance, which suggests that special considerations for HAL are unnecessary in this regard. For example, from October 2019 to January 2020, 43 percent gross bond issuance by UK resident corporates was in Sterling.[49]

There may well be reasons for the CAA to consider a higher quality investment grade rating (A) than is typically assumed (BBB). However, the evidence indicates that the availability of finance is not a driver of this, as financing could be available at BBB, but rather what rating is associated with efficient financing of the notional entity. The CAA should apply a high bar for any adjustments to the cost of debt on the basis that its debt costs may be materially out of line with those of other UK corporates of a similar credit rating.

4.3. APPROACH TO FINANCING AND FINANCEABILITY

Within the framework of Figure 4.1 there are three broad elements that the CAA can adjust:

- The package of risks, incentives and allowances (represented by steps 1, 2 and 3) will determine the range of operational cash flows that the business can generate.
- The target credit rating (represented by step 5) will determine the cost of debt and the credit metrics that the business will be expected to target.
- The notional gearing (represented by step 4) reflects the relative importance of debt and equity finance.

The costs of equity and debt are not strictly within the CAA's control. These will follow naturally from the other decisions the CAA will take, as indicated in Figure 4.1.

In general, it is not possible for the CAA to fix all elements independently of one another; there must always be a 'balancing item' ensuring overall consistency. For example, it is not open to the CAA to simultaneously allocate substantial risks to the regulated company, set a robust credit rating and assume a high notional gearing. The role of the financeability analysis is to highlight when a package of assumptions may be inconsistent, but it does not indicate which element(s) should be adjusted in order to achieve consistency. It is likely that the CAA will need to take an iterative approach.

In the sections that follow we consider which elements of the package the CAA should consider flexing in order to ensure that a notional operator of Heathrow Airport would be able to meet the challenges of capacity expansion.

4.3.1. Risks, incentives and allowances

Our analysis in Section 3 indicated that HAL currently operates under a relatively low-risk regime by the standards of international airports and enjoys many of the same regulatory protections as energy and water networks. Section 4.1 above set out a discussion of reasons why this may change under capacity expansion. However, given that many aspects of the regime are likely to remain the same – notably the use of a RAB, periodic volume forecast resets and the single-till approach – a sensible working assumption is that expansion will have a similar risk profile. It is the regulatory regime more than the scale of the project that determines risk.

What is the read-across between the package of risks, incentives and allowances on one hand, and the assessment of financeability on the other? Flexing the risk allocation will have two effects:

- As risk increases the implied cost of equity will also increase. This will increase the baseline cash flows available for servicing debt, providing support for some credit metrics that enter into the financeability analysis.

[49] See the *"Gross Table (£ breakdown)"* sheet in the Bank of England spreadsheet *"Capital issuance by UK-residents (all currencies)"*, available on bankofengland.co.uk.

- With increased risk will come a heightened possibility of downside scenarios sufficiently severe to impinge on credit ratings. This will tend to weaken the financeability analysis.

Because these two effects work in opposite directions there is a risk of contradictory implications. We would expect the latter effect to dominate; other things being equal, a high-risk package is likely to pose more significant financeability challenges. However, a superficial analysis of base case credit metrics may indicate the opposite.

The CAA's consultation indicates that it will use analysis of return on regulatory equity (RORE) to assess equity financeability. Similarly, the use of downside scenarios should inform the CAA's assessment of debt financeability. The probability weighted impact of these downside scenarios should be commensurate with the target credit rating assumed. Incentive rates and parameters can be adjusted to fine-tune the degree of risk exposure – with any adjustments being reflected in the assumed asset beta and cost of equity.

4.3.2. Target credit rating

Regulators generally target a broad investment grade credit rating for the notional entity, and the CAA's March 2019 consultation indicated a "reasonable investment grade" rating. How might this translate into a specific assumption in the context of capacity expansion?

- It is possible that, given the quantum of debt to be raised, a strong rating may support access to debt markets. The CAA and HAL have each considered an A- rating as the basis for planning.
- Equally, in the context of an investment programme that will more than double HAL's RAB, a degree of (temporary) deterioration in credit quality might be expected and tolerated. The CAA references two offshore wind projects and the Thames Tideway Tunnel as examples of projects that have been able to raise substantial volumes of debt at a credit rating of Baa1 (one notch below A3, equivalent to A-).

In principle either of these options is defensible. The former will help to reduce the notional cost of debt below that currently applicable, but will imply a more stringent set of financeability thresholds that will be more challenging to meet. The latter will entail slightly higher debt costs but will be more accommodating of weaker cash flows during the most intense periods of construction.

As noted in Section 4.2 we would challenge the assumption that HAL would be unable to raise sufficient debt finance at a rating slightly below A-. The CAA restricts its observations to debt raising by infrastructure companies. However, investors in HAL will compare it with all debt of a similar rating. Analysis of the capacity for BBB rated debt in the market as a whole is required.

A recent OECD report noted a trend towards issuance of lower quality bonds such that A-rated and above bonds are now in a minority.[50] In 2019, BBB rated bonds – the lowest quality of bonds that enjoy investment grade status – accounted for 51% of all investment grade issuance. Only 30% of the global outstanding stock of non-financial corporate bonds were rated A or above and issued by companies from advanced economies. By focusing on an A- rating, the CAA risks adopting an artificially high standard and concluding that debt finance capacity is more limited than it is in practice.

In Section 4.2 we concluded that as a result the CAA might plausibly consider adjustments to the notional cost of debt that are not required in practice. Here we emphasise the possibility that the CAA might attach insufficient weight to efficient financing solutions that incorporate BBB rated debt. We would expect the CAA to subject the view that only an A- rating would be consistent with sufficient capital market depth to scrutiny.

4.3.3. Notional gearing

The notional gearing assumption often attracts relatively little consideration and analysis in regulatory determinations. For regulated businesses operating in steady state across regulated sectors in GB an assumption in

[50] http://www.oecd.org/corporate/ca/Corporate-Bond-Market-Trends-Emerging-Risks-Monetary-Policy.pdf.

the region of 60% has generally been considered appropriate. We adopted an assumption of 60% for the purpose of our Q6 roll-forward cost of capital in Section 3.

When a regulated business departs from business as usual, however, the optimal gearing for the notional entity may change. A period of investment and expansion will naturally tend to increase cash flow pressures and tighten credit metrics. This pressure can be mitigated through a more prominent role for equity finance and lower gearing.

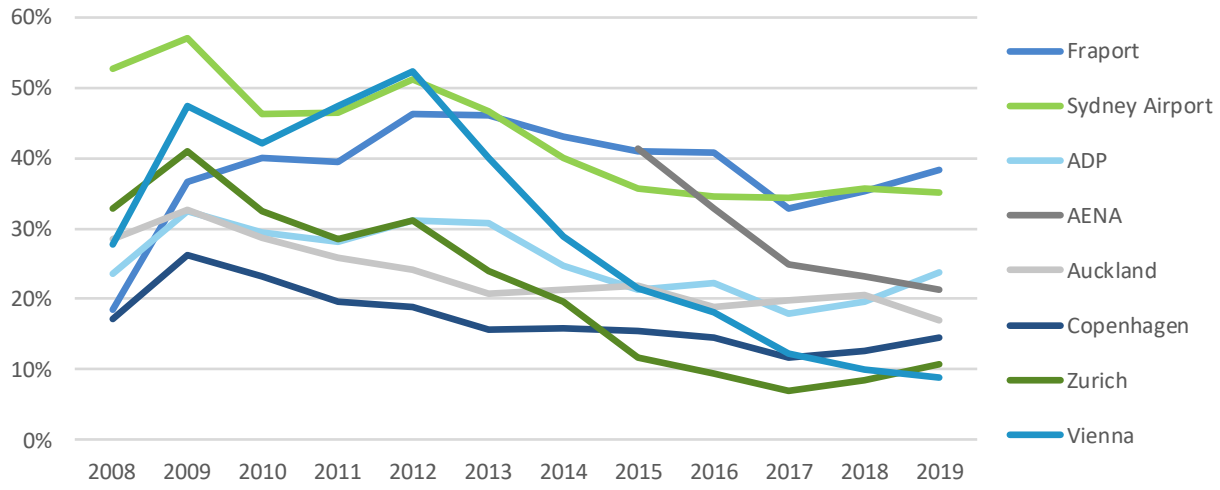
The effect on cost of capital and financeability of a lower gearing assumption will be complex:

- A lower gearing assumption will generally be more supportive of debt financeability:
  - Gearing is itself a key metric in assessing credit ratings.
  - Interest cover ratios will be easier to achieve given the lower debt burden.
- The impact of a lower gearing assumption on the cost of capital may be ambiguous:
  - Lower gearing will reduce the weighting on debt, tending to increase the cost of capital.
  - Lower gearing will reduce the degree of financing risk captured in the equity beta, tending to decrease the cost of capital.
  - Lower gearing will also reduce the weighting on new debt, in the current context tending to increase the cost of capital.

We would expect the CAA as part of its analysis of financeability to form an objective, evidence-based assessment of the optimal gearing in the context of capacity expansion. This assessment should consider a scenario in which the notional gearing assumption is calibrated to be consistent with the proposed target credit rating and package of risks, incentives and cost of capital allowances.

Other things being equal, we would expect this gearing assumption to be lower than the 60% that has been applied during more stable periods. Figure 4.4 below summarises the gearing rates observed for other international airports over the past decade. None has been as highly geared as 60%, and currently all are majority financed by equity. A lower notional gearing assumption would not be out of line with actual financing approaches adopted by other international airports.

Figure 4.4: Gearing of comparator airports (annual average)



Source: CEPA analysis of Bloomberg data. Gearing = Net Debt / (Net Debt + Market Capitalisation)

A further consideration is the likely strong availability of equity financing. CAA considers that equity financing is important, but its analysis does not reflect the significant appetite for this in global capital markets. For example, the Preqin (2019) quarterly update on infrastructure indicates US$90bn of equity raised by global unlisted infrastructure funds in the 12 months to October 2019, and a similar high level of investor interest in the previous

five years.[51] This excludes availability for equity investment from within listed markets, the source of finance for Ferrovial.

We consider that the evidence points to strong interest from investors in assets of the quality of HAL. As well as suggesting a high bar to the CAA providing any special adjustments to the WACC, we consider that this evidence should give the CAA comfort in considering a range of potential financing approaches. This should include relatively equity-focused approaches as well as debt-focused. Ultimately the most suitable notional gearing assumption should be the one that minimises efficient costs to consumers.

4.3.4. Summary

We propose that the CAA avoids pre-judging appropriate assumptions on the approach to financing capacity expansion ahead of its financeability analysis. Instead those assumptions should be informed by that financeability analysis – recognising that judgements on risks and incentives, target credit rating and notional gearing are inter-related.

The CAA's assessment of financeability and determination of cost of capital parameters could take the following form:

- Based on our analysis in Sections 3, 4.1 and 4.2, as well as advice the CAA has received from its advisors, the Q6 roll-forward represents a reasonable starting point for the costs of equity and debt. Any deviations from this – for example to reflect changes in HAL's exposure to risk – should be clearly linked to changes in the regulatory regime rather than adopted as working assumptions on the basis of the expansion project's large scale.
- We recognise there are reasons an A- target credit rating may be defensible. Analysis of the depth of capital markets at various credit ratings, however, suggests that a lower target rating should also be feasible. The CAA should consider both in its analysis. The preferred target rating should minimise efficient financing costs and entail a set of financeability thresholds consistent with the cash outflows expected during a large construction programme.
- The notional gearing assumption should then be calibrated to produce a financing approach consistent with the degree of risk exposure in the regulatory regime and the target credit rating. Though we have not carried out our own detailed financial modelling it is likely that the notional gearing assumption implied by this approach would be lower than the 60% assumed for Q6.

This approach differs from our understanding of the CAA's work to date. It is currently considering a 'twin track' approach for financeability, including a "high gearing" view of the world as well as a "moderately geared notional company'". Based on paragraph 3.49 of CAP 1876 we interpret "moderately geared" as an assumption in the range of 60-70%. Though a reduction from HAL's current level of gearing we would not necessarily regard even 60% as a "moderate" rate of gearing in the context of an expansion programme that would more than double the RAB. It is more likely to be considered moderate in the context of energy or water networks operating with no exposure to volume risk and steady-state investment programmes.

The approach would also differ from HAL's view expressed in its IBP, which is based on combining:

- a high assessment of the riskiness of the regulatory regime for expansion;
- a strong target credit rating; and
- a high notional gearing assumption for a large construction project.

This view lacks consistency. An A- credit rating would tend to be associated with a relatively low notional gearing; an assumption of 60% implies an unwarranted degree of financeability pressure. Were the CAA able to devise a

[51] Preqin (Oct 2020) *"Preqin quarterly update: Infrastructure Q3 2019"*, available on preqin.com.

regulatory regime exposing HAL to the degree of risk implied in its cost of equity assumption, it is highly unlikely that an A- credit rating would be a realistic prospect, particularly at relatively high levels of gearing. In any case it is difficult to believe that such a high degree of risk exposure would be achievable in the context of a RAB-backed regime, limited volume risk, single till approach and historically weak capex incentives.

It is important that the CAA subjects HAL's proposed financing approach to sufficient scrutiny. HAL uses its own financeability analysis to argue that the high cost of equity it assumes is necessary to reconcile its target credit rating and notional gearing assumptions. A more appropriate conclusion for the CAA to draw would be that its notional gearing assumption is unrealistic. This represents a more logical, commercially sound decision making process: investors in a project would expect to size the quantum of debt finance according to what the cash flows could support, not the other way around. It is natural to assume, at the margin, a greater role for equity finance in the context of capacity expansion than for steady-state operations. Our analysis of the capacity of equity investors and the actual financing structures used by other international airports supports a notional gearing assumption lower than 60%.

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