Economic regulation of Heathrow Airport Limited: H7 Initial Proposals

Section 2: Financial issues

CAP2265C

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Enquiries regarding the content of this publication should be addressed to: robert.toal@caa.co.uk

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Chapter 6

The H7 Regulatory Asset Base and HAL's request for a RAB adjustment

Introduction

6.1 This Chapter sets out how we will calculate the value of the regulatory asset base (RAB) for the H7 price control period. The RAB reflects the value of the investment that HAL has made in the regulated business and allows the recovery of investment on a smoothed basis over an extended period, allowing for stability in charges and the financing of new investment.

6.2 We set price controls on the basis that HAL can expect (but does not have an absolute guarantee) that it will:

- recover its efficiently incurred investment over the life of the relevant assets, through the regulatory depreciation charge; and
- earn a return each year on the undepreciated part of that investment that remains in the RAB.

6.3 The use of a RAB facilitates the CAA in furthering the interests of consumers generally by helping us:

- set a smooth profile of charges over time;
- secure that HAL can finance its activities by facilitating return and depreciation on new investment;
- secure that the reasonable demands of consumers are met by supporting investment; and
- promote economy and efficiency by providing for a return and depreciation of efficient investments.

6.4 The opening RAB in H7 will be comprised of the following component parts:

- the roll-forward of the Q6 RAB, including additions relating to efficiently incurred capex, depreciation and inflation indexation for the Q6 and iH7 periods;
- allowed Category B[1] and Category C[2] costs incurred by HAL in respect of expansion; and

[1] Category B costs are those associated solely with seeking planning permission for the delivery of new runway capacity at Heathrow. For more information please see Appendix C to the July 2019 Consultation

[2] Category C costs are those incurred by HAL in connection with implementation and construction of new capacity, up to entry-into operation. For more information please see Appendix C to the July 2019 Consultation

- the £300m adjustment to the RAB that we announced in the April 2021 RAB Adjustment Decision related to HAL's application for a covid-19 related adjustment.[3]

6.5 We indicated in our April 2021 RAB Adjustment Decision that we would consider whether it would be consistent with our statutory duties to apply a further adjustment to the H7 opening RAB in respect of losses incurred during the pandemic.

6.6 The remainder of this chapter:

- provides further clarity regarding our policy in respect of the targeted £300m RAB adjustment we announced in our April 2021 RAB Adjustment Decision;
- sets out our policy regarding a further RAB adjustment in H7;
- presents our proposed opening RAB for H7, considering each of the constituent components referred to above; and
- provides a summary of how we intend to roll forward the RAB in H7.

Targeted £300m RAB adjustment

Context

6.7 In July 2020, HAL requested that we make an adjustment to its RAB to address the shortfall in the revenue it expected to experience in 2020 and 2021 due to the severe impact of the covid-19 pandemic on its business. Subsequently, HAL has made a series of further representations to us in support of its request.

6.8 In April 2021,[4] we decided that the best way for us to further the interests of consumers, consistent with our primary duty under CAA12, in response to the issues raised by HAL's request would be to make a targeted and focused regulatory intervention ahead of the H7 price review. Specifically, we decided that a RAB adjustment of £300 million (in 2018 prices) represented a transparent and proportionate intervention that was needed at that time to further the interests of consumers.

6.9 We considered that the adjustment would:

- fund additional investment by HAL during 2021, to maintain service quality and provide necessary capacity in the event of a stronger than expected recovery in passenger traffic; and

[3] On 27 July 2020, HAL sent us a request that we should make an adjustment to its regulatory asset base ("RAB") to address the shortfall in the revenue it expected to recover in 2020 and 2021 due to the severe impact of the covid-19 pandemic on its business. HAL subsequently provided several updates to its request, ultimately seeking an adjustment of £2.5bn (2018 prices) in its Updated RBP.

[4] See CAP2140.

- help avoid a higher cost of debt finance for HAL that could increase charges to consumers in the future.[5]

6.10 In taking this decision, we took note of the weight that credit rating agencies place on their qualitative assessment of the regulatory framework and the possible benefits of signalling support for the notional company being able to access investment grade finance. We also noted that peak notional gearing levels were high relative to certain thresholds used by credit rating agencies.

Stakeholders' views

AOC/LACC

6.11 AOC/LACC stated in their response to our April 2021 RAB Adjustment Decision that they remained opposed to a RAB adjustment that compensated HAL for losses as a result of the impact of the covid-19 pandemic on traffic levels,

> "*not only as a result of the negative effect on economic incentives that would result, but also due to the precedent that would be created through the use of the RAB in such a manner.*" [6]

6.12 They have also requested that we provide clarity[7] regarding whether:

- the RAB adjustment may be reversed in H8 or H9 once an appropriate level of gearing has been restored; and
- whether additional investment of £230 million by HAL would funded directly by the RAB adjustment and so the additional investment would not further increase the RAB.

HAL

6.13 In both its response to the April 2021 Way Forward Document[8] and its updated RBP,[9] HAL has indicated that it considers the £300m RAB adjustment we set out in the April 2021 RAB Adjustment Decision would:

- be insufficient to ensure the stability of the regulatory framework and the best possible outcomes for consumers in H7;

[5] CAP2140, paragraph 4.

[6] Letter from AOC/LACC dated 11th June 2021, titled "*Re: CAA CAP2140: Heathrow's request for Covid-19 related RAB adjustment*".

[7] CEPA, on behalf of AOC/LACC, also indicated that it consider it would be appropriate for us to provide further detail on "*the basis of and rationale for*" our proposed iH7 RAB adjustment – see CEPA (2021), "Way Forward – Technical Appendix", June, p1. The full extent of information used to reach a decision on this adjustment were set out in our April 2021 RAB Adjustment Decision. We are therefore not in a position to provide further information.

[8] HAL (2021), "Economic regulation of Heathrow Airport Limited: Consultation on the Way Forward (CAP2139)", paragraph 4b.

[9] HAL (2021), "Heathrow Airport: H7 Revised Business Plan – Update 1", June, p47.

- mean that investors could in future no longer have a legitimate expectation that they will receive a return of capital invested, which would fundamentally change the investment proposition; and
- be extraordinary and at odds with decades of accepted regulatory practice in the UK.

Discussion of stakeholder feedback

6.14 In the April 2021 RAB Adjustment Decision, we stated it would be undesirable for us to reverse our £300 million RAB adjustment during the H7 process, with the "benefit of hindsight", unless there was evidence that HAL was manifestly failing to deliver on necessary investment to re-open additional capacity, particularly in terminals, in a timely way and to maintain quality of service. Otherwise, reversing the RAB adjustment could undermine both investor expectations and the credibility of our decisions, leading to higher costs to consumers in future. So, we do not propose to adopt the suggestions made by airlines that we reverse the RAB adjustment set out in our April 2021 RAB Adjustment Decision.

6.15 We also said that if evidence were to emerge that HAL had not responded appropriately, including in respect of service levels where this is within HAL's control, we would:

- look to introduce additional protections around service quality in H7; and
- consider reducing the £300 million RAB adjustment or making offsetting reductions to revenue.

6.16 We are continuing to monitor performance at the airport including with respect to investment and service levels. Our initial view is that HAL has re-opened terminal capacity in a way that has allowed airline demand to be met, and that service quality performance has been good when measured against the metrics. We welcome further views and evidence that may be relevant to our assessment of this issue.

6.17 We also do not propose to substitute additional investment for the RAB adjustment. This would undermine our intervention and could provide incentives on HAL to not undertake efficient additional investment as it would bear the cost but without further remuneration through the RAB.

6.18 Therefore, we propose to retain the £300 million targeted RAB adjustment and do not set out proposals to reduce or reverse this amount.

Further adjustment to the H7 opening RAB

6.19 We indicated in the April 2021 RAB Adjustment Decision that we would consider the wider issues HAL has raised on issues such as regulatory depreciation and the cost of capital at the H7 price control review,[10] in deciding whether or not to make any further RAB adjustments or other interventions.

[10] CAP2140, Paragraph 5.

6.20 We also indicated that if we were to make allowances for the recovery of historical depreciation, we would consider whether these should be adjusted to take account of outperformance by HAL earlier in the Q6 period.[11]

6.21 Since regulatory depreciation from 2020 and 2021 was £1.6 billion (in 2018 prices), we said that there would need to be a clear case that such a material adjustment would further the interests of consumers, having regard to the other matters required by our secondary duties.

Stakeholders' views

AOC/LACC

6.22 AOC/LACC stated in its response to the April 2021 RAB Adjustment Decision that it remains opposed to any further RAB adjustment that compensated HAL for losses as a result of the impact of covid-19 on traffic levels.[12]

HAL

6.23 In its response to our February 2021 Consultation, HAL put forward several reasons to explain why a total RAB adjustment of £2.6bn was needed immediately.[13] HAL emphasised the importance to investors of the full recovery of regulatory depreciation, which it considers to be a fundamental principle of RAB-based regulation. It also said that its proposed RAB adjustment is necessary to preserve HAL's return of capital, and hence investor confidence in the regulatory framework.

6.24 In the light of this, HAL has then suggested that its proposed RAB adjustment would:

- reduce the H7 WACC: it suggested that "*the impact of the RAB adjustment we requested would be to reduce the increase in Heathrow's pre-tax WACC by 1.5%*"[14] and has subsequently increased this figure to 1.9% in its updated RBP;[15]
- facilitate deferral of revenues (through a depreciation adjustment) into future price control periods, leading to lower H7 charges: HAL had previously stated that, "*with an adjustment in place, it is possible to smooth depreciation to mitigate charge increases in H7 from fewer passengers*";[16]

[11] CAP2140, Paragraph 35.

[12] Letter from AOC/LACC dated 11th June 2021, titled "*Re: CAA CAP2140: Heathrow's request for Covid-19 related RAB adjustment*".

[13] HAL (2021), "Economic regulation of Heathrow: response to CAA consultation on Covid-19 related RAB adjustment (CAP2098)", March, Paragraph 48.

[14] HAL (2021), "Economic regulation of Heathrow: response to CAA consultation on Covid-19 related RAB adjustment (CAP2098)", March, Paragraph 51.

[15] HAL (2021), "H7 WACC updates", Table 11.

[16] HAL (2020), "Economic regulation of Heathrow: response to its request for a covid-19 related RAB adjustment (CAP1966)", November, Paragraph 56.

- result in more investment and better service for passengers; and
- secure HAL's debt financeability: HAL specifically referred to impacts on its compliance with covenants and suggested that, "*action would also significantly reduce the risk of a credit rating downgrade and Heathrow having difficulty in accessing debt markets*".[17]

6.25 HAL also suggested that we had previously ignored equity financeability in our approach and that this was inconsistent with our statutory duties.[18]

HAL's Updated RBP

6.26 In its Updated RBP, HAL presented:

(vi) a "Full Adjustment" scenario, in which it assumed that that the RAB adjustment applied at the start of the H7 period would be based on an adjustment of £2.5bn (2018 prices);[19] and

(vii) a "Low Adjustment" scenario, in which it assumed that no further adjustment to the RAB would be made at the start of H7 beyond the £300 million adjustment we made in our April 2021 RAB Adjustment Decision.

6.27 It provided further discussion of its proposed H7 RAB adjustment, including why, in HAL's view, it is necessary, how it has been estimated and its impact across the H7 price control, including in relation to:

- the scope for and size of a depreciation adjustment;
- the WACC for H7;
- the passenger demand shock factor;
- the scope for revenue profiling;
- the scale of the capital programme and the efficiencies HAL suggests this will facilitate in term of opex and commercial revenues; and
- the advisability of an Enhanced Service overlay.

6.28 HAL has also outlined the impacts it expects the RAB adjustment to have on consumer outcomes in terms of service, resilience and other outcomes.

[17] HAL (2021), "Economic regulation of Heathrow: response to CAA consultation on Covid-19 related RAB adjustment (CAP2098)", March, Paragraph 65.

[18] HAL (2021), "Economic regulation of Heathrow: response to CAA consultation on Covid-19 related RAB adjustment (CAP2098)", March, Paragraph 69.

[19] This was slightly lower than its previously requested amount of £2.6bn due to the updating of various inputs.

Our Views

The role of regulatory depreciation

6.29 We explained our view of the role of regulatory depreciation in the April 2021 RAB Adjustment Decision as follows:

> "*We agree with HAL that a price control should be set* ex ante *on the basis that companies would recover regulatory depreciation plus a reasonable allowed return on a forward looking basis. This is a necessary condition for satisfying our secondary duty to secure that HAL is able to finance its activities. It is also consistent with the "fair bet" principle that underpins much of UK economic regulation.*
>
> *This does not constitute an absolute guarantee that companies will be able to recover regulatory depreciation* ex post *irrespective of what happens to traffic levels during the regulatory period. This would effectively amount to a guarantee that a company will never be exposed to losses. Such a guarantee does not seem proportionate or consistent with an approach to setting a price control on the basis that HAL bears traffic risk. We, therefore, disagree with HAL that it is a fundamental principle of UK regulation that companies are guaranteed a recovery of regulatory depreciation, unless this has been explicitly set out as part of the regulatory framework*."[20]

6.30 We have carefully reviewed the evidence and representations from HAL. However, providing that the regulatory arrangements for the future are set on the basis of reasonable expectations about returns, we are not persuaded that it is necessary or appropriate to retrospectively correct for historical shocks – including in relation to the non-recovery of regulatory depreciation – unless this was explicitly provided for in the regulatory regime or was clearly in the interests of consumers.

6.31 While we acknowledge that the pandemic is likely to have heightened investor perceptions of risk in HAL and that this could persist for a significant period, we are taking the following steps to address these matters:

- the application of a TRS, which reduces HAL's exposure to future shocks.[21] The TRS will form part of HAL's licence;
- provision of an allowance for asymmetric risk to ensure that the price control remains a "fair bet";[22] and

[20] See CAP2140, paragraph C39

[21] See Chapter 1.

[22] See Chapter 7.

- determination of a higher asset beta (and so higher WACC) in recognition of the likelihood of heightened risk perceptions by investors even after taking into account the above two regulatory mechanisms.[23]

6.32 These new arrangements that we are proposing to put in place as part of these Initial Proposals should support investor confidence in the regulatory framework and help ensure that HAL remains financeable.

Impact on the H7 WACC (cost of equity)

6.33 Investors' perceptions of risk, and hence their required returns, are driven by their forward-looking expectations.

6.34 In the absence of any other regulatory measures, a RAB adjustment could mitigate investors' perceptions of increased risk following the pandemic and lead to a lower cost of capital. However, this would depend on investors' beliefs regarding the circumstances under which a similar adjustment would be made in the future. For example, if the RAB adjustment was presented as a one-off intervention that was unlikely to be repeated under any circumstances, it might not have any effect on investors' forward-looking perceptions of risk. On the other hand, if the RAB adjustment were to be interpreted as implying that we would intervene in a similar manner with near certainty in the context of future traffic shocks, it could significantly mitigate perceptions of heightened risk.

6.35 We consider that there are benefits to consumers from reducing perceptions of forward-looking risk exposure, through

- managing investor perceptions;
- maintaining appetite for investment; and
- securing a lower cost of capital than would otherwise be the case.

6.36 We also consider that a proportionate means of signalling our commitment to containing the impacts of future traffic shocks, and hence mitigate perceptions of risk, is through a formal traffic risk sharing (TRS) mechanism as discussed in Chapter 1. We will also consider whether there is merit in issuing policy guidance that sets out the future circumstances under which it would be appropriate in the future to reopen the price control. Taken together our approach provides a framework for treatment of future traffic risks and we do not consider that a RAB adjustment would provide a material additional benefit to consumers in terms of reducing the cost of capital.

6.37 We have further considered HAL's suggestion that the application of a forward looking TRS or revenue risk sharing mechanism would not be credible, and hence could not effectively mitigate covid-19 related increases in the cost of equity, in the absence of a RAB adjustment.

6.38 The evidence we have seen suggests that:

[23] See Chapter 9.

- Regulatory announcements are generally taken into account by the market and influence perceptions of risk: for example, in our February 2021 Consultation, we ruled out a "no intervention" option, and this was explicitly recognised by rating agencies.[24] This contributed to a view that

  - "*the U.K. aviation regulator, the CAA, will take a balanced approach that will support Heathrow Funding Ltd.'s (HFL) financeability. We therefore think the regulatory framework in the period starting January 2022 (H7: 2022-2026) should remain supportive and transparent*"[25].

- We note that this view has also been expressed by equity analysts. For example, BNP Paribas noted that

  - *"we do still view the fact that Heathrow is regulated and that the CAA accepts that some intervention is necessary as a credit positive, even if any eventual compensation may well be less and more spread out than Heathrow are hoping for".*[26]

- Regulatory determinations, once codified and embodied in the licence, can directly affect the equity beta of regulated companies. For example, we note a study carried out by AGRF and KPMG[27] in the context of the PR19 determination by the Competition and Markets Authority (CMA). This study demonstrated a statistically significant impact of the PR14 price control determination on the share price and equity beta of both Severn Trent and United Utilities.

6.39 We are, therefore, satisfied that a transparent and clear TRS mechanism would be credible in informing stakeholders how future traffic risks would be treated regardless of whether a RAB adjustment was applied. It is our intention that the TRS mechanism would be set out and applied either through HAL's licence or in policy guidance. On this basis, we maintain our previous view that a RAB adjustment would not contribute to a material additional reduction in the cost of equity when applied concurrently with the other steps we are taking in setting the H7 price control. As such, we do not consider that a further RAB adjustment is warranted on the basis of its impact on the cost of equity and, therefore, would not be justified in the interests of consumers.

Impact on depreciation and revenue profiling

6.40 We consider that there are two relevant questions with respect to the impact of a RAB adjustment on revenue profiling:

[24] S&P Global Ratings (2021), "Research Update: Heathrow Funding Class A 'BBB+' And Class B 'BBB-' Ratings Taken Off CreditWatch Negative And Affirmed; Outlook Negative", March, p2.

[25] S&P Global Ratings (2021), "Research Update: Heathrow Funding Class A 'BBB+' And Class B 'BBB-' Ratings Taken Off CreditWatch Negative And Affirmed; Outlook Negative", March, p1.

[26] BNP Paribas (2021), "Heathrow: Dreaming of a summer traffic recovery", February, p1.

[27] AGRF/KPMG report, paragraph 4.6.12.

- firstly, whether a further RAB adjustment can facilitate substantial reprofiling of revenues relative to a no-adjustment scenario; and
- secondly, whether doing so would justify a RAB adjustment of the scale that HAL is requesting.

Impact of RAB adjustment on revenue profiling

6.41 We consider that our Initial Proposals provide for allowed revenues that are sufficient to ensure that the notionally financed company is financeable in H7. There appears to be only limited scope for deferring any revenues into future price control periods, for example by reducing depreciation. This is because doing so would adversely affect key credit metrics, for example, FFO to debt, that are already close to relevant thresholds in the early years of the H7 period.

6.42 The only way to reduce the depreciation charge in H7 in a manner that is consistent with ensuring financebility would be to increase funds from operations ("FFO") in some other way, such as increasing the allowed return, and this would not allow for revenue profiling and reduced charges to consumers. Further, the immediate effect of a RAB adjustment would be to increase the allowed return and depreciation charge, which, in turn, would lead to increased charges. To offset this increase, it would be necessary to reduce depreciation by at least the same amount. Any further reductions in depreciation, and hence airport charges, could therefore cause FFO to debt to fall putting pressure on the relevant thresholds and financeability.

6.43 Overall, we are not persuaded that a RAB adjustment is either necessary or sufficient for deferring revenues through a depreciation adjustment.

Value of revenue reprofiling to consumers

6.44 Even if a RAB adjustment somehow enabled significant additional reprofiling of revenues, we are not persuaded that this would represent a sufficient justification for making such an adjustment.

6.45 Our primary duty is to further the interests of users of air transport services, which are defined as present and future passengers and cargo owners. This means we must strike the balance between charges in H7 and future charges that affect the interests of these classes of consumer in the manner that we consider will further such of their interests as we think best. As such, we are not solely concerned with charges in H7.

6.46 We acknowledge that it can be desirable to move revenues between price control periods to avoid undue volatility in charging levels. In these circumstances there may be benefits to consumers of using profiling to generate a flatter profile of charges over time.

6.47 However, the evidence we have seen suggests that the benefit to consumers of NPV-neutral reprofiling of revenues is likely to be small compared to the scale of the RAB adjustment that would be required to facilitate it. For example, if

consumers' discount rate[28] is assumed to be equal to the WACC, there would be no consumer benefit arising from reprofiling.

6.48 We, therefore, do not consider that making a significant further RAB adjustment to facilitate revenue reprofiling is likely to be in the interests of consumers, even if it were to result in temporarily lower charges across the H7 period.

Impact on investment, opex (including the Enhanced Service Overlay) and service quality

6.49 We disagree with HAL that a further RAB adjustment is necessary to allow for an appropriate level of investment, opex or service quality in H7.

6.50 In the April 2021 RAB Adjustment Decision, we considered that a £300m RAB adjustment was warranted to support investments needed to maintain service quality and support re-opening of capacity in the event of a stronger than expected recovery in passenger traffic. Under normal circumstances, we would expect such investments to be funded by HAL and its shareholders. However, in the extraordinary circumstances faced by HAL during the covid-19 pandemic, we considered that it was prudent and in consumers' interest to advance targeted funding to support investment projects needed within a short space of time in 2021, and ahead of the H7 price control review. This was particularly the case given the high peak levels of notional gearing expected in 2021, which exceeded certain thresholds considered by credit rating agencies.

6.51 This rationale no longer applies and we can ensure that future investment is allowed for in this price control review. In addition, HAL's proposed further RAB adjustment does not constitute targeted funding to support specific investment projects, but rather is based on the principle that it should be remunerated for historical losses.

6.52 We expect that the price control we will set for H7 will enable an efficient airport operator to access sufficient debt and equity capital to fund an appropriate level of investment. We consider that investors should be willing to commit capital to the business providing that they expect in future, on average, to earn their required return.

6.53 We are not persuaded by HAL's argument that a rational investor would react to the past crystallisation of risks, and the consequent non-recovery of regulatory depreciation in 2020 and 2021, by reducing investment and shortening the time horizons of their investments. As we have previously said, we expect investors to make decisions based on the forward-looking balance of risk and return, taking into account the protections available to them. This includes the existence of a TRS mechanism that will significantly insulate them from volume risk in future.

6.54 Overall, we do not consider that a further RAB adjustment is necessary to support investment and quality of service. We also do not consider that a further RAB adjustment is necessary to limit the higher opex and lower commercial revenues that HAL contends will arise in the absence of such an adjustment. As

[28] This is defined to be the rate at which a consumer must be paid to substitute future consumption for present consumption and remain indifferent.

a result, we do not consider that making a further RAB adjustment is in the interests of consumers in relation to the range, availability quality or continuity of AOS.

Impact on cost of debt and debt financeability

6.55 In the April 2021 RAB Adjustment Decision, we considered that a £300m RAB adjustment could help to avoid undue increases in the cost of debt. We considered it would do so by:

- signalling support for the notional company, which could improve credit rating agencies qualitative assessment of HAL's business risk; and
- by limiting peak notional gearing levels, which at that time were high relative to certain thresholds used by credit rating agencies.

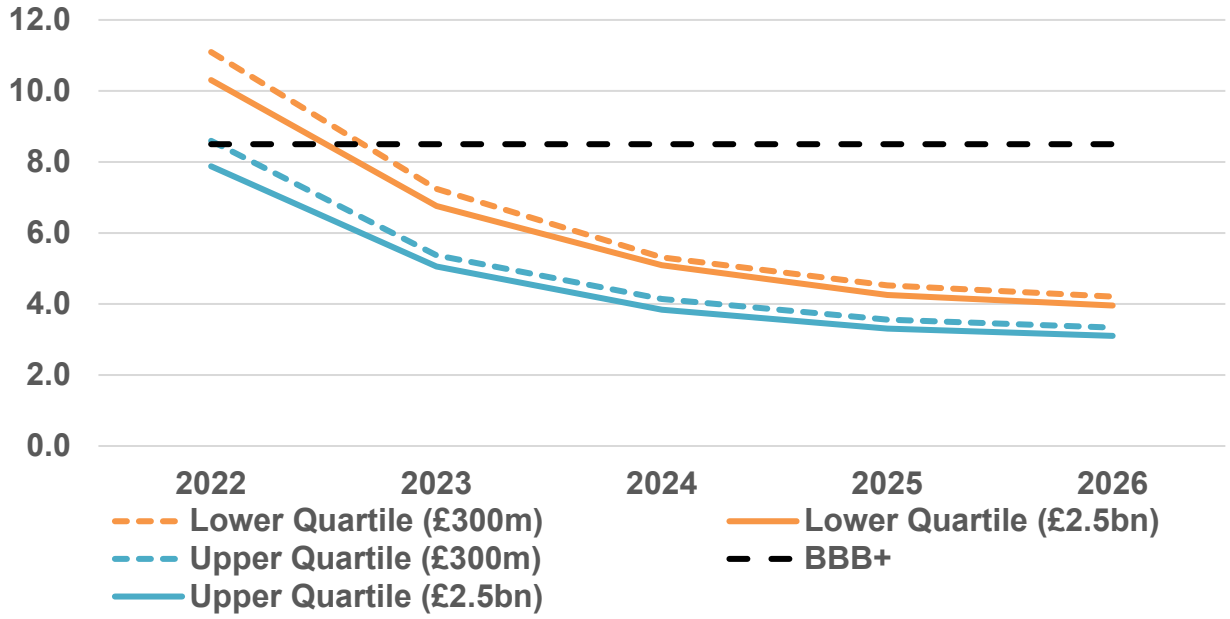
6.56 We also previously examined the forecast evolution of HAL's notional financial ratios with and without a RAB adjustment, using the information in HAL's RBP. We found that the RAB adjustment proposed by HAL did not materially improve HAL's credit metrics.

6.57 We do not consider that a further RAB adjustment is necessary to manage the peak in HAL's gearing, since this will be adequately addressed by the £300m RAB adjustment we have already announced.

6.58 We carried out analysis to assess whether a further RAB of £2.5bn adjustment (in line with HAL's RBP) could significantly improve HAL's credit metrics relative to solely making a RAB adjustment of £300m in line with the April 2021 RAB Adjustment Decision. The results of this analysis are set out below.

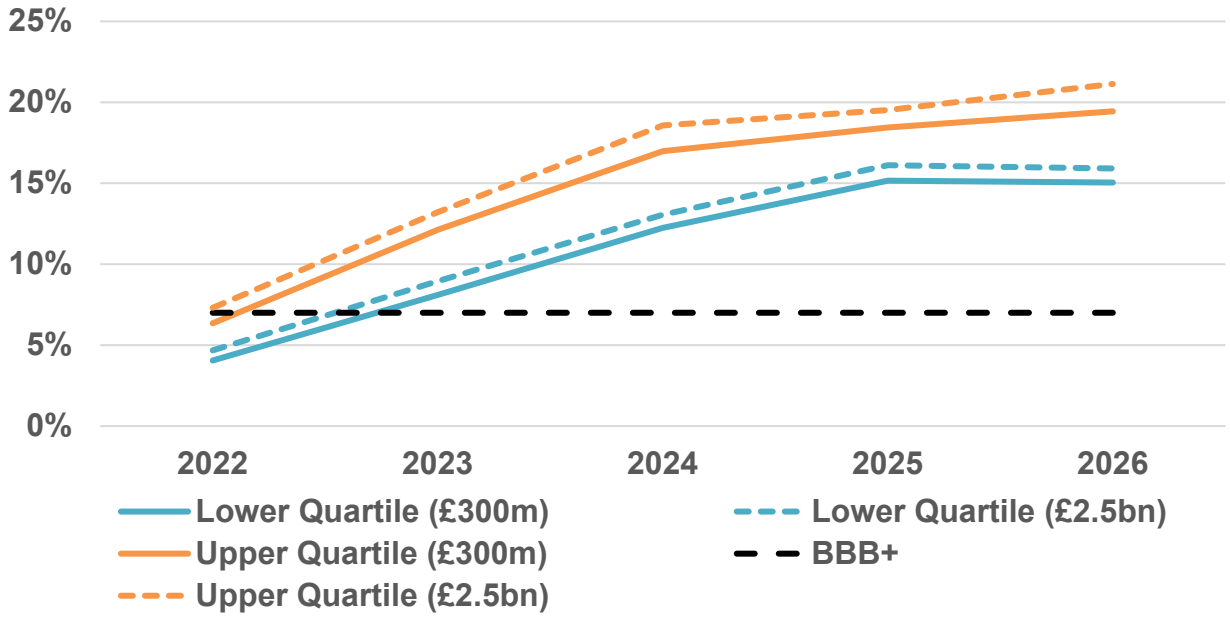
6.59 In line with our broader assessment of financeability (see Chapter 11), we have focussed on three key metrics: net debt to EBITDA, FFO to debt and PMICR. As can be seen from Figure 6.1, Figure 6.2 and Figure 6.3 below, the RAB adjustment improves each of the financial metrics considered. Under the Upper Quartile scenario, it results in net debt to EBITDA and FFO to debt being brought in line with thresholds for BBB+ in 2022. Under the Lower Quartile scenario, it results in PMICR being brought in line with thresholds for BBB+ in 2023 (but not 2022).

Figure 6.1: Impact of a RAB adjustment on net debt to EBITDA



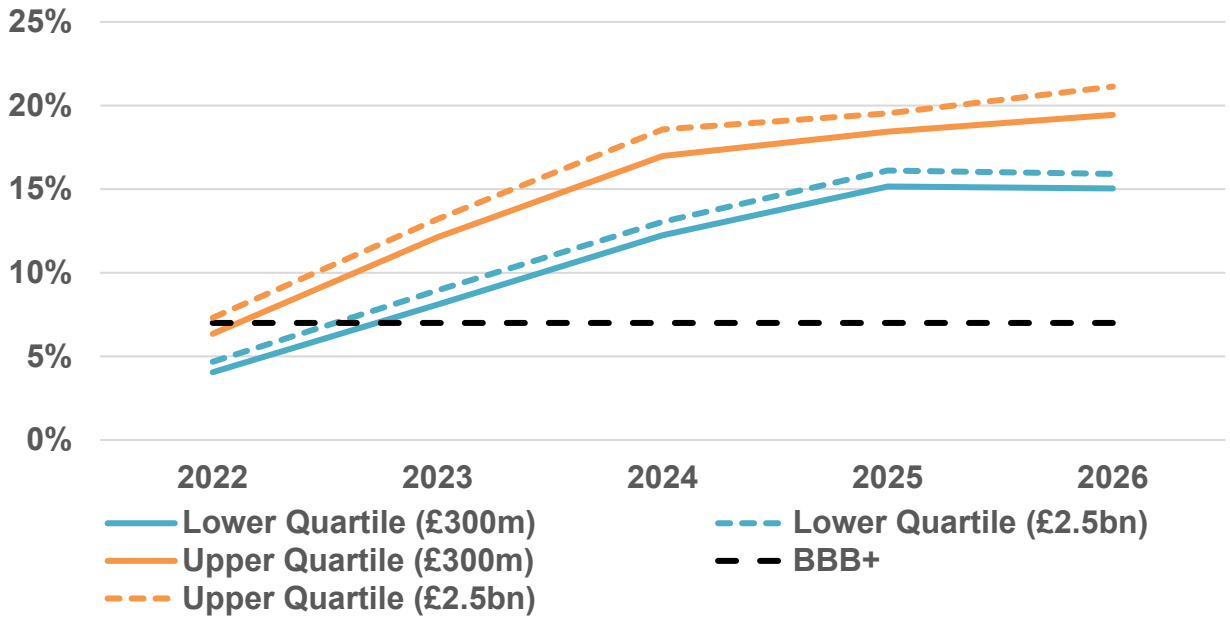
Source: CAA analysis

Figure 6.2: Impact of RAB adjustment on FFO to debt



Source: CAA analysis

Figure 6.3: Impact of a RAB adjustment on PMICR



Source: CAA analysis

6.60 It is possible that these relatively modest improvements in the notional financial ratios would result in a one-notch improvement in the credit rating of the notional entity. At the same time, this is subject to some uncertainty: while they do bring some ratios in line with thresholds for a higher credit rating, this is only the case in a single year, and credit rating agencies may look beyond the temporarily depressed metrics. It is also possible that a further RAB adjustment would positively influence credit rating agencies' qualitative assessment of HAL's business risk.

6.61 Even if a further RAB adjustment could lead to a one notch improvement in the notional credit rating, we do not consider that this alone would justify the inclusion of an adjustment of the scale that HAL has requested.

6.62 We indicate in Chapter 11 that while we compare the financial ratios of the notional entity to the thresholds for a BBB+ credit rating, we would not necessarily view a notional entity that was rated BBB to be unfinanceable. We also note that there are more proportionate means of achieving financial ratios that are consistent with BBB+ in the early years of the price control available to us than a further RAB adjustment of the scale that HAL has requested. For example, we could consider reprofiling of revenues within H7, or advancing revenues from future periods.

6.63 Based on this analysis, we consider that a further RAB adjustment is not justified based on the impact on HAL's cost of debt or debt financeability.

Impact on equity financeability

6.64 In the April 2021 Way Forward Document, we acknowledged the importance of equity financeability and set out initial thinking on how we would seek to ensure HAL was financeable from the perspective of equity in H7.[29]

6.65 In the absence of a RAB adjustment, the notional entity would either need to:

- reinvest a substantial proportion of its equity return in H7 to deleverage the business following the increase in gearing driven by the impact of the covid-19 pandemic. The scale of deleveraging required implies that there would need to be only very limited notional dividend payments in the early years of H7, while the level of dividends would recover in the later years;
- obtain an injection of new equity at the start of H7, which would return gearing to its level before the covid-19 pandemic occurred; or
- combine the above in some way.

6.66 We explain in Chapter 11 why we consider that our Initial Proposals are consistent with equity financeability in the absence of the full RAB adjustment. We consider that a temporary period of dividend forbearance is reasonable, providing that the overall allowed return is in line with the WACC, and there is a clear path towards a sustainable level of notional dividends.

6.67 We also note, as an alternative, it would be reasonable to assume a notional equity injection as a means of de-leveraging the business. In support of this assumption, we have observed several businesses in the UK aviation sector that have successfully raised equity in the last 1 to 18 months:

- HAL itself secured a £750m capital injection from ADIF2 into Heathrow Finance group in 2020;[30]
- Manchester Airport Group injected £300m in equity, relative to debt balance pre-pandemic of £1.8bn;[31]
- Gatwick Airport has received a capital injection of £370m;[32]
- EasyJet raised £419m through issue of new shares;[33]
- Ryanair raised €400m of equity;[34] and

[29] CAP2139, paragraph 3.44.

[30] HAL (2020), "*Heathrow (SP) Limited: Results for the 9 Months ended 30 September 2020*", p4.

[31] Manchester Airports Holdings Limited (2021), "Annual report and consolidated financial statements for the year ended 31 March 2020", p13.

[32] https://www.gatwickairport.com/globalassets/company/investor/2021/interim/investor-presentation-results-for-the-period-ended-30-june-2021.pdf, p10

[33] https://www.cityam.com/easyjet-raises-419m-through-share-placing-to-bolster-finances

[34] https://www.marketwatch.com/story/ryanair-raises-eur400m-in-share-placing-2020-09-04#:~:text=Ryanair%20Holdings%20PLC%20said%20Friday,35.2%20million%20shares%20at%20EUR11

- IAG has undertaken a capital increase of €2.75bn.[35]

6.68 We further note the CMA's position, as stated in its determination for Northern Ireland Electricity, and which we refer to in Chapter 11, is consistent with this view.

6.69 We therefore consider that the notional entity is financeable from the perspective of equity without a RAB adjustment, and as such, we do not consider that a RAB adjustment is warranted on the grounds of equity financeability.

Impact on passenger shock factor

6.70 We have carefully considered the impact of the pandemic on our proposed allowance for asymmetric risk. Our approach is set out in Chapter 7.

6.71 We have calculated this allowance on the basis that no RAB adjustment is applied, and that a TRS mechanism is put in place. Therefore, there is no benefit for consumers, nor is it necessary to support HAL's financeability, for a RAB adjustment in relation to these matters.

CAA Initial Proposals

6.72 Having considered each of HAL's arguments regarding the need for a further RAB adjustment in H7, we conclude, for the reasons set out above that no further RAB adjustment is justified in the interests of consumers.[36] This is because such an adjustment is either not needed to further their interests in relation to lowering the overall cost of AOS that they are exposed to, or, where there might be benefit to them, the adjustment HAL argues for is not proportionate to the benefit that it would bring.

6.73 As a result, we do not consider that the CAA needs to take any action to adjust the RAB in the manner that HAL has proposed.

Calculation of H7 opening RAB

6.74 We summarise below how we propose to calculate the H7 opening RAB. For each of the years from 2014-2020, the closing RAB is calculated as the sum of:

- the opening RAB;
- actual capex additions in each year;
- Category B and Category C costs incurred by HAL in respect of expansion;
- indexation of the opening RAB; less

[35] https://www.iairgroup.com/~/media/Files/I/IAG/capital-increase-documents/en/fully-underwritten-capital-increase-10-09-2020.pdf

[36] See paragraphs 6.39, 6.43, 6.48, 6.54, 6.63, 6.69 and 6.71 above.

- regulatory depreciation.[37]

6.75 In 2021, we also include an additional adjustment of £372m to the RAB. This comprises:

- the £300m RAB adjustment we announced in our April 2021 RAB Adjustment Decision, appropriately uplifted for inflation;
- additions pursuant to our Q6 capex review,[38] including relevant financing costs; and
- additions pursuant to our early expansion costs review,[39] including relevant financing costs.

6.76 These are summarised in Table 6.2 below. The H7 opening RAB is then equal to the closing RAB in 2021. Under our current forecasts, this is equal to **£16,692m** in nominal prices.

6.77 The opening RAB for H7 will be confirmed at Final Proposals once all actual values for 2021 are known.[40]

Table 6.1: Roll-forward of Q6 RAB

Nominal prices	Q6	Q6	Q6	Q6	Q6	Q6+1	iH7	iH7
	2014*	2015	2016	2017	2018	2019	2020	2021
Opening RAB	14,816	14,942	15,004	15,321	15,792	16,078	16,224	16,031
Additions in year	392	586	668	618	666	619	447	308
Assumed ordinary depreciation	(504)	(703)	(723)	(772)	(802)	(823)	(830)	(847)
Indexation to 31st Dec	238	178	373	625	422	350	190	389
Closing RAB (pre-adjustments)	14,942	15,004	15,321	15,792	16,078	16,224	16,031	15,881
CAA adjustments	-	-	-	-	-	-	-	811
Closing RAB after CAA adjustments	14,942	15,004	15,321	15,792	16,078	16,224	16,031	16,692

Note: Q6 only included the last 9 months of 2014.

Source: CAA calculations

[37] For 2020, an additional item "cost of change additions to the RAB" was used as agreed between HAL and airlines.

[38] see Appendix E on our policy decision on Q6 capex review

[39] see Appendix F on our policy decision on the treatment of early expansion costs

[40] Tables 6.1 and 6.2 were updated after publication of initial proposals to correct an arithmetic error.

Table 6.2: Composition of CAA adjustments to the RAB in 2021 (£m, nominal prices)

Targeted RAB adjustment	316.6
Q6 capex review	(13.4)
Q6 capex review financing cost	(3.1)
Early expansion cost review[41]	510.4
CAA adjustments	**810.5**

Source: CAA calculations

Roll-forward of the H7 RAB

6.78 We set out below how we intend to roll forward the H7 RAB in order to calculate the H8 opening RAB.

Annual roll-forward

6.79 In each year during H7, the closing RAB shall be calculated in a similar manner to previous price control periods, that is, as the sum of:

- the opening RAB;
- actual capex additions in year;
- indexation of the opening RAB; less
- regulatory depreciation and disposals.

End of period adjustment

6.80 We will also adjust Heathrow's RAB at the end of H7, in respect of certain regulatory mechanisms we are intending to apply during H7, including:

- the TRS;
- cost of new debt indexation;
- the tax clawback mechanism; and

41 This figure includes actual and forecast expansion costs incurred by HAL between the end of October 2016 and 2021, and reflects efficiency adjustments made by the CAA (including the upper end of the range proposed in Appendix F, which is subject to consultation). The costs included are Category B costs (and Interest During Construction associated with Category B expenditure), Category C costs, wind down costs, appeal costs and costs associated with the IPHS. We note that we have not yet reviewed wind down, appeal and IPHS costs.

- the tax uncertainty mechanism.[42]

Next steps and implementation

6.81 We welcome the views of stakeholders on any of the issues raised in this chapter and will consider these carefully as part of our work to develop Final Proposals.

6.82 The approach to and calibration of the RAB is an important driver of the price control calculations set out in Chapter 11.

[42] see Chapter 1 on our policy on traffic risk sharing; Chapter 9 on cost of debt indexation and Chapter 10 on tax allowance.

Chapter 7

Allowance for asymmetric risk

Introduction

7.1 In setting HAL's price control, we make projections of its costs and revenues and use these alongside a forecast of passenger numbers. These forecasts are important in our work to further the interests of consumers, as they help us align the price control settlement with expected volume of passengers and support our work to identify appropriate allowances for operating costs and new investment.

7.2 These forecasts should be set in a way such that the expected opportunities for HAL to out-perform are broadly matched against the risk that HAL could under-perform. Otherwise the price control arrangements will contain bias that could either:

- lead to windfall profits for HAL at the expense of consumers, or
- create expectations of losses that could damage incentives for new investment and the provision of AOS by HAL, which would be contrary to consumers' interests.

7.3 In the case of passenger forecasts, historical experience suggests that the risks that HAL could encounter sudden downside shocks to traffic are not likely to be accompanied by an equal and offsetting set of possible upside events. To address this, it is appropriate to consider adjustments for these asymmetric risks.

7.4 The background section of this chapter explains the approach we adopted to these matters at Q6. We then go on to set out:

- stakeholders' views;
- our views;
- initial proposals; and
- next steps and implementation issues.

Background

7.5 In our Q6 price control determination, we made allowance for the asymmetry of risks around volume forecasts by applying a "shock factor" adjustment of -1.2% each year to our Q6 traffic forecasts. This -1.2% figure was calibrated to match the average annual loss of volumes that HAL experienced over the period from 1991 to 2012 as a result of one-off events such as the Gulf War, the 9/11 terrorism attacks, SARS and volcanic ash.

7.6 The last two years of the Q5 period (2012 and 2013) and the first five years of the Q6 period (2014 to 2018) subsequently turned out to be a comparatively

benign period in which traffic growth was relatively constant. However, in 2020, HAL was severely affected by the current pandemic, a shock whose scale and duration has far exceeded any of the downside events that HAL had previously encountered.

7.7 In the light of historical evidence and the recent experience of pandemic risk, we need to consider how to account within our H7 price cap calculations for the asymmetry of traffic risks that HAL now faces during the period from 2022 to 2026.

Stakeholders' views

7.8 In their replies to the April 2021 Way Forward Document, airlines have generally opposed the inclusion of "shock factors" within traffic forecasts, arguing that demand risks are already fully accounted for in the assessment of the allowed return calculated for the WACC.

7.9 British Airways stated that:

> "We continue to oppose the use of "demand shocks", which are irrelevant to setting passenger forecasts as the risk is already incorporated in the assessment of WACC, along with market-based information of investor expectations; incorporating demand shocks would double count this risk. Furthermore, "demand shocks" have been highly asymmetric in implementation in Q6, charging consumers for the downside and granting Heathrow the full upside; forecasting should be realistic and based upon likely future demand."[43]

7.10 The AOC/LACC also stated that:

> "Without seeing a further update to the contrary, fundamentally HAL's forecasting remains too pessimistic, driven in part by their views on shocks, to which we fully concur with the CAA creates a 'double count' given the current situation, and constraining capacity. The medium to longer term general consensus within industry is of a return to 2019 levels by 2024; given Heathrow's market power; consolidation of airlines at Heathrow; and strong past performance in recovery, we would continue to expect Heathrow to outperform the general industry forecast."[44]

7.11 HAL put forward an initial calculation of a revised H7 shock factor in its December 2020 RBP. That calculation followed the same method that we had used in our Q6 decision but expanded the data set by nine years to capture the final years of Q5, Q6 and the iH7 period.

7.12 It noted that the treatment of the pandemic shock would need to be consistent with our response to its claim for a RAB adjustment. HAL also said that, if we were to accept HAL's preferred RAB adjustment in full, the appropriate shock

[43] British Airways (2021), "British Airways Response to CAP2139: Economic regulation of Heathrow Airport Ltd: Consultation on the Way Forward", June, paragraphs 5.22-5.23.

[44] AOC/LACC (2021), "Re: Response to Economic Regulation of Heathrow–CAP2139H7 Way Forward Consultation", June, paragraph 3.2.6.

values for 2020 and 2021 could be capped at 10% and the average shock factor for the period 1991 to 2021 would be 1.46%. However, if we were to reject HAL's claim, it said the appropriate shock values would be 75% and 50% for 2020 and 2021 respectively and the average shock factor would be 4.85%.

HAL's Updated RBP

7.13 HAL updated its calculations in its updated RBP in July 2021 to take account of the latest traffic outlook. Its proposed estimate remained 1.46% with a full RAB adjustment and it increased its wider estimate (even taking account of the £300 million RAB adjustment that we had proposed) to 5.16%. This increase reflected the reduction in HAL's traffic forecast for 2021 from 37m to 21m passengers and the consequently worse impact of the pandemic.

Our Views

7.14 We do not agree with the airlines that HAL is compensated in full for bearing demand risks through the allowed return. The Capital Asset Pricing Model ("CAPM") framework that we use when assessing the allowed return on equity assumes that the risks faced by investors are symmetrically distributed, but experience shows that risks around passenger numbers tend not to be equally balanced. This requires us to allow for asymmetric risks through a separate mechanism. We agree with HAL that our decision on the RAB adjustment is a relevant consideration in the calibration of our allowance for asymmetric risk.

7.15 Set out below is our thinking on two key issues:

- the form(s) that allowance(s) for asymmetric risk could take; and
- the calibration of the allowance(s) for asymmetric risk during the H7 period.

Form of allowance for asymmetric risk

7.16 We have considered three possible ways in which we could potentially adjust HAL's price cap to provide an allowance for asymmetric risk:

- the first approach is to continue with our Q6 approach and make a downward adjustment to our central case H7 traffic forecasts;
- an alternative option would be to make an adjustment instead to our estimate of the H7 cost of capital and to reflect the asymmetric risks faced by investors in the calculation of the allowed return price control building block; and
- a third possible option would be to add an amount to HAL's H7 revenue entitlement to offset the loss of revenue that HAL might expect to suffer during the H7 period as a result of downside shocks.

7.17 It is important to note that each of the three options can be calibrated and applied in such a way as to provide HAL with an identical expected amount of revenue in each year of the H7 period. The approaches should, therefore, be distinguished and evaluated not by reference to the financial impact they would have on HAL and on customers but according to a range of other criteria such as:

- simplicity of calculation;
- the ease with which stakeholders can understand the rationale for and value of our adjustment (both now and in the future); and
- avoidance of unintended consequences.

7.18 We have concluded based on these factors that a different approach is warranted for:

- medium frequency, low impact shocks of the type seen prior to 2020; compared with;
- low frequency, high impact shocks that the current pandemic typifies (we use the term “pandemic-magnitude event” as a shorthand for these shocks in the discussion below).

7.19 In the former case, we have an established method from the Q6 review which we can use again in this H7 review to give an appropriate annual allowance for non-pandemic shocks. This method is relatively simple to apply and understood by stakeholders. It should also improve the accuracy of our forecasts, since history suggests that at least one such shock can reasonably be expected to occur in H7.

7.20 In the case of pandemic-magnitude events, however, our analysis is that the Q6 approach of adjusting traffic forecasts may bring certain disadvantages. Although this approach would result in forecasts that were closer to the long-term, statistical mean for traffic volumes, they are unlikely to be a good predictor of traffic volumes in H7. If a pandemic-magnitude event were to recur in H7, our forecasts under this approach would still be significantly above the outturn traffic volumes. If there was no such recurrence in H7, the forecasts would significantly understate outturn traffic volumes.

7.21 Similar considerations apply in the case of an adjustment to the allowed return. We considered during the Q6 review the arguments for making an adjustment to the cost of capital to reflect asymmetric risks and were not persuaded that it was necessary or practical to allow for the “skewedness” of returns within the calculation of the WACC. Nothing that has happened since the start of Q6 causes us to alter this assessment. Adjusting the H7 rate of return would also distort the operation of multiple regulatory mechanisms which use the cost of capital figure as a discount rate, potentially reducing the transparency of in intra- and inter-period reprofiling of revenues.

7.22 The third option of making a stand-alone revenue allowance to take account of pandemic-magnitude events would seem to avoid these issues because:

- it would constitute a transparent way of recognising and compensating on a smoothed, annualised basis the loss of profit that irregular, low probability events impose on an airport operator;
- it would leave our H7 traffic forecasts and our H7 allowed return intact as the best available forecasts of H7 volumes and the H7 cost of capital respectively; and
- it would not interfere with the operation of other regulatory mechanisms.

7.23 Based on these considerations, we therefore propose to make allowance for pandemic-magnitude events outside the H7 traffic forecast and in a stand-alone revenue allowance.

Initial Proposals

Calibration of allowance – non-pandemic shocks

7.24 As set out in Chapter 2, we will apply an annual "shock factor" of -1.07% to our H7 traffic forecasts as recognition for the likely incidence of non-pandemic shocks. This is necessary because the unadjusted forecasts represent upwardly-biased estimates of outturn traffic volumes, due to the expectation that non-pandemic shocks such as those highlighted in paragraph 7.5 above may occur in H7. Even with a TRS mechanism in place, the prospect of such shocks in H7 would lead to an expected under-recovery in the absence of a shock factor adjustment, since the TRS does not fully insulate HAL from traffic risk.

Calibration of allowance – pandemic-magnitude events

7.25 In the light of paragraphs 7.20 to 7.23 above, we will also apply an allowance for pandemic risks, to be calculated as follows:

- step 1: estimate the traffic loss that HAL might expect to encounter if a pandemic-magnitude events occurs;
- step 2: calculate the annual losses of profit that HAL would suffer if a pandemic-magnitude event was to crystallise in any given year of the H7 control period;
- step 3: evaluate how frequently a pandemic-magnitude event might be expected to occur in the future, and calculate the equivalent probability of one occurring in any given year; and
- step 4: weigh the losses of profit identified in step 2 by the probability identified in step 3 and add these amounts to HAL's H7 aeronautical revenue allowance.

7.26 These steps are described in more detail below.

Step 1: estimate the traffic loss that HAL might expect to encounter if a pandemic-magnitude event occurs

7.27 The experience of the covid-19 pandemic provides us with very recent data on the way in which a pandemic-magnitude event can cause a near-shutdown of domestic and international travel.

7.28 If a similar event or event of a similar magnitude occurs in the future we assume it will:

- impact passenger numbers over a three-year period; and
- have an impact with similar profile to that seen in and/or anticipated for 2020, 2021 and 2022: that is precipitating a traffic reduction of -57%, -73% and -37% in each of the three years respectively.

Step 2: calculate the annual losses of profit that HAL would suffer if a pandemic-magnitude event were to crystallise in any given year of the H7 control period

7.29 The last two years have demonstrated that a material step-change drop in traffic will have knock-on effects for both costs and revenues. We have, therefore, undertaken modelling to calculate the loss of profit that HAL would incur in the event of the recurrence of a pandemic-magnitude event during H7. This analysis assumes that opex and non-aeronautical revenues will vary in accordance with the elasticities used in the analysis in Chapters 4 and 5. These calculations are summarised in Table 7.1 below.

Table 7.1: Possible in-period losses due to a pandemic-magnitude event, £m nominal prices

	2022	2023	2024	2025	2026
Lower Quartile					
If an event were to recur in 2022	735	1,321	824	0	0
If an event were to recur in 2023	0	1,032	1,648	953	0
If an event were to recur in 2024	0	0	1,289	1,905	1,018
If an event were to recur in 2025	0	0	0	1,489	2,036
If an event were to recur in 2026	0	0	0	0	1,592
Upper Quartile					
If an event were to recur in 2022	941	1,653	1,022	0	0
If an event were to recur in 2023	0	1,292	2,045	1,163	0
If an event were to recur in 2024	0	0	1,598	2,326	1,230
If an event were to recur in 2025	0	0	0	1,818	2,459
If an event were to recur in 2026	0	0	0	0	1,922

Source: CAA calculations

7.30 It is also important to account for the protection that the new TRS mechanism will offer. At the end of H7, HAL will be entitled to a RAB adjustment worth:

- between 40% and 60% of the first 10% of lost revenue from airport charges; and
- between 90% and 100% of all remaining losses of revenue from airport charges above that 10% threshold.

7.31 We have adopted the midpoint of these values (that is, 50% and 95%, respectively) for the purposes of estimating the RAB adjustment that HAL will receive in the event of a future pandemic-magnitude event. These values are set out in Table 7.2 below.

Table 7.2: Adjustment to the H8 RAB under the TRS mechanism following a pandemic-magnitude event, £m, nominal prices

£m	Upper quartile	Lower quartile
If an event were to recur in 2022	3,913	2,520
If an event were to recur in 2023	4,552	3,010
If an event were to recur in 2024	4,785	3,255
If an event were to recur in 2025	3,546	2,470
If an event were to recur in 2026	1,103	800

Source: CAA calculations

7.32 HAL's resulting net exposure to pandemic-magnitude events, once the offsetting impact of the TRS is taken into account, is summarised in Table 7.3 below. These figures represent the net present value ("NPV") of the amounts set out in Tables 7.1 and 7.2 above as at the start of H7, when discounted at the WACC we set out in Chapter 9.

Table 7.3: Net exposure to pandemic-magnitude events, £m, nominal prices

£m	Upper quartile	Lower quartile
If an event were to recur in 2022	767	857
If an event were to recur in 2023	840	1,011
If an event were to recur in 2024	863	1,104
If an event were to recur in 2025	769	966
If an event were to recur in 2026	591	618

Source: CAA calculations

Step 3: evaluate how frequently a pandemic-magnitude event might be expected to occur in the future, and calculate the equivalent probability of a shock occurring in any given year

7.33 It is not straightforward to estimate the frequency of pandemic-magnitude events. Under these circumstances, we consider that the most prudent approach is to adopt a range of plausible assumptions.

7.34 We have therefore allowed for a probability that sits between a 1-in-20-year and 1-in-50-year range, consistent with the assumptions that we are applying in Chapter 9. This translates into a probability of 3.5% of a new pandemic-magnitude event beginning in any given year, starting from 2023.

Step 4: weigh the losses of profit identified in Step 2 by the probability identified in Step 3 and add these amounts to HAL's H7 aeronautical revenue allowance

7.35 We next weight the annual losses shown in Table 7.3 on the assumption that there is a 3.5% probability of a new pandemic-magnitude event beginning in any

given year, starting from 2023. This results in the expected annual losses shown in Table 7.4.

Table 7.4: Probability-weighted, expected losses due to pandemic-magnitude events, £m nominal prices

£m	Upper quartile	Lower quartile
If an event were to recur in 2022	0	0
If an event were to recur in 2023	29	35
If an event were to recur in 2024	29	37
If an event were to recur in 2025	25	32
If an event were to recur in 2026	19	19
Total	**102**	**124**

Source: CAA calculations

7.36 The projected growth in passenger numbers during the H7 period, along with our assumptions about the probability and impact of pandemic-magnitude events, mean that the expected financial loss due to asymmetric risk varies from year to year. We consider that it is appropriate for reasons of simplicity to profile our allowances so that HAL receives a constant revenue allowance in each year of the H7 period. The smoothed calculation is shown in Table 7.5 below.

Table 7.5: Revenue allowance for asymmetric risk, £m nominal prices

£m	2022	2023	2024	2025	2026
Lower quartile	30	30	30	30	30
Upper quartile	26	26	26	26	26

Source: CAA calculations

7.37 Adopting the approach set out above should deliver an adjustment to the calculation of the price control that is needed to further the interests of consumers by providing a proportionate response to HAL's exposure to the risk of pandemic-magnitude events during H7. When taken together with other measures we are intending to adopt – namely, the TRS, and our pandemic-related uplift to the WACC – we expect that our approach to the H7 price control will secure the ability of the notional company to finance its activities.

Next steps and implementation

7.38 We welcome the views of stakeholders on any of the issues raised in this chapter and will consider these carefully as part of our work to develop our Final Proposals.

7.39 The annual shock factor will be added to the base demand forecast, as set out in Chapter 2. The allowance shown in Table 7.5 above is added to the calculation of price control revenue in Chapter 11.

Chapter 8

The financial framework

Introduction

8.1 Consideration of the financial framework we use in setting HAL's price control is a key element of the way in which we have regard to the need to secure that HAL can finance its activities at Heathrow. It is also important to consumers as the financial framework influences the overall level of charges and supports HAL in financing new investment.

8.2 Where appropriate, we have sought to adopt an approach that is consistent with key components of the Q6 financial framework as there are advantages in the predictability and continuity of regulation in terms of avoiding unnecessary uncertainty and possible increases in HAL's cost of capital.

8.3 In this chapter we discuss two key elements of the financial framework:

- capital structure (in particular our approach to a notional structure and the associated level of gearing); and
- regulatory depreciation.

8.4 In respect of both of these areas we are adopting a broadly consistent approach to that used in previous HAL price controls.

8.5 Other aspects of our approach are evolving more in response to the uncertainty associated with the impact of the covid-19 pandemic, including:

- introducing a traffic risk sharing (TRS) mechanism to make clear how volume risk will be allocated between consumers and HAL in the future (see Chapter 1);
- updating our analysis of the cost of capital to consider the impact of the covid-19 pandemic (see Chapter 9);
- making an explicit allowance for asymmetric risk in respect of future events having comparable impact to the covid-19 pandemic (see Chapter 7).

8.6 Our overall approach to the financial framework is designed to support financeability for both debt and equity, and we have retained our focus on a notionally financed company. An appropriate level of gearing for the notional entity supports both debt financeability and financial resilience, and so is important both to investors and consumers.

8.7 Regulatory depreciation reflects the amount that is deducted from the RAB in each year and allowed as cash flow in the calculation of the price cap. Regulatory depreciation is an important issue for consumers as it directly affects

the level of charges and HAL's overall financeability and its ability to fund new investment.

Background

The notional financial structure

8.8 In previous airport price control reviews, we have based our assessment of financeability, and determined HAL's allowed return, based on a "notional" or "efficient" financial structure. The "notional financial structure" constitutes a set of assumptions regarding the scale and nature of HAL's debt liabilities. These assumptions reflect our views on the efficient balance between debt and equity finance. In practice, these assumptions have differed significantly from HAL's actual financial structure.

8.9 The April 2021 Way Forward Document explained that, by assessing the impact of our policy proposals on this notional entity, we avoid making judgements on, or allowances for, HAL's actual financial structure. This has been a key part of our approach to the financial framework as it makes clear that we have regard to financeability in setting HAL's price control, while not seeking to regulate the actual choices made by HAL itself. This ensures that these actual choices remain the responsibility of HAL, its directors and shareholders. We have adopted this approach in setting previous price controls and it remains a central element of our policy.

8.10 The rationale for this approach has been that HAL's actual financial structure is the responsibility of HAL's directors and shareholders and is influenced by the particular choices they make. If the financeability test and allowed return determination were to be carried out on the basis of HAL's actual financial structure, it could weaken the incentive on HAL to manage its finances prudently and could lead to consumers underwriting particular risks that HAL's directors and shareholders have decided to take. In the Q5, Q6 and iH7 price control periods, we used a notional gearing assumption of 60%. HAL has been able to adopt alternative levels of gearing, but the benefits, risks and costs of doing so lie with HAL and its directors and shareholders.

8.11 Given the advantages noted above, the April 2021 Way Forward Document explained that we intended to continue to use a notional gearing assumption and would explore how the specific level of notional gearing that we assume might need to be varied to take account of the impact of the covid-19 pandemic.[45]

Gearing

8.12 In the April 2021 Way Forward Document, we noted that many participants in the aviation sector, including HAL, had raised equity in response to the impact of the covid-19 pandemic. The provisional analysis in the April 2021 Way Forward Document assumed that support from shareholders in the H7 period was provided by way of dividend forbearance so that HAL paid no dividends but, equally, shareholders injected no cash. We further noted the broad equivalence

[45] See Appendix G for our latest thinking in respect of licence conditions for financial resilience.

between dividend forbearance and equity injection as different ways of providing equity support.

8.13 We presented analysis in the April 2021 Way Forward Document showing that the gearing of the notional company would have increased to 67% had it started 2020 at 60% gearing and funded the shortfall in cash from operations by issuing additional debt while not paying dividends to shareholders.

8.14 The April 2021 Way Forward Document also looked at gearing "glidepaths" and the trajectory for deleveraging after the covid-19 pandemic and returning the notional entity to 60% gearing. We presented analysis showing that gearing could be returned to 60% within H7 without the need for a RAB adjustment or cash injection from shareholders, provided there was a further period of dividend forbearance.

Regulatory depreciation

8.15 In the April 2021 Way Forward Document, we stated our intention to consider using depreciation and reprofiling, where appropriate and practicable, to develop a price control that delivers affordable charges for consumers and supports the financeability of HAL's investment programme.

8.16 We also noted that in the H7 period, when demand, at least initially, is depressed by the impact of the covid-19 pandemic, it may be more appropriate to reduce depreciation so that individual passengers travelling in the H7 period do not pay a disproportionate share of depreciation costs. We stated that we would continue to look at depreciation profiles in developing our initial proposals.

Stakeholders' views

8.17 Stakeholders have generally accepted that we should focus on the notional entity, but HAL has noted that we should have appropriate regard for our statutory duties, which do not mandate a focus on notional financing.

8.18 In its RBP update, HAL identified two conditions in which it considered the deferral or reprofiling of depreciation could be appropriate:

- that investors have confidence in the return of capital; and
- that the gearing impact of the pandemic can be unwound (for the notional company) while still providing an appropriate return to shareholders.

8.19 HAL argued that the CAA was wrong to suggest that depreciation could be deferred even if there were to be no full RAB adjustment. HAL suggested that the CAA's conclusion was unreliable as it rested on analysis which assumed that no dividends would be paid and that this was inconsistent with the CAA's observation of a statement by Standard & Poors' ("S&P") that European airports will return to paying dividends from 2023 onwards.

8.20 In its update to the RBP, HAL brought together the concepts of regulatory depreciation and gearing by noting that if there is no deferral of regulatory depreciation, gearing would return to 60% only at the end of the H7 period. HAL

went on to suggest that this could lead to pressure to minimise capex as a way of restoring an appropriate level of gearing.

8.21 BA and the LACC/AOC supported the notional approach to developing policy for the financial framework. BA suggested that the gearing profile for H7 should reflect the optimal, lowest, level of WACC. The LACC/AOC made a similar point in suggesting that the CAA's decision in respect of gearing should reflect an "efficient notional capital structure".

8.22 BA suggested that depreciation deferral or revenue re-profiling may be appropriate as a way to support affordability during the "recovery phase" from the impact of the covid-19 pandemic, but that this should only be contemplated once the CAA is satisfied that the building block allowances are all set at the efficient level. BA also requested that the CAA transparently set out its calculations for determining the opening gearing for H7.

8.23 The LACC/AOC suggested that any changes to the level of notional gearing need to be well evidenced. The LACC/AOC argued that any increases in gearing due to the impact of the covid-19 pandemic should be reversed by dividend forbearance. It also suggested that the CAA should consider evidence of airports and airlines raising equity in response to the impact of the covid-19 pandemic.

Our views

8.24 As noted in Chapter 6, we have decided for our Initial Proposals, that no further RAB adjustment is appropriate. This is important context for the following discussion of the financial framework as it has a material bearing on the level of gearing[46] and because HAL has argued that depreciation deferral is only appropriate if it receives a full RAB adjustment.

8.25 We are also retaining a focus on the notional entity for the reasons set out in the discussion in the April 2021 Way Forward Document and summarised earlier in this chapter. This approach benefits consumers by focusing on an efficient capital structure while being clear that decisions on, and the consequences of, the actual financial structure are the responsibility of HAL, its directors and shareholders. We note the representations HAL has made in relation to these matters and our statutory duties and we would be open to considering any information from HAL or other stakeholders that suggests a different approach to financeability would allow us to better discharge our statutory duties.

8.26 Stakeholders have commented on the possibility and appropriateness of adjusting the depreciation profile to meet certain affordability or financeability objectives. We are still open minded about using depreciation to manage affordability and mindful of its impact on financeability. However, our analysis suggests that, based on our current view of the building block allowances for H7, that it is not appropriate to either accelerate or defer depreciation.[47]

[46] When measured on the basis of debt or net debt to RAB

[47] See Chapter 11 for our assessment of affordability and financeability

8.27 Stakeholders expressed a range of views on the appropriateness of dividend forbearance, the potential need for shareholders to inject cash and the appropriate profile of gearing in H7. Our assessment summarised below shows the notional entity being able to make substantial dividend payments during H7 after an initial period in which cash generated by the business is used to restore gearing to 60%.

8.28 We note airlines' suggestions that the gearing level should be chosen so as to minimise the cost of capital. Corporate finance theory suggests that the cost of capital is largely unaffected by gearing. As a result, we have not sought to use the cost of capital as a tool for choosing the optimal level of gearing.

Gearing

8.29 The modelling summarised in Chapter 11 shows that the notional entity's gearing would peak at 64.8% in 2021 and would then fall as the recovery in passenger volumes means that operations become cash generative once again. Assuming that the notional entity pays no dividends until gearing is returned to 60%, our modelling shows that the notional entity would achieve this in 2023 for the upper end of our range and 2024 for the lower end of our range and that it would be paying dividends from 2024 onwards.[48]

8.30 We note the statement by S&P that we referred to in the April 2021 Way Forward Document which suggested that European airports may be able to pay dividends from 2023. The S&P report in question was published in March 2021 and was based on a passenger recovery profile which now appears somewhat optimistic.[49] We also note a report produced by Barclays[50] which suggested there was scope for dividends to be reinstated at previous pay-out ratios from 2024 onwards and which also noted the need to reduce gearing as a potential constraint on dividend payments.

8.31 There is clearly a range of views on when it may be possible for airports to resume payment of dividends. Our assessment is that a resumption of dividend payments in 2023 or 2024 would be consistent with our statutory duties where we have a primary duty to further the interests of consumers and where the need to have regard to the need to ensure financeability is expressed as one of several secondary duties.[51] We also consider that resumption of dividend payment in 2023 or 2024 would be broadly consistent with market expectations based on the reports referred to above.

8.32 We have considered whether it might be appropriate to assume a reduction in the assumed level of gearing given potentially higher perceptions of risk. We consider that the TRS significantly mitigates against the risk posed by another

[48] See Chapter 11 for further assessment of the dividends that we project the notional entity would pay.

[49] See https://www.spglobal.com/_assets/documents/ratings/research/100049716.pdf. The report refers to European estimates for passenger volumes in 2021 of 30-50% below 2019 levels. By contrast HAL's base case assumption for passenger numbers in 2021 is 21.5m which represents 27% of the 80.9m passengers it served in 2019.

[50] Barclays Global airport benchmarking, June 2021

[51] See Appendix A

pandemic or similarly significant impact risk.[52] We also propose to introduce an allowance for asymmetric risk specifically to balance the potential impact of a future pandemic.[53]

8.33 In the event of a future global pandemic or other major shock, the notional entity would likely still experience pressure on liquidity because:

- amounts recouped over the years through the allowance for asymmetric risk would be likely to have been disbursed as dividends; and
- amounts receivable through the TRS would be added to the RAB and recovered from the beginning of the next control period.

8.34 That said, shareholders would, indirectly, have been funded so that they would be able to provide cash support in the event of a pandemic/shock (effectively repaying the amounts in respect of asymmetric risk allowance) and the notional entity would be able to raise debt against the increased value of the RAB.

8.35 So, together, the asymmetric risk allowance and TRS should have the effect that the notional entity would be able to access additional finance in the event of a future pandemic, and it is appropriate to retain the Q6 assumption of 60% notional gearing. Lower gearing would also have the disadvantage of being less tax efficient, which could ultimately mean higher costs for consumers.

Regulatory depreciation

8.36 Our starting point in determining the depreciation profile for H7 has been to consider the profile that HAL submitted through its RBP update. This profile reflects the projected accounting depreciation based on HAL's accounting policies. We consider that this is an appropriate starting point for determining regulatory depreciation as it would see investment in the physical assets returned over a period that broadly matches the life of the assets.

8.37 From this starting point, we have then considered the impact of this depreciation profile on equity financeability. Since regulatory depreciation is not required to follow the same rules as accounting depreciation, there is flexibility in how the regulatory determination can be set, although it has been our standard practice to match accounting depreciation. Our assessment of equity financeability (see Chapter 11 for further details) shows that, using HAL's profile of depreciation, leads to a reasonable profile of equity financeability metrics. We therefore consider that no adjustment to HAL's proposed profile of depreciation is required to address concerns about equity financeability. We have also considered the depreciation profile in the context of our broader assessment of affordability and financeability[54] and are content it is a reasonable basis for initial proposals.

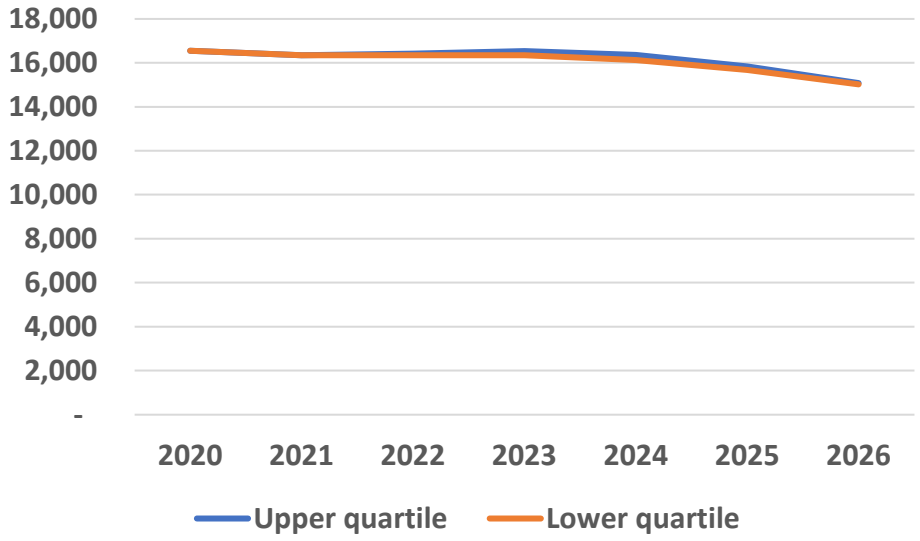
[52] See Chapter 1 for our Initial Proposals in respect of the TRS mechanism and Chapter 9 for our Initial Proposals in respect of the cost of capital.

[53] See Chapter 7

[54] See Chapter 11

8.38 We have also cross-checked the depreciation profile by looking at its impact on the RAB. Figure 8.1 below shows the profile of the RAB in H7:

Figure 8.1: profile of RAB (CPI-real 2020 prices)



Source: CAA analysis

8.39 Figure 8.1 shows that the RAB is relatively stable over the course of H7 with a slight decline towards the end of the period. We consider that this is appropriate in the current context. Specifically, in a scenario where capex is constant over time, the RAB ought to remain stable and in H7 the annual "run rate" of the capex allowances within the price control would be less than actual annual capex in the Q6 period.[55]

8.40 The depreciation profile HAL submitted as part of its RBP update does not include in H7 any depreciation in respect of the £300m[56] RAB adjustment that we announced in the April 2021 Decision.[57] We have maintained this approach in these Initial Proposals.

Initial Proposals

8.41 Taking into account the reasons we have set out above, our Initial Proposals for the financial framework are based on the following assumptions:

[55] Actual capex in Q6 was approximately in the range £600m-£900m while annual allowances in H7 are set to be approximately £350m-£500m (all in RPI-real 2020 prices).

[56] In 2018 prices

[57] See our April 2021 RAB Adjustment Decision

- Notional financing: we have retained our focus on notional financing, consistent with the interests of consumers. HAL's actual gearing is a choice for its directors and shareholders.
- Gearing: we assume that the notional entity would have begun 2020 with a gearing of 60% (consistent with our Q6 price control determination) and would then have raised debt to fund cash shortfalls caused by the covid-19 pandemic and that it then returns to 60% gearing during the H7 price control period; and
- Depreciation: we propose to use HAL's depreciation profile from its RBP update, which is consistent with our wider assessment of affordability and financeability.

8.42 We consider that these proposals are in the interests of consumers because:

- our focus on notional financing benefits consumers by focusing on an efficient capital structure (and so a lower cost of capital and lower airport charges) while being clear that decisions on, and the consequences of, the actual financial structure are for HAL and its directors and shareholders;
- our approach to gearing is broadly consistent with previous practice. This should support both HAL's financeability and efficient investment, which should enable HAL to deliver the infrastructure and investment necessary to provide an appropriate range of airport operation services; and
- our approach to regulatory depreciation should also support financeability and reasonably balance the interests of present and future consumers.

Next steps and implementation

8.43 We welcome views on any aspect of the issues raised in this chapter and will consider these representations as part of our work to develop final proposals.

8.44 The approaches described above in respect of gearing and depreciation are implemented through our financial modelling and are reflected in our financeability assessment and price control calculations as summarised in Chapter 11. This modelling will be updated in due course to support our work on Final Proposals.

Chapter 9

Weighted Average Cost of Capital ("WACC")

Introduction

9.1 The allowed WACC is a key building block of the revenue we allow HAL to earn under the price control. It represents a return on the RAB and acts as a payment to investors and creditors for the risk they incur by committing capital to the business. Setting an appropriate WACC furthers the interests of consumers by helping to ensure that:

- HAL is able to finance the investment it needs to carry out its activities and meet the reasonable demands for AOS; and
- efficient financing costs are reflected in the price control.

It is one of the means by which we have regard to our duty to secure that HAL is able to finance its provision of AOS at Heathrow airport.

9.2 The WACC is calculated as a weighted average of the cost of equity and the cost of debt. The weights assigned to each are based on the proportion of debt and equity that we assume the notional company has in its financial structure (as discussed further in Chapter 8). We refer to this as the "notional financial structure".

9.3 The cost of equity represents the expected return that the shareholders in a "notionally financed" airport operator would require in order to induce them to commit equity capital to the business. This expected return is not observable and so is estimated based on models that help to show how investors value equity investments. We have estimated the cost of equity for HAL based on the Capital Asset Pricing Model ("CAPM"). This model is used by economic regulators in the UK and has been used by other stakeholders in their submissions for H7 to date. CAPM estimates the cost of equity on the basis of three parameters:

- the "equity beta";
- the "risk free rate"; and
- the "total market return".

9.4 The cost of debt provides HAL with an allowance to cover its efficiently incurred borrowing costs. In estimating the cost of debt we take account of both of the following parameters:

- the cost of existing or "embedded" debt; and
- the cost of new debt.

9.5 This chapter starts by setting out important background information on our approach to setting the WACC in the context of the uncertainty created by the

impact of the covid-19 pandemic and (and explains how the WACC relates to other elements of the price control). It then goes on to set out our initial analysis for the following WACC parameters:

- asset beta;
- debt beta;
- total market return ("TMR");
- inflation;
- risk free rate;
- cost of embedded debt;
- cost of new debt; and
- issuance and liquidity costs.

9.6 While the above analysis is helpful in informing a plausible range for the WACC, and can be used to take account of the impact of specific aspects of the price control and risk sharing arrangements, there will remain an important element of judgment in finalising our estimate of HAL's WACC. The estimate of the WACC is ultimately a judgment taking account of the evidence and analysis, rather than a calculation using a point estimate of each parameter. These matters are discussed further in the final section of this chapter. We also summarise our current estimate of the plausible range for HAL's WACC, based on the analysis of the components set out above.

Background

9.7 We are conscious that the issues and analysis involved in estimating HAL's WACC for H7 are complex and subject to a significant degree of uncertainty. This is particularly the case in the context of the impact of the covid-19 pandemic.

9.8 The consequence of this uncertainty is that there is a heightened risk that the WACC estimate will be set too high or too low. If it is set too high, then this could be contrary to our primary duty to protect consumers as it will lead to airport charges being higher than they need to be properly to compensate investors. Conversely, if the WACC is set too low, then this could undermine the interests of consumers as this could undermine the incentives and financing of investment.

9.9 When determining the ranges we should use for the individual WACC parameters, we attempt to reconcile these considerations and the present level of uncertainty by adopting an inclusive approach that considers a reasonably broad range of evidence. As a consequence, our parameter ranges are wider than they might otherwise be. At the same time, there are inevitably cases where we have had to exercise judgement regarding where the upper and lower bounds for a parameter should be set. Examples include where we have determined that evidence is not robust or should receive a lower weighting. In

such cases, we have endeavoured to explain our reasoning for limiting the range.

Interactions with other elements of the price control

9.10 Our assessment of the WACC has been based on a number of assumptions regarding other aspects of the price control, and should be read in conjunction with the relevant chapters on those matters. Specifically, we have estimated the WACC on the assumption that:

- we will apply the £300m uplift to the H7 RAB that we announced in our April 2021 decision;
- no further uplift will be applied to the opening H7 RAB in respect of losses incurred during the covid-19 pandemic, consistent with the reasoning set out in Chapter 6;
- a Traffic Risk Sharing ("TRS") mechanism will apply in H7 in the way discussed in Chapter 1; and
- we will provide an allowance for asymmetric risk in H7 that will reflect both the impact of the current pandemic and the mitigating impact of the TRS, as outlined in Chapter 7.

Asset beta

Context

9.11 The asset beta is a measure of the "systematic" risk to which a company is exposed. This is the proportion of total risk that cannot be eliminated by holding a diverse portfolio of assets. It is an important input into our cost of capital calculation because, under the CAPM, it is the parameter that determines shareholders' required return for holding a stock in a specific business, in this case Heathrow airport. We estimate that a 0.01 increase in the asset beta results in a 7-8bps increase in the WACC.

9.12 Consistent with the CMA's approach in its determinations of the PR19 water price controls and its previous decisions, we estimate the asset beta, and then consider how this should translate into an estimated equity beta through our assumptions about the notional entity's gearing and the debt beta.

9.13 In the April 2021 Way Forward Document, we did not set out an estimate for HAL's asset beta. Instead, we reflected on various issues surrounding the way we estimate HAL's asset beta. On the pre-pandemic asset beta for HAL, we discussed:

- the comparator businesses we might use to estimate HAL's asset beta (as HAL does not have an independent stock exchange listing);
- approaches we could use to calculate comparators' asset betas; and
- how we might translate comparator asset betas into an estimate of the asset beta for HAL.

9.14 We also considered how we might estimate the impact of the pandemic on HAL's asset beta, and how we might take account of new regulatory mitigations and interventions (particularly the TRS).

Stakeholders' views

AOC/LACC

9.15 CEPA, on behalf of the AOC, made various comments on our proposed approach to estimating the asset beta.[58] It had previously estimated a range for the H7 asset beta of **0.45-0.50.**[59]

9.16 CEPA broadly supported our consideration of a broad comparator set, but highlighted the importance of undertaking a comprehensive "relative risk assessment" and noted that we had not undertaken such an assessment to date.[60]

9.17 As for the impact of the current pandemic on the asset beta, CEPA concurred with:

- our view that data from before the covid-19 pandemic started should not be disregarded; and
- our concern that data from during the covid-19 pandemic could be over-represented in the market evidence used to assess the asset beta.

9.18 It challenged our indicative frequency of a pandemic-magnitude event occurring once every 20-50 years and suggested that the lower bound for this estimate is unsupported by evidence.

9.19 CEPA also indicated that we should consider shorter beta estimation windows and limiting extreme values ("Winsorisation") in carrying out our assessment.

9.20 CEPA highlighted that the introduction of either a TRS or a RAB adjustment would reduce HAL's systematic risk exposure, and this should be properly taken into account.

HAL

9.21 HAL suggested that:

- the CMA's report on NERL's RP3 price control set out a useful basis for assessing appropriate comparators and estimation approaches to use to obtain asset betas; and
- the CAA approach should reflect this.[61]

[58] CEPA (2021), "Way Forward – Technical Appendix", June.

[59] CEPA (2020), "H7 cost of capital estimation", November, section 4.6.3.

[60] CEPA (2021), "Way Forward – Technical Appendix", June, p2.

[61] HAL (2021), "Economic regulation of Heathrow Airport Limited: Consultation on the Way Forward (CAP2139): Heathrow Response", June, paragraph 76d.

9.22 It further suggested that it would be inappropriate for us to supplant the CMA's estimate of the pre-covid-19 asset beta for airports with a different estimate of our own.

9.23 Nonetheless, HAL also maintained its view that data prior to March 2020 was irrelevant for the purposes of estimating the post-pandemic beta.

HAL's July 2021 Updated RBP

9.24 HAL estimated two values for the H7 asset beta, corresponding to a scenario in which we applied its proposed uplift to the RAB (asset beta **0.82**), and another in which we only apply the £300m uplift that we announced in the April 2021 Way Forward Document[62] (asset beta **0.98**).

9.25 HAL provided two sets of analysis to support its asset beta estimates:

- it considered market data for three comparator airports: ADP, Fraport and AENA. It estimated the asset beta for these comparators based on two years and 20 months of daily returns respectively; it also
- updated the analysis of return volatility that it presented in the previous iteration of its RBP, which it used to estimate the impact of the covid-19 pandemic on the H7 asset beta.

9.26 HAL noted that the values implied by each set of analysis are broadly consistent, which it said was indicative of their underlying robustness.

Our views

Overall approach and treatment of the pandemic

9.27 We have carefully considered how to approach estimating HAL's asset beta. This presents a significant challenge for H7, as is exemplified by the starkly divergent estimates of the asset beta estimates put forward by stakeholders in response to the April 2021 Way Forward Document.

9.28 We do not consider that either of the approaches proposed by HAL and CEPA (on behalf of airlines) to estimating HAL's asset beta represent an appropriate way forward. The positions are essentially at opposing ends of a spectrum of possible approaches, with HAL advocating exclusive reliance on data from the pandemic period, while CEPA is advocating placing very limited or no weight on this data. In general, we take a view that a relatively high hurdle should apply to completely discounting potentially relevant information.

9.29 To inform our view, we have commissioned a report from Flint Global ("Flint") on the estimate of the asset beta for H7.[63] This is published alongside this document.

9.30 In line with the advice we have received from Flint, we consider that it is more appropriate to place weight on data from both before and during the pandemic.

[62] HAL (2021), "H7 WACC Updates", p8.

[63] Estimating Heathrow's beta post covid-19, Flint, August 2021 www.caa.co.uk/cap2266E

Such an approach neither ignores pre-pandemic data nor artificially bounds or restates the actual pandemic data. At the same time, we consider that it is necessary to place lower weight on data from the pandemic period, to ensure that the impact of the pandemic is not over-represented in the asset beta estimate.

Assumed frequency of a future pandemic-type event

9.31 It is not straightforward to estimate the frequency of future pandemic-type events. Under these circumstances, we consider that the most prudent approach is to adopt a range of plausible assumptions.

9.32 CEPA has stated that the lower bound of the 20-50 year range we set out in the April 2021 Way Forward Document is "unsupported",[64] and that "we would not expect an event of this magnitude every fourth price control". We consider that the likelihood of an event is highly uncertain and so it would not be prudent to rule out such a prospect without robust evidence.

9.33 We have also considered whether it would be reasonable to assume a significantly lower frequency of recurrence at the upper bound of our range. We note that, according to the US Centre for Disease Control and Prevention (CDC) there were at least three global pandemics in the 20th century[65] with death tolls over 1 million. While the world would be reasonably expected to learn from the experience of the covid-19 pandemic, we have not found evidence to reasonably support a significantly lower assumed frequency than once in 50 years.

Shorter estimation periods and Winsorisation

9.34 In line with CEPA's suggestion, Flint examined rolling asset betas based on short, six-week estimation windows to assess short-term trends in asset betas since the start of the covid-19 pandemic. This analysis has demonstrated that airport comparator betas have exhibited greater volatility during the pandemic, but also that there have been discrete "peaks" corresponding to news events. These occurred particularly in:

- March 2020 when the pandemic first emerged and began to spread internationally; and
- November 2020 when markets responded positively to news related to vaccine efficacy.

9.35 This would seem to be consistent with our view that data from the pandemic period is unlikely to represent a robust predictor of future risk: once these spikes "drop out" of the dataset, it would be reasonable to expect beta estimates to fall.

9.36 On the other hand, Flint indicated that it does not consider that very short-term beta estimates can produce

> "a reliable indicator of future systematic risk perceived by investors – these essentially, and wrongly in our view, fully remove the most significant

[64] CEPA (2021), "Way Forward – Technical Appendix", June, p3.
[65] https://www.cdc.gov/flu/pandemic-resources/basics/past-pandemics.html

periods during which COVID-19 drove marked share price and index movements and affected the observed betas".[66]

We agree and have therefore not used such short estimation windows in estimating the H7 asset beta.

Impact of a TRS mechanism and RAB adjustment

9.37 We agree with CEPA that the application of a TRS mechanism will reduce systematic risk and hence reduce the asset beta. We set out how we have estimated this effect below.

9.38 We have set out in Chapter 6 why we do not consider that a further RAB adjustment is needed in the presence of a TRS mechanism. So, we have estimated the WACC on the basis that no further RAB adjustment will be applied in H7.

Relative risk assessment and comparator selection

9.39 We have worked with Flint to carry out a detailed comparative assessment of listed airport companies since the April 2021 Way Forward Document.

9.40 It is apparent that none of the airports we have considered represents a particularly close match for HAL, as each comparator exhibits at least one material differentiating factor.[67] As such, a significant degree of judgement is required in determining the appropriate weight to be placed on each.

9.41 We continue to consider that some weight should be placed on each of the three airport groups considered in the June 2020 Consultation, since the largest airport within each of these groups is a close comparator to HAL in terms of size and traffic mix, registering over 60 million passengers a year prior to the pandemic.

9.42 We agree with CEPA that both ADP and Fraport now have significant holdings in other geographies, which reduce their comparability to HAL. The regulatory framework for the Paris airports (the largest of the ADP airport holdings) has also changed since Flint's previous report and is now based on single-year price control periods with legal limits on maximum price increases in each year.

9.43 These observations are less applicable to AENA: its holdings in other geographies are more limited, and 80% of its revenues are derived from airports in European countries. Moreover, we note that AENA's regulatory framework exhibits similarities to HAL's current price control framework, including the application of multi-year price controls, with limited flexibility to change prices in the face of volume shocks.[68] Its regulatory framework also encompasses the full portfolio of Spanish airports owned by AENA, not solely Madrid. These factors

[66] Flint (2021), "Support to the Civil Aviation Authority: Estimating Heathrow's beta post-COVID-19", August, p11.

[67] For example, in terms of operational characteristics such as the volume and composition of traffic at the airports owned by the relevant entities, or in terms of their regulatory frameworks.

[68] We have based our choice of comparators on a comparison with HAL's current (i.e., Q6/iH7) regulatory framework. For H7, we are proposing to implement certain changes to the regulatory framework, including a TRS mechanism, which could alter HAL's systematic risk profile. We address the implications of these new regulatory mechanisms on HAL's asset beta separately below.

suggest that AENA may be more comparable with HAL compared with ADP and Fraport. At the same time, we are conscious that AENA also exhibits certain differences: for example, AENA exhibits relatively little transfer traffic compared with HAL.

9.44 In the April 2021 Way Forward Document, we also identified five additional airports that we said we would consider: Auckland, Copenhagen, Sydney, Vienna and Zurich.[69]

9.45 The regulatory regime under which Zurich airport operates exhibits similar characteristics to that under which HAL operates. However, Zurich is smaller than Heathrow and the CMA previously excluded it from the comparator set it used for its decision on RP3.[70] We place some weight on Zurich, alongside ADP and Fraport, but less than we place on AENA.

9.46 We have placed limited weight on Sydney and Vienna airports. Sydney's market index is less diversified than the market index used to estimate the equity beta of the European airports. Sydney is also not subject to a formal regulatory price control, and its traffic mix has previously been dominated by domestic traffic. In addition, the evolution and impact of the pandemic (for example, in terms of early case numbers) has been very different in Australia.

9.47 Vienna is almost six times smaller than HAL, and subject to a regulatory regime that affords it greater discretion to amend its charges in response to traffic shocks than HAL's. In addition, only around 10% of Vienna's shares trade openly on the stock exchange, and its asset beta estimate is notably less statistically robust than the remaining candidate betas.

9.48 Flint's analysis suggests that Copenhagen and Auckland airports' equity betas could not be estimated reliably,[71] and so we do not place any weight on these comparators.

9.49 In summary, we have placed weight on six comparators, which we can rank in order of importance as follows:

- We place greatest weight on AENA;
- We place some weight on ADP, Fraport and Zurich; and
- We place only limited weight on Sydney and Vienna.

Relevance of CMA RP3 Determination

9.50 In its June 2020 report, Flint explicitly compared its (pre-covid-19 pandemic) findings with those of the CMA's RP3 determination. It noted certain minor differences of approach, but also noted that the CMA's determination ultimately

[69] See CAP2139A at Table J2.

[70] CMA (2020), "*NATS (En Route) Plc /CAA Regulatory Appeal: Provisional findings report*", March, Paragraph 12.67.

[71] Flint noted that a very limited proportion of Copenhagen Airport's shares trade on the stock market, rendering it share price data unreliable. It also noted that Auckland airport is traded on the NZX exchange, a market which is not highly diversified, and that its business activities include significant non-aviation exposure.

represented a "*broad judgement in light of the overall evidence and the relative risk of the different airports*".[72]

9.51 We note that the CMA's determination of 0.52-0.62 was close to Flint's own range of 0.50-0.60. As such, we are comfortable that Flint's findings are consistent with the evidence considered by the CMA in the context of RP3, and that Flint has exercised its judgement in a careful and considered manner.

9.52 More generally, we disagree with HAL's statement that

> "[i]t would be inappropriate for the CAA to supplant this estimate of the pre-covid asset beta for airports with a different estimate of its own."

9.53 We note that the circumstances of covid-19 have meant that significant new information has emerged since the CMA conducted its assessment of beta vales as part of its RP3 determination. We therefore consider it appropriate to look again at the information available on these matters and to take a judgment on this new information, but also take account of the helpful precedent previously established by the CMA.

Our Initial Proposals

9.54 We set out below our proposed approach for estimating the asset beta for H7, which draws heavily on the findings of the Flint report, including our views on:

- HAL's pre-pandemic asset beta;
- the impact of the pandemic on HAL's asset beta, before the effect of regulatory mitigations (such as the TRS mechanism) is considered; and
- the effect of regulatory mitigations on HAL's asset beta.

We then combine these estimates to arrive at a view of the asset beta for H7.

Pre-pandemic asset beta

9.55 In its June 2020 report, Flint previously estimated an asset beta of **0.50-0.60** for HAL. This was based on daily return data for AENA, ADP and Fraport and considering different estimation windows and rolling averages. These are summarised in Table 9.3 below.

[72] CAP1940C, p20.

Table 9.3: Summary of asset beta estimates presented in Flint June 2020 report

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

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

9.56 We previously stated in the June 2021 Way Forward Document that it would be appropriate to apply a similar approach to that used by the CMA in its PR19 Final Determination for calculating comparator asset betas. We have chosen not to apply all aspects of this method for the following reasons:

- the use of 10-year estimation periods and longer trailing average periods would not be possible for AENA, which was only listed in 2015;
- estimation periods shorter than 5 years do not provide a sufficient number of pre-pandemic observations; and
- there is broad consensus from our stakeholders that daily data is appropriate for the purpose of estimating comparator betas.

9.57 In the report accompanying these Initial Proposals, Flint has indicated that its updated analysis, encompassing the new set of comparators, continues to be consistent with its previously estimated range for the pre-covid-19 pandemic asset beta.[73] The final rows of Tables 2 and 3 in Flint's report show that the asset beta estimate that would emerge based on the 42-month period immediately prior to the pandemic is 0.52-0.60, depending on the comparator set chosen. This is broadly consistent with Flint's original range.

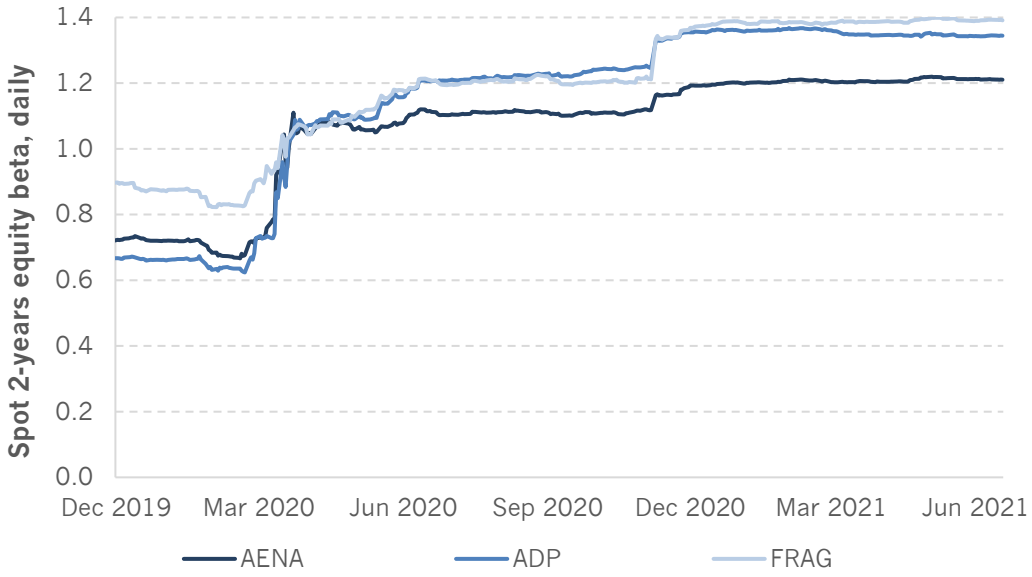
9.58 We therefore propose to use **0.50-0.60** as the estimate of HAL's pre-pandemic asset beta.

Unmitigated impact of pandemic

9.59 As illustrated below in Figure 9.1, movements in equity markets, and airport stocks in particular, during the pandemic have driven substantial increases in observed equity betas for listed airport comparators.

[73] Estimating Heathrow's beta post covid-19, Flint, August 2021 www.caa.co.uk/cap2266E

Figure 9.1: Movements in comparator asset betas during the pandemic



Source: Flint Global

9.60 The observed data has been significantly driven by extreme daily market or share price movements (or both) that exhibit an unusually strong influence on the beta calculation. This is illustrated, for example, in Figure 11 of Flint's report, which shows discrete "spikes" in short-term asset betas driven by the arrival of news regarding the pandemic. For example, both airport stocks and market indices recovered sharply in November 2020 when announcements emerged regarding the imminent availability of a vaccine.

9.61 By contrast, we consider that it is highly unlikely that such conditions will persist throughout H7, and that it is reasonable to expect that the operating environment faced by airports will be more benign in the future, although smaller shocks can be expected to occur periodically based on history. As HAL recognises, pandemic-like events are not likely to happen frequently, and the post-pandemic period is, therefore, likely to be characterised by prolonged periods during which index behaviour and associated airport share price movements that more closely resemble a pre-pandemic pattern.

9.62 At the same time, we acknowledge that the pandemic is likely to have heightened investor perceptions of the risk exposure of the sector, and so HAL's asset beta is unlikely to return to its pre-pandemic level, at least for some considerable time. This implies that we cannot simply disregard the impact of the covid-19 pandemic.

9.63 Determining the exact scale of this longer-lasting increase in HAL's asset beta is a challenging exercise since the post-pandemic period is unlikely to precisely resemble either the pandemic period or the preceding period.

9.64 Flint has carried out analysis involving the application of weights to individual observations of daily share price movements based on whether they occurred

within or before the covid-19 pandemic period. The weights reflected the assumed frequency with which pandemic-type events will occur in the future.

9.65 The results of this analysis are summarised in Tables 9.2 and 9.3 reproduced from Flint's report below. Table 2 of Flint's report sets out the beta estimates that emerge under different assumptions for the frequency of pandemic recurrence, and on the assumption that future pandemics will influence HAL's asset beta for a period of 17 months.[74]

Table 9.4: Reweighted asset beta estimates for different frequencies of covid-like event of 17-month duration

	AENA	ADP	Fraport	Zurich	Vienna	Sydney	AENA	4 company	6 company
2y raw beta	0.93	0.89	0.69	0.78	0.83	0.60	**0.93**	**0.81**	**0.79**
5y raw beta	0.82	0.84	0.70	0.80	0.64	0.57	**0.82**	**0.79**	**0.73**
Frequency of COVID-like event (1 in X years)									
7.5	0.78	0.78	0.68	0.78	0.56	0.57	**0.78**	**0.75**	**0.69**
10	0.75	0.74	0.65	0.76	0.50	0.57	**0.75**	**0.73**	**0.66**
15	0.71	0.69	0.62	0.74	0.44	0.57	**0.71**	**0.69**	**0.63**
20	0.69	0.66	0.60	0.72	0.40	0.56	**0.69**	**0.67**	**0.61**
50	0.64	0.59	0.55	0.69	0.32	0.56	**0.64**	**0.62**	**0.56**
100	0.62	0.57	0.54	0.68	0.28	0.56	**0.62**	**0.60**	**0.54**
N/A	0.60	0.54	0.51	0.67	0.25	0.56	**0.60**	**0.58**	**0.52**

Note: Assumes debt beta of 0.05. '4 company' column takes a simple average of AENA, ADP, Fraport and Zurich. '6 company' column takes an average of all six comparators.

Source: Flint analysis based on Thomson Reuters data as of 18th June 2021.

9.66 Table 9.3 reproduced from Flint's report then sets out corresponding beta estimates on the assumption that future pandemics will influence HAL's asset beta for a longer period of 30 months.

[74] This corresponds to an assumption that future pandemics will have a similar duration to the covid-19 pandemic, and that the covid-19 pandemic had a material influence on HAL's beta during the period February 2020 to June 2021.

Table 9.5: Reweighted asset betas for different frequencies of covid-like event of 30-month duration

	AENA	ADP	Fraport	Zurich	Vienna	Sydney	AENA	4 company	6 company
5	0.89	0.89	0.72	0.82	0.77	0.58	**0.89**	**0.83**	**0.78**
7.5	0.85	0.86	0.72	0.81	0.68	0.58	**0.85**	**0.81**	**0.75**
10	0.81	0.82	0.70	0.79	0.62	0.57	**0.81**	**0.78**	**0.72**
15	0.77	0.77	0.67	0.77	0.54	0.57	**0.77**	**0.74**	**0.68**
20	0.74	0.73	0.64	0.75	0.48	0.57	**0.74**	**0.72**	**0.65**
50	0.67	0.63	0.58	0.71	0.36	0.56	**0.67**	**0.65**	**0.59**
100	0.64	0.59	0.55	0.69	0.31	0.56	**0.64**	**0.62**	**0.56**
N/A	0.60	0.54	0.51	0.67	0.25	0.56	**0.60**	**0.58**	**0.52**

Source: Flint analysis based on Thomson Reuters data as of 18th June 2021.

9.67 Flint has assumed a frequency of 20-50 years for the purpose of estimating the impact of the pandemic on HAL's asset beta, which we consider represents a prudent range. This suggests that the impact of the pandemic has been to increase the asset beta by **0.04-0.14**, depending on the assumed duration of the current pandemic. This in turn suggests an "unmitigated" asset beta of **0.54-0.74**, before taking into account the impact of regulatory mitigations. We propose to adopt this figure for the purposes of our Initial Proposals.

Effect of regulatory mitigations

9.68 Several of the proposals in these Initial Proposals document change the allocation of risk between HAL and its customers, most notably the introduction of the TRS.

9.69 It is reasonable to expect that the introduction of a TRS will lead to a reduction in HAL's asset beta, since it will substantially reduce the volatility of returns that HAL would otherwise experience. However, the extent to which the TRS would reduce the asset beta cannot be estimated with precision, for several reasons:

- estimating HAL's volatility of returns and, hence, the impact of the TRS on the volatility of returns is problematic, since there are no market benchmarks on which to base such an estimate;
- under our proposed TRS mechanism, different sharing factors apply depending on the extent to which outturn traffic differs forecasts. This means that the impact of the TRS depends on the expected scale of future shocks, which is subject to uncertainty; and
- although the TRS is likely to reduce the volatility of returns, the extent to which this would translate into a reduction in the asset beta is uncertain, since it could also affect the correlation of returns with the market index.

9.70 In the absence of a superior approach to estimating this impact, we have estimated the effect that TRS would have in terms of mitigating the increase in the asset beta based on the percentage of cashflow losses that would be avoided in the event of a future pandemic-type event. While we acknowledge that this can only be a rough approximation of the "true" impact, we consider that this assumption is preferable to assuming that the TRS has no impact, which is highly unlikely to be correct.

9.71 As part of our determination of the allowance for asymmetric risk, we have estimated the impact of another pandemic on HAL's returns with and without a TRS mechanism in place. This analysis indicates that the TRS would mitigate 64% of HAL's total cashflow losses.

9.72 This figure is likely to overstate the extent to which investors will expect that the TRS will insulate HAL from pandemic-related losses over the longer-term. This is because we will revisit HAL's regulatory framework in H8, and as such no decisions have or can be made at this stage about the future form of a TRS beyond the end of H7. This means that investors may place less weight on the impact of the TRS after this point. Taking these observations into account, we have assumed that the TRS will reduce the asset beta by roughly half of the increase due to the pandemic, or 0.02-0.07.

9.73 We also expect that the TRS will reduce the pre-covid asset beta for HAL. However, this effect is more difficult to quantify, since we lack a robust estimate of HAL's pre-pandemic equity volatility, as we noted previously in the April 2021 RAB Adjustment Decision[75]. As such, we propose to account for this impact in our choice of point estimate for WACC, which will be an important part of our final proposals.

9.74 Bringing together the pre-pandemic asset beta of 0.50-0.60 with the mitigated impact of the pandemic on the asset beta if 0.02-0.07, results in a range for the asset beta of 0.52-0.67 for H7.

9.75 This is higher than both the Q6 Final Determination (0.42-0.52) and the CMA's Provisional Findings for RP3 (0.50-0.60), reflecting what we consider to be the likely enduring impact of the covid-19 pandemic on HAL's asset beta. It is considerably lower than the equivalent estimate proposed by HAL of 0.98 since it is not driven by relying exclusively on data from during the pandemic as the basis for our estimate. It is higher than the estimate previously put forward by CEPA on behalf of the AOC/LACC of 0.45-0.50, since we rely on a different set of comparators, and implicitly place greater weight on the pandemic period.

9.76 It is also significantly higher than recent CMA determinations for asset beta in the water and energy sectors, reflecting market evidence of materially higher risks associated with investment in airports. The CMA's Final Determination for PR19 was based on an asset beta of around 0.33[76], and Ofgem's RIIO-2 Final

[75] See CAP2140 at paragraphs C152-C166.

[76] This is based on Table 9-37 of CMA (2021), "Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations: Final report". It has been calculated

Determination for the electricity transmission and gas transmission and distribution companies – which was upheld by the CMA in the context of the recent appeals of this determination – was around 0.35.[77]

Debt beta

Context

9.77 The debt beta represents the proportion of a company's systematic risk exposure that is attributable to debt. A company's asset beta can be defined in terms of the following formula:

Asset beta = gearing x debt beta + (1 – gearing) * equity beta

9.78 Rearranging the formula above demonstrates that the equity beta is a function of a company's asset beta, its gearing and its debt beta:

Equity beta = (asset beta – gearing * debt beta) / (1 – gearing)

9.79 The debt beta is, therefore, a necessary input when translating the asset beta into an equity beta. When a company is partly financed with debt, attributing the systematic risk exposure of the company entirely to equity will generally overstate the company's equity risk, since some of this risk will be borne by creditors. We estimate that a 0.01 increase in the debt beta results in a 4-5bps reduction in the WACC.

9.80 In its June 2020 Report, Flint indicated that a debt beta of 0.10 was a reasonable estimate for HAL in H7, compared with 0.05 for the comparator airports considered in that report[78]. This approach was motivated by the significant observed differences in gearing between HAL and these comparators, which Flint considered warranted a higher debt beta assumption for HAL. It also appeared to support a more plausible WACC at higher levels of gearing.

9.81 In the April 2021 Way Forward Document, we said that we would consider whether this assumption remained appropriate at Initial Proposals.[79]

Stakeholders' views

AOC/LACC

9.82 CEPA, on behalf of the AOC/LACC, proposed a view consistent with that set out by Flint in its June 2020 Report: namely, a debt beta estimate of **0.05** for comparator airports and **0.10** for HAL.[80]

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by the sum of: i) the debt of beta 0.075 multiplied by the notional gearing assumption of 60%; and ii) the equity beta of 0.71 by (1 – the notional gearing assumption of 60%).

[77] Ofgem (2021), "RIIO-2 Final Determinations – Finance Annex (REVISED)", p24.

[78] CAP1940C, p22.

[79] CAP2139A, Appendix J, paragraph 59.

[80] CEPA (2020), "H7 cost of capital estimation", November, section 4.2.

9.83 It concurred with Flint's view that the higher notional gearing for HAL relative to its comparators warranted a higher debt beta.

HAL

9.84 HAL has previously made several statements in respect of the debt beta:[81]

- the CAA had put forward no evidence to suggest that there is any difference in debt beta between HAL and its comparators;
- HAL suggested that the debt beta is more closely linked to a company's credit rating than its gearing;
- HAL has a similar credit rating to companies for which the CMA determined a debt beta of 0.05, and this supports a similar debt beta estimate for HAL;
- the CAA has not engaged with evidence that HAL argues shows that the debt beta is small and not significantly different from zero; and
- structural models suggest that the impact of changing gearing from 35% to 60% would be expected to increase debt beta by only around 0.01.

HAL's July 2021 Updated RBP

9.85 HAL assumed a debt beta of **0.05** both for itself and for its comparator airports.

Our views

9.86 We consider that there are two principal issues for consideration in respect of the debt beta for HAL:

- the level of the debt beta; and
- the relationship between gearing and debt beta.

We consider each in turn below.

Level of debt beta

9.87 We reject HAL's suggestion that we have not engaged with the evidence it has referred to in its updated business plan.[82]

9.88 HAL presented this evidence in the context of the CMA's determination of the RP3 price control for NERL.[83] At that time, we responded to this evidence with reports by PwC[84] and Europe Economics[85] respectively. These reports suggested that:

[81] HAL (2021), "H7 WACC Updates", pp9-10.

[82] HAL (2021), "H7 WACC Updates", p10.

[83] Professor Zalewska, Estimation of the Debt Beta of the Bond Issued by NATS (En-Route) plc, April 2019.

[84] PwC (2019), "Estimating the cost of capital for H7 and RP3 - Response to stakeholder views on total market return and debt beta", August.

[85] Europe Economics (2019), "Comments on NERA/NERL critiques of Europe Economics' WACC analysis", June.

- the evidence to which HAL is referring implied a debt beta of zero or less for all UK investment grade companies, which does not seem to be a reasonable conclusion and suggests that the method is unlikely to be reliable;
- the findings of the study to which HAL is referring were sensitive to the time period and data frequency under consideration; and
- that other estimation approaches pointed to higher debt beta estimates, and in some cases considerably higher.

9.89 In any case, the evidence to which HAL has referred is inconsistent with its own proposed estimate for H7. As such, we did not consider that it warranted further commentary.

9.90 Overall, we consider that a range of positive debt beta estimates are plausible for HAL, and that both the estimates of 0.05 and 0.10 appear to be within this plausible range.

Relationship between gearing and debt beta

9.91 We consider that there is a logical relationship between gearing and debt beta. To illustrate this, it is useful to consider the extreme cases of a company that is fully equity financed and one that is fully debt financed. The former company will have a debt beta of zero, and the latter will have a debt beta that is equal to its asset beta. It follows that the debt beta must vary with gearing. The relevant question in the current context is the nature of this relationship for airport companies comparable to HAL.

9.92 HAL has suggested that the impact of gearing on debt beta is limited, except at extreme levels of gearing. It has referred to two sets of evidence to support this view:

- an Oxera paper[86] that HAL has suggested shows that debt beta is more closely linked to credit rating than to gearing; and
- specifically to a structural model estimated by Oxera in that report, which HAL has suggested demonstrates that the impact of gearing on debt beta is small.

9.93 We do not agree with HAL's interpretation of the Oxera paper. We note that the Oxera paper states that:

> "*Academic research has shown how debt beta varies with credit rating. A credit rating is a composite measure of creditworthiness and is affected by gearing and asset risk. Therefore, one would expect companies of a similar or the same credit rating to have similar debt betas.*"[87]

[86] Oxera (2020), "*Estimating debt beta for regulated entities*", June.

[87] Oxera (2020), "*Estimating debt beta for regulated entities*", June, p6.

9.94 However, it then qualifies this statement by stating that:

> "*Schaefer and Strebulaev (2008) showed that debt beta and credit rating are negatively correlated, i.e. on average, all else equal, the lower the credit rating, the higher the debt beta. Note, however, that this is not a precise one-to-one relationship—two individual bonds with the same credit rating can have different debt betas. Equally, two individual bonds with the same debt beta can have different credit ratings.*" [emphasis added]

9.95 This does not appear to us to rule out any relationship between gearing and debt beta, even for bonds or issuers with the same credit rating: indeed, Oxera explicitly allow for the possibility that bonds or issuers with the same credit ratings but different levels of gearing could have different debt betas.

9.96 We consider that the structural model put forward in the Oxera paper is not an appropriate basis for examining the relationship between gearing and debt beta for H7. For example, we note that it relies on an estimate of asset volatility which, as we noted in the April 2021 RAB Adjustment Decision, is not possible to estimate robustly for HAL[88]. We also note that it has been calibrated on data for energy network and water companies and, as such, its application to airports is uncertain.

9.97 Notwithstanding the above, we agree with HAL that the relationship between gearing and debt beta is difficult to estimate with precision and we acknowledge the possibility that a change in gearing may have less of an effect on debt beta than we had assumed in our previous consultations.

Our Initial Proposals

9.98 We have amended our proposed range to reflect the possibility that HAL's higher gearing relative to comparators does not imply a higher debt beta for HAL.

9.99 We assume a range of **0.05-0.10** for HAL's debt beta, where the lower bound estimate of 0.05 corresponds to an assumption that there is no difference in debt beta between HAL and its comparators. The upper bound for the beta reflects Flint's original view that HAL's higher gearing implies a higher debt beta relative to comparator airports. We continue to view this as a plausible assumption, since the debt beta must logically vary to some extent with gearing, and we are not persuaded that the evidence put forward by HAL rules out this possibility. So, we continue to include this within our range for the debt beta.

[88] See CAP2140 at paragraphs C152-C166.

Total market return

Context

9.100 The TMR is the return required by investors for investing in a diversified basket of equity securities. It is an important input into the calculation of the cost of equity under the CAPM. We estimate that a 10bps increase in the TMR results in a 5-6bps increase in the WACC.

9.101 In the April 2021 Way Forward Document, we set out the issues that we would need to consider at Initial Proposals, including:

- the approach we would adopt regarding the deflation of historical market returns; and
- the averaging approach we would use to estimate historical returns.

9.102 In each case, we indicated that we were minded to adopt the same approach as the CMA in its PR19 Final Determinations.

Stakeholders' views

AOC/LACC

9.103 CEPA, on behalf of the AOC/LACC, previously put forward an estimate of the TMR of **5.2%-6.0%** RPI-real.[89] This was based on a range of estimation approaches which paralleled those considered by the CMA in the context of the Provisional Determination for PR19. In most cases, CEPA's analysis was consistent with the CMA's approach.

9.104 There were, however, two principal differences. The first was CEPA's position that the CED-CPI inflation series is preferable to the CED-RPI inflation series, and its exclusive reliance on the former. This resulted in the upper end of CEPA's range being 25bps lower than the upper bound of the CMA's range. The second was that CEPA placed relatively less weight on historical *ex ante* estimates of the TMR in arriving at its final proposed range.

HAL

9.105 In its updated RBP, HAL has proposed a TMR estimate of **5.85% RPI-real**, consistent with the midpoint of the CMA's range for the PR19 Final Determinations.

Our views

9.106 We have not been presented with further evidence since the April 2021 Way Forward Document that would suggest that we should adopt a different approach from that we had previously suggested. As such, we propose to maintain the

[89] CEPA (2020), "H7 cost of capital estimation", November, Section 3.4.

approach we set out in the April 2021 Way Forward Document. This is to adopt the same approach used by the CMA in its PR19 Final Determinations.

Our Initial Proposals

9.107 We propose to use a TMR of **5.2% to 6.5% RPI-real** in our Initial Proposals, consistent with the CMA's PR19 Final Determinations range.

Inflation

Context

9.108 This section sets out the approach regarding the inflation assumption we have used to estimate the cost of capital. The inflation assumption is important since the allowed return is calculated based on a real WACC applied to an inflation indexed RAB. However, several WACC components are estimated in nominal terms and must be deflated in order to avoid double-counting of inflation. These include:

- the yield on non-gilt securities used as an input into the estimate of the risk free rate; and
- the yield on the benchmark index of debt securities used to estimate the cost of embedded and new debt.

9.109 We said in the April 2021 Way Forward Document that we would consider whether it was appropriate to continue to place weight on each of the approaches for estimating inflation that we considered in the June 2020 Consultation:

- at the lower bound, the RPI inflation assumption used by the CMA in its determination of the RP3 price control for NERL. This was based on HMT consensus forecasts for RPI inflation at that time of 2.78%; and
- at the upper bound, an estimate based on the Bank of England implied inflation curve, adjusted to strip out a potential inflation risk premium, and cross-checked against OBR forecasts. This estimate suggested a value of 3.10%.

9.110 We also said that we would update our estimate of the RPI-CPI wedge to reflect the latest OBR guidance, in line with the CMA's approach in its Final Determinations for PR19.

Stakeholders' views

AOC/LACC

9.111 CEPA, on behalf of the AOC/LACC, advocated using unadjusted breakeven inflation as the basis for deflating nominal yields.[90] It raised concerns over our

[90] CEPA (2020), "H7 cost of capital estimation", November, Section 5.2.2.

approach of stripping out an estimate of the inflation risk premium from breakeven inflation, on the basis that doing so would create "an opportunity for the regulated company to arbitrage and gain at the expense of the consumer".[91]

9.112 It presented the following example:

> "*Let us assume that breakeven inflation is 3.50% and that 50bps is assumed to represent an inflation risk premium. Let us assume that the nominal cost of debt is equivalent to the market benchmark, at 5.00%. Heathrow's real interest cost will be 1.50%, yet the CAA's approach means Heathrow's allowed real cost of debt is 2.00%.*"[92]

HAL

9.113 HAL indicated that our approach should be consistent with the CMA's Final Determinations for PR19. As such, HAL considers that we should assume an inflation rate of 2.9% based on the Government target of 2.0% for CPI inflation, and the OBR's current estimate of the wedge between CPI and RPI of 0.9%.

Our views

9.114 We have reflected further on the approach to inflation we outlined in the April 2021 Way Forward document, and on the approaches suggested by stakeholders. We consider that each of these approaches effectively reflect "long-term" measures of inflation that, over time, should ensure recovery of efficient nominal debt costs.

9.115 However, RPI inflation is currently expected to deviate materially from its long-term level over the course of H7, particularly during the early years as illustrated in Table 9.4.

Table 9.6: Forecast vs long-term inflation in H7

	2022	2023	2024	2025	2026[93]	**Average**
OBR forecast of RPI	2.0%	2.4%	2.7%	3.0%	2.9%	**2.6%**
CPI target plus wedge	2.9%	2.9%	2.9%	2.9%	2.9%	**2.9%**
Breakeven inflation	3.2%	3.2%	3.2%	3.2%	3.2%	**3.2%**

Source: OBR March 2021 forecasts, Bank of England data, CAA analysis.

9.116 If we were to deflate the risk free rate and cost of debt using a long-term measure of inflation, but outturn inflation was materially below this level, there is a risk that HAL would not be able to recover its efficiently incurred nominal costs of embedded debt. This in turn could create a financeability challenge, and may

[91] CEPA (2021), "Way Forward – Technical Appendix", June, p6.

[92] CEPA (2021), "Way Forward – Technical Appendix", June, p6.

[93] The OBR forecasts only extend to 2025. As such, we have assumed that RPI inflation reverts to 2.9% in 2026, in line with the government's CPI target plus a wedge of 0.9%.

not be consistent with our secondary duty to have regard to the need to secure that HAL is able to finance its licensed activities.

9.117 The use of a "long-term" inflation measure would also be inconsistent with how we have forecast other price control building blocks, and with our approach at RP3.

9.118 We are, therefore, minded to deflate the nominal risk rate and cost of debt using forecast levels of RPI during H7.

Our Initial Proposals

9.119 We propose to deflate the nominal risk free rate and cost of debt based on an inflation forecast of 2.6%. This is comprised of the OBR forecast of RPI from 2022-2025, set out in its March 2021 forecasts[94], together with an RPI assumption of 2.9% in 2026[95]. We will take account of the latest available OBR forecasts and update our estimates accordingly at Final Proposals.

Risk free rate

Context

9.120 The risk free rate is the return that an investor would expect to earn on a risk free asset. It is an input into the calculation of the cost of equity under the CAPM. However, changes to the risk free rate have a smaller impact on the WACC than the other CAPM parameters. By way of illustration, we estimate that a 10bps increase in the risk free rate results in only a 1-2bps reduction in the WACC.

9.121 In the April 2021 Way Forward Document, we considered four groups of issues:

- **whether to place weight on high-quality corporate debt indices**: we indicated that exclusive reliance on index-linked Gilts ("ILGs") would be likely to result in a downward-biased estimate of the risk free rate;
- **the tenor of our reference bonds**: we indicated that we would consider instruments at or close to 20-year maturities;
- **the averaging period that should apply**: we said we would apply a six-month trailing average; and
- **whether to include a forward rate adjustment**: we said we did not propose to apply a forward rate adjustment.

[94] OBR (2021), "Economic and Fiscal Outlook", March, Table 2.9.

[95] This corresponds to the government's 2% CPI target plus an RPI-CPI wedge of 0.9%.

Stakeholders' views

AOC/LACC

9.122 CEPA, on behalf of the AOC/LACC, previously advocated exclusive use of ILGs as the basis for estimating the risk free rate.[96] It indicated that it did not consider it appropriate to place weight on high-quality corporate debt securities, and raised concerns regarding the use of the indices used by the CMA in its PR19 Provisional Determinations.[97]

9.123 CEPA placed weight on both 10-year and 20-year ILGs, and focussed on 3, 6 and 12-month averaging periods.[98]

9.124 CEPA also considered that a forward rate adjustment is beneficial where it represented a better proxy of expectations in the future than the spot rate[99].

HAL

9.125 In its updated RBP, HAL has adopted the CMA's estimate of the risk free rate set out in the its Final Determinations for PR19 (**-2.22%** RPI-real) on the basis that this estimate is relatively recent and consistent with current market data.

Our views

ILGs vs high-quality debt securities

9.126 In the April 2021 Way Forward Document, we said that we would further consider the concerns expressed by CEPA over the use of high-quality corporate debt instruments, and particularly those regarding the AAA-rated iBoxx indices considered by the CMA in its work on PR19.

9.127 We have not been able to establish a superior index on which to base an estimate of the risk free rate. However, as we have previously indicated, we nonetheless consider that ILGs exhibit a "convenience yield", which means that they are likely to understate the "true" risk free rate. In the absence of a superior means of estimating this convenience yield, we continue to consider that it is appropriate to place some weight on the iBoxx non-Gilts AAA-rated 10+ years and 10-15 years indices, in line with the CMA's approach to PR19. While we are aware of drawbacks associated with these indices, we consider their use to be preferable to relying exclusively on ILGs.

Tenor of relevant instruments

9.128 We remain of the view that it is appropriate to rely on 20-year tenor instruments to estimate both the risk free rate and the cost of debt. The rationale for this assumption is set out in further detail in the section on the cost of debt.

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[96] CEPA (2020), "H7 cost of capital estimation", November, Table 2.1.

[97] CEPA (2020), "H7 cost of capital estimation", November, Section 2.3.

[98] CEPA (2020), "H7 cost of capital estimation", November, Table 2.1.

[99] CEPA (2020), "H7 cost of capital estimation", November, Table 2.1.

Averaging period

9.129 We have not seen compelling evidence to depart from the CMA's approach of using six-month trailing averages. So, we have adopted such an average up to a cut-off date of 18th June 2021.

Forward rate adjustment

9.130 We have received no further evidence in respect of the appropriateness or otherwise of forward adjustments. We therefore propose to retain our previous position of not applying a forward rate adjustment, in line with the CMA's approach to its work on PR19.

Our Initial Proposals

9.131 We propose to use an estimate of risk free rate of **-1.83%, RPI-real**.

9.132 This is calculated as follows:

a) the 6-month trailing average of the £ iBoxx non-Gilt AAA-rated 10+ years index to 18th June 2021 is 1.33% (nominal);

b) the 6-month trailing average of the £ iBoxx non-Gilt AAA-rated 10-15 years index to 18th June 2021 is 1.10% (nominal);

c) the average of the figures in steps (a) and (b) is 1.21% (nominal);

d) when the figure in step 3 is deflated by our inflation estimate of 2.6%, this implies an RPI-real figure of -1.37%;

e) the 6-month trailing average yield on 20-year ILGs to 18th June 2021 is - 2.29%; and

f) the average of the figures in steps (d) and (e) is -1.83%, RPI-real.

Cost of embedded debt

Context

9.133 Like other economic regulators in the UK, we estimate the WACC by reference to the costs that would be incurred by HAL under a notional financing structure. Embedded debt is, therefore, defined as debt that the notionally financed entity would already have issued at the start of H7. The cost of embedded debt provides HAL with an allowance for servicing this debt. We estimate that a 10bps increase in the cost of embedded debt would result in a 5bps increase in the WACC.

9.134 In the April 2021 Way Forward Document, we examined various issues that we would need to consider at Initial Proposals, including:

- **whether to base the cost of embedded debt on a notional benchmark or HAL's actual costs**: we said that we will consider further the question of whether, and how, HAL's actual cost of debt should inform our assessment of the cost of embedded debt at Initial Proposals;
- **the form of the notional benchmark to be used**: we said that we will consider further the tenor and averaging period that should be used; and
- **the impact of the pandemic**: we outlined certain potential approaches for taking account of the impact of the pandemic on HAL's cost of embedded debt.

Stakeholders' views

AOC/LACC

9.135 CEPA, on behalf of the AOC/LACC, supported the use of a notional benchmark, but expressed a different view to us regarding how it should be estimated.

9.136 It has continued to advocate for the use of shorter tenors (10-15 years) than we had previously considered (20 years).

9.137 CEPA said that we have continued to dismiss evidence from comparator airports with shorter debt tenors without a sufficient basis for doing so, stating that:

> "The CAA has continued to dismiss evidence from other comparator airports with much shorter debt tenors, suggesting that these comparator airports have adopted an inefficient treasury strategy and created risk for equity holders through an asset-liability mismatch".[100]

9.138 CEPA noted that Heathrow's debt portfolio, including bond and bank debt, is shorter than 20yrs and that this alone does not justify a move away from the Q6 use of 10-15yr benchmarks.

9.139 CEPA also suggested that:

> "plausible explanations for the divergence between Heathrow and comparator airports would be the impact of Heathrow's higher gearing necessitating that debt be more spread out (to avoid bunched redemption dates), or that Heathrow can issue longer term debt as it is lower risk than those comparators."[101]

9.140 CEPA also expressed concern that:

> "Heathrow has not reconciled the information provided in its RBP on its nominal debt costs and the debt costs contained in their quarterly debt reporting to investors and stakeholders. The March 2021 debt summary indicates a nominal cost of debt with accretion of 1.43%."

[100] CEPA (2021), "Way Forward – Technical Appendix", June, p6.

[101] CEPA (2021), "Way Forward – Technical Appendix", June, p6.

9.141 These considerations have implications for the averaging period for the benchmark, which would be correspondingly shorter under CEPA's preferred tenor.

9.142 CEPA did not consider that an uplift should be applied to the cost of embedded debt in respect of the current pandemic since the current period of underperformance relative to benchmark indices is largely offset by outperformance in previous periods.

HAL

9.143 HAL has continued to advocate the use of its actual debt costs as a basis for determining the cost of embedded debt for H7.[102] It advanced several views in this regard.

9.144 It has stated that:

> "the CMA precedent for the H7 determination is that Heathrow's actual cost of embedded debt should be used".[103]

9.145 It has also suggested that:

> "In CAP2139 the CAA state that the CMA ruled out using individual companies' actual cost of debt as a basis for estimating the embedded cost of debt. The CAA fail to note that this is in the context of water companies, where there are a range of regulated companies that give them more information than for a decision with a single company. The CAA also fail to note that in the NERL appeal, the CMA did use NERL's actual cost of debt, as did the CAA itself. For determinations with single companies, the CMA has always used the actual cost of debt for embedded debt."[104]

9.146 HAL has stated that the appropriate means of accounting for the variation in the spread between the yield on HAL's bonds and that of the iBoxx index is to use the average spread over the period as they state that their advisors, NERA, have done.

9.147 HAL has also stated that,

> "we have provided a range of evidence on the higher cost of Heathrow debt compared to the iBoxx index … we are disappointed that the CAA to date has still not provided any proper engagement with the evidence we have provided."

9.148 HAL has reiterated its view that there is no relationship between gearing and the cost of debt for instruments and issuers of the same credit rating. It notes that:

[102] HAL (2021), "H7 WACC Updates", p16.

[103] HAL (2021), "H7 WACC Updates", Section 5.6.3.2.3.

[104] HAL (2021), "H7 WACC Updates", Section 5.6.3.2.3.

> "[w]e are surprised by the CAA's view that gearing is a more important determinant of the cost of debt than credit rating. This view is completely contrary to market evidence and practice."[105]

9.149 It also referred to the Oxera paper discussed above in support of this view.

9.150 HAL has also considered a notional benchmark as a cross-check on its actual cost of debt. It has suggested that a 20-year tenor is appropriate for H7, together with a 15 or 20-year collapsing average period.[106] It has also indicated that a 0.3% minimum HAL-specific spread should be applied to the iBoxx index.

HAL's July 2021 Updated RBP

9.151 HAL has assumed a cost of embedded debt for H7 of **4.60%** nominal (based on an RPI inflation assumption of 2.9%), or **1.70%** RPI-real.

Our views

The role of HAL's actual cost of debt in setting the cost of embedded debt for H7

9.152 We do not consider that HAL's statement that "[f]or determinations with single companies, the CMA has always used the actual cost of debt for embedded debt"[107] is persuasive:

- there have not been enough single-company determinations to draw any inferences regarding the existence of a standard practice on the part of the CMA in these cases; and
- we note that the CMA does not generally simply adopt companies' actual cost of debt at face value. For example, in the case of RP3, the CMA benefitted from our own assessment of the efficiency of NERL's debt issuance. We consider that the CMA will, in general, need to satisfy itself that the company's actual cost of debt is efficient, and the use of notional benchmarks is one means of doing so.

9.153 There are also important differences between RP3 and H7 that we consider drove the CMA's approach in that case and our own approach to the cost of embedded debt for H7. These are that:

- NERL's gearing was close to the CMA's notional assumption; and
- NERL had only issued a single bond, and did not possess a portfolio of complex derivative instruments.

9.154 So, for RP3, it was relatively straightforward to ascertain whether NERL's cost of embedded debt was reasonable. HAL's financial structure does not permit us to scrutinise its actual cost of debt as easily and it is, therefore, not appropriate for us to adopt a similar approach in H7.

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[105] HAL (2021), "H7 WACC Updates", Section 5.6.3.2.3.

[106] HAL (2021), "H7 WACC Updates", Section 5.6.3.2.2.

[107] HAL (2021), "H7 WACC Updates", Section 5.6.3.2.2.

9.155 We also consider that using a notional cost of debt provides stronger incentives on the regulated company to maintain efficient costs than using an actual cost of debt. Therefore, we would only support using actual cost of debt where this can be clearly demonstrated to be efficient and provide a better outcome for consumers than using a notional benchmark.

9.156 As a result, we maintain our view that HAL's cost of embedded debt should be based on a notional benchmark, not HAL's actual cost of debt.

HAL's actual cost of debt compared with the iBoxx index

9.157 In the light of HAL's comments, we have carried out further analysis of HAL's actual cost of embedded debt compared with the iBoxx index, based on publicly available data on HAL's Class A bonds sourced from Bloomberg.

9.158 Consistent with HAL's advisors, NERA, our analysis has focussed on HAL's Class A debt, since we consider that this provides the most suitable approximation for the notional entity. HAL's Class A RAR has varied between 65% and 70% in recent years, compared with a notional gearing assumption of 60%. While this is still somewhat higher than our notional assumption, we consider that it nonetheless provides a useful point of reference. It has also historically exhibited a similar level of credit quality compared with our target credit rating.

9.159 We have compared the spreads at issuance of these instruments over relevant benchmarks to the concurrent spreads of the iBoxx A and BBB-rated 10+ year non-financial indices. By focussing on spreads over relevant benchmarks instead of raw yields, we have controlled for the effect of tenor and other characteristics that might otherwise influence yield.[108]

9.160 Our analysis suggests that, since 2008, HAL's Class A debt has been issued at a spread to benchmark that is on average 29bps lower than the corresponding iBoxx spread as set out in Table 9.5.

[108] These factors might explain why HAL's advisors, NERA, may have found that HAL has historically issued debt at a premium to the iBoxx.

Table 9.7: Issuance spread of Class A nominal HAL bonds compared with contemporaneous iBoxx spreads

Issue date	Amt outstanding (£)	Issuance spread	iBoxx spread	Difference
25/06/2021	66m	84.0	123.0	-39.0
13/04/2021	377m	124.0	124.9	-0.9
13/04/2021	174m	147.0	124.9	22.1
08/04/2021	430m	140.0	125.4	14.6
13/10/2020	290m	133.0	161.1	-28.1
12/10/2020	645m	104.0	161.3	-57.3
17/12/2019	66m	147.0	149.2	-2.2
15/04/2019	166m	113.0	163.7	-50.7
14/03/2019	559m	133.0	170.0	-37.0
11/03/2019	74m	191.0	174.8	16.2
11/10/2018	93m	251.0	169.7	81.3
30/08/2018	232m	132.0	169.4	-37.4
08/03/2018	232m	128.0	150.8	-22.8
12/07/2017	430m	138.0	145.0	-7.0
07/12/2016	85m	67.0	166.3	-99.3
17/02/2016	316m	93.0	252.6	-159.6
21/05/2015	290m	106.0	158.4	-52.4
11/02/2015	645m	144.0	156.0	-12.0
01/07/2014	43m	237.0	145.8	91.2
02/04/2012	43m	286.0	251.4	34.6
26/01/2012	43m	291.0	279.4	11.6
Average	**252m**	**131.6**	**160.2**	**-28.6**

Note: the issuance spreads have been adjusted to reflect the sterling equivalent values for non-GBP issuance. We have excluded bonds for which data on sterling-equivalent issuance spreads are unavailable.

Source: Bloomberg data and Centrus analysis of currency swaps

9.161 As indicated in Table 9.89.6 below, if callable and extendable instruments are excluded, this falls to around 20bps.

Table 9.8: Issuance spread of non-callable, non-extendible Class A nominal HAL bonds compared with contemporaneous iBoxx spreads

Issue date	Amt outstanding (£)	Issuance spread	iBoxx spread	Difference
14/03/2019	559m	133.0	170.0	-37.0
11/03/2019	74m	191.0	174.8	16.2
08/03/2018	232m	128.0	150.8	-22.8
12/07/2017	430m	138.0	145.0	-7.0
07/12/2016	85m	67.0	166.3	-99.3
21/05/2015	290m	106.0	158.4	-52.4
11/02/2015	645m	144.0	156.0	-12.0
01/07/2014	43m	237.0	145.8	91.2
02/04/2012	43m	286.0	251.4	34.6
26/01/2012	43m	291.0	279.4	11.6
Average	**244m**	**139.9**	**161.7**	**-21.8**

Note: the issuance spreads have been adjusted to reflect the sterling equivalent values for non-GBP issuance. We have excluded bonds for which data on sterling-equivalent issuance spreads are unavailable.

Source: Bloomberg data and Centrus analysis of currency swaps

9.162 We do not consider that this is sufficient evidence to support a "halo effect", given the limited number of bonds and considerable variation in spreads over time. However, we consider that this shows that HAL has historically been able to at least match iBoxx spreads on average.

9.163 Furthermore, we note that, as HAL itself has observed, the CMA's estimate of the 20-year collapsing average of the iBoxx index implies a cost of embedded debt (4.85%) that is in excess of HAL's actual forecast cost of embedded debt for H7 (4.60%). This would seem to be further evidence that HAL can, on average, at least match the iBoxx index.

Relationship between gearing and the cost of debt

9.164 HAL has misrepresented our position on the relationship between gearing and the cost of debt. We have not commented on the relationship between credit

rating and gearing or suggested that "*gearing is a more important determinant of the cost of debt than credit rating*",[109]

9.165 We note HAL's references to papers by Oxera, which it suggests demonstrate that "*the cost of debt depends primarily on credit rating and not on the gearing of the issuing company*". As mentioned previously, we disagree with HAL's interpretation of the Oxera paper, which does not in fact dispute the relationship between gearing and the cost of debt. Rather, this merely posits the existence of a relationship between credit rating and the cost of debt, which we do not dispute. We think it is entirely reasonable to suggest that variations in the cost of debt for instruments and issuers of the same credit rating can vary based on the issuers' level of gearing. This is consistent with corporate finance theory.

9.166 However, we also note that for our Initial Proposals, this does not appear to be a material issue. As shown in this section, differences in gearing have not led to a material difference between HAL's actual cost of debt and that implied by the 20-year collapsing average of the iBoxx index.

Tenor and averaging period

9.167 We note CEPA's remarks regarding comparator company tenors. There could be various reasons why comparator companies issue at shorter tenors than HAL:

- their asset lives could be shorter, requiring shorter tenor debt in order to match assets to liabilities;
- they could face restrictions on their ability to issue longer-term debt due to the lower liquidity at the longer end of the yield curve in non-sterling markets; and
- they could be intentionally issuing debt at shorter tenors than their asset lives.

9.168 We agree with CEPA that the latter two explanations would result in an asset-liability mismatch that could increase the risk exposure of the relevant airports. However, we disagree with CEPA's characterisation of such mismatches as "inefficient treasury strategy". There could be legitimate reasons for this: particularly where these companies face constraints on their ability to issue at the longer end of the yield curve, or where it would be disproportionately expensive to do so.

9.169 We have also seen no evidence that asset-liability mismatches would lead to a higher equity beta, or if it did, that this increase would be material. As such, these reasons do not, by themselves, provide a reason for adopting an assumption for the tenor of the notional entity's debt that is shorter than its average asset life.

9.170 We also note the other explanations put forward by CEPA, namely that:

[109] HAL (2021), "H7 WACC Updates", Section 5.6.3.2.2.

- HAL issues longer-dated debt due to its higher gearing, which CEPA suggests necessitates that debt be more spread out to avoid bunched redemption dates; and
- HAL can issue longer term debt as it is lower risk than those comparators.

9.171 To date, we have not seen supporting evidence that there is a significant link in practice between gearing and tenor in the manner that CEPA has suggested. We also disagree with CEPA that HAL can definitively be said to be subject to lower risk than the comparators we have considered and would refer CEPA to the relative risk analysis carried out by Flint in the report accompanying these proposals on this point.

9.172 We observe that recent UK regulatory precedent strongly supports use of a 20-year tenor in this context, with the CMA, Ofwat and Ofgem all adopting this assumption in their respective determinations for PR19 and RIIO2. We note CEPA's observation that the CAR's 2019 determination for DAA assumed a 10-year tenor. However, this could once again reasonably be attributed to the limited liquidity of longer-dated bonds in the Euro market.

9.173 Overall, we do not see a strong case for moving away from the assumption we set out in the April 2021 Way Forward Document that we should use a 20-year debt tenor for the notional entity. We note that this is a longer tenor than our Q6 approach, and supports a notional benchmark that is broadly in line with HAL's actual cost of debt.

Reconciliation of HAL's investor update to its updated RBP

9.174 Noting CEPA's comments, we have requested that HAL provide a reconciliation between the forecast cash cost of debt for H7 of 2.58% presented in Table 6 of its updated RBP[110] and the nominal cost of debt of 0.68% set out in the June 2021 Debt Update[111].

9.175 HAL indicated that the nominal cost of debt set out in the June 2021 Debt Update excluded both:

- the impact of swap reprofiling; and
- accretions on index-linked debt and swaps.

9.176 HAL directed us to its H1 2021 financial results, which indicates that:

> "*The average cost of Heathrow SP's nominal gross debt at 30 June 2021 was 0.68% (31 December 2020: 0.87%). This includes interest rate, cross-currency and index-linked hedge costs and excludes index-linked accretion. Including index-linked accretion, Heathrow SP's average cost of debt at 30 June 2021 was 1.64% (31 December 2020: 1.48%). The increase in the average cost of debt since the end of 2020 is mainly due to an increase in inflation, partially offset by savings from further swap*

[110] HAL (2021), "H7 WACC Updates", Table 6.

[111] HAL (2021), "*Heathrow (SP) Limited's consolidated debt and cost of debt at 30 June 2021*", July.

reprofiling in the first 6 months of the year. Excluding the impact of our swap portfolio reprofiling initiated in 2020, Heathrow SP's average cost of debt at 30 June 2021 was 2.64% excluding index-linked accretion and 3.60% including index-linked accretion."[112]

9.177 We are, therefore, satisfied that HAL's estimate of its cash interest costs in H7 is consistent with published accounts. The difference between the figures cited in its June 2021 Debt Update and its updated RBP are largely attributable to the effect of HAL's swap reprofiling exercise. The small residual difference pertains to forecast changes over the course of H7 (such as the impact of maturing debt).

9.178 As we understand it, HAL has based its proposed cost of debt allowance on forecast interest costs excluding the effect of swaps: that is, excluding both the near-term reduction in interest costs and the subsequent increase in interest costs that result from this exercise. For the avoidance of doubt, consistent with HAL's approach, we do not intend to provide any uplift associated with potential higher future interest costs resulting from the swap reprofiling exercise; but we also do not intend to reduce the cost of debt allowance to reflect the corresponding reduction in near-term interest costs.

9.179 We have also asked HAL to provide a reconciliation of the impact of accretions set out in its debt update (1%)[113] with the impact of accretions set out in its updated RBP (around 2%).[114]

9.180 HAL has indicated that most of this difference results from differences in RPI inflation expectations in H7 compared with the prevailing level of RPI inflation on which the debt update was based.

9.181 To illustrate this, it has compared the accretion cost in its 2020 audited accounts of 0.6% with its forecast accretion cost in its RBP of around 2.0%: a difference of 1.4%. It notes that RPI inflation in 2020 was 1.5%, whereas HAL has assumed that RPI inflation over H7 will be 2.9%. Differences in inflation levels in 2020 compared with H7 account for around 0.9% of the difference in accretion costs between HAL's 2020 audited accounts and its RBP[115].

9.182 HAL has indicated that the remaining difference of 0.5% is due to its expectation that the proportion of its total stock of debt that is indexed to RPI (either directly or through swaps) will increase slightly over H7, due to the longer average maturity of index-linked debt.

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[112] HAL (2021), "*Heathrow (SP) Limited: Results for the 6 months ended 30th June 2021*", July, p10.

[113] The June 2021 debt update indicates that "*Average cost of debt is based on nominal values of debt and is calculated after the impact of interest rate, cross-currency and index-linked hedges but excluding index-linked accretion. Including index-linked accretion the cost of debt is 1.64%*". This compares to a cash cost of debt excluding accretions of 0.68%, implying that the impact of accretions is around 1%.

[114] HAL (2021), "H7 WACC Updates", Table 6.

[115] HAL has indicated that if the accretion cost set out in the 2020 audited accounts was to be restated using a 2.9% RPI inflation assumption, consistent with the forecast for H7, the resulting accretion cost would be 1.5% - or, 0.9% higher.

9.183 Overall, based on HAL's additional information, we are satisfied that the information provided in the RBP is consistent with audited accounts.

Impact of pandemic

9.184 We have further considered whether we should reflect the impact of the covid-19 pandemic through an uplift to the iBoxx indices we previously proposed.

9.185 Our analysis of the spread to benchmark at issuance of HAL's Class A bonds included bonds issued in 2020 and 2021, that is during the period of the covid-19 pandemic. This analysis suggested that HAL has been able to at least match the index, even when the covid-19 pandemic period is included. Furthermore, we previously noted that the 20-year collapsing average of the iBoxx A/BBB 10+ year indices results in an estimate of the cost of embedded debt that is similar to HAL's actual cost of embedded debt.

9.186 Together, these factors suggest that it would not be appropriate for us to include any uplift to reflect the impact of the pandemic.

Our Initial Proposals

9.187 We propose to estimate the cost of embedded debt for H7 based on the 20-year collapsing average yields on the A and BBB 10+ year non-financials indices, which were 4.39% and 4.80% respectively as at 18th June 2021. Deflating the average of these nominal yields (4.60%) by our proposed range for RPI inflation of 2.62% implies an RPI-real estimate of the cost of embedded debt of **1.98%**.

Cost of new debt

Context

9.188 New debt is defined as debt that we would expect HAL to issue in the course of H7 under the notional financial structure. The cost of new debt provides HAL with an allowance for servicing this debt. The impact of the cost of new debt on the WACC depends on the extent of new debt issuance that is expected in H7. Under current assumptions, we estimate that this impact is relatively limited: a 10bps increase in the cost of new debt results in a 1bp increase in the WACC.

9.189 In the April 2021 Way forward Document, we considered a range of issues in relation to the cost of new debt, including:

- the impact of the pandemic: we outlined a range of potential options we could consider;
- whether we should apply a New Issue Premium: we indicated that we were not minded to apply such a premium;
- whether we should apply an Index-Linked Premium: we indicated that we were not minded to apply such a premium;
- the relevant index we should use: we indicated that we were minded to adopt a consistent tenor across both embedded and new debt; and

- the weight we should place on new debt when estimating the cost of debt: we noted that the assumed quantum of new debt in H7 would be dependent on the broader assumptions regarding the price control framework. We said that we would confirm the weighting of new debt that we will assume in H7 at Initial Proposals.

Stakeholders' views

AOC/LACC

9.190 We have not received further representations from the AOC/LACC on the cost of new debt, other than the comments summarised previously regarding the appropriate length of debt tenor.

HAL

9.191 HAL has expressed various views in respect of the cost of debt which are summarised below.

HAL-specific spread over iBoxx

9.192 HAL has observed that the traded yields on its Class A debt are significantly in excess of the corresponding traded yields on the iBoxx A-rated index: at peak, HAL has noted that this difference is as high as 1.4%.[116] It has, therefore, argued for the inclusion of a HAL-specific spread equivalent to the six-month average difference between the traded yields on its Class A debt and those of the iBoxx A-rated index to end of March 2021 (1.06%).

Use of a forward adjustment

9.193 HAL has suggested that a forward adjustment is necessary to ensure that the forecast cost of new debt is accurate.

9.194 It has suggested that the CMA did not include a forward adjustment in the context of PR19 because:[117]

- it considered the impact was small for the period 2020-2025;
- it did not consider that the market data was a good forecast of the likely outturn; and
- mainly because Ofwat's debt indexation approach meant that there would be a correction for the actual outturn of debt costs.

9.195 HAL has suggested that this logic does not apply in the case of H7 because:

- the adjustment is not small in Heathrow's case; and
- forward rates provide the best forecast of future costs.

[116] HAL (2021), "H7 WACC Updates", Section 5.6.3.3.3.

[117] HAL (2021), "H7 WACC Updates", Section 5.6.3.3.2.

New issuance premium

9.196 HAL has stated that:

> "*The CAA to date has failed to engage at all with Heathrow on the evidence it has provided on these premiums. This is both disappointing and a failure of proper regulatory process*."[118] It has also said that, "*In CAP2139, the CAA appear to be questioning the existence of NIPs, and provide no supporting evidence for the view. We find this surprising and concerning*."

9.197 HAL referred to evidence it said it had previously presented in respect of its most recent bond issuances showing this was in the range 10-20bp.

9.198 HAL explained that:

> "*A company cannot issue new debt at the current market yield of its bonds, even though once issued, the spread of the new bond will be consistent", and, therefore, "given the approach we have set out above is effectively based on the current yield of Heathrow debt (i.e. the yield of the iBoxx plus the spread between Heathrow debt and the iBoxx) the NIP must be included to obtain a reasonable estimate of Heathrow's cost of debt at issuance."*[119]

Index-linked premium

9.199 HAL has maintained its previous suggestion that index-linked debt must be issued at a premium to nominal debt and that it is, therefore, reasonable to assume a 10bps premium in respect of index-linked debt.

9.200 It has further stated that:

> "The CAA have provided no evidence that this approach is not reasonable, nor have they provided any evidence that the cost of index linked debt is not higher than fixed debt. Indeed, the CAA approach effectively assumes that Heathrow can obtain index linked/fixed swaps at zero cost. Given this, we do not understand why the CAA has drawn the conclusions it has, and we consider that its approach is not robust."

HAL's July 2021 Updated RBP

9.201 HAL has estimated the cost of new debt as the combination of several components:

- the six-month trailing average of the iBoxx 10+ NFC A and BBB indices to end of March 2021 (2.09% nominal);
- a forward adjustment, based on UK nominal 20-year gilts, of 0.24%;

[118] HAL (2021), "H7 WACC Updates", Section 5.6.3.3.2.

[119] HAL (2021), "H7 WACC Updates", Section 5.6.3.3.2.

- a HAL-specific spread over the iBoxx index of 1.06%, based on the difference in trading yields between HAL Class A bonds and the iBoxx A-rated index;
- a New Issuance Premium of 0.1%-0.2%; and
- an Index-Linked Premium of 0.05%.

9.202 When combined, these values suggest a cost of new debt of **0.67% RPI-real**.

9.203 HAL has also assumed a weight on new debt of 12.5%, which it considers is consistent with a notional gearing of 60% and an average tenor at issuance of 20 years.

Our views

HAL-specific spread over iBoxx

9.204 In the light of HAL's comments, we have examined the benchmark spreads at issuance on HAL's Class A bonds issued since April 2020[120] based on publicly available data sourced from Bloomberg. We have then compared these with the benchmark spreads on the iBoxx A/BBB index. This is set out in Table 9.99.7 below.

9.205 This analysis suggests the spreads at issuance on these Class A bonds were 19bps below the corresponding iBoxx spreads. If only bonds issued in 2021 are considered, the HAL bond spreads were 7bps above the corresponding iBoxx spreads. It is also noteworthy that all bonds issued since April 2020 included embedded call or extendability options that would tend to increase their yield.

9.206 This evidence would suggest that the iBoxx continues to represent a suitable basis for the cost of new debt, and no HAL-specific premium over the index is warranted for new debt.

[120] This excludes a bond issued in March 2020. Inclusion of this bond does not materially affect the results.

Table 9.9: Issuance spread of HAL Class A nominal bonds issued since March 2020 compared with contemporaneous iBoxx spreads

Issue date	Amount outstanding (£)	Issuance spread	iBoxx spread	Difference
25/06/2021	66m	133.0	170.0	-37.0
13/04/2021	377m	191.0	174.8	16.2
13/04/2021	174m	128.0	150.8	-22.8
08/04/2021	430m	138.0	145.0	-7.0
13/10/2020	290m	67.0	166.3	-99.3
12/10/2020	645m	106.0	158.4	-52.4
Average	**330m**	**123.0**	**142.1**	**-19.1**

Note: the issuance spreads have been adjusted to reflect the sterling equivalent values for non-GBP issuance. We have excluded bonds for which data on sterling-equivalent issuance spreads are unavailable.

Source: Bloomberg data and Centrus analysis of currency swaps

9.207 There could be several reasons why traded yields on HAL's Class A bonds have been significantly in excess of the yield on the iBoxx index despite HAL being able to issue debt at comparable benchmark spreads to the iBoxx. These could include differences in tenor, the presence of embedded options in HAL's bonds, or potentially the existence of a New Issue Discount.

9.208 Even so, we consider that benchmark spreads at issuance, and not traded yields, of HAL's bonds represents the appropriate basis for determining the cost of new debt for H7. We have seen no evidence that traded yields on HAL's bonds have been a good predictor for the cost of new debt during the pandemic.

Use of a forward adjustment

9.209 In line with the CMA's Final Determinations in relation to PR19, we continue to view the application of a forward adjustment as inappropriate.

9.210 While we agree with HAL that the size of the adjustment could be sufficiently material to warrant consideration, we disagree that forward rates represent the best forecast of future spot rates. For example, applied in the manner HAL is suggesting, forward rates would have predicted future increases in spot rates during the last decade, at a time when spot rates exhibited a continuous decline.

9.211 We would also highlight that we are proposing to apply a debt indexation approach to correct for the actual outturn of the iBoxx indices. This reduces the need to apply a forward rate adjustment, consistent with the CMA's Final Determination on PR19.

New issuance premium

9.212 We reject HAL's statement that we have failed to engage with the evidence it has provided on the new issuance premium.

9.213 HAL had previously argued for a new issuance premium in the context of the Q6 price control determination. At that time, we responded to HAL by observing that we had based our allowance for the cost of debt on the yield-to-maturity ("YTM") at issuance, and that this:

> "reflects the actual fixed coupon payments that the issuer will have to make compared to the actual proceeds. It therefore automatically includes any premium that the issuer might have to pay".[121]

9.214 There was, therefore, no need for a further adjustment in respect of any potential new issuance premium.

9.215 This remains the case with our current analysis: we have compared the benchmark spreads on the iBoxx with the issuance spreads on HAL's Class A debt, and checked that they are comparable. The latter will automatically include any new issuance premium.

9.216 We have not seen any further evidence from HAL that suggests this approach would underestimate any new issue premium for H7. HAL has referred to a UBS estimate in respect of a single Sterling issuance, and a Deutsche Bank estimate in respect of a single Euro issuance. [122] We would, however, be cautious about placing weight on evidence from single issuances to set a notional cost of debt. We would also need to see clear evidence that this meant the new issue premium already in the cost of new debt was underestimated.

Index-linked premium

9.217 We have examined the spreads at issuance on HAL Class A index-linked bonds, based on publicly available data sourced from Bloomberg, to determine whether these have exhibited any premium compared with their nominal counterparts. As set out in Table 9.10 below, we found that HAL's index-linked debt generally exhibited higher issuance spreads than the relevant, contemporaneous iBoxx indices, although we note that the number of bonds available from which to draw inferences is small.

[121] CAP1115, Paragraph 6.28.

[122] HAL (2020), "Heathrow Airport H7 Revised Business Plan (Detailed)", December, Footnote 77.

Table 9.10: Issuance spread of HAL Class A index-linked bonds compared with contemporaneous iBoxx spreads

Issue date	Amt outstanding	Issuance spread	iBoxx spread	Difference
09/12/2009	460m	285.0	224.3	60.7
28/01/2014	50m	131.0	147.4	-16.4
24/07/2014	100m	217.3	150.7	66.6
28/01/2014	75m	131.0	147.4	-16.4
28/01/2014	75m	0.0	147.4	-147.4
Average	152m	222.6	194.3	28.3

Note: the issuance spreads have been adjusted to reflect the sterling equivalent values for non-GBP issuance. We have excluded bonds for which data on sterling-equivalent issuance spreads are unavailable.

Source: Bloomberg data and Centrus analysis of currency swaps

9.218 We previously indicated that even if index-linked debt was more expensive than nominal debt, HAL could presumably seek to finance itself through other means, such as nominal debt. However, we consider that there are benefits to consumers for HAL being able to access index-linked markets. Examples of these benefits include mitigating timing mismatches between nominal interest costs and a real WACC. It would, therefore, not be appropriate to penalise HAL unduly by preventing it from recovering costs associated with issuing index-linked debt.

9.219 We, therefore, propose to include an uplift of 5bps in respect of index-linked debt, in line with HAL's updated RBP.

Debt tenor

9.220 For the reasons outlined in paragraphs 9.164 to 9.170, we propose to retain our assumption of a 20-year tenor for the cost of new debt.

Impact of the pandemic

9.221 As discussed in Chapter 11, our financeability assessment compares the notional company's financial ratios against relevant thresholds for a BBB+ rating. We consider that this is consistent with the use of the average of the A- and BBB-rated 10+ year non-financial iBoxx indices for estimating the cost of new debt.

9.222 Our examination of the issuance spreads on HAL's Class A debt during the pandemic suggests that HAL has been able to issue at spreads comparable to those observed for the A- and BBB-rated 10+ year non-financial iBoxx indices.

9.223 We therefore do not see a strong case for introducing a pandemic-related uplift to the cost of new debt.

Our Initial Proposals

9.224 We propose to base our cost of new debt estimate on the six-month trailing average yield on the A- and BBB-rated 10+ year non-financial iBoxx indices, which was 2.12% and 2.37% respectively as at 17th May 2021. When the average of these values (2.24%) is deflated using our proposed RPI inflation assumption of 2.62%, this implies an estimate of -0.37% RPI-real.

9.225 We then add a premium in respect of index-linked debt of 5bp, which results in an estimate of -0.32% RPI-real.

9.226 We do not intend to introduce any uplifts for HAL-specific premiums, forward adjustments or new issuance premiums.

9.227 Based on the financing assumptions we have set out in Chapter 8, we assume a weighting on new debt of 16%-17%.

9.228 As outlined in previous consultations,[123] we intend to introduce a mechanism that will adjust HAL's opening RAB for H8 to reflect the difference between our cost of new debt allowance and the outturn value of the A- and BBB-rated 10+ year non-financial iBoxx indices.

9.229 We have developed a working model alongside these Initial Proposals that illustrates how this mechanism could function in practice, which we will make available to stakeholders upon request.

Issuance and liquidity costs

Context

9.230 Issuance and liquidity costs represent the additional costs associated with issuing debt that is incurred by issuers and not captured directly within the interest cost of the debt. Issuance costs represent one-off transaction costs associated with issuing debt and include, for example, legal costs and bank fees. Liquidity costs represent the cost of maintaining committed facilities to ensure that funding is available to repay bond principle as it comes due and to fund capex requirements. They are typically a prerequisite of accessing bond finance. We estimate that a 10bps increase in issuance and liquidity costs results in a 6bps increase in the WACC.

9.231 In its June 2020 report, Flint assumed that a reasonable estimate for the annual issuance and liquidity costs that the notional entity would incur was 0.1% of notional outstanding debt.[124] This was based on a review of precedent determinations for other regulated businesses where the efficient costs were estimated.

[123] For example, in the June 2020 Consultation, we indicated that we were intending to update the cost of new debt in-period based on the relevant index values in each year of the price control.

[124] CAP1940C, Section 4.

9.232 In the April 2021 Way Forward Document, we signalled that we had not received any substantial new evidence on the level of issuance and liquidity costs for H7 and were, therefore, minded to retain Flint's estimate.[125]

Stakeholders' views

AOC/LACC

9.233 CEPA, on behalf of AOC/LACC, previously proposed an allowance of 0.1% for transaction costs,[126] which we understand are equivalent to issuance and liquidity costs.

9.234 We have not received further representations on the level of issuance and liquidity costs from the AOC/LACC.

HAL

9.235 HAL has continued to advocate an allowance for issuance and liquidity costs that reflects its observed costs.

9.236 HAL stated that:

> "The CAA continues to ignore the evidence we have provided and assert that an allowance of 0.1% is sufficient for issuance and liquidity costs combined. The CAA has neither engaged with the evidence we have provided, nor undertaken any analysis to support its estimate of 0.1%. This is a serious failure of regulatory due process. Our approach clearly links the costs of liquidity to the size of the liquidity facility required for a notional company and the costs of such a facility. If the CAA believe the cost should be lower, they should explain this by reference to alternative assumptions that are grounded in market data."

HAL's July 2021 Updated RBP

9.237 HAL has retained its previous estimate of issuance and liquidity costs of 0.18%.

9.238 HAL's estimate of issuance costs were based on its actual issuance costs, and estimated to be 0.06%. HAL's estimate of liquidity costs were based on:

- a notional debt repayment profile;
- peak forecast H7 annual capex;
- an assumed facility term of 18 months; and
- a commitment fee and arrangement cost based on "typical" market costs.

9.239 Based on these assumptions, HAL estimated a liquidity cost of 0.12%.

[125] CAP2139A, paragraph 161.

[126] CEPA (2020), "H7 cost of capital estimation", November, Table 5.1.

Discussion of stakeholder feedback

9.240 We strongly disagree with HAL's assertion that we have not engaged with the evidence it has provided. We noted in the April 2021 Way Forward Document that HAL's estimate appeared to be largely based on its own actual costs.[127] This is the case:

- for issuance costs, in their entirety; and
- for liquidity costs, in respect of the scale of the arrangement and commitment fees assumed.

9.241 We also note that HAL has referred in its updated RBP to "typical market costs", though it has focused on its own actual costs. HAL has not sought to benchmark its own costs against other comparable issuers, or explain differences between its costs and those incurred by other companies such as the energy and water networks.

9.242 Consistent with the position we set out in the April 2021 Way Forward Document, we do not consider HAL's actual costs to represent an appropriate basis for setting regulatory allowances, since:

- such costs may not have been incurred efficiently; and
- enacting a policy of setting allowances based on actual costs would undermine incentives for HAL to continue to act efficiently.

9.243 In its June 2020 report, Flint clearly set out why the regulatory allowances for energy and water companies represented suitable benchmarks for HAL in respect of issuance and liquidity costs.[128] We note that, contrary to HAL's assertions, these allowances were based on actual market data for these companies. We are, therefore, satisfied that there is sufficient evidence to support an assumption of 0.1% for notional debt costs.

Our Initial Proposals

9.244 We propose to use an estimate of **0.1%** for issuance and liquidity costs combined.

Choice of a point estimate

Context

9.245 There is a degree of uncertainty associated with estimating each of the parameters used to assess HAL's WACC, so we have presented a range of plausible estimates for each parameter. To determine a single point estimate for the WACC for the H7 price control, we will need to determine the appropriate

[127] CAP2139A, paragraph 161.

[128] CAP1940C, Section 4.

balance between the risk of setting the WACC too high, leading to consumers paying too much; and setting the WACC too low, and undermining financeability.

9.246 In the April 2021 Way Forward Document, we set out various considerations that are relevant for the determination of a point estimate from within the reasonable range. These were informed by the CMA's Final Determination for PR19, and we consider that they remain relevant for H7:

- **the need to promote investment, both within a single price control and in the longer-term:** we indicated that this consideration might warrant setting a point estimate slightly above the midpoint of the range;
- **asymmetry in the choice of WACC parameters:** we indicated that we did not consider that this consideration warranted setting a point estimate above or below the midpoint of the range;
- **the balance of risk within the price control package**: we indicated that we did not consider that this consideration warranted setting a point estimate above or below the midpoint of the range; and
- **cross-checks on the level of WACC, including considering HAL's financeability**: we indicated that this consideration might warrant setting a point estimate slightly above the midpoint of the range.

Stakeholders' views

AOC/LACC

9.247 CEPA, on behalf of the AOC/LACC, has consistently advocated setting the point estimate of the WACC at the midpoint of the plausible range. It has previously highlighted that there is no justification for aiming up based on arguments around asymmetry.[129]

9.248 In its recent Technical Annex, it stated that:

> "[w]e agree with the CAA that no clear rationale exists for aiming up, and that where required, any adjustment should be minimal".[130]

9.249 CEPA also noted that there could are reasons to support the lower end of the range. For example, it noted that there may be an increase in the WACC driven purely by the difference between our notional gearing assumption of 60% and comparator gearing levels.

9.250 It has also noted that forward-looking and historical forward-looking evidence may indicate an expected TMR below the historical long-run average.

[129] CEPA (2021), "*CEPA Response on H7 WACC – February 2021*", February, Section 7.

[130] CEPA (2021), "*Way Forward – Technical Appendix*", June, p7.

HAL

9.251 HAL advocated setting a point estimate of the WACC above the midpoint of the range. It set out an approach that it considers reflects the CMA's approach in its Final Determinations for PR19. This approach reflected the need to ensure that:

- regulation should create a supportive long-term investment environment; and
- the allowed return is set in a way that encourages the right level of new investment.

9.252 HAL noted that the CMA carried out Monte Carlo analysis to calibrate the degree of aiming up they should include based on the potential range of cost of equity input parameters. This analysis suggested that a point estimate 25bps above the midpoint of the range would represent the 77th percentile of cost of equity outcomes.

9.253 HAL has suggested that following the same approach for HAL would suggest a larger absolute degree of aiming up, since the results of the CMA modelling would scale directly with the overall cost of equity.

HAL's July 2021 Updated RBP

9.254 HAL included a 50bps uplift to the midpoint of the range for the cost of equity in light of its observations above.

Our views

9.255 We disagree with CEPA's implicit characterisation of our position on aiming up in the April 2021 Way Forward Document. We did not explicitly rule out setting a point estimate above the midpoint of the range, and indeed highlighted at least two factors: (i) encouraging investment and (ii) securing financeability; that might justify doing so.

9.256 For the avoidance of doubt, we agree with HAL that the need to provide the right incentives and environment for investment may warrant setting the WACC above the midpoint of the range.

9.257 However, we do not agree with HAL that a higher cost of equity necessarily implies a greater degree of aiming up. That said, we consider that a wider range for the cost of equity implies a greater degree of uncertainty overall and, hence, a higher absolute quantum of "aiming up" in basis points terms might be warranted.

9.258 We are also aware that, even on a notional basis, HAL will face a significant financing challenge in H7, and this could potentially also warrant further aiming up.

9.259 On the other hand, we note that the application of a TRS mechanism substantially reduces HAL's risk exposure (and will mean extra costs for airlines and consumers in downside scenarios). This should, in principle, reduce the extent of aiming up required and/or suggests that the WACC could be set at or below our current mid-point estimate.

9.260 Our final decisions on these matters are likely to involve a significant element of regulatory judgment. Given the exceptional circumstances that the covid-19 pandemic has created for the aviation sector it may be appropriate for us to take into account a wider set of issues in reaching judgments on these matters than those identified by the CMA (and noted above) in the context of PR19. We will be guided by our statutory duties and likely involve finding the package of measures that delivers appropriate charges for consumers, allows for the funding of essential new investment and takes appropriate account of our duty with respect to HAL's financeability. We will set out our approach to these matters in Final Proposals.

Our Initial Proposals for the WACC range

9.261 The Table 9.9 below summarises our proposed ranges for each parameter and HAL's overall WACC. All figures are presented in RPI-real terms.

9.262 This range should support further consultation with stakeholders that will support us in setting a WACC that will further the interests of consumers by ensuring that:

- airport charges are no higher than is necessary;
- HAL is able to finance the investment it needs to carry out its activities and meet the reasonable demands for airport operation services; and
- we have appropriate regard for HAL's financeability.

Table 9.9: Summary of proposed WACC range and point estimate

Parameter	Upper bound	Lower bound
Gearing	61%	62%
Risk free rate	-1.8%	-1.8%
TMR	6.5%	5.2%
ERP	8.3%	7.0%
Asset beta	0.67	0.52
Debt beta	0.05	0.10
Equity beta	1.63	1.20
Post-tax cost of equity	**11.8%**	**6.6%**
Cost of new debt	-0.3%	-0.3%
Cost of embedded debt	2.0%	2.0%
Weight on new debt	16.6%	16.3%
Issuance and liquidity costs	0.1%	0.1%
Cost of debt	**1.7%**	**1.7%**
Vanilla WACC	**5.6%**	**3.6%**

Source: CAA

Next steps and implementation

9.263 We welcome views on any aspect of the issues raised in this chapter and will consider these representations as part of our work to develop Final Proposals.

9.264 The WACC is a key driver of the level of the H7 price control and is used in the calculations of the price control summarised in Chapter 11.

Chapter 10

Treatment of Tax

Introduction

10.1 As well as incurring operating and capital costs and providing a return to investment HAL will need to fund payments of corporation tax and so we make an allowance for such payments in setting its price control.

10.2 This chapter deals with our approach to these matters and:

- provides background information to our previous approach and consultations;
- summarises the views of stakeholders
- sets out our response to stakeholder feedback and makes initial proposals in relation to the treatment of corporation tax; and
- explains next steps and how we expect our policy to be implemented.

10.3 The approach that we take to dealing with corporation tax is important to furthering the interests of consumers. This is because consumers will be affected directly as tax feeds through into our calculations of airport charges. In deciding on an approach that furthers the interests of consumers we have also considered:

- how to support the financeability of the notional company in a proportionate way by setting reasonable tax allowances;
- incentivising HAL's management to run the business (including its tax affairs) efficiently;
- supporting new investment; and
- ensuring that the approach to tax allowances is consistent with our approach to other elements of the price control, and, where appropriate, over time.

Summary of our previous approach and consultations

10.4 In the Q6 price control review, and at previous reviews, we set allowances using a pre-tax cost of capital, in which we 'gross up' the cost of equity part of the WACC calculation by the prevailing corporation tax rate. We have sought during this H7 review to stand back and examine the merits of this approach.

10.5 In previous consultations, we discussed the advantages of an alternative approach that would involve setting a tax allowance in line with the forecast corporation tax payments estimated in our financial model and providing this

allowance through a stand-alone line item in our allowed revenue calculation (so that it is separate and distinct from our WACC allowance). The estimate of the tax costs of the notional entity we made was based on a notional gearing consistent with our approach to the calculation of the cost of capital and assessment of financeability.[131]

10.6 Alongside this "post tax" approach, we discussed a potential:

- "tax clawback mechanism", under which tax benefits accruing to HAL from adopting a higher level of gearing than the notional level would be returned to the users; and
- "tax uncertainty mechanism" to adjust the allowed tax costs to take account of unexpected changes that are outside reasonable management control, such as changes in the rate of corporation tax.

10.7 We also discussed potential alternatives to the post tax approach, such as a tax "pass through" mechanism, noting the potential difficulties in implementing such a policy.

Stakeholders' views

10.8 Airlines did not offer strong views on the approach for setting tax allowances.

10.9 HAL opposed a post tax approach. In its IBP and RBP, it presented arguments in favour of retaining the "pre tax" approach including:

- maintaining regulatory stability and promoting investor confidence;
- it would be simple to implement and understand and does not require detailed modelling of corporation tax liabilities; and
- it is a more transparent approach, because the actual tax payable may not be settled until many years after the tax year in question has passed.

10.10 HAL also argued against a post tax approach, making a number of points including that it:

- requires an accurate forecast to be made of the likely level of tax that HAL will pay;
- requires a forecast of the notional company's gearing to be "implemented properly"; and
- is difficult to validate in terms of the accuracy of the allowance because actual tax payments may not be settled until many years after the tax year in question.

10.11 HAL also referred to the Competition Commission's statements on tax allowances in 2007 in its report on the Q5 price control. The Competition Commission recommended in this decision that a simple pre tax WACC

[131] See Chapter 8 for a description of the notional approach to assessing financeability

approach should be used on the grounds that there is no good reason to change the approach adopted by the Competition Commission for previous price controls.[132]

10.12 HAL subsequently presented a response to the CAA's "H7 Price Control Model – approach to corporation tax"[133]. On the rationale for moving away from the pre-tax method, HAL argued that the two drivers for considering a change in tax policy are not valid. Specifically, it considered that:

- the expansion programme is currently on pause so is not relevant, and
- the pre tax approach has produced a reasonable tax allowance compared to HAL's actual tax liability over the course of Q6.

10.13 HAL suggested that the pre tax approach will continue to provide a reasonably accurate estimate of tax costs for the H7 period and referred to the expected profile of capital allowance claims to support this point.

10.14 On the benefits of the pre tax method, HAL argued that the pre tax approach has the following benefits:

- it ensures that, over time, the allowance will be accurate;
- it maintains the incentive for HAL to manage its tax affairs efficiently; and
- it does not introduce time inconsistency related to tax losses carried forward.

10.15 HAL also noted that companies have discretion over when to claim capital allowances which means the post tax method would need to make assumptions about when it is efficient to claim capital allowances. In addition, HAL noted the difficulties in forecasting structures and buildings allowances ("SBAs") given the lack of historical data[134] and that one-off adjustments are difficult to predict given the wide range of disallowances in prior years.

Our views

10.16 We agree with HAL that expansion of Heathrow is no longer a relevant factor and that this dilutes the previously stated rationale for moving away from the established pre tax approach. We also note that uncertainties around the trajectory of the recovery from the impact of the covid-19 pandemic means there

[132] Competition Commission economic regulation of the London airports companies (Heathrow Airport Ltd and Gatwick Airport Ltd) 2007. See https://www.gov.uk/cma-cases/heathrow-airport-ltd-and-gatwick-airport-ltd-price-control-review at Appendix F, page 4.

[133] CAP1876A: See https://publicapps.caa.co.uk/docs/33/CAP1876A%20CAA%20approach%20to%20taxation%20Grant%20Thornton.pdf

[134] HAL suggested a possible solution based on assigning the SBA to most of the non-qualifying pool (excluding land).

is a great deal of uncertainty about future passenger volumes, costs and revenues, which limits our ability to make an accurate forecast of HAL's future tax payments.

10.17 We note that airlines have not expressed strong views on tax policy and that HAL has been clear that its preference is to retain the pre tax approach to tax.

10.18 Given the current uncertainty, the scale of change elsewhere in the regulatory framework (e.g. the introduction of TRS, new incentives for capital expenditure, and OBR) there is some force in the arguments that it would be advantageous to maintain stability of other aspects of the regulatory regime, including in relation to the calculation of allowances for corporation tax.

10.19 Therefore, we have adopted a pre tax approach for these initial proposals but intend to continue to consider and consult the adoption of the tax clawback and tax uncertainty mechanisms referred to above, to ensure that the pre-tax approach is consistent with furthering the interests of consumers and having regard to HAL's financeability.

10.20 In particular, the existing pre tax approach does not consider the impact on the allowance of any differences arising from changes in the statutory rate of corporation tax. This means the tax allowance could result in either over or under remuneration of HAL's tax liabilities as a result of changes to tax rates that are wholly outside management control. We consider it in consumers' interests to have a mechanism which adjusts for these differences and that this can be implemented in a way without diluting the incentives on HAL's management to manage tax affairs efficiently.

10.21 We also note that the wider group of companies that HAL is a part of benefits from the tax shield created by the higher levels of gearing that the wider group maintains. The risks associated with this relatively high level of debt are for HAL and its shareholders to manage. Nonetheless there is an argument that consumers should share in the benefits of the associated tax shield. These arguments seem particularly strong in relation to the debt associated with the whole business securitisation which directly supports the licensee and its regulated activities.

10.22 Heathrow (SP) Ltd consolidates different parts of the core Heathrow operations including both Heathrow Funding Ltd, where activities regarding regulated airport bond financing occur, and Heathrow Airport Limited (HAL) which is the licensee. Therefore, it captures the financing activities of the regulated airport and the whole business securitisation and would reflect any relevant transactions across its subsidiaries that could impact its tax position.

10.23 HAL has provided a comparison that shows the allowance in Q6 was higher than the tax liabilities incurred by the Heathrow (SP) Ltd group companies. Our initial assessment is that this additional benefit accrued to HAL was likely to have been mainly driven by gearing levels of the actual company and consumers have received no benefit from this.

10.24 A tax clawback mechanism would reduce the incentive for HAL to increase gearing as a way to increase its returns. It would do so by returning to consumers a proportion of any additional tax benefits from this higher level of

gearing. While this would represent an important modification to our approach to setting the price control the sharing of the benefits of HAL's actual tax shield would appear to be a proportionate approach that would further the interests of consumers. It would not unduly undermine our focus on the notional entity or our broader approach where HAL bears the risks and rewards (where appropriate modified by benefit sharing) for the decisions it makes on its financial structure.

10.25 HAL would still retain full responsibility for managing its financial structure and maintaining financial resilience, as the claw back mechanism would only introduce a degree of sharing in respect of the benefits of tax allowances.

Our Initial proposals

10.26 As noted above it is important to establish a reasonable approach to estimating the tax allowances for the H7 price control period to ensure that consumers are directly protected from excess costs and that our approach reasonably supports HAL's financeability and incentives for new investment. The additional safety nets associated with a tax uncertainty mechanism and a tax clawback mechanism would potentially further assure us that a pre tax approach can further the interests of consumers by allowing for a transparent, proportionate and reasonable approach to calibrating tax allowances provided for by the price control.

10.27 We are putting forward the tax uncertainty mechanism and tax clawback mechanism as proposals that we consider have considerable merit, but recognising that they would be new to the regulatory framework for HAL, and the extent of other changes in the regulatory arrangements that are proposed, we will consider carefully whether to proceed with introducing these mechanisms after considering responses to these Initial Proposals. It is also possible that we would choose to implement only one of the mechanisms and not the other. Further details on how each of these mechanisms could work is set out below.

Tax uncertainty mechanism

10.28 The tax uncertainty mechanism could protect consumers from excess costs and ensure allowances were sufficient to support HAL in financing its activities. This mechanism would provide for changes to be made to HAL's tax allowances if there are changes in the statutory rate of corporation tax. The adjustment mechanism will allow for the tax allowance more closely to align with actual tax costs while retaining the benefits of the current arrangements and not undermining the incentives on HAL's management to manage its tax affairs efficiently.

10.29 This mechanism would be implemented through an adjustment to the RAB at the beginning of the H8 price control period. The adjustment would be calculated as a difference between the tax allowance calculated for the pre-tax WACC for H7 and the revised tax allowance that would have resulted from using the actual statutory corporation tax rates that HAL experienced during H7.

Tax clawback mechanism

10.30 The pre tax cost of capital is based on the level of gearing that we assume for the notional company. Where HAL's actual level of gearing is higher than this, absent such a mechanism, HAL could receive a benefit from being able to deduct the additional interest payments from its revenues in calculating its taxable profits. Bearing this in mind we intend to adopt a "tax clawback mechanism" that would share these benefits with consumers and help ensure that our tax allowance aligns more closely with actual tax costs while retaining the benefits of the existing approach.

10.31 We propose that the tax clawback mechanism would operate by adopting the steps set out below. We would:

- compare HAL's actual gearing[135] (year-end net debt to RAB) to the notional company's gearing.
- if HAL's actual gearing is higher than the notional company's gearing, recalculate the pre tax cost of capital allowed for H7 on the basis of the actual gearing;
- compare the resulting recalculated pre tax cost of capital calculated at step 2 with the pre tax WACC that we calculated on the basis of the notional company's gearing at the start of H7;
- calculate the difference in HAL's revenue during H7 between the revenues based on the pre tax WACC calculated at the start of the H7 period and the revenue that would have resulted from using the updated WACC calculated at step 2; and
- a share of the resulting difference in revenue would be deducted from HAL's RAB at the start of the H8 price control.

10.32 Our view is that consumers should share at least 50% of these benefits.

10.33 We note that there can be potentially different approaches in re-calculating the cost of equity and cost of debt, and these will need to be carefully considered. These include:

- the relationship between debt beta and gearing;
- the level of gearing to assume for de-gearing and re-gearing equity beta;
- the proportions of embedded and new debt to assume; and
- the appropriate assumptions for the cost of new and embedded debt at higher levels of gearing.

10.34 We intend to consider these issues in developing our Final Proposals, alongside an appropriate sharing factor.

[135] This would be the gearing of HAL, taking account of inter-company debts (such as to Heathrow Funding Limited). Since it would be calculated for HAL it would not take account of debt raised elsewhere in the group that is not on-lent to HAL.

10.35 We consider that, taken together, these proposals could further the interests of consumers by ensuring that, over the course of H7 (including setting the H8 price control) HAL will receive a price control allowance for its tax costs that is commensurate with its tax liabilities for that period. This should ensure that airport charges reflect an appropriate level of tax costs.

10.36 We do not consider that the introduction of the tax uncertainty mechanism or the tax clawback mechanism will necessarily undermine the incentives on HAL's management to run the business (including its tax affairs) efficiently, given the tax uncertainty mechanism adjusts for factors outside HAL's control and the tax clawback mechanism shares benefits between HAL and consumers.

10.37 While the introduction of these mechanisms will make the regulatory regime more complicated, we consider that these changes could be proportionate to furthering the interests of consumers. We also recognise that these arrangements will lead to the benefits of these mechanisms accruing to future consumers during H8, but consider that these arrangements represent the best way to ensure that consumers are not exposed to costs relating to an inappropriate level of tax allowances.

Next steps and implementation

10.38 We welcome the views of stakeholders on any of the issues raised in this chapter. We consider that our initial proposals in respect of tax, and in particular the uncertainty and tax clawback mechanism, have considerable merit but recognise that they are relatively new ideas. We will consider the views of stakeholders carefully on these matters as part of our work to develop Final Proposals.

10.39 In Chapter 9 we show how the H7 cost of capital would be calculated. Adopting a pre-tax approach to corporation tax allowances means that the cost of equity is scaled up such that it provides an appropriate allowance for corporation tax.

10.40 Table 10.1 below shows the currently announced and projected rates of corporation tax in the UK. These are the rates that we have used in calculating the level of charges for our Initial Proposals as set out in Chapter 11.

Table 10.1: UK corporation tax rates

	2022	2023	2024	2025	2026	Weighted average
Rate	19%	25%	25%	25%	25%	23.8%

Source: gov.uk[136]

10.41 Table 10.2 below shows how we have uplifted the vanilla WACC to a pre-tax WACC. All figures are presented in RPI-real terms. The table below uses the

[136] See https://www.gov.uk/government/publications/corporation-tax-charge-and-rates-from-1-april-2022-and-small-profits-rate-and-marginal-relief-from-1-april-2023/corporation-tax-charge-and-rates-from-1-april-2022-and-small-profits-rate-and-marginal-relief-from-1-april-2023

average H7 gearing and an average of the tax rates projected for H7 to illustrate overall WACC. The tax rate and gearing may vary each year.

Table 10.2: uplifting of vanilla to pre-tax WACC

Parameter, RPI-real	Upper bound	Lower bound
Gearing	61%	62%
Post-tax cost of equity	11.8%	6.6%
Tax rate	23.8%	23.8%
Pre-tax cost of equity	15.5%	8.7%
Cost of debt	1.7%	1.7%
Vanilla WACC	**5.6%**	**3.6%**
Pre-tax WACC	**7.1%**	**4.4%**

Source: CAA

10.42 We will also consider what further detail it is appropriate to provide in respect of final position on the tax clawback and uncertainty mechanisms in our work to develop Final Proposals.

Chapter 11

Calculating a price cap and financeability

Introduction

11.1 This chapter:

- discusses stakeholder responses to the April 2021 Way Forward Document on financeability and affordability;
- summarises our views on these responses;
- sets out the assumptions we have made to derive Initial Proposals for the level and profile of the charges for that HAL will be able to levy within the H7 price control;
- discusses the affordability of these charges; and
- discusses our assessment of debt and equity financeability in the light of the assumptions we have made on costs and charging levels.

11.2 These issues are central to the CAA's considerations in discharging its duty to further the interests of consumers. In setting the level of the price control we must consider financeability and HAL's ability to finance new investment, but also be mindful of ensuring that HAL's charges are no higher than is appropriate so to further consumers' interests.

Background

11.3 In furthering the interests of consumers we are required to "have regard to" a number of matters, including the need to secure that HAL is able to finance its provision of airport operation services. This is not, however, a direct duty to ensure that in all circumstances HAL is financeable, but rather is to consider financeability as part of how we further the interests of consumers. We refer to this as the "financeability duty".

11.4 As explained in Chapter 8 our approach to furthering the interest of consumers and discharging the financeability duty is to set a price control that facilitates the "notional" company[137] in HAL's position having ongoing access to sufficient capital to allow it to:

- develop maintain and operate Heathrow airport, including supporting appropriate quality of service; and

[137] A description of the "notional company" and the reasons why we use it as a basis of our approach to regulating HAL can be found in Chapter 8.

- doing so in a cost-effective way to meet the reasonable demands of consumers.

11.5 We also cannot provide an absolute guarantee that the notional entity will be financeable in all possible scenarios. In particular, given the size of HAL's RAB we cannot guarantee the notional entity would be financeable if passenger volumes were to be very low for an extended period of time.

11.6 We have been mindful of the importance of both financeability and the affordability of charges not only in the analysis set out in this chapter but more generally in developing proposals for the H7 price control, including in respect of:

- the allowed cost of capital (see Chapter 9);
- regulatory depreciation (see Chapter 8); and
- the TRS mechanism (see Chapter 1).

Summary of our previous consultations

11.7 We have presented our policy thinking and illustrative analysis in respect affordability and financeability in several previous consultations, most recently the April 2021 Way Forward Document.[138]

11.8 In relation to debt financeability, the April 2021 Way Forward Document noted the importance of a "reasonable investment grade credit rating".[139] We presented illustrative analysis suggesting that credit metrics for the notional entity would be under pressure in 2022 but would return to levels consistent with a BBB+ or A- credit rating in the later years of H7. We also noted that rating agencies would likely consider this trend in addition to the specific values of the credit metrics in individual years.

11.9 Our illustrative analysis also looked at the potential impact of a full RAB adjustment on financeability. We concluded from that analysis that a full RAB adjustment does not materially influence whether or not HAL is financeable under the notional financial structure. This is because a RAB adjustment does not significantly support cash flow which is the key constraint on the notional company achieving a reasonable investment grade credit rating the early years of H7.

11.10 The April 2021 Way Forward Document also presented our illustrative analysis of equity financeability metrics as well as the level of charges. We noted the scope for the notional entity to stop paying dividends for a period and to reduce its level of gearing.

11.11 We also set out the tools available to us to manage affordability, namely:

[138] See https://publicapps.caa.co.uk/docs/33/HAL%20Economic%20Regulation%20Consultation%20on%20the%20Way%20Forward%20(CAP2139).pdf

[139] See paragraph 3.36 of our April 2021 Way Forward Document

- re-profiling revenues between multiple price control periods through the use of a depreciation adjustment; and
- re-profiling revenues within the H7 period.

We presented analysis that considered the impact of different re-profiling options on a range of financeability metrics.

Stakeholders' views

11.12 In both its Revised Business Plan and its response to the April 2021 Way Forward Document, HAL stated that a stable and investable H7 framework which can deliver in the interests of consumers requires a financeability policy that enables "actual HAL" (not the notional entity) to return to achieving an A- credit rating by the end of H7. HAL stated that this was necessary to finance its activities during the H7 period efficiently.

11.13 HAL described how investors assess HAL's credit worthiness and the impact of the S&P downgrade (from A- to BBB+) and the potential impact of any further downgrades. HAL presented analysis suggesting that a one "notch" downgrade would cost consumers £190m over the lifetime of £3bn debt financing and suggested that this £3bn of debt would need to be raised in the next two years. HAL also described in qualitative terms the importance of being able to access non-Sterling debt markets and the importance of an A- credit rating in being able to obtain the swaps necessary to allow debt issuance in non-Sterling currencies.

11.14 HAL said that the structural creditor protections provided by the covenants contained in its financing platform produce a one notch uplift in the rating assigned by credit rating agencies. HAL went on to argue that this implied that for the notional entity to be rated at BBB+ it would be necessary to achieve credit metrics which, for Heathrow Funding Limited, would be consistent with an A- rating.

11.15 HAL referred to CAA statements about efficient investment and the need for an A- rating by referring back to the January 2020 Consultation. HAL quoted the CAA's words that:

> "a credit rating materially lower than the existing A- rating referred to above would not be compatible with efficient financing"

although did not place this statement in the wider context of expansion in which it was made.[140]

11.16 HAL stated that the CAA should not infer from HAL's debt issuance profile since the onset of the covid-19 pandemic that HAL is in a secure position to continue to raise the debt it will require to refinance maturing debt cost effectively. HAL suggested that its debt issuance in the last 18 months was only possible due to:

[140] The statement HAL quoted was made when HAL was expecting to be undertaking significant amounts of capex in H7 to support expansion and that it would, therefore, need to raise a much larger volume of debt than is currently expected for H7.

- investors seeing the covid-19 pandemic as a temporary issue; and
- issuing debt with higher spreads than prior to the pandemic.

11.17 HAL suggested that credit rating agencies would not be able to "look past" both the pandemic and lower than threshold levels for credit metrics in the early years of H7. HAL referred to a comment made by Fitch Ratings that it:

> "expect[s] that this will enable Heathrow to deleverage below our rating sensitivities of 8x for the class A and 9x for the class B by 2022".[141]

11.18 HAL presented the data set out in Table 11.1 on the credit metrics it says are consistent with the actual entity maintaining an A- credit rating.

Table 11.1: Summary of credit metric thresholds shown in HAL's Updated Revised Business Plan

Credit metrics	Thresholds
FFO/Net debt (S&P)	>8%
Net debt/RAB (S&P)	<70%
PMICR (Fitch)	>1.6x
Net debt/EBITDA (Fitch)	<8.0x

Source: Heathrow, Standard & Poor's, Fitch

11.19 HAL also pointed out that the thresholds referred to in the table above are those that would trigger a downgrade and that an appropriate level of headroom above these levels is required to maintain the credit rating.

11.20 HAL set out its views on the revenue amounts it required both in 2022 and on average in H7 to achieve these credit metrics. In doing so, HAL noted that dividend forbearance is not an acceptable approach to achieving debt financeability on an ongoing basis. HAL suggested that, in order to achieve both debt and equity financeability, the CAA would need to make use of a range of other levers, including depreciation, the cost of capital and profiling of revenues.

11.21 HAL suggested that there should be a stepped increase in charges between 2021 and 2022 with a declining profile of charges over the rest of H7 as a way to support financeability. HAL noted that bringing cash flows forward in this way would support credit metrics and that an injection of cash from shareholders would not provide the same support.

11.22 In respect of equity financeability, HAL's response to the April 2021 Way Forward Document stated that the CAA had not explained what would be a "reasonable timescale" for the return to it paying dividends. HAL suggested that the CAA had not justified why there should be any assumption that the notionally financed company would pause paying dividends. HAL followed on by noting that, in other sectors, regulators have assumed dividends will continue to be paid and referred, in particular, to water companies and the CMA's PR19

[141] Page 6 of section 5.7 of HAL's Updated Revised Business Plan

determination. HAL suggested that the CAA should use the CMA's approach as a starting point for any financeability analysis. HAL also highlighted the CMA's concerns that, if expected returns are too low, then it may deter new investment.

11.23 To support its updated business plan, HAL commissioned a research agency to undertake acceptability testing research. A key objective of this research is to understand consumers' acceptability of potential resultant airport charges in H7 in exchange for service improvements. HAL uses this research to reach a number of conclusions in its updated business plan including: the current airport charge is good value for money; consumers value and are willing to pay more for improved services; and that the acceptable level of airport charge in exchange for the service improvements in its "Optimal Plan" ranges between £29.89 and £39.59.

11.24 Among airlines, BA stated that analysis conducted by the airlines suggested that prices should fall in H7. BA suggested that depreciation deferral or revenue re-profiling may be appropriate as a way to support affordability, so long as the underlying assumptions on costs and commercial revenues (or price control building blocks) are set correctly.

11.25 BA set out its view that the price in H7 needs to represent the value customers get and that affordability cannot be defined in terms of a specific level of price. BA suggested that a large step increase in the level of the charge between 2021 and 2022 is unlikely to be justified on the grounds that rating agencies would tend to "reverse out" the effects of NPV-neutral reprofiling of revenue.

11.26 BA and the LACC/AOC both suggested that it was appropriate that dividends should be reduced or paused with cash flow instead being used to reduce HAL's level of gearing. BA supported this statement by stating that we should not be persuaded by HAL that it is entitled to a certain level of dividends.

11.27 BA also agreed with our statements in the April 2021 Way Forward Document that a period in which no dividends were paid would be consistent with market precedent and expectations. BA also noted that many participants in the aviation industry have been able to raise new equity despite the context of dividends being a remote prospect in the short term.

11.28 In respect of financeability, BA noted that there is no licence requirement for HAL to maintain an investment grade credit rating. BA went on to suggest that this allows us the freedom to choose "*the most efficient possible financing incentive structure.*"

11.29 BA also noted that "*a company's value is not affected by its dividend policy*", citing a corporate finance textbook on this topic,[142] and argued that this meant it was reasonable for dividends to be suspended while cash flow is retained to reduce gearing.

[142] BA cited Brealey, R. A., Myers, S. C., & Allen, F. (2006). Principles of corporate finance, 8th edition. New York: McGraw-Hill International

Our views

11.30 In formulating our approach to financeability for these Initial Proposals we have considered our statutory duties and taken into account the views of stakeholders and the broader context of the H7 price control review. In particular, the fact that this is a time of significant uncertainty as the aviation sector recovers from the impact of the covid-19 pandemic. While there are indications that the recovery should continue in the coming months, the possibility remains that the covid-19 pandemic could cause further disruption to the industry and we need to be responsive to the situation as it evolves.

11.31 As described in Chapter 8, we are seeking to evolve our existing policy where providing a reasonable degree of predictability and stability is consistent with our statutory duties. Our approach to financeability is one area where in broad terms we consider that appropriate evolution of the policy applied in Q6 will further the interests of consumers and reasonably support HAL's financeability. We are also very mindful that our approach takes into account current best practice across the UK economic regulators.

11.32 We set out below our views on the range of issues that were highlighted by stakeholders and are key to both furthering the interests of consumers and to HAL's financeability:

- the profile of price control revenues and affordability;
- debt financeability; and
- equity financeability.

Profile of price control revenues and affordability

11.33 We are not convinced that HAL's approach of using acceptability testing research to justify increases in airport charges is robust. We note that irrespective of the ability or willingness of passengers to pay, an increase in the price of a service represents a worsening of value for money and can create consumer detriment. Just because HAL thinks it *can* raise charges, that doesn't automatically mean it *should* raise charges. Further, we consider that even in terms of a narrower assessment of acceptability testing only limited weight can be placed on HAL's research for the following reasons:

- consumers' limited understanding of the airport charge,
- the lack of context given to respondents such as airport charges at other similar airports; and
- the limiting factors[143] to this research that HAL itself acknowledges.[144]

[143] See updated RBP chapter 4.0

[144] Our review of HAL's consumer acceptability testing research has been supported by FTI Consulting. Their report is published alongside our Initial Proposals www.caa.co.uk/cap2265F

11.34 Given BA's comments about how reprofiling should only be considered once we are confident that the building block allowances are all properly set, we consider it would be helpful to clarify our thinking on reprofiling. We see reprofiling as a way to help manage affordability and financeability by adjusting the periods in which revenue is generated. We do not propose that reprofiling of revenues be used to justify the inappropriate setting of building block allowances.

11.35 We note BA's suggestion that rating agencies commonly reverse out NPV-neutral reprofiling adjustments. For the avoidance of doubt our financeability analysis takes a conservative approach to these matters. As we explain below we have profiled airport charges per passenger so there is an initial increase in charges and then charges are flat in real terms. As volumes are forecast to be lower in 2022 (and so unit costs will be higher) this tends to reduce the credit metrics (relative to those calculated from the unprofiled revenues) at the point when they are most constrained. Calculating credit metrics on the basis of profiled revenues is, therefore, the more prudent approach in terms of financeability and we would expect credit rating agencies to adopt a similar approach.

11.36 We discuss further the appropriate profile of airport charges over the H7 period later in this chapter.

Debt financeability

11.37 Bearing in mind we are no longer focusing on capacity expansion but instead the recovery of the two runway airport from the impact of the covid-19 pandemic, our analysis of debt financeability suggests that returning to an "A-" credit rating during the course of H7 is not a priority for the notional entity. To have a high degree of confidence that the notional entity would be rated A- by the end of H7 would be costly for consumers as it would require significant headroom above the targets we have identified for credit metric thresholds as part of these Initial Proposals.

11.38 Our analysis shows that the notional entity will need to raise £1.9bn[145] (nominal) in total during H7, equivalent to an average of approximately £0.4bn each year. Analysis conducted by our strategic financial advisors, Centrus, showed that the largest BBB/BBB+ issuers in the UK have issued on average £0.3bn-£2.5bn (nominal) over the last three years. We note that the last three years have been affected by the impact of the covid-19 pandemic but consider this evidence suggests that the notional entity would very likely be able to issue all the debt it needs to at a BBB+ or BBB rating.

11.39 We note HAL's estimate of the £190m (nominal) cost of issuing debt with a BBB+ rating rather than A-. We recognise that debt issued at BBB+ will be more expensive than debt issued at A- and HAL's method for estimating the difference in bond coupons is reasonable. However, our analysis of the notional company suggests that in 2022 and 2023[146] it will need to issue no more than £0.4bn

[145] The precise amount required and the profile of the expected drawdowns differs between the top and bottom ends of our range but the total amount required is £1.9bn in both cases.

[146] Namely the periods which HAL considers when producing its estimate of £190m

(nominal) rather than the £3bn (nominal) HAL suggests it will need to issue. A key driver in the different projected amounts of debt issuance is dividends as HAL expects to pay larger dividends than we model.[147]

11.40 This implies that the incremental cost to consumers of a one notch downgrade would be approximately £25m.[148] Our analysis suggests that adding £25m to HAL's cash flow in 2022 would improve the ratio of FFO to net debt by approximately 30bps. This effect would last for only one-year and so would be highly unlikely to result in the notional entity being awarded a one notch upgrade to its credit rating. Consequently it appears that the more cost effective option for consumers would be for HAL to maintain a lower credit rating for a period of time.

11.41 HAL also referred to the importance of being able to access non-GBP debt markets. We recognise the importance of having a diversified range of sources of finance and that issuing in non-GBP currencies can provide some diversification. In the context of H7, when we calculate that the notional entity will be issuing £1.9bn in total across the five-year period, it is not clear that there is any need to access non-GBP debt markets.

11.42 We broadly agree with HAL's point relating to the one notch uplift to credit rating provided by the creditor protections in its financing platform. This does not change our view that the notional entity would remain financeable with BBB/BBB+ debt since, as described above, we consider that the evidence indicates that, even at BBB, the notional entity would be able to issue sufficient debt.

11.43 We note that in carrying out our financeability assessment we are trying to find a reasonable proxy for the rating thresholds that would apply to the notional entity. This involves a certain amount of complexity:

i) the thresholds that are relevant for the notional entity may not be identical to those that apply to the actual entity / Heathrow Funding Limited given the complications created by the whole business securitisation and the different levels of gearing; and

ii) rating agencies will use their judgment in making their assessments and will consider qualitative factors such as the TRS mechanism and the length of the price control in so doing. These qualitative factors can be highly material to rating agencies' assessments but, due to their subjective

[147] We note that HAL's estimate of the cost of a credit rating downgrade referred to a need to issue £3bn of debt over two years while the models HAL submitted with its Updated RBP show that the notional company would draw £0.4bn (in the case with a £300m RAB adjustment) or £2.1bn (in the case with a full RAB adjustment). HAL has also provided us analysis, separate to the Updated RBP that shows it would issue £6.5bn in the H7 period. We note that the key driver of the difference between our estimate of debt issuance requirements in 2022 and 2023 is dividends. The model HAL submitted for the full RAB adjustment case in its Updated RBP assumed dividends of £2.8bn would be paid in 2022 and 2023 while our analysis suggests that none would be paid. All figures in this note are presented in nominal terms.

[148] Calculated by scaling HAL's estimate of £190m according to our view of the nominal amount of debt the notional entity would need to issue.

nature, we cannot be sure of their precise impact on the rating assessment.

11.44 These issues are addressed further below in our assessment of debt financeability.

Equity financeability

11.45 We have considered HAL's comments in respect of equity financeability and the timetable for which it is reasonable to assume a return to payment of dividends. As described in Chapter 8, our assessment is that a resumption of dividend payments for the notional company in 2023 or 2024 would be consistent with our statutory duties where we have a primary duty to further the interests of consumers and where the need to have regard to the need to ensure financeability is one of our secondary duties.[149] We also consider that resumption of dividend payment in 2023 or 2024 would be broadly consistent with market expectations based on the reports referred to in Chapter 8.[150]

11.46 Nonetheless, we have not set a target year in which it would be appropriate to assume payment of dividends as the actual payment of dividends is a matter for HAL's management. We also note that there is significant uncertainty about the path of the recovery at Heathrow and this may also impact on the timing of dividend payments.

11.47 HAL's suggestion that we should follow the CMA's approach in the PR19 appeal to the determination of dividends does not seem appropriate. The PR19 inquiry related to water companies which have not been affected by the covid-19 pandemic in the same way as HAL or the aviation sector more widely. We note the points made by BA on the profile of dividends and agree that the profile of dividends does not necessarily affect a company's value. We are content that given the present circumstances a short period with no dividends is a reasonable assumption to make.

11.48 In the medium to longer-term we consider that it is important that the notional entity is able to pay dividends, once gearing has been restored to an appropriate level.[151] The cash flows available for payment of dividends constitute an important buffer for debt financeability and act as an incentive on management to continue to invest and to maintain service quality, both of which benefit consumers.

11.49 We note HAL's references to the CMA's statement about how "*expectations of insufficient investment returns based on the current cost of capital may discourage companies*" from investing. These comments were made in the

[149] See Appendix A

[150] As we note in paragraph 11.80, one of the roles played by the projected dividends is to bolster debt financeability by providing a buffer. The payment of dividends is not guaranteed and, even in the notional company, will depend on achieving sufficient financial performance. The level and timing of dividends paid by the actual company are a matter for HAL's management to determine based on the performance of the actual company.

[151] See Chapter 8 for our initial proposals in respect of gearing.

context of the CMA's assessment of the cost of capital and relate to the importance of setting the cost of capital at the appropriate level. They do not appear to relate to the payment profile of dividends.

11.50 We have considered whether it would be appropriate to assume that shareholders in the notional entity inject additional cash to support the business during the H7 period. Our analysis shows that no such support is required for the notional entity during H7.[152] The notional entity does not require a shareholder injection of cash as a means of achieving adequate liquidity (since it achieves that anyway) and such shareholder support would not materially improve credit metrics (which are the most constrained part of the financeability assessment). We note, however, that many participants in the aviation sector, including HAL, have obtained such shareholder support since the onset of the covid-19 pandemic, in contrast to the results of our modelling of the notional entity.

Initial proposals

The profile of price control revenues and affordability

11.51 We have calculated the level of charges for our Initial Proposals using the same building block approach as used in Q6 and in other RAB-regulated sectors. This involves allowances for operating costs, the allowed return on the RAB and regulatory depreciation. We also take account of commercial and other revenues and forecasts of passenger numbers to derive price-controlled airport charges per passenger.

11.52 Given the uncertainty created by the pandemic, we set out a range for airport charges based on lower and upper quartile assumptions of operating costs and commercial revenues, and our range for allowed returns. These variables have been chosen as they are key drivers of affordability and financeability and together produce a reasonable indicative range for the price control. Clearly in the work necessary to support the development of Final Proposals other variables and assumptions may also change.

11.53 Another key driver of price levels is the forecast of passenger numbers. We have based our analysis on a central forecast as per the assessment set out in Chapter 2. If our views on these matters change significantly in the run up to final proposals then these could have a significant impact on the level of the price control, or in more extreme scenarios our overall approach to setting the control.

11.54 Table 11.2 below presents a summary of the price control building blocks and the resulting level of charges.

[152] Although this is the position on our modelled notional basis, of course it is a matter for HAL's shareholders to determine whether they consider it appropriate to provide additional support to the actual financing structure by way of equity support.

Table 11.2: summary of our initial proposals

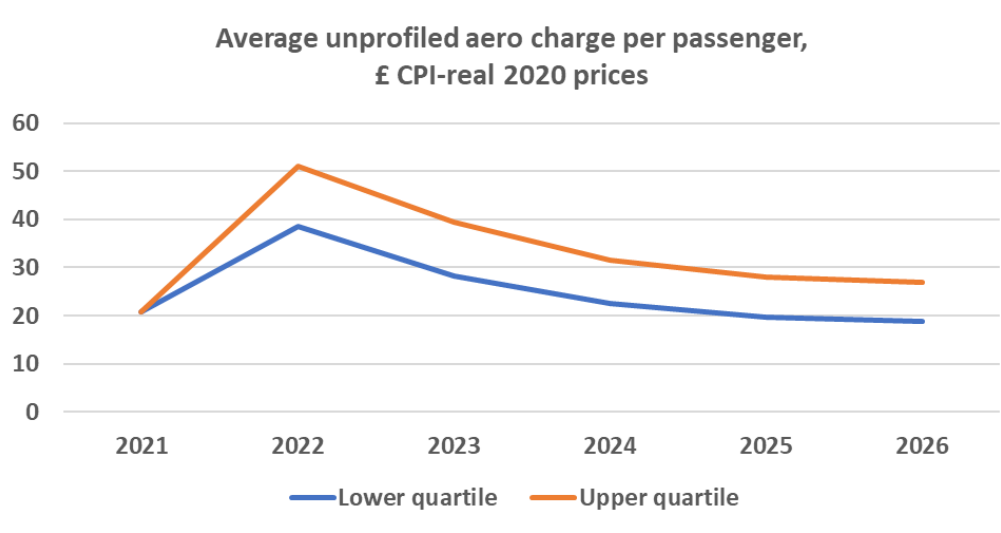
Lower quartile						
£m 2020, CPI-real	**2022**	**2023**	**2024**	**2025**	**2026**	**Total[153]**
Operating costs	1,015	1,085	1,134	1,158	1,163	5,555
Regulatory depreciation	929	916	870	888	902	4,504
Allowance for asymmetric risk	29	28	28	27	27	138
Allowed return (incl. tax)	631	665	696	684	673	3,349
Gross revenue requirement	**2,604**	**2,694**	**2,727**	**2,757**	**2,764**	**13,547**
Commercial revenues (incl. ORCs)	-795	-957	-1,075	-1,179	-1,216	-5,222
Cargo revenues	-55	-38	-24	-14	-11	-142
Net revenue requirement	**1,754**	**1,699**	**1,629**	**1,564**	**1,537**	**8,182**
Passengers (m)	46	60	72	79	82	339
Unprofiled yield per pax (£)	38.44	28.22	22.62	19.71	18.74	25.55
Profiled yield per pax (£)	**24.18**	**24.29**	**24.49**	**24.72**	**24.95**	**24.52**
Upper quartile						
£m 2020, CPI-real	**2022**	**2023**	**2024**	**2025**	**2026**	**Total**
Operating costs	1,085	1,164	1,225	1,264	1,283	6,022
Regulatory depreciation	929	916	870	888	902	4,504
Allowance for asymmetric risk	25	25	24	24	24	122
Allowed return (incl. tax)	1,011	1,130	1,115	1,097	1,079	5,431
Gross revenue requirement	**3,051**	**3,235**	**3,234**	**3,273**	**3,287**	**16,079**
Commercial revenues (incl. ORCs)	-708	-845	-957	-1,039	-1,064	-4,614
Cargo revenues	-15	-14	-12	-11	-11	-63
Net revenue requirement	**2,327**	**2,376**	**2,265**	**2,222**	**2,212**	**11,402**
Passengers (m)	46	60	72	79	82	339
Unprofiled yield per pax (£)	51.02	39.46	31.45	28.00	26.97	35.38
Profiled yield per pax (£)	**33.92**	**34.08**	**34.35**	**34.68**	**35.00**	**34.41**

Source: CAA

[153] The figures in the 'total' column for unprofiled yield per pax and profiled yield per pax are averages rather than totals.

11.55 Figure 11.1 below shows the unprofiled charges for H7 for both the upper and lower ends of our range:

Figure 11.1: unprofiled charges



Source: CAA, HAL Airport Charge consultation 2021

11.56 Figure 11.1 shows that, without any re-profiling, the charge would be high (and a very material increase compared to 2021) in 2022 with even the low end of our range leading to a charge of £38.44.This would be a real increase of about 75% on the level of charges at the end of Q6. It is difficult to reconcile this level of increase as being consistent with the interests of consumers as airlines would likely fund this through higher ticket prices. In addition to this detriment to the interests of consumers in relation to the costs of AOS, large increases in airport charges in 2022 could constrain the recovery in services at Heathrow as airlines and/or passengers reduced demand for AOS during this critical year in the recovery of the sector.

11.57 While the relationship between airport charges and ticket prices is not a simple one, a material increase in the cost base that airlines face may act to impede the recovery in aviation services following the pandemic. For example, the increase in airport charge could lead to certain marginal routes becoming uneconomic and customers seeking those routes finding their needs unmet.

11.58 Bearing the above in mind, we consider there is a strong argument for re-profiling charges to support affordability in the early years of the price control and that more stable prices would further the interests of consumers both at the start and throughout the H7 period. As part of considering the profile of charges, we also need to determine the initial level of charges. Historically we have made what is known as a "P0" adjustment[154] to charges to increase or decrease charges in the first year of a price control period compared to the last year of the

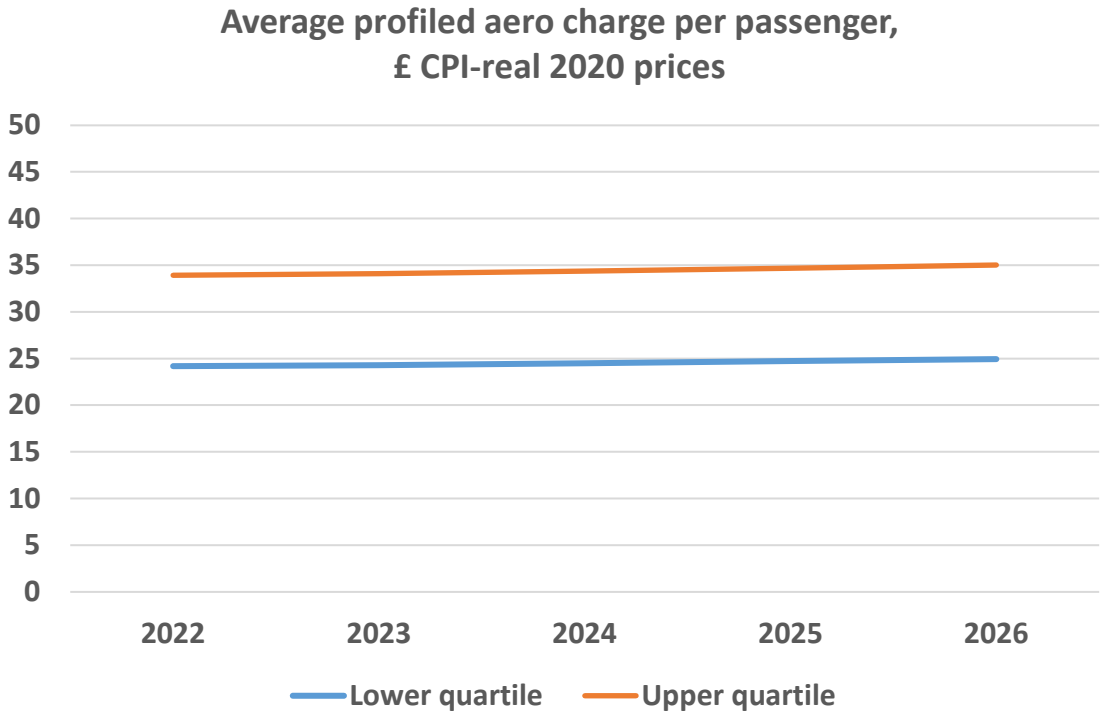
[154] A P0 adjustment is an amount that is added to or subtracted from the charge from the last year of the previous price control when calculating the charge for the first year of the next price control. It therefore represents a step up or down in the level of the charge.

previous price control period. These initial proposals assume a P0 adjustment to deliver a flat profile of airport charges per passenger over the H7 period.

11.59 We note that even with re-profiling the top of our range would create detriment for consumers as they would need to fund very significant real price rises. As we explain in the sections below, the bottom of the range would put additional pressure on HAL's financeability. We will engage further with stakeholders on these matters as part of our work to develop Final Proposals that both further the interests of consumers in terms of the level of charges and allowing HAL to fund the necessary investment to keep the airport safe and secure.

11.60 Our Initial Proposal in respect of the profile of charges is that we will set a profile of charges that is flat in real terms as shown in Figure 11.2 below:

Figure 11.2: proposed profile of charges:



Source: CAA

11.61 We have also considered depreciation profiling to advance or defer depreciation between different price control periods. Such an adjustment does not appear to be warranted at this stage, given the overall position on affordability and financeability. This is because deferring depreciation makes an already difficult financeability position more challenging by reducing revenues in the short term.[155] The flip side of this is that advancing depreciation improves

[155] See paragraphs 11.72-11.87 for our full assessment of debt financeability

financeability by bringing forward revenues, but does so at the expense of affordability. We will consider this issue further in developing our Final Proposals.

Assessment of debt financeability

11.62 As noted above, we have a statutory duty to have regard to financeability as part of determining how we can best discharge our primary duty to further the interests of consumers. In doing so, we consider financeability in respect of debt and equity separately. Debt financeability is about the notional entity being able to access the debt finance it needs, when it needs it, at a reasonable cost. We assess debt financeability quantitatively using the same credit metrics and thresholds used by credit rating agencies. We also consider qualitative factors, including equity financeability and the role of shareholders, and how those factors might affect debt financeability.

Key assumptions for our financeability assessment

11.63 Our assessment of debt financeability is informed by our understanding of the amount of debt that the notional entity would need to raise in H7. As noted above it is important that the notional entity has ongoing access to cost effective finance. The credit rating that the notional entity would need to be able to access cost effective finance is influenced by the amount of debt it would need to raise. We recognise that, all else equal, debt will be cheaper the higher the credit rating. But given that there is a cost to consumers of supporting higher credit ratings, it may be that it is not, in net terms, cheaper to have a higher credit rating.

11.64 As noted above, our analysis of the notional company shows that it will need to issue £1.9bn (nominal) in total across the five years of H7. In the context of the size of the RAB and historical levels of debt issuance by the actual company, this is a relatively manageable amount of debt to issue.

11.65 While we consider that a rating of BBB or BBB+ would allow the notional entity to raise the debt it requires in H7, we consider that the H7 price control should pave the way towards it achieving a credit rating at least at the top of this range (even assuming the notional entity does not benefit from the one notch upgrade associated with HAL's whole business securitisation), to give the notional entity the flexibility to raise sufficient debt in the longer-term.

11.66 For these Initial Proposals, we have assessed the credit metrics of the notional company against the threshold required for a BBB+ credit rating and have assessed its ability to raise sufficient debt for H7 at BBB. We do so because we recognise that the information that we have from credit rating agencies on the BBB+ rating reflects the one notch uplift of HAL's whole business securitisation. Our use of the metrics that apply to HAL for a BBB+ rating reflects our decision to be prudent in the assessment of financeability. By:

- assessing credit metrics against this BBB+ rating threshold; and
- considering whether the notional entity could issue sufficient debt at a rating of BBB

we can be confident that, even if the same one notch differential were to apply to the notional entity, the notional entity would still be financeable.

11.67 Our assessment of financeability requires that we make an assumption about the level of the notional company's gearing at the start of H7. We have calculated the opening gearing as described in Chapter 8. In summary, we have calculated the amount of debt that the notional entity would have drawn to sustain itself through 2020 and 2021 when operational cash flows were reduced because of the impact of the covid-19 pandemic. By assuming that gearing was 60% at the end of 2019 (consistent with the Q6 settlement) and rolling forward the gearing in line with the notional entity's debt requirements we have calculated the opening gearing for H7.

11.68 We have assessed the appropriateness of assuming an injection of cash from shareholders. We informed our assessment by first of all assuming that there is no such cash injection and looking at the resulting financeability metrics. From this review, we were able to consider whether there would be consumer benefit from assuming an equity injection. We concluded that an equity injection would not provide material net benefits to consumers as it would be of limited use in supporting the most constrained financial metrics (which we discuss in more detail below).

11.69 While we do not consider that it is appropriate to assume an equity injection into the notional company, there is regulatory and market precedent for it. As described in Chapter 6, and as noted by BA, other entities in the aviation sector have raised funds from shareholders in 2020 and 2021 to support them through the covid-19 pandemic.

11.70 Regulators have from time to time assumed, implicitly or explicitly, that an equity injection may be appropriate. Ofgem assumed that there may be equity injection in the notional entity in its RIIO2 final determinations.[156] The CMA, in its determination of the NIE appeal in 2014 noted that

> "if shareholders were able to withdraw large sums in periods with strong cash flow, it was reasonable they should also be willing to supply finance in periods of weaker cash flow."[157]

11.71 So, while there is market and regulatory precedent for equity injection, our analysis suggests that, in the context of our Initial Proposals, it is not required to support financeability of the notional company. While we have reached this view in the context of how best to further our statutory duties, it means that the Initial Proposals imply different expectations for Heathrow's shareholders than many shareholders in aviation businesses, including airlines, during the last 18 months, who have injected significant new equity to support the businesses in question.

[156] See 5.29-5.30 of RIIO-2 Final Determinations – Finance Annex (REVISED)

[157] See para 17.100 https://assets.publishing.service.gov.uk/media/535a5768ed915d0fdb000003/NIE_Final_determination.pdf

Assessment of debt financeability

11.72 As noted above, we consider that for the notional entity to be debt financeable it needs to be able to access the debt finance it needs, when it needs it and to be able to do so cost effectively. In line with the approach we adopted in the April 2021 Way Forward Document, we have assessed debt financeability using a range of credit metrics.

11.73 The metrics we have used to assessing debt financeability are summarised below.

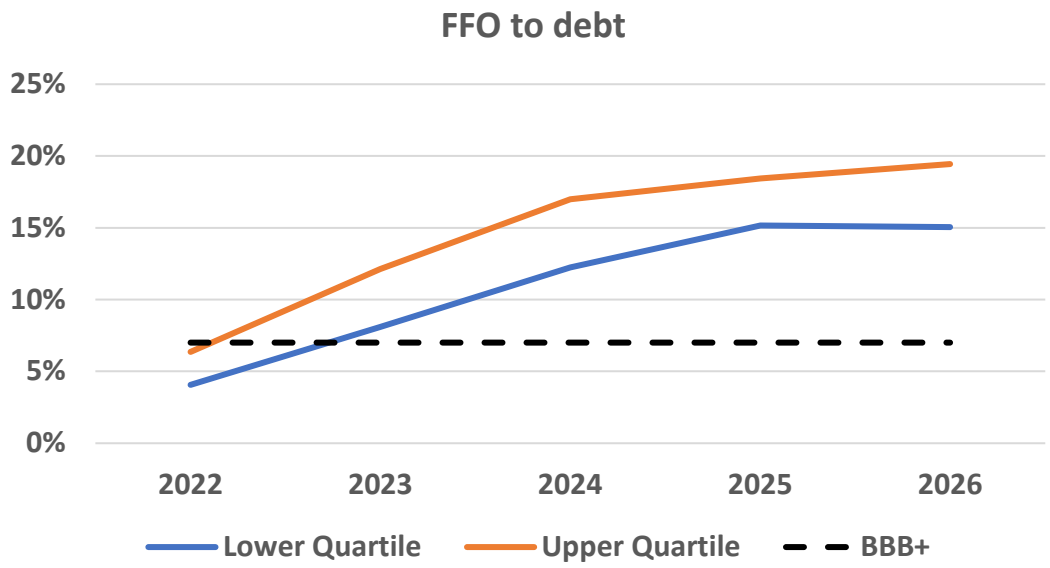
- The ratio of Funds From Operations ("FFO") to net debt: this is an important metric for S&P and looks at the entity's leverage in terms of the cash it is generating from operating its business.
- The ratio of net debt to EBITDA:[158] this metric is similar to the ratio of FFO to net debt, albeit that it uses a different measure, namely EBITDA, to assess cash generation. It is an important metric for Fitch.
- Post Maintenance Interest Cover Ratio ("PMICR"): this metric calculates how much cash flow is available for the payment of interest after deducting an amount equal to the regulatory depreciation allowance. In doing so, it takes account of the need for a business such as an airport to continue to invest in new capital equipment to replace older assets which have reached the end of their useful economic life. It is an important ratio for Fitch.
- The ratio of net debt to RAB: businesses which are regulated on the basis of a RAB are generally able to raise finance against the value of the RAB. Investors understand the value of the RAB and recognise that the RAB will create allowances in respect of return on RAB and regulatory depreciation. This ratio is, therefore, an important measure of how much additional scope there is for raising further debt.

11.74 Figures 11.4 to 11.7 below present the results of our credit metric analysis for each of the metrics described above. For each metric, we show the level implied by both the top and bottom ends of our Initial Proposals price range. The charts also show the threshold level that we understand would be required to be achieved to avoid a downgrade below BBB+.[159]

[158] EBITDA is earnings before interest, tax, depreciation and amortisation. It is sometimes seen as an approximate measure of cash generated from operations.

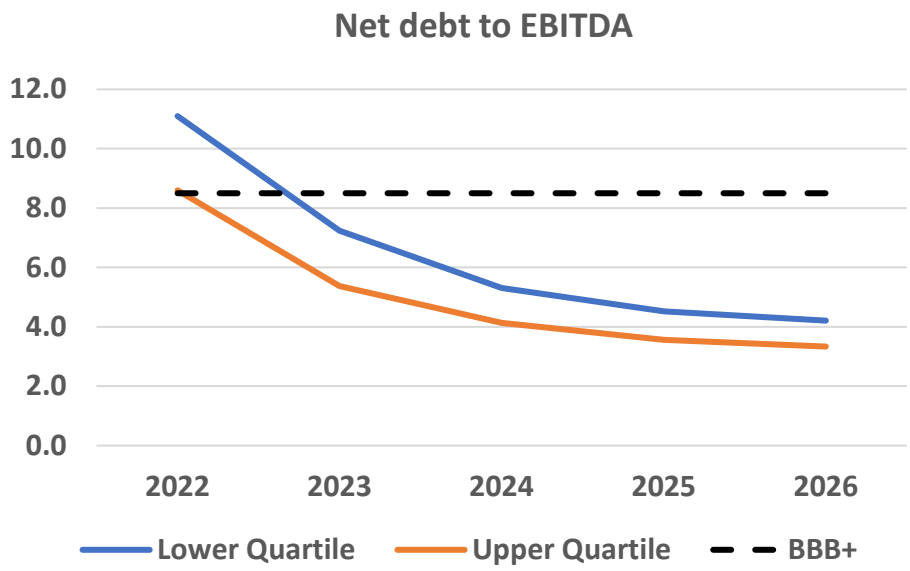
[159] Noting our comments in paragraph 11.83-11.86 about the range of factors that bear on the overall rating assessment.

Figure 11.3: FFO to net debt



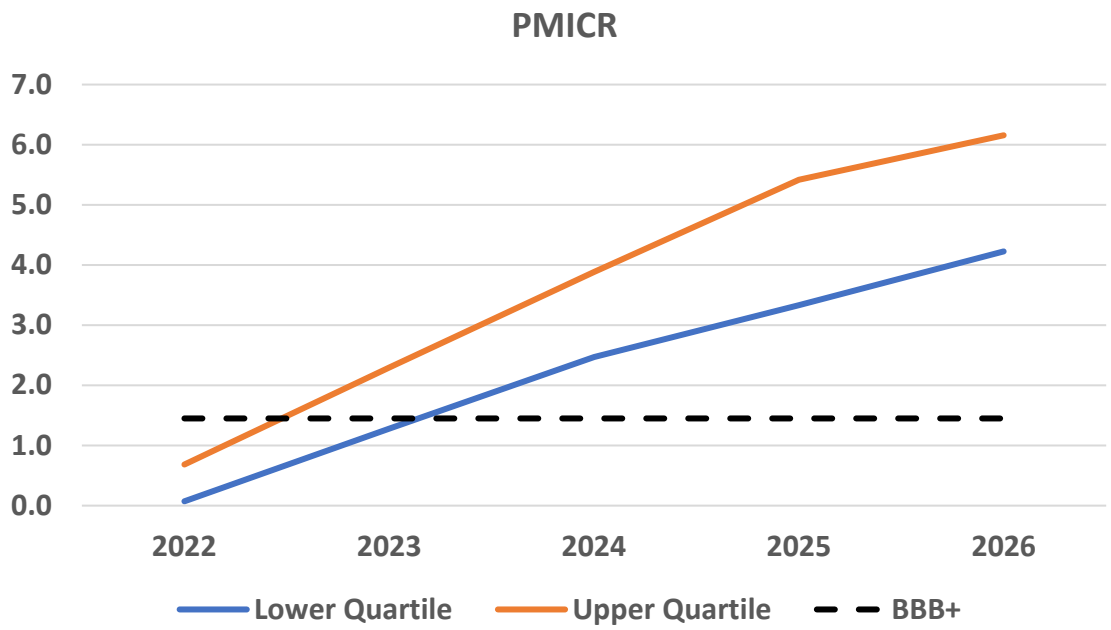
Source: CAA analysis

Figure 11.4: net debt to EBITDA



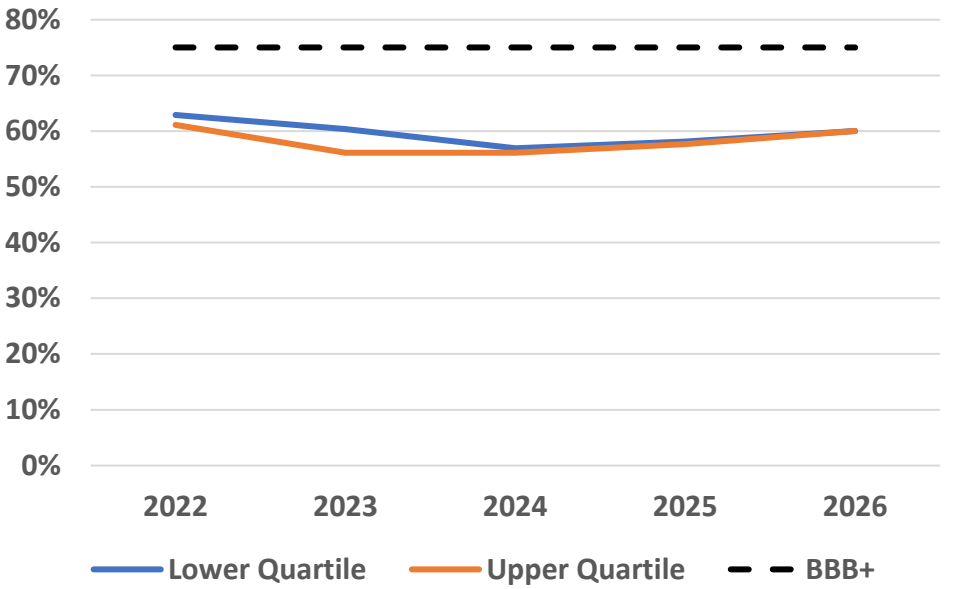
Source: CAA analysis

Figure 11.5: post maintenance interest cover ratios



Source: CAA analysis

Figure 11.6: net debt to RAB



Source: CAA analysis

11.75 From the analysis presented in Figures 11.3 to 11.6, we observe that credit metrics in 2022 are under pressure in both the upper and lower quartile scenarios. Some of the metrics in respect of the lower quartile are similarly under pressure in 2023.

11.76 This pressure in 2022 and 2023 reflects the low number of passengers expected in those years, combined with the profile of charges. As described in paragraphs 11.56-11.60, we have profiled the charges in H7 with the result that in early years the charge is less than the unprofiled charge while it is higher than the

unprofiled charge in later years. This reduction in charges in 2022 is contributing to the weakness in credit metrics in that year.

11.77 We consider that, while any weakness in credit metrics is undesirable, the strong trajectory in credit metrics over the H7 period means that the overall profile is such that the notional entity ought to be able to achieve a credit rating that would allow it to issue cost effect debt when required. If the notional entity were to be downgraded to BBB in 2022, this is still investment grade[160] so it would still be able to access debt markets cost effectively. We expect that the strongly improving trajectory in credit metrics over H7 would lead to the notional entity being rated at least BBB+ towards the end of the period.

11.78 We also note that PMICR is particularly weak in 2022 and 2023. In addition to the factors mentioned above, PMICR is affected by the profile of depreciation in H7. PMICR is calculated after deducting the regulatory depreciation charge from funds from operations. The rationale underlying this credit metric is that, in a steady state, regulatory depreciation represents a useful proxy for required maintenance expenditure. PMICR, therefore, represents a measure of an entity's ability to cover interest payments after allowing for maintenance of the regulated assets.

11.79 In the context of H7, in the lower quartile scenario, depreciation is projected to be £4.8 billion, while capex is projected to be £2.6 billion as discretionary capex is limited during the recovery phase. We consider that, in H7, the level of capex forecast provides a better indication of required maintenance expenditure than the regulatory depreciation charge. As such, the PMICR metric will give a more negative impression of post-maintenance cash interest cover than will be the case in reality.

11.80 We have also considered the role of equity in supporting debt financeability. We note that the notional entity is projected to pay substantial dividends from 2024 (in the upper quartile scenario) or 2025 (in the lower quartile scenario).[161] These dividend payments act as a buffer to debt financeability as the cash could be diverted to cover interest payments if required. This further strengthens our view that debt financeability in the second half of H7 appears robust.

11.81 We have considered whether it would be appropriate to assume an injection of cash from shareholders of the notional entity as a way to support debt financeability. Our analysis of the notional entity demonstrates that, in practice, a shareholder injection of cash would not materially support the credit metrics which are under most pressure. For example, FFO to debt and PMICR are both under pressure due to relatively low levels of cash being generated by operations. Injections of cash from shareholders would not be counted towards this measure of cash generation so would not significantly improve these ratios.[162]

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[160] And indeed the rating notch below, BBB-, is also investment grade

[161] See paragraphs 11.95-11.114 for further detail of our assessment of equity financeability.

[162] While shareholder cash injection would not support credit *metrics* it would likely still be seen as a credit positive qualitative by rating agencies.

11.82 Shareholder cash could be used to reduce the amount of debt outstanding, but this would only have a marginal impact on FFO to debt and PMICR. Conversely, any injection of shareholder cash would require that we remunerate the direct costs of issue. Regulators in the past have assumed these to be 5% of the amount issued.[163] There would, therefore, be a tangible and potentially significant cost to consumers of assuming a shareholder cash injection which would appear to be of limited benefit in improving these ratios, and so of little apparent benefit to consumers that would justify the cost to them of such issuance.

11.83 We have also considered the qualitative factors that influence debt financeability. We are aware that credit rating agencies conduct a detailed assessment of the business risk profile of the entities that they rate and that this assessment forms an important part of their overall rating determination process.

11.84 For H7, we consider that the introduction of traffic/volume risk sharing (see chapter 1) will reduce the business risk profile of the notional entity. While such a risk sharing mechanism limits the potential for outperformance, it also limits the scope for underperformance. As the impact of the covid-19 pandemic has demonstrated, the potential downside risk is very significant.

11.85 A TRS mechanism would also serve to preserve the value of the business in the event of another major volume shock similar to the impact of the covid-19 pandemic. Nonetheless, as currently specified the TRS mechanism would be of limited direct benefit in supporting credit metrics in the short term, as the mechanism would better support the value of the RAB rather than short term cash flow. So, we consider it is an important qualitative consideration as it makes the notional entity a more robust business while not necessarily directly supporting credit metrics.

11.86 Another qualitative factor we have considered is our response to HAL's requests for a large RAB adjustment.[164] Our initial proposal is to provide no incremental RAB adjustment, beyond the £300m we announced in the April 2021 RAB Adjustment Decision.[165] We consider that our Initial Proposal in this area will be broadly neutral from a rating perspective as it:

- is consistent with our previous statements about the risk of under recovery of depreciation; and
- our analysis suggests a further RAB adjustment is not necessary to reasonably support HAL's financeability.

11.87 Overall, our conclusion in respect of debt financeability is that the notional entity will be financeable in H7 and HAL should be able to access cost effective debt finance in a timely way.

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[163] See https://www.ofgem.gov.uk/sites/default/files/docs/2010/07/cost-of-raising-equity%2C-cepa-%282010%29_0.pdf

[164] See Chapter 6 for details of our approach in respect of the RAB adjustment.

[165] See https://publicapps.caa.co.uk/docs/33/HAL%20Economic%20Regulation%20Covid-19%20related%20RAB%20adjustment%20(CAP2140%20v2).pdf

Stress testing

11.88 There is significant uncertainty about the future trajectory of the covid-19 pandemic and the impact this will have on aviation traffic in the H7 period. We have conducted stress testing analysis to examine what will happen to the notional entity if passenger numbers fall short of expectations.

11.89 Our stress test scenario assumes that prices would be set as per the range of our Initial Proposals, but that outturn passenger numbers would be lower. Specifically, we assume that passengers would be as shown in Table 11.3 below:

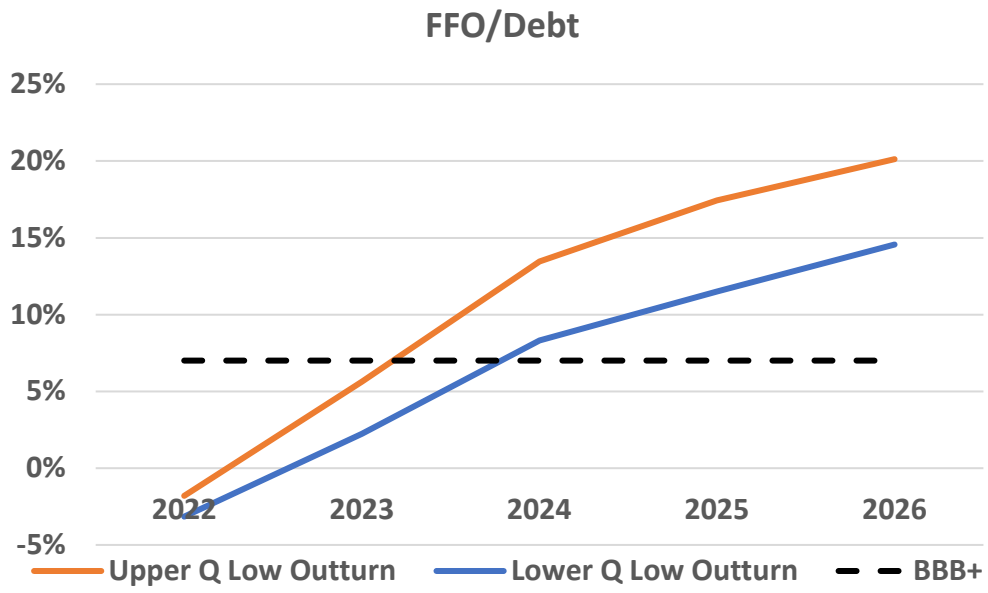
Table 11.3: base and stress case passenger volume assumptions

millions of passengers	2022	2023	2024	2025	2026
Initial proposals assumption	45.6	60.2	72.0	79.4	82.0
Stress test assumption	18.7	36.3	55.2	63.5	70.9

Source: CAA

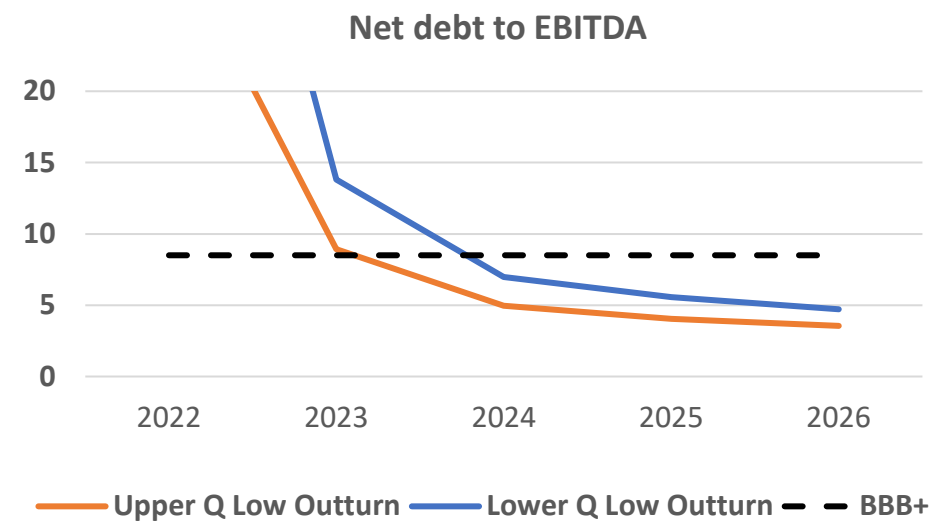
11.90 This would lead to lower revenues and consequently lower credit metrics as set out in Figures 11.7 to 11.10 below.

Figure 11.7: stress test FFO to debt



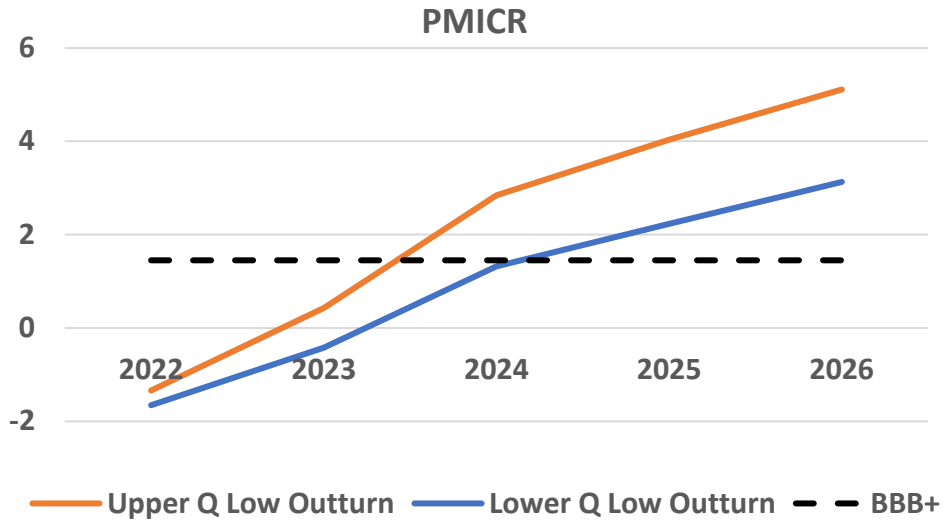
Source: CAA analysis

Figure 11.8: stress test net debt to EBITDA



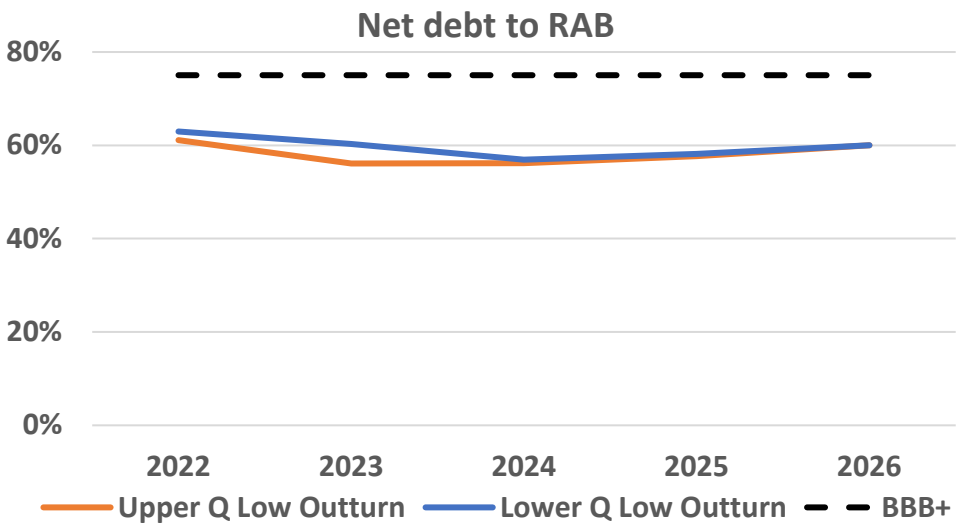
Source: CAA analysis

Figure 11.9: stress test post maintenance interest cover ratio



Source: CAA analysis

Figure 11.10: stress test net debt to RAB



Source: CAA analysis

11.91 The stress test results shown in Figures 11.7 to 11.10 above show that, if passenger volumes turn out to be materially lower than the numbers which we use for calculating charges, financeability will be significantly challenged. We note that this stress test is much more severe than the sort of stress testing traditionally carried out by economic regulators in setting price controls and reflects the new information revealed by the impact of the covid-19 pandemic on the possible impact of demand shocks on the aviation sector. Given this new approach, and the broader uncertainty created by the pandemic (for instance HAL has retained an investment grade rating to date despite experiencing even lower levels of demand), it is hard to reliably gauge what credit rating the notional entity might achieve were passenger numbers to turn out at the levels assumed in the stress test.

11.92 The TRS mechanism would support the value of the business as deviations in passenger volumes below forecast would lead to a positive adjustment to the RAB. This support may provide shareholders with sufficient comfort that they are willing to provide cash to support the business, although the volume risk sharing mechanism itself would not provide direct support to debt financeability.

11.93 There is, therefore, a basis for considering that, even in a stress test situation, our Initial Proposals could be financeable, although we acknowledge that there may be a range of views on these matters. We consider that making this assessment is consistent with our financeability duty and having regard to the need to ensure that the notional entity is able to finance its activities.

11.94 We will engage further with stakeholders on our stress testing as part of our work to support final proposals. While there is likely to continue to be significant uncertainty regarding the path of volume recovery by the time of the Final Proposals, in carrying out the stress testing and considering the weight to place on the results, we will have regard to the actual evidence of volumes at that time and more up to date future projections.

Assessment of equity financeability

11.95 By looking at the price control from the perspective of equity investors, we can consider whether it provides reasonable returns in terms of the size, timing and likelihood of receiving those returns. This forms part of our overall consideration of financeability.[166]

Assessment of equity financeability

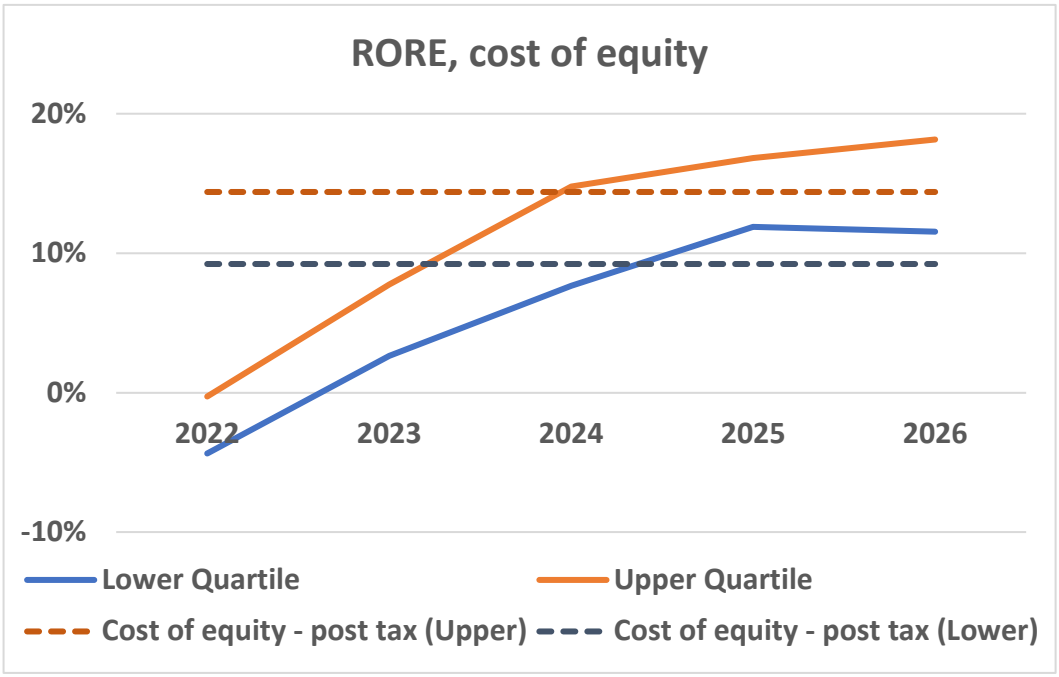
11.96 We assess equity financeability using the metrics we have previously consulted upon:

- Return on Regulatory Equity ("RORE");
- Internal Rate of Return ("IRR"); and
- Running yield and dividends.

11.97 We also consider qualitative factors that affect equity financeability.

11.98 RORE measures the profit after tax as a percentage of the amount of equity invested in the notional company. It is a measure of profitability and, therefore, can provide a useful indication of value generation regardless of whether that value is being returned to shareholders.[167] In a steady state, RORE should be equal to the allowed cost of equity. Figure 11.11 below shows the results of our RORE analysis of the notional entity:

Figure 11.11: nominal return on regulatory equity



Source: CAA analysis

[166] See paragraphs 6.1 to 6.3 above

[167] That is, RORE is not affected by our assumptions in respect of dividend payment

11.99 Figure 11.11 above shows that, for both the upper and lower ends of our initial proposals range, RORE has a strongly upward sloping profile and, in the later years of the price control, RORE exceeds the level of the allowed cost of equity. Table 11.3 below compares the weighted average RORE with the allowed cost of equity.[168]

Table 11.3: weighted average return on regulatory equity

Nominal figures	RORE	Allowed post-tax cost of equity
Upper quartile	11.69%	14.4%
Lower quartile	6.23%	9.24%

Source: CAA analysis

11.100 Table 11.3 shows that the weighted average RORE over the H7 period is somewhat lower than the allowed nominal cost of equity.

11.101 We interpret this result with a degree of caution. While it is natural to expect a link between accounting measures of return such as RORE and IRR, the academic literature[169] on these matters suggests that these links depend on the application of a specific set of weights to ensure equivalence. The use of unweighted, or imprecisely weighted, accounting measures can result in misleading inferences regarding equity returns. This is particularly the case where the RORE varies significantly over time, as is the case in the current context.

11.102 We also note that the profile of RORE shown in Figure 11.11 above is strongly upward sloping. This is due to the profiling of revenues.[170] The consequence of this profile is that shareholders will generate the bulk of their return in the second half of the price control period. We consider that this is appropriate in the context of a period in which the global economy recovers from the impact of the covid-19 pandemic as shareholders play their part in helping to keep charges affordable to support the recovery.

11.103 We have also considered IRR, which measures the return generated over a period of time, taking account of any change in the underlying value of the asset over that period. In calculating IRR, it is necessary to make assumptions about the capital value of the notional entity at the start and end of H7. We have assumed that the value of the equity is equal to the equity portion of the RAB. Specifically, that the equity was worth 35% of the RAB at the start of the period, and 40% of the RAB at the end of the period, consistent with the profile of gearing. This produces a range of IRR values from 10.62% to 17.42% (nominal). These values are higher than the allowed nominal cost of equity.

11.104 We draw some comfort from the range of IRR values suggested above but consider that the width of the range, and the sensitivity to assumptions about

[168] We compare RORE to the post-tax cost of equity as RORE assesses post-tax profitability as that reflects returns available for shareholders.

[169] As demonstrated by Kay (1976) and subsequent literature.

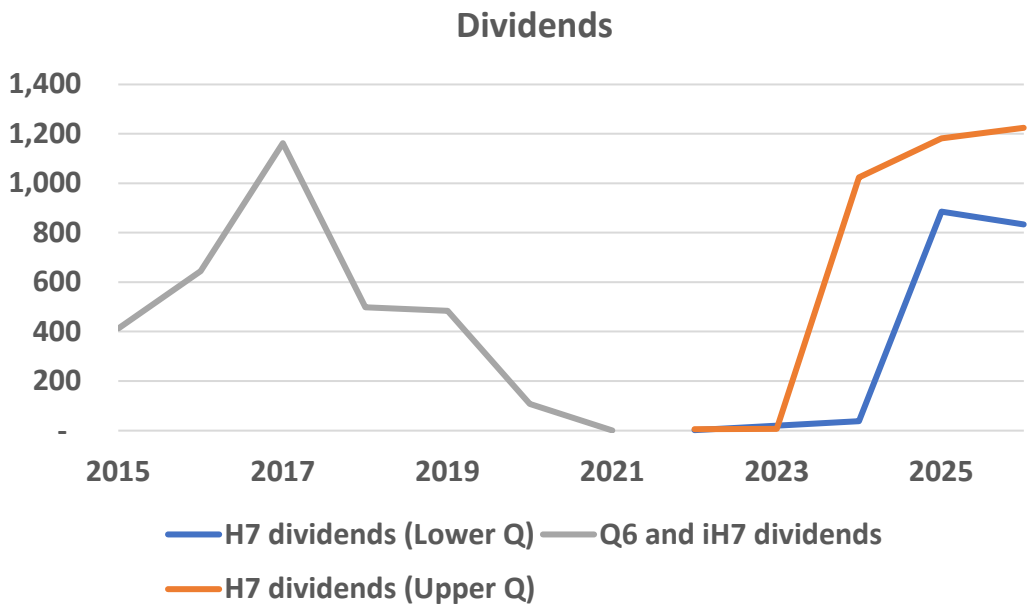
[170] Described in paragraph 11.56-11.60

equity values, means that consideration of the IRR should only be part of our assessment of equity financeability.

11.105 The third quantitative factor we have considered when assessing equity financeability is the "running yield" and the profile of dividend payments. We note that shareholders should generally be indifferent to the timing of dividend payments as this does not affect the value of the business. Nonetheless, we consider that a resumption of dividend payment by the notional company in the H7 period would be an important signal to shareholders that would help to demonstrate equity financeability.

11.106 Figure 11.12 below shows the profile of HAL's actual dividends up to 2021 and projections for dividends paid by the notional company in the H7 period. For the H7 period, we present two profiles representing the upper and lower ends of our range for Initial Proposals.

Figure 11.12: historical actual[171] and projected notional dividends



Sources: CAA analysis, HAL

11.107 We observe that in the upper quartile case dividend payments from 2024 onwards are comparable in size to the largest historical dividend payment from 2017. We note the absence of dividends in 2022 and 2023 in this scenario and consider that this is reasonable in the context of a period in which the aviation industry is recovery from the impact of the covid-19 pandemic. The notional

[171] Historical actual dividends are in respect of Heathrow (SP) Limited as this is the real world entity that appears to most closely resemble the notional entity. Specifically because it is the lowest point within the group at which the debt financing activities of Heathrow Funding Limited and the licenced activities of Heathrow Airport Limited are consolidated.

entity would be de-leveraging in 2022 and 2023 and that this is a prudent use of cash flow that might otherwise be used for paying dividends.

11.108 The lower quartile case sees dividends return to historical levels in 2025 and 2026 with only a minimal level of dividend in the prior years. Given that:

- dividends are projected to be meaningful and recurring by the end of H7; and
- the timing of dividends does not influence the value of the business

we consider that this profile of dividend payments appears reasonable.

11.109 As noted in Chapter 8, we are mindful of the Barclays report[172] which suggested there was scope for dividends to be reinstated at previous pay-out ratios from 2024 onwards and which also noted the need to reduce gearing as a potential constraint on dividend payments. The profile of dividends shown above appears broadly consistent with the expectations of the Barclays report. We do not put significant weight on this assessment alone as it reflects the view of just one market participant, but we do consider it a meaningful cross check.

11.110 Table 11.4 below shows the nominal running yield for each of the upper and lower quartiles of our initial proposals:

Table 11.4: nominal running yield

Nominal	**2022**	**2023**	**2024**	**2025**	**2026**
Upper quartile	0.1%	0.1%	16.8%	19.7%	20.7%
Lower quartile	0.0%	0.3%	4.1%	14.7%	14.1%

Source: CAA analysis

11.111 The analysis of running yield in Table 11.4 presents a very similar story to the dividend profiles shown in Figure 11.12. The running yield in the later part of the period comfortably exceeds the nominal allowed cost of equity[173] while there is essentially no yield in the early part of the H7 period. Again we consider that this is appropriate in the context of recovery from the impact of the covid-19 pandemic and a period of de-leveraging for the notional company.

11.112 The final part of our assessment of equity financeability is to consider qualitative factors. We note that shareholders are the main beneficiaries of the TRS since it would support the value of the business if traffic volumes were to fall. We consider that this supports the ongoing attractiveness of the notional entity as an equity investment.

11.113 While shareholders have benefitted from our interim RAB adjustment of £300 million we are not proposing any further RAB adjustment as explained in Chapter 6. On balance we do not consider this unduly detrimental to equity financeability

[172] Barclays Global airport benchmarking, June 2021

[173] For comparison the nominal, post-tax allowed cost of equity in our initial proposals are 9.2% and 14.4% for the lower and upper quartiles respectively.

as we have a robust approach to estimating the cost of capital as set out in Chapter 9 and a revenue adjustment for asymmetric risk as per Chapter 7.

11.114 The TRS also facilitates a five-year price control which in turn provides some predictability and certainty which we expect investors would welcome during a time of widespread uncertainty in the aviation sector. Overall, we consider that qualitative factors further support equity financeability.

Summary

11.115 Based on the analysis presented above, we consider that our Initial Proposals are financeable. The notional business should offer a range of returns consistent with the allowed cost of equity and retain access to investment grade debt finance. We consider that our Initial Proposals would facilitate the "notional" company[174] in HAL's position having ongoing access to sufficient capital to allow it to:

- finance its activities at Heathrow airport;
- so securing that HAL can meet the reasonable demands of users for AOS including through developing, and maintaining Heathrow airport, including through supporting an appropriate range and quality of service; and
- do so in a cost-effective way.

11.116 We consider that our Initial Proposals are both in the interests of consumers and have been developed with due regard to our obligation under the Act to secure that HAL can finance its provision of AOS at Heathrow airport.

Next steps and implementation

11.117 We welcome the views of stakeholders on any of the issues raised in this chapter and will consider as part of our work to develop Final Proposals.

11.118 The calculations of the price control summarised in this chapter will form the basis of the licence modification that will set out the new H7 price control as part of our Final Proposals.

[174] A description of the "notional company" and the reasons why we use it as a basis of our approach to regulating HAL can be found in Chapter 8.