

Points arising from the CAA Consultation on H7 Final Issues

1 May 2024

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Introduction

1. This report addresses AlixPartners' views on the CAA's consultation¹ (hereafter termed the "**CAA Consultation**") for actions it should take to finalise the Heathrow H7 price controls following the CMA's decision² (hereafter termed the "**CMA Decision**") on the appeals brought by HAL and the Airlines.
2. Table 1 summarises the three H7 issues that the CMA remitted back to the CAA.

Table 1: Summary of CMA's remittals to the CAA for the H7 price controls

CAA error	CMA instructions for remittal
<p>Index linked premium</p> <p>The CAA's evidence for a premium of 15bps ("basis points") applied to the cost of index linked debt was insufficient to reach its conclusion.³ In addition, the CAA was wrong to assert that the fact that a premium had not been applied by other regulators was not a relevant consideration for applying a positive premium in HAL's debt allowance.⁴</p>	<p>The CAA must:⁵</p> <ul style="list-style-type: none"> • apply an index-linked premium of 15bps only if it has sufficient robust evidence that this level of premium is appropriate; or • apply a revised index-linked premium at a level which the CAA has calculated on the basis of appropriate and robust evidence; or • not apply an index-linked premium, if the CAA decides upon further consideration that the available evidence is insufficient to constitute robust evidence for the calculation of an appropriate level of indexed-linked premium.
<p>Passenger shock factor</p> <p>The CAA was wrong to select 0.87% as the level of the passenger shock factor applied to the passenger forecast because it failed properly to validate whether HAL's calculations of that figure were correct.⁶</p>	<p>The CAA must:⁷</p> <ul style="list-style-type: none"> • apply a shock factor to the passenger forecast for 2023-2026 only if it has first appropriately validated that level of the shock factor; or • apply a revised shock factor to the passenger forecast based on a validated estimation.
<p>AK Factor</p> <p>Whilst the CAA was not wrong to apply an AK factor for over-recovery of revenues by HAL during the pandemic period,⁸ the CAA's calculation of the magnitude did not allow for the impact of the pandemic of passenger numbers.⁹</p>	<p>The CAA must consider whether HAL did actually over-recover revenues during 2020 and 2021 when determining recovery through the AK factor.¹⁰</p>

Source: CMA Decision

¹ CAA, "Economic regulation of Heathrow airport: H7 final issues", CAP2980, 2024.
² CMA, "H7 Heathrow Airport Licence Modification Appeals, Final Determinations", 17 October 2023.
³ CMA Decision, paragraph 7.291.
⁴ CMA Decision, paragraph 7.304.
⁵ CMA Decision, paragraph 16.10.
⁶ CMA Decision, paragraph 16.11.
⁷ CMA Decision, paragraph 16.12.
⁸ CMA Decision, paragraph 10.63.
⁹ CMA Decision, paragraph 10.64.
¹⁰ CMA Decision, paragraph 16.15.

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3. In the remainder of this note we assess the actions we believe the CAA should take as a result of the CMA remittals and also the allowance for business rates left open from the CAA's Final Determination. We cover:
- (a) The index linked premium in the cost of debt;
 - (b) The passenger forecast shock factor;
 - (c) The AK factor;
 - (d) The business rates allowance for H7;
 - (e) The pension deficit repair allowance;
 - (f) Removal of pod parking incremental profits from the commercial revenues allowance;
 - (g) Terminal Drop-off Charge;
 - (h) Correct an arithmetic error in paragraph D9 of the CAA proposals; and
 - (i) Changes to HAL's licence.

Index linked premium in cost of debt

Context

4. The index linked premium incorporated into the H7 price control was meant to allow for any difference in the cost of indexed linked debt relative to fixed nominal debt, given that in the notional financing structure both types of debt are used. The CMA found that the CAA's estimate of a positive index linked premium was not justified by the data and analysis available to it and so had no factual basis.¹¹ The Airlines argued that in fact the cost of index linked debt would be lower than that of equivalent fixed rate debt due to the inflation protection that it afforded.

CAA Consultation proposal

5. The CAA is clear that:

*"The index-linked premium we used was intended to reflect the difference in the cost of such instruments compared to the cost of equivalent debt with a fixed coupon, when the cost of each type of instrument is expressed on a comparable basis."*¹²

6. The CMA found that the CAA had insufficient evidence to justify its index linked premium. Therefore, this is remitted back to the CAA to either produce a revised estimated based on sufficiently robust data or, if not possible, simply remove the index linked premium. This lack of evidence is consistent with no index linked premium being used in either of Ofgem's determination of RIIO-1 or RIIO-2, or the CMA's redetermination of PR19 in the water sector.

¹¹ CMA Decision, paragraph 7.305.

¹² CAA Proposals, paragraph 2.1.

7. The CAA, on reconsideration, agreed that there was insufficient evidence on which to base an index linked premium. A report commissioned by the CAA from Centrus (hereafter termed the “**Centrus Report**”) was unable to find sufficient data to support a premium in regulated utility bond issues, not least because of the lack of issues of such bonds since 2007.

AlixPartners’ views

8. To be clear, the index linked premium – the difference between the yield on an indexed linked corporate bond and an equivalent fixed rate bond - is the net effect of two very different causes:
- (a) A potential lack of liquidity in the market for index linked corporate bonds (which would generate a positive premium);
 - (b) Longer average payment times on index linked bonds compared to an equivalent fixed rate bond, since part of the return is the indexed capital that is not repaid until the maturity of the bond (which would generate a positive premium);
 - (c) A proven benefit to investors of protection against inflation (which would generate a negative premium or a discount).
9. The Centrus Report is helpful in that it compares index linked spreads against nominal bond spreads where, in both cases, the spreads are measured relative to UK gilts.¹³ However, this is not itself the index linked premium that the CAA is seeking to measure defined above in paragraph 5. The difference is summarised below in Table 2.

Table 2: CAA index linked premium vs. Centrus analysis

CAA index linked premium	Centrus comparison of spreads
Indexed linked bond yield Less Nominal bond yield	Index linked bond yield Less Gilt index linked yield Less Nominal bond yield Less Gilt Nominal bond yield

Source: CAA Consultation and Centrus report

10. It is important to understand what effects are caught in both measures:
- (a) The CAA index linked premium will be a net impact of: (i) a liquidity premium on index linked bonds; and (ii) a negative premium from the avoidance of exposure to inflation risk;
 - (b) The Centrus Report comparison of spreads, on the other hand, captures only the liquidity premium effect and the longer average repayment period. The negative premium for avoidance of inflation risk is ignored as the Centrus comparison adds in the premium of the Gilt Nominal bond yield above the Gilt index link yield, with this capturing the fact that index linked Gilts have lower yields as they enable inflation risk to be avoided.
11. Therefore, from the Centrus Report we can conclude:

¹³ Centrus, “CAA –Cost of Inflation-Linked Debt”, November 2023. See methodology on page 3 and results on pages 4-8 and 10-11.

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- (a) There is no robust evidence on the magnitude of any index linked bond liquidity premium – at least in the regulated corporate sector studied by the Centrus Report; but
 - (b) The Centrus Report is silent on the possibility of a negative index linked premium from the avoidance of inflation risk in index linked bonds, since its comparison of spreads adds in the premium of nominal Gilts above index linked Gilts.
 12. Whilst there is no evidence for a premium on the basis of a lack of index linked bond liquidity, it is still the case that conceptually and factually (see further below), investors require a lower return for inflation index linked bonds (such as UK Indexed Linked Gilts, “**ILG**”) rather than equivalent nominal/fixed bonds as the latter do not bear any inflation risk.
 13. As AlixPartners has shown in its previous reports,¹⁴ this is very clear from the market for government gilts. To investigate the issue of measurement we calculated the value of the inflation protection afforded by index-linked gilts as follows:
 - (a) We take the 20-year nominal gilt yield¹⁵ from the Bank of England’s yield curve calculations;¹⁶
 - (b) Subtract long term expected RPI-inflation of 2.9%;¹⁷
 - (c) Further subtract the 20-year ILG yield from the Bank of England’s yield curve calculations.
 14. Results are shown in Figure 1 along with averages over various periods, including back to 2009 (corresponding broadly to the period used by the CAA to assess HAL’s cost of embedded debt). Whilst the index-linked benefit has fluctuated, the nominal yield less expected inflation has (unsurprisingly) always been higher than the index linked-yield. In other words, as expected, because of the inflation risk implicit in nominal gilt yields (as inflation could be higher than expected) these have been significantly higher than index linked yields.

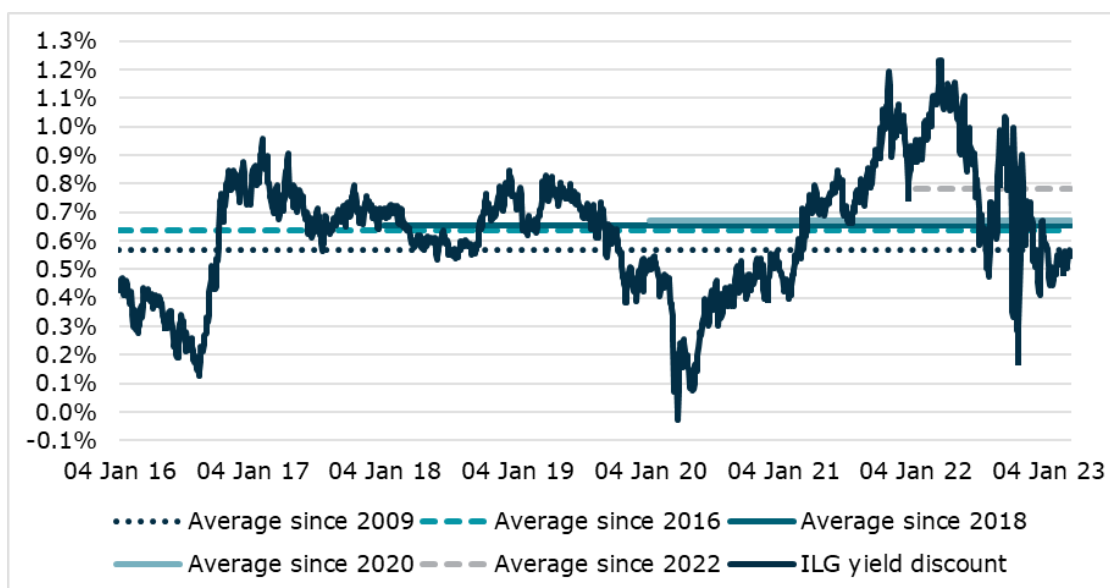
¹⁴ AlixPartners, “Cost of capital issues raised by the Heathrow Airport H7 Price Control”, 17 April 2023.

¹⁵ Cf. CAA H7 Final Proposals, paragraph 9.293.

¹⁶ <https://www.bankofengland.co.uk/statistics/yield-curves>

¹⁷ Cf. CAA H7 Final Proposals paragraph 9.220.

Figure 1: Inflation expectation adjusted nominal yields relative to Index-linked gilt yields relative



Source: AlixPartners analysis based on Bank of England yield curve estimates

15. Also shown in Figure 1 are the average index yield premia over various periods. These are tabulated in Table 3, showing that average premia would be higher if more reliance is placed on more recent data. For embedded debt it is appropriate to take the average back to 2009 since this matches the period looked at by the, CAA. This gives a negative premium of 0.57% for embedded debt. For new debt the more recent average of 0.78% should be used.

Table 3: Index-linked gilt yields relative to inflation expectation adjusted nominal yields adjustments

Averaging period	Index-linked benefit
From 2009	0.57%
From 2016	0.64%
From 2018	0.65%
From 2020	0.67%
From 2021	0.78%
From 2022	0.78%

Source: AlixPartners analysis.

16. Whilst we accept that the analysis above is done in relation to UK government gilts, and so a negative adjustment as high as 57-78bps may not be wholly appropriate, HAL will also receive a benefit of lower costs from issuing its own index linked bonds, which it could do on the basis of its index linked RAB. We note that in the context of RIIO-2 CEPA estimated GB energy network companies issued nominal debt at 38bps below the average of A and BBB iBoxx indices compared to 49bps for index linked debt.¹⁸ Therefore, index linked corporate debt for these regulated companies debt is issued at 11bps below equivalent nominal debt. Therefore, a negative adjustment of around 10bps would be appropriate in a lower end of a range.

¹⁸ CEPA "Review of cost of capital ranges for Ofgem RIIO-2 for onshore networks", February 2018, p.29-30. Calculations of index linked debt yields relative to breakeven inflation.

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17. In conclusion, there is good evidence for a negative index linked adjustment of at least 10bps. This change reduces HAL's overall pre-tax WACC from 4.01% (assumed in the CAA Proposals) to 3.99%.

Passenger forecast shock factor

Context

18. HAL's passenger forecasting methodology applies a downward shock factor to allow for transitory shocks to HAL's traffic caused by factors such as meteorological, geological, security and public health events.¹⁹ These events will generally (but not always) have a negative impact on passenger traffic.
19. The CMA found that the CAA was not wrong to accept the principle of a passenger shock factor in HAL's forecasting methodology but did fail to properly validate whether HAL's calculations of a factor of 0.87% was correct.²⁰ Therefore, this was remitted back to the CAA to validate the estimate.

CAA Consultation proposal

20. HAL subsequently provided the CAA with details of its computation and the CAA has come to the view that "*HAL calculated the shock factor on a reasonable basis, and [the CAA] propose[s] to retain its estimate of 0.87% and make no further adjustments to HAL's price control for these matters.*"²¹

AlixPartners views

21. We have reviewed HAL's disclosed spreadsheet providing its justification for the 0.87% shock factor and do not believe that it to be sufficiently robust to support the adjustment. This is for a number of reasons:
- (a) the estimate is contaminated by economic downturns which should be excluded;
 - (b) there is an insufficient basis to assume the base traffic forecasts already reflect "shocked" traffic;
 - (c) the methodology ignores the possibility of "positive rebounds" following negative shocks (e.g. because of delayed travel).

22. We expand on each below.

The estimate is contaminated by economic downturns which should be excluded

23. The purpose of the passenger forecast shock factor is to allow for an "expected" impact of non-economic shocks on passenger numbers over the regulatory period. This is clear from the CAA's Final Proposals (paragraph 1.77):

*"We continue to consider that the application of a shock factor to cover temporary and difficult-to-predict **non-economic shocks (such as major volcanic eruptions, terrorism events,***

¹⁹ Macro-economic shocks are excluded since they are elsewhere accounted for in the modelling process (see paragraph 23 and 24.

²⁰ CMA Decision, paragraph 9.309(c).

²¹ CAA Consultation, paragraph 3.16.

vars) to air travel is appropriate. This is in line with regulatory precedent, in the form of previous adjustments made by the CAA in the Q6 HAL price control and as well as in our Initial Proposals.” (Emphasis added).

24. The exclusion of economic shocks is important because these are already included in the econometric models that HAL uses elsewhere in its forecasting procedure, with macro-economic forecasts sourced from Oxford Economics.²²
25. However, HAL’s passenger shock model conflates shocks with macro-economic effects that should also be captured by its econometric model. For example, the estimated shock attributed to Desert Storm in 1991 (8.00%) coincides with a 1.7% decline in UK GDP that year. HAL’s estimate of 8.00% will pick up both effects.
26. The only way to disentangle non-economic and economic shocks would be an econometric approach. This would require:
 - (a) Estimating the relationship between monthly traffic numbers and GDP (or some other economic measure) taking account of seasonality, moveable key holiday dates (specifically Easter), leap years, etc.
 - (b) Use this relationship to construct a monthly passenger series with these effects removed.
27. HAL has not done this but instead opted for a more simplistic approach using deviations from the average level in the same month of the previous and next year or, where this is not possible because of shocks in previous or subsequent years, averaging the growths in the unshocked months of the same year (e.g. London Bombs and Liquid Bombs in the following year).
28. This simplified non-econometric approach will not distinguish between economic and non-economic effects and so will over-estimate the latter where these are combined with attenuating economic effects (e.g. downturns in GDP).
29. The CMA endorses the CAA view that the passenger shock factor should exclude economic shocks²³ and we agree with this. However, since the CAA appears to not have investigated the actual calculation it seems to have missed the fact that the calculation erroneously includes economic shocks. Therefore, our argument is that by failing to validate the calculation of the shock factor the CAA erroneously allowed HAL to include economic shocks in the calculation.

There is insufficient evidence that the base traffic forecasts don’t already reflect “shocked” traffic

30. An unstated assumption behind the whole of HAL’s approach to traffic shocks is that the traffic forecast to which the shock factor is applied has already been adjusted to ensure it is “unshocked”. If this were not the case, expected traffic shocks will be double counted.
31. For example, if the econometric models that HAL uses are calibrated to “raw” traffic data, shocks in this underlying data will produce a lower average traffic level which may²⁴ flow through to the

²² See CAA Initial Proposals, paragraph 2.21, 3rd bullet; and CAA Final Proposals, paragraph 1.27, 3rd bullet point.

²³ CMA Decision, paragraph 9.246(b).

²⁴ The extent of this will depend on the precise specification of HAL’s econometric models, particularly the level of differencing applied to the data. We have no visibility of this.

forecast produced by the econometric model. If this is the case, no further adjustments would be justifiable.

32. We are not aware of any indication from published HAL or CAA documents that HAL has specifically uplifted the raw traffic data used in its econometric models to exclude shocks and, therefore, there can be no assurance that the passenger shock factor is not double counting (or triple counting in the case of economic shocks for the reasons given in paragraphs 23-28).

The methodology ignores the possibility of "positive rebounds" following negative shocks (e.g. because of delayed travel)

33. HAL's model makes no attempt to identify whether shocks are followed by any rebound in traffic after a shock or indeed any "positive shock" events. Rebounds would naturally occur as a (possibly large) proportion of cancelled flights are rebooked in the months or year following the shock. We see no indication that HAL attempted to quantify this effect.
34. In the absence of any attempt to estimate traffic rebound, an alternative assumption of 100% traffic rebound could be assumed for all shocks of less than, say, 12 months. Based on HAL's model, we estimate that this alone would reduce the shock factor from 0.87% to 0.56%.²⁵

AK factor

Context

35. Whilst HAL's overall price controls are set in advance by the regulatory settlement some individual elements use cost pass-throughs. Additionally, when HAL sets the structure of individual charge elements for the forthcoming year (e.g. passenger charges for different passenger types and charges for movements and parking of different aircraft types) it needs to assume volume mix for that year. For these reasons, HAL will inevitably over or under recover revenue against the regulated cap on average yield per passenger.
36. Consequently, since Q4, HAL's price control formulae have contained a factor to allow true-ups in following years for over or under recovery of revenues. This is known as the '**K factor**'. During pandemic years of 2020 and 2021 particular issues arose that required an additional '**AK factor**' to be included in the formulae in subsequent years.

CAA Consultation proposal

37. The AK factor accounts for:
- (a) Savings made by HAL during 2020 and 2021 though an underspend of capex relative to price control settlements in those years;
 - (b) Savings made by HAL during 2020 and 2021 through relief on business rates expense relative to price control settlements in those years;
 - (c) Additional revenues collected by HAL due to forecasting errors in the mix of passenger types, aircraft movements and aircraft parking (hereafter termed "**volume mix**") made in

²⁵ We retain in the calculation: Desert Storm, 9/11 and SARS.

HAL's annual charging setting during 2020 and 2021. Most of this variance was a result of airlines operating flights with lower passenger load factors during the pandemic years of 2020 and 2021, meaning that HAL collected additional revenues from aircraft movement and parking charges relative to overall passenger volumes, giving a higher yield per passenger than allowed for by the price cap.

38. In respect of capex and business rates, the CAA Consultation proposes to follow the CMA Determination and calibrate the AK factor such that HAL recovers these costs from revenues based on the actual traffic volumes in the relevant years.
39. The CAA Consultation recognises that the adjustments made for the capex and business rates components of the AK-factor do not apply to the volume mix component.²⁶ The issue arises not through the recovery of expenditure variances over actual or forecast traffic volumes but because of variances in HAL's own forecast of the volume mix passengers and aircraft movements which meant that the actual revenue per passenger received by HAL exceeded the regulatory price cap.
40. The CAA Consultation consider two options:²⁷
- (a) Option A is pro-rating the actual number of passengers seen in 2020 and 2021 in actually the same way as for capex and business rates. As noted above, in our view, this would be entirely inappropriate since the issue is around the mix of volumes rather than the level of passenger traffic. HAL should not receive any further compensation for lower passenger traffic on top of the RAB adjustment;
 - (b) Option B takes the view that HAL cannot be held wholly responsible for this variance in the pandemic period and so should retain 50% of the additional revenue that it received.²⁸
41. The CAA's proposes to adopt Option B.

AlixPartners view

42. Our view is that the AK factor is fundamentally a maths question of the extent of HAL's over-recovery of revenues (the CMA Decision rejected HAL's arguments about a further basis for compensation due to the pandemic²⁹). The CMA asked the CAA to recalibrate the AK factor for the exceptional circumstances of the pandemic and its impact on the amount of the correction to be recovered (para 1.6 of CAA consultation) to reflect HAL's actual over-recovery of revenues. We do not expect this issue to arise for correction factors beyond the context of those exceptional circumstances.³⁰ We acknowledge that the CAA has adopted the approach set out by the CMA by recalibrating the adjustments for development capex and business rates by applying the proportion of outturn passengers to forecast passengers to the original figures.³¹ The AK factor should take account of the actual over-recovery that HAL made during these years based on the lower passenger numbers.
43. In respect to the volume mix, the same general principle needs to be applied: the AK factor should rectify the actual over recovery that HAL received as a result of fewer passenger per flight as was

²⁶ CMA Decision, paragraph 1.33 and paragraph 1.37.

²⁷ CAA Consultation, paragraph 1.36.

²⁸ CAA Consultation, paragraphs 1.36 and 1.37.

²⁹ CMA Decision, paragraphs 10.69-10.72.

³⁰ CAA Consultation, paragraph 1.6.

³¹ CAA Consultation, paragraphs 1.29-1.30.

originally calculated in the H7 Final Decision. The calculation in the CAA's original H7 Decision correctly made this adjustment (unlike that capex and business rates component).

44. The CAA Consultation, as explained in its Option B now appears to seek to change this principle and allow HAL to retain half of its over-recovery. We see no justification for this "sharing". The amount of additional revenue made by HAL was pure over-recovery against the regulated settlement based on actual traffic volumes/mix.
45. Therefore, there are two consequences of making the adjustment that the CAA Consultation proposes:
- (a) The sharing adjustment that the CAA Consultation proposes would effectively undo the regulatory contract whereby HAL is regulated on a yield per passenger. It would do this by transferring ex-post the risk of lower traffic from a monopolist (HAL) to airlines (who operate in competitive markets), and in a scenario where airlines' profits depend on high load factors.
 - (b) There is no consumer benefit to providing HAL with an ex-post windfall revenues. This will not change HAL's behaviour in any way other than potentially incentivising it to "game" forecasts in future years because of the possibility it will be allowed to retain the gain over and above the regulated price cap (see paragraph 48), such as in the event of future pandemics.
46. We note that the CMA Decision questions whether the standard workings of the per-passenger yield price control provided an appropriate basis for determining over-recovery related to the passenger mix.³² The CMA Decision also suggests that because it was the airlines that made the decision to not reduce the number of flights in proportion to the reduction in passengers, the CAA should have considered whether HAL should be required to repay the over-recovery.³³ We think the CAA could consider this point but should still conclude it appropriate for HAL to refund the over-recovery based on the revenue it actually received in 2020 and 2021 for the reasons given above.
47. First, we note that it is not unusual for airlines to fly planes with lower passenger loads in times of depressed traffic, for example after terrorist concerns (e.g. liquid bombs of 2006) or economic downturn (such as the Global Financial Crisis). The economic logic for doing this is that, whilst fuel and crew costs may be variable, a proportion of costs are already sunk – namely investment in airport slot rights need to be preserved³⁴ and the purchase or leasing costs of aircraft. Therefore, whilst the pandemic was unique in its magnitude, the response of airlines in this situation was not unusual.
48. Second, allowing HAL to over-recover against the regulated yield per passenger on the basis of errors in forecasting during its annual charge setting process would further risk incentivising HAL to "game" its annual forecasting process if it believed there was a possibility it would not be required to refund the full over-charge in the K-factor. This risk would be accentuated as typically less scrutiny is given to the detailed annual forecast used to set the airport charge components.

³² CMA Decision, paragraph 10.114.

³³ CMA Decision, paragraph 10.115.

³⁴ We note that slot relief was partial since early 2021 and so airlines still had to operate flights.

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49. Therefore, allowing HAL to over-recover against the agreed regulatory package goes against the principles of incentive regulation and would risk setting a precedent that HAL could be compensated for future variances in volume mix caused by forecasting errors.
50. In the light of our analysis above, rather than the 50/50 split proposed by the CAA, HAL should repay 100% of the over-recovery for volume mix. We do, however, support the CAA splitting the AK factor adjustment equally into the remaining years of H7 (2025-26)³⁵ to ensure transparency, regulatory certainty and timely return of over-recoveries for the benefit of the customers.
51. As a consequence of our views the CAA's "Recalculated AK factor (£ million CPI-2020)" for 2020 would increase from £29 to £37 million and that for 2021 would increase from £48 million to £65 million, based on modifying the Appendix D calculations of the CAA Proposal shown in the Appendix to this note. When accounting for the indexation uplift, revised pre-tax WACC and equal split over 2025-26, this would increase the CAA's estimate of the estimated reduction of the price cap through the AK factor from -£0.718 in 2025 and -£0.748 in 2026 to -£0.956 in 2025 and -£0.996 in 2026.

Allowance for Business Rates

CAA Consultation proposal

52. The CAA believes HAL's 2026 business rates revaluation by the VOA may cause HAL's business rates to increase in a material way.³⁶ Despite a reduction of £85 million to HAL's business rates liability in H7, the CAA proposes not to make the downwards adjustment to the H7 business rates allowance set in the Final Decision but rather "log up" this amount against any future increase in business rates following revaluation and "true up" the position as part of the H8 price control review when the results of the revaluation will be known.³⁷

AlixPartners view

53. We have three objections to the CAA's approach. First, our view is that the CAA's approach lacks the transparency of costs recovered in the regulatory period in which they are incurred. We understand that HAL may not actually be liable for any increase in business rates from the VOA's revaluation process until the start of H8.
54. Second, the CAA's argument for deferring the £85 million reduction because of a likelihood that business rates will rise in H8 only has merit in providing a smooth path for HAL's charges if all other cost elements stay the same. The CAA needs to consider whether an increase in business rates in H8 would cause charges to rise overall, i.e. it is total costs that are important, not business rates in isolation.
55. In H8 average passenger volumes will likely be higher than in H7 and consequently overall unit costs are likely to be lower, and so even a substantial increase in business rates in H8 should not result in a problematic profile of overall charges.
56. Third, the risk that business rates will rise in the 2026 revaluation must be balanced against the risk that H7 will be extended (as happened for both Q5 and Q6). If this happens any repayment of over-

³⁵ CAA Consultation, paragraph 1.41.

³⁶ CMA Decision, paragraph 5.12.

³⁷ CMA Decision, paragraph 5.14.

recovery of business rates will be delayed. (There would be no issue in the case where there was an increase in business rates as a result of the revaluation as this could easily be accommodated in the H7 extension agreement.)

57. In conclusion, we do not believe that the £85 million business rates should be deferred, but rather included in the H7 cost base. Any increase in business rates during 2026 could easily be rolled into H8 since the amounts will be relatively small and most probably absorbed in higher passenger numbers anticipated for H8.

Allowance for Pension Deficit Repair Contributions

CAA Consultation proposal

58. The CAA's pensions advisers have indicated that there appears to be no case for HAL to make Pension Deficit Repair Contributions ("PDRC") until towards the end of H7 at the earliest. Therefore, the CAA proposes to remove £84 million of PDRC costs from the opex allowance for H7 and recalculate and reduce HAL's maximum allowed yield for 2025 and 2026 to reflect this. If HAL needs to incur PDRCs towards the end of the H7 period, the CAA proposes to address this through the H8 price control.³⁸

AlixPartners view

59. AlixPartners agrees with this approach and regards it to be consistent with our proposed approach on business rates explained above in paragraphs 53 to 55.

Pod parking allowance

CAA Consultation proposal

60. For the H7 Final Decision the CAA was not able to remove the T5 pod parking costs from the commercial revenue allowance as it had intended³⁹ (and done so in previous regulatory periods⁴⁰).
61. In removing the incremental profit an issue arose as to how to estimate the average incremental revenue yield from pod parking at T5. HAL's preferred approach was to compare the average yield per pod parking space with the average yield per parking space for all business parking facilities at Heathrow. This resulted in an estimated premium of 73%.⁴¹ The CAA, on the other hand, argues that it is more appropriate to compare the pod car park revenue per space against the T5 business car park only. This approach gives a premium of around 50% for 2019 (before disruption from the pandemic). This is towards the top end of the range for the pre-pandemic period of 2015-2019 which was 38-51%. In much of 2022, post-pandemic, the premium was distorted by closure of the T5 business carpark for the first 6 months of the year and the slow recovery of volumes in the remainder of the year.⁴²

³⁸ CAA Consultation, paragraph 14.

³⁹ CAA Consultation, paragraph 6.1.

⁴⁰ CAA Consultation, paragraph 6.2.

⁴¹ CAA Consultation, paragraph 6.7.

⁴² CAA Consultation, paragraph 6.8.

AlixPartners view

62. We agree with the CAA that it is important to find as close a benchmark as possible for T5 pod parking. Passenger mix, demand for carparking spaces and consumer willingness to pay for car parking close to the terminal will all vary between terminals. However, we believe the CAA should conduct a fuller evaluation at H8 to identify the costs attributable to pod parking. This would include analyses of:
- (a) Whether pod parking revenues should still be carrying any premium over other parking products given that the system has now been in operation for over a decade;
 - (b) No information has been disclosed on how costs are allocated to the pod parking product, for instance common infrastructure such as the entrance in Terminal 5. If pod parking is a premium product, should there be an equivalent allocation of costs to this service (including, for instance, for maintenance)?
 - (c) Whether the differences in occupancy are due to a premium or other factors.

Terminal Drop-off charge

63. We understand that HAL is requesting a change to its licence condition governing risk sharing for its Terminal Drop-off Charge ("**TDOC**") for the retrospective period 2022-2025.⁴³ As currently drafted risk sharing only applies to the period 2025-2026, however HAL argues that it was the CAA's intent for TDOC risk sharing to apply for the whole period including 2022-2023. We find this slightly surprising at this stage of the process since the true ups for other elements of the 2022 costs have already been factored into the K factor applied for the 2024 charges, which have already been consulted on and are in force.
64. Whilst the CAA is in the best position to comment on the intent of the sharing mechanism, including whether it was intended to cover the risk of shortfalls, our view from an economic incentive perspective is that risk sharing should only apply to elements that are outside the control of the company such as net volumes of traffic to and from the airport (discussed in paragraph 65). Indeed, the CAA excluded TDOC revenues from HAL's Traffic Risk Sharing mechanism. The CAA expected HAL *"to adopt a commercial approach to establishing the TDOC and maximising future TDOC revenues"*.⁴⁴ To the extent that any revenue shortfall is due to HAL's own decision making not to price to the CAA's forecasts or any operational inefficiency, it should be excluded from any historical true-up of the risk sharing mechanism.
65. We also comment that the CAA needs to take account of the fact that terminal drop-off traffic will be a direct substitute for HAL's revenues from car parking and commercial interests in public transport to and from the airport. Under-performance in terminal drop-off traffic may be associated with higher car park visits or revenues on public transport. The CAA needs to consider these issues in the round, by taking into account the impact of TDOC revenues on HAL's other public transport revenues. In this respect, we note that the CAA signalled that it will be conducting a review of TDOC revenues of TDOC revenues in 2024.⁴⁵

⁴³ HAL Licence, C1.19.

⁴⁴ CAA Final Proposals, paragraph 5.74.

⁴⁵ CAA Final Decision, see paragraph 5.8 of CAP2524C.

Arithmetic error

66. There appears to be an arithmetic error in paragraph D9 that leads to an understatement of the negative H7 adjustment by £0.067 in 2025 (i.e. -£0.864 rather than -£0.798) and £0.076 in 2026 (i.e. -£0.901 rather than -£0.825).

Changes to HAL's licence

67. AlixPartners has performed the calculations necessary to change the AK and H7 factors to rectify the issues discussed in this note. (We do not include the short comings in the passenger shock factor as this would require more work before a reliable factor can be estimated). Details of our calculations, which follow the approach of the CAA Proposals are shown in the Annex.

68. The licence changes required to implement our view of the AK factor (i.e. requiring HAL to refund its over-recovery of volume mix) is in condition C1.22(b) as follows:

C1.22(b)(i) OR2020 is equal to ~~£29~~ £37 million in 2020 RPI-real prices; and

C1.22(b)(ii) OR2021 is equal to ~~£48~~ £65 million in 2021 RPI-real prices.

69. The corrected numbers above are those given in paragraph 51 above.
70. All the remaining changes discussed in this note can be accommodated by recalibrating the 2025 and 2026 prices in the Price Control Model ("PCM") and amending the H7t in license condition C1.23. Table 4 details the changes required to the PCM.

Table 4: Changes required to PCM

Issue	Changes to PCM
Index linked premium in cost of debt	Sheet: I_series Row: 336-338, 341-342, 348
Passenger forecast shock factor	Sheet: I_series Row: 17, 22, 24
Business rates allowance	Sheet: I_series Row: 159

Source: AlixPartners analysis.

71. The licence changes required to implement our view of the H7 factor (i.e. correction of arithmetic error, negative index linked premium of 10bp and reduction in business rates) is in condition C1.23 as follows:

(a) for 2025, $H7_{2025} = -0.798$ -1.684; and

(b) for 2026, $H7_{2026} = -0.825$ -1.755.

72. Taken together, these license changes will have a £186 million impact on airline costs, to the benefit of customers, over 2025-26 (nominal prices).

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73. We also note that a material subscript error needs to be rectified in licence condition C1.6 (X_{t-1} for X_t). This is covered in paragraphs 7.3 to 7.15 of the CAA Consultation; we agree with the CAA's commentary and proposal to correct this manifest error.
74. Finally, as discussed in paragraph 7.24 of the CAA Consultation, we are of the view that the inclusion of HAL's one-off £0.25 per passenger service quality bonus in the 2023 base average yield per passenger from which the 2024 price cap is calculated lacks transparency. Since this was a one-off-bonus it should not appear in the base price from which the maximum charge is calculated for the following year. We understand that the calibration of the currently used PCM allows for this distortion but nevertheless in our view the approach lacks transparency.

Conclusion

75. This note sets out our views on the CAA Consultation concerning actions that should be taken to finalise the Heathrow H7 price controls following the CMA Decision. We conclude that:
- (a) **The index linked premium in the cost of debt should at least be -10 bps:** an important role for index linked debt is to remove inflation risk from investors' returns and, therefore, allow them to lend money at lower interest rates (since the debt issuer will now bear the inflation risk – which in HAL's case is mitigated by the index linked revaluations of its regulated asset base). This should produce a negative linked premium that has not been considered by either the CAA and its financial advisers, Centrus. There is evidence for a negative index linked adjustment of at least 10bps. This change reduces HAL's overall pre-tax WACC from 4.01% (assumed in the CAA Proposals) to 3.99%.
 - (b) **The passenger forecast shock factor:** the CAA has not properly validated the methodology used by HAL to set its passenger forecast shock factor. We find that HAL's methodology has three critical flaws: (i) the estimate is contaminated by economic downturns, which should be excluded; (ii) there is an insufficient basis to assume the base traffic forecasts already reflect "shocked" traffic; and (iii) the methodology ignores the possibility of "positive rebounds" following negative shocks (e.g. because of delayed travel). Each of these will result in an over-estimation of the shock factor value making HAL's estimate unreliable and unfit for purpose. While we are not able to quantify the true value ourselves, the CAA should require HAL to rectify these flaws if the shock factor is to be used.
 - (c) **The AK factor:** In respect of the business rates and development capex elements of the AK factor, we acknowledge that the CAA has adopted the approach set out by the CMA by recalibrating the adjustments to reflect the actual over-recovery that HAL made during the pandemic years based on the lower passenger numbers. The volume mix element of the AK factor presents a different issue in that it already reflects HAL's actual over-recovery against the regulated settlement based on actual traffic mix, and as a matter of principle HAL should not benefit from the unexpected change in volume mix during the pandemic. Therefore, we find that HAL should not be allowed to retain its over-recovery due miss-forecasting the volume mix. In the light of this, rather than the 50/50 split proposed by the CAA, HAL should repay 100% of the over-recovery from volume mix miss-forecasts.

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- (d) **The business rates allowance for H7:** the £85 million business rates reduction received by HAL should not be deferred, but rather included in the H7 cost base. This reflects the principle of aligning costs with the period in which they are incurred and aids transparency of the regulatory process. Any increase in business rates towards the end of H7 can be covered during the H8 process, with any interim cost increase likely to be mitigated by likely higher passenger volumes during this regulatory period.
- (e) **Pension deficit repair allowance:** we agree with the approach taken by the CAA to implement the saving in the PDRC in H7. This is consistent with our proposed approach on business rates.
- (f) **Removal of pod parking incremental profits from the commercial revenues allowance:** We agree with the CAA that it is important to find as close a benchmark as possible for T5 pod parking. Passenger mix, demand for carparking spaces and consumer willingness to pay for car parking close to the terminal will all vary between terminals. However, we believe the CAA should conduct a fuller evaluation at H8 to identify the costs attributable to pod parking and whether a premium is still justified.
- (g) **Terminal Drop-off Charge:** Whilst the CAA is in the best position to comment on the intent of the sharing mechanism, including whether it was intended to cover the risk of shortfalls, our view from an economic incentive perspective is that risk sharing should only apply to elements that are outside the control of the company such as net volumes of traffic to and from the airport. To the extent that any revenue shortfall is due to HAL's own decision making not to price to the CAA's forecasts or any operational inefficiency, it should be excluded from any historical true-up of the risk sharing mechanism. The CAA should also consider the extent to which under-performance in terminal drop-off traffic is associated with higher car park visits or revenues on public transport.
- (h) **Correct an arithmetic error in paragraph D9 of the CAA proposals:** There appears to be an arithmetic error in paragraph D9 that leads to an understatement of the negative H7 adjustment.

76. In Table 5 we summarise the results (excluding any impact from further review of the passenger forecast shock factor and the TDOC for which we have insufficient information).

Table 5: Impact of AlixPartners view of the AK_t and H7_t factors - changes to the allowed price cap in 2025 and 2026

	2025 AP	2026 AP	2025 CAA	2026 CAA
AK factor - total	-0.956	-0.996	-0.718	-0.748
H7 factor				
Index linked premium	-0.336	-0.350	-0.186	-0.192
PDRC	-0.695*	-0.724*	-0.642	-0.663
Business rates	-0.685	-0.714		
Pod parking	+0.032*	+0.034*	+0.030	+0.031
Total	-1.684	-1.755	-0.798	-0.825

*: Difference between CCA calculation due to rectification of error in CAA Consultation paragraph D9.

Source: AlixPartners analysis.

77. The overall impact of the price changes in Table 5 is shown in Table 6. This uses the H7 passenger forecasts to scale the unit prices to the overall airport usage costs paid by all airlines at Heathrow. Overall, we conclude that the CAA Proposals would result in an overpayment by airlines (£ million, nominal).

Table 6: Impact of AlixPartners view of the AK_t and H7_t factors – overall cost to airlines

£ million, nominal)	2025	2026	Total
CAA proposals			
AK factor	58.11	61.02	119.13
H7 factor	64.38	67.08	131.46
AP proposals			
AK factor	77.15	81.01	158.16
H7 factor	135.90	142.69	278.59
Impact			
AK factor	19.04	19.98	39.03
H7 factor	71.52	75.61	147.13
Total	90.56	95.60	186.16

Source: AlixPartners analysis.

Appendix: Recalculation of AK and H7 factors

78. The CAA's approach to take account of the factors discussed in its consultations was twofold. First, it directly calculated revised the AK_t factor for 2025 and 2026 and, second, it introduced a new $H7_t$ factor to capture the impact of other changes it proposed to make to the regulated price cap previously published in its H7 Final Decision (PDRC, removal of the indexed linked debt premium and changes to pod parking incremental profits). Although these changes relate to the whole of the H7 period, the CAA's calculations ensure that the overall impact is trued-up in 2025 and 2026 after allowing for expected inflation and the time value of money (through the cost of capital). The impact was then equally spread over both years.
79. In this annex we provided calculations for the AK_t and $H7_t$ factors using the exact methodology of the CAA proposals but corrected for:
- (a) First, the arithmetic error in paragraph D9;
 - (b) Second, our view of the necessary assumptions from the analysis of this note.

CAA published calculations

80. In the table below we show our reproduction of the CAA's calculations. Note that these differ slightly from published CAA Proposals due to rounding errors in reproducing CAA calculations.

AK Factor						
£ million, 2020 CPI-real prices	2020	2021	Total			
Original calculation						
Original Dt ("A")	-40	-89	-129			
Original BRt ("B")	-35	-40	-75			
Original Pax mix ("C")	-17	-33	-50			
Original AK factor ("D"=A+B+C)	-92	-162	-254			
Passenger figures used to recalibrate D_t and BR_t						
Forecast passenger volume (million) ("E")	81.5	82				
Outturn passenger volume (million) ("F")	22.1	19.4				
Outturn passenger volume as a percentage of forecast passenger volume (%) ("G" = F/E)	27%	24%				
Recalculation of AK factor						
Recalculated Dt ("H" = A x G)	-11	-21	-32			
Recalculated BRt ("I" = B x G)	-9	-9	-19			
Recalculated Pax mix ("J" = C x 50%)	-9	-17	-25			
Recalculated AK factor ("AK" = H + I + J)	-29	-47	-76			
	2020	2021	2025	2026	Total	
Inflation, WACC and passenger forecast inputs						
ONS CPI index (D7BT index) ("L")	108.75	111.56				
ONS RPI index (CHAW index) ("M")	293.14	305.00	381.25	384.94		
Pre-tax real WACC (%) ("N")						4.01%
H7 forecast passengers (million) ("P")			80.7	81.3		
Calculation						
Recalculated AK factor (£ million CPI-2020) (applying CPI inflation uplift to "AK" from Table 1 above) – for detail, see paragraph D3 below	29	48				77
2020 allowed revenues adjustment (reduction) in 2025 and 2026 (£ million nominal) ("Q" calculated in accordance with paragraph D4 below)			22.83	23.97		46.80
2021 allowed revenues adjustment (reduction) in 2025 and 2026 (£ million nominal) ("R" calculated in accordance with paragraph D5 below)			35.28	37.05		72.33
Changes (reduction) to allowed price cap in 2025 and 2026 (£ per passenger) ("S" = (Q + R) / P)			0.720	0.751		
H7 Factor						
£ million, 2020 CPI-real prices	2024	2025	2026	Total		
Removal of the index linked debt premium ("T")	-8.19	-8.37	-8.44	-25.00		
Changing PDRC allowance ("U")	-28.25	-28.88	-29.12	-86.25		
Changing pod parking allowance ("V")	1.31	1.33	1.35	3.99		
Reduction in business rates ("W")	0.00	0.00	0.00	0.00		
Total H7t adjustment ("W" = T + U + V + W)	-35.13	-35.92	-36.21	-107.26		
	2022	2023	2024	2025	2026	Total
Inflation, WACC and passenger forecast inputs						
ONS CPI index (D7BT index) ("L")	340.49	376.96	382.60	381.25	384.94	
Pre-tax real WACC (%) ("N")						4.01%
H7 forecast passengers (million) ("P")				80.7	81.3	
Calculation (all in current year prices)						
Present value of change as at 2022 ("X" calculated in accordance with paragraph D8 below)			-31.22	-30.69	-29.75	-91.66
NPV (as at 2022) to be recovered ("Y") = Xtotal x 50%				-45.83	-45.83	-91.66
Nominal amount to be recovered (£ million) ("Z" calculated in accordance with paragraph D9 below)				-64.38	-67.08	
Changes to allowed price cap in 2025 and 2026 (£ per passenger) AA = Z / P (see paragraph D10 below)				-0.798	-0.825	

Note: differs slightly from published CAA Proposals due to rounding errors in reproducing CAA calculations.

AlixPartners Calculations

82. In the table below we provide the AlixPartners calculations, with differences in assumptions highlighted in blue. Our calculations differ from those of the CAA for the following reasons:

- HAL is allocated 100% of the volume mix adjustment in the AK factor (as discussed in paragraph 51);
- We assume a negative index linked premium of 10bp (as discussed in paragraph 17);
- We do not defer the £85 million business rates deduction (as discussed in paragraph 56).

AK Factor						
£ million, 2020 CPI-real prices	2020	2021	Total			
Original calculation						
Original Dt ("A")	-40	-89	-129			
Original BRt ("B")	-35	-40	-75			
Original Pax mix ("C")	-17	-33	-50			
Original AK factor ("D"=A+B+C)	-92	-162	-254			
Passenger figures used to recalibrate D_t and BR_t						
Forecast passenger volume (million) ("E")	81.5	82				
Outturn passenger volume (million) ("F")	22.1	19.4				
Outturn passenger volume as a percentage of forecast passenger volume (%) ("G"= F/E)	27%	24%				
Recalculation of AK factor						
Recalculated Dt ("H"= A x G)	-11	-21	-32			
Recalculated BRt ("I" = B x G)	-9	-9	-19			
Recalculated Pax mix ("J" = C x 100%)	-17	-33	-50			
Recalculated AK factor ("AK" = H + I + J)	-37	-64	-101			
	2020	2021	2025	2026	Total	
Inflation, WACC and passenger forecast inputs						
ONS CPI index (D7BT index) ("L")	108.75	111.56				
ONS RPI index (CHAW index) ("M")	293.14	305.00	381.25	384.94		
Pre-tax real WACC (%) ("N")					3.99%	
H7 forecast passengers (million) ("P")			80.7	81.3		
Calculation						
Recalculated AK factor (£ million CPI-2020) (applying CPI inflation uplift to "AK" from Table 1 above) – for detail, see paragraph D3 below	37	65			102	
2020 allowed revenues adjustment (reduction) in 2025 and 2026 (£ million nominal) ("Q" calculated in accordance with paragraph D4 below)			29.53	31.00	60.53	
2021 allowed revenues adjustment (reduction) in 2025 and 2026 (£ million nominal) ("R" calculated in accordance with paragraph D5 below)			47.62	50.00	97.63	
Changes (reduction) to allowed price cap in 2025 and 2026 (£ per passenger) ("S" = (Q + R) / P)			0.956	0.996		
H7 Factor						
£ million, 2020 CPI-real prices	2024	2025	2026	Total		
Negative 10bp index linked debt premium ("T")	-13.65	-13.95	-14.07	-41.67		
Changing PDRC allowance ("U")	-28.25	-28.88	-29.12	-86.25		
Changing pod parking allowance ("V")	1.31	1.33	1.35	3.99		
Reduction in business rates ("#")	-28.33	-28.33	-28.33	-85.00		
Total H7t adjustment ("W" = T + U + V + #)	-68.92	-69.83	-70.17	-208.93		
	2022	2023	2024	2025	2026	Total
Inflation, WACC and passenger forecast inputs						
ONS CPI index (D7BT index) ("L")	340.49	376.96	382.60	381.25	384.94	
Pre-tax real WACC (%) ("N")						3.99%
H7 forecast passengers (million) ("P")				80.7	81.3	
Calculation (all in current year prices)						
Present value of change as at 2022 ("X" calculated in accordance with paragraph D8 below)			-61.29	-59.72	-57.70	-178.71
NPV (as at 2022) to be recovered ("Y" = Xtotal x 50%)				-89.35	-89.35	-178.71
Nominal amount to be recovered (£ million) ("Z" calculated in accordance with paragraph D9 below)				-135.90	-142.69	
Changes to allowed price cap in 2025 and 2026 (£ per passenger) AA = Z / P (see paragraph D10 below)				-1.684	-1.755	
				CAA Error	-0.886	-0.930
Total impact on airline costs						
£ million (nominal)				2025	2026	Total
CAA Proposals						
AK factor				58.11	61.02	119.13
H7 factor				-64.38	-67.08	-131.46
AlixPartners						
AK factor				77.15	81.01	158.16
H7 factor				-135.90	-142.69	-278.59
Impact						
AK factor				19.04	19.98	39.03
H7 factor				71.52	75.61	147.13
Total				90.56	95.60	186.16