

Virgin Atlantic Airways response to the CAA's consultation on *Economic regulation of capacity expansion at Heathrow: policy update and consultation (CAP 1610)*

Introduction

1. Virgin Atlantic Airways (VAA) is pleased to respond to the consultation on CAP 1610, *Economic regulation of capacity expansion at Heathrow: policy update and consultation*, published in December 2017. This follows our response to the *Consultation on the core elements of the regulatory framework to support capacity expansion at Heathrow (CAP 1541)* in September 2017. We welcome the CAA's ongoing consultation on how the regulatory approach to expansion at Heathrow can best protect the interests of consumers.
2. This response follows the structure of the consultation document and covers the following issues in turn:
 - affordability;
 - cost transparency;
 - encouraging competitive solutions and commercial arrangements;
 - profiling of regulatory depreciation;
 - cost of capital and debt indexation;
 - financeability and indexing for inflation;
 - financial resilience and ring fencing;
 - the regulatory retreatment of early construction costs; and
 - interim arrangements to extend the Q6 price control

Affordability

3. We have consistently supported expansion at Heathrow provided that it enables a significant increase in airline competition at the airport and provides genuine value for money for passengers. We do not support the delivery of expansion at any price. The programme must deliver the right scope and passenger benefits at the right price, as well as value and cost efficiency for the life of the programme.
4. We have shared with HAL our high level requirements for expansion, such as world-class intra-airport connectivity that enables the airport to operate as hub for all carriers across the airport campus. We want the project to meet these objectives as they will deliver significant passenger benefits by enabling effective airline competition at the airport.
5. We judge that expansion can be delivered to meet our objectives and deliver significant passenger benefits without increasing passenger charge in real terms. We welcome the CAA's recent oral evidence to the Transport Select Committee confirming our assessment: *'The modelling we have done says that it is plausible to build the infrastructure that is currently proposed and keep costs flat. We know that it is possible.'*¹
6. We have called on HAL to commit to a Passenger Cost Guarantee, setting out the total budget for delivering the expansion programme, committing that passenger charges will be no higher than today's charges in real terms, and guaranteeing to cover the costs of any overspend. This is important because Heathrow already has the highest airport passenger charges in the world.² Despite the current Q6 RPI-1.5% price path, the long haul passenger charge at Heathrow increased by over 8% to £44.34 in 2018.³

¹ <http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/transport-committee/airports-national-policy-statement/oral/79002.html>, Q.635

² Leigh Fisher Review of Airport Charges 2016

³ https://www.heathrow.com/file_source/Company/Static/PDF/Partnersandsuppliers/Heathrow-Airport-Limited-Conditions-of-Use-2018.pdf, p.29

Passengers should be protected from cost overruns or inefficiencies as they have no influence over the programme. Increasing charges further would impact on passenger demand and undermine the business case for expansion.

7. The CAA refers to HAL's response to this issue in CAP 1541 where it was suggested that the CAA should not 'back solve' for a specific price level (para. 1.23). Our experience of the expansion programme is that HAL are 'back solving' for a number of public commitments - such as on surface access and air quality - that were made to secure the Government's preference for Heathrow expansion but bring significant cost and risk to the project.

Cost transparency

8. We are pleased that the CAA shares our aspirations for bringing transparency to the costs of capacity expansion and will seek to ensure that there are properly transparent forecasts of all the capital and operating expenditures necessary to support the efficient expansion and operation of Heathrow in the future (para. 1.17). We agree with the CAA's assessment that HAL needs to make *'substantial further progress, as soon as is reasonably practicable, in producing forecasts of the efficient level of the over costs of capacity expansion that are reliable and robust'* (para. 8).
9. We recognise that the Heathrow expansion programme has years to run, but HAL issued a national press release stating it had *'identified potential savings of £2.5bn'* and that it was *'increasingly confident we can meet the affordability challenge'* in December 2017⁴, and issued a full public consultation on its emerging plans in January 2018⁵, yet has still not provided airlines (or the CAA we understand) with any significant new detail on the costs of expansion. This hampers meaningful engagement because we cannot provide informed views on various options without any detailed understanding of the relative capital or operational costs. We look forward to the CAA's latest assessment in its next Section 16 report.

Encouraging competitive solutions and commercial arrangements

10. Given Virgin Atlantic was founded on the principle that competition in aviation is good for passengers, we are open-minded to any proposals to introduce intra-airport competition at Heathrow.
11. The arguments in favour of third party engagement are around the benefits of competition, both in terms of the cost of building a terminal or other facilities, and in terms of stimulating the current airport operator to reduce costs and improve its own service levels. There would be issues to consider, such as how the benefits of competition would be shared between airlines located in different terminals due to capacity constraints that prevent unrestricted movement between operators. However, we are pleased that, like us, the CAA remains open to the idea of third party involvement; that it considers the regulatory regime flexible enough to accommodate a wide range of commercial structures at Heathrow; and that the CAA would be in favour of such arrangements where they can be shown to benefit consumers.
12. We are aware that the idea of third party engagement in the form of competing terminal infrastructure has been considered many times before. It was first raised in the run up to Q4 in a CAA 2001 discussion paper, *Competitive Provision of Infrastructure and Facilities Within Airports*.⁶ The CAA concluded at that time that the benefits of regulatory

⁴ <https://www.heathrowexpansion.com/construction-and-supply-chain/heathrow-set-unveil-options-2-5-savings-expansion-plans/>

⁵ <https://www.heathrowexpansion.com/other-news/heathrow-expansion-gathers-momentum-consultation-launches/>

⁶ <http://webarchive.nationalarchives.gov.uk/20140605145547/http://www.caa.co.uk/docs/5/ergdocs/competitionwithinairportsfeb01.pdf>

intervention to stimulate intra-airport competition would most likely be outweighed by operational and regulatory dis-benefits.

13. The issue was raised again by the CAA in its December 2005 *Airports Review: Policy Issues* consultation⁷ after the Irish Government had raised the possibility in 2002 of a competing terminal at Dublin Airport, and again in March 2008 in relation to a new terminal at Stansted, when Frontier Economics prepared a paper for easyJet on the Regulation of Capacity Investment at Stansted Airport.⁸ This paper presented extensive supporting evidence in favour of competition between airport terminals and provided several examples from other airports, mainly in the US. It also offered arguments against potential concerns. We believe that this paper presents very robust theoretical arguments in favour of intra-airport competition and that the CAA should have regard to them in considering this issue.
14. There are some well-known examples of third party involvement in terminal construction and operation, particularly in the USA, where different ownership of airport terminals is common. Terminal 4 at New York JFK Airport is an example of a privately-owned terminal (the owner being Amsterdam Schiphol Airport). There are also examples in Europe, including at Antalya and Prague. The Irish Government has recently considered once again the possibility of introducing a third-party developer at Dublin Airport.
15. Although the concept of intra-airport competition is established overseas and has been aired several times before in the UK, we believe that the once in a generation expansion of capacity at Heathrow warrants its re-consideration. The CAA has always recognised that competition is preferable to regulation and it is incumbent upon it to explore competitive options to their greatest extent. We understand that the CAA has concluded that it currently has no legal powers to compel HAL to enter into engagement with third parties, but has stated that it expects HAL to address how it has engaged with potential third-party providers in its Initial Business Plan and Final Business Plan. We suggest the CAA proactively enter into discussion with HAL to explore how third-party engagement could benefit the process of providing new capacity. At the same time, the CAA should explore what legal powers it would need if it became clear that such a route would afford the best outcome for consumers.
16. We note that the CAA remains open to HAL and airlines bringing forward commercially negotiated arrangements (para. 7). We are open to exploring this option but have reservations. We are concerned that the potential outcome may not be in passengers' best interests. The CAA has determined that HAL holds significant market power⁹ and this is likely to grow stronger with expansion. This places airlines at a disadvantage when entering into commercial negotiations. Furthermore, there is a big difference in scale between airlines at Heathrow. One airline group operates more than 50% of slots and no other group operates more than 5% of slots. This means there is likely to be a large disparity in power between different airlines in their negotiations with HAL.

Profiling of regulatory depreciation

17. In our response to CAP 1541, we proposed using unitised depreciation as a more equitable approach to defining regulatory depreciation in the context of the development of a third runway at Heathrow. In CAP 1610, the CAA states that "*We do not intend to pursue concepts such as unitised depreciation, as such a relatively mechanistic approach could be inconsistent with affordability and/or financeability*".¹⁰ Given the potential importance of issues around the form of depreciation and the well-recognised benefits in terms of the equitable distribution of costs across existing and future users, we are

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http://webarchive.nationalarchives.gov.uk/20140605144844/http://www.caa.co.uk/docs/5/ergdocs/erg_ercp_airportsreview_dec05.pdf

⁸ <https://www.frontier-economics.com/documents/2008/03/regulation-of-capacity-investment-at-stansted-airport-frontier-report.pdf>

⁹ <http://publicapps.caa.co.uk/docs/33/CAP%201133.pdf>

¹⁰ CAP1610 Para 1.28, Page 23-24

concerned that the CAA has essentially dismissed the concept at this early stage without any evidence being presented to support the statement, and without being transparent in any analysis of its impact on either affordability or financeability.

18. As previously stated, the use of straight line depreciation is out of step with more recent regulatory precedent in relation to the funding of major airport infrastructure and in our view profiling regulatory depreciation seems to a purely arbitrary approach. The Irish CAR, in considering the correct form of depreciation in relation to DAA's investment in Terminal 2 at Dublin Airport and latterly in relation to the second runway at Dublin, concluded that the use of unitised depreciation is a more equitable approach as it avoids the perverse issue that with straight line depreciation existing passengers will pay more on a per passenger basis than future passengers, as there are fewer of them to bear the costs. This helps to at least partially address potential issues around prefunding and provides a more equitable solution in terms of the costs borne by existing and new users.
19. We note that unitised depreciation has been adopted by the Dutch Government in relation to the economic regulation of Amsterdam Schiphol Airport¹¹. It was the approach used in regulating the investment in the fifth runway at Schiphol. This approach was felt to be the most appropriate in regulating major infrastructure investments (defined as in excess of €100 million), where there is expected to be initial overcapacity.
20. The CAA asserts that unitised depreciation could be incompatible with affordability and financeability. In our view unitised depreciation could improve affordability as it would enable depreciation charges to be borne by more passengers as the airport grows and hence reduce the pressure on charges. We accept that this may impact to some degree on financeability given that it will take longer for HAL to recover its capital costs (albeit it will be earning a higher return as the more of the investment will remain in the RAB for longer), but we would at least expect an analysis of this effect to be undertaken, especially given the clear equity benefits for users and the ultimate duty of the CAA to further the interests of users.
21. Furthermore, we would also point out that profiling regulatory depreciation is not inconsistent with unitised depreciation. A starting point is needed for any form of profiling and this could be from a unitised form.

Cost of capital and debt indexation

22. We recognise that capacity expansion will require the financing of significant amounts of capital expenditure. As the cost of financing will be critical in determining the overall level of airport charges, it is a high priority issue for us.
23. We welcome the work commissioned by the CAA and produced by PwC providing an early and preliminary range for HAL's WACC. We have set out a number of specific points in relation to the WACC and its determination for consideration below, but overall we judge the PwC analysis to be generally sound, providing a very useful initial view.
24. We note that the CAA is consulting a group of senior expert advisors on its approach to the WACC and areas of additional focus for future consideration (para. 2.12). We expect the CAA to be fully transparent on this process, notably which other advisers are being consulted, the scope of any advice, and on its views on the position put forward by its advisers.

Cost of debt

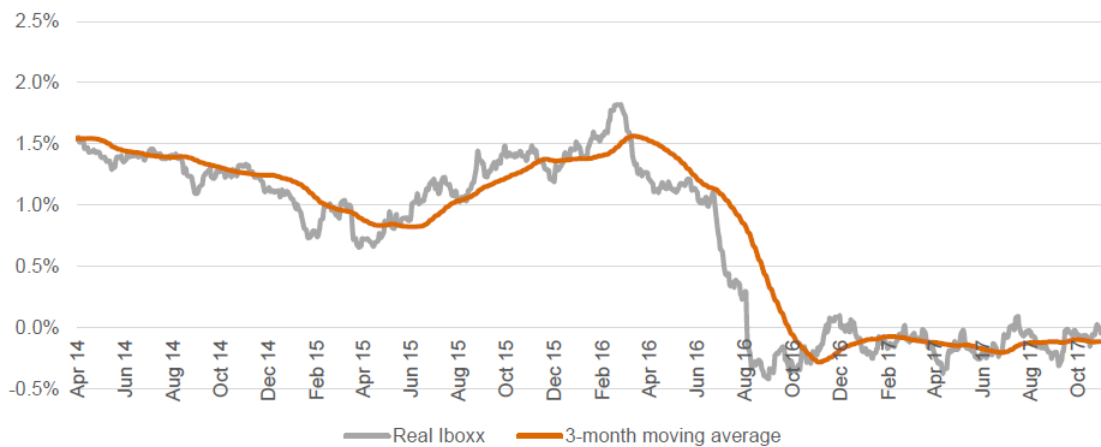
25. We have considered a number of issues around the cost of debt below, specifically around the cost of new debt and the cost of embedded debt.

¹¹ Decree dated 7 July 2006 entailing rules regarding the operation of Amsterdam Airport Schiphol (Amsterdam Airport Schiphol Operation Decree) – Kingdom of the Netherlands (2006). Chapter 1, Article 1, Point G and below

Cost of new debt

26. PwC judges the cost of new debt to lie between 0.15% - 0.6%, with a point estimate of 0.4% using the IBoxx benchmark for long term, non-financial investment grade corporates (taken as an average of A and BBB ratings). This methodology is appropriate for a notional airport as the index covers the cost of debt for firms across the higher and lower end of the investment grade credit ratings.
27. We note that the Q6 CAA determination overestimated the indexed cost of new debt at 2.5%, citing shocks in the market post the global financial crisis. However, as can be seen in Figure 4.3 from the PwC report, the real benchmark yields have always remained under 2% since April 2015. This has allowed for airports like Heathrow to take advantage by raising new debt and refinancing existing debt at rates significantly lower than 2.5%.

Figure 4.3 Real iBoxx yields over Q6



Source: Thomson Reuters, Bank of England, CAA Q6 final decision

Note: Real nominal iBoxx yields deflated to real-terms using Bank of England 10-year breakeven inflation

28. Table 1 shows the recent debt raising activity of various investment grade airports across the Europe.

Table 1: Recent Debt raising activity by investment grade airports in Europe					
Airport	Recent Credit Rating	Ratings Provider	Coupon Rate on bond/loan issuance (Nominal)	Year of Issuance	Notes
Geneva	AA (Canton of Geneva)	S&P	0.40%	2017	CHF175m, 10-year bond, ISIN CH0379268706
Amsterdam Schiphol	A+	S&P	1.12%	2016	€150m, 12-year fixed rate bond, due 2028, XS1437013870
Aéroports De Paris	A+	Fitch	1%	2017	€500m, 10-year bond, FR0013302197
Zurich	A+	S&P	0.625%	2017	CHF 350m, 12-year bond, CH036 153 287 9
Avinor (Norwegian Airports)	A1 (Equivalent to A+)	Moody's	1.250%	2017	€500m, 10-year bond, XS1562601424
AENA (Spanish Airports)	A	Fitch	0.69%	2017	€600m, 5-year new fixed rate debt borrowed from various entities
Heathrow	A-	S&P	1.875%	2017	June 2017 of a €500 million, 15-year public

					bond with a fixed rate coupon of 1.875%
Dublin	A-	S&P	1.554%	2016	€400m Eurobond maturing in 2028 (12-year)
Swedavia	A- to A+	Nordic Banks	0.935%	2017	SEK 2bn 5-year bond, SE0010494443
Gatwick	BBB+	S&P	3.125%	2017	£350m maturing in 2041 (24-year bond)
MAG (Manchester + Stansted)	BBB+	Fitch	2.875%	2017	£300m, 22-year bond, with an annual coupon of 2.875% and order book that was over three times oversubscribed at around £1bn. XS1718393512
Brussels	Baa1 (Equivalent to BBB+)	Moody's	1%	2017	€300m, 7-year bond, BE6295011025
Aeroporti Di Roma	BBB+	Fitch	1.625%	2017	€500m, 10-year bond, EMTN, June 2017

29. The table demonstrates that the nominal rates for bonds with maturities under 20 years lie between 0.4% (Zurich, 2017) to 1.875% (Heathrow, 2017). The nominal rate itself used for this particular bond issuance for Heathrow is considerable lower than the CAA's estimate of real cost of new debt of 2.5%. Adjusting this 1.875% to a real rate (with 2017 RPI of 3.6%) yields a real cost of debt of -1.667%, far below the cost of debt for average investment grade non-financial corporates. It is also worth noting that the highest cost of debt, Gatwick with a nominal rate of 3.125%, yields a real rate of -0.46% in 2017, despite having a longer time to mature and a credit rating of BBB. Given the analysis above, for a notional airport with an investment grade credit rating, we believe that the range put forward by PwC is not unreasonable, but suggest that it is likely to be towards the high end of a potential range.

Cost of embedded debt

30. We note PwC's support for the use of debt indexation in relation to embedded debt and that this runs contrary to the views expressed by the CAA. We continue to believe that debt indexation has significant equity advantages and therefore support PwC's position.
31. We understand that PwC has estimated the real cost of embedded debt of 1.8% using a more cautious 15-year trailing average of the IBoxx benchmark. Using a 15-year trailing average takes into account the debt issuances over a longer time frame and again for the purposes of aligning the cost of debt to a notionally efficient airport, the investment grade benchmark is more appropriate. This figure again is far higher than HAL's real cost of debt. In September 2017, Heathrow reported its cost of debt in total as 3.95% (Heathrow Airport Holdings Limited's consolidated debt and cost of debt at 30 September 2017) across all debts combined. Adjusting to the 2017 RPI of 3.6% gives a real cost of debt of 0.34%. Again, this suggests that for a notional company 1.8% is not unreasonable on current evidence but that it is towards the top end of any range around the cost of embedded debt.

Overall cost of debt

32. In comparison with recent regulatory proceedings, the overall cost of debt of 1.8% estimated by PwC falls in line with the Utility Regulator's NIE Networks RP6 Final Determination on the real cost of debt of 1.63% (vs 3.5% in RP5), where the embedded cost of debt was retrieved from NIE's actual cost of debt and the new cost of debt was

determined using the IBoxx BBB Corporate Index. The Utility Regulator made the following statement in relation to the cost of debt:¹²

'Our estimate of NIE's cost of debt is lower than the other allowed costs of debt. This reflects the opportunity that NIE has to raise new debt at historically low rates of interest towards the start of the RP6 period, whereas other companies will have to go on servicing more in the way of legacy debt at comparatively higher rate of interest for several more years. Indeed, the estimate could have been lower if we had taken into account, as Ofgem has previously, the potential for regulated companies to outperform the reference rate – referred to as the halo effect.'

Weight of embedded and new debt

33. The CAA needs to consider two particular issues around the weighting between embedded and new debt.
34. Rational, notionally efficient businesses would typically seek to take advantage of favourable market conditions, such as low interest rates, to refinance their existing debt. This has certainly been done by airports in the past, a key example being Dublin (2016). The amount of debt to refinance is, however, subjective. In relation to Heathrow it could be significant, as around 42% of existing debt commitments mature before the end of 2024.
35. If the amount of debt HAL would have to raise relating to capacity expansion were to £17bn as per the Airport's Commission Final Report¹³, it would nearly double the amount of debt HAL currently services. Adjusting the weighting of new debt relating to capacity expansion and refinancing activity would significantly increase the weighting to at least the 60% seen in PwC's high case scenario.
36. For the purposes of comparison, the NIE RP6 determination adopted a 48:52 balance of embedded debt to new debt, substantially higher than the existing balance, following discussions which determined that NIE would be raising an additional amount of debt in the coming years.

Cost of equity

37. We have number of observations regarding the cost of equity and its influence on the WACC.

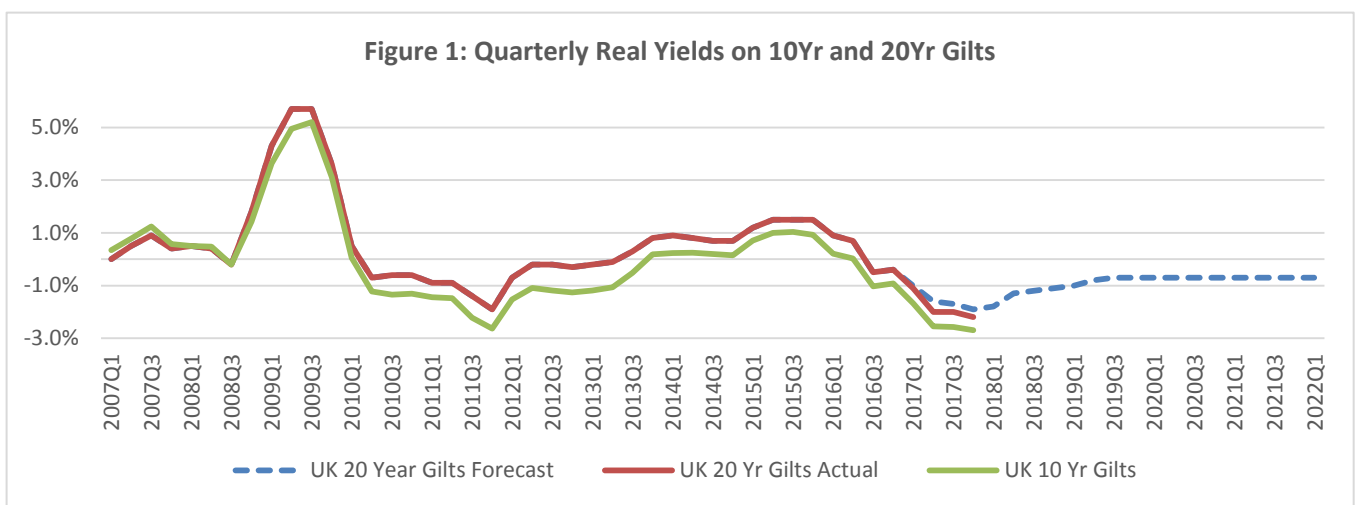
Risk-free rate (RFR)

38. PwC has estimated the RFR at between -1.4% to -1% by taking into account the spot and forward-looking yields on both nominal and indexed linked gilts, and also by considering recent regulatory decisions on the RFR.
39. Having examined the spot yields on 10yr gilts since the Q6 decision and the OBR medium-term forecast yields for gilts, we agree with PwC that the RFR should be lower than the current 0.5% adopted for Q6. There is clearly a current downward trend in returns, driven in part by an increasing supply of gilts due to quantitative easing, resulting in a lower yield. This trend has been ongoing since the Q6 determination consultations, making it more than just a short-term market imperfection.
40. However, forward yields of currently trading bonds are not the most appropriate determinants of future yields. The yield of a Government bond depends on the supply and demand characteristics of the bond at the time of issue. We have therefore used forecasts produced by various governing bodies to form our views on the RFR.

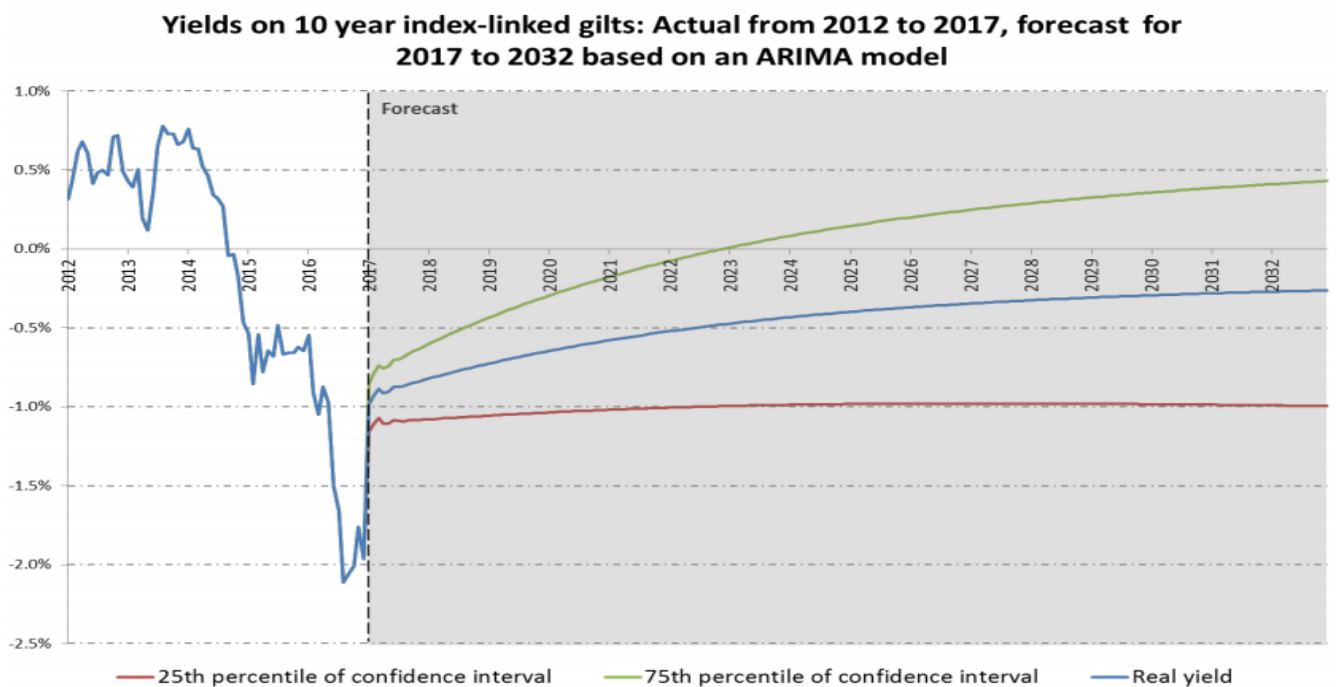
¹² <https://www.uregni.gov.uk/sites/uregni/files/media-files/2017-07-04%20RP6%20FD%20Main%20Report%20%28002%29.pdf>, p.225, para. 12.49

¹³ Noting that HAL has already suggested it can reduce the costs of its proposals to some degree

41. Figure 1 below shows the historic quarterly real yields on 10-year and 20-year gilts (adjusted using quarterly inflation rates) and forecast for 20-year gilts produced by the OBR. By the end of 2022, the forecast yields on the 20-year gilts are estimated to rise to -0.7%. A similar trend can be seen with the 10-year gilt yields, but with lower yields, as the shorter time frame to maturity provides a lower risk to gilt buyers compared to 20-year gilts. Thus, we assume that the 10-year gilts will follow a similar forecasted path with a lower real yield.
42. The second graph shows a medium-long term forecast for the 10-year index linked gilts, produced by the Financial Conduct Authority and the PwC Economics team, using information from the Bank of England. The real yields slowly rise to -0.4% by 2024 from around -1%. By the end of 2032, it is estimated that the real yield would rise to around -0.25%.



Source: OBR, Bank of England, York Aviation Analysis



Source: Rates of Return for FCA Prescribed projections, FCA, September 2017

43. When viewed in the round, these two pieces of evidence suggest that a RFR of somewhere between -1.0% and 0% would be appropriate, notwithstanding the potential broader issues around the adoption of a negative RFR.
44. We note that the application of a negative RFR appears to be unprecedented in regulatory determinations, as the idea of a negative RFR does not seem practical. However, the RFR is only being used on a relative rather than an absolute basis, as the CAPM formula dictates the return on equity relative to holding a risk-free asset. The negative RFR phenomenon can also be understood in a way that explains the fragility of current market conditions, where an investor would now have to pay a “premium” to ensure a “risk-free” investment, compared to the past where investors would be rewarded for investing in risk-free assets and the expected return on equity would inevitably be lower.
45. Mathematically speaking, the impact of a negative RFR to the cost of equity ought to be minimal as the CAPM relationship involves the use of RFR twice. By way of an example, assuming an equity beta of 1, RFR of -1% and the Total Market Return (TMR) of 5%, we would expect a cost of equity of 5% as the subtracting the RFR from the TMR to deduce the market risk premium (addition in this case due to negative rate) would be equally reversed by the addition of RFR at the start of the equation (subtraction due to negative rate).

$$\text{Cost of Equity} = Rfr + \beta(Rm - Rfr)$$

46. It is also worth considering other regulators’ positions in relation to the RFR. The recent NIE final determination in 2017 rejected the idea of a negative real RFR and decided to use a figure of 1.25%, stating that this rate was at the top end of “plausible ranges” at current market conditions. However, this real rate of 1.25% is 0.25% lower than the rate estimated in the previous RP5 determination of 1.5% (see table below). We also highlight the following statement:¹⁴

‘The UKRN peer review (annex S) highlights a growing feeling among regulators that it might be appropriate to look again at the generic assumptions feeding into regulators’ CAPM calculations and highlights the “danger that giving much weight to regulatory precedent could risk perpetuating a situation where regulatory decisions are increasingly out of kilter with market evidence”

Parameter	NIE, RP5	GB electricity DNOs	FE and PNGL, GD17	NIE, RP6
Risk-free rate	1.5%	1.5%	1.25%	1.25%

47. This suggests that the CAA needs to be considering a RFR that is certainly well below 0.5%, reflecting the observed declines in gilt yields since 2011. PwC’s position that RFRs are currently negative is perfectly reasonable but is intellectually difficult from a regulatory perspective. This perhaps suggests that RFR of close to 0% is the most appropriate course. We would highlight to the CAA the concerns outlined by the UKRN in relation to the pure use of regulatory precedent and that the use of inputs that are closer to the market evidence is ultimately preferable.

Asset Beta

48. PwC has recommended the use of the same range as in Q6, i.e. 0.42-0.52, with a point estimate recommendation for H7 at the lower end of the range. At this stage, our view is similar to PwCs, particularly around the point estimate, although we highlight the following key points.

¹⁴ <https://www.uregni.gov.uk/sites/uregni/files/media-files/2017-07-04%20RP6%20FD%20Main%20Report%20%28002%29.pdf>, p.221, para. 12.31

49. HAL's systematic risk assessment based on traffic and revenue sensitivity to global shocks outlined by PwC is lower in comparison to Aeroports De Paris (AdP) and Fraport (FRA), indicating a lower fundamental and market risk to the airport.
50. AdP and FRA, the two most relevant Beta comparators to HAL, exhibit lower Beta values than the rest of the comparators listed in PwC's sample. A more relevant comparator to add to the list would be AENA, which PwC has not considered.
51. With regard to the Beta estimates for AdP and FRA, PwC has used a European index as a base to compare the volatility against instead of using the stock's domestic index, which has overestimated the Beta as a result. Using a Europe-wide index assumes mutually exclusive movements in the French and German index, and ignores the nation specific volatilities taking place that affect the index and the stock. The difference between the use of local and European index can be seen below:

Table A2.3 Asset Betas for key HAL comparators calculated using daily data under a variety of assumptions

Company	Index	Spot		2 Year Average	
		Raw	Blume	Raw	Blume
Fraport	Local	0.33	0.43	0.32	0.41
	European	0.37	0.45	0.37	0.44
AdP	Local	0.50	0.60	0.47	0.57
	European	0.53	0.61	0.51	0.60

Source: Thomson Reuters, Capital IQ, PwC analysis

Table A2.4 Asset Betas for key HAL comparators calculated using monthly data under a variety of assumptions

Company	Index	Spot		5 Year Average	
		Raw	Blume	Raw	Blume
Fraport	Local	0.41	0.47	0.53	0.56
	European	0.53	0.55	0.68	0.65
AdP	Local	0.45	0.55	0.47	0.55
	European	0.54	0.61	0.55	0.61

Source: Estimating the cost of capital for H7, PwC

52. We recommend the use of a point estimate Asset Beta significantly lower than the 0.5 adopted in Q6. PwC's position that a point estimate at the lower end of the plausible range appears reasonable at this stage, but this may be an overestimate given that HAL has demonstrated lower demand risk than its peers and the overestimation as a result of using a European Index in calculating the asset beta. This is an area where further analysis would be helpful.

Total market returns (TMR)

53. PwC has used various techniques in estimating the real TMR and has recommended a range of 5.6% to 6.3%. Our view takes into account the long-term equity returns and historic investment allocation into UK Equities made by major pension funds and life insurance companies (representing a significant fraction of the current investment market) as their investment decisions to an extent can influence market behaviour.
54. We believe that the long run equity returns are in line with analysis done by Barclays and Credit Suisse (see table below) as they take into account all the highs and lows in the equity markets throughout the time period. In September 2017, the FCA published a report in conjunction with PwC on the *Rates of Return for FCA prescribed projections*¹⁵ and the table below is an extract produced by the working group reporting on returns of

¹⁵ <https://www.fca.org.uk/publication/research/rates-return-fca-prescribed-projections.pdf>

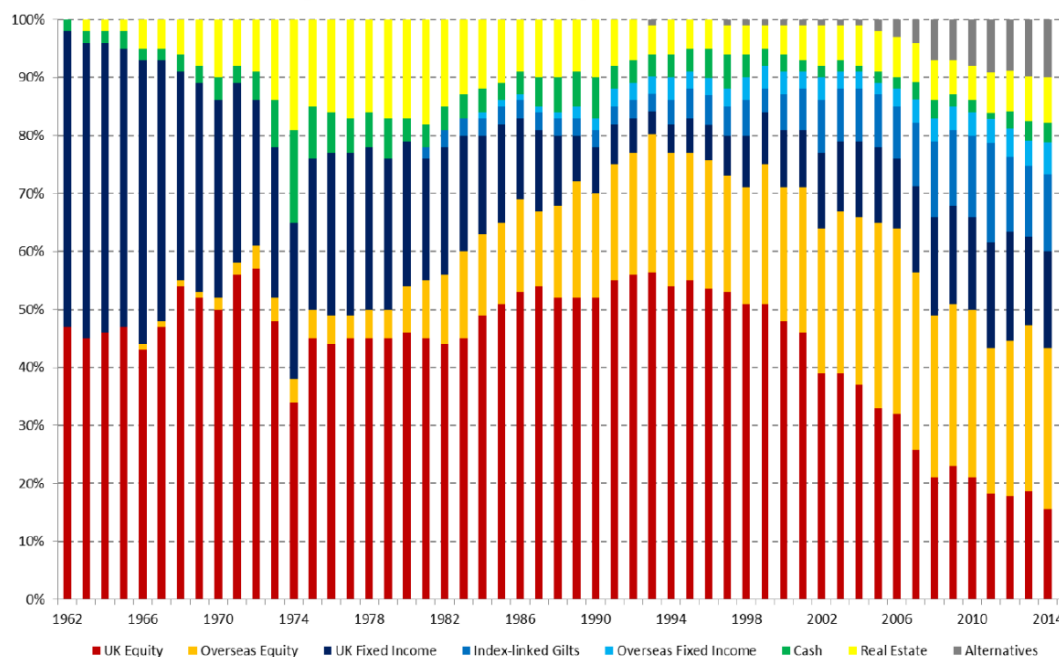
various asset classes. The report produced a summary of annual returns with a midpoint of 4% in 2017, representing a drop by 0.75% since the previous assessment in 2012, stating that the TMR of 4% is a projected return over the next 10-15 years.¹⁶ This suggests that returns on UK equities have been dropping and will continue to do so, and consequently it should not be a surprise that the cost of equity in the H7 WACC calculation is lower than in previous determinations.

Table 11: Annualised equity returns for the UK and US across periods

Source	UK			US		
	1996-2016	1967-2016	1900-2016	1996-2016	1967-2016	1900-2016
Barclays EGS 2017 - Real	3.7%	5.6%	5%	6%	5.4%	6.6%*
Credit Suisse Yearbook 2017 - Real	-	6.9%	5.5%	-	5.8%	6.4%
Own calculations, CRSP Data - Nominal ²⁴	-	-	-	7.9%	9.8%	9.6%*

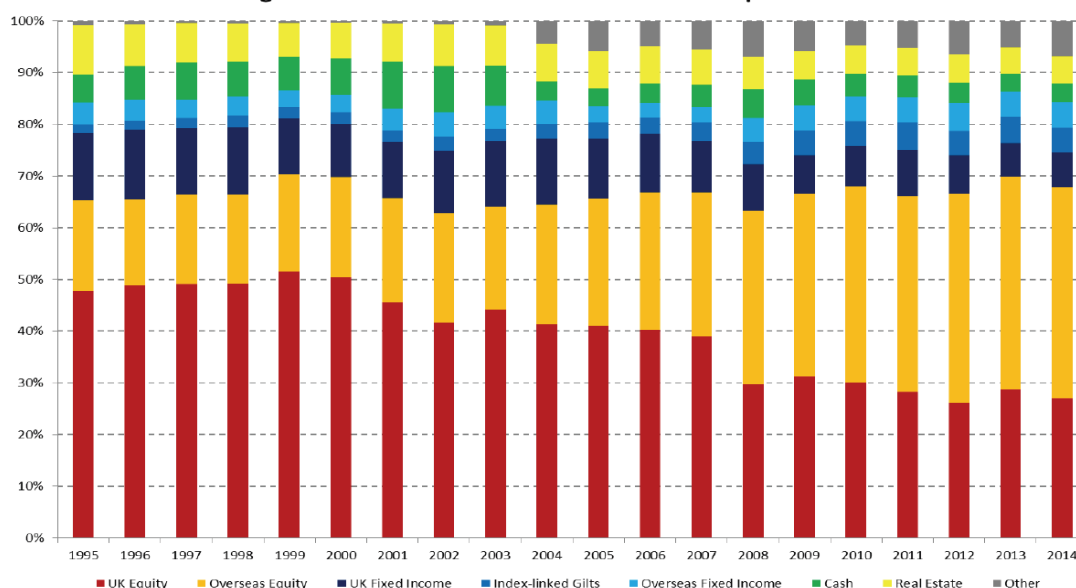
55. The drop in annual equity returns is also potentially linked to the dropping demand for UK equities, as investors tend to allocate their resources to achieve higher yields. As can be seen in the charts below from the same FCA report, the average allocation towards UK equities made by pension funds in 1962 was close to 50%, but has dropped over time to around 17% in 2015. The introduction of new asset classes, such as index linked gilts and alternative assets, and a rise in demand for foreign equities (due to their high-risk nature) have led to a downward slide in allocation towards UK equities. A similar trend can be found with the asset allocation observed in UK life insurance companies, allocating just under 50% in 1965, and slowly falling to 28% in 2015, with an increasing exposure to overseas equity and other/alternative assets. Again, this reflects a market in which the returns UK equities are declining, which should be taken account of in calculation of the H7 WACC.

The average asset allocation of UK pension schemes 1962 - 2015



¹⁶ <https://www.fca.org.uk/publication/research/rates-return-fca-prescribed-projections.pdf>, p.76

The average asset allocation of UK life insurance companies 1995 - 2014



Overall WACC

56. There is clearly a long way to go in terms of evidence gathering before a determination can be reached. The initial range produced by PwC is a useful starting point, but all of the evidence presented above suggests the final determination should be below or at least at the bottom end of this initial range. We note the recent NIE RP6 final determination of 3.18% in this context. We believe it is important that the CAA acknowledges and is clear that the changed market conditions through Q6 mean that a significant reduction in the WACC is likely for H7.

WACC uplift for new runway

57. PwC has suggested a range of between 0.25%-1%, and consider the WACC uplift associated with the new runway to be at the lower end of this range using a wide range of case studies from other infrastructure projects. Our views are in line with PwC, in that the WACC uplift should fall at the lower end of the range as the two most relevant case studies identified by PwC (HAL T5 and Ofgem RIIO-T1) show uplifts that are also at the lower end of the range.

58. We also understand from footnote 110 that, if the complexity of the CAPEX involved with R3 affects HAL's credit rating, specifically leading to a downgrade by a notch, the associated rise in the cost of new debt would typically be around 15-20 bps (i.e. 0.15%-0.2%). An uplift of 0.25% is sufficient to cover this risk of rise in the cost of new debt.

59. In the context of discussions around competitive provision, it should be noted that outsourcing risk to third party providers would significantly reduce the construction risk to HAL and thus a WACC uplift would not be needed.

Debt market depth

60. With regard to the demand for debt financing of a new runway, it is worth looking at two of HAL's recent bond issuances. First, in 2016, HAL successfully placed a £400m bond facility priced at 2.75% maturing in 2049. It was noted that the orderbook for this transaction was significantly over subscribed with over £1.2 billion offered from over 100 institutions globally. A similar trend was found in 2017, when HAL raised a £275m bond priced at 3.875%, maturing in 2027, with the orderbook "in excess of £1.8 billion" from over 200 institutions globally (London Stock Exchange, 2016/17). This provides support

for the PwC position that there appears to be sufficient depth in the GBP corporate debt market to support financing of the third runway.

Financeability and indexing for inflation

61. We share the CAA's view that that final scheme must be financeable *and* affordable. We do not have further detailed comments on what has been put forward in relation to assessing financeability at this stage, but reserve the right to comment further as proposals become clearer.

Financial resilience and ring fencing

62. We agree that HAL is responsible for providing services that are very important to consumers and the UK economy and measures to promote financial resilience through HAL's license conditions should be considered. However, the impact on affordability and financeability of measures that impact on HAL's financial efficiency need to be considered carefully.
63. We understand that the CAA is at an early stage in its thinking in relation to these issues and that the KPMG report on the subject will be published in the near future. We have not therefore considered these issues in detail at this stage. We remain open minded in relation to all of the potential measures put forward and will interested to see additional detail and analysis, but will to comment on two.
64. With regard to an obligation to maintain an investment grade credit rating, we believe that in maintaining an investment grade credit rating, HAL ought to be fairly cautious in relation to leverage, cash balances and working capital management as these factors could potentially change HAL's credit rating. It is therefore a potentially efficient measure in guarding financial resilience
65. With regard to a cash/dividend lock up, we note that HAL has previously locked its dividend payments following its acquisition by the Ferrovial-led consortium in 2006. The lock up lasted around 5 years, until HAL commenced issuing dividends at the end of 2012. It is worth noting that the magnitude of these dividends (adding up to around £1.7 billion over the past 5 years based on HAL's Annual Accounts), is significant, equating to roughly 10% of the entire expansion project budget, or over 10% of its current debt commitments. During the construction phase, acknowledging the amount of capital expenditure to be undertaken, we would suggest that the CAA consider looking into a temporary dividend lock up such that HAL partly contributes to the construction risk using its cash flows instead of issuing substantial dividends.
66. We would also like to stress the importance of equity capital financing to HAL. The benefit of raising equity financing wouldn't just assist in the financeability of the new runway, but could also create additional space for raising further debt capabilities, creating a total capital growth of more than just the growth in equity capital as a result.

The regulatory treatment of early construction costs

67. The provision of additional capacity at Heathrow is in the interests of consumers only if the expenditure incurred in providing this capacity is affordable and efficiently incurred and demonstrably in the interests of passengers. Without clarity those matters agreed by all parties, any early construction costs must be entirely at HAL's own risk.
68. Even with appropriate provision of information and consultation, the question remains as to when and whether consumers should be expected to pay for early construction costs when the affordability and deliverability of additional capacity is not yet clear. For example, it is concerning to read the CAA's assessment relating to 'other enabling costs' which HAL forecasts could amount to around £300m ahead of the grant of the DCO: *'HAL has not provided us with sufficient information to fully describe this category of costs or to*

give adequate comfort that these costs are properly separate from either planning costs or costs associated with HAL's "business as usual activities" and the Q6 price control.'

69. The CAA suggests that if HAL is able to satisfy the requirements proposed for the provision of information and consultation, then early construction costs would be allowed into the RAB and remunerated "at the prevailing WACC" (para 5.16). We do not believe that early construction costs should be allowed into the RAB (and by implication paid for by consumers) until the specific proposals for expansion are agreed and approved, along with their affordability.
70. We also take the "prevailing" WACC to mean the WACC that is appropriate at whatever point costs enter the RAB, rather than at any other historical point. To be clear, if the Development Consent Order for expansion were not to be approved, consumers should not be expected to pay for early expenditure incurred by HAL as there would be no benefit accruing to them.

Interim arrangements to extend the Q6 price control

71. The CAA comments on the potential interim arrangements for Q6 in relation to: the length of the potential extension; determining the regulatory revenue allowance for the extension; the price path for the extension.
72. In the relation to the length of a potential extension to Q6, we support the logic in trying to align the regulatory control periods with the third runway extension, but it must be accepted that this will never be perfect and that at some point practicality must prevail. In our view, Q6+2 should be confirmed and should be the basis moving forward. This will align the control period to the expansion phasing as it is known now and will provide certainty as to the regulatory regime. Extensions beyond that point should not be considered. This certainty is important for all parties and further uncertainty would be a distraction from the primary issue.
73. We note the CAA's position in relation to the regulatory revenue allowance and would agree with its conclusions. HAL has gained significantly over the Q6 period so far from higher than forecast traffic and substantially lower than predicted cost of debt. Many of these gains have been made due to changes in the wider economy beyond its control and not through its own efficient performance. Perpetuating these gains would clearly not be in the best interests of consumers. Furthermore, we agree with the CAA that resetting the most straight forward building blocks based on the latest available information would seem the most logical and equitable way forward.
74. The CAA has proposed that the price path for the extension should be RPI-0% as it feels that this is in the best interests of consumers and that the excess returns gained over and above the allowable returns should then be 'paid off' the RAB via an adjustment to regulatory depreciation. The logic associated with this is that by essentially over paying in the short run airlines can reduce the upward pressure on prices that could come with the investment associated with the construction of the third runway.
75. We object strongly to this approach and do not believe that it is compatible with the CAA's primary duty to consumers
76. Firstly, we note the CAA's acknowledgement that the adoption of a RPI-0% price path is not what airlines wanted or what HAL advocated. Hence, the CAA's proposal is entirely founded on its own view that it is better for consumers.
77. The CAA has historically agreed that the interests of consumers and airlines are strongly aligned. This in itself would suggest that RPI-0% is not in the interests of consumers if it is not the view adopted by airlines.
78. The proposal would worsen equity issues around prefunding. By making today's passengers pay more than is required via an RPI-0% price path (or indeed via an RPI-

1.5% price path given the CAA's intentions around identifying regulated revenues) to try to reduce prices for future passengers is blatantly inequitable. This intertemporal inequity in the regulatory framework is becoming a recurring theme across a number of issues (see comments above around the form of depreciation) and we would highlight that the CAA's duty is towards both present and future passengers.

79. Any perceived benefit from a RPI-0% price path is not worth the compromise in terms of the equity impacts in terms of the impact on future prices. Our analysis suggests that a RPI-0% price path and a regulatory revenue allowance set via resetting the basic building blocks would result in a reduction in the RAB in 2022 of around £400 million (RPI-1.5% would result in around £320 million). This represents only around 3% of the total current construction costs of the third runway and would result in reduction of £0.20 per passenger over H7. In our view this is unlikely to make any significant difference to the pressures on pricing and it is certainly not sufficient reason to disadvantage existing passengers.
80. The CAA should abandon this proposal and implement a price path for the extension to Q6 that is in line with its recommendations in relation to determining regulated revenue.