Airport Slot Reform: Consultation IA on the Slot Allocation System **IA No: DfT00461** **RPC Reference No:** **Lead department or agency: Department for Transport** **Other departments or agencies: N/A**	Impact Assessment (IA) **Date:** **Stage: Consultation** **Source of intervention: Domestic** **Type of measure: Primary Legislation** **Contact for enquiries:** slotconsultation@dft.gov.uk
Summary: Intervention and Options	**RPC Opinion:** Informal review to be requested (this only consultation stage IA)

Cost of Preferred (or more likely) Option (in 2019 prices)			
Total Net Present Social Value For Final IA[1]	**Business Net Present Value** For Final IA	**Net cost to business per year** For Final IA	**Business Impact Target Status** Qualifying Provision

What is the problem under consideration? Why is government intervention necessary?

The problem under consideration is how best to allocate scarce capacity at the UK's congested airports amongst competing users and uses. An airport slot is the permission given to an airline operator to use the full range of airport infrastructure (runway, terminal, gates, etc.) at a specific date and time for take-off and landing at an airport. The current legislation on slot allocation is set out in Regulation (EEC) No 95/93 which was amended and retained in UK law following the UK's departure from the EU (the Regulation). These rules allow airlines with existing holdings of series of slots to retain them indefinitely ("Historic Rights") provided they continue to be used more than a certain minimum percentage of the time (normally, 80%) in each slot scheduling season. Almost all slots at the most congested airports in the UK are allocated to airlines with such Historic Rights. Combined with a weak secondary trading market, in which it appears that incumbent airlines may be reluctant to sell or lease slots to competitors, this scarcity has led to limited opportunities for expanding airlines to increase their slots holdings at some airports which potentially, inhibits competition, constrains new forms of connectivity and prevents the most efficient use of the available capacity. Government intervention is necessary to ensure that scarce airport capacity, including any future new large scale airport slot capacity, is allocated fairly and efficiently (in the best interest of consumers).

[1] An Impact Assessment to be completed post-consultation assessing further the impact of slot reform policies.

What are the policy objectives and the intended effects?

In accordance with the Consultation Document, the objectives of slot reform are:[2]

- stimulating a competitive environment by creating a more efficient, transparent, and dynamic slot market, and;
- establishing a framework for allocation of new slots.

The policy options are thus organised under the following headings:

- a more efficient slot system;
- a more transparent slot system;
- allocation of new slots, and;
- a more dynamic slot system

[2] See Department for Transport, (2023), Airport Slot Reform: Consultation on the Slot Allocation System

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

Option 0 – status quo / baseline / business-as-usual scenario

1. A More Efficient Slot System

1.1 Re-defined New Entrant Rule
1.2 Restrictions on Newly Allocated Slots
1.3 Removal of Re-time Priority
1.4 Permanent Powers to Improve Resilience
1.5 Increase to Slot Usage Ratio

2. A More Transparent Slot System

2.1 Strengthened Coordination Committee Role
2.2 Guidance on Secondary Criteria
2.3 Power to Direct the UK Slot Coordinator
2.4 A Slot Register, a Specified Platform for all UK Trades, and Strengthened Oversight of Secondary Trading
2.5 Limit on Slot Leasing

3. **Allocation of New Slots**

3.1 Auction of New Slots
3.2 Ring-fencing of New Slots for Certain Purposes

4. A More Dynamic Slot System

4.1 Limiting Historic Rights for New Slots

Will the policy be reviewed? We expect to perform a PIR within 5 years of implementation of the preferred policy option, however this will be discussed in more detail within the Final IA. **If applicable, set review date:** tbc, possibly 5 years after implementation of preferred policy option

Does implementation go beyond minimum EU requirements?		N/A		
Is this measure likely to impact on international trade and investment?		Potential impact on trade		
Are any of these organisations in scope?	**Micro** Unlikely	**Small** Unlikely	**Medium** Potentially	**Large** Yes
What is the CO_2 equivalent change in greenhouse gas emissions? (Million tonnes CO_2 equivalent)		**Traded:** Not yet quantified	**Non-traded:** Not yet quantified	

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible SELECT SIGNATORY: ..... Date: .....

Summary: Analysis & Evidence Policy Option DfT00461

Description: **N.B. This will only be completed in the Final Stage Impact Assessment and so is here left blank.**

FULL ECONOMIC ASSESSMENT

Price Base Year	PV Base Year	Time Period Years	Net Benefit (Present Value (PV)) (£m)		
			Low: Optional	**High:** Optional	**Best Estimate:**

COSTS (£m)	**Total Transition** (Constant Price)	Years	**Average Annual** (excl. Transition) (Constant Price)	**Total Cost** (Present Value)
Low	Optional		Optional	**Optional**
High	Optional		Optional	**Optional**
Best Estimate				

Description and scale of key monetised costs by 'main affected groups'

Other key non-monetised costs by 'main affected groups'

BENEFITS (£m)	**Total Transition** (Constant Price)	Years	**Average Annual** (excl. Transition) (Constant Price)	**Total Benefit** (Present Value)
Low	Optional		Optional	**Optional**
High	Optional		Optional	**Optional**
Best Estimate				

Description and scale of key monetised benefits by 'main affected groups'

Other key non-monetised benefits by 'main affected groups'

Key assumptions/sensitivities/risks **Discount rate (%)**

BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:			Score for Business Impact Target (qualifying provisions only) £m:
Costs:	**Benefits:**	**Net:**	

Contents

1.0 Policy Rationale

Policy background

1. **An airport 'slot' is a permission to use all necessary airport infrastructure to operate an aircraft at a specified date and time for take-off or landing**. Slots are used to manage aircraft movements at airports where the demand of airlines for flights exceeds the airport capacity. In the UK, there are eight airports, known as "Level 3" airports, where slots are co-ordinated; namely, Heathrow, Gatwick, Manchester, Birmingham, London City, Stansted, Luton and Bristol.[3] Airport slot allocation is governed by Regulation (EEC) No 95/93 on common rules for the allocation of slots at UK airports, as amended (known as 'Regulation 95/93', or 'the Slot Regulation'), which became retained law in the UK following the UK's departure from the EU.

2. **Slots are allocated to airlines (at no cost to the airlines for the use of the slot) by an independent slot coordinator (Airport Coordination Limited, or "ACL"), with two separate slot scheduling seasons (summer and winter)**. They are allocated in the form of a "slot series", which refers to the same hourly slot operated regularly on a weekly basis during a slot scheduling season (e.g., a slot at Gatwick, on Monday between 7am and 8am, operated every week). In normal conditions,[4] Regulation (EEC) No 95/93 allows for airlines to retain existing slot series for the next equivalent scheduling period (summer or winter, as the case may be), providing they are operated at least 80% of the time (known as the 'utilisation requirement', or the "Use It or Lose It" (UIOLI) rule). At congested airports, the vast majority of slots are allocated in this way (see below). Any remaining slots are returned to a pool and allocated by the slot co-ordinator based on a set of criteria. This occurs prior to the start of the season, with 50% of such pool slots reserved for "new entrants", presently defined in the Slot Regulation essentially as airlines with less than 5 slots a day at the airport in question.

3. **The ability to retain slot series, potentially indefinitely, via Historic Rights is very valuable to incumbent airlines, as it provides them with certainty for long-term planning and route development at airports which are slot capacity constrained**. On the other hand, such Historic Rights make it difficult for other airlines to access such airports, particularly at the most constrained airports, notably Heathrow and, to a lesser extent, Gatwick, which may provide an impediment to competition and the most efficient usage of the slots.

4. **Trading of slots (leasing, exchanging and buying/selling) is allowed**. Once airlines have gained the Historic Rights to slot series, they may, as an alternative to using the slot series themselves, sell them to other airlines, who then acquire the Historic Rights to the slots; or they may lease them to other airlines on a temporary basis, with the slots handed back to the original Historic Rightsholder at the end of the lease.

5. **Such "secondary trading" provides another means for other airlines to obtain slight rights at an airport, although incumbent airlines may be reluctant to sell or lease slots to their competitors**.

[3] Bristol Airport is presently only slot coordinated in the summer season at night; the other Level 3 airports are slot coordinated at all times.

[4] Temporary alleviation from these rules has been provided during the COVID-19 pandemic to date. The 80% utilisation requirement was waived completely during the Summer 2020, Winter 2020/21 and Summer 2021 slot scheduling seasons, and a lower utilisation requirement and other conditions were applied for the Winter 2021/22, Summer 2022 and Winter 2022/23 seasons.

Problem under consideration

Introduction – Efficiency of Slot Allocation

6. **The problem under consideration is how to reduce potential inefficiencies in the allocation of scarce slot capacity at the UK's congested airports to deliver the best outcomes in terms of social welfare**[5]**.** It is important that scarce airport capacity is allocated and used 'efficiently'. There are several aspects to efficiency,[6] but our primary focus is '*allocative efficiency',* which involves allocating slots to the users and uses from which the highest value is derived, such that ultimately the total welfare of consumers and producers is maximized. More efficient allocation in the market for slots should result in better outcomes in downstream markets, such as the market for flights, which directly affect consumers, for example in terms of price or quality of service (see section 'Impact on competition and consumers' below).

7. **The first reason for potential inefficiency is that demand for airport slots currently outstrips supply and continued aviation growth means slot capacity has become increasingly constrained**. The difference between supply and demand means it is possible that airlines which could generate the highest value from the slots do not have opportunity to access them. Prior to the impact of the COVID-19 pandemic on aviation demand, slots at Heathrow and Gatwick were significantly over-subscribed in almost all hours of operation[7], particularly in the summer seasons. Similar constraints exist at other UK airports during peak demand periods. With aviation demand now recovering (during 2022, flight and passenger numbers returned to above 80% of 2019 levels), such constraints are again becoming significant.

8. **The second reason for potential inefficiency is that the current distribution of slots and rules for reallocating them may not lead to an efficient use of available slot capacity**. There are benefits to airlines holding a large proportion of slots, such as the ability to deliver economies of scale to support hub operations, potentially enhancing connectivity for passengers. However, the high concentration of slots in the hands of relatively few airlines (see consultation document) may mean that airlines that could generate more value from a slot struggle to obtain them and may lead to competition concerns which hamper efficiency. In addition, there are potential inefficiencies in the way that the current slot allocation process works and limitations in the secondary market which mean potential exchanges of slots between airlines that could result in more efficient use do not take place.

9. **Airport expansion could in principle address the issue of scarce slot capacity but raises wider concerns and therefore excess demand for slots is likely to continue in future**. If airport capacity was expanded to meet demand, all airlines that could derive value from the use of a slot would be able to obtain one. However, such expansion has wide ranging impacts, including on the environment, and is often controversial. While several UK airports have plans to expand, we expect there to be significant future excess demand for slots at some UK airports. Even if airport capacity grew significantly, if passenger demand also continues to grow then any relief would be temporary.

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[5] Social welfare defined by Oxford Reference as the well-being of society or the community at large. In economic terms, social welfare is an aggregation of the welfare or utility of the individual members of the society. See <https://www.oxfordreference.com/>.

[6] Three important types of efficiency are allocative, productive and dynamic efficiency. *Allocative efficiency* involves allocating slots to the uses from which the highest value is derived, such that total welfare (for given capacity) is maximized; *productive efficiency* refers to achieving a given output at minimum cost, and; *dynamic efficiency* refers to encouraging productive efficiency improvements over time through competition and innovation.

[7] Based on airline requests for slots.

10. **Given the limitations of expanding airport capacity, reforms targeting the current distribution of and rules for allocating slots may be the most useful lever for addressing potential efficiencies in the slots system and improving consumer welfare.** More efficient allocation of slots should subsequently result in better outcomes in downstream markets, such as the markets for flights, improving societal welfare, potentially through lower prices or improved quality. The factors and evidence contributing to potential inefficiencies which may be addressed by such reforms and the subsequent impacts improved efficiency and competition may have on consumer welfare are discussed in the next two sections.

Factors Leading to Potentially Inefficient Use of Existing Capacity

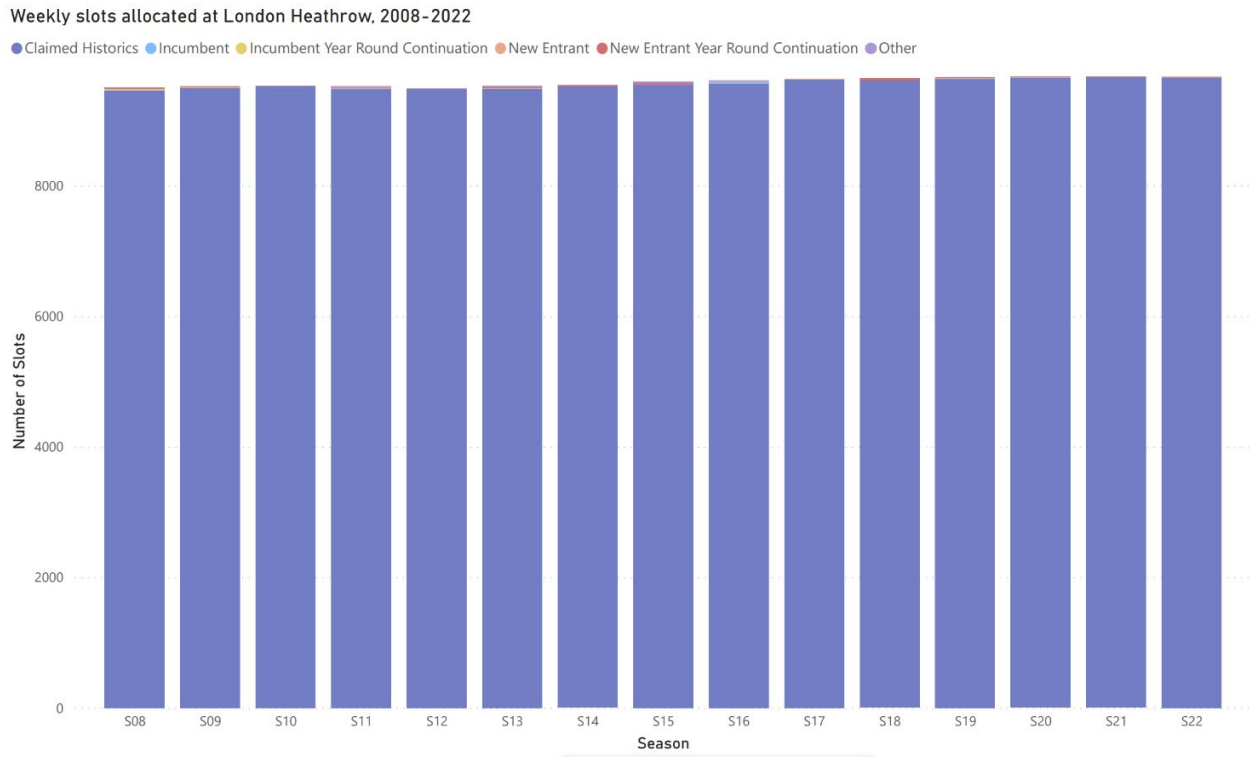
11. **As described above the key drivers which slot reforms could address to improve efficiency are the potentially suboptimal initial allocation of airport slots and the limited churn of slots between airlines.** These could mean that airlines which value slots the most and could use the slots most efficiently, including potential new entrants, do not currently hold them or struggle to obtain them. This could lead to inefficiency and welfare losses, including through reduced competition or innovation and higher prices for consumers (see next section). This section considers the factors leading to inefficiency in the slots market and the following section considers the impacts on competition and consumers. There are several factors which contribute to concern about the initial allocation and slot turnover rates:

    - High proportion of slots allocated on basis of Historic Rights at key airports, and which airlines are likely to retain indefinitely given the current slot utilisation rules
    - Limitations of the secondary trading market in slots to increase slot churn and facilitate more efficient use of slots
    - Strategic behaviour by airlines to stop challengers obtaining slots, raising concerns about high concentration of slots
    - Suboptimal administrative rules (other than the utilisation rule) surrounding slot allocation

    These are considered in turn below.

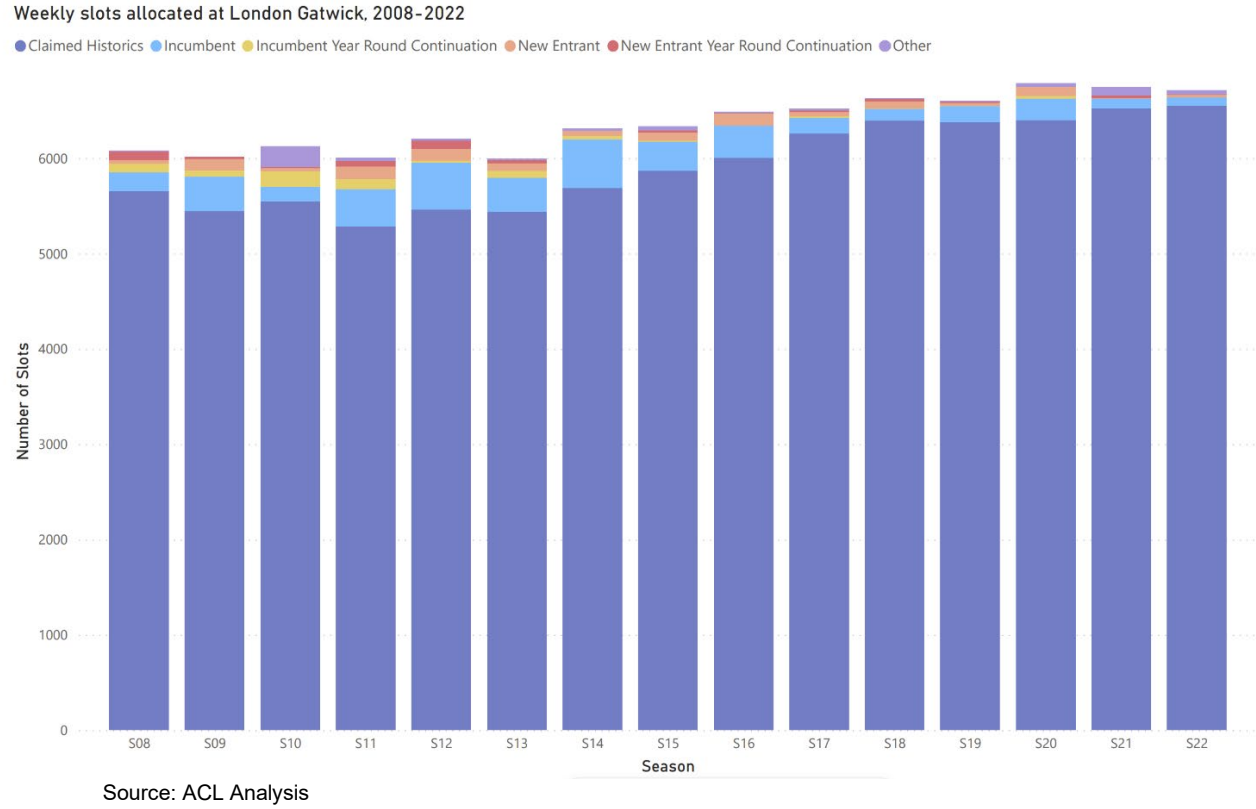
12. **One potential reason for inefficiency is the high proportion of slots that are allocated on the basis of Historic Rights at capacity constrained airports, and the ability for airlines to keep these slots indefinitely under current slot rules.** Current slot rules mean that airlines automatically obtain rights to use a slot in the following corresponding season (summer or winter), providing they use it for 80% of the current season. As illustrated in Figure 1, more than 99.5% of slots at Heathrow are allocated on the basis of Historic Rights, and that this has been the case for at least the last decade. A similar picture has developed at Gatwick in recent years, with more than 97% of slots now allocated on an historic basis, as shown in Figure 2. This means that only a very small proportion of slots are available via the pool allocation process, so there are very limited opportunities for airlines to increase their slot holdings at some airports, potentially inhibiting competition.

    Figure 1: Weekly Slots Allocated at London Heathrow, Summer Seasons, 2008 – 2022



Source: ACL Analysis

Figure 2: Weekly Slots Allocated at London Gatwick, Summer Seasons, 2008 – 2022



Source: ACL Analysis

13. **The limitations of secondary trading in facilitating the exchange of slots between airlines is another potential reason for inefficiencies.** Inefficiencies in the existing allocation could potentially be resolved by an efficient trading system, such that slots gravitated towards highest value uses and users, who would be likely to be prepared to pay most to use such slots either on a permanent or temporary basis. Data for the secondary trading market at Heathrow and Gatwick is provided in Figures 3 and 4 below, respectively. Trading has increased as the number of slots

allocated from the pool has decreased, and around 2% - 5% of slots are typically traded each season. Despite this the trading statistics lead to a number of concerns:

- DfT's initial analysis of recent slot data suggests only approximately a quarter of slots series traded over the last 11 seasons at Heathrow were exchanged on a permanent basis, as opposed to leased (Figure 5). [8] This is significant, as small airlines in particular might be less able to secure the long-term investment needed to grow and face uncertainties in planning when only holding slots temporarily.
- The uses of types of traded slots could also suggest inefficiency. Odoni (2020) suggests that greater route length and higher average number of seats per operation may indicate more efficient use of a slot, as it reflects extraction of more economic value from that slot.[9] We recognise the limitations in using these metrics to assess the relative efficiency of different routes.[10] Nevertheless, these metrics can be useful in seeking to assess the impact of slot trading on the efficient use of slots.
- DfT analysis (Figures 6 and 7) of recent seasons at London Heathrow suggests that in normal times (i.e., excluding seasons affected by COVID-19 which might be expected to show different patterns, including for example airlines flying to fewer long-distance destinations due to such routes tending to being subject to lengthier covid restrictions that short haul routes) average distance flown and average seats per operation decrease following *temporary* trades (leases). In contrast, again excluding COVID-19 seasons, the average distance flown and seats per operation travelled increases following *permanent* trades. This could suggest that permanent trades are improving efficiency while and temporary trades (leases) are not[11]. The number of permanent trades is relatively small, however, and some airlines have communicated their reluctance to trade permanently given their expected need for slots in the longer term.
- ACL analysis of slot trades for summer seasons[12] from 2008 to 2019 at London Heathrow also shows similar patterns for the proportion of traded slots that are used for long-haul vs short-haul routes (Figure 8) and the change in average seats per traded slot (Figure 9) for permanent vs temporary trades.[13]
- Overall, it seems unclear that slot trading is improving the efficiency of slot usage given the greater number of temporary versus permanent slot trades in recent seasons.

[8] This analysis is in its initial stages, is to be updated further by DfT in due course, and DfT will consider further data and evidence provided by respondents.

[9] Odoni, (2020), A Review of Certain Aspects of the Slot Allocation process at Level 3 Airports Under Regulation 95/93, p.88.

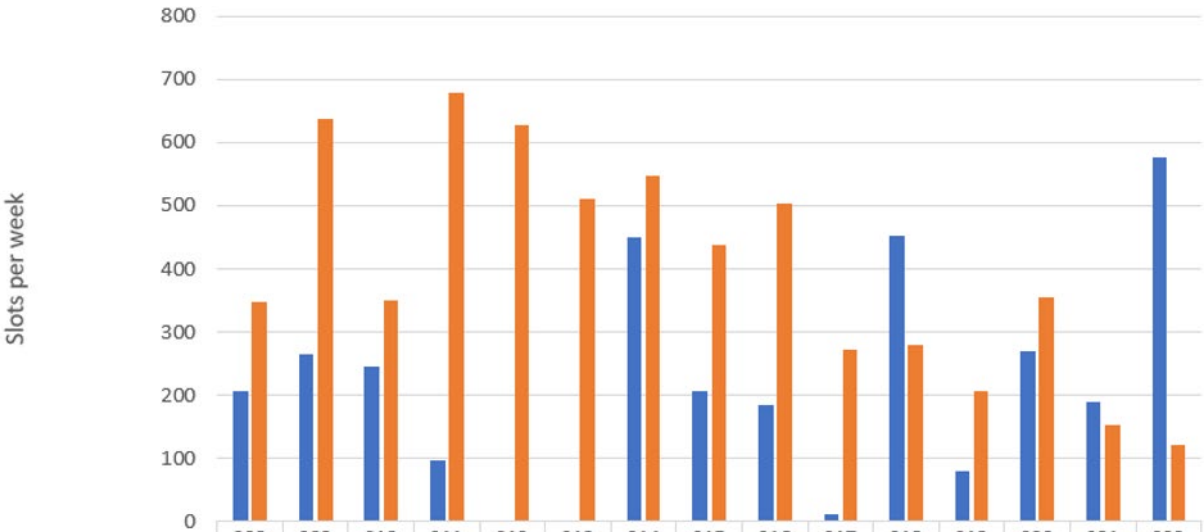
[10] For discussion of limitations of using number of seats as a measure of efficiency, including consideration of types of passengers (e.g., business travellers), see OXERA, (2019), 'Slot Allocation at an Expanded Heathrow', Prepared for Department of Transport, p.86.

[11] DfT is continuing to exploring the full range of reasons for why this may have happened.

[12] Note: excludes winter seasons.

[13] *ACL*, Aviation 2050: The Future of UK Aviation: ACL response to Sections 3.46 to 3.65 of the Consultation Document, pp.58-59.

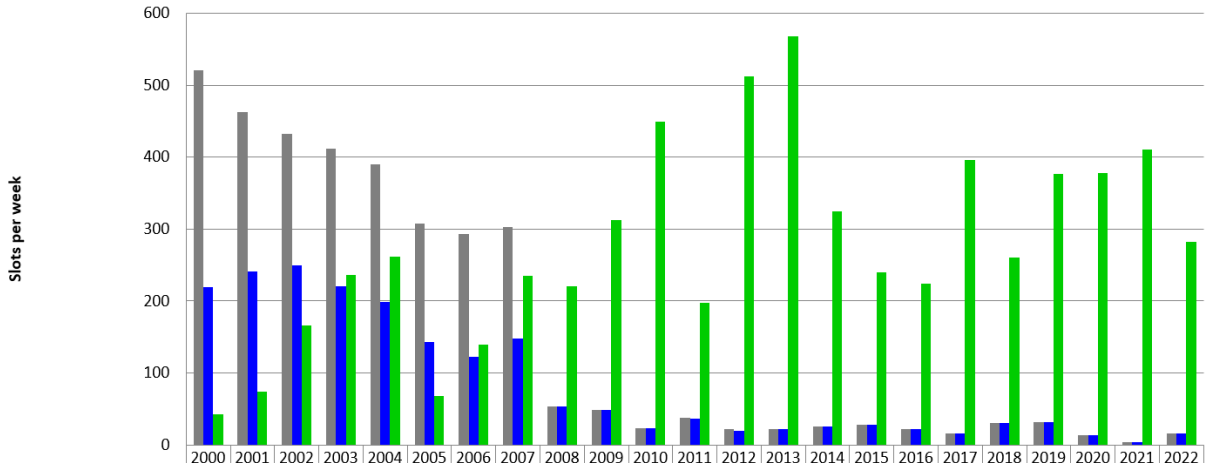
Figure 3: Number of Slot Transfers by Week, Heathrow, 2000 – 2022 (Summer seasons)



	S08	S09	S10	S11	S12	S13	S14	S15	S16	S17	S18	S19	S20	S21	S22
Secondary Trading	206	264	246	96	0	0	451	207	185	11	453	80	270	189	577
Slots Allocated	348	638	351	678	628	512	547	438	504	272	280	207	354	152	121

Source: ACL Analysis
Note: About 10,000 weekly slots are allocated at Heathrow.

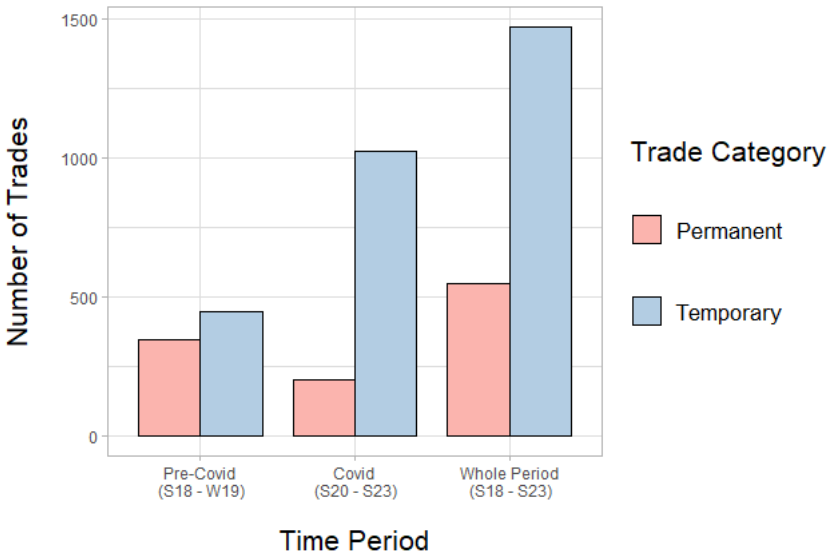
Figure 4: Number of Slot Transfers by Week, Gatwick, 2000 – 2022 (Summer seasons)



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Pool Availability	520	462	432	412	390	308	293	303	54	48	23	38	22	22	26	28	22	16	30	32	14	4	16
Pool Allocation	219	241	249	221	199	143	123	148	54	48	23	36	20	22	26	28	22	16	30	32	14	4	16
Slot Transfers	42	74	166	236	262	68	139	235	220	313	449	198	512	568	324	240	224	396	260	376	378	410	282

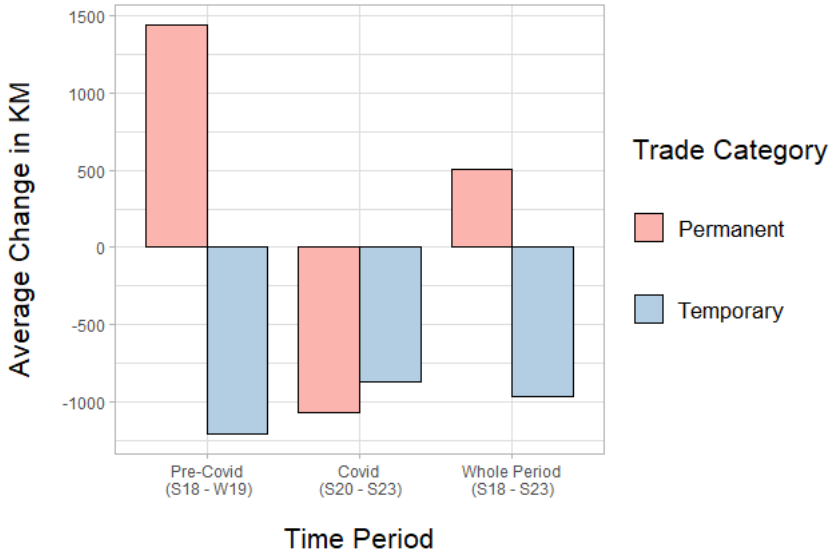
Source: ACL Analysis
Note: about 6,700 weekly slots are allocated at Gatwick

Figure 5: Number of Permanent vs Temporary Slot Trades, Heathrow, Summer 2018 - Summer 2023



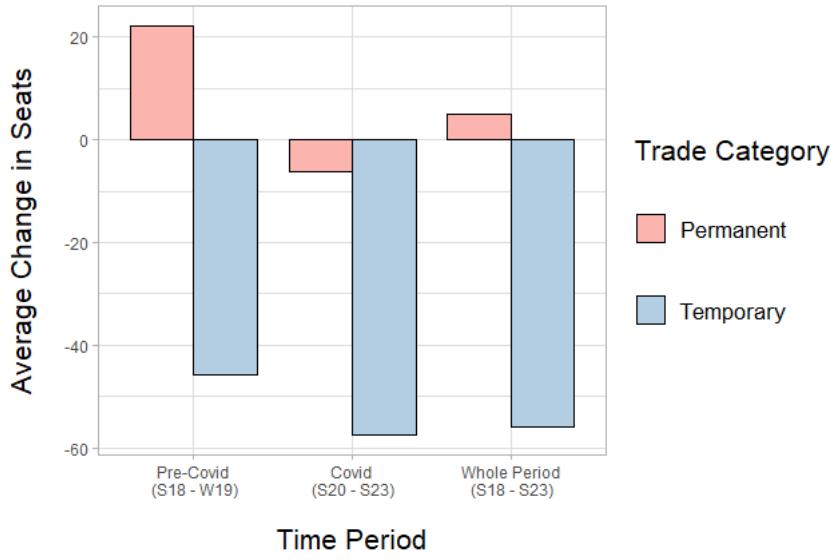
Source: DfT Analysis based on data provided to DfT by ACL
Note: Only some trades (up to early Jan 23) included for S23 due to data availability at time of analysis

Figure 6: Average Change in km Flown per Operation for Traded Slots, split by Permanent vs Temporary Trades, Heathrow, Summer 2018 - Summer 2023



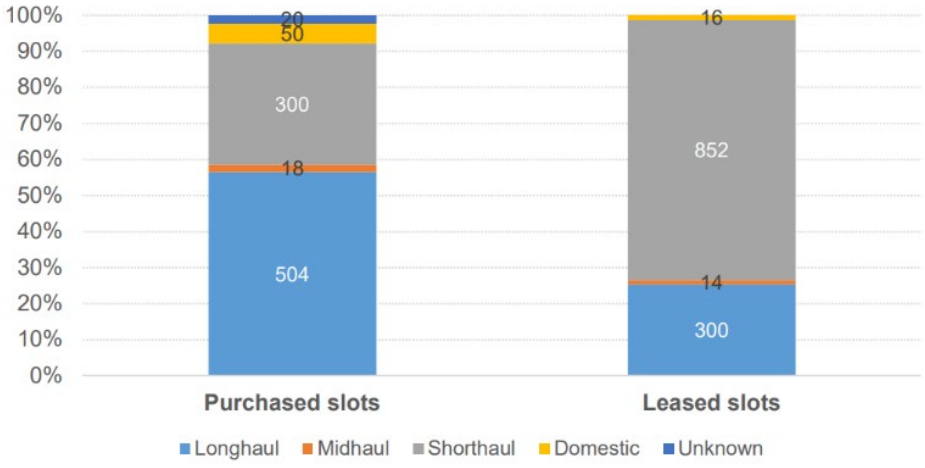
Source: DfT Analysis based on data provided to DfT by ACL
Note: Only some trades (up to early Jan 23) included for S23 due to data availability at time of analysis

Figure 7: Average Change in Seats per Operation for Traded Slots, split by Permanent vs Temporary Trades, Heathrow, Summer 2018 - Summer 2023



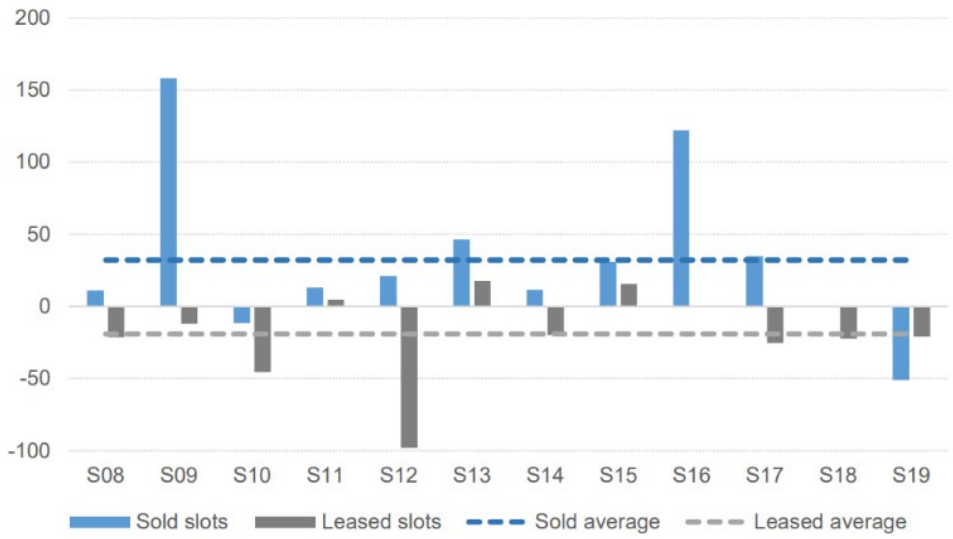
Source: DfT Analysis based on data provided to DfT by ACL
Note: Only some trades (up to early Jan 23) included for S23 due to data availability at time of analysis

Figure 8: ACL Analysis of Long-haul vs Short-Haul use of traded slots, split by purchased versus leased slots, Heathrow, Summer 2008 – Summer 2019



Source: ACL Analysis

Figure 9: ACL Analysis of Change in Average Seats per Traded Slot, split by sold vs leased slots, Heathrow, Summer 2008 – Summer 2019



Source: ACL Analysis
Note: Excludes remedy slot leases

In addition, a lack of transparency in the secondary trading market may also be hampering turnover of slots via the secondary market. Whilst some detail on secondary trading is available on ACL's website[14], making more knowledge available to airlines, airports, policymakers and regulatory authorities could help facilitate trades. For example, if airlines had more information about the prices slots had previously been bought or sold for, they may be more confident in valuing slots and hence purchasing or selling on the secondary market. But this level of information is not typically available to airlines.

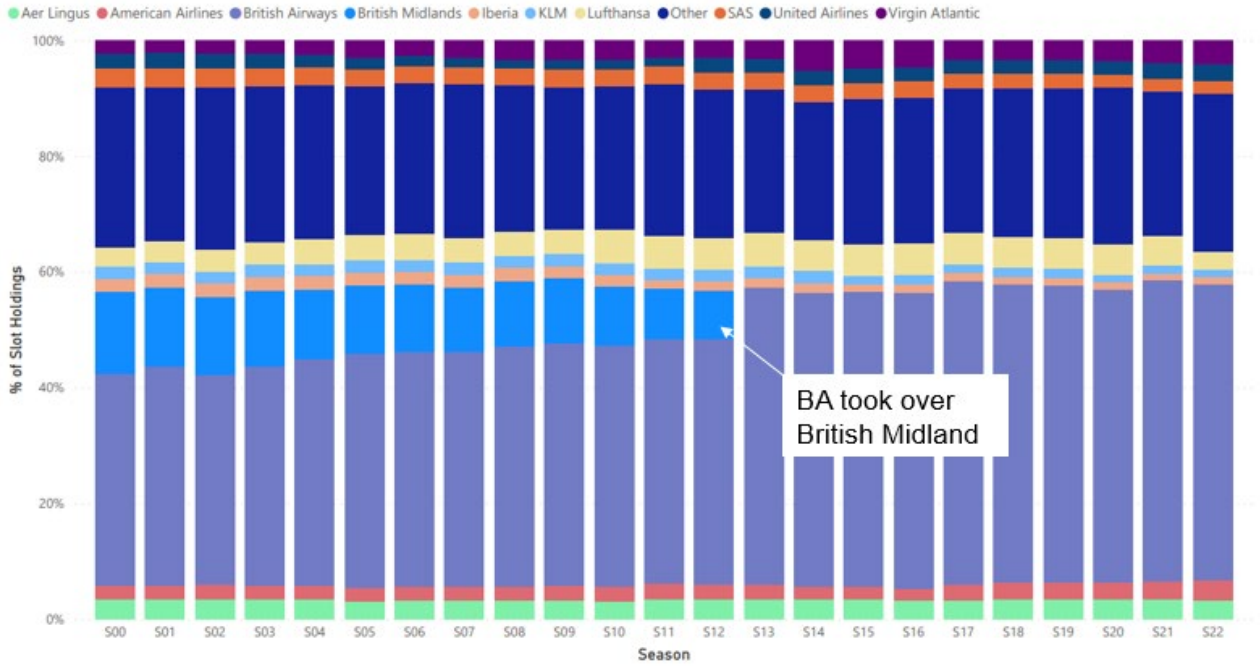
14. **Strategic behaviour by airlines could also lead to inefficiencies and exacerbate concerns about the high concentration of slots in the hands of relatively few airlines.** These are discussed in detail below:
    - Another potential source of inefficiency is that incumbent airlines may strategically decide not to sell or lease slots to competitors, perhaps because the costs of extra competition outweigh the benefits of the proceeds of the sale. This could happen even where rival airlines derive greater value from the slot and may value it more highly.[15] The issue is likely to be more acute between airlines that are not part of the same alliance or group, or involved in a Joint Venture. ACL data suggests that a substantial proportion (typically around half) of slot leases are undertaken within airline groups or alliances.[16] DfT's initial analysis from recent slot trades suggests that airlines are willing to trade slots within alliances[17] and with airlines outside their

[14] See Completed Slot Trades | Airport Coordination Limited (acl-uk.org).
[15] ACL, (2019), Response to Aviation 2050, Figure 43.
[16] ACL, (2019), Response to Aviation 2050, p. 29.
[17] Major airline alliances include Star Alliance, OneWorld, SkyTeam, and others.

alliance, though more work could be undertaken to understand trading across joint ventures and groups.

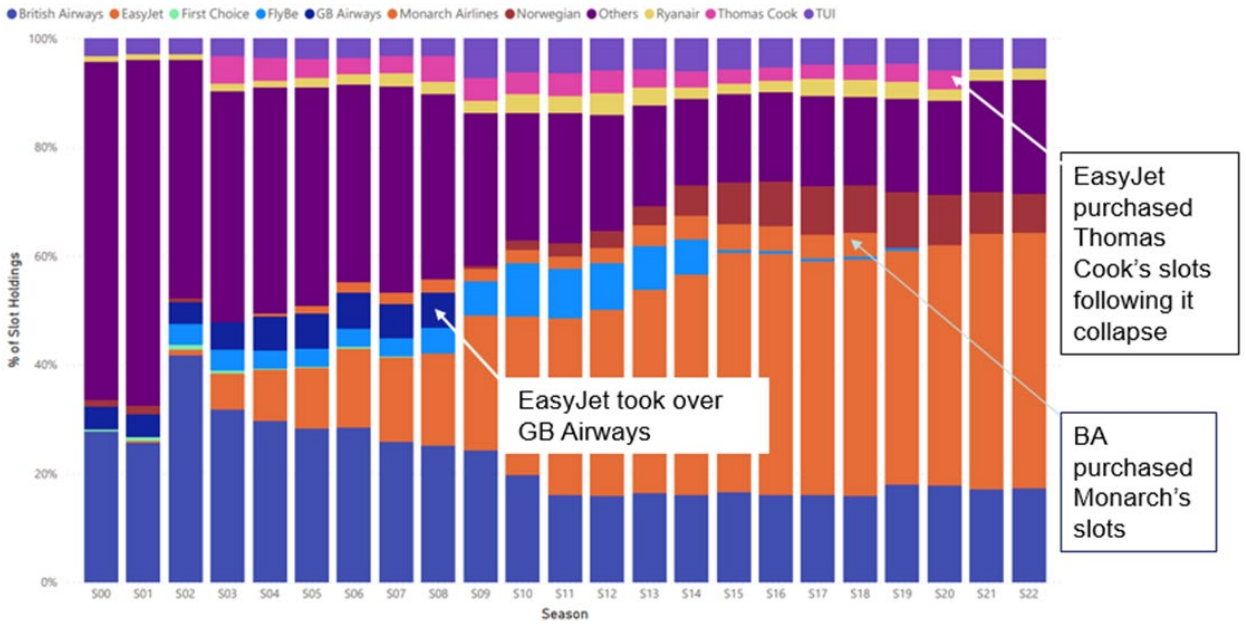
- Another source of inefficiency from strategic behaviour is that airlines may use leasing to "hoard" slots that they cannot use themselves but want to retain the value of the slots which they already hold. At present, to help ensure slots are used in accordance with how they were allocated, new entrants are restricted from trading newly allocated slots, but this only applies for two years, and does not apply to newly allocated slots more generally. As a result of the limited availability of slots (new or traded) at certain airports under the current system, there are limited opportunities for airlines to increase their slots holdings at some airports, potentially inhibiting competition and preventing the most efficient use of the available capacity. Figure 10 shows that the 'slot shares' of airlines at Heathrow has been very static over the last 15 years, with the only major change in the distribution of slots occurring as a result of an airline merger. At Gatwick, there is a slightly different trend, resulting from the emergence of EasyJet as the dominant carrier at the airport over the last 15 years (Figure 11). However, a significant share of EasyJet's growth came from picking up slots from airlines leaving the market, and, with capacity now significantly constrained at Gatwick too, there are likely to be limited opportunities in the future for new airlines to build up substantial slot holdings there in the same way. As Figure 4 showed, the number of slots available via allocation and secondary trading during the period in which EasyJet grew the most was significantly higher than in more recent years.

Figure 10: Summer Season Slot Holdings by Carrier - Heathrow



Source: ACL Analysis and DfT Additions

Figure 11: Summer Season Slot Holdings by Carrier - Gatwick



Source: ACL Analysis and DfT Additions

15. **Another potential driver of inefficiencies are other administrative aspects of the slot allocation system**. Some aspects of the existing slot rules work to further reinforce the incumbency advantages. An example of this is the priority given to the "retiming" of existing slots by Historic Rights holders prior to the allocation of pool slots, which gives existing holders of slots priority over those applying for slots. Another example is the "new entrant rule", which reserves 50% of the pool allocation to "new entrants".[18] While aimed at facilitating new entry, the new entrant rule seems in practice to lead to a fragmentation of slots (a large number of airlines each with a relatively small number of slots) because the scarcity of slots at some airports makes it very difficult for an airline to acquire enough slots to grow beyond the point that it stops being a new entrant. This is a particular feature at Heathrow, where, for Summer 2022 for example, British Airways holds about 10 times more slots than its nearest competitor, the largest of which has a 'slot share' of less than 5%.

Table 1: Top 5 Operators, by Air Transport Movements (ATMs), at Heathrow and Gatwick (Summer 2022)

Heathrow			Gatwick		
Operator	**Total ATMs**	**% of Total**	**Operator**	**Total ATMs**	**% of Total**
British Airways	152,613	49.9%	EasyJet	98,407	53.2%
Virgin Atlantic	13,020	4.3%	British Airways	18,971	10.3%
American Airlines	9,982	3.3%	Vueling	10,862	5.9%
Aer Lingus	9,796	3.2%	Wizz Air	10,858	5.9%
Lufthansa	8,878	2.9%	TUI Airways	10,332	5.6%
Total	305, 926	100.0%	Total	185,046	100.0%

Source: DfT analysis using ACL Summer 2022 Start-of-Season reports for London Heathrow and London Gatwick airports. The chart shows the division of top five slot holdings by airlines at Heathrow and Gatwick for Summer 2022. 'Slots held' is the total weekly number of individual slots for a week. The figures come from a randomly selected week in the Summer 2022 season.
Note 1: "EasyJet" includes Easyjet UK, Easyjet Europe and Easyjet Switzerland
Note 2: "Wizz Air" includes Wizz Air and Wizz Air UK

[18] The Slot Regulation defines "new entrant" as "an air carrier requesting, as part of a series of slots, a slot at an airport on any day, where, if the carrier's request were accepted, it would in total hold fewer than five slots at that airport on that day".

Impact on competition and consumers

16. **In general, increased competition should lead to increased efficiency, which should lead to improved consumer welfare.** The CMA, in its published guidelines on assessing competition impacts, notes that, in general terms, competition may drive efficiency in the following ways:[19]

> *"The evidence suggests that competition drives productivity in three main ways. First, within firms, competition acts as a disciplining device, placing pressure on the managers of firms to become more efficient. Secondly, competition ensures that more productive firms increase their market share at the expense of the less productive. These low productivity firms may then exit the market, to be replaced by higher productivity firms. Thirdly, and perhaps most importantly, competition drives firms to innovate, coming up with new products and production processes which can lead to step-changes in efficiency."*

17. **In the aviation context, a lack of slot churn and limited competition in the market for slots may have a negative impact on consumer welfare in form of higher prices, lower service quality and reduced choice**. More specifically, the CMA states that the current administrative slot allocation process has 'had a restrictive effect on slot mobility and created significant barriers to entry and expansion…[which] has exacerbated the market power of incumbent airlines that hold slots at capacity constrained airports'[20]. This has potentially impacted consumers in three ways:

    i. *Higher prices* – from potential lack of competition

    ii. *Reduction in service quality* – if incumbents innovate less than they might due to less competition (on certain routes)

    iii. *Reduced choice of airline and routes* – if potential entrants are restricted from accessing slots[21]

    The CMA states that, whilst it is possible that hub models operated by carriers with high concentrations of slots at particular airports could fully use network effects to drive consumer benefits through improved destination choice and comprehensive timetabling, it considers that increased efficiency and competition for slots 'has the potential to generate a wider range of benefits to consumers'[22].

18. **Empirical evidence from two recent studies on the effect of competition on fares suggests a lack of competition may increase prices for consumers**. In a study commissioned by the US Department of Transportation, Breuckner and Singer[23] found that an extra competitor reduces fares by 4-7% over period 1997-2016, whilst fare increases of a similar magnitude occurred per additional carrier pair with Antitrust Immune Alliance (ATI) or joint venture (JV) status (rather than simple alliance partners), on a route. They posit that the effect of two carriers becoming an alliance partner is equivalent to the effect of removing a competitor. Calzaretta et al[24] find similar reductions in fares of around 4.5% and 4% when the number of competitors on a route increased from one to two, and from two to three, respectively (with further competitors having no further impact on fares). They do not find evidence of higher fares when two or more carriers on a route enter an ATI or JV relationship conditional on the number of routes (marking an interesting difference with Breuckner

[19] CMA, (2015), *Competition impact assessment: guidelines for policymakers* (https://www.gov.uk/government/publications/competition-impact-assessment-guidelines-for-policymakers)

[20] CMA, (2018), *Advice for the Department of Transport on competition impacts of airport slot allocation*

[21] CMA, (2018), *Advice for the Department of Transport on competition impacts of airport slot allocation*

[22] CMA, (2018), *Advice for the Department of Transport on competition impacts of airport slot allocation*

[23] J.K.Brueckner and E.Singer, (2019), 'Pricing by international airline alliances: a retrospective study using supplementary foreign-carrier data', *CESifo Working Papers*,

[24] R.J.Calzaretta et al, (2017), 'Competitive Effects of International Airline Competition, *Journal of Competition Law and Economics*, 13(3), pp.501-548,

and Singer). Breuckner and Singer also find the effect is particularly significant for economy class tickets, with up to an 8.2% decrease in fares when a competitor is added, and up to a 12.7% increase in fares when an ATI pair is added, to a route. The effects on business class tickets are far less pronounced. Both studies find around a 10% reduction in fares when Low-Cost Carriers[25] (LCCs) are added to a route.

19. **This is significant when placing such potential impacts in context**. Table 2 shows UK household expenditure on airfares for 2019, the most recent year not affected by the COVID-19 pandemic. It indicates that UK households spend around £10 billion per year on domestic and international airfares for private purposes (note that this excludes expenditure on business travel). While this covers all airports, a significant proportion of this expenditure will have been incurred at the most slot-constrained airports (e.g., Heathrow, Gatwick) where the benefits of slot reform are likely to be concentrated.

Table 2: UK Household Expenditure on Airfares (2019)

Weekly household expenditure			Annual household expenditure		
Within UK	International	Total	Within UK	International	Total
£8m	£191m	£199m	£417m	£9,959m	£10,376m

Source: ONS Family spending workbook 1: detailed expenditure and trends, Annex 1, Table 7.3.4

Other concerns with the existing slot allocation system

20. **Aside from the above concerns relating primarily to competition and efficiency, there are several other concerns with the existing slot allocation system**:

(i) **Practicality for large-scale allocation.** The existing slot allocation system is tried and tested in relation to relatively small increments in airport capacity. However, at congested airports, where demand for slots exceeds the available capacity, each allocation decision requires a judgement to be made by the Slot Coordinator, balancing allocation criteria against a fixed timescale and potentially multiple carriers all seeking the same slots. It is thus questionable how practical the system would be for the allocation of large-scale new capacity, such as that resulting from a new runway, given the large number of allocation decisions that would be required in that event in cases where the demand for slots exceeds the supply. It is particularly questionable as to whether large scale allocation would be manageable within existing timescales for the seasonal slot allocation process.

(ii) **Transparency.** Transparency is usually considered desirable to ensure the credibility and legitimacy of regulatory processes in the eyes of all stakeholders (in addition to improving the efficiency of markets). At present, some stakeholders have told us that the slot allocation process lacks transparency in demonstrating the basis on which slots have been allocated between competing uses and users. Similarly, some information pertaining to slot trades (e.g., lengths of leases) is not readily available, and the potential availability of slots for trading is not equally accessible by all participants (e.g., a significant proportion of trades are undertaken within airline groups or alliances).

(iii) **Government objectives/priorities**. The independence of the Slot Coordinator is an important principle underlying the Slot Regulation and the slot allocation process. However, it is not uncommon in other regulated sectors for the government to be able to issue guidance to the regulatory authority, without compromising the independence of the regulator or the primacy of the regulator's statutory duties. Presently there is no corresponding mechanism for the

[25] Brueckner and Singer (2019) state that low-cost carriers include Southwest, JetBlue, Virign America, Sun Country, Ryanair, and easyJet amongst others, see p.12.

government to give guidance on its policy objectives or priorities to the Slot Coordinator in making allocation decisions with such priorities, which could enhance social welfare, in mind.

(iv) **Resilience.** The COVID-19 pandemic has shown that unanticipated exceptional events may necessitate adjustments to the way in which slots rules are administered. However, a lack of flexibility in the existing Slot Regulation meant that it was necessary for the Government to pass new primary legislation to enable temporary bespoke alleviation from aspects of the slot rules during the pandemic. Many other countries took similar steps as part of their response to the pandemic. Thus it may be desirable to consider amendments to the Slot Regulation that ensures that they are more robust and flexible to manage possible future exceptional events.

Rationale for intervention

21. **Government intervention is required in the airports slots market** to address potential inefficiencies and potential market failures arising from: (i) the mismatch between supply and demand in the market for slot capacity, and (ii) shortcomings of the current capacity allocation system given constrained supply. The latter includes many of the issues raised in the preceding 'Problem under Consideration' section.

22. **It is difficult for the market to resolve the problem by increasing capacity, due to constraints on airport expansion**. The development of airports is subject to planning consents and other considerations and is often controversial. This means the market does not automatically adjust to higher demand for airport capacity by increasing capacity at that airport. Moreover, airports in locations with spare capacity often do not act as close substitutes for airports in locations with capacity constraints, often because of geographical advantages of the latter, for example Heathrow, which is centrally located and close to major cities.

23. **Even if large-scale new capacity at constrained UK airports was authorised to reduce the gap between supply and demand, significant government intervention via the slot rules would likely be required to ensure this capacity was allocated efficiently to airlines.** New slot capacity would likely be highly sought after by airlines, leading to fierce competition for slots, with different demands for different types and packages of slots. Optimising the allocation of new slots would be computationally challenging and the existing administrative allocation system may not lead to the most efficient allocation of new slots. However, any alternative market-based mechanism, such as auctions for new slots, would need to be designed so as to ensure fairness, transparency and that airlines are not able to use new airport capacity to obtain or entrench a position of significant market power, if the potential efficiency benefits of market mechanisms are to be realised. Moreover, there is a risk that without government intervention new capacity would also become affected by the same issues as current capacity after the initial allocation, and hence supply increase alone may not target all factors affecting efficiency.

24. **In the absence of such new capacity, the mismatch in supply and demand is currently managed using an administrative process**. In particular, the Slot Regulation establishes the role of the independent slot coordinator (ACL is the UK's slot coordinator) in allocating slots at the UK's capacity constrained (Level 3) airports using allocation rules which are described in the Regulation supplemented by secondary criteria contained in the Worldwide Slot Guidelines. The coordinator uses these criteria to manage demand and allocate take-off and landing slots between the competing uses and users. There is currently no objective means to assess the value of slots in alternative uses or to alternative users, which a market could provide. These problems are compounded by the system of Historic Rights (subject to minimum slot utilisation requirements)

which creates inertia in the system and "bakes in" historical allocations which may not represent the most efficient allocation today. While the Slot Regulation allows airlines to exchange slots which they hold, which could in theory enable historically-allocated slots to gravitate to higher-value uses over time, this process is not fully transparent, and may not give airlines the best opportunities to acquire slots. The scarcity of slots and their value may also incentivise uncompetitive commercial behaviours such as hoarding slots even in cases where other users could use them more efficiently.

25. **Despite some positive aspects of the administrative mechanism, the issues and evidence highlighted in the 'Problem under Consideration' section above suggests it still may not provide the most efficient allocation of airport capacity over time or be most effective in enabling competition**. Table 3 below categorises some of the potential market failures in more detail, to frame the problems requiring government intervention in economic terminology.[26] It also indicates whether the failure pertains to the initial – 'primary' – allocation of airport capacity or to the secondary allocation (through the trading market), as this distinction is important for coming up with policy solutions. It also describes the potential impact of each failure on consumers and welfare.

Table 3: Potential Government and Market Failures in Slot Allocation

Aspect Driving Inefficiency	Type of Government / Market Failure	Allocation Stage	How Aspect May Lead To Inefficiency
Slot values are not based on market pricing	Government	Primary	Without a primary market for slots, airlines do not pay a market price for their use of a slot.[27] The slot allocation process therefore does not provide users with a price signal reflecting the full marginal social cost of the airport slot they are using. This may result in inefficiencies, including slots not being utilised in the way that delivers the maximum social value.[28],[29] While the secondary market provides some form of price signal, the lack of transparency means it is not a very clear price signal.
Permanent nature of Historic Rights	Government	Primary	The permanent nature of Historic Rights may be hampering airlines who would be able to extract maximum value from slots from obtaining them, thereby favouring incumbents, who may be less innovative and less focussed on extracting maximum value from them. These rights may give incumbents a degree of market power, bestowing some (unnecessary) price setting ability and potentially leading to prices higher than the 'competitive price'. This can lead to inefficiencies and damage consumer welfare.
Allocation Rules	Government	Primary and Secondary	Various other aspects of the current administrative system for slot allocation may facilitate incumbents holding onto slots, leading to barriers to entry and potentially inhibiting airlines who value slots the most obtaining them and hence reducing efficiency and competition. These include priority given to retiming of existing slots, and practical limitations of the new entrant rule. Again, this could mean airlines with a high

[26] See HM Treasury, (2022), The Green Book: Central Government Guidance on Appraisal and Evaluation, p.29.

[27] It could be that a pure market system, where airlines would pay the full marginal social cost of a slot (sometimes known as runway pricing) could generate efficient outcomes, but this is uncertain, may be difficult to implement in practice, and be a significant change from the existing system. Airlines face airport charges to recover the (private) average costs faced by airports, but these are unlikely to reflect the full marginal social cost of slot usage at the most constrained airports.

[28] Potential inefficiencies from non-market pricing of airport capacity is discussed in more detail in *NERA Economic Consulting*, 'Study to Assess the effects of Different Slot Allocation Schemes: A Final Report for the European Commission, DG TREN', (2004), esp pp.49-63, and D.Starkie, 'The Economics of Secondary Markets for Airport Slots', in Boyfield (ed.), *A Market for Airport Slots*, The Institute of Economic Affairs (IEA), (2003), pp.54-7.

[29] Note that this issue arises because an administrative system is used to allocate slots rather than a market mechanism. As such this is not strictly a 'market' failure, but a failure of the existing regulation that requires intervention – and hence relevant to include here.

			concentration of market power will charge higher prices to consumers.
Strategic behaviour in secondary trading system	Market (Monopoly / Market Power)	Secondary	Airlines may be reluctant to trade slots with potential competitors either at all, or at least on a permanent (rather than temporary) basis. They may favour trading slots only within airline alliances, joint ventures or other groupings, potentially reducing market access for competitors. This may inhibit competition and lead to higher flight prices or a lower quality of flight service for consumers. Due to the high value of some slots, airlines may also 'hoard' slots they do not intend to use, retaining them (e.g., via leasing out) to retain their value or to stop other airlines who may be competitors obtaining them. Again, this leads to inefficiency of allocation and usage.
Lack of information and transparency in secondary trading system	Market (Imperfect Information)	Secondary	For markets to function efficiently, information needs to be publicly available on both the demand and supply of the product. However, slot trading occurs "behind closed doors", and information on whether a slot is available for trading or any monetary component associated with the slot exchange is not required to be made publicly available. Limited information means airlines might make less accurate estimations of slot values, preventing efficiency-enhancing trades that would have occurred otherwise and hence damaging consumer welfare. Lack of information may also prevent regulators from optimal decisions to improve efficiency in the market, also damaging consumer welfare.

26. **In summary, when any of these potential government/market failures materialise, there is the potential for allocative inefficiency**. Such considerations are important when making the case for reform of the current slot allocation system and/or greater use of market mechanisms.

27. **Given these potential inefficiencies, government intervention is necessary in order to foster a more efficient use of existing capacity and meet government objectives**. It is unlikely that slot allocation issues could be solved without regulatory intervention (e.g., through innovation or a stakeholder-led change alone). Whilst further airport capacity expansion is likely in coming years, it is unlikely this will be sufficient to entirely address the excess demand for slots at the busiest UK airports. In addition, practically both government and stakeholder-led action would be required to directly address the issue of slots given the complex regulatory environment and the competing interests. This means there is a need for regulatory intervention to address present shortcomings in the slot allocation system and ultimately improve social welfare.

Policy Objective

28. **In accordance with the Consultation Document, the objectives of slot reform are**:

    - stimulating a competitive environment by creating a more efficient, transparent, and dynamic slot market; and
    - establishing a framework for allocation of new slots.

29. **The policy options are thus organised in the Consultation Document and this Consultation IA under the following headings**:

    - a more efficient slot system;
    - a more transparent slot system;
    - allocation of new slots, and;
    - a more dynamic slot system.

Options Considered

Table 4: Slot Reform Policy Options

Option No.	Option	Description
Business-as-Usual		
0	Status quo	Continuation of current trends
Efficiency		
1.1	Re-defined new entrant rule	A power for the Secretary of State to change the definition of the new entrant rule by regulation, and removal of the definition of an airport system and all references to it
1.2	Restrictions on newly allocated slots	Restrictions on re-routing and exchanging slots extended from 2 equivalent seasons to 4 equivalent seasons, and applied to all newly allocated slots (not just new entrants as at present)
1.3	Removal of re-time priority	Removal of re-time priority (re-time requests to be treated on equal basis to new slot requests).
1.4	Permanent powers to improve resilience	Permanent powers to provide alleviation from slot rules in exceptional circumstances
1.5	Increase to slot usage ratio	Increase utilisation requirement from present 80%
Transparency		
2.1	Strengthened Coordination Committee role	Strengthen the role and accountability of the coordination committee so it can act as a focal point for scrutiny of decision making in relation to slots, including resolving complaints
2.2	Guidance on secondary criteria	A power for the Secretary of State to add to and/or subtract from the list of secondary criteria for allocating pool slots set out in the WASG, and to provide guidance to ACL on the prioritisation and/or interpretation of such secondary criteria
2.3	Power to direct the slot coordinator	A power for the SoS to issue a direction to the coordinator requiring it to undertake a certain action
2.4	A slot register, and trading platform for UK slot trades, and strengthened oversight of secondary trading	A register to record all slot holdings (2.4a), a platform for secondary trading of slots (2.4b) and strengthened oversight of secondary trading (2.4c)
2.5	Limitation on slot leasing	Slot leasing to be limited to a set period, after which the slot will have to either be returned to the pool or flown by the original slot holder
New Slots		
3.1	Auction of new slots	Use of slot auctions for the allocation of new slots.
3.2	Ring-Fencing of new slots for certain purposes	When there is release of new slots, a proportion of new slots to be reserved for specific destinations e.g., domestic connections
Dynamism		
4.1	Limiting Historic Rights for new slots	Limiting Historic Rights on new slots to a fixed duration e.g., 15 years

Analytical Framework

Introduction

30. **In this section we propose and explore some analytical frameworks that could be used to quantify the impacts of reforms to the slot allocation system**. While reforms are made in the slots market, the principal impacts on social welfare and so allocative efficiency are likely to be felt via downstream flight markets. The impacts will depend on the behavioural responses of airlines to any changes, for which there are few precedents and which it may be difficult to predict. This means quantification of some of the impacts is likely to be particularly challenging in this case. To address this we outline below some analytical frameworks which could be used to more robustly quantify the impact of potential reforms on social welfare in a subsequent final stage Impact Assessment[30]. Whilst we do not attempt full quantification at this stage, we welcome feedback on the frameworks below prior to any quantification so we can incorporate feedback into the final stage impact assessment. This should help us address any limitations and increase the robustness of analysis.

Types of Impact

31. **A literature review has been conducted to identify general categories of impacts resulting from slot reform policy changes**. We adapt a useful categorization by OXERA[31] to use in our assessment, as follows:

    1) Impacts to the market in question (in this case, the market for slots and, subsequently, market(s) for flights)
    2) Direct administrative costs to the competition authority (or in this case the slot coordinator) - these include the additional resources used in administration of the policy, such as extra staff, IT resource and legal costs.
    3) Direct compliance costs to firms - these include the costs of complying with the regulation, such as labour costs, administrative overheads, IT/system costs, capital requirements, legal expenses, one-off costs to adjust to new regulation (e.g., investments needed to update systems etc.).
    4) Indirect regulatory costs resulting from regulatory uncertainty/risk - regulation changes and associated uncertainty may raise firms' exposure to market risks, leading to potential cost increases. For example, higher market risks might lead to increased cost of capital / require higher average returns.
    5) Other social cost and benefits (including externalities etc.)[32,33] - these include other social costs or benefits resulting from changes to the market in question that go on to have affects outside that market. This includes the impact on the wider economy from changes in connectivity as a result of slot reform, in addition to the impacts it could have on hub operations and domestic carriers (see discussion below). Other potential costs or benefits falling under this category include the impacts on the environment that might result from the impact of reforms on the flights market.

[30] As above, an Impact Assessment to be completed post-consultation assessing further the impact of slot reform policies.

[31] Draws heavily on OXERA, (2004), 'Cost and Benefits of Market Regulators; Part I: Conceptual Framework', pp.12-21.

[32] Adapted from OXERA, (2004), 'Cost and Benefits of Market Regulators; Part I: Conceptual Framework'

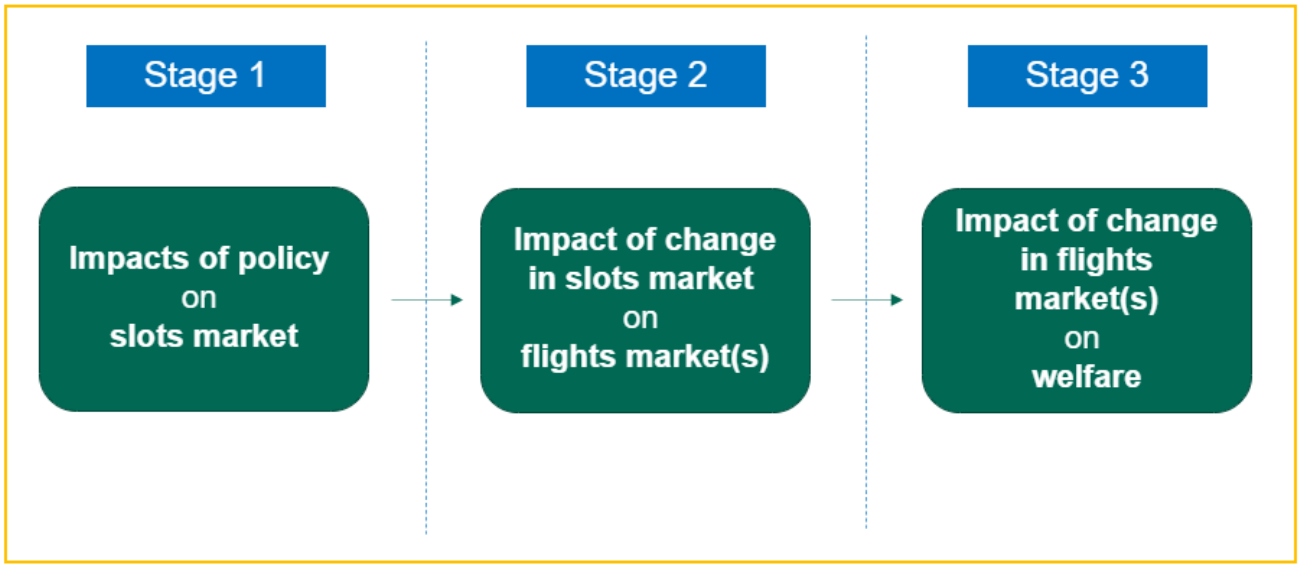
[33] OXERA, (2017), 'Costs and Benefits of competition policy analysis' , OXERA Agenda February 2017

In this section we primarily explore how we could seek to identify and quantify the first category – the impacts to the market(s) in question (and to a lesser extent indirect impacts of connectivity in category 5). We focus primarily on category 1 (and to a lesser extent category 5) because we anticipate these impacts to be the most challenging to assess. For example, it is challenging to understand the impact of reforms on who owns slots and how they are utilised. The impact on consumers from changes to the slots market are reasonably downstream and mapping this mechanism, from the impact on slots through to the impact on flights and ultimately to consumer welfare is not straightforward. We outline below how we propose to undertake this stage of the analysis. **We would welcome feedback on the options outlined**.

Quantifying Impacts on Market for Slots and Other Relevant Markets

32. **We have identified three main analytical stages for quantifying the social welfare impacts of slot reform policy options in the market for slots and downstream flights market.** The first stage estimates the impact of a slot reform policy change on the market for slots. The second stage estimates the impact of the change in the market for slots on the market(s) for flights, including the impact on changes in price and quantity in different segments of the market. The third stage estimates the impact of changes in flight market prices and quantities on measures of consumer welfare. These stages are illustrated in Figure 12.

Figure 12: Stages in Analysing Impacts of Changes to Slots Allocation Rules



33. **For Stage 1, DfT has identified several possible approaches for quantifying impacts.** These are detailed below:
    - The first possible approach involves reviewing literature to find previous estimates of the impact of different potential slot reforms on slots held by airline or types of airlines at airports. Whilst this would give a direct estimate, there may not be available data due to lack of historical examples of the slot reforms under consideration.
    - A second option involves constructing new estimates of the effect of slot policies based on historical policy implementation and data. This may also suffer from lack of historical data and examples.
    - A third type of approach is 'expert elicitation' of policy impacts, involving pooling experts' estimates of policy changes to yield estimates of the impact of different possible reforms under different scenarios. These could include eliciting considered estimates from DfT experts and relevant stakeholders or using more formal structured elicitation approaches

such as the Cooke Protocol, Sheffield Protocol or Delphi methods.[34] There is precedence for using expert elicitation in work commissioned by government.[35] We would need to consider whether this approach would work, especially given its complexity, and carefully design our approach to avoid pitfalls including issues of bias.

- A fourth suite of approaches are based on experiments and/or simulations. Types of experiments include behavioural laboratory/online experiments, in which humans are asked to behave as if they were in a 'real' environment, and 'demonstration projects' / field experiments, where real behaviour is observed.[36,37] There is precedent for applying the former method to slots questions, including a study commissioned by DfT from OXERA[38] which tested the behaviour of actors under various slot reform options for newly allocated slots at Heathrow, including creating limited duration rights, scrapping a new entrant rule, and auctioning slots. DfT could also draw on agent-based modelling (ABM) simulation studies, where the choices of computer rather than human agents are modelled under different slot allocation mechanisms.[39,40] Experimental approaches may require significant additional external expertise and we would need to consider whether the benefits of these approaches (relative to other approaches) justified the additional resources required.

34. **For Stage 2 we have identified three potential approaches[41] for quantifying the impacts of changes in the slots markets on flights market(s).** These are not exhaustive and DfT welcomes comments on these and also suggestions for other approaches.

Approach 1

This approach is based on the approaches used by Mott MacDonald (MMD) and Steer Davies Gleave (SDG) in previous analyses of the slots market.[42, 43] These approaches first split flights at specified airports according to certain types/characteristics. They then calculated how the quantity of different types of flight change due to a slot policy (this would depend on what happens in Stage 1 (see above). Finally, they calculate the implications of change in quantity on prices or revenues. These outputs can then be used to assess societal impacts in Stage 3 (see below),

Mott MacDonald's Approach

This section provides a high level, simplified, summary of Mott MacDonalds' approach to analysing the impacts of slot reform policies. For further details readers should see Mott MacDonald, (2006), *Study of the Impact of Secondary Trading at Community Airports*.

- The approach first categorises flights at each airport studied, including by length of flight the carriers' position in the market (e.g., dominant incumbent, other incumbent, new entrant,

[34] A.O'Hagan, (2019), Expert Knowledge Elicitation: Subjective but Scientific, *The American Statistician*, Vol 73, No.S1, 69-81: Statistical Inference in the 21st Century.

[35] H.Davies, J.Russell, A.Varghese, H.Holmes , M.O.Soares, B.Woods, R.Puig-Peiro, S.Evans, R.Tierney, S.Mealing, M.Sculpher, J.V.Robotham, (2023), 'Developing a Modeling Framework for Quantifying the Health and Cost Implications of Antibiotic Resistance for Surgical Procedures', *MDM Policy Pract.*, 4;8(1):23814683231152885.

[36] OECD (2019), *Competition Assessment Toolkit: Volume 3. Operational Manual,* www.oecd.org/competition/toolkit

[37] OXERA, (2019), 'Slot Allocation at an Expanded Heathrow', Prepared for Department of Transport.

[38] OXERA, (2019), 'Slot Allocation at an Expanded Heathrow', Prepared for Department of Transport, for experiment design and results see in particular Chp 4. (pp.32-38) and Chp.s 6-7, pp. 59-97.

[39] Herranz, R., Toribo, D., Alsina, N., Garrigó, L., Poza, D., Pessenti, R. and Castelli, L. (2016), 'Agent-Based Simulation of Airport Slot Allocation Mechanisms: Analysis of Results', ACCESS (Application of agent-based Computational Economics to Strategic Slot Allocation), Working Paper 6, February.

[40] Araúzo, J.A., Villafáñez, F.A., García, D.P., Pajares, J. and Pavón, J. (2018), 'Agent Based Modelling and Simulation of an Auction Market for Airport Slots Allocation', in Bajo, J. et al. (eds), *Highlights of Practical Applications of Agents, Multi-Agent Systems, and Complexity: The PAAMS Collection*, PAAMS 2018, Communications in Computer and Information Science, 887.

[41] It is possible that some elements of these approaches would be made trickier by covid, but we don't think that covid has affected the underlying design principles and spirit of each approach or makes them infeasible.

[42] Mott MacDonald, (2006), *Study of the Impact of Secondary Trading at Community Airports*

[43] Steer Davies Gleave, (2011), Impact Assessment of revisions to Regulation 95/93: Final Report

low-cost carrier and others), and whether they are passenger, cargo-only or charter flights, and calculates the overall number of flights per flight type per airport in a baseline scenario.

- Second, it estimates how the number of flights of each type changes due to a slot policy change - in MMD's case the introduction of secondary trading of slots. For example, MMD state that the introduction of secondary trading could lead to dominant existing hub operators acting as strong purchasers of slots, as they obtain strong network benefits from an additional destination or frequency relative to other carriers and are likely to increase their number of long-haul flights and strengthen or maintain some short-haul feeder routes using these.[44]
- Finally, they combine the change in quantity of flights with other data to be able to generate the change in revenue (and other measures such as price per passenger) for each flight type at each airport due to the change in number of flights flown.
- These outputs are subsequently used to calculate welfare impacts (See more in Stage 3 below).

Steer Davies Gleave's Approach

This section provides a high level, simplified, summary of Steer Davies Gleave's approach to analysing the impacts of slot reform policies. Again, readers should see *Steer Davies Gleave, (2011), Impact Assessment of revisions to Regulation 95/93: Final Report* for more details.

- Steer categorise use of slots by type at each airport considered, including whether they are used by a main based network carrier, other network carrier, network carrier not based at the airport concerned, low cost carrier or charter/leisure carrier. [45] They also consider the length of the route (long-haul, short-haul, regional) and (for some airports) whether the flight is peak, shoulder or off-peak). They use this to produce a baseline scenario of slot allocation.
- They then calculate the change in slot allocation due to a slot reform option; for example, an option might affect the number or type of flights, such as the route length or the airline operating a slot, for which slots are used.
- This information is subsequently used in calculation of changes in passengers, passenger kilometres and other measure such as fares. For example, they posit that an *x*% increase in the number of passengers will require a certain change in fares, and that this can be calculated using data on price elasticities of demand.[46]
- These outputs can subsequently be used to calculate welfare impacts (see Stage 3 below).

Approach 2

A second approach is based on a form of equilibrium modelling used in some of DfT's in-house aviation competition modelling.

- This approach first identifies a geographic market for flights to analyse, for example the UK-EU flight market, and categorizes flights in this market by airline.
- Second, it assumes each airline in this market supplies a certain number of flights at a certain price that maximizes profit (based on a standard profit maximization function), given

[44] See, Mott MacDonald, (2006), *Study of the Impact of Secondary Trading at Community Airports*, pp.9-3 to 9-6 for how other types of carrier may react to this measure and the implications for types of slots used.

[45] Steer classify this category as charter/leisure, but lots of airlines in this category are charter airlines.

[46] Price elasticity of demand captures how a (percentage) change in demand relates to a (percentage) change in price. For example, a 2% change in price – e.g., of passenger fares - might lead to a 1%, 2%, or 3% change in demand for flights. If it led to a 3% change in demand, then we might say demand is 'elastic', as the % change in demand is bigger than the % change in price. Intuitively in this case, demand is sensitive to the change in price.

a certain level of passenger demand for that airline's flights (represented by a demand function).[47]

- Third, it draws on data on number of flights and fares offered by airlines to calculate the total quantities of flights provided by each airline individually and overall, and the average price of a flight overall. If a slot reform policy led to these inputs being changed, then the approach would calculate different quantities and prices, representing the impact of the policy.

This type of approach is powerful and suggested in common guidance on competition impact assessments[48, 49, 50] and variants of it have been used in studies of the aviation sector.[51] An approach with some similarities (in general type of approach, though very different in details) has also been developed by UCL[52], though this is currently specific to certain geographies. However, it is also complex, potentially expensive to undertake, and the outputs are only as good as the inputs.

Approach 3

A third approach could involve using behavioural or agent-based experiment or simulations to understand the impact of the change in slot holdings on the market(s) for flights. This approach is likely to be highly bespoke and details of the experiment or process would significantly determine the modelling process. One example of this approach is OXERA's study commissioned by DfT, which considers the impacts of different slot allocation reforms on slots used and types of flights flown. However, the results for this relate to newly allocated slots and they do not fully consider the impact on types of flights flown using slots that are not newly allocated.[53]

35. **There are challenges associated with each of these approaches**. For the first approach, whilst categorisation of flights is useful from a modelling perspective, there may be a range of useful categorisations for different reform policies, and consideration should also be given to the extent to which passengers' willingness-to-pay for flights might differ across flights with the same classification, for example due to preferences for specific destinations, airlines and other factors. For the second approach, it would be necessary to consider technical challenges (including specification of various functions), the appropriateness of using more complex modelling given the potential uncertainties over the inputs fed into it, and whether it is feasible for the geographical market under consideration. The third approach is highly complex and would most likely require significant specialist expertise.

36. **In Stage 3, DfT will calculate the welfare impacts of changes in the market(s) for flights.** This will likely involve calculating measures commonly used in government economic appraisal, such as consumer and producer surplus.[54] For example, Mott McDonald use outputs on quantity and revenue from stage 2 to calculate the change in consumer and producer surplus from secondary trading for each of the flight types they study and each airport. Similarly, DfT's in-house competition model uses price and quantity outputs from the constrained optimization modelling to calculate producer and consumer surplus. Aside from calculating consumer and producer surplus, welfare

[47] The approach also allows airlines to consider other airlines' behaviour when making decisions (other airlines are represented in the equations, i.e., profit maximization and demand functions).

[48] Competition and Markets Authority (CMA), (2015), 'Competition Impact Assessment, part 2, guidelines'

[49] OXERA, (2015), 'How Can the Impact of Competition be Assessed within a Cost-Benefit Analysis Framework?'

[50] OECD, (2019), *Competition Assessment Toolkit: Volume 3, Operation Manual*, www.oecd.org/competition/toolkit

[51] OXERA, (2015), 'Technical report in response to Airport Commission consultation, Prepared for Gatwick Airport Limited

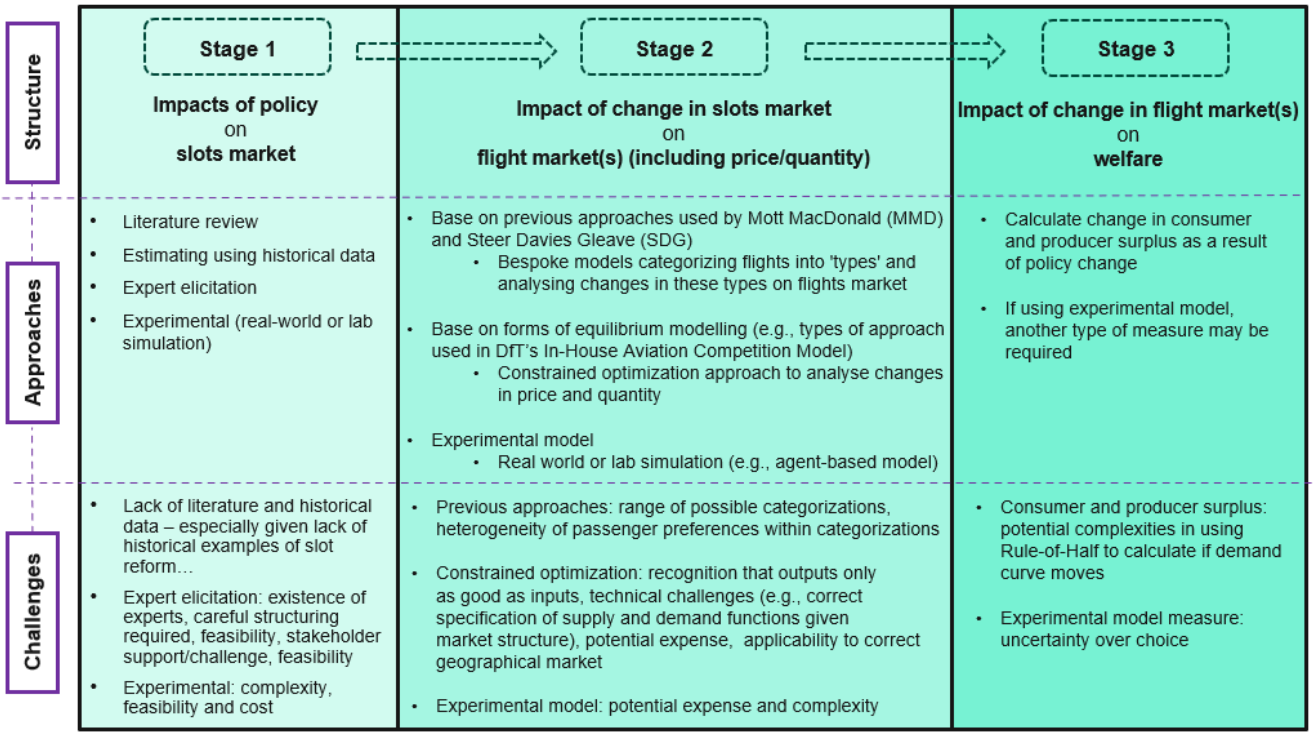
[52] Doyme, K., Dray, L., O'Sullivan, A., & Schäfer, A., (2019), 'Simulating Airline Behavior: Application for the Australian Domestic Market', *Transportation Research Record*, *2673*(2), pp.104–112.

[53] OXERA, (2019), 'Slot Allocation at an Expanded Heathrow', Prepared for Department of Transport, for detail on impacts on slots used and flights flown see in particular Chp. 7, pp. 68-97.

[54] If an experimental or simulation approach was used in Stage 2 different measures of welfare may be used.

might also be estimated by applying simple multipliers to outputs from Stage 2. For example, Steer Davies Gleave estimate economic benefits per passenger of a reform policy using estimated economic benefit per passenger of certain types of flights.[55] More detail on calculating measures such as consumer and producer surplus is provided in DfT's Transport Appraisal Guidance.[56]

Figure 13: Summary of Possible Approaches to Analysing Impact of Slot Reform Policies on the Slots Market, Flights Market(s), and Welfare, and their Challenges



37. **Figure 13 summarises the approaches discussed for Stages 1, 2, and 3, and also discusses challenges associated with these approaches**. The reader should refer to the main text in this section for further details.

Quantifying Other Impacts

38. **DfT will also attempt to quantify impacts belonging to categories 2-5 (see 'Types of Impact' section above).** Quantifying costs/benefits arising from impacts for categories 2-4 is less conceptually challenging than those from category 1 but requires obtaining the necessary data and contact with key stakeholders, such as ACL and industry. Impacts from category 5 are potentially more challenging and so are discussed briefly here. The degree of challenge will depend on the specific other wider costs and benefits included, of which there are a wide range. DfT will attempt to quantify these indirect impacts where possible and would welcome feedback on this. Here we discuss two of these – wider impacts associate with changes in connectivity and environmental impacts – in more depth to give an indication of how they might be quantified. We will aim to assess other impacts where possible in the final impact assessment.

Connectivity

[55] See Steer Davies Gleave, (2011), Impact Assessment of revisions to Regulation 95/93: Final Report, pp.31-32 for details.

[56] Department for Transport, (2021), TAG UNIT A1.3: User and Provider Impacts, pp. 1-3.

39. **DfT will attempt to assess indirect impacts (those outside the market in question) of connectivity**. There is some uncertainty about the indirect impacts of slot reform on connectivity, which could potentially be both positive or negative. Improvements in international air connectivity could benefit the UK economy through direct and indirect jobs, inwards tourism, trade and business. These impacts on GDP and productivity would reflect a direct private benefit to passengers but also wider economic benefits to society. However, it could also disbenefit the UK economy through greater spending outside the UK by UK residents, which could reduce overall UK economic gains. Improvements in domestic air connectivity could yield economic benefits through increased domestic tourism, although spending on air travel could to a large extent displace other types of transport (for example domestic road and rail) leading to marginal impacts on domestic tourism. [57] Decreases in international connectivity could lead to increased domestic spending, including on leisure activities, as people otherwise travelling abroad for leisure spend instead in the UK. However, this would be counterbalanced by decreased spending in the UK by international passengers.

40. **To estimate the wider economic impact of changes to connectivity DfT has identified two possible approaches.** The first is to review previous literature to find previous analysis on aviation network benefits. This is a well-researched area, with several econometric papers considering the relationship between connectivity and GDP. Oxford Economic Forecasting (OEF) undertook an econometric analysis on behalf of IATA which considered the relationship between connectivity and long-run investment and productivity, concluding that a 10 per cent rise in connectivity (relative to GDP) is estimated to increase long-run GDP by 1.1 per cent.[58] InterVISTAS also developed an econometric model to estimate the impact of changes in connectivity and in other factors on labour productivity levels. They concluded that a 10 per cent increase in connectivity will increase labour productivity by 0.07 per cent and boosts total factor productivity by 0.9 per cent.[59] This is a complex area with much controversy due to the closely linked relationship between connectivity and GDP – a change in connectivity has an impact on GDP whilst at the same time a change in GDP has an impact on connectivity. A second approach could be to replicate similar analysis. This is something which DfT is considering but would require more up-to-date data to be available and consideration as to the most appropriate model specifications.

Environmental Impacts

41. **DfT will also consider the feasibility of quantifying indirect environmental impacts from slot reform policies**. Whilst not the primary focus of slot-reform policies[60], if a policy leads to more long-haul flights being flown there may be greater social cost in the form of carbon emissions, or if larger aircraft are used, there may be additional negative externalities in the form of noise, local air quality pollutants or GHG emissions. Conversely, if a policy leads to a reduction in long haul flights, there may be fewer costs in terms of carbon emissions. DfT considers it important to idenitfy and attempt to quantify these impacts. Some policies could reasonably increase or decrease environmental impacts[61], and where there is uncertainty in the overall direction of impact, both potential impacts are listed in the options assessment below. One

[57] See Steer Davies Gleave 2011 European Commission Paper on the 'Impact assessment of revisions to Regulation 95/93' (Steer Davies Gleave (2011) Impact Assessment Revisions Regulation 95-93-appendices.pdf)

[58] See IATA Economics Briefing No 3 (January 2006)– Airline Network Benefits (https://www.iata.org/en/iata-repository/publications/economic-reports/airline-network-benefits/)

[59] See IATA Economics Briefing No 8 (July 2007) – Aviation Economic Benefits (https://www.iata.org/en/iata-repository/publications/economic-reports/aviation-economic-benefits/)

[60] The view of the majority of stakehodlers consulted by DfT is that slot reform is not the optimal lever for addressing environemtnal impacts from aviation. Nevertheless, there may be notable impacts to the environmental impacts from certain policy options, and DfT considers it important to analyse these impacts. DfT welcomes stakeholder views on this.

[61] See discussion on Option 4.2, Power to Ring-Fence Slots, below.

example of where indirect environmental impacts have been quantified is Steer Davies Gleave's assessment of the impact of slot reform. In their assessment they calculated carbon emissions per passenger kilometre for different types of route (e.g., long haul, short haul etc.) using Department for Environment, Food and Rural Affairs (DEFRA) guidance on carbon emissions per passenger kilometre (based on combining aircraft fuel burn with flight data such as average aircraft seating, loading factors, passengers and passenger kilometres).[62] The approach we take to assessing these impacts will be consistent with the Department's standard guidance on appraising environmental impacts.[63]

[62] Steer Davies Gleave, (2011), European Commission Paper on the 'Impact assessment of revisions to Regulation 95/93' (Steer Davies Gleave (2011) Impact Assessment Revisions Regulation 95-93-appendices.pdf), p.33.
[63] Department for Transport, (2022), TAG UNIT A3: Environmental Impact Appraisal.

2.0 Costs and Benefits

Option 0 – Business-as-Usual

42. **For the business-as-usual case, we are intending to assume continuation of the existing Slot Regulation and continuation of trends in slot allocation and usage similar to those prevailing prior to the COVID-19 pandemic**. Whilst there is some debate about whether trends in slot allocation and usage will continue in the same vein as before the pandemic[64], airport capacity has been heavily constrained at Heathrow for more than a decade, with more than 99.5% slots allocated on an historic basis, meaning that very few slots are available for allocation from the 'pool' each season, including for new entrants. In recent years, Gatwick has been rapidly reaching a similar situation, with around 97% of slots now allocated on an historic basis. While other Level 3 airports in the UK are less congested, other than at some peak times, they are projected to become increasingly congested through time once the sector has recovered from the impact of the pandemic.[65]

43. **Levels of secondary trading at Heathrow and Gatwick typically accounting for around 2-5% of slots in a season (this figure includes leases and sales)**. Considering only slots sold/purchased, about 1% of slots at Heathrow are typically sold/purchased each year. We consider that trading activity will continue at broadly this level in the absence of slot reform. At other coordinated airports, we expect congestion to increase over time, reducing availability of slots from the pool resulting in secondary trading accounting for increasing share of slot mobility through time.

44. **With Heathrow Airport Limited reflecting on next steps for its 3rd runway proposals (with priority on recovery from COVID-19) , and Gatwick consulting stakeholders about expanded use of its 2nd runway, there is uncertainty about the scale and timing of any additional capacity at congested airports in the UK.**. Were significant new capacity to be installed, the counterfactual assumes allocation of new slots in accordance with the existing Slot Regulation.

45. **While the COVID-19 pandemic led to a significant reduction in flying during 2020-2022, demand has been gradually recovering in the UK since the removal of a prohibition on non-essential international travel in May 2021**. As of end of March 2023, UK flight traffic had recovered to about 80% - 85% of corresponding 2019 levels[66]. In addition, EUROCONTROL's latest central estimate published in March 2023 indicates traffic in UK airspace for the 2024 calendar year will be 99% of 2019 levels[67]. Based on the recovery to date it is possible that levels of congestion may have returned to pre-pandemic levels later in the 2020s, with increasing levels of congestion thereafter.

46. **The business-as-usual case would be a continuation of existing slot allocation rules and practices, with assumed impacts as follows**:

[64] There is ongoing debate about the extent to which the aviation markets will have changed as a result of the pandemic.

[65] The DfT's most recently published UK aviation forecasts predicted (Table 25) growth in unconstrained UK passenger demand of 1.8% pa over 2020-2030, 1.7% pa over 2030-2040, and 1.6% pa over 2040-2050, in the base case (https://www.gov.uk/government/publications/uk-aviation-forecasts-2017).

[66] DfT analysis of EUROCONTROL flight traffic data.

[67] Note that Eurocontrol comparisons relate to Instrument flight rules (IFR) movements, which include passenger, cargo, military, and business jet flights, including overflights. See EUROCONTROL Forecast Update 2023-2029.

- **Implementation/transition costs for airlines, airports, and the slot.** In the counterfactual, we assume the existing slot allocation system is retained, including for new capacity, providing familiarity and predictability for stakeholders (airlines, airports, slot co-ordinator). In the absence of significant new capacity, administration and compliance costs associated with slot allocation and usage are assumed unchanged from current levels. However, in the case of the addition of large-scale new slot capacity, such as a new runway, the slot coordinator may face significant practical challenges in allocating such a large number of new slots using the existing slot allocation rules,[68] and earlier allocation of slots may also be necessary, leading to additional resource requirements for the slot coordinator.[69]

- **Benefits and inefficiencies in the current allocation of slots**. As described earlier, there are likely to be inefficiencies in the existing allocation of slots, due to: (i) historical allocation of slots – many slots will have been originally allocated more than a decade ago, and; (ii) in the secondary market – a lack of transparency and lack of incentive to make slots available to competitors. Factor (ii) provides an impediment to slots gravitating to higher value uses that might normally be expected, in a free market, to address factor (i). Due to lack of slot 'churn', any inherited inefficiencies in slot allocation – while difficult to assess in quantitative terms - are likely to be retained in the system for a long time. Furthermore, it seems reasonable to assume, were the same slot rules to be retained for the allocation of large-scale new capacity in future, that the same concerns about the efficiency of slot use under the existing allocation rules would emerge in relation to the allocation of those slots also. Against this, incumbent airlines would continue to benefit from the certainty given by historic rights when considering, including whether to invest in new routes.

- **Without slot reform, existing criteria for allocating slots are not necessarily aligned with government objectives or international best practice**. ACL allocates according to criteria in the existing Slot Regulation and WASG guidance. The slot coordinator is not required to take into account any objectives of the government of the day (such as on domestic connectivity, trade, environment, etc.), and there is no legislative mechanism for the government to communicate its strategic priorities to the slot co-ordinator. The current Regulation is retained EU law. The EU is continuing to update its slots rules and wider international guidelines continue to evolve, so there is a risk, which will grow over time, that the UK regulation becomes out of date which could lead to barriers or inconsistencies with other countries.

- The **existing new entrant rule** - which prioritises new entrants in the allocation of available slots from the pool but does not appear to help greatly in scaling-up operations beyond a relatively low level - is assumed to continue with the present definition of new entrant.

- **Existing levels of competition**. We assume that competitive pressures will be limited by scarce slot capacity, lack of slot 'churn', and the incentive for airlines not to trade slots with competing airlines.

- **Existing levels of connectivity.** The current combination of airport capacity being constrained and majority of slots at an airport being held by one or two airlines could inhibit competition and lead to the slot allocation system becoming undynamic, limiting choice and potentially connectivity for businesses and passengers. But there are also benefits to an airline holding a

[68] For example, CEPA, (2019), *Slot Allocation at Heathrow in the context of runway expansion*, p.66notes that "the current rules around how slots are allocated anticipate that ACL may need to make subjective value judgements related to efficiency, connectivity and competition. At present, when only a few slots are available, application of judgment is not a major concern, as the impact of ACL decisions on the efficiency of allocation is limited. However, release of capacity on a large scale and where demand is high will place greater pressure on these judgements and ACL would need to develop their expertise in judging economic efficiency in these circumstances".

[69] CEPA, (2019), *Slot Allocation at Heathrow in the context of runway expansion*, p.108

large proportion of slots at an airport, especially at a hub airport such as Heathrow, as a large single carrier can deliver economies of scale and support hub operations, which could enhance connectivity. To assess the business-as-usual case, we will look to undertake further analysis, considering segmentations of destinations served by airports over time.

47. **In the sections that follow, we provide an initial assessment, principally in qualitative terms, of the potential costs and benefits of each of the slot reform options included in the Consultation Paper**. These assessments will be developed further, including quantitative assessment to the extent possible, in the final stage impact assessment for those options which are ultimately taken forward for legislation. The quantitative final stage assessment will follow the also take into account further data and evidence submitted by respondents to this consultation exercise.

48. **For each cost and benefit, we distinguish between "monetised" and "unmonetised" cost and benefits**. For this Consultation Impact Assessment, we have generally defined "monetised" as those costs or benefits which *we expect should be monetisable as part of the final stage impact assessment*, even if they have not been monetised as part of this Consultation IA. It is also possible that some costs or benefits currently marked as 'unmonetised' may in fact be monetised in the final stage impact assessment, and this may also depend on feedback on the analytical framework. Please note that in some cases cost estimates have been included which are based on limited evidence; this is done in order to elicit feedback from respondents and encourage them to submit further data or evidence to inform the assessment for the final stage impact assessment.

49. **Costs are further broken down into "transition costs" and "ongoing costs"**. Transition costs can include one-off spending, such as updating guidance, and time taken to familiarise with new regulations. Ongoing costs capture all other reoccurring costs.

50. **We also identify whether the cost or benefit is direct or indirect**.[70] Direct impacts are those which fall on those businesses which are subject to the regulation and accountable for compliance. Impacts which occur subsequently or in related markets are likely to be indirect impacts. An impact resulting from the 'pass through' of regulatory impacts, such as higher prices to consumers, is an important category of an indirect effect, where the pass-through could be viewed as a 'second round' impact. As per RPC guidance, we have classified the impacts in category '1' in the section "Analytical Framework, Types of Impact" above as direct if they relate to impacts in the market for slots, and indirect if they occur in the market for flights. Impacts such as environmental or connectivity impacts in category '5' are considered indirect. DfT has identified environmental impacts below where a reasonable assessment of the option suggest environmental impacts could be significantly different from the business-as-usual scenario. However, it is possible that there could be environmental impacts other than those identified at this stage. If so we intend to include them in the final stage impact assessment.

51. **Indirect impacts will be included in the Net Present Social Value (NPSV) but excluded from the Business Impact Target (BIT) and Equivalent Annual Net Direct Cost to Business (EANDCB) to be calculated as part of the final stage impact assessment**.

[70] For full definition see "Business Impact Target specific issues: direct versus indirect impacts", Regulatory Policy Committee.

Option 1.1 – Re-defined new entrant rule

A power for the Secretary of State to change the definition of the new entrant rule by regulation, and removal of the definition of an airport system and all references to it.

Summary

52. Regulation 10.6 of the Slot Regulation states that 50% of slots which are allocated from the pool (i.e., slots for which there is not an existing Historic Rights-holder) should be allocated to "new entrants", defined (broadly-speaking) as an airline which holds fewer than five slots on that day at that airport.[71]

53. The regulation defines a new entrant as an airline that:

- would hold fewer than five slots at that airport on a given day; or
- for an intra-UK route or UK-European Economic Area (EEA)[72] route with less than three competitors, would hold fewer than five slots for that route on a given day; or
- for a non-stop scheduled passenger service between an airport and a regional airport where no other airline operates the route, would hold fewer than five slots on a given day at a given airport for that service.

It also stipulates that an airline holding more than 5% of the total slots available on the day in question at a particular airport, or more than 4% of the total slots available on the day in question in an airport system of which that airport forms a part, shall not be considered a new entrant at that airport.[73] The Regulation states that an airport system is 'two or more airports grouped together and serving the same city or conurbation' (the five slot coordinated airports serving the London area (London City, Heathrow, Gatwick, Luton and Stansted) have historically been considered an airport system).

54. By giving them preferential access to pool slots, the new entrant rule is intended to help smaller airlines and new airlines at an airport establish a presence at the airport. However,
    - the current regulations, including the relatively low level of the threshold used to define "new entrant" (five slots a day) and the failure to qualify as a new entrant if it has more than 5% of the total slots at an airport on a particular day, does not provide sufficient support for airlines wishing to scale up to a position where they can provide effective competition for larger airlines. This is particularly true at airports such as Heathrow and Gatwick which are most capacity-constrained and where few slots are available for allocation from the pool such that the new entrant rule may in practice have little impact except in the case of release of capacity. Indeed, the CMA states that arguably the most important way of supporting strong competition [in this context] is to 'allow smaller airlines to grow more rapidly to benefit from economies of scale'.[74] Whilst the current new entrant rule may facilitate airlines getting initial access to an airport, the CMA has also stated that the consumers may be better served by a smaller number of slightly larger operators than a larger number of airlines who cannot build sufficient scale to compete with incumbents.
    - the definition of an airport system implies that receiving a slot at any airport in the system serving for example the London area is equivalent, despite the geographical, connectivity and

[71] The Slot Regulation defines "new entrant" as "an air carrier requesting, as part of a series of slots, a slot at an airport on any day, where, if the carrier's request were accepted, it would in total hold fewer than five slots at that airport on that day".

[72] The language of the Regulation reflects the fact it was written before the UK's departure from the EU.

[73] Council Regulation (EEC) No 95/93 (1993), Article 2

[74] CMA, (2018), *Advice for the Department for Transport on competition impacts of airport slot allocation*

commercial differences between these airports. In practice an airline may not be able to obtain slots at an airport for which it qualifies under all criteria other than the airport system criteria, which may have implications for competition and the consumer at specific airports.

55. The definition of new entrant in the Worldwide Airport Slot Guidelines has already been widened to fewer than seven slots a day (from fewer than five slots a day).[75] Based on ACL's start-of-season reports for Heathrow for Summer 2022, 71 of the 104 airlines with slots at Heathrow were allocated less than 5 slots a day, on average over the season; this would increase to 79 airlines if the threshold were increased to 7 slots per day.[76] However, the UK Slot Regulation would need to be amended to change the definition of new entrant applicable in the UK. As described in the consultation document, a change to update the new entrant rule to be consistent with WASG guidelines is being considered separately using powers in the Retained EU Law (REUL) bill, but this would be a one-off change and would not give the UK the flexibility to change the rule again if appropriate to do so.

56. In order to better facilitate the growth of smaller airlines, it is therefore proposed to give a power for the Secretary of State to change the definition of the new entrant rule by regulation. This would give the Secretary of State the flexibility to set a different limit or additional criteria for the definition of a new entrant if beneficial for the UK as a whole or for an individual airport. It is also proposed to remove the definition of an airport system and all references to it in the regulation, to address the concerns that airlines may be not considered new entrants for holding slots at an airport which might have very different characteristics than the airport concerned.

57. The costs and benefits of these potential changes are summarised below. Note that whilst the first proposal listed in the paragraph above is to give the Secretary of State the power to change the definition of the new entrant rule, the analysis here assumes a change led to a widening of the definition of a new entrant. The corresponding costs and benefits below would be different if a change tightened the definition of a new entrant.

Monetised Costs

58. Potential minor administrative costs to the Slot Coordinator due to revisions to the slot regulation (direct cost)

Unmonetised Costs

59. There could be a small cost to airlines holding less than 5 slots a day at an airport, if widening the new entrant rule definition as a result of the new power slightly reduced their access to the 50% of slots allocated from the pool (direct cost).
60. There could be a cost to airlines classified as a new entrants under the current airport system defintion, if removing the definition of an airport system slightly reduced their access to the 50% of slots allocated from the pool (i.e., if airlines previously excluded from classification as 'new entrants' were now classified as new entrants due to removal of references to airport system in the regulation, they may acquire more new entrant slots (direct cost)).
61. Potential costs to passengers and consumers of air cargo services if these measures led to fewer slots being allocated to the smallest airlines in the market leading to less competition (indirect benefit).

[75] See Worldwide Airport Slot Guidelines, Section 11 – Terms and Abbreviations

[76] Note that these are only approximate figures, as the definition of new entrant refers to the specific day in question rather than an average day.

Monetised Benefits

62. None.

Unmonetised Benefits

63. There could be a benefit to airlines previously unclassified as new entrants who were classified as new entrants due to widening of the defintion of new entrant due to the new power (direct benefit).
64. There could be a benefit to airlines not classified as new entrants under the current airport system defintion who were subsequently classified as new entrants due to removal of the definition of an airport system (direct benefit).
65. Benefits to passengers and consumers of air cargo services due to an increase in competition and potentially lower fares and/or higher quality of service from the above changes as a result of facilitating the growth of new/smaller airlines at an airport to a greater scale to compete with incumbents (indirect benefit).

Direct Costs

Monetised Costs

Transition Costs

66. None.

On-going Costs

67. Potential minor administrative costs to the Slot Coordinator from familiarizing themselves with and adjusting slot allocation due to revisions to the slot regulation. (These are ongoing in the sense that they would apply each time changes were made to the slot regulation).

Unmonetised Costs

68. There could be a small cost to airlines holding less than 5 slots a day at an airport, if widening the new entrant rule definition as a result of the new power slightly reduced their access to the 50% of slots allocated from the pool. However, such airlines may over time benefit from the widening of the definition if/as they grew in size.
69. There could be a cost to airlines who are classified as new entrants under the current airport system defintion, if removing the definition of an airport system slightly reduced access to the 50% of slots allocated from the pool (i.e., if airlines previously excluded from classification as 'new entrants' due to the airport system definition were now classified as new entrants). (It is possible such airlines could benefit if they had entered an airport system and the regulation had not been changed).
70. Potential costs to passengers and/or consumers of air cargo services if these measures led to fewer slots being allocated to the smallest airlines in the market leading to less competition and potentially higher fares or lower quality of service.

Direct Benefits

Monetised Benefits

71. None.

Unmonetised Benefits

72. There could be a benefit to airlines previously unclassified as new entrants who were classified as new entrants due to widening of the defintion of new entrant due to the new power, from increased access to the 50% of slots from the pool that are allocated to new entrants[77]..
73. There could be a benefit to airlines not classified as new entrants under the current airport system defintion, but who were subsequently classified as new entrants due to removal of the definition of an airport system. This would arise from increased access to the 50% of slots from the pool that are allocated to new entrants[78].

Business Impact Target Calculations

74. To be completed for Final IA.

Indirect Costs and Benefits

75. Potential costs to passengers and/or consumers of air cargo services if use of the power to widen the definition of the new entrant rule and/or removal of the definition of an airport system led to fewer slots being allocated to the smallest airlines in the market, leading to less competition and potentially higher fares or lower quality of service. The extent of this impact would depend on the magnitude of the change in the definition of new entrant.
76. Benefits to passengers and/or consumers of air cargo services due to an increase in competition and potentially lower fares and/or higher quality of service from widening of the definition of the new entrant rule and/or removal of the airport system definition. This change should increase competition by improving the ability of airlines who wish to grow at scale to do so, which should help level the playing field for them to compete with incumbents[79]. The extent of this impact would depend on the magnitude of the change in the definition of new entrant.

Sensitivity Analysis

77. To be completed for Final IA.

Q1. What impact do you think changing the definition of the new entrant rule and/or removing the definiton of an airport system (and all references to it in the regulation) would have on airline competition? Please answer in as much detail as you can, providing supporting evidence.

Q2. What, if any, impact do you think these changes would have on improving efficiency of slot allocation? Please provide supporting evidence.

[77] CEPA, (2019), *Slot Allocation at Heathrow in the context of runway expansion*, p. 112.

[78] CEPA, (2019), *Slot Allocation at Heathrow in the context of runway expansion*, p. 112.

[79] See CEPA, (2019), *Slot Allocation at Heathrow in the context of runway expansion*, pp. 113 -114. Note CEPA attribute the increase in competition from this particular change to be from making it easier for smaller airlines to operate at scale and hence provide a more level playing field for them to compete with other airlines, rather than necessarily due to changes in the number of airlines.

Option 1.2 – Restrictions on newly-allocated slots

Restrictions on re-routing and exchanging newly allocated slots extended from 2 equivalent seasons to 4 equivalent seasons, and applied to all newly allocated slots (not just new entrants as at present)

Summary

78. Presently, the Slot Regulation prohibits new entrants from transferring a slot to another route "for a period of two equivalent scheduling periods unless the new entrant would have been treated with the same priority on the new route as on the initial route" (Regulation 8a.3(b)). This is intended to ensure that slots are used on the routes for which they were allocated, and hence ensure that the principles used to allocate the slots are not circumvented by an airline wishing to use the slots for an alternative purpose.

79. The Slot Regulation also prohibits new entrants from exchanging slots "for a period of two equivalent scheduling periods, except in order to improve the slot timings for these services in relation to the timings initially requested" (Regulation 8a.3(c)). It is understood that this is intended to deter new entrants from applying opportunistically for slots that they do not intend to use in the long term, with the aim of subsequently selling them on for a profit (since slots are allocated for free).

80. It is proposed to strengthen these provisions by increasing the restrictions on re-routing and exchanging newly allocated slots from two equivalent scheduling periods to four equivalent scheduling periods, and to apply them to all newly-allocated slots (i.e., not just to slots newly allocated to new entrants, as at present). The overall intent is to ensure that slots are used in the manner expected at the time they were allocated, at least for the first few years. The costs and benefits are summarised below.

Monetised Costs

81. None

Unmonetised Costs

82. Airlines with newly allocated slots would have less flexibility in how those slots can be used, reducing the value of such slots to such airlines (direct).
83. To the extent it prevents holders of a slot responding to changes in demand, reduction in the efficiency of slot allocation/usage, with potential costs for air passengers and users of air cargo services (indirect)

Monetised Benefits

84. None

Unmonetised Benefits

85. To the extent it discourages airlines obtaining slots opportunistically, improvement in the efficiency of slot allocation/usage, with potential benefits for air passengers and users of air cargo services (indirect).

Direct Costs

Monetised Costs

Transition Costs

86. None.

On-going Costs

87. None.

Unmonetised Costs

88. This change would make it more difficult for airlines to apply for slots on the basis of one specified route but then use them for an alternative route. It would also make it more difficult for airlines to gain from opportunistically applying for slots which they may intend to sell at a profit after a short period of time. An incentive for such behaviour may arise from the fact that slots are allocated for a free but at congested airports may have a significant value. Airlines would now need to use any slots which they are newly allocated for a period of four equivalent seasons (years), rather than the present two years (which presently applies only to slots newly allocated to new entrants). This would entail an increase in costs of operating the slots and a reduction in value of slots allocated to an airline receiving a newly allocated slot.

Direct Benefits

Monetised Benefits

89. None.

Unmonetised Benefits

90. None

Business Impact Target Calculations

91. To be completed for final IA.

Indirect Costs and Benefits

92. There may be an indirect benefit for air passengers and uses of air cargo services arising from an improvement in the efficiency of the allocation of slots. As the CEPA report notes, "*the extension of slot use restrictions [for four years] following a primary allocation make it more costly for airlines to hold onto slots they have obtained opportunistically. This will actively discourage some airlines from submitting speculative slot requests, but also encourages them find a way to use them profitably or hand them back if they do obtain them*".[80] They would be an increased likelihood that newly allocated slots are being allocated to those airlines with genuine long-term demand for such slots.

93. However, any such benefits would need to be offset against corresponding costs arising to the extent it prevents holders of a slot adapting slot use in response to changes in demand. While it is possible that restricting changes to newly allocated slots might lead to a less efficient outcome if airlines cannot innovate and use slots for 'better' routes, the primary concern that the policy seeks to address is that airlines may apply for slots on one basis and use them on another basis which, if they had declared at the outset, might not have led to the allocation of the slot in the first place (the impact of this measure on efficiency may thus depend in part on the extent to which co-ordinators' allocation decisions are more efficient than can be achieved through the secondary market).

[80] CEPA (2019), *Slot Allocation at Heathrow in the context of runway expansion*, p. 115.

Sensitivity Analysis

94. To be completed for Final IA.

Q3. Do you have any evidence that airlines may apply for slots on the basis of one route and then change the route once any restriction on changing routes expires?

Q4. Do you have any evidence that airlines may apply for slots with the sole intention of trading them once the restriction on trading expires?

Q5. Do you have any evidence that this measure could have possible adverse impacts in terms of restricting airlines from adapting use in light of changes in demand?

Q6. Do you have any evidence that this measure could have positive impacts by increasing the time for which slots must be used for the routes they were allocated and hence helping to ensure that the principles used to allocate the slots are not circumnavigated?

Option 1.3 – Removal of re-time priority

Removal of priority for re-time requests (re-time requests to be treated on equal basis to new slot requests)

Summary

95. Regulation 8.4 of the Slot Regulation allows slots to be re-timed for "operational reasons or if slot timings of applicant air carriers would be improved in relation to the timings initially requested". A re-time allows an airline to request to change a slot timing from anything between a few minutes. Provided the prior approval of the Slot Coordinator is obtained, 're-time' requests are given priority over the allocation of remaining slots from the pool. The volume of re-times can be very significant: CEPA reported that in the Winter 2018 slot allocation, almost a third of historic slots allocated at Heathrow were re-times.[81]

96. In the current allocation system, the coordinator prioritises re-time requests from incumbents over new slot requests. This could give incumbents a competitive advantage over new entrants (or other incumbents) when they both request the same slot, as the coordinator would prioritise the incumbent re-time request and allocate the slot to the incumbent. This gives incumbents looking to re-time slots an advantage and could prevent churn in the slot system, potentially leading to inefficiencies.

97. De-prioritisation of re-times should thus create a more even playing field between incumbents and new entrants and enhance competition. It could perhaps also lead to more slots being returned to the pool, although this seems less likely at airports where slots are very valuable. A change of this nature has already been made in Worldwide Airport Slot Guidelines,[82] but it is not yet reflected in the UK's Slot Regulation. The costs and benefits of this change are summarised below:

Monetised Costs

98. Cost to Slot Coordinator due to increase in the number of allocation decisions which are made on the grounds of secondary criteria (direct cost)

Unmonetised Costs

99. Recurring cost to airlines with existing slot holdings, arising from de-prioritisation of re-time requests, meaning they may not be able to schedule flights at their preferred time, as previously (direct cost).

Monetised Benefits

100. None.

Unmonetised Benefits

101. Recurring benefit to airlines with new slot requests in competition with re-time requests, arising from de-prioritisation of re-time requests of other airlines, meaning that new slot requests will be afforded relatively higher priority than before (direct benefit).
102. Benefit to airline consumers (passenger and consumers of air cargo services) from increased competition and more efficient allocation of slots arising from more equal treatment of new entrants vis a vis incumbents (indirect benefit).

[81] CEPA, (2019), *Slot Allocation at Heathrow in the context of runway expansion*, p.39.

[82] See Worldwide Airport Slot Guidelines, para 8.3.3.2

Direct Costs

Monetised Costs

Transition Costs

103. None.

On-going Costs

104. A small increased cost to the Slot Coordinator, due to the increase in the number of allocation decisions it will be required to make. As CEPA notes: "the removal of priority for re-timed applications will result in an increase in the number of allocation decisions which are made on the grounds of secondary criteria… where there is no hierarchical prioritisation process for ACL to follow…it must balance the various factors which are raised by the competing applications…".[83]

Unmonetised Costs

105. There will be a cost to airlines with existing slot holdings arising from lesser flexibility as to how they may use their slots. This will prevent such airlines using re-time requests to optimise their own capacity.

Direct Benefits

Monetised Benefits

106. None.

Unmonetised Benefits

107. The requirement for airlines to return slots to the pool if they wish to re-time slots may increase the pool of slots available to new entrants. There may thus be a benefit to airlines making new slot requests arising from having greater access to slots available from the pool.

Business Impact Target Calculations

108. To be completed for Final IA.

Indirect Costs and Benefits

109. Benefits to passengers and users of air cargo services from more competition and more efficient allocation of slots. Where multiple airlines are requesting the same slot, with some airlines wishing to retime an existing slot and other airlines wishing to request a new slot, the slot coordinator would consider which of the competing requests would make the most efficient use of the slot. Hence, there would be likely to be an indirect societal benefit arising from the more efficient usage of slots. As CEPA notes: "…*airlines usually submit re-time requests to optimise their own schedules. But it is unlikely that always prioritising re-time requests over new requests results in higher aggregate efficiency. Moreover, it could limit the scope for efficiency improvements by allocating capacity based on incumbency, rather than the wider economic value of the proposed service*." [84]

Sensitivity Analysis

110. To be completed for Final IA.

[83] CEPA, (2019), *Slot Allocation at Heathrow in the context of runway expansion*, p.123

[84] CEPA, (2019), *Slot Allocation at Heathrow in the context of runway expansion*, p.111

Q7. Do you have any evidence on the potential impacts of the removal of re-time priority?

Option 1.4 – Permanent powers to improve resilience

Permanent powers for the Secretary of State to provide alleviation from slot rules in exceptional circumstances.

Summary

111. We are proposing a measure to improve the resilience of the slot allocation process to external shocks, in light of the experience with COVID-19. We are proposing that any slot reform legislation should include permanent powers, similar to the time-limited powers provided in the Air Traffic Management and Unmanned Aircraft (ATMUA) Act 2021 during the COVID-19 pandemic, to enable temporary changes to slots usage rules for extraordinary events or circumstances outside of the control of airlines. This will help protect airlines with existing slot holding from losing their slots (or from needing to operate empty or near-empty flights - "ghost flights" - to retain their slots) in the case of major external events impacting aviation demand. As with the similar measures in the ATMUA Act, to ensure appropriate governance we envisage that the Government would, where possible, seek to consult industry before exercising the powers. (As noted in the consultation document, proposals to clarify and expand Justified Non-Utilisation of Slots (JNUS) provisions are being considered separately in the REUL bill).

112. The costs and benefits are summarised below:

Monetised Costs

113. Potential costs for the Slot Coordinator from implementing temporary revisions to the Slot Regulation as a result of the new alleviation power (direct).

Unmonetised Costs

114. In the event of relevant exceptional circumstances arising including facilitating alleviation from the slot rules under the proposed new powers, new entrant airlines may be deprived of an opportunity to be allocated slots in the following season which might otherwise have been available in the absence of these provisions from other airlines' failure to comply with the normal utilisation requirement (direct).
115. In those circumstances, air passengers and users of air cargo services would forego the competition benefits (e.g., lower fares, new connectivity) that might have resulted from new entrant airlines being allocated such slots in the absence of these provisions (indirect).
116. There would also be a potential cost to airports who, as a result of an exceptional event occurring and a provision being triggered, may lose airport charge income from airlines which they might otherwise have received (direct).

Monetised Benefits

117. None

Unmonetised Benefits

118. In the event of the exceptional circumstances arising, airlines with historic slot rights would not lose existing slot holdings (direct).

119. In those circumstances, air passengers and users of air cargo services would benefit from the retention of existing connectivity provided by existing airlines (indirect) (as distinct from the lost new connectivity from new entrants airlines described under 'costs' above).
120. There is a possible alternative benefit, which assumes that incumbent airlines would not lose their slots in the counterfactual but would instead operate empty or near-empty flights - "ghost flights" - to retain their slots. In this case, the benefit of the measure would be the avoidance of the financial and environmental costs associated with such flights. (direct)
121. There is a possible benefit for air passengers and users of air cargo-only services if lower risks for airlines translates into lower costs, and hence lower fares (indirect).

Direct Costs

Monetised Costs

Transition Costs

122. No material transition costs are anticipated from inclusion of alleviation powers.

On-going Costs

123. If a qualifying external event were to occur, and the alleviation mechanism is triggered, potential additional costs for the Slot Coordinator from implementing temporary revisions to the Slot Regulation, as occurred with COVID-19-related slot alleviation measures implemented under the ATMUA Act. These are estimated to be minor (< £0.1m per occurrence), (but as per the Introduction to Assessment of Options section, this is only an initial estimate and we will welcome responses to this consultation to more accurately estimate this).

Unmonetised Costs

124. In the business-as-usual case (i.e.in the absence of this measure), it would be likely that airlines would find difficulty meeting the utilisation ratio, and hence the retention of their Historic Rights to the slots would be at risk, potentially leading to more slots becoming available to new entrants in subsequent years in the business-as-usual.
125. Thus, compared to the business-as-usual, one direct cost of the provisions would fall upon new entrant airlines, who may be deprived of opportunities to be allocated slots which might otherwise (in the absence of these mechanisms) become available in the following year.
126. The above costs assume that incumbent airlines would lose their slots in the business-as-usual case, rather than operate ghost flights in order to retain them via compliance with the utilisation requirement. If they did operate ghost flights, the measure would result (compared to the business-as-usual) in a potential cost to airports, who may lose airport charge income which they might otherwise have received from the operation of ghost flights by airlines.

Direct Benefits

Monetised Benefits

127. None.

Unmonetised Benefits

128. In the event of the exceptional circumstances arising, direct benefits of the measure would accrue to airlines with existing slot holdings, who would likely be able to retain their historic slots as a result of the implementation of the provision.
129. There is a possible alternative benefit, which assumes that incumbent airlines would not lose their slots in the business-as-usual, but would instead operate empty or near-empty flights (sometimes referred to as “ghost flights”) in the counter-factual sufficient to retain their slots. In this case the benefit of the measure would be the avoidance of the financial and environmental costs associated with such ghost flights.

Business Impact Target Calculations

130. To be completed for Final IA.

Indirect Costs and Benefits

131. As described above, this measure may lead to incumbent airlines retaining Historic Rights that they might be at risk of losing in the business-as-usual case (in the absence of the powers). Thus, in those circumstances, there would be an indirect cost to air passengers and users of air cargo-only services who would forego the competition benefits (e.g., lower fares, new connectivity) that might otherwise have resulted from new entrant airlines being allocated such slots.
132. There would however be indirect benefits in that circumstance to air passengers and users of air cargo services, which would arise from the retention of existing connectivity provided by existing airlines (as distinct from the lost new connectivity from new entrant airlines).
133. There is a further potential indirect benefit for air passengers and users of air cargo services if lower costs and risks for airlines as a result of this measure translates into lower fares than in the business-as-usual case.

Sensitivity Analysis

134. To be completed for Final IA.

Q8. Do you have any evidence on the impacts to the aviation industry which might occur from exceptional events in the absence of the types of measures implemented using powers contained in acts such as the ATMUA Act?

Option 1.5 – Increase to slot usage ratio

To increase the required utilisation ratio from the present 80%, possibly on an airport-by-airport basis.

Summary

135. At present, the primary allocation criteria set out in the Slot Regulation require that an airline uses a slot series at least 80% of the time in order to retain the Historic Rights for that slot series for the following equivalent season. While there are reasons why an airline might not be able to use every slot within a slot series, the 80% minimum utilisation ratio implies that up to 20% of slots could in theory be unused in a season, which would clearly not be making best use of the available capacity, at the most constrained airports in particular. In practice, ACL data for the Summer 2019 season indicates that while the majority of slots at Heathrow and Gatwick were part of series used 100% of the time, around 4% - 5% of slots were part of series used more than 80% but less than 90% of the time. Increasing the required utilisation rate to, for example, 90% would thus be likely to increase the usage of slots, as airlines would be anxious not to lose valuable Historic Rights to slots (or would sell to airlines able to meet the higher utilisation requirement).

136. The costs and benefits of this proposal are summarised below.

Monetised Costs

137. None

Unmonetised Costs

138. Cost to airlines with existing slot holdings from operating additional flights to comply with 90% usage requirement that they had chosen not to operate with 80% utilisation requirement (or lost value of slots if they choose not to operate the additional flights) (direct cost)
139. Potential environment costs (e.g., noise, emissions) associated with increased numbers of flights, including flights with limited passengers or potential ghost flights (indirect cost)

Monetised Benefits

140. None.

Unmonetised Benefits

141. Benefits to air passengers and users of air cargo services derived from the increase in flights operated following introduction of 90% utilisation requirement (indirect benefit).
142. Benefits to airports equal to the difference between the increase in airport charge and commercial (e.g., retail) income and increase in operating costs resulting from the increase in flights operated following introduction of 90% utilisation requirement (direct benefit).
143. Potential benefits to air passengers and users of air cargo services if the higher utilisation requirement leads to more slots being returned to the pool and this results in greater competition between airlines (indirect benefit)

Direct Costs

Monetised Costs

Transition Costs

144. No substantive transition costs are anticipated.

On-going Costs

145. None.

Unmonetised Costs

146. One of the main impacts of this policy will be to require some airlines to operate some additional flights if they wish to retain the Historic Rights to a slot series. This will impact on slot series which were previously being operated more than 80% but less than 90% of the time. Assuming the reason these flights were not previously operated 90% of the time was because it was not profitable to do so (assuming operators are rational), increasing the usage ratio to 90% will result in additional operational costs (and so reduced overall profitability / a net loss of income) for airlines.

147. Alternatively, if airlines decide that the value of the slots in question does not justify the additional operational costs of meeting the higher utilisation target, then it may instead choose not to operate additional flights and there will instead be a cost to the airlines of the lost value of the slots in question from failure to meet the utilisation requirement.

148. In practice, a combination of these two effects may be observed. Airline behavioural responses to this are uncertain and it is hard to say for certain which of these effects would dominate, though airlines are unlikely to want to give up slots.

Direct Benefits

Monetised Benefits

149. None.

Unmonetised Benefits

150. There will be direct benefits to airports equal to the difference between the increased airport charge and commercial (e.g., retail) income and increased operating costs resulting from the increase in flights operated following introduction of 90% utilisation requirement.

Business Impact Target Calculations

151. To be completed for Final IA.

Indirect Costs and Benefits

152. There will be an indirect benefit to air passengers and users of air cargo services derived from the increase in flights operated following introduction of 90% utilisation requirement.
153. Potential further indirect benefits to air passengers and users of air cargo services if the higher utilisation requirement leads to more slots being returned to the pool and this results in greater competition between airlines.
154. Potential environment costs (e.g., noise, emissions) associated with increased numbers of flights or ghost flights (if airlines fly empty or near-empty planes to comply with a higher usage ratio).

Sensitivity Analysis

155. To be completed for Final IA.

Q9. Do you have any evidence on whether increasing the usage ratio would lead to a more efficient use of airport slots and/or more effective competition between airlines?

Option 2.1 – Strengthened Co-ordination Committee role

Strengthen the role and accountability of the Coordination Committee so that it can act as a focal point for scrutiny of decision-making in relation to slots, including resolving complaints.

Summary

156. A coordination committee comprising representatives of the airport's stakeholders is established at each slot-coordinated airport under Article 5 of the Slot Regulation to provide, amongst other things, oversight of slot coordination at the airport. It is proposed that the regulation is updated to strengthen the role and accountability of the coordination committee in order that it acts as a focal point for scrutiny of decision making in relation to slots. We envisage that this would involve requirements on the coordinator to provide reports to the coordination committee at regular intervals and for the airport coordination committee to, as a minimum, publish and make publicly available these reports as well as reports on decisions taken by the committee. We would also consider introducing a requirement for every coordination committee to have an independent chair.
157. The Government believes that the coordination committee is best placed to resolve issues relating to slot allocation at individual airports. We expect that as part of updating Regulation to strengthen the role of the coordination committee, the committee will be given clear accountability for ensuring complaints or appeals in relation to decisions by the coordinator reach conclusion.
158. The costs and benefits are summarised below:

Monetised Costs

159. Potential small additional administrative costs borne by members of the committee as a result of its enhanced role (direct cost).

Unmonetised Costs

160. None.

Monetised Benefits

161. None.

Unmonetised Benefits

162. Benefits are expected to arise to users of the airport as a result of potentially improved decision-making and governance (e.g., due to improvements in accountability) (indirect benefit).

Direct Costs

Monetised Costs

Transition Costs

163. No substantive transition costs are anticipated.

On-going Costs

164. Potential small additional administrative costs borne by members of the committee as a result of its enhanced role. However, these are expected to be minor (estimated at less than £1m per airport per year).

Unmonetised Costs

165. None.

Direct Benefits

Monetised Benefits

166. None.

Unmonetised Benefits

167. None.

Business Impact Target Calculations

168. To be completed for Final IA.

Indirect Costs and Benefits

169. Indirect benefits to users (and potential users) of the airport as a result of improved decision-making and governance. However, it is likely that any such benefits would be difficult to quantify.

Sensitivity Analysis

170. To be completed for Final IA.

Q10. Do you have any evidence on the potential additional costs or benefits that may arise as a result of strengthening the role and accountability of the airport coordination committees?

Option 2.2 - Guidance on secondary criteria

Definition: A power for the Secretary of State to add to and/or subtract from the list of secondary criteria for allocating pool slots set out in the WASG, and to provide guidance to ACL on the prioritisation and/or interpretation of such secondary criteria

Summary

171. Presently, once ACL has allocated slots to airlines with Historic Rights, the remaining slots in the pool are allocated based on secondary criteria, with 50% of such slots reserved for new entrants. Such secondary criteria are based on Worldwide Slot Guidelines and include factors such as the balance of types of service and market, competitive considerations, the needs of the consumer, and the number and frequency of operations. However, the secondary criteria are not prescriptive and have no particular weighting. The consultation document proposes that a new power should be introduced to allow the Secretary of State to add criteria to and/or remove criteria from the list of secondary criteria set out in the WASG, for the purpose of its application by the slot coordinator in the UK. The power would also allow the Secretary of State to provide guidance to the coordinator on the prioritisation and/or interpretation of these secondary criteria.

172. The changes to the criteria and or any associated guidance could be used to align the secondary criteria to wider government priorities or to address particular circumstances at the time. Industry would be notified of any changes well in advance. The guidance would not affect the independence of the slot coordinator; whilst the coordinator would need to have regard to the guidance, it would have the freedom to decide how to apply it to its decisions.

173. The costs and benefits of such an approach are described below:

Monetised Costs

174. Potential minor recurring costs for the slot coordinator from time-to-time from having to adjust its slot allocation processes to reflect the latest government criteria/guidance (direct cost).

Unmonetised Costs

175. There is a risk that the slot coordinator, and the slot allocation process in general, may be perceived as being less independent of government, which could increase uncertainty for airlines and ultimately increase costs for consumers if such costs are passed on in higher fares (indirect cost).
176. There are potential costs for air passengers and consumers of air cargo services if using slots for certain purposes results in less efficient use of capacity (indirect costs).

Monetised Benefits

177. None.

Unmonetised Benefits

178. The government would be able to add/remove secondary criteria and/or prioritise certain objectives within the secondary criteria which should mean the slot rules better reflect government objectives. Depending on the government objective(s) in question, this could positively impact air passengers and consumers of air cargo services and/or third parties (e.g., environment). It could also have positive impacts on efficiency if using slots for such objectives aligned with more efficient use.

Direct Costs

Monetised Costs

Transition Costs

179. None.

On-going Costs

180. Potential minor recurring costs for the slot coordinator from time-to-time from having to adjust its slot allocation processes to reflect the latest government criteria/guidance. It is likely such costs will be passed on by ACL to sector participants. However, these costs are not expected to be significant in the context of overall sector costs.

Unmonetised Costs

181. None.

Direct Benefits

Monetised Benefits

182. None.

Unmonetised Benefits

183. None.

Business Impact Target Calculations

184. To be completed for Final IA.

Indirect Costs and Benefits

185. Potential costs to airlines, air passengers and users of air cargo services if the slot coordinator is perceived as less independent of government. The independence of the slot coordinator is an important principle underpinning the slot allocation system worldwide. It gives confidence to airlines that slot allocation decisions will not be subject to political interference, and therefore reduces risks associated with holding slots and developing route networks. Were a mechanism to be introduced to enable the government to give guidance to the slot co-ordinator on secondary criteria to meet government objectives, it is possible that the slot-coordinator, and the slot allocation process in general, may be perceived as being less independent of government[85]. This could increase risks for airlines (e.g., if any perceived additional regulatory risk increases the cost of capital) and ultimately costs for consumers if such costs are passed on in higher fares. However, similar mechanisms are seen in regulated utility sectors in the UK, where Ministers issue guidance on policy priorities which regulators must take into account when considering how best to carry out their statutory duties, and in any case any additional risks could be offset by any benefits associated with the guidance providing greater clarity on the interpretation of the criteria in place.

186. Potential costs for air passengers and consumers of air cargo services if using slots for certain purposes results in less efficient use of capacity. This could arise when the market may have used the slot differently to how government guidance suggests a slot should be used.

187. At present, other than primary legislation to change the Slot Regulation, there is no mechanism that allows government policy objectives to be reflected in the allocation of slots. Within the bounds of the existing slot allocation framework, this proposal would enable the government to add/remove

[85] Also see CEPA, (2019), *Slot Allocation at Heathrow in the context of runway expansion*, p.107.

secondary criteria and/or prioritise policy objectives within the secondary criteria, which may mean the slot rules better reflect government objectives. The beneficiaries of this mechanism will depend upon which government objectives are prioritised, but may include air passengers, consumers of air cargo services, and/or wider society. There may also be improvements in terms of efficiency if using slots for such objectives aligned with more efficient use.

Sensitivity Analysis

188. To be completed for Final IA.

Q11. Do you have any evidence on the potential costs and benefits associated with the introduction of a power for the Secretary of State to add to and/or subtract from the list of secondary criteria for allocating pool slots set out in the WASG, and to provide guidance to ACL on the prioritisation and/or interpretation of such secondary criteria?

Option 2.3 – Power to direct the slot coordinator

A power for the Secretary of State to issue a direction to the slot coordinator requiring it to undertake a particular action

Summary

189. Under this proposal, the Secretary of State would be able to issue a direction to the slot coordinator requiring it to undertake a particular action. This power might be of use where specific circumstances arose which were not envisaged by the Regulation or where the Government wished the coordinator to act in a certain way to fit in with a wider industry response. On example where this power could have been useful was regarding attempts to reduce the number of passengers at London Heathrow due to baggage handling issues during Summer 2022. The Government believes that independent and impartial slot coordination remains essential to the efficient operation of the slot allocation system and the use of such powers should not compromise the independence of the slot coordinator which is enshrined in the Slot Regulation. The Government does not envisage a role for it in day-to-day individual slot allocation decisions, rather more as direction in specific circumstances help provide clarity and certainty to the industry. The costs and benefits are summarised below:

Monetised Costs

190. None.

Unmonetised Costs

191. There may be a perception that such a power could compromise the independence of the slot coordinator and the primacy of the Slot Regulation, unless appropriate constraints are placed upon the exercise of such powers (indirect).

Monetised Benefits

192. None.

Unmonetised Benefits

193. Since such powers would be exercised only in exceptional circumstances, it seems likely that where the Government exercised such powers it would generally be to the benefit of air passengers and users of air cargo services or wider society in general (indirect).

Direct Costs

Monetised Costs

Transition Costs

194. None.

On-going Costs

195. None.

Unmonetised Costs

196. None.

Direct Benefits

Monetised Benefits

197. None.

Unmonetised Benefits

198. None.

Business Impact Target Calculations

199. To be completed for Final IA.

Indirect Costs and Benefits

200. The independence of the slot coordinator is enshrined in the Slot Regulation. There is at present no means for the government to intervene in how slots are allocated and the implementation of the slots rules other than via primary legislation (as occurred during the COVID-19 crisis, for example). Unless the power is exercised judiciously, perhaps subject to certain constraints or criteria, there therefore may be a perception that such a power could compromise the independence of the slot coordinator and the primacy of the Slot Regulation. To the extent that the independence of the slot coordinator is seen as central to good decision-making and good governance in the allocation of slots, this would impose an indirect cost for air passengers and air cargo-only services (also see similar discussion for option 2.2 above).

201. On the other hand, provided such powers were exercised only in exceptional circumstances, and perhaps subject to certain constraints or criteria as mentioned above, then where the government exercised such powers it would generally be likely to be to the benefit of air passengers and users of air cargo services or wider society in general.

Sensitivity Analysis

202. To be completed for Final IA.

Q12. Do you have any further evidence on the potential costs and benefits, including on independence of the slot coordinator, of a power for the Secretary of State to issue a direction to the slot coordinator?

Option 2.4a – A slot register

A register to record all slot holdings

Summary

203. While ACL can track whether a slot has Historic Rights attached, it can be difficult for it to be certain who ultimately has the original Historic Rights to a slot, particularly given that the contents of lease agreement are not usually disclosed. In addition to improving transparency and good governance, such information may be important for assessing competition between airlines. It could also provide greater clarity where slots have been allocated for specific purposes, such as competition remedies or (subject to other reform options) ring-fenced for a specific purpose. As a minimum, the register would record all slot holdings, showing who holds the Historic Rights to a slot, who operates each slot, and record the duration of slot lease agreements. A register would make the slot allocation system more transparent and would allow the holding and operation of slots to be transparent. The costs and benefits are summarised below:

Monetised Costs

204. Cost to Slot Coordinator of establishment and ongoing maintenance of Slot Register (direct cost)

Unmonetised Costs

205. Cost to airlines of complying with reporting requirements associated with Slot Register (direct cost)

Monetised Benefits

206. None

Unmonetised Benefits

207. A potential benefit to regulators and airlines (in some circumstances) from better information about trading partners and prices (direct benefit)
208. A potential benefit to passengers and cargo service users from better flight prices or quality due to better information available to airlines and regulators (indirect benefit)

Direct Costs

Monetised Costs

Transition Costs

209. There would be an initial transition cost to ACL of establishing the Slot Register and reporting requirements of airlines. These are estimated to be of the order of £0.5m - £1m (but as per the Introduction to Assessment of Options section, this is only an initial estimate and we will welcome responses to this consultation to more accurately estimate this)

On-going Costs

210. There will be ongoing costs to ACL of maintaining the Slot Register; however it is expected that this process should become fairly routine (with minimal ongoing costs) once the initial register has been established.

Unmonetised Costs

211. There will be some ongoing costs to airlines from complying with reporting requirements associated with the Slot Register, but these are unlikely to be significant.

Direct Benefits

Monetised Benefits

212. None.

Unmonetised Benefits

213. A potential benefit to airlines from better information about trading partners and prices. This could reduce uncertainty about slot values, increase the chance of an airline who 'truly' values a slot the most obtaining it, and increase the overall trading frequency (increased liquidity). There may also be benefits to the regulator who can better understand the economic value of slots to inform policymaking.

Business Impact Target Calculations

214. To be completed for Final IA.

Indirect Costs and Benefits

215. A potential benefit to air passengers and users of air cargo-only services from improved competition and efficiency. An increase in competition could results from improvements in transparency and governance of the slot allocation system from the register. Identification of the ultimate holder of Historic Rights to a slot, and an understanding of all lease arrangements, will facilitate an improved understanding of the distribution of slots across airlines, which may help in assessing the effectiveness of competition and the impact of future allocation decisions, and will provide a firmer foundation for monitoring slot trading. It could lead to airlines which value a slot more highly than current holders to obtain them, or increase competition, leading to improved flight prices and/or quality of service. Moreover, if the likelihood of airlines who 'truly' value a slot the most obtaining them increases due to better information, they are likely to offer services which deliver greater overall benefits to their consumers.

Sensitivity Analysis

216. To be completed for Final IA.

Q13. Do you have any evidence on the potential costs or benefits of establishing and maintaining a Slot Register?

Option 2.4b – Mandate a specific platform for all UK slot trades

A specified trading platform for all secondary trading of slots at slot-coordinated airports, with all slots that are available for trading required to be advertised on the platform.

Summary

217. It is proposed that all secondary trading should be required to be undertaken via a designated trading platform. Whilst the exact functionality of the platform is yet to be decided, it is envisaged that the slot coordinator would be responsible for providing and maintaining the platform. The current proposal is for the platform to at least require available slots to be advertised. However additional requirements could supplement this, for example requiring airlines' to disclose prices paid, or to mandate them to sell slots to the highest bidder. The proposal is intended to address the current lack of transparency in the secondary trading market, and to facilitate more equal access amongst airlines to slots which are available to by acquired via secondary trading. The likelihood and magnitude of the platform's impacts (see below) would significantly depend on the specifics of the platform requirements. ACL previously operated a voluntary slot trading platform to facilitate trading of slots on the secondary market but this was discontinued due to low utilisation, which amongst other things made it hard to recover costs of platform supervision.[86] This issue may be less relevant with mandatory registration for all (not just traded) slots, but other issues may be more relevant. The costs and benefits are summarised below. [87]

Monetised Costs

218. Costs to the Slot Coordinator of setting-up the mandatory slot trading platform, which we estimate as approximately a £1m - £2m one-off cost (but as per the Introduction to Assessment of Options section, this is only an initial estimate and we will welcome responses to this consultation to more accurately estimate this) (direct cost).
219. Ongoing costs to the Slot Coordinator of administering and maintaining the mandatory slot trading platform, which we estimate at £0.5m - £1m a year (but as per the Introduction to Assessment of Options section, this is only an initial estimate and we will welcome responses to this consultation to more accurately estimate this) (direct cost).
220. Costs to airlines of familiarisation and compliance with requirements of the mandatory slot trading platform, which we estimate at £0.5m - £1m a year for airlines as a whole (but as per the Introduction to Assessment of Options section, this is only an initial estimate and we will welcome responses to this consultation to more accurately estimate this) (direct cost).

Unmonetised Costs

221. A potential cost to airlines from reduced willingness to trade due to platform requirements (direct cost)
222. A potential cost to passengers and cargo service users from airlines' reduced willingness to trade due to platform requirements (indirect cost)

Monetised Benefits

223. None

Unmonetised Benefits

[86] Aviation 2050: The future of UK Avaition: ACL response to Section 3.46 to 3.65 of the consultation document, (2019), <ACL-response-to-green-paper.pdf (acl-uk.org)>, [accessed 06/03/203].

[87] It is possible that many of the costs and benefits categorized as 'unmonetised' in this section may in fact be monetised in the Full Impact Assessment. This will depend on many factors, including feasibility of approaches to quantification, data availability, and potential robustness of the analysis. This decision that will be taken in due course as DfT explores this further.

224. A benefit to airlines from a reduction in 'search' costs related to identifying potential parties to a trade (direct benefit)
225. A benefit to passengers and cargo service users from improved airline offer due to reduced search costs (indirect benefit)
226. A potential benefit to regulators and airlines (in some circumstances) from better information about trading partners and/or prices (direct benefit)
227. A potential benefit to passengers and cargo service users from better flight prices or quality due to better information available to airlines and regulators (indirect benefit)
228. Depending on the design of the platform, a benefit to airlines from reduced strategic behaviour in the trading market, leading to a positive impact on competition (direct benefit)
229. Depending on the design of the platform, a benefit to passengers and cargo service users from increased competition in the aviation sector due to reduced strategic behaviour by airlines, leading to improved flight prices / quality (indirect benefit)

Direct Costs

Monetised Costs

Transition Costs

230. There will be initial costs to the slot coordinator in setting up a slot trading platform, which we estimate as approximately a £1m - £2m one-off cost. It is likely that such costs would be passed on to airlines.
231. There will be initial costs to airlines from familiarisation with the platform, perhaps of the order of £0.25m - £0.5m for airlines as a whole.

On-going Costs

232. There will be ongoing costs to the Slot Coordinator of administering and maintaining the slot trading platform, which we estimate as approximately £0.5m - £1m a year. It is likely that such costs would be passed on to airlines.

233. There will be ongoing costs to airlines from compliance with the requirements of the platform when undertaking slot trades, which we estimate at £0.25m - £0.5m a year for airlines as a whole.

Unmonetised Costs

234. A potential cost from airlines' reduced willingness to trade due to platform requirements. For example, airlines may not be comfortable sharing trade information with a competitor or regulator, may worry about the control they have over a trade, or may be limited in combining a trade with other aspects of a deal. The price an airline would be willing to accept for a slot may also vary according to the buyer. For example, an airline may seek to extract a higher price from an airline it viewed as a potential competitor. This could lead to a decrease in trades (liquidity) and fewer airlines, especially non-incumbents or those without significant slot holdings, picking up slots.

Direct Benefits

Monetised Benefits

235. None.

Unmonetised Benefits

236. There may be a benefit to airlines from a reduction in 'search' costs related to identifying potential parties to a trade. This could increase airline's ability to pick up useful slots, helping them develop their businesses and increasing overall market liquidity.
237. A potential benefit to airlines from better information about trading partners and/or prices. This could reduce uncertainty about slot values, increase the chance of an airline who 'truly' values a slot the most obtaining it, and increase the overall trading frequency (increased liquidity). There may also be benefits to the regulator who can better understand the economic value of slots to inform policymaking.
238. Depending on the design of the platform, a benefit to airlines from reduced strategic behaviour, for example fewer instances of airlines refusing to trade with competitors (overall or on specific routes) or new entrants. This could lead airlines which value a slot more highly to obtain slots.

Business Impact Target Calculations

239. To be completed for Final IA.

Indirect Costs and Benefits

240. A potential cost to passengers and cargo-only service users from airlines' reduced willingness to trade due to platform requirements. If fewer airlines, especially non-incumbents or those without significant slot holdings pick up slots, downstream trading benefits such as improved flight prices and quality may not occur.
241. A benefit to passengers and cargo service users due to better flight prices or quality due the benefits from airlines from a reduction in 'search' costs.
242. A potential benefit to passengers and cargo service users due to the benefits of better information for airlines and regulators. If the likelihood of airlines who 'truly' value a slot the most obtaining them increases, they are likely to offer services which deliver greater overall benefits to their consumers. If regulators can better understand slot values, this may also lead to longer-term benefits, perhaps in through flight prices or quality, from improved governance.
243. A benefit to passengers and cargo-only service users due to increased competition amongst airlines from a slot trading platform (depending on design of the platform). This should benefit passengers through lower flight prices and increased innovation. We expect that, over time, dynamic efficiency benefits will emerge as the slot trading platform provides improved access for competitors to existing slots. This is likely to increase the effectiveness of competition between airlines, ultimately resulting in improved outcomes for air passengers and users of air cargo-only services on parameters such as fares and quality of service.

Sensitivity Analysis

244. To be completed for Final IA.

Q14. Do you have any evidence on the potential costs to the slot co-ordinator of setting up and maintaining a mandatory slot trading platform, and the potential costs to airlines of compliance with such a system?

Q15. Do you have any evidence of the potential benefits to airlines, passengers, or cargo service users from setting up a mandatory slot trading platform?

Q16. Do you have any evidence on how these costs/benefits might vary according to the specifics of the platform requirements?

Option 2.4c – Strengthened oversight of secondary trading

Oversight of certain slot trades by a regulatory body

Summary

245. In order to ensure that slot trading helps promote effective competition amongst airlines, an existing regulatory body may be given a formal role in approving slot trades which have the potential to be detrimental to competition.[88]

246. To minimise the administrative burden on the regulatory body, a threshold may be set below which a review is unlikely to be necessary (e.g., a review would only automatically apply where the acquiring airline/group/alliance holds more than a certain percentage of slots). Moreover, it may only be necessary to include this provision at airports holding substantial market power (as designated by CAA in accordance with the Civil Aviation Authority Act 2012 - currently Heathrow and Gatwick) – as market power arising from the acquisition of airport slots is less likely to be a concern at airports without such designation. The limit would be determined and set out in advance.

247. The costs and benefits are summarised below:

Monetised Costs

248. Cost to regulatory body of undertaking review/approval of qualifying trades (direct), including transitional costs from establishing protocols and procedures. We estimate such cost as likely to be of the order of £0.1 – £0.2 million transitional cost and £0.1 – £0.2 million per qualifying trade thereafter (but as per the Introduction to Assessment of Options section, this is only an initial estimate and we will welcome responses to this consultation to more accurately estimate this)

Unmonetised Costs

249. Cost to affected airlines from being restricted in scope of available trades, potentially reducing the value (to that airline) of its slots in some cases (direct)

Monetised Benefits

250. None

Unmonetised Benefits

251. Potential benefits to airlines with fewer slot holdings or potentially those outside major alliances from reduced concentration of slots amongst those with large slot holdings (direct benefit)
252. Potential benefits to passengers and consumers of air cargo services, perhaps via flight quality or prices, from more competition between airlines (indirect benefit)

Direct Costs

Monetised Costs

Transition Costs

[88] See also CEPA, (2019), *Slot Allocation at Heathrow in the context of runway expansion*, pp. 175-76 for a discussion of this issue.

253. Initial costs for the regulatory body from establishing protocols and procedures for how it would investigate qualifying trades. We estimate such cost as likely to be of the order of £0.1 – £0.2 million transitional cost.

On-going Costs

254. There are like to be recurring costs for the regulatory body of undertaking review/approval of qualifying trades. We estimate such cost as likely to be of the order of £0.1 – £0.2 million per qualifying trade. It is difficult to estimate how many qualifying slot trades the regulatory body would be required to investigate each year. However, we expect it to be a relatively small number (perhaps of the order of 1 – 2 trades per year), as it will be unlikely that airlines with large slot holdings would wish to potentially subject themselves to competition investigation by the regulatory body. For trades occurring in the Winter 2022 season, for example, publicly available data shows IAG owned airlines were the acquiring party in just three slot trades with external parties at Heathrow (less than 51 weekly slots); while EasyJet was the acquiring party in only one slot trade with external parties at Gatwick (82 weekly slots).[89] Moreover, it is possible that this mechanism may serve to reduce the number of slots that airline groups with high market shares would otherwise acquire in the absence of this review mechanism.

Unmonetised Costs

255. None.

Direct Benefits

Monetised Benefits

256. None.

Unmonetised Benefits

257. Potential benefits to airlines with fewer slot holdings or potentially those outside major alliances. This is because regulatory oversight could prevent trades which could lead to increased from concentration of slots amongst airlines, or potentially airline alliances, that already have significant slot holdings.

Business Impact Target Calculations

258. To be completed for Final IA.

Indirect Costs and Benefits

259. As mentioned above, we expect this measure could reduce the number of trades that airlines would make within the same group/alliance. We therefore anticipate benefits to passengers and consumers of air cargo services (e.g., lower fares, improved connectivity and quality) from more competition between airlines.

Sensitivity Analysis

260. To be completed for Final IA.

Q17. Do you have any evidence on the costs and benefits associated with a role for an existing regulatory body in secondary trading?

[89] Source: DfT analysis based on data provided at https://www.acl-uk.org/completed-slot-trades/. British Airways (member of IAG) and EasyJet hold around half of available slots at Heathrow and Gatwick, respectively. 'Acquiring party for X slot trades' does not include trades when an airline only received back slots previously temporarily traded to other airlines.

Option 2.5 – Limit slot leasing

Slot leasing to be limited to a set period, after which the slot will have to either be returned to the pool or flown by the original slot holder

Summary

261. Leasing of slots - whereby one airline arranges for another airline to operate its slots for one or more flying seasons, while retaining the Historic Rights to the slots in the long term - is relatively common practice among airlines. Sometimes this is done for short-term operational reasons. However longer-term leasing may occur as the result of a competition remedy, where an airline wishes to retain slot rights but does not at that time have a good use for the slot, or where a lessee can be identified who places a higher value on the usage of the slot. This could have detrimental impacts on efficiency. While leasing facilitates a form of slot mobility, it may ultimately be damaging to competition, as the ability to lease may prevent some slots from being returned to the pool that would otherwise have been returned. It may also prevent an airline acquiring a slot on a permanent basis which it valued more than a lease and could have used in a potentially efficiency enhancing way, perhaps due to increased certainty[90] over operations or investment.

262. Odoni (2020) argues that slots are used more efficiently if they are used to fly seats with greater average distance or seats flown per operation.[91] These measures have limitations; longer flights might not necessarily indicate greater efficiency, perhaps in cases where a buyer puts on a short-haul route that feeds a hub airport, one could argue that absolute number of available seats, does not take into account factors such as configuration of the aircraft, load factors achieved or aircraft loading (cargo vs passengers). [92] Nevertheless, literature suggests these measures may imply that sellers have extracted more economic value out of their slots than previous sellers did, and so they can be considered reasonable proxies of efficiency. Analysis submitted by ACL in response to Aviation 2050 suggested that some slots previously used on long-haul routes have been leased out for use on short-haul routes, and on average leased slots are used by aircraft with fewer seats than before the lease transaction.[93] More recent slot trading analysis by DfT also suggests that the average distance and seats flown per operation decrease when slots are traded temporarily. However, we found these measures *increased* when slots are trade permanently (other than for the period affected by the COVID-19 pandemic) (see Figure 6 and Figure 7 for kilometres and seats flown, respectively). Slot usage resulting from leasing may thus not necessarily be consistent with how slots would be used if allocated from the pool or traded permanently and might imply a less efficient outcome in some cases.

263. By placing a limit on the length of time for which slots can be leased, this option is designed to prevent airlines using long-term lease arrangements as a means of hoarding slots. The costs and benefits of limiting slot leasing are summarised below: [94]

Monetised Costs

264. None.

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[90] CEPA, (2019), *Slot Allocation at Heathrow in the context of runway expansion*, p.113.

[91] A.Odoni, (2020), 'A Review of Certain Aspects of the Slot Allocation Process at Level 3 Airports Under Regulation 95/93', pp. 88.

[92] Who flies in a seat may be also more important than the number of seats flown. For example, if an aircraft flew fewer seats but with different types of passengers, this might have implications for efficiency. See OXERA, (2019), 'Slot Allocation at an Expanded Heathrow', Prepared for Department of Transport, p.86 for a similar argument.

[93] See ACL response to Aviation 2050, page 21.

[94] It is possible that many of the costs and benefits categorized as 'unmonetised' in this section may in fact be monetised in the Full Impact Assessment. This will depend on many factors, including feasibility of approaches to quantification, data availability, and potential robustness of the analysis. This decision that will be taken in due course as DfT explores this further.

Unmonetised Costs

265. Cost to existing holders of slots (reduced slot value) from reduced flexibility to lease out slots (direct cost).
266. Cost to airlines that currently enjoy access to slots via leasing which may be restricted by this option and would be unlikely to obtain slot access via primary allocation (direct cost)

Monetised Benefits

267. None.

Unmonetised Benefits

268. Benefits to other airlines who could use slots more efficiently that current holders from less restricted access to slot rights if more slots become available either through the pool or from permanent trades due to restrictions on leasing (direct benefit).
269. Potential benefits to air passengers and consumers of air cargo-only services from more effective competition and/or efficient use of slots due to more slots becoming available through the pool or permanent trades (indirect benefit).
270. Potential benefits to air passengers and consumers of air cargo service users from a better offering from airlines arising from the potential benefits of increased certainty and ease of securing investment if airlines obtain slots permanently rather than as a lease (indirect benefit).

Direct Costs

Monetised Costs

Transition Costs

271. No material transition costs are anticipated.

On-going Costs

272. None.

Unmonetised Costs

273. There will be ongoing costs to existing holders of slots from reduced flexibility in how they are able to utilise slots[95], including by leasing them to other airlines, which may reduce the value of the slot to that airline. For example, an airline may be required to use a slot rather than lease it long term to another airline which may value the slot more.
274. Correspondingly, there may potentially also be a cost to those firms that currently enjoy access to leases but would be unlikely to obtain slot access via primary allocation.

Direct Benefits

Monetised Benefits

275. None.

Unmonetised Benefits

[95] The value arising from the flexibility of delaying slot sales depending on future changes in future market or business developments is sometimes known as the 'option value'. For a fuller discussion of this, see *NERA Economic Consulting*, 'Study to Assess the effects of Different Slot Allocation Schemes: A Final Report for the European Commission, DG TREN', (2004), p.136.

276. Benefits to other airlines who could use slots more efficiently than current holders due to less restricted access to slot rights. If the measure prevents current slot holders using leases to hoard slots, then slots with Historic Rights or which are valued more highly potential holders could be returned to the pool or traded permanently with these potential holders. The increased certainty attached to slots with Historic Rights could reduce airline's operational uncertainties or increase airline's potential for investment and innovation.

Business Impact Target Calculations

277. To be completed for Final IA.

Indirect Costs and Benefits

278. As described above, potential indirect benefits, such as improved flight prices and quality, to passengers and cargo service users from: (i) from more effective competition as a result of restricting the ability of airlines to hoard slots via slot leasing and hence slots more readily beign returned to the pool, and; (ii) a better offer in terms of prices or quality from airlines who value slots most highly due to benefits of increased certainty and ease of securing investment if airlines obtain slots permanently rather than as a lease

Sensitivity Analysis

279. To be completed for Final IA.

Q18. Do you have any evidence on how limiting slot leasing is likely to affect efficiency of slot usage?

Option 3.1 – Auction of new slots

Use of slot auctions for the allocation of new slots

Summary

280. Presently, slot allocation is administered by the slot coordinator in accordance with the Slot Regulation and the Worldwide Slots Guidelines. Due to the volume of slots which have associated Historic Rights, relatively few slots are newly-allocated each season at Level 3 airports, in particular Heathrow and Gatwick. Reliance is placed on the independent slot coordinator allocating slots from the pool in an appropriate manner in accordance with the Regulation. However, in the case of new slots, it may be difficult, especially if managing the allocation of such a large number of slots, to allocate efficiently via an administered process, particularly if there is an excess demand for the slots.

281. Moreover, an auction process should, in principle, help promote an efficient allocation of slots, and/or ensure that income from sale of the slots is maximised (DfT's primary focus is on the former) Revenue raised from the auction may accrue to the airport and could be used in whole or part to offset airport charges.[96]

282. Our assessment assumes that auctioning is only used in circumstances in which there is likely to be significant excess demands for the new slots (otherwise, the value of slots would be low post-expansion, and the auction may then not be the most effective means of allocation).

283. The specific design of slot auctions will require careful consideration to ensure that the potential benefits are realised and unintended consequences avoided. Whilst we discuss auction design at an indicative and very high-level here, it is discussed in more detail in an Annex B to the Consultation Paper, and the interested reader should look for definitions and more detailed descriptions there. When considering allocative efficiency in the context of auctions, it is important to distinguish between efficiency in the market in which the auction takes place (slots market) and in any downstream markets. We are most concerned with using slot auctions to improve efficiency in a downstream market – flights markets – rather than in just the initial allocation of slots, the 'efficient outcome' of which could be suboptimal in terms of welfare if it enables firms to acquire undue market power. In practice, this means using devices such as slot caps or set-aside licenses (reserving some capacity for new entrants) to help ensure competition in downstream markets.

284. The auction design selected will also depend on a number of other considerations (for more details see Annex X in the Consultation Paper) specific to the slots' context, including:

(i) How airlines value slots: whether bidders privately value goods (valuations are 'independent'), bidders have a common value for goods (same value for a good but different private signal about its value) or interdependent values (a mix of private and common values) – in the slots context, airlines are likely to have interdependent valuations

(ii) the 'product design': whether goods bid for are 'complements' and/or 'substitutes'– in the slots context, whether an arrival slot only has value if it is obtained with a departure slot (complements – very likely in this context), or whether two slots might be of equal use to an

[96] Separate to the slot allocation process, airports charge airlines fees for landing and taking-off at an airport, amongst other services. Such charges are subject to the Airport Charge Regulations, which require each airport's charges to be transparent and non-discriminatory between airlines. In addition, airports deemed by the CAA to have significant market power (presently, Heathrow and Gatwick) are subject to additional controls on the prices they can charge under the Civil Aviation Authority Act 2012.

airline but the airline may only need to obtain one (substitutes – possible in this context). Given slots are complements, an auction would almost certainly need to allow package bidding, that is, bidding for combinations of slots.

(iii) the 'bidding language': questions include whether slots are to be sold at one airport or many, how long rights to the slot are for/ whether they are unlimited, and whether airlines could bid for slots on just a particular day and time of a 'typical week', or in a way as to accommodate more complex flight requests.

285. Other key aspects of auction designs can be chosen after establishing these basic elements. Aspects include whether to have a single or multiple bidding rounds, and whether bids should be known to participants or submitted confidentially (so-called 'sealed-bids'). Issues which will need to be considered include the Winner's Curse, bid shading, collusion, sniping, and entry deterrence / predation, and other competition concerns.

286. There are multiple auction design options available for auctioning slots for new capacity which address the issues raised in the points above. Annex B to the Consultation Paper explores these in more detail, including design options suggested by CEPA in their work for the Department, but we would also welcome further design ideas from respondents to this consultation. [97]

287. For the purpose of the full impact assessment, it will be important to assess the welfare impacts of using auctions to allocate slots. The 'Analytical Framework' section above outlines approaches to do this, but it is important to note that Stage 1 would be particularly tricky for auctions. There is some precedence for the experimental approach discussed above; for example, OXERA[98] employed a behavioural experiment to test the impact of replacing the current administrative slot allocation mechanisms with auctions. They measured the impact on competition at the route and airport level using market-share and Herfindahl-Hirschman Index (HHI) metrics. Careful consideration would be needed regarding translation of these metrics into changes in slot holdings and whether different auction designs required different approaches. Despite this example, we are open to considering many options for quantification, particularly for Stage 1, for the auctions option.

288. The potential costs and benefits of auctions for new slot capacity are summarised as follows:

Monetised Costs

289. Costs to Slot Coordinator (or other designated body) of designing and administering an auction (direct cost). We estimate such costs may be in the order £5m - £10m per auction. These are likely to occur in the initial auction and for subsequent auctions. (As per the Introduction to Assessment of Options section, this is only an initial estimate and we will welcome responses to this consultation to more accurately estimate this)

290. Costs to airlines of participating in an auction (direct cost) – i.e., costs of assessing auction design, slots and submitting bids. Our initial estimate is that such costs may be similar to the administration costs of the auction – i.e., of the order of £5m - £10m per auction for airlines as a whole. As per the Introduction to Assessment of Options section, this is only an initial estimate and we will welcome responses to this consultation to more accurately estimate this)

291. Potential extra costs to consumers if airlines pass on additional costs of taking part in an auction and paying for slots through higher fares (indirect costs).

Unmonetised Costs

[97] CEPA, (2019), *Slot Allocation at Heathrow in the context of runway expansion*

[98] Oxera, (2019), *Slot allocation at an expanded Heathrow: Behavioural experiment*, p.65.

292. Cost to airlines from auction payment for slots rights (i.e., of obtaining slots that they otherwise obtain for free under an administrative allocation), although this should not exceed the value which airlines place on those rights (direct cost)
293. Cost to airlines who do not obtain a slot who would have obtained one under an administrative allocation (direct cost).
294. Potential cost to airlines of perceived unfairness of specific values assigned to auction design aspects, such as the level of a cap (direct cost).

Monetised Benefits

295. Avoided costs to Slot Coordinator / airlines of administering / engaging with current administrative system for allocation of new slots (likely to be particularly significant in the case of large-scale new capacity requiring allocation of a large number of new slots) (direct benefit)
296. Benefits to airlines of obtaining slots not otherwise obtained under administrative allocation (direct benefit)
297. Welfare benefits to passengers and air cargo service user arising from more efficient allocation of slots (N.B. This measure incorporates some impact of changes in slots held and hence competition).[99] (indirect benefit)

Unmonetised Benefits

298. Benefit to airports from the receipt of income from the slot auction (direct benefit) if that income goes to airports. This may be used to offset airport charges to airlines or used to fund airport development.
299. Potential benefit to airlines of reduced (perceived) unfairness from subjective rulings when the coordinator administers slots (direct benefit)

Direct Costs

Monetised Costs

Transition Costs

300. There will be initial costs of designing and administering the auction process. Depending on the scale of the auction, these are likely to be significant, as various aspects of auction design will need to be considered, as well as appropriate governance procedures. It is for consideration which party or parties would be best placed to administer any auction. A well-designed and administered auction process can entail significant costs. The 3G Spectrum Auction undertaken by the Radiocommunications Agency in April 2000 cost £8.1m according to a report of the National Audit Office (NAO).[100] If the number of new slots is large, it is likely that the cost of designing a large-scale auction of slots would be of similar order of magnitude. We provisionally estimate such costs may be in the order £5m - £10m per auction.

301. There will also be transition costs to airlines of participating in the auctions as compared to the existing administered system. These transition costs may include familiarising with the auction process, evaluating the available opportunities prior to submitting bids (e.g., if slots are bundled into different packages), and ensuring compliance with any regulatory requirements. Businesses may need to provide training to their staff on the rules and procedures. Our initial estimate is that such costs may be similar to the administration costs of the auction i.e., of the order of £5m - £10m per auction for airlines as a whole.

[99] Due to the nature of the aviation market, many of the costs and benefits of reform of the slot allocation system would be likely to affect both UK and non-UK residents. As per Green Book guidance, UK impacts should be distinguished where proportionate to do so.
[100] NAO, (2001), The Auction of Radio Spectrum for the Third Generation of Mobile Telephones.

On-going Costs

302. In addition to the transition costs mentioned above, which will arise in relation to the first auction in particular, there will likely be similar ongoing costs to the respective parties relating to each subsequent auction.

Unmonetised Costs

303. Airlines would also face the cost of having to pay for slot rights under an auction system. This compares to the existing slot allocation mechanism (counterfactual) whereby airlines are allocated slots for free under the existing regulations. The creation of new slots should lead to a reduction in overall slot values, but the purchase of slots under an auction mechanism is still likely to be a significant cost to airlines at congested airports. Generally speaking, the costs paid by an airline should not exceed the benefits it expects to receive from the slot rights. However, airlines may be at risk of over-bidding (if they wish to outbid a competitor, for example) or suffering the 'winners curse' (where the winner of an auction has overvalued the commodity being auctioned). It is possible these costs would be mitigated by auction revenues being partially used to offset airport charges.
304. Costs to airlines who do not obtain a slot who would have obtained one under an administrative allocation. This could detrimentally impact an airline's business operations, with the impact varying based on the usefulness of the slot.
305. The potential cost of perceived unfairness in specific values assigned to auction designed aspects. This could include airline dissatisfaction with the level of the slot cap or impact of ability to bid, for example by well-financed state-backed airlines. (Note that perceived unfairness when there is a subjective component to decisions are this is also a concern with criteria-based allocation, so this would have to be additional cost from perceived unfairness).

Direct Benefits

Monetised Benefits

306. Avoided costs to airlines / slot coordinator of administering / engaging with the current administrative system for slot allocation. As noted earlier, an administered slot allocation system may prove costly to implement, especially if there are a large number of new slots where many complex judgements about the allocation of slots need to be made.
307. Benefits to airlines from obtaining slots to use at an airport not otherwise obtained under administrative allocation. This could help airlines implement their business plans.

Unmonetised Benefits

308. There is likely to be a significant benefit, to slot capacity constrained airports in the first instance, from the income from a slot auction. This compares to the counterfactual case (current Slot Regulation) whereby airlines receive slots for free. We assume that the airport would use the income to fund airport expenditure and/or offset airport charges. In the case of Heathrow and Gatwick airports, which are subject to economic regulation by the Civil Aviation Authority, the revenues would be taken into account in their regulated settlement, reducing the airport charges the airports would be allowed to levy on airlines. This would ultimately benefit airlines, offsetting the costs they pay for slots as part of the auction.

309. There could be a potential benefit of reduced (perceived) unfairness from subjective rulings when the coordinator administers slots. Under an auction, bids are resolved based on objective criteria,

and this lessens the likelihood of airlines disputing decisions. (Note that perceived unfairness when there is a subjective component to decisions are this is also a concern with criteria-based allocation, so this would have to be additional cost from perceived unfairness).

Business Impact Target Calculations

310. To be completed for Final IA.

Indirect Costs and Benefits

311. Potential costs to consumers if airlines pass on any increase in costs associated with the operation. Airlines may argue this is necessary because their margins are too thin to accommodate increases in costs. On the other hand, CEPA argue this is unlikely to occur as air ticket prices are also a function of competition, which is unlikely to be negatively affected by an auction, and could be positively affected. This means extra competition may restrict airlines' ability to raise fares.[101] Overall the extent to which costs are passed through may depend on the extent of competition and whether the cost increase affects all airlines in a similar manner or is limited to certain airlines participating in the auction.

312. There should also be an indirect benefit, compared to the counterfactual case, to passengers and users of cargo services arising from the more efficient allocation of slots under an auction as compared to an administered system. This is because the auction process allows airlines to indicate the value that they place on the available slots, or packages of slots, allowing them to be allocated to the users and uses which derive the highest value. The behavioural experiment on slot auctions carried out by OXERA for the DfT in 2019, in the context of potential capacity expansion at Heathrow, found that the auction option led to an increase in both producer and consumer surplus compared to an administered approach for allocating that capacity, and that, of the options considered, the auction option resulted in the highest total surplus (sum of producer and consumer surplus, representing social welfare).[102] This theoretical efficiency improvement may not be delivered in practice if incumbents raise their bids in order to keep out rivals, though the risk of this can be mitigated by appropriate auction design such as slot caps.

Sensitivity Analysis

313. To be completed for Final IA.

Q19. Do you have any evidence on the potential costs of (a) administering, (b) participating in, and (c) potential outcomes of a slot auction?

Q20. Do you have any evidence on the potential benefits of a slot auction?

[101] CEPA, (2019), *Slot Allocation at Heathrow in the context of runway expansion*, p.148.

[102] OXERA, (2019), 'Slot Allocation at an Expanded Heathrow', Prepared for Department of Transport, section 7.4.

Option 3.2 – Ring-Fencing of New Slots for Certain Purposes

When there is release of new slots, a proportion of these new slots are reserved for specific purposes e.g., domestic connections

Summary

314. At present, there is no mechanism that allows government policy objectives to be reflected in the allocation of slots. The Slot Coordinator is independent and makes allocation decisions solely based on primary criteria set out in the Slot Regulation and secondary criteria set out in the Worldwide Slot Guidelines. However, there may be some benefits to be derived from reserving some slots for the achievement of defined government policy objectives, providing this does not compromise the independence of the Slot Coordinator and the overall efficiency of the allocation.

315. One possible area where government objectives could be accommodated within the slot allocation system is in relation to connectivity, especially domestic connectivity. While some domestic routes are defined as Public Service Obligations (PSOs), and receive government subsidy, there may be unserved domestic routes which are commercially-viable (i.e., even without government subsidy) but for which slots are unavailable or deployed on a higher value use.

316. Under this proposal, a certain percentage of slots becoming available from the expansion of airport capacity would be ring-fenced for specific purposes. The principal costs and benefits of such an approach are set out below.

Monetised Costs

317. None

Unmonetised Costs

318. There could be a loss in economic efficiency, as the ring fencing of slots could lead to an overprovision of domestic connections compared to passenger demand and slots not being allocated to their highest value use, for example potentially more valuable international services, ultimately impacting air passengers and users of air cargo services (indirect cost).[103]
319. There could be costs to certain types of airlines (direct cost). For example, if the power was used to reserve some slots for additional domestic connectivity, this may benefit airlines predominantly serving domestic routes over airlines predominantly serving international routes.
320. Potential environmental costs if slots otherwise used for domestic connections are used for international connections due to ring-fencing, which typically result in higher noise levels, climate change effects, and local air pollutants, or if more flights are available for domestic connections, and this causes carbon emission-increasing displacement effects in the economy (e.g., use of domestic flights replaces long-distance rail) (indirect cost).
321. There could be economic development costs to, for example, domestic (international) locations if ring fencing slots for international (domestic) connections (indirect costs).

Monetised Benefits

322. None

[103] CEPA, (2019), *Slot Allocation at Heathrow in the context of runway expansion*, p.134.

Unmonetised Benefits

323. There could be economic development benefits to, for example, domestic (international) locations served using ring-fenced slots for domestic (international) connections (indirect benefit).
324. There could be benefits to certain types of airlines. For example, if the power was used to reserve some slots for additional domestic connectivity, this may benefit airlines predominantly serving domestic routes over airlines predominantly serving international routes (or vice versa) (direct benefit).
325. Potential environmental benefits if slots otherwise used for international connections are used for domestic connections due to ring-fencing, which typically result in lower noise levels, climate change effects and local air pollutants (indirect benefit)

Direct Costs

Monetised Costs

Transition Costs

326. No substantive transition costs are anticipated from this measure.

On-going Costs

327. None.

Unmonetised Costs

328. There could be costs to certain types of airlines. For example, if the power was used to reserve some slots for additional international connectivity, this may make it more difficult for airlines predominantly serving domestic routes to obtain slots.

Direct Benefits

Monetised Benefits

329. None.

Unmonetised Benefits

330. There could be benefits to certain types of airlines – for example, if the power was used primarily to ring-fence for domestic connectivity, airlines predominantly serving domestic routes may have greater access to slots than airlines serving international routes. Any ringfencing would need to be consistent with the Government's obligations to ensure a fair and equal opportunity to compete.

Business Impact Target Calculations

331. To be completed for Final IA.

Indirect Costs and Benefits

332. Presently, once ACL has allocated slots to airlines with Historic Rights, the remaining slots in the pool are allocated based on secondary criteria, with 50% of such slots reserved for new entrants. Such secondary criteria are based on Worldwide Slot Guidelines and include factors such as the balance of types of service and market, competitive considerations, the needs of the consumer, and the number and frequency of operations. While these secondary criteria are not prescriptive and have no particular weighting, a deviation from these criteria to prioritise a particular

use that might not otherwise be able to be accommodated could lead to a loss in economic efficiency, ultimately impacting air passengers and users of air cargo-only services.

333. There could be economic development costs to, for example, domestic (international) locations if ring fencing slots for international (domestic) connections, ultimately costing residents and businesses in those locations (indirect costs).

334. Potential environmental costs if flights otherwise used for domestic connections are used for international connections due to ring-fencing, which typically emit more CO_2, or if more flights are available for domestic connections, and this causes carbon emission-increasing displacement effects in the economy, (e.g., if more people travel across the UK using flights rather than trains, and more CO_2 is emitted for the same route from aeroplanes vs trains).

335. There could be economic development benefits to, for example, domestic (international) locations served using ring-fenced slots for domestic (international) connections, ultimately benefiting residents and businesses in those locations.

336. Potential environmental benefits to society if flights otherwise used for international connections are used for domestic connections due to ring-fencing, which typically emit less CO_2.

Sensitivity Analysis

337. To be completed for Final IA.

Q21. Do you have any evidence on whether there are domestic routes that are commercially viable but not currently operated due to slot constraints?

Option 4.1 – Limiting Historic Rights for new slots

Limiting historic rights on new slots to a fixed duration e.g., 15 years

Summary

338. Under present slot rules, a slot series has to be operated for 80% of the time in a season in order for the airline to retain the right to operate the slot series in the next equivalent season (known as "Historic Rights"). At Heathrow, more than 99.5% of slots are allocated on the basis of such Historic Rights, but the figure is lower at other airports. The system of Historic Rights gives long-term certainty to airlines and airports to support investment and route development. However, Historic Rights also limit the access of slots to other airlines who wish to start or expand operations at the airport, potentially leading to inefficiencies in the use of slots over time as well as a weakening competitive pressures from new entrants. The DfT has received advice from the CMA that, as a result of Historic Rights as well as the limitations of secondary trading, the allocation of slots has not evolved fully to reflect and incorporate changes to the market (and in order to allow for competition to drive behaviours in the market), making it unlikely that all incumbent slot holders are the most efficient users of slots.[104]

339. To ameliorate this problem in future years, we are considering whether the way that Historic Rights work should change and that Historic Rights for new slots be limited to a maximum of, say, 15 years, at which point they would be returned to the pool for re-allocation (DfT is not committed to this figure and is keen to hear from consultees whether this period of time should be shorter or longer). Under this system, there would be no automatic guarantee that any airlines would keep their slots at the end of this period. At the end of a slot's life, it would return to the pool to be reallocated by the coordinator in a neutral and fair basis, according to the allocation criteria. During the 15-year life of a slot, the utilisation requirement (presently, 80%) would continue to apply, so an airline could still lose a slot if it was not meeting the utilisation requirement. Airlines would also be able to trade their slots, but the remaining life of a slot would not change when it was traded (e.g., if a slot was traded five years into the 15-year Historic Right period, the airline acquiring the slot would only be able to use it for a further 10 years).

340. It is for consideration whether this policy should apply only where new slots are created as a result of significant capacity expansion, where an airport chooses to 'opt in', and if so whether this should only apply to a proportion of such slots or all slots, or to all newly allocated slots (i.e., including slots which are newly allocated as part of the present slot allocation process each season as well as those created as a result of capacity expansion). In the latter case, the policy would impact existing slots which are presently held with Historic Rights, and so would likely have an earlier and more significant impact than if restricted to new large-scale capacity only. The costs and benefits of this proposal are summarised below.

Monetised Costs

341. None.

[104] CMA Advice for the Department for Transport on competition impacts of airport slot allocation, December 2018 (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/767230/cma-advice-on-impacts-of-airport-slots.pdf)

342. Unmonetised Costs
343. Cost to the slot co-ordinator from a larger volume of slots having to be allocated from the pool each season (direct cost).
344. Costs to airports from need to alter facilities to facilitate greater churn in airline presence (direct cost)

345. Costs to airlines who would otherwise have benefited from obtaining unlimited historic rights (direct cost):
346. From extra administration and uncertainty involved with time-limited rights (direct cost)
347. From higher financing costs for airlines if time-limiting rights to slots is perceived to increase risk (direct cost)
348. If they are not able to compete as effectively with holders of existing slots with Historic Rights as they otherwise would have if they had Historic Rights due to difficulties in achieving scale or business growth due to (i) and (ii)
349. Cost to consumers (choice, quality of service) if less investment in routes, facilities etc. as a result of time-limiting rights to slots (indirect cost)
350. Potential cost to consumers from reduced competition from development of 'two-tier' slot system (indirect cost)

Monetised Benefits

351. None.

Unmonetised Benefits

352. Benefits to airlines from increased opportunity to obtain slots from the pool (direct benefit)
353. Potential benefits to airlines from reduced incentives for strategic behaviours and slot hoarding during holding of time-limited slots (compared to if held with unlimited rights) and potentially more active secondary market (see explanation below) (direct benefit)
354. Benefits (i.e., lower fares, more choice, higher quality) to passengers and consumers of air cargo services from more efficient allocation of slots as a result of periodic re-allocation of slots (indirect benefit)
355. Potential benefits to passengers and consumers of air cargo services from increased competition between airlines (indirect benefit).

Direct Costs

Monetised Costs

Transition Costs

356. No material transition costs are anticipated.

On-going Costs

357. None.

Unmonetised Costs

358. Potentially minor additional costs to the slot coordinator from limiting Historic Rights. For example, there may be minor additional administrative costs over time from the need to make more allocation decisions each season (due to larger volume of slots being allocated from the pool each season). While potentially significant for the co-ordinator, such additional costs are likely to represent a small proportion of overall sector costs.

359. Potentially minor additional costs for airports. This could arise from airlines having less stable schedules and hence airports are likely to need to adapt their facilities more frequently to accommodate different airlines.
360. Additional costs to airlines who would otherwise have benefited from slots with unlimited historic rights. These costs arise from:

(i) *Extra administration and uncertainty*. This could involve minor additional costs from the need to amend route networks over short periods of time. In addition, CEPA notes that airlines would have to optimise their network and schedules more regularly and more intensively than they currently do and run a profitable route before the slots are returned to the pool.[105] However, CEPA also note that these impacts could be mitigated if slots are reallocated on a rolling basis and the policy is restricted to new capacity only as we are considering (no impact on Historic Rights for existing slots) – provided the unequal treatment of new and existing slots does not raise competition concerns. The shorter the duration of the rights to slots, the more significant these impacts will be. OXERA notes airlines would have less time to recover fixed costs of using the slots, which could also affect airlines differently, with new airlines potentially facing higher fixed costs when beginning operations from, for example, Heathrow.[106] CEPA also consider that compatibility issues may arise if airlines lose a time-limited slot while still retaining a slot with historic rights at a destination airport, but note that airlines currently consider slots at either ends of routes to be separate rights, selling or leasing slots at either end whilst keeping rights at the other.[107] They argue this means selling or leasing at only one end of the route would not be significantly different and so there may not be significant extra costs from this aspect of the change. Nevertheless, DfT considers this would still generate additional uncertainty for airlines.

(ii) *Increased risk and associated cost of raising capital for airlines*. This could occur if airlines are seen as a riskier investment as a result of limitations placed on Historic Rights (e.g., from having more limited guaranteed time to recoup investment in new routes). This could potentially increase the costs for airlines of financing investment.

(iii) *Less ability to compete with airlines with grandfather rights for existing slots*. One unintended consequence is that airlines may not be able to compete as effectively as they would if they had historic rights due to difficulties in achieving scale or business growth due to (i) and (ii). This could be particularly difficult for smaller airlines looking to grow at scale and may lead to less competition than otherwise.

Direct Benefits

Monetised Benefits

361. None.

Unmonetised Benefits

362. Benefits to airlines from better opportunity to obtain slots. Limiting historic rights for new slots would introduce greater churn into the market than newly allocated slots with perpetual rights, allowing airlines, including those who can better use slots than current holders, to obtain them more easily.
363. Potential benefits to airlines from reductions in strategic behaviour to prevent competitors obtaining slots. This measure may also reduce the incentives for holders of time-limited slots (and to a lesser extent holders of existing slots) to hoard slots within the duration of ownership to prevent competitors obtaining them, as there would generally be slots available for allocation from the pool

[105] CEPA, (2019), *Slot Allocation at Heathrow in the context of runway expansion*, p.122. On the latter point, if an airline loses a time -limited slot, it would need to decide whether to use another slot to operate that service or cease a service operation; this could have wider consequences for that airlines' schedule.

[106] Oxera, (2019), *Slot allocation at an expanded Heathrow: Behavioural experiment*, p.64.

[107] CEPA, (2019), *Slot Allocation at Heathrow in the context of runway expansion*, p.124.

each season[108]. This incentive could add an extra layer of churn beyond just that provided by allocation of time-limited rights. It could lead to a more active secondary trading market as attempts to prevent competitors obtaining slots through this mechanism could be circumvented by pool requests.[109] Overall it could help facilitate the entry of new airlines at scale, improving competition.

Business Impact Target Calculations

364. To be completed for Final IA.

Indirect Costs and Benefits

365. Cost to consumers (choice, quality of service) if there is less investment by airlines in routes, facilities etc as a result of time-limiting rights to slots. Time-limiting Historic Rights may reduce the incentive for airlines to invest in routes, especially new routes, airport lounges, and assets such as aircraft and ground facilities. There is uncertainty as to how significant these impacts could be. CEPA argue that airlines begin retiring some aircraft after approximately 15 years (though others may be used for longer), suggesting an airline could make a return on investment in aircraft over a 15-year period[110]. In addition, the risk of losing a proportion of slots may not deter airlines from investing in airport facilities where they still hold a large number[111]. The impact on investment will be greater the closer the airline gets to the end of period for which it has Historic Rights.

366. Potential costs to consumers and air cargo service users if competition decreases due to unintended consequences of a two-tier slot system. For example, if incumbents holding slots with unlimited historic rights are able to make offers that time-limited holders cannot, for example unique or greater frequency of routes or better connections (due to benefits of unlimited rights such as greater certainty), this may decrease competition, and lead all else equal to higher fares or reduced quality of service.

367. Benefits to passengers and consumers of air cargo services from improved efficiency in allocations of slots due to increased churn from easier access to historic rights, potentially resulting in lower fares, more choice and higher quality of flights. It is unlikely that indefinite Historic Rights, as has been adopted to date, leads to the most efficient allocation over time, as the spread of airlines at the most constrained airports fails to reflect the evolution of the market. Increased churn should increase the likelihood of carriers who value slots the most obtaining them, resulting in improved outcomes for passengers and air cargo service users.[112] While the secondary market could remedy the issue of lack of churn, by allowing airlines to trade their slots to other airlines who can use the slots more efficiently, in practice the secondary market is fairly illiquid because of a mixture of strategic incentives and transaction costs which provide deterrents to trading slots.

368. Potential benefits to air passengers and consumers of air cargo services from improved competition and efficiency due to reduced strategic behaviour by airlines, potentially creating churn beyond that added just by introducing limited-duration rights. This churn could also benefit passengers through lower fares, more choice and higher quality of flights.

Sensitivity Analysis

369. To be completed for Final IA.

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[108] CEPA, (2019), *Slot Allocation at Heathrow in the context of runway expansion*, p.129. This assumes 'staggered' allocation of slots with limited duration rights.

[109] CEPA, (2019), *Slot Allocation at Heathrow in the context of runway expansion*, p.129.

[110] CEPA, (2019), *Slot Allocation at Heathrow in the context of runway expansion*, p.133.

[111] CEPA, (2019), *Slot Allocation at Heathrow in the context of runway expansion*, p.133.

[112] CEPA, (2019, *Slot Allocation at Heathrow in the context of runway expansion*, pp.129-130.

Q22. Do you have any evidence on the impact of time-limited Historic Rights for new slots that would inform a decision on whether to time-limit and if so the most appropriate duration?

3.0 Risks and Unintended Consequences

370. **Any reform of the current slot allocation system risks deviating from a tried and tested system which, despite its shortcomings, has generally worked predictably for more than two decades and which is widely adopted in other countries**. Any policy which deviates from this could cause incompatibility with arrangements in other countries. For example, time-limiting historic rights could cause compatibility issues may arise if airlines lose a time-limited slot while still retaining a slot with historic rights at a destination airport. This could cause significant uncertainty for airlines.

371. **There may be risks for producers and consumers due to reforms of the current, and these are likely to be more severe for more radical policy options**. More 'radical' reforms, in particular the treatment of Historic Rights are more likely to create risks for producers and consumers. If airlines do not have a reasonable degree of certainty as to their access to slots, this could undermine the incentive for them to invest in their operations. This could impact on consumers through potentially more limited route choice and unimproved facilities. In addition, there may be unintended consequences arising from development of a "two-tier" slot system, including reduced competition, which could lead to negative impact of fares or quality of service. Any implications for air service agreements between the UK and other countries will also need to be considered. For the reform options having a more minor impact, impacts should be less significant.

372. **There may also be risks of reforms to the current system for bodies such as the slot coordinator.** Some of the options would involve the grant of greater powers for the government to intervene in the slot allocation process, whether by issuing guidance to the slot co-ordinator, by providing temporary alleviation from the usual slots' rules, or by giving directions to the slot coordinator. Such powers will need to be carefully circumscribed to ensure they are used only in ways that result in welfare improvements for aviation users and/or wider society and do not compromise the independence of the slot coordinator.

373. **There are also risks pertaining to the introduction of large-scale new capacity.** For example, if slot auctions for large-scale new capacity may be expected to lead to a more efficient allocation of slots, it will be important to ensure that there is a level playing field and that auctions are not used by incumbent airlines to enhance an already dominant position. Appropriate auction design, such as caps on slot holdings, can help ensure such potential shortcomings are avoided. In addition, there may be unintended consequences of ring-fencing new slots for certain uses, such as extra domestic emissions if flights are prioritized for domestic use, or higher emissions if ring-fencing for international uses leads to longer flights with typically higher levels of emissions.

374. **There are also high levels of uncertainty associated with behaviour for slot reform policy options**. Whilst we have identified what we consider to be reasonable directions and magnitudes of rational behaviour in response to slot reform policies, most reforms lack precedent and there is a significant degree of complexity in mapping the impact of changes to slot rules to impacts on consumers. We hope the feedback to this consultation will help reduce some of this uncertainty.

375. **A Post-Implementation Review (PIR) could also help to assess whether these risks or unintended consequences emerge following policies**. This would most likely consist of an economic evaluation to fully capture the costs and benefits of reform (See Section 5: Post-Implementation Review below).

4.0 Wider Impacts

Innovation Test

376. Many of the policy proposals in this document have the objective of improving access to airport slots, which in turn is intended to facilitate more effective competition between airlines. In the long run this may be expected to be conducive to the introduction of innovative business models and products in order to attract and benefit customers and increase productivity.

377. Aviation is a long-standing industry which has benefitted from important technological innovations from time-to-time. Some innovations seen in the recent past include aircraft with greater capacity or range, or improved levels of fuel efficiency, which enables slots to be used more efficiently (whether in financial cost or environmental terms). In the future, technological improvements may extend to aircraft which operate with reduced carbon emissions, such as through the use of sustainable aviation fuel or other new technologies. Another type of innovation relevant to slot reform concerns the impact of competition on encouraging innovations in service offerings that airlines may make in order to attract customers, gain market share and increase profits, such as has been seen in the rapid development of Low-Cost Carrier (LCC) airline models since the 1990s for example. While future innovations are inevitably difficult to predict, beneficial innovations are likely to be encouraged by a more efficient, transparent and dynamic slot system that improves competition and choice for consumers. We do not envisage that any of the policy options would have a negative impact on innovation compared to the business-as-usual scenario.

Small and Micro Business Assessment

378. Small businesses are defined in the better regulation framework guidance as those businesses employing between 10 and 49 full-time equivalent (FTE) employees.[113] Micro businesses are those employing between one and nine employees. Small and micro businesses include voluntary and community bodies (also known as civil society organisations).
379. As per guidance provided by the RPC, the Consultation IA is required to include provisional indication of 1) how much of the policy objective is sacrificed by applying a full exemption; and 2) how much of the overall cost to business is expected to fall on small businesses (with no exemption).
380. Slot allocation policies directly impact only relatively large airlines and airports. In general, we don't expect any small or micro businesses to be significantly impacted by the policy proposals in this document. One exception to this is ACL, the company that presently acts as slot coordinator for all of the UK airports, which according to its published accounts has around 40 employees.[114] ACL (or other slot coordinator(s)) may incur additional costs of administering some of the reforms proposed. However these costs will generally be minor in the context of the sector as a whole, and we expect it will generally be able to recover any additional costs it incurs via charges on users. We therefore do not consider it necessary or appropriate to exempt any small or micro businesses from the scope of the policy.
381. Supplementary guidance issued by the Department for Business, Energy, and Industrial Strategy (BEIS) in October 2022 requires government departments to now also consider the case for exemption of medium-sized businesses, defined as businesses with between 50 and 499

[113] See: https://www.gov.uk/government/publications/small-and-micro-business-assessment-samba-guidance

[114] Source: Airport Coordination Limited, Annual report and group financial statements for the year ended 30 September 2021, page 19.

employees, from the requirements of new regulatory measures.[115] Some smaller UK airlines or airports may fall within this definition of medium-sized business. However, we consider it is unlikely to be necessary or appropriate to exempt any medium-sized businesses from the scope of the regulation. First, there is no disproportionate burden on medium-sized businesses; indeed, some elements of the policy are aimed at creating a more even playing field between large incumbent airlines and smaller 'new entrants'. Secondly, since the policy concerns common rules for slot allocation, the policy could not in practical terms be applied if some businesses were exempted from the regulation.

Q23. How many people are employed by your business? Do you have any evidence that any micro (<10 employees), small (10-49 employees) or medium-sized (50-499 employees) businesses would be impacted by any of the slot reform options? Do you have any evidence that any option would have a disproportionately burdensome impact on any such businesses?

Equalities Impact Assessment

382. We have considered those with protected characteristics under the Equality Act 2010, [116] and do not expect the policy to have any systematic impact on those with protected characteristics as compared to those without such protected characteristics.

Justice Impact Test

383. We do not expect the policy to have any impact on the justice system, but this will be considered further at the final stage.

Trade Impact

384. The potential impact on trade of some options may need to be considered, particularly in relation to the treatment of Historic Rights, guidance given to the slot coordinator on secondary criteria, and any ring-fencing of new slots to facilitate certain types of connectivity.

Family Test

385. No expected impact.

Health Impact Assessment

386. No expected impact.

Human Rights Impact

387. No expected impact.

Rural Proofing

388. No expected impact.

Sustainable Development

389. No expected impact.

Competition Assessment

390. In considering the impact that policy options may have on competition, we have paid close regard to the guidelines on competition impact assessment issued by the CMA.[117] These suggest (Part I, page 8) that regulatory provisions should be "screened" against four key questions ("competition checklist"), following which a more in-depth assessment should be undertaken if the answer to any of these questions is 'yes':

[115] See https://www.gov.uk/government/publications/better-regulation-framework/medium-sized-business-regulatory-exemption-assessment-supplementary-guidance

[116] Age, disability, sex, gender reassignment, pregnancy and maternity, race, religion or belief and sexual orientation

[117] CMA (2015) *Competition impact assessment: guidelines for policymakers* (https://www.gov.uk/government/publications/competition-impact-assessment-guidelines-for-policymakers)

- Will the measure directly or indirectly limit the number or range of suppliers?
- Will the measure limit the ability of suppliers to compete?
- Will the measure limit suppliers' incentives to compete vigorously?
- Will the measure limit the choices and information available to consumers?

391. In our view, none of the measures proposed fail any of these tests. On the contrary, our slot reform proposals are generally aimed at facilitating more effective competition between airlines by improving the efficiency, transparency and dynamism of the slot allocation process.

392. We have also considered the "Competition toolkit" published by the Organisation for Economic Co-operation and Development (OECD). This toolkit indicates (based on a database of research studies of the impact of pro-competitive market reforms) that pro-competition reforms may typically lead to price reductions in a market of around 20%.[118] However, due to its generic approach, we consider that this approach is unlikely to provide a suitable methodology to accurately monetise the impacts of the specific changes proposed in this consultation.

393. The competition impacts of each of the policy options are considered within the individual assessment sections above. The CMA's competition impact guidelines recognise (Part II, page 47) that relevant data for a quantitative comparison of options is not always available and, even when available, may not be amenable to analysis. As a result, the CMA notes that in practice most decisions about which options to prefer are qualitative. Nevertheless we have endeavoured to identify quantified impacts where possible and would welcome further evidence and data from stakeholders as well as suggestions as to what further quantified analysis could be undertaken ahead of the final Impact Assessment.

Greenhouse Gases Impact Test/Wider Environmental

394. As described above, DfT will consider quantifying indirect environmental impacts from slot reform policies. Please see Analytical Framework, Environmental Impacts section for more details.

[118] OECD Competition Toolkit (https://www.oecd.org/daf/competition/assessment-toolkit.htm), Volume 3, Annex 2.

5.0 Post Implementation Review

1. **Review status:** Please classify with an 'x' and provide any explanations below.

	Sunset clause		X	Other review clause		Political commitment		Other reason		No plan to review

Regulations to be reviewed every five years to ensure continued suitability.

2. **Expected review date** (month and year):

tbc	tbc	/	tbc	tbc

Tbc - we expect to perform a PIR within 5 years of implementation of the preferred policy option, however this will be discussed in more detail within the Final IA

3. **Rationale for PIR approach:**

Circle the level of evidence and resourcing that will be adopted for this PIR (see Guidance for Conducting PIRs):

Describe the rationale for the evidence that will be sought and the level of resources that will be used to collect it.

- **Will the level of evidence and resourcing be low, medium or high? (See Guidance for Conducting PIRs)** The level of evidence and resource required is likely to be high for three reasons. First, the scale of the impacts could be large, particularly for more significant reform options, such as 3.1 Limiting Historic Rights and 4.1 Auction of new slots, and so any evaluation would have to be proportionate to the expected impacts quantified. Second the policy is likely to involve a high level of stakeholder scrutiny, especially from industry, and the impact assessment will likely involve elements of novelty (see Analytical Framework section above), especially due to the lack of precedence and limited evidence regarding many of the reforms. Third, given this novelty, the work could require substantial analytical support (depending on the options quantified), including to design and implement bespoke modelling and address evidence gaps.

- **What forms of monitoring data will be collected?** The exact forms of monitoring data collected will be clearer following feedback from the consultation IA, but these will likely include data on the slots market (including who uses them at what airport and for what types of routes) and the flights market (including price and quantity of flights and choice available).

- **What evaluation approaches will be used? (e.g. impact, process, economic)** Initially it will be necessary to understand range of existing evaluation activity planned for the measure and the wider policy area. Additional evaluation processes may be necessary, including economic, impact and process evaluation.

- **How will stakeholder views be collected? (e.g. feedback mechanisms, consultations, research)** At this stage it is too early to state definitively how stakeholder views for evaluation would be collected. However, it would likely involve consulting with relevant stakeholders, or using more bespoke methods such as workshops or focus groups. Bespoke research may also be required. Whichever methods are used to collect views, it would likely be beneficial to collect both qualitative and quantitative evdience.

Rationale for not conducting a PIR:

A PIR will most likely be conducted.

Key Objectives, Research Questions and Evidence collection plans			
Key objectives of the regulation(s)	**Key research questions to measure success of objective**	**Existing evidence/data**	**Any plans to collect primary data to answer questions?**
• Stimulating a competitive environment by creating a more efficient, transparent, and dynamic slot market, and; • Creating a framework for slot allocation in the event that a large number of new slots become available.	• What has been the effect of the policy on allocative efficiency, productive efficiency, and dynamic efficiency? • Has a framework for slot allocation in context of large-scale new capacity been created and (if implemented) what have its impacts been?	• Some relevant data available from CAA and ACL. Further data to be collected and analysed during and post consultation. • To follow from consultation.	• To be informed by consultation responses. • To be informed by consultation responses.

6.0 Summary of Consultation IA Call-Out Questions

Table 5: Summary of Consultation IA Call-Out Questions

Option Number	**Option**	**Question(s)**
1.1	*Re-defined new entrant rule*	Q1. What impact do you think changing the defintion of the new entrant rule and/or removing the definiton of an airport system (and all references to it in the regulation) would have on airline competition? Q2. What, if any, impact do you think these changes would have on improving efficiency of slot allocation? Please provide supporting evidence.
1.2	*Restrictions on newly allocated slots*	Q3. Do you have any evidence that airlines may apply for slots on the basis of one route and then change the route once any restriction on changing routes expires? Q4. Do you have any evidence that airlines may apply for slots with the sole intention of trading them once the restriction on trading expires? Q5. Do you have any evidence that this measure could have possible adverse impacts in terms of restricting airlines from adapting use in light of changes in demand? Q6. Do you have any evidence that this measure could have positive impacts by increasing the time for which slots must be used for the routes they were allocated and hence helping to ensure that the principles used to allocate the slots are not circumnavigated?
1.3	*Removal of re-time priority*	Q7. Do you have any evidence on the potential impacts of the removal of re-time priority?
1.4	*Permanent powers to improve resilience*	Q8. Do you have any evidence on the impacts to the aviation industry which might occur from exceptional events in the absence of the types of measures implemented using powers contained in acts such as the ATMUA Act?
1.5	*Increase to slot usage ratio*	Q9. Do you have any evidence on whether increasing the usage ratio would lead to a more efficient use of airport slots and/or more effective competition between airlines?
2.1	*Strengthened Coordination Committee role*	Q10. Do you have any evidence on the potential additional costs or benefits that may arise as a result of strengthening the role and accountability of the airport coordination committees?
2.2	*Guidance on secondary criteria*	Q11. Do you have any evidence on the potential costs and benefits associated with the introduction of a power for the Secretary of State to add to and/or subtract from the list of secondary criteria for allocating pool slots set out in the WASG, and to provide guidance to ACL on the prioritisation and/or interpretation of such secondary criteria?

2.3	*Power to direct the slot coordinator*	Q12. Do you have any further evidence on the potential costs and benefits, including on independence of the slot coordinator, of a power for the Secretary of State to issue a direction to the slot coordinator?
2.4a	*A slot register*	Q13. Do you have any evidence on the potential costs or benefits of establishing and maintaining a Slot Register?
2.4b	*A trading platform for UK slot trades*	Q14. Do you have any evidence on the potential costs to the slot co-ordinator of setting up and maintaining a mandatory slot trading platform, and the potential costs to airlines of compliance with such a system? Q15. Do you have any evidence of the potential benefits to airlines, passengers, or cargo service users from setting up a mandatory slot trading platform? Q16. Do you have any evidence on how these costs/benefits might vary according to the specifics of the platform requirements?
2.4c	*Strengthened oversight of secondary trading*	Q17. Do you have any evidence on the costs and benefits associated with a role for an existing regulatory body in secondary trading?
2.5	*Limitation on slot leasing*	Q18. Do you have any evidence on how limiting slot leasing is likely to affect efficiency of slot usage?
3.1	*Auction of new slots*	Q19. Do you have any evidence on the potential costs of (a) administering, (b) participating in, and (c) potential outcomes of a slot auction?
		Q20. Do you have any evidence on the potential benefits of a slot auction?
3.2	*Ring-Fencing of New Slots for Certain Purposes*	Q21. Do you have any evidence on whether there are domestic routes that are commercially viable but not currently operated due to slot constraints?
4.1	*Limiting Historic Rights for new slots*	Q22. Do you have any evidence on the impact of time-limited Historic Rights for new slots that would inform a decision on whether to time-limit and if so the most appropriate duration?
N/A	*Section 4 Wider Impacts: Small and Micro Business Assessment*	Q23. How many people are employed by your business? Do you have any evidence that any micro (<10 employees), small (10-49 employees) or medium-sized (50-499 employees) businesses would be impacted by any of the slot reform options? Do you have any evidence that any option would have a disproportionately burdensome impact on any such businesses?