KING&WOOD MALLESONS
金杜律师事务所

6 January 2020

To Mr David Jones
General Manager – Adjudication Branch, Merger and Authorisation Review
Australian Competition & Consumer Commission
23 Marcus Clarke Street
Canberra ACT 2601
david.jones@accc.gov.au

Copy **adjudication@accc.gov.au**

Dear Mr Jones

British Airways Plc and Qatar Airways Q.C.S.C. – joint application for interim authorisation and authorisation

We act for British Airways Plc (**BA**) and Qatar Airways Q.C.S.C. (**QR**) (together, the **Parties**).

The Joint Business Agreement

The Parties entered into a Joint Business Agreement in 2016 (the **JBA**), as amended on 15 May 2018. Under the JBA, the Parties may, subject to any necessary regulatory approvals, co-ordinate their air passenger services on the London-Doha, Edinburgh-Doha and Manchester-Doha routes and on more than 80 routes behind and beyond each of London and Doha.

Proposed expansion of co-ordination under the JBA

The Parties now wish to co-ordinate their air passenger services on routes beyond and behind their respective hubs in London and Doha (the **B&B Routes**).

The B&B Routes comprise all routes between BA's 'offline'[1] points in Australia and the United Kingdom and QR's offline points in Western Europe.

The B&B Routes originate or terminate in four Australian cities: Adelaide, Canberra, Melbourne and Perth, each of which are 'offline' destinations for BA.

Currently, BA offers customers the ability to travel to and from these Australian cities through its code share arrangements with Qantas and/or QR and QR flies its own planes to these four Australian cities.

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[1] An "offline" route is one where the airline does not operate its own aircraft on the route but serves the route, if at all, only via competitive connecting code share or interline arrangements with third-party airlines.

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We are instructed to lodge a joint application with the Commission for:

- interim authorisation pursuant to sub-section 91(2)(d) of the *Competition and Consumer Act* 2010 (Cth) (**Act**); and
- authorisation under sub-section 88(1) of the Act for a term of five years,

to allow BA and QR to co-ordinate their activities on the B&B Routes.

The joint application focuses on the following nine B&B Routes, which have been identified as having passenger densities above a *de minimis* threshold:

1 ADL-LON (Adelaide – London);

2 MEL-LON (Melbourne – London);

3 PER-LON (Perth – London);

4 CBR-LON (Canberra – London);

5 ADL-MAN (Adelaide – Manchester);

6 MEL-EDI (Melbourne – Edinburgh);

7 PER-EDI (Perth – Edinburgh);

8 MEL-MAN (Melbourne – Manchester); and

9 PER-MAN (Perth – Manchester).

The B&B Routes do not include services where the origin or destination port is or will be Sydney. Sydney is an "online" O&D for both parties and is, therefore, not within the scope of the JBA.

The Parties will continue to operate as independent competitors for the supply of air passenger services where the origin or destination port is Sydney.

The co-ordination will not involve any air cargo services and, with the exception of the London-Doha trunk route, will not involve any co-ordination of capacity.

This letter and its attachments contain the documents, data and information required by the Commission's written guidance for Applications for Authorisation for Proposed Conduct (**Guidance**).[2]

Structure of the joint application for interim authorisation and authorisation

The Parties' joint application consists of the following:

- a confidential version of the joint submission (see **Confidential Attachment A-1** to this letter). A non-confidential version of the joint submission, 'marked restriction of publication of part claimed', is also attached (see **Attachment A-2** to this letter)[3]; and
- copies of the Parties' signed declarations pursuant to the Commission's Guidance (see **Attachment B** to this letter).

As referenced below, the Parties submit that their proposed co-ordination will not lead to any customer detriment and is likely to benefit the public.

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2 Australian Competition & Consumer Commission, *Application for authorisation for proposed conduct* (November 2017).

3 The joint submission includes the information, data and documents requested by the Commission on pages 2 to 4 of the Guidance.

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No detriments to competition

The co-ordination will not have any measurable detriments to competition including because:

- the Parties have been code sharing on the routes between Doha and Adelaide, Melbourne, Perth and Canberra since late May 2018;
- the B&B Routes have low annual densities and the incremental increases in market shares on any of these routes (and particular, the nine B&B routes) will not be significant. The co-ordination will not have any material effect on concentration BA's or QR's individual share of any passenger category on those routes;
- other Airlines, including Emirates, Qantas and Etihad will continue to impose substantial competitive pressure on the Parties; and
- SkyTeam and Star Alliance have similar or larger shares than oneworld.

Likely benefits to the public

The co-ordination will likely result in a number of benefits to the public, including:

- greater flexibility and choice of flights and connecting services for passengers wishing to travel between Australia and Europe or the Middle East;
- optimised scheduling across each of BA and QR, allowing them to more efficiently meet demand with existing capacity;
- seamless booking and check-in on both Parties' websites;
- a more attractive range of fares and fare combinability;
- seamless journeys when connecting between BA's and QR's services; and
- enhanced access to both Parties' frequent flyer plans and lounges beyond what is offered through oneworld.

Payment of prescribed filing fee

We have paid, by way of electronic funds transfer on 18 December 2019, the prescribed filing fee of $7,500 for the application of interim authorisation and application for authorisation.

Please refer to **Attachment C** for proof of payment.

Claim for confidentiality

The information in **Confidential Attachment A-1** and any information contained in any of the other Attachments to this letter that is marked as Confidential, is confidential to BA and/or QR (as applicable).

If the confidential information were to become publicly available, BA and/or QR (as applicable) would likely suffer commercial detriment and, in relation to some of the information, be exposed to proceedings for breach of its contractual and equitable obligations of confidentiality.

The Parties request, pursuant to section 89(5) of the Act that the confidential information described above be excluded from the Commission's public register.

Further, the Parties consider that the confidential information described above relates to the Commissions' core statutory function of administering and enforcing the Act.

Accordingly, the Parties consider that the information comprises "protected information" as defined by section 155AAA(21)(a) of the Act.

Please contact us if the Commission would like any further information.

Thank you for your assistance.

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Yours sincerely

[redacted]

Sharon Henrick | Partner, Head of Competition Law & Regulatory, Australia
King & Wood Mallesons
T [redacted] | M [redacted]

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Christopher Kok | Senior Associate
Competition Law & Regulatory
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British Airways Plc and Qatar Airways Q.C.S.C.

Joint Business Arrangement

Joint application for interim authorisation and final authorisation

NON-CONFIDENTIAL VERSION - RESTRICTION OF PUBLICATION OF PART CLAIMED

6 January 2020

Any information that is confidential to BA and that should not be shared with Qatar, is in red text.

Any information that is confidential to Qatar and that should not be shared with BA, is in purple text.

Any information that is confidential to BA and Qatar is in green text – this information can be shared between BA and Qatar but not with third parties.

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Joint application for interim authorisation and final authorisation

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Joint application for interim authorisation and final authorisation

1 Executive summary

1.1 BA's and QR's Joint Business Agreement

On 17 November 2016 British Airways Plc (**BA**) and Qatar Airways Q.C.S.C. (**QR**) (collectively, **the Parties**) entered into a confidential Joint Business Agreement (the **JBA**). The JBA was amended on 15 May 2018.[1]

The JBA covers the Parties' air passenger services on all routes between the UK and Qatar, including the trunk route London-Doha, and on more than 80 routes behind and beyond (**B&B**) each of London and Doha.

In late summer 2016, before implementing the proposed joint business arrangement, the parties undertook a formal self-assessment under the UK Competition Act 1998 and Article 101 of the Treaty on the Functioning of the European Union. On an informal basis, BA met with the Competition and Markets Authority and discussed the proposed arrangement with the European Commission. Both authorities indicated that they did not envisage opening an investigation into the joint business.

1.2 Rationale for the JBA

Both BA and QR operate between London and Doha. QR also operates from UK regional cities direct to Doha (BA only operates these regional routes one-stop via London). On the London-Doha route, the parties share any incremental revenues generated [**CONFIDENTIAL TO BA AND QR**].[2] These arrangements ensure metal neutrality within the joint business on the London-Doha route where both parties' metal is present.

QR operates all of the Doha B&B routes included in the joint business and BA operates all of the London B&B routes included in the joint business. The Parties have implemented enhanced code share commission on these connecting sectors, and on QR's non-stop routes between Doha and regional UK destinations, to ensure the appropriate incentivisation for the Parties to sell these connections over Doha or London as relevant.

The principal objective of the JBA was (and continues to be) to give BA and QR access to "offline" origin and destination ports (**O&Ds**)[3] to enable each of them to offer more choice of destinations to customers and to compete more effectively on Europe / UK to Asia / Australasia / Middle East / Africa routes with other Gulf carriers, most notably Emirates and Etihad, Turkish Airlines and the large competing global alliances, SkyTeam and Star Alliance.

The JBA allows the Parties to offer customers more compelling and competitive travel options than either of them would be able to offer on a stand-alone basis, including by allowing each Party's customers access to the other's complementary network of routes B&B the London-Doha "trunk route."[4]

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1 A confidential copy of the Joint Business Agreement as executed on 17 November 2016, and as restated on 15 May 2018, is collectively contained in **Schedule 1**.

2 **[CONFIDENTIAL TO BA AND QR]**.

3 An "offline" route is one where the airline does not operate its own aircraft on the route but serves the route, if at all, only via competitive connecting code share or interline arrangements with third-party airlines.

4 A trunk route is a strategic route between major cities that connects hubs to other hub routes and cities.

QR contributes an established network between the UK and Doha and a wide range of onward destinations beyond and behind Doha to destinations (offline for BA) in Asia, Australasia, Middle East and Africa [**CONFIDENTIAL TO BA**].

BA, in turn, contributes a number of onward destinations B&B London to destinations in the UK and Europe (offline for QR) and offers an established distribution structure with strong loyalty programmes and marketing platforms as well as extensive corporate and agency relationships.[5]

In addition, the JBA facilitates the Parties' ability to generate efficiencies and cost savings.

1.3 Staged implementation of the JBA

The Parties have been implementing the JBA in stages, commencing with their London-Doha trunk routes and B&B into Asia and Africa.[6]

1.4 Joint application for Interim and Final Authorisation for Proposed Conduct

The Parties now wish to co-ordinate their air passenger services on a limited number of routes between the UK / Europe and Australasia which include a UK-Doha leg (the **B&B Routes** or the **Proposed Conduct**).

The provisions on cartel conduct (Division 1 of Part IV) and / or section 45 of the *Competition and Consumer Act 2010* (Cth) (**Act**) may apply to the proposed conduct.

Consequently, the Parties are jointly applying to the Commission for interim and final authorisation under sub-sections 91(2)(d) and 88(1) of the Act.

1.5 The B&B Routes

The B&B Routes comprise all routes between (1) Australian cities which are offline to BA and (2) the UK and cities in Western Europe which are offline to QR. Currently, there are 104 B&B Routes. **Schedule 2** contains a list of each of the current B&B Routes. These routes are subject to review from time to time.

The B&B Routes exclude Sydney and therefore do not include any online points in Australia for BA.

The B&B Routes between Australia and the UK/EU originate or terminate in four Australian cities: Adelaide, Canberra, Melbourne and Perth (the **Four Australian Cities**), each of which are 'offline' destinations for BA.

Currently, BA offers customers the possibility of travel to and from its offline points in Australia through its arm's length competitive code share relationships[7] with Cathay Pacific, Malaysia Airlines, Qantas and / or QR, the latter two of which each fly their own planes to all of the Four Australian Cities.

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[5] Note that if one of the parties decides to commence its own operations to a JBA destination then that destination is removed from the scope of the JBA immediately upon the relevant carrier publicly announcing the new route. Note that each carrier makes such decisions entirely independently without any discussion or coordination with the other party, who are informed of the decision only on the date of the public announcement.

[6] At the time, the UK's Competition Markets Authority and the European Commission were provided with confidential briefings, pursuant to the rules for self-assessment under the UK's Competition Act 1998 and Article 101 of the Treaty on the Functioning of the European Union.

[7] 'Code-sharing' arrangements allow one carrier to market tickets under its own code on a flight operated by another carrier. Under these arrangements, the marketing carrier places its code on the operating carrier's flight and sells tickets through its own distribution system.

In the remainder of this joint application, we focus on nine of the B&B Routes. The nine routes have been identified using a *de minimis* threshold of 10,000 MIDT[8] passengers per annum (based on S18 and W18 seasons combined and equating to approximately 20,000 total passengers per annum because MIDT's data only records bookings made via travel agents (or, indirect bookings) and does not record direct bookings made directly with airlines). This follows the approach in the European Union (**EU**) where, for threshold purposes, the European Commission has assumed that MIDT indirect bookings represent 50% of all bookings with the other 50% being bookings made directly with the airlines.

The European Commission's decisional threshold practice is 30,000 passengers per annum (15,000 MIDT passengers). Routes which have passenger densities of less than 15,000 MIDT passengers per annum are considered by the European Commission to have a likely impact on competition that is too small to warrant investigation.

Having regard to demographic differences between the EU and Australia, out of an abundance of caution, we have used a more conservative threshold to identify the nine routes, being 20,000 passengers per annum compared to the European Commission's threshold of 30,000 passengers per annum.

As the Commission will see from the remainder of this application, some of the nine routes have very thin passenger densities indeed.

1.6 The Nine B&B Routes

The nine B&B Routes comprise:

1 ADL-LON (Adelaide – London);

2 MEL-LON (Melbourne - London);

3 PER-LON (Perth - London);

4 CBR-LON (Canberra – London);

5 ADL-MAN (Adelaide – Manchester);

6 MEL-EDI (Melbourne - Edinburgh);

7 PER-EDI (Perth - Edinburgh);

8 MEL-MAN (Melbourne - Manchester); and

9 PER-MAN (Perth - Manchester)

(collectively, the **Nine B&B Routes**).

1.7 What the Proposed Conduct will not involve

The B&B Routes do not include services where the origin and destination (**O&D**) port is Sydney. Sydney is an "online" O&D for both parties and is, therefore, not within the scope of the JBA. The Parties will continue to operate as independent competitors for the supply of air passenger services where the origin or destination port is Sydney.

[8] [**CONFIDENTIAL TO QR**].

With the exception of the London-Doha trunk route, the Proposed Conduct does not involve the co-ordination of capacity.

The JBA does not include any air cargo services.

1.8 Summary of reasons in support of the application for Interim and Final Authorisation

In summary, the joint application for interim and final authorisation is based on evidence, as required by sub-sections 90(7) and (8) of the Act, that the Proposed Conduct:

- will result in net benefits to the public in the form of increased competition on the B&B routes (each of which is relatively new and has relatively low passenger densities), including because the Proposed Conduct will likely trigger a competitive response from other airlines, through more compelling travel options for passengers wishing to travel on those routes, improved customer service on those routes and efficiencies and lower fares on those routes; and

- will not result in detriment to the public sufficient to outweigh those benefits, including because the Proposed Conduct will not have any substantial impact on the concentration of suppliers of any of the B&B Routes. In particular, with reference to **Table 1** below, on the Nine B&B Routes, most of the increases in concentration are insignificant, with the greatest increase in concentration being 12%. On all routes, the presence of vigorous competition from other well-established international air carriers will remain.

Granting interim authorisation will not result in any lasting detriment. Failing to grant interim authorisation will only delay the realisation of public benefits.

2 Potential application of Part IV Division 1 and / or section 45 of the Act

The Proposed Conduct could involve the Parties co-ordinating schedules, revenue planning, sales and marketing activities, service parameters and standards and jointly procuring goods and services with a view to ensuring they deliver a seamless service for passengers and realise efficiencies.

In anticipation of obtaining approval from the Commission for the extension of the JBA to the B&B Routes, BA has been code sharing on QR's routes between Doha and Adelaide, Melbourne, Perth and Canberra since late May 2018 on a commercial arm's length basis. Consequently, for the purposes of the Act, the Parties might be regarded as actual competitors for the supply of those services, potential competitors for the supply of other services and actual or potential competitors for the acquisition of goods and services used in operating on the B&B Routes.

Consequently, the Proposed Conduct could result in the Parties inadvertently breaching the provisions on cartel conduct and / or section 45 of the Act in the absence of the complete defence for joint ventures or an authorisation from the Commission.

The Parties consider the Proposed Conduct should take the benefit of the complete defence for joint ventures. However, there is some uncertainty over the operation of the complete defence for joint ventures, including as a result of amendments to it made as a result of the Federal Government's decision to adopt some of the recommendations of the Harper Committee.

In the face of that uncertainty and because of the potentially very serious consequences if the complete defence for joint ventures does not apply to the Proposed conduct, the Parties are applying to the Commission for:

- interim authorisation pursuant to sub-section 91(2)(d) of the Act to commence engaging in the Proposed Conduct as soon as possible; and
- authorisation under sub-section 88(1) of the Act for a term of 5 years.

3 British Airways

BA is a British airline with a hub at London Heathrow and bases at London Gatwick and London City airports. It is part of the International Airlines Group and is one of the world's leading global airlines. BA flies to more than 70 different countries, carries more than 40 million customers a year and has a fleet of nearly 300 aircraft.

For further information, please see **Schedule 3** for BA's most recent company factsheet.

3.1 BA's operations in Australia

Passengers travelling with BA to Australia have a choice of flying to Australia via Singapore, Bangkok, Hong Kong, Tokyo or Doha with BA and / or BA's oneworld partners.[9]

Of those routes, the only route operated by BA using its own aircraft for the entire route is its daily 'direct'[10] flights between London and Sydney, via Singapore.

For passengers who wish to travel onwards from Sydney to another Australian city with BA, they may fly from Sydney to Adelaide, Albury, Brisbane, Cairns, Canberra, Coffs Harbour, Coolangatta, Hobart, Melbourne and Perth with Qantas pursuant to a code sharing arrangement between BA and Qantas.

All routes other than BA's 'direct' daily flights between London and Sydney via Singapore involve the passenger transferring to another carrier's aircraft at the mid-point in Asia or the Middle East.

In Hong Kong, the passenger could take a code share flight offered by Cathay Pacific to Sydney, Melbourne, Perth, Brisbane or Cairns or a code share flight offered by Qantas to Sydney or Melbourne.

In Bangkok, the passenger could board a code share flight to Sydney offered by Qantas.

In Tokyo, the passenger could board a code share flight with Japan Airlines to Sydney.

In Doha, the passenger could board a non-stop code share flight offered by QR to Canberra (via Sydney), Melbourne, Adelaide or Perth.

[9] For further details, see British Airways website: https://www.britishairways.com/cms/global/pdfs/ba_travel_trade/route_focus/australia_faq.pdf

[10] Direct flights have a single flight number. Unlike a non-stop flight, direct flights involve one or more stopovers to refuel but do not involve a change of aircraft.

3.2 Name, address (registered office), telephone number and ACN

British Airways	
Name	British Airways plc
Address	Waterside, Harmondsworth, Middlesex, UB7 0GB, United Kingdom
Telephone	
ACN	Not applicable

3.3 Email address for service of documents in Australia

British Airways	
Name	Sharon Louise Henrick
Position	Partner, Head of Competition Law and Regulatory Group, Australia, King & Wood Mallesons
Telephone	
Email	

4 Qatar

QR provides international air transportation services.

QR is the national carrier of the State of Qatar.

It is one of the fastest growing airlines operating one of the youngest fleets in the world. It flies to more than 160 destinations.

For further information, please see **Schedule 4** for QR's most recent company factsheet.

4.1 QR's operations in Australia

In 2015, the Australian and Qatari Governments approved an expanded Air Services Agreement, paving the way for increased flights between the two countries. The Agreement allows Qatari or Australian airlines to operate up to 21 flights a week between Qatar and major Australian gateway airports.

QR offers daily non-stop flights from Melbourne, Adelaide, and Perth to Doha, and 'direct' flights from Canberra to Doha via Sydney. In relation to the CBR-LON route, Qatar will fly from CBR to Sydney, collect Qatar passengers at Sydney and fly to Doha and then London. It will not collect any BA passengers during the stopover in Sydney.

The CBR-LON route will be constrained by other airlines offering services from Sydney to London for those passengers choosing to travel from CBR to Sydney before boarding an international flight to London. For example, a passenger is able to fly from Sydney to London on BA (via Singapore), from Sydney to London on Qantas, from Sydney to London on Singapore Airlines (via Singapore), from Sydney to London on Cathay Pacific (via Hong Kong), as well as via Abu Dhabi on Etihad Airway (refer to paragraph 8.2 of the submission for full details. For passengers who do not utilise Qatar from Canberra to Sydney, they will be able to board a number of other international carriers to London.

QR flies twice daily between Sydney and Doha.

4.2 Name, address (registered office), telephone number and ACN

Qatar Airways	
Name	Qatar Airways Q.C.S.C.
Address	Qatar Airways Tower 1, Airport Road, Doha, Qatar
Telephone	
ACN	Not applicable

4.3 Email address for service of documents in Australia

British Airways	
Name	Sharon Louise Henrick
Position	Partner, Head of Competition Law and Regulatory Group, Australia, King & Wood Mallesons
Telephone	
Email	

5 The JBA

5.1 Co-ordination under the JBA

Under the JBA, the Parties may co-ordinate their activities in various ways, including in relation to:

- schedule coordination;
- capacity (limited to London-Doha, as stated above);
- revenue planning;
- joint pricing;
- sales e.g. fare combinability, joint selling and dealing through direct and indirect channels;
- marketing;
- service parameters and standards e.g. routings, frequencies, connection requirements and times and lounge access;
- product development and alignment of passenger handling policies and service procedures (limited to the London-Doha route);
- frequent flyer programs (**FFPs**); and
- sharing and alignment of best practices and tools.

BA and Qatar will co-ordinate capacity on the London-Doha route where they both operate aircraft. This is the trunk route and is metal neutral. On routes where only Qatar has metal, there will be no capacity co-ordination due to the fact that BA does not fly its own metal, though the parties may discuss how connecting B&B routes and their associated capacity and passenger numbers

will impact capacity on the London-Doha route. The B&B routes feed the London-Doha trunk route. Therefore, increasing traffic on these B&B routes will lead to increased traffic on the trunk route, thus increasing the commercial viability of the London-Doha trunk route and the possibility of the parties increasing capacity on the trunk route in the future.

BA and Qatar, through the arrangement, aim to provide customers with greater choice across a greater number of routes which will in turn increase traffic and possibly capacity over time on the trunk route.

5.2 Financial arrangements under the JBA

Under the JBA, the Parties:

- [**CONFIDENTIAL TO BA AND QR**]; and
- [**CONFIDENTIAL TO BA AND QR**].

5.3 The Nine B&B Routes in particular are important to the Parties' abilities to compete

The Nine B&B routes on either side of the London-Doha trunk route are significant for both carriers' operations on the trunk route. This is because access to the B&B Routes contributes to maximising passenger numbers and, in turn, the commercial viability of the London-Doha trunk route.

Cooperation on the Nine B&B routes in particular will improve the parties' ability to compete effectively on these routes relative to Qantas and Emirates, other Middle Eastern and Asian carriers as well as SkyTeam and Star Alliance global alliances, including by provoking a strong competitive response by those competitors. The competitive landscape between the UK/Europe and Australia is discussed further in Section 8.2 below.

5.4 Value-added services for passengers

The arrangements under the JBA, including the ability to jointly offer loyalty benefits, including reciprocal earn and burn of frequent flyer points, status recognition, access to lounges and ease of booking flights, together with an enhanced network of destinations on the code of each Party, are particularly important to passengers with itineraries involving long international sectors. For these passengers, ease of connection is of increasing value.

As the Commission has previously recognised,[11] such value-added services have a significant impact on consumer satisfaction and preferences when choosing which airline to fly with.

The JBA was designed to address these consumer needs and to adapt the Parties' offerings accordingly. The Proposed Conduct would allow passengers travelling on the B&B routes to enjoy these value-added benefits, with both parties able to offer their customers a greater choice of competitively priced destinations between the UK / Europe and Australasia.

5.5 Drive for efficiency is increasingly necessary for airline success

The highly competitive nature of the passenger airline industry means that the Parties must continually search for opportunities to drive efficiency and in turn lower fares.

[11] ACCC, Determination: Applications for authorisation lodged by Virgin Blue Airlines and Air New Zealand, 16 December 2010, [5.116]-[5.120].

6 Counterfactual scenario

6.1 Future with and without the Proposed Conduct

In the absence of the Proposed Conduct, the counterfactual scenario would be less effective competition against other carriers on the B&B Routes with substantially fewer benefits for passengers travelling on routes between Australia and the UK/Europe, including the Nine B&B Routes.

Without authorisation of the Proposed Conduct, BA and Qatar would not extend the current JBA to include the B&B Routes and would continue their existing arm's length codeshare and interline arrangements.

This would mean that the customer benefits as set out in Section 9 below would not materialise. In particular, customers would not benefit from the reduction of fares made possible through efficiencies and the elimination of double marginalisation.

7 The Proposed Conduct will not cause any appreciable detriments

7.1 The Proposed Conduct will be confined to BA's offline points in Australia

Presently, only QR aircraft serve the entirety of the B&B Routes. BA does not operate its own aircraft for the entire journey on any of the B&B routes and only offers its customers the possibility of travelling to and from the Four Australian Cities through its arm's length competitive code share relationships with Qantas and/or QR.

Further, each of the Parties only offer 'indirect' flights on the B&B Routes.

7.2 There is no significant competitive overlap between the Parties

On the basis detailed above, the Parties have focussed on the competitive overlap on the Nine B&B Routes. The incremental increases in market shares on any of these routes will not be significant. **Table 1** below shows the incremental increases in market share on the Nine B&B Routes that will result from the Proposed Conduct.

In line with the Commission's past approach, the Parties have provided passenger numbers for both time sensitive and non-time sensitive passengers based on a split of first/business cabins and economy/premium economy cabins respectively. Without making any concessions on the appropriate market definition, the Parties have attempted to provide data based on this split and are comfortable that no matter how the market is defined, its cooperation on the B&B routes is unlikely to cause the Commission any concerns, particularly given the increased efficiencies and consumer benefits that will arise from the cooperation.

Table 1 has been prepared based on the information contained in **Schedule 5** ("*Estimated Shares on the Nine B&B Routes*") which contains a detailed breakdown of passenger numbers and market shares for each of the Nine B&B Routes, across four seasons (Summer 2017, Winter 2017, Summer 2018 and Winter 2018). The ranges listed in Table 1 represent the lowest and the highest increment across the four seasons for each of the Nine B&B Routes.

Table 1: Incremental increases in shares on each of the Nine B&B Routes

Route	Market share - Passengers		
	Time Sensitive	Non-Time Sensitive	All passengers
ADL-LON	1 - 3%	2 - 6%	2 - 5%
MEL-LON	2 - 4%	1 - 4%	2 - 4%
PER-LON	1 - 2%	1 - 3%	1 - 3%
CBR-LON	3 - 12%	3 - 8%	3 - 9%
ADL-MAN	0 - 1%	0 - 7%	0 - 6%
MEL-EDI	1 - 3%	1 - 8%	1 - 6%
PER-EDI	0 - 1%	0 - 4%	0 - 4%
MEL-MAN	0%	0 - 5%	0 - 4%
PER-MAN	0%	0 - 6%	0 - 5%

As can be seen in Table 1, across the Nine B&B Routes, the vast majority of incremental increases in market share are insignificant. In addition, the highest incremental increase (being 12% in W17 for "time-sensitive" passengers on the Canberra-London route) is insignificant when other market players on that route are taken into account. The incremental increase in market share on this route is also well below 12% for each of the S17, S18 and W18 seasons.

7.3 Competitive constraints on each of the Nine B&B Routes

As can be seen from the tables in **Schedule 5**, on each of the Nine B&B Routes, the Parties will continue to face vigorous competition from other carriers.

(a) **CBR-LON**

Across the four IATA seasons considered, BA has a market share of 7 to 16% in the time sensitive passengers' category, 6 to 11% in the non-time sensitive passengers category and 6 to 12% in the all passengers category on the Canberra-London route.

The incremental increase in market share contributed by QR on this route will only be 3 to 12% for time sensitive passengers, 3 to 8% for non-time sensitive passengers and 3 to 9% for all passengers.

The combined market share of the Parties arising from the Proposed Conduct on this route will be 19 to 28% for time sensitive passengers, 14 to 31% for non-time sensitive passengers and 15 to 31% for all passengers. These are shares that can result in the Commission investigating conduct but do not, as far as we are aware, result in the Commission identifying issues of concern.

While the incremental increase resulting from the Proposed Conduct is larger than for the other Australian Routes, other airlines will continue to enjoy the position of the largest carrier on the Route: Qantas in the time sensitive passengers' category, and Singapore Airlines in the non-time sensitive passengers and all passengers categories.

Qantas' market share will be 24 to 32% for time sensitive passengers, compared to BA's and QR's combined market share of 19 to 28%.

Singapore Airlines' market share will be 30 to 44% for non-time sensitive passengers (followed by Qantas with a 16 to 27% market share). BA and QR will have a non-time sensitive combined market share of 14% to 31%. Singapore Airlines' market share will be 28 to 40% for all passengers (followed by Qantas with a 19 to 29% market share for all passengers). BA and QR will have a combined market share for all passengers of be 15 to 31% as a result of the Proposed Conduct.

QR is a relatively new entrant on the route.

The JBA will, therefore, enable the Parties to become a more effective competitor against the more established larger airlines on this route. Indeed, significant competition will remain and the Parties will continue to be constrained by intense competition from Qantas and Singapore Airlines on the route. They will also be constrained by competition from other airlines who offer services out of Sydney, for passengers who choose to travel to Sydney before boarding an international flight to London.

(b) **ADL-LON**

The incremental increase in market share resulting from the Proposed Conduct on the Adelaide to London route will be a minimal 1 to 3% for time sensitive passengers, 2 to 6% for non-time sensitive passengers and 2 to 5% for all passengers. This is due to BA's very limited presence on this route.

Even though QR has a market share of 27 to 31% of time sensitive passengers, 30 to 34% of non-time sensitive passengers and 30 to 33% of all passengers on this route, it is significantly constrained by its closest competitor, Emirates. Emirates has a market share of 24 to 36% of time sensitive passengers, 27 to 29% of non-time sensitive passengers and 28 to 30% for all passengers.

Further, there are a number of other airlines, including Singapore Airlines, Qantas and Cathay Pacific, which will continue to exert competitive constraints on the Parties.

Accordingly, significant competition will remain and the Parties will continue to be constrained by competition on this route from other airlines, in particular, Emirates.

(c) **MEL-LON**

The incremental increase in market share resulting from the Proposed Conduct on this route will be a minimal 2 to 4% for time sensitive passengers, 1 to 4% for non-time sensitive passengers and 2 to 4% for all passengers. This is due to BA's very limited presence on this route.

QR's presence is also relatively limited at 6 to 9% for time sensitive passengers, 7 to 11% for non-time sensitive passengers and 6 to 10% for all passengers.

The market shares on this route are relatively fragmented. However, Qantas has the largest shares on this route.

In the time sensitive passengers category, several competitors have comparable market shares with QR's 6 to 9%. Cathay Pacific has a share of 7 to 11%, Emirates has a share of 10 to 14%, Etihad has a share of 9 to 13% and Singapore Airlines has a share of 11 to 16%. Qantas has the largest share, of 22 to 26%.

In the non-time sensitive passengers category, several airlines have approximately more than twice the market share of QR's 7 to 11%. Emirates has a share of 10 to 12%, Etihad has a share of 11 to 17% and Royal Brunei Airlines has a share of 11 to 20%. Qantas has a share of 10 to 18%.

In terms of total passengers, QR's share is 6 to 10%. The shares of several airlines exceed that of QR. Emirates will have a share of 11 to 16%, Etihad will have a share of 10 to 12% and Royal Brunei Airlines will have a share of 10 to 18%. Qantas also has a share in excess of QR, with a share of 12 to 19%.

Accordingly, significant competition will remain and the Parties will continue to be constrained by competition on the Melbourne-London route from other airlines, including in particular Qantas, Cathay Pacific, Emirates, Etihad and Royal Brunei Airlines.

(d) **PER-LON**

The incremental increase in market share resulting from the Proposed Conduct on this route will only be 1 to 2% across time sensitive passengers, and 1 to 3% for the non-time sensitive passengers and all passengers' categories, as a result of BA's negligible presence on the route.

In the time sensitive passenger category, QR has a share of 12 to 15%. QR's share in S17 was 15% and 12% in both W17 and S18. Emirates has a share of 25 to 37%, and Singapore has a share of 12 to 19%.

In terms of non-time sensitive passengers, QR only has a share of 17 to 20%. Emirates has a higher share of 16 to 23%, and Singapore has a share of 17 to 21%.

Similarly, in the all passenger categories, QR's share of 17 to 19% is surpassed by Emirates' market share of 18 to 25%, and Singapore's market share of 17 to 21%.

In addition, Qantas also offers non-stop flights from London Heathrow to Perth, using the Qantas Dreamliner. The Qantas Dreamliner can carry 236 customers. As at 1 August 2019, this service is the fastest commercial route from the UK to Australia. Accordingly, significant competition will remain and the Parties will continue to be constrained by competition on the Perth-London route from other airlines, and in particular, Qantas and Emirates.

(e) **ADL-MAN**

The incremental increase in share resulting from the Proposed Conduct on the Adelaide to Manchester route will be negligible (0 to 1% for time sensitive passengers, 0 to 7% for non-time sensitive passengers and 0 to 6% for all passengers), as BA only has a minimal presence on the route.

While QR has a share of 27 to 34% for time sensitive passengers, 36 to 38% for non-time sensitive passengers and 35 to 38% for all passengers, Emirates surpasses QR in all categories. Emirates has a share of 39 to 50% of time sensitive passengers, 35 to 39% of non-time sensitive passengers, and 36 to 40% of all passengers.

Accordingly, significant competition will remain and the Parties will continue to be constrained by competition on the Adelaide to Manchester route from other airlines and, in particular, Emirates.

(f) **MEL-EDI**

The incremental increase in share resulting from the Proposed Conduct on the Edinburgh to Melbourne route will be minimal – 1 to 3% for time sensitive passengers, 1 to 8% for non-time sensitive passengers and 1 to 6% for all passengers due to BA's very limited presence on this route.

QR has a share of 33 to 48% in the time sensitive passengers category on this route, where it will continue to face vigorous competition from Emirates and Etihad, in particular. Etihad has a share of 3 to 41%, and Emirates has a share of 1 to 26%.

In respect of non-time sensitive passengers, QR has a market share of 29 to 41%. Etihad has a share of 6 to 48%, and Emirates has a share of 1 to 26%.

Similarly, in the all passengers category, QR has a market share of 30 to 41%. Etihad has a share of 5 to 47%, and Emirates has a share of 1 to 26%.

Accordingly, significant competition will remain and the Parties will continue to be constrained by competition on this route from other airlines.

(g) **PER-EDI**

The incremental increase in market share resulting from the Proposed Conduct on the Edinburgh to Perth route will be negligible, at 0 to 1% for time sensitive passengers, 0 to 4% for non-time sensitive passengers and 0 to 4% for all passengers, given BA's very limited presence on the route.

On the Edinburgh to Perth route, QR has a share of 51 to 62% in the time sensitive passenger category, 47 to 61% in the non-time sensitive passenger category and 48 to 62% in the all passengers category.

Etihad and Emirates have been strong competitors of QR in all three categories, with Etihad having a share of 37% in S17 in the time sensitive passenger category, and Emirates having a share of 25% in W18 in the same category. In the non-time sensitive passengers category, Etihad had a share of 45% in W17 and Emirates had a share of 21% in W18. In the all passengers category, Etihad had a share of 44% in W17 and Emirates had a share of 21% in W18.

Accordingly, significant competition will remain and the Parties will continue to be constrained by competition on this route from other airlines, including from Emirates, which has recently drastically increased its presence on this route.

(h) **MEL-MAN**

The incremental increase in market share resulting from the Proposed Conduct on the Manchester to Melbourne route will be negligible, at 0% for time sensitive passengers, 0 to 5% for non-time sensitive passengers and 0 to 4% for all passengers given BA's very limited presence on the route.

In the time sensitive passengers category, QR has a market share of 8 to 11%. Etihad and Emirates have higher shares, at 20 to 29% and 23 to 31% respectively.

In the non-time sensitive passengers category, QR has a share of 9 to 16%. This is far exceeded by Etihad and Emirates, which have shares of 29 to 33% and 21 to 24% respectively.

The JBA will therefore enable the parties to become a more effective competitor against the larger airlines. Indeed, significant competition will remain and the Parties will continue to be constrained by competition on this route from other airlines, including Emirates and Etihad.

(i) **PER-MAN**

The incremental increase in share resulting from the Proposed Conduct on this route will be negligible, at 0% for time sensitive passengers, 0 to 6% for non-time sensitive passengers and 0 to 5% for all passengers as BA has a very limited presence on this route.

In the time sensitive passengers category, QR has a share of 7 to 22%. The primary player on this route is Emirates, with a share of 37 to 55%. In addition, as stated above, the incremental increase in market share will be 0%.

In the non-time sensitive passengers category, QR (with a share of 26 to 40%) will be constrained by both Emirates and Etihad, which have shares of 20 to 29% and 1 to 28% respectively.

Similarly, in the all passengers category, QR's market share of 25 to 38% will be constrained by Emirates and Etihad, which have a share of 22 to 32% and 1 to 27% respectively.

Accordingly, significant competition will remain and the Parties will continue to be constrained by competition on this route from other airlines, including Emirates and Etihad.

7.4 Other characteristics of the Nine B&B Routes

In addition to the small increases in incremental share on each of the Nine B&B Routes, the other B&B Routes are all relatively new routes with corresponding low passenger densities.

The low passenger densities are, to a large extent, a product of the relatively small size of the populations of the O&D ports for at least one end of each route and the ability of passengers to choose to travel, by air, rail or road, to a larger city before boarding a long haul international flight.

These characteristics are likely to remain in the foreseeable future. While each of the Nine B&B Routes are highly contestable, they are likely to remain relatively concentrated into the foreseeable future irrespective of the Proposed Conduct.

7.5 London to Sydney will be excluded from the Proposed Conduct

The Parties currently compete vigorously on the London-Sydney route, where they both offer direct services.

The Parties do not propose extending the JBA to include any direct flights to and from Sydney. The route is highly contested and any attempt by the Parties to co-ordinate on the routes would be quickly defeated by the other airlines who offer services on the route, including Qantas, Emirates, Etihad, Singapore Airlines and Cathay Pacific.

The Parties are fully committed to ensuring that their co-ordination on the B&B Routes will not impact, in any manner, their respective positions on the Sydney route and will continue to compete for passengers flying to and from Sydney.

8 Air passenger services between Australia and the UK / Europe

8.1 Relevant area of competition

For the purposes of the joint application, the Parties submit that it is not necessary to precisely define the affected markets.

To assist the Commission, and consistent with the approach the Commission adopted in its Final Determination in respect of Qantas Airways Limited's and Emirates' Applications for Revocation and Substitution of Authorisation on 23 March 2018,[12] the Parties now provide additional information about the supply of passenger air services between Australia and the UK / Europe, because those services will continue to operate as an important constraint on the Proposed Conduct.

[12] ACCC, Determination and Interim Authorisation: Applications for revocation and substitution for authorisation lodged by Qantas Airways Limited and Emirates, 23 March 2018, p. 15, section headed "Relevant Area of Competition".

In recent years, passenger numbers on Australia-UK / Europe routes have increased and capacity on those routes has expanded significantly.

Tourism Australia's analysis suggests that there are almost 1,000[13] weekly services between Australia and the UK via major hubs in the Middle East and Asia operated by more than 15 carriers.

8.2 Other airlines on the Australia-UK / Europe routes

The Parties are subject to competitive constraints from other carriers, including in many instances from other Gulf carriers, as well as other oneworld, Star and SkyTeam alliance airlines more generally on the Australia to UK / Europe routes.

The Australia – UK / Europe routes are characterised by strong competition between a large number of competitors, both end-point carriers and mid-point carriers.

End-point carriers are designated carriers that operate out of either Australia or Europe. Mid-point carriers offer services from centrally located hubs, primarily in Asia or the Middle East.

(a) Qantas

Qantas is the only end-point carrier on the Australia – UK / Europe route apart from BA. All other European carriers have ceased operating services to Australia and instead rely on alliance or codeshare relationships with mid-point carriers.

Qantas operates daily one-stop flights from Melbourne and Sydney to London via Perth and Singapore respectively. Qantas offers additional services from Australia to the UK/Europe through its joint business partner Emirates.

Qantas also launched non-stop flights from Perth to London in March 2018[14] and in August 2018 announced plans for a non-stop flight between Sydney and London to commence in 2022.[15] Qantas is said to be making '*really good progress'* with those plans, with the non-stop flight between Sydney and London said to be on the '*brink of commercial viability'*.[16]

(b) Midpoint carriers based in Asia

The following mid-point carriers based in Asia operate on the Australia –UK / Europe route:

- **Singapore Airlines:** currently operates services from Adelaide, Brisbane, Cairns (through its Silkair subsidiary), Darwin (through Silkair), Melbourne, Perth and Sydney to Europe, via Singapore.
- **Cathay Pacific**: currently operates services from all major Australian cities to Europe, via Hong Kong.

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13 One stop service, with maximum 5 hours transit. Tourism Australia Market Profiles 2017 – UK. Available: http://www.tourism.australia.com/content/dam/assets/document/1/6/x/g/0/2002896.pdf

14 News.com.au, "The long haul: Here's what to expect on board Australia's longest flight", 26 March 2018. Available: https://www.news.com.au/travel/travel-advice/flights/the-long-haul-heres-what-to-expect-on-board-australias-longest-flight/news-story/1b09b307d85bf688b0c378b44941ae07

15 News.com.au, "Qantas' non-stop flights are about to get even longer", 31 August 2018. Available: https://www.news.com.au/travel/travel-advice/flights/qantas-nonstop-flights-are-about-to-get-even-longer/news-story/68a2c4437dd2131ac701fbbe7edfb82c

16 South China Morning Post, "Qantas non-stop Sydney-London flight on the brink of 'commercial viability', a threat to Cathay Pacific and Hong Kong airport", 13 November 2018. Available: https://www.scmp.com/news/hong-kong/hong-kong-economy/article/2173004/threat-cathay-pacific-and-hong-kong-qantas-says-non

- **Thai Airways International**: currently operates flights out of Sydney, Brisbane, Perth and Melbourne to Europe, via Bangkok.

- **Other carriers** which fly between Australia and the UK/Europe include:

  - via South East Asia: Royal Brunei Airlines, Garuda Indonesia, Malaysia Airlines, Philippine Airlines, Vietnam Airlines;

  - via China: Air China, China Airlines, China Eastern, China Southern and EVA Air;

  - via India: Air India; and

  - via other parts of North Asia: Japan Airlines, Korean Air, All Nippon Airways and Asiana.

(c) **Midpoint carriers based in the Middle East**

Middle Eastern carriers have rapidly expanded capacity to and from Australia. Between 2012 and 2017, Middle Eastern airlines have doubled in size in Australia and New Zealand, growing from 1.8 million seats in the region in 2012 to 3.6 million in 2017.[17]

It has been predicted that by 2020, Middle Eastern carriers could create a presence in Australia and New Zealand double that of Singapore Airlines, an operation which established itself over many decades.[18]

Capacity from the three Middle Eastern hubs of Doha, Dubai and Abu Dhabi to Australia is reported to have grown by 18.4 per cent in 2016, reaching approximately 2.8 million annual seats.[19]

Emirates

Emirates is the Middle East's largest carrier flying to almost 40 cities in Europe and operating services on more than 130 city pairs.

Emirates currently operates multiple daily services between Australia (Sydney, Melbourne, Brisbane, Adelaide and Perth) to the UK / Europe via Dubai.

In 2013, Emirates commenced its alliance with Qantas. These two airlines co-operate on services in the Australia to UK / Europe, the Australia-Middle East, the Australia-Asia and the trans-Tasman markets. The Commission is familiar with the alliance, having authorised it on two occasions.

Etihad Airways

Etihad is a full-service network carrier operating from a hub in Abu Dhabi, the capital of the United Arab Emirates.

Etihad commenced services to and from Australia with flights to Sydney in March 2007, Brisbane in September 2007, Melbourne in March 2009 and Perth in July 2014.[20]

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17 Centre for Aviation, "Gulf airlines in Australia/New Zealand: 2017 could surpass 2016's record growth", 20 January 2017. Available: https://centreforaviation.com/insights/analysis/gulf-airlines-in-australianew-zealand-2017-could-surpass-2016s-record-growth-321532

18 Centre for Aviation, "Gulf airlines in Australia/New Zealand: 2017 could surpass 2016's record growth", 20 January 2017. Available: https://centreforaviation.com/insights/analysis/gulf-airlines-in-australianewzealand-2017-could-surpass-2016s-record-growth-321532

19 Tourism Australia, "United Kingdom: Market Profile", 2017 – UK. Available: http://www.tourism.australia.com/content/dam/assets/document/1/6/x/g/0/2002896.pdf

20 Application for Authorisation lodged by Etihad and Air Serbia, 7 December 2016, section 2.3.

In 2010, Etihad entered into a commercial partnership with Virgin Blue Airlines (now Virgin Australia) under which those two carriers agreed to cooperate on pricing and scheduling of services across their respective networks.[21]

This partnership allows those carriers to offer a joint global network of more than 100 destinations which includes 41 destinations in Australia and 35 weekly services between Abu Dhabi and Australia (14 Sydney services, 7 Brisbane services and 14 Melbourne services).

In 2014, Etihad entered into a commercial partnership with Alitalia to co-operate in respect of various routes, including between Australia and Italy, through joint pricing, joint route and schedule co-ordination and joint marketing, distribution and sales representation.[22]

(d) **Code share carriers**

A large number of carriers offer services between Australia and Europe by code sharing with other airlines, including:

- **Virgin Atlantic**: Virgin Atlantic offers services from London to Australia via Hong Kong through a code-share with Virgin Australia and via Los Angeles through a code-share with Delta..
- **Lufthansa**: Lufthansa code-shares on Singapore Airlines' services from Singapore and Thai Airways' services from Bangkok to Australia.
- **Air France:** Air France offers daily services between Australia and Paris via Hong Kong (code-share with Qantas) and Shanghai (code-share with China Eastern).

8.3 Existing competitors are vigorous and effective

The Australia-UK/Europe route is characterised by highly competitive behaviour that will not be lessened in any way as a result of the Proposed Conduct.

This route is characterised by large, well-established carriers like Emirates, Etihad and Qantas. These carriers not only have large market shares individually, but through a number of code-share and authorisation arrangements have collectively made it very difficult for individual carriers to compete effectively.

The Parties expect that competitors will continue the pro-competitive initiatives they have in place, including by taking advantage of efficiencies and enhanced offerings enabled by the creation of alliances.

As the Commission has previously concluded, the Australia-UK/Europe route is highly competitive:

- there is competition on routes to UK/Europe via multiple hubs including Dubai, Bangkok, Singapore, Hong Kong and Abu Dhabi;[23]
- there are a large number of established carriers with the ability and incentive to expand their operations, including a number of Chinese airlines which have recently expanded services to Australia and are growing their market presence at a fast pace, such as China Southern Airlines, China Eastern Airlines and Air

[21] Application for Authorisation lodged by Etihad and Air Serbia, 7 December 2016, section 2.7.

[22] Application for Authorisation lodged by Etihad and Air Serbia, 7 December 2016, section 2.10.

[23] ACCC, Determination: Application for revocation of A91247 – A91248 and the substitution of authorisations A91510 – A91511 lodged by Virgin Australia and Etihad Airways, 4 December 2015, [74]; ACCC Determination: Applications for authorisation lodged by Qantas Airways Limited and Emirates alliance, 27 March 2013, [380].

China, as well as other midpoint carriers who all have the ability to expand capacity between Australia and Europe;[24]

- there is available capacity in the short to medium term for an Australian designated airline to enter an Australia-UK/Europe route or enter via codeshare, and there is available capacity for a number of foreign designated carriers to likewise expand services (with the exception of via Hong Kong);[25] and

- the route is characterised by year-on-year increases in capacity and reductions in average fares, as more competitors enter the route and expand their services. These trends have in turn led to increases in total passenger numbers.[26]

We summarise below some examples of initiatives implemented by other airlines to attract travellers to and from Australia:

(a) **Qantas and Emirates**

The Qantas and Emirates alliance has provided Qantas customers with greater choice and flexibility of schedules in flying to the UK and Europe.

Customers can purchase either a Qantas ticket or an Emirates ticket and access any of the alliance's codeshare flights.

Increased access to each carrier's frequencies and destinations has provided passengers with increased flexibility and convenience as a result of the greater choice of frequencies and arrival/departure times. For example, before the alliance with Emirates, around 400,000 customers travelled on Qantas code to Europe each year. This figure has now tripled, with more than 1.2 million customers travelling on Qantas code to Europe.

New benefits have been delivered through adjustments to the Qantas and Emirates networks. As set out above, in March 2018 Qantas replaced its Melbourne-Dubai-London services with Melbourne-Perth-London services operated by the 236 seat Boeing 789 Dreamliner aircraft, offering a world-class level of in-cabin comfort, product and service on the first ever direct Australia-London service.

At the same time, Qantas also re-routed its Sydney-Dubai-London service via Singapore as part of Qantas' focus on prioritising operations to its home region of Asia. To backfill the Qantas Sydney-Dubai service, Emirates launched an additional daily non-stop frequency between Sydney and Dubai in March 2018.

Further, Emirates launched an additional daily service between Brisbane and Dubai in December 2017, as well as increasing the gauge of one of its Melbourne-Dubai services to an A380 aircraft in March 2018.[27]

Qantas' Melbourne-Perth-London services add a new one-stop schedule option for London-bound passengers from major Australian cities such as Melbourne,

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[24] ACCC Determination: Application for revocation of A91247 – A91248 and the substitution of authorisations A91510 – A91511 lodged by Virgin Australia and Etihad Airways , 4 December 2015, [74]; ACCC Determination: Applications for authorisation lodged by Qantas Airways Limited and Emirates alliance, 27 March 2013, [383]-[384].

[25] ACCC, Determination: Application for revocation of A91247 – A91248 and the substitution of authorisations A91510 – A91511 lodged by Virgin Australia and Etihad Airways, 4 December 2015, [74]; ACCC Determination: Applications for authorisation lodged by Qantas Airways Limited and Emirates alliance, 27 March 2013, [385].

[26] ACCC Determination: Application for revocation of A91247 – A91248 and the substitution of authorisations A91510 – A91511 lodged by Virgin Australia and Etihad Airways, 4 December 2015, [74].

[27] Application for Revocation and Substitutions of Authorisations A91332 and A91333 lodged by Qantas Airways Limited and Emirates, 11 October 2017, p. 3.

Brisbane and Adelaide (in addition to non-stop from Perth) allowing an afternoon departure from Australia and convenient morning arrival time into London.

Examples of new scheduling and routing options provided as a result of the alliance include:

- passengers being able to depart Sydney in the afternoon and arrive in most major European cities the next morning; and
- passengers being able to depart from major European cities in the morning on an Emirates/Qantas codeshare service and join the Dubai-Sydney flight.[28]

The alliance allows passengers to fly on Qantas operated services to London via Perth or Singapore, and choose to fly with Emirates to Dubai, from where they will still be able to fly on to London or access 38 onward connections on Emirates to Europe and 28 to the Middle East and North Africa region.

Emirates passengers flying to Australia have access to 60 onward connections on Qantas to destinations in domestic Australia and New Zealand.

Qantas and Emirates have offered customers a better spread of schedule timings and increased schedule choice between major Australian cities and major European cities, with different journey options to London from the five largest cities in Australia including:

- Qantas direct from Perth or via Singapore, Emirates from Perth via Dubai;
- Qantas from Melbourne via Perth or Singapore, Emirates from Melbourne via Dubai;
- Qantas from Sydney via Perth or Singapore, Emirates from Sydney via Dubai;
- Qantas from Brisbane via Perth or Singapore, Emirates from Brisbane via Dubai; and
- Qantas from Adelaide via Perth, Emirates from Adelaide via Dubai.

When Qantas and Emirates first announced their intention to form an alliance in September 2012, there was an immediate and intense reaction from competing airlines.

In October 2012, Etihad Airways announced an increase in its Sydney-Abu Dhabi capacity and in November 2012 Singapore Airlines signed multi-year agreements with six tourism organisations in Australia.[29]

(b) **Etihad and Virgin Australia**

Under its strategic alliance with Virgin Australia, Etihad and Virgin have expanded the number of codeshare and interline destinations offered through the alliance to 80 across Africa, Australia, Europe and the Middle East.

[28] Application for Revocation and Substitutions of Authorisations A91332 and A91333 lodged by Qantas Airways Limited and Emirates, 11 October 2017, p. 35.

[29] Initial competitor reactions were summarised in a submission to the Commission lodged by Emirates on 30 November 2012. Available: http://registers.accc.gov.au/content/index.phtml/itemId/1078153/fromItemId/401858/display/submission

In August 2015, Etihad commenced a second daily service from Abu-Dhabi to Melbourne which later resulted in Etihad's four class-A380 aircraft flying to Melbourne for the first time.

Etihad also opened a new premium lounge in Melbourne, the airline's largest outside Abu Dhabi.[30]

Etihad increased its capacity on the Abu Dhabi to Perth route by 14 per cent since it introduced its Boeing 787 Dreamliner aircraft.[31] Since late 2017, Etihad has operated up to 14 weekly flights on its Abu Dhabi-Sydney route using its flagship A380 aircraft.[32]

Etihad has also operated the Dreamliner to Melbourne from 2017.[33]

(c) **Singapore Airlines**

Australia remains a priority market for Singapore Airlines, particularly given its strategic alignment with, and shareholding in, Virgin Australia.

It has been reported that 26 per cent of all passengers at Changi Airport in Singapore are in transit, with Australia being the largest source of origin for those connecting travelers (particularly those en route to the UK/Europe).[34]

With Changi Airport, Singapore Airlines has worked to maximise the attractiveness of Singapore as a transit point for passengers such as through the '*Changi Transit Programme'* to provide rewards and incentives to travelers to take advantage of during a stopover in Singapore.[35]

(d) **China Southern and China Airlines**

China Southern is another carrier that has invested heavily in attracting Australian consumers travelling to the UK/Europe.

Reflecting its 'Australian strategy' in place since 2009, China Southern operates daily Guangzhou-London Heathrow services and has strategically added frequencies on morning departures from Australia which arrive in Guangzhou at night to connect with long-haul departures to Europe and North America.

Similarly, in July 2017, China Airlines announced a boost in frequencies up to twice daily between Sydney and Taipei, timed to connect to the carrier's newly reinstated services between Taipei and London Gatwick four days a week, with customers able to travel on the new Airbus A350 aircraft for the entire Sydney-London journey.[36]

(e) **Virgin Atlantic and Virgin Australia**

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30 Virgin Australia Annual Report 2016, p 26; Application for Revocation and Substitutions of Authorisations A91332 and A91333 lodged by Qantas Airways Limited and Emirates, 11 October 2017, p. 32.

31 Virgin Australia Annual Report 2016, p 26.

32 Etihad, "Etihad Airways A380 goes double daily to Sydney", 26 April 2017. Available: http://www.etihad.com/en-au/about-us/etihad-news/archive/2017/etihad-airways-a380-goes-double-daily-to-sydney/

33 Etihad, "Etihad Airways expands Boeing 787 service in Europe",' 30 May 2017. Available: http://www.etihad.com/en-au/about-us/etihad-news/archive/2017/etihad-airways-expands-boeing-787-network-in-europe/

34 '26% of Singapore Changi pax connect to other services, Australia largest origin market' in Centre for Aviation, Alerts, 16 June 2017.

35 Singapore Airlines media release 'Singapore Airlines and Changi Airport Group extend Changi Transit Programme', 21 March 2016. Available: http://www.singaporeair.com/en_UK/au/media-centre/press-release/article/?q=en_UK/2016/January-March/21Mar2016-1705

36 'CI doubles Sydney' in *Travel Daily*, 20 July 2017.

On 4 July 2019, the Commission granted interim authorisation for an alliance between Virgin Atlantic and Virgin Australia. The interim authorisation relates to the UK/Ireland Route via Hong Kong, Los Angeles and other current and future mutual mid-points.

In making its determination, the Commission considered that some public benefits may be obtained from the interim authorisation and that interim authorisation was unlikely to result in a substantial lessening of competition.

The Commission will make its final determination during November 2019.

8.4 The Nine B&B routes in particular are highly contestable

The Parties will remain constrained by the threat of new entry and expansion as a result of Australia's bilateral arrangements and 'Open Skies' agreements with certain countries.

The 'Open Skies' agreements typically involve:

- no restrictions on routes, capacity or traffic rights;
- no regulation of tariffs, except to prevent anticompetitive behaviour;
- liberal arrangements for granting operating authorisations following receipt of designation; and
- provisions facilitating regulatory cooperation by civil aviation authorities on matters such as trade in aviation goods and services – which has potential to increase opportunities for air freight transportation services.

Australia's liberalised air services agreements with other countries make it likely that the Parties will remain constrained by the prospect of new entry and expansion (including by low cost carriers).

In that regard, it is worth noting that most of Australia's bilateral air services arrangements provide foreign airlines with unrestricted access to all international airports other than Sydney, Melbourne, Brisbane and Perth.

8.5 Customers have the ability to completely bypass the Parties

Australian travellers have more choice than ever before in respect of how to fly from Australia to the UK/Europe route. They can completely bypass the Parties.

9 The Proposed Conduct will result in benefits to the public

The term 'public benefits' is not defined in the Act.

However, it has traditionally been given a broad meaning, to mean anything of value to the community generally, including as one of its principal elements, the achievement of the economic goals of efficiency and progress.[37]

As evidenced in the section above, the JBA involves the combination of two complementary networks, rather than competing networks given BA's lack of operations and tiny overlaps to the Four Australian Cities. It will not create any

[37] ACCC Guidelines for Authorisation of Conduct (non-merger), March 2019, p. 43; *Re 7-Eleven* (1994), ATPR 41-357 at 42,777. See also *Queensland Co-operative Milling Association Ltd* (1976), ATPR 40- 012, at 17,242 and *VFF Chicken Meat Growers' Boycott Authorisation* (2006) AcompT 9 at [75].

harm to competition or consumers. However, for completeness the parties outline below the following benefits expected to be generated by the JBA.

9.1 The Proposed Conduct will increase competition

The Commission has previously accepted that the enhancements to the product and service offerings enabled by the creation of an alliance has the potential to trigger a competitive response from rival airlines, having regard to the varying competitive conditions across the relevant markets.[38]

The Proposed Conduct will increase competition by making the Parties each more effective competitors against other carriers and joint businesses As the Commission has recognised, this will likely trigger a competitive response from other airlines.

9.2 Passengers will enjoy more compelling travel options

The Proposed Conduct will allow the Parties to offer customers more compelling and competitive travel options than each is able to offer currently, such as by adjusting schedules to offer more convenient connection times.

9.3 Passengers will enjoy improved customer services

Passengers travelling on the B&B Routes will have the benefit of the following as a result of the Proposed Conduct:

- seamless journeys when connecting between the Parties on indirect services through enhanced customer support in London and Doha and reciprocal lounge access;
- seamless booking and check-in on either Party's website;
- enhanced access to both Parties FFPs beyond what is offered through oneworld, including enhanced loyalty offerings and more options to earn/use points, aligned benefits gained from different loyalty programs, improved availability of redemption classes and access to promotions and special offers in the Parties' combined networks;
- fare combinability leading to a greater number of frequency choices for passengers; and
- optimised scheduling across both airlines (this, in turn, is expected to lead to greater efficiency in meeting the demand with existing capacity, generating cost savings).

9.4 The Proposed Conduct will result in efficiencies and lower fares

The Parties expect the Proposed Conduct will allow them to generate efficiencies across the B&B Routes, leading to lower average per-passenger costs and, in turn, lower fares as strong competition from other major airlines and alliances means cost efficiencies will be passed on.

With nearly twenty years of experience with metal-neutral JBs, there is now overwhelmingly strong empirical evidence of the pro-consumer price effects of metal-neutral JBs. In 2017, Compass Lexecon published a comprehensive worldwide study of international airline cooperation, analysing airline passenger,

[38] ACCC Determination: Applications for authorisation lodged by Qantas Airways Limited and Emirates alliance, 27 March 2013, [277].

capacity, and fare data over a 17-year period.[39] This study shows that revenue-pooling JBs are "*strongly procompetitive, generating lower fares on connecting routes and increased traffic on segments served by multiple alliance partners, with no associated increase in non-stop fares where partner airlines overlap operations*" (emphasis added). A copy of this study is at **Schedule 8**. A recent analysis conducted by Brueckner and Singer for the US DOT, further confirmed these pro-competitive fare effects.[40]

The Parties envisage deriving the following from the Proposed Conduct:

(a) **Elimination of double-marginalisation**

The Proposed Conduct is necessary to prevent double-marginalisation on the B&B Routes.

In competitive arm's length arrangements, the Parties individually set prices on the portion of the itinerary where they operate their own aircraft and maximise their own mark-up based on the demand on that portion of the passenger's journey. However, this pricing fails to consider the demand for the overall itinerary and results in higher fares and suboptimal capacity utilisation.

By comparison, the cooperative pricing arrangement under the JBA will allow each of the Parties to consider the effect of its pricing on the overall demand for the itinerary, removing double-marginalisation and consequently reducing fare levels and improving capacity utilisation.

(b) **Efficiencies will result in lower fares**

Further, the JBA is expected to allow the joint utilisation of the marketing and distribution strength of each Party, particularly in their home markets (London in the case of BA and Doha in the case of QR), enabling better promotion of their services.

Combined passenger feed means that new routes and frequencies reach acceptable load factors earlier than would be the case for each carrier operating individually, providing the potential to increase capacity.

The Proposed Conduct allows the Parties to improve efficiencies by benefitting from:

- economies of scope by spreading head office, marketing, IT and distribution costs over a greater number of destinations;
- more efficient and effective brand exposure, marketing budget allocation and sales impact. The ability to cooperate and openly discuss strategy is integral to both short-term tactical decisions to promote services to specific destinations and to broader joint marketing and promotional activity;
- economies of density as a result of the Parties being able to increase load factors on the B&B Routes and consequently reduce average cost per seat sold;

[39] Robert J Calzaretta, Jr., Yair Eilat, and Mark A Israel, Competitive Effects of International Airline Co-operation, Journal of Competition Law & Economics, Volume 13, Issue 3, September 2017, Pages 501–548, available at: https://doi.org/10.1093/joclec/nhx016 (refer to **Schedule 8**).

[40] Jan K Brueckner and Ethan Singer, Pricing by International Airline Alliances: A Retrospective Study Using Supplementary Foreign-Carrier Fare Data, revised February 2019, available at: http://www.socsci.uci.edu/~jkbrueck/DOT_study.pdf

- cost savings from various areas of invariable costs including, but not limited to, marketing and sales, scheduling, capacity planning; and
- other cost savings and efficiencies through joint procurement and supply management.

The Parties intend savings to be passed on in the form of lower fares as the JBA allows them to better compete to win share from competitors such as the other global alliances, the Gulf carriers and other carriers.

10 No appreciable detriments to the public

As in the case of the term 'public benefits', the Act does not define 'p*ublic detriments'*.

However, the Australian Competition Tribunal has stated that it includes any impairment to the community generally and any harm or damage to the aims pursued by society, including the achievement of economic efficiency.[41]

Consistent with this definition, the Parties submit that the Proposed Conduct will not result in any competitive detriment as the Parties will continue to be disciplined by a number of vigorous and effective competitors providing strong and effective constraint within highly competitive markets, as well as the prospect of expansion and new entry.

The Proposed Conduct will not give the Parties the incentive or the ability to introduce uncompetitive prices or service levels.

11 Net benefits are likely to outweigh public detriments

The likely public benefits from the Proposed Conduct (as set out above) will outweigh any likely public detriments from the Proposed Conduct (as set out above) and the Commission should authorise the Proposed Conduct.

12 Term of authorisation sought

The Parties are seeking authorisation for 5 years.

13 Application for interim authorisation

The Parties are seeking interim authorisation as soon as possible (and, in line with the Commission's Guidelines for Authorisation of Conduct (non-merger), respectfully request the Commission make its decision to grant interim authorisation within 28 days) to give effect to the Proposed Conduct pending the outcome of the Commission's final decision on authorisation.

13.1 Test for granting interim authorisation

Under sub-section 91(2)(d) of the Act the Commission may, at any time, in the case of an application for authorisation, grant an authorisation that is expressed to be an interim authorisation.

[41] ACCC Guidelines for Authorisation of Conduct (non-merger), March 2019, p. 67; *Re 7-Eleven Stores Pty Limited* (1994) ATPR 41-357 at 42,683.

In assessing an application for interim authorisation, the Commission considers:[42]

- the objective of the Act, which includes enhancing the welfare of Australians through the promotion of competition;
- the extent to which the relevant market will change if interim authorisation is granted. Interim authorisation is more likely to be granted when it will maintain the market status quo. Interim authorisation is unlikely to be granted if doing so would permanently alter the competitive dynamics of the market or inhibit the market from returning to its pre-interim state if final authorisation is later denied;
- the degree to which the arrangements appear to be anti-competitive;
- the level of urgency of the request;
- the possible harm to the applicant if the request for interim authorisation is denied; and
- the possible harm to other applicants (such as customers or competitors) if the request for interim authorisation is granted or denied.

13.2 Reasons in support of application for interim authorisation

The Parties submit that there are clear benefits and no detriments associated with the Proposed Conduct and the Commission should grant interim authorisation for it as soon as possible.

Any delay in receipt of interim authorisation will only delay realisation of the public benefits.

For commercial reasons, it is important for the Parties to be able to engage in the Proposed Conduct as soon as possible. For example, scheduling and marketing activities typically occur in large blocks (for example, for an entire summer or winter season). The absence of interim authorisation is only likely to prevent the benefits from the Proposed Conduct from accruing for an entire season. The inability to take advantage of these benefits would be commercially costly for both carriers and to the detriment of the passengers travelling on the B&B Routes.

Granting interim authorisation will not have a significant impact on, or permanently alter the structure or dynamics in, any market and it will not result in any commercial harm to customers, suppliers of the applicants' competitors. There will not be any adverse implications of granting interim authorisation.

14 Conclusion

In conclusion:

(a) the Proposed Conduct will not be likely to cause any appreciable loss to competition or other public detriment, including uncompetitive pricing or uncompetitive service levels; and

(b) the public benefits expected to arise from the Proposed Conduct will outweigh any public detriment. The benefits to the public include lower

[42] ACCC Guidelines for Authorisation of Conduct (non-merger), March 2019, pp. 54 - 55; *Re Queensland Timber Board* (1975) ATPR 40-005 at 17,122– 123

fares and increased efficiencies, avoided costs and inefficiencies and increased competition on B&B Routes.

Therefore, the Parties submit that the Commission should authorise the Proposed Conduct and grant the application for interim authorisation.

Declaration by Applicant(s)

Authorised persons of the applicant(s) must complete the following declaration. Where there are multiple applicants, a separate declaration should be completed by each applicant.

The undersigned declare that, to the best of their knowledge and belief, the information given in response to questions in this form is true, correct and complete, that complete copies of documents required by this form have been supplied, that all estimates are identified as such and are their best estimates of the underlying facts, and that all the opinions expressed are sincere.

The undersigned undertake(s) to advise the ACCC immediately of any material change in circumstances relating to the application.

The undersigned are aware of the provisions of sections 137.1 and 149.1 of the *Criminal Code* (Cth).

[redacted] 06 DEC 2019

Morten Loej
Senior Vice President Corporate Planning

This 8th day of December 2019.

Note: If the Applicant is a corporation, state the position occupied in the corporation by the person signing. If signed by a solicitor on behalf of the Applicant, this fact must be stated.

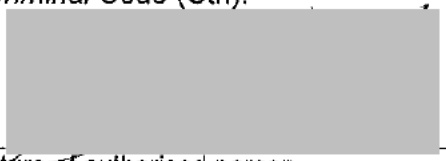
Declaration by Applicant(s)

Authorised persons of the applicant(s) must complete the following declaration. Where there are multiple applicants, a separate declaration should be completed by each applicant.

The undersigned declare that, to the best of their knowledge and belief, the information given in response to questions in this form is true, correct and complete, that complete copies of documents required by this form have been supplied, that all estimates are identified as such and are their best estimates of the underlying facts, and that all the opinions expressed are sincere.

The undersigned undertake(s) to advise the ACCC immediately of any material change in circumstances relating to the application.

The undersigned are aware of the provisions of sections 137.1 and 149.1 of the *Criminal Code* (Cth).



Signature of authorised person

Head of Alliances

Office held

(Print) Name of authorised person Christopher Fordyce

This 9th day of December 2019.

Note: If the Applicant is a corporation, state the position occupied in the corporation by the person signing. If signed by a solicitor on behalf of the Applicant, this fact must be stated.

Schedule 1 Confidential Joint Business Agreement between BA and QR

[CONFIDENTIAL TO BA AND QR]

Schedule 2 The B&B Routes

No.	Route	No.	Route	No.	Route
1	MEL-LON	36	ADL-BFS	71	CBR-TLS
2	PER-LON	37	JER-PER	72	BSL-PER
3	ADL-LON	38	PER-TLS	73	FAO-PER
4	PER-MAN	39	MRS-PER	74	IBZ-PER
5	MEL-MAN	40	BIO-MEL	75	ADL-PMI
6	ADL-MAN	41	CBR-EDI	76	ADL-BIO
7	CBR-LON	42	LUX-MEL	77	ADL-LUX
8	MEL-EDI	43	HAJ-PER	78	JER-CBR
9	PER-EDI	44	PER-STR	79	CBR-MRS
10	DUS-MEL	45	BLL-PER	80	ADL-LBA
11	GLA-PER	46	ADL-LYS	81	ADL-BSL
12	GLA-MEL	47	ADL-TLS	82	ADL-INV
13	NCL-PER	48	MEL-PMI	83	BSL-CBR
14	BFS-MEL	49	CBR-GLA	84	BIO-CBR
15	HAM-MEL	50	CBR-BFS	85	BLL-CBR
16	DUS-PER	51	BIO-PER	86	CBR-LBA
17	MEL-NCL	52	CBR-DUS	87	CBR-STR
18	HAM-PER	53	LBA-MEL	88	ABZ-CBR
19	ADL-GLA	54	CBR-HAM	89	CBR-HAJ
20	ABZ-PER	55	ABZ-ADL	90	ADL-FAO
21	LYS-MEL	56	ADL-JER	91	ADL-IBZ
22	BFS-PER	57	BSL-MEL	92	CBR-LUX
23	ADL-EDI	58	PER-PMI	93	CBR-FAO
24	ADL-DUS	59	INV-PER	94	CBR-PMI
25	ADL-HAM	60	ADL-MRS	95	CBR-INV
26	ADL-NCL	61	INV-MEL	96	CBR-IBZ
27	MEL-TLS	62	LBA-PER	97	BHX-PER
28	LYS-PER	63	ADL-HAJ	98	CWL-PER
29	MEL-STR	64	ADL-STR	99	BHX-MEL
30	CBR-MAN	65	ADL-BLL	100	CWL-MEL
31	MEL-MRS	66	LUX-PER	101	ADL-BHX
32	JER-MEL	67	CBR-LYS	102	ADL-CWL
33	BLL-MEL	68	IBZ-MEL	103	BHX-CBR
34	ABZ-MEL	69	FAO-MEL	104	CBR-CWL
35	HAJ-MEL	70	CBR-NCL		

Schedule 3 BA's Fact Sheet

BRITISH AIRWAYS FACTSHEET

British Airways, part of International Airlines Group, is one of the world's leading global premium airlines and the largest international carrier in the UK.

British Airways, part of International Airlines Group, is one of the world's leading global premium airlines and the largest international carrier in the UK.

FLIGHTS

The carrier offers the 145,000 customers that fly with it every day, quality, choice and convenience. It has its home base at London Heathrow, the world's busiest international airport, and flies to more than 200 destinations in 80 countries across the globe. British Airways flies from London's premium airports, Heathrow, Gatwick and London City, and from 16 UK airports in total. British Airways' destinations guide is here.

A British Airways aircraft takes off from somewhere in the world, every 90 seconds. British Airways has a fleet of more than 280 aircraft, including the A350 and 787. By 2020 it will have received 100 new aircraft in less than a decade. Find out more about the airline's aircraft here.

DINING

The airline carries up to 145,000 customers every day and 45 million customers a year and serves those customers 25 million cups of tea, 9.9 million bottles of wine and 1.25 million bottles of Champagne.

BENEFITS

The benefits of booking with British Airways include:

• A family of flexible fares, price points and cabins to suit customers' needs

• Complimentary food and drinks on all long-haul flights

• Free seat selection within 24 hours of departure

• No charge to pay for bookings by debit or credit card

• No charge to check-in

• Flights to primary airports, at the destinations customers want to travel to

• A generous free baggage allowance, or, on European routes and some international routes, customers can choose to book a hand baggage only fare

• Day trip return fares to popular European destinations

• A choice of cabins on all our flights (A business class cabin on every flight)

• Collecting Avios on every flight

LOYALTY SCHEME

British Airways' loyalty scheme, the British Airways Executive Club is industry leading, awarding members Avios on every flight, which can be spent on flights, upgrades, seat selection, car hire, hotel accommodation and excursions. Gold and Silver Executive Club members have access to British Airways global network of premium lounges (more than any other European airline), fast-track security and priority boarding.

PUNCTUALITY

British Airways has the best punctuality record on flights departing from London of all the large short-haul carriers in the UK. The airline knows how important punctuality is to customers, and is focused on driving further improvements through digital technology.

PEOPLE

British Airways employs the most experienced crews in the air and on the ground. It currently has approximately 45,000 employees, including 16,500 cabin crew and 3,900 pilots. Pilots and cabin crew have an average of 15 years' experience. The airline's 4,700 engineers have an average of 19 years' experience each.

British Airways also offers opportunities for graduates and has more than 145 places for apprentices every year. Find out more about a career with the airline here.

100 YEARS OF FLYING

British Airways celebrated its 100th anniversary on 25 August, 2019. The airline can trace its origins back to the birth of civil aviation. Since the world's first schedule air service on August 25, 1919, air travel has changed beyond all recognition.

The British Airways Heritage collection is an extensive document archive recording the formation, development and operations of British Airways and its predecessor companies as well as memorabilia and artefacts. More than 130 uniforms from the 1930s to the present day are preserved, as well as a large collection of aircraft models and pictures.

To explore British Airways' past, click here.

Schedule 4 QR's Fact Sheet

Fact Sheet

October 2019

qatarairways.com

oneworld

QATAR AIRWAYS القطرية

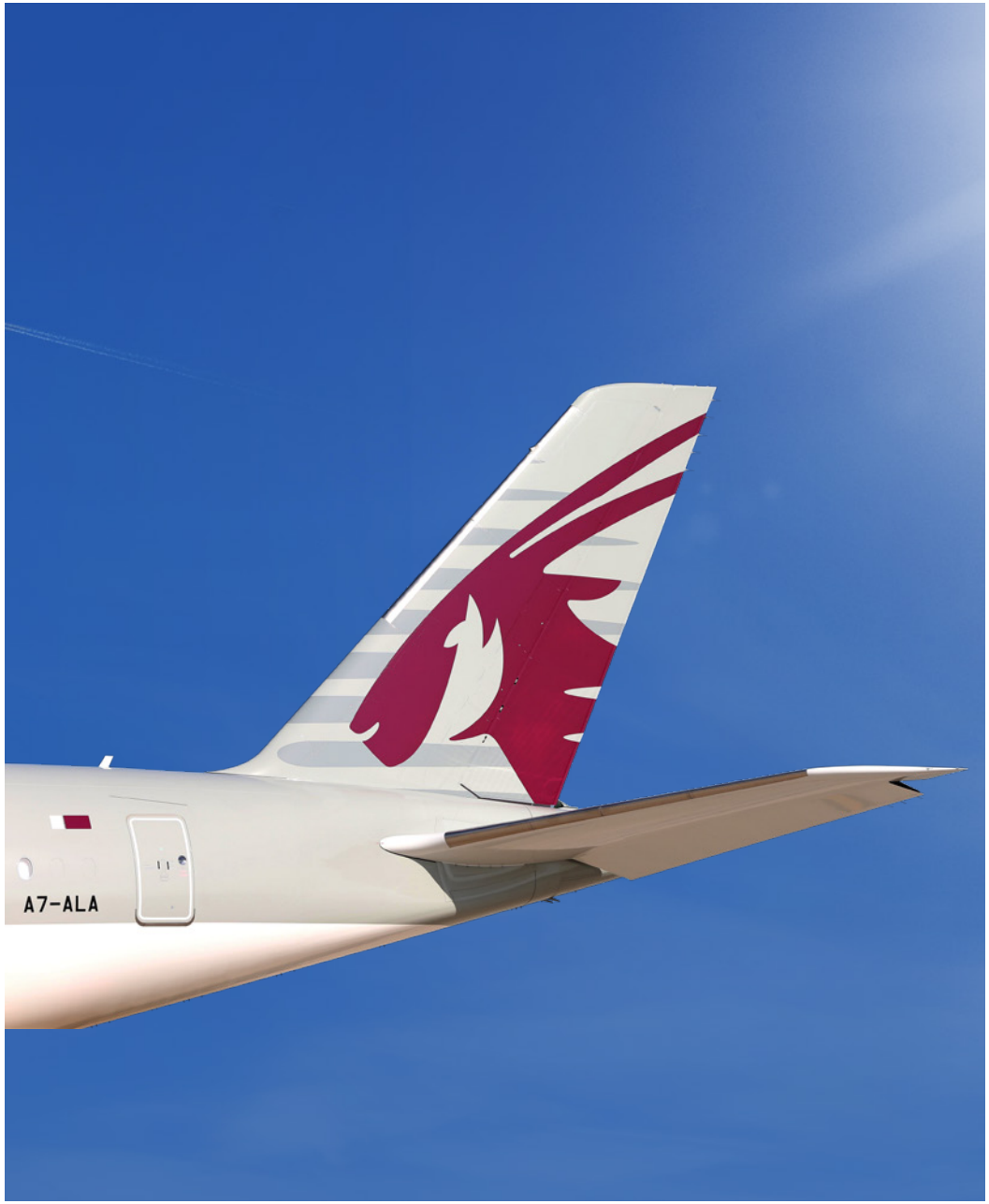
GOING PLACES TOGETHER

Qatar Airways is the national carrier of the State of Qatar. Undergoing rapid expansion, we are one of the fastest growing airlines operating one of the youngest fleets in the world.

Launched:	1997
Head office:	Qatar Airways Tower, P.O. Box 22550, Doha, Qatar
Reservations number:	+974 4022 6000
Website:	**qatarairways.com**
Group Chief Executive:	His Excellency Mr. Akbar Al Baker
Worldwide network:	More than 160 destinations

Expansion in 2018/2019

- Antalya
  Turkey
- Bodrum
  Turkey
- Canberra
  Australia
- Cardiff
  United Kingdom
- Da Nang
  Vietnam
- Davao
  Philippines
- Gaborone
  Botswana
- Gothenburg
  Sweden
- Isfahan
  Iran
- Izmir
  Turkey
- Langkawi
  Malaysia
- Lisbon
  Portugal
- London Gatwick
  United Kingdom
- Málaga
  Spain
- Mogadishu
  Somalia
- Mombasa
  Kenya
- Mykonos
  Greece
- Penang
  Malaysia
- Rabat
  Morocco
- Thessaloniki
  Greece
- Valletta
  Malta



Current Fleet (Passenger and Cargo): 227 aircraft

2	Airbus Long Range A319LRs	**30**	Boeing 787-8 Dreamliners
32	Airbus A320s	**9**	B777-200LRs
6	Airbus A321-200s	**48**	B777-300 ERs
7	Airbus A330-200s	**87**	Total Boeing passenger fleet
13	Airbus A330-300s		
37	Airbus A350-900s (4 leased LATAM aircraft)	**5**	Airbus A330F Freighters
9	Airbus A350-1000s	**17**	Boeing 777F Freighters
10	Airbus A380s	**2**	Boeing B747-8 Freighters
116	Total Airbus passenger fleet	**24**	Total Cargo fleet

Corporate Jet Subsidiary Qatar Executive: 24 aircraft

- **3** Bombardier Challenger 605s (x 1 Medevac configuration)
- **1** Bombardier Global XRS
- **2** Bombardier Global 5000s
- **2** Bombardier Global 5000s Vision
- **6** Gulfstream G650ER
- **4** Gulfstream G500

Qatar Executive also manage six aircraft on behalf of Amiri fleet.

On order: By 2022, QE will receive 18 additional aircraft.
Qatar Executive is the largest G650ER operator in the world.

Highlights of 2019

- Awarded World's Best Airline, World's Best Business Class, Best Airline in the Middle East, Best Business Class Seat in the 2019 World Airline Awards, managed by the international air transport rating organisation Skytrax
- Nine new destinations launched
- 13 new aircraft acquired
- National Airline Partner of the IAAF World Championships Doha 2019
- Qatar Executive breaks the world circumnavigation speed record with the Gulfstream G650ER

Highlights of 2018

- First airline in the world to operate the Airbus A350-1000
- 25 new aircraft acquired
- 12 new destinations launched
- Multi-year partnership agreement with FC Bayern München
- Multi-year partnership agreement with Italian football club A.S. Roma
- Awarded 'World's Best Business Class' in the 2018 World Airline Awards, managed by the international air transport rating organisation Skytrax

Highlights of 2017

- 11 new destinations launched
- 19 new aircraft acquired
- 57 awards received
- Launched QSuite at ITB Berlin in March 2017
- 20th year of operations
- Official Airline Partner of FIFA

Europe

Adana, Ankara, Athens, Amsterdam, Antalya, Barcelona, Belgrade, Berlin, Birmingham, Bodrum, Brussels, Bucharest, Budapest, Baku, Cardiff, Copenhagen, Dublin, Edinburgh, Frankfurt, Geneva, Gothenburg, Helsinki, Istanbul Airport, Istanbul Sabiha Gokcen, Izmir, Kyiv, Larnaca, Lisbon, London Gatwick, London Heathrow, Madrid, Málaga, Malta, Manchester, Milan, Moscow, Munich, Mykonos, Nice, Oslo, Paris, Pisa, Prague, Rome, Sarajevo, Skopje, Sofia, St. Petersburg, Stockholm, Tbilisi, Thessaloniki, Venice, Vienna, Warsaw, Yerevan, Zagreb and Zurich

Middle East and Africa

Algiers, Amman, Addis Ababa, Baghdad, Basra, Beirut, Cape Town, Casablanca, Djibouti, Durban, Dar es Salaam, Doha, Entebbe, Erbil, Isfahan, Johannesburg, Kigali, Kilimanjaro, Kuwait, Lagos, Maputo, Mashhad, Marrakech, Mogadishu, Mombasa, Muscat, Najaf, Nairobi, Rabat, Salalah, Shiraz, Seychelles, Sohar, Sulaymaniyah, Tehran, Tunis, Windhoek and Zanzibar

Asia Pacific

Adelaide, Auckland, Bali, Bangkok, Beijing, Canberra, Chengdu, Chiang Mai, Chongqing, Da Nang, Davao, Guangzhou, Langkawi, Hangzhou, Hanoi, Ho Chi Minh City, Hong Kong, Jakarta, Kuala Lumpur, Krabi, Manila, Melbourne, Perth, Penang, Phnom Penh, Phuket, Seoul, Shanghai, Singapore, Sydney, Tokyo Haneda, Tokyo Narita and Yangon

South Asia

Ahmedabad, Amritsar, Bengaluru, Chennai, Cochin, Colombo, Delhi, Dhaka, Faisalabad, Goa, Hyderabad, Islamabad, Karachi, Kathmandu, Kolkata, Kozhikode, Lahore, Mumbai, Multan, Nagpur, Peshawar, Sialkot and Thiruvananthapuram

South America

Buenos Aires and São Paulo

Indian Ocean

Maldives

North America

Atlanta, Boston, Chicago, Dallas/Fort Worth, Houston, Los Angeles, Miami, Montreal, New York, Philadelphia and Washington D.C

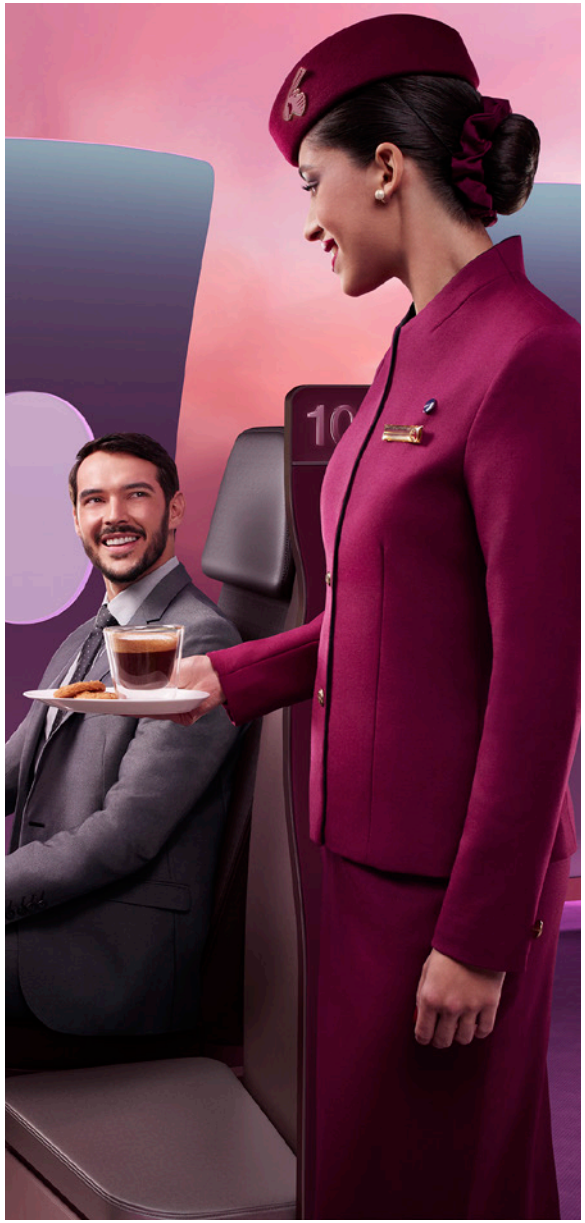
Cargo destinations

Over 60 dedicated freighter destinations within Qatar Airways' global operations, including those not served by scheduled passenger flights – Accra, Almaty, Basel, Guadalajara, Liège, Luxembourg, Macau, Mexico City, Panama City, Pittsburgh, Quito, Singapore, Stansted and Zaragoza

Qatar Airways Cargo is one of the leading air cargo carriers globally. The freighter fleet currently includes 17 Boeing 777Fs, five Airbus A330Fs and two Boeing 747-8Fs

Codeshare partners

Air Botswana, Air Italy, Asiana Airlines, Azerbaijan Airlines, Bangkok Airways, British Airways, Cathay Pacific, Comair, Finnair, GOL, Iberia, Japan Airlines, JetBlue, LATAM Brasil, Malaysia Airlines, Middle East Airlines, Oman Air, Royal Air Maroc, Royal Jordanian, S7 Airlines, SNCF, SriLankan Airlines, SUN-AIR of Scandinavia and Vueling



Privilege Club

Qatar Airways' Privilege Club loyalty programme has partnerships with international airlines, hotels, car rental companies, banks and other partners worldwide

oneworld airlines: American Airlines, British Airways, Cathay Pacific, Finnair, Iberia, Japan Airlines, LATAM Airlines, Malaysian Airlines, Qantas Airways, Royal Jordanian, S7 Airlines, SriLankan Airlines and another 22 affiliate carriers

Airlines: Air Maroc, Bangkok Airways, GOL, Middle East Airlines and Royal Air Maroc

Hotels: Conrad Hotels and Resorts, Doubletree by Hilton, Embassy Suites Hotels by Hilton, Fairmont Hotels & Resort, Four Points by Sheraton, Suites and Resorts, Hampton by Hilton, Hilton Garden Inn, Hilton Grand Vacations Company, Hilton Honors, Hilton Hotels and Resorts, Homewood Suits by Hilton, Hyatt Hotels Corporation, Langham Hospitality Group, Marriott Bonvoy, Millennium and Copthorne, Radisson Blu Hotels and Resorts, Raffles Hotels & Resorts, Rocketmiles, Rotana, Shangri-La Hotels and Resorts, Starwood Preferred Guest Program, Swissôtel Hotel & Resorts, Waldorf Astoria Hotels and Resorts, Minor Hotel Group (Anantara, AVANI and PER AQUUM), Kempinski Hotels, Kaligo, The Peninsula Hotels, Souq Waqif Boutique Hotels, Agoda, Accor, Booking.com and Trip.com

Car rentals: Sixt, Hertz, Avis, Europcar, Budget, Rentalcars, Salik and Blacklane

Cobranded bank partners: Qatar National Bank, Qatar Islamic Bank, Burgan Bank and Housing Bank Habib Bank Limited

Bank and credit cards: Ahli United Bank, Ahlibank Qatar, American Express, Al khaliji, Barwa Bank, Capital One, Cathay United Bank, Citibank, Commercial Bank Accolades, Doha Bank, Housing Bank Rewards, HSBC Greece and Sri Lanka,

International Bank of Qatar, Mastercard, Visa, Masraf Al Rayan, QNB Life Rewards, WanLi Tong, ICBC, The Group, Hana, JD Coin and Standard Chartered Bank

Travel services: Almotahajiba, Dary, Ooredoo Qatar, Ooredoo Kuwait, Ooredoo Oman, Air Miles, My Rewards Points, Qatar Airways Holidays, Travelling Connect, Famous Agents, ResPlus, Language Direct, Mileslife, Akruu, Qpost Connected, Qatar Duty Free, Qatar Airways Cargo, The Bicester Village Shopping Collection and Vodafone Qatar, Education City Golf Club

Number of employees

Qatar Airways Group employs more than 46,000 staff worldwide

Divisions

Dhiafatina Hotels, Oryx Galleria, Privilege Club, Qatar Aircraft Catering Company, Qatar Airways Holidays, Internal Media Services, Qatar Aviation Services, Qatar Distribution Company,
Qatar Duty Free Company and Qatar Executive

Contact us:

Qatar Airways Group Corporate Communications Department
P.O. Box 22550, Doha, Qatar.
Tel: +974 4022 2200; Fax: +974 4022 5350
qrmedia@qatarairways.com.qa

Schedule 5 Estimated shares on the Nine B&B Routes

Definitions

In this Schedule and in Schedule 6, the terms below have the following meanings:

- **Time Sensitive passengers**: passengers travelling in First or Business cabins. In reality not all passengers in these cabins will be time-sensitive (i.e. predominantly interested in reaching their destination in the shortest possible time and purchase tickets with a high level of flexibility and with fewer restrictions on changing their itineraries, often (but not exclusively) travelling for business).
- **Non-Time Sensitive passengers**: passengers travelling in Economy or Premium Economy cabins. In reality not all passengers in these cabins will be non-time sensitive (i.e. prepared to accept longer journey times, more price sensitive, often (but not exclusively) travelling for leisure).
- **Direct flight:** flights carrying a single flight number. Unlike a non-stop flight, direct flights involve one or more stopovers to refuel although but does not involve a change of aircraft.
- **Indirect flight:** flights involving one or more stopovers and involves a change of aircraft.
- **Non-stop flight**: Non-stop flights do not involve any stopovers.
- **Airlines:**
    - **CX:** Cathay Pacific
    - **QF:** Qantas
    - **MH:** Malaysia Airlines
    - **SQ:** Singapore Airlines
    - **EK:** Emirates
    - **EY:** Etihad Airways
    - **LH:** Deutsche Lufthansa
    - **CZ:** China Southern Airlines
    - **IB:** Iberia Airlines
    - **EI:** Aer Lingus Cargo
    - **AY:** Finnair
    - **KL:** KLM
    - **TG:** Thai Airways
    - **AF:** Air France
    - **VA:** Virgin Australia

- **VN:** Vietnam Airlines
- **GA:** Garuda Indonesia
- **BI:** Royal Brunei Airlines
- **PR:** Philippine Airlines
- **VS:** Virgin Atlantic
- **JL:** Japan Airlines

- **City codes:**
  - **ADL:** Adelaide
  - **LON:** London
  - **MEL:** Melbourne
  - **PER:** Perth
  - **MAN:** Manchester
  - **CBR:** Canberra
  - **EDI:** Edinburgh

Methodology for calculating the incremental increase in market share

The increment is the lower of the numbers for passengers and market share contributed by each of BA and QR. The 'Total BA+QR' rows in the tables below have been adopted for calculating the incremental increase in all of the tables within this Schedule. Please refer to **Schedule 6** for the complete data set for all airlines on the routes referred in this schedule.

1 ADL-LON

1.1 Direct

No airline carried time sensitive passengers or non-time sensitive passengers direct on the ADL-LON route in S17, W17, S18 or W18.

1.2 Indirect

(a) Time sensitive passengers

TIME SENSITIVE PASSENGERS – INDIRECT (ADL-LON)								
	Passengers				Market share			
Company	S17	W17	S18	W18	S17	W17	S18	W18
BA	161	71	104	41	3%	2%	2%	1%
QR	1,474	1,012	1,789	813	28%	27%	31%	27%
Total BA + QR	1,635	1,083	1,893	854	31%	29%	32%	28%
Increment	**161**	**71**	**104**	**41**	**3%**	**2%**	**2%**	**1%**

Therefore, the Proposed Conduct would result in an incremental increase in market share of approximately 1% - 3%.

(b) Non-time sensitive passengers

NON-TIME SENSITIVE PASSENGERS – INDIRECT (ADL-LON)								
	Passengers				Market share			
Company	S17	W17	S18	W18	S17	W17	S18	W18
BA	551	451	581	930	2%	2%	2%	6%
QR	8,412	7,186	9,723	4,937	30%	34%	33%	30%
Total BA + QR	8,963	7,637	10,304	5,867	32%	36%	35%	35%
Increment	**551**	**451**	**581**	**930**	**2%**	**2%**	**2%**	**6%**

Therefore, the Proposed Conduct would result in an incremental increase in market share of approximately 2% - 6%.

(c) All passengers

ALL PASSENGERS – INDIRECT (ADL-LON)								
	Passengers				Market share			
Company	S17	W17	S18	W18	S17	W17	S18	W18
BA	712	522	685	971	2%	2%	2%	5%
QR	9,886	8,198	11,512	5,750	30%	33%	33%	29%
Total BA + QR	10,598	8,720	12,197	6,721	32%	35%	35%	34%
Increment	**712**	**522**	**685**	**971**	**2%**	**2%**	**2%**	**5%**

Therefore, the Proposed Conduct would result in an incremental increase in market share of approximately 2% - 5%.

2 MEL-LON

2.1 Direct

No airline carried time sensitive passengers or non-time sensitive passengers direct on the MEL-LON route in S17, W17, S18 or W18.

2.2 Indirect

(a) Time sensitive passengers

TIME SENSITIVE PASSENGERS – INDIRECT (MEL-LON)								
	Passengers				Market share			
Company	S17	W17	S18	W18	S17	W17	S18	W18
BA	882	494	1,040	691	3%	2%	3%	4%
QR	1,908	1,528	1,708	1,727	6%	7%	6%	9%
Total BA + QR	2,790	2,022	2,748	2,418	9%	10%	9%	12%
Increment	**882**	**494**	**1,040**	**691**	**3%**	**2%**	**3%**	**4%**

Therefore, the Proposed Conduct would result in an incremental increase in market share of approximately 2% - 4%.

(b) Non-time sensitive passengers

NON-TIME SENSITIVE PASSENGERS – INDIRECT (MEL-LON)								
	Passengers				Market share			
Company	S17	W17	S18	W18	S17	W17	S18	W18
BA	2,081	1,669	2,728	3,685	1%	2%	2%	4%
QR	10,986	10,546	9,248	6,949	8%	11%	7%	8%
Total BA + QR	13,067	12,215	11,976	10,634	9%	12%	9%	12%
Increment	**2,081**	**1,669**	**2,728**	**3,685**	**1%**	**2%**	**2%**	**4%**

Therefore, the Proposed Conduct would result in an incremental increase in market share of approximately 1% - 4%.

(c) All passengers

ALL PASSENGERS – INDIRECT (MEL-LON)								
	Passengers				Market share			
Company	S17	W17	S18	W18	S17	W17	S18	W18
BA	2,963	2,163	3,768	4,376	2%	2%	2%	4%
QR	12,894	12,074	10,956	8,676	8%	10%	6%	8%
Total BA + QR	15,857	14,237	14,724	13,052	9%	12%	9%	12%
Increment	**2,963**	**2,163**	**3,768**	**4,376**	**2%**	**2%**	**2%**	**4%**

Therefore, the Proposed Conduct would result in an incremental increase in market share of approximately 2% - 4%.

3 PER-LON

3.1 Direct

BA and QR do not carry time sensitive passengers or non-time sensitive passengers direct on the PER-LON route.

3.2 Indirect

(a) Time sensitive passengers

TIME SENSITIVE PASSENGERS – INDIRECT (PER-LON)								
	Passengers				Market share			
Company	S17	W17	S18	W18	S17	W17	S18	W18
BA	246	139	179	124	2%	1%	1%	1%
QR	2,060	1,384	1,816	1,710	15%	12%	12%	15%
Total BA + QR	2,306	1,523	1,995	1,834	17%	14%	14%	16%
Increment	**246**	**139**	**179**	**124**	**2%**	**1%**	**1%**	**1%**

Therefore, the Proposed Conduct would result in an incremental increase in market share of approximately 1% - 2%.

(b) Non-time sensitive passengers

NON-TIME SENSITIVE PASSENGERS – INDIRECT (PER-LON)								
	Passengers				Market share			
Company	S17	W17	S18	W18	S17	W17	S18	W18
BA	1,433	1,020	784	1,923	2%	2%	1%	3%
QR	14,693	10,655	13,159	10,232	20%	17%	18%	18%
Total BA + QR	16,126	11,675	13,943	12,155	22%	19%	19%	22%
Increment	**1,433**	**1,020**	**784**	**1,923**	**2%**	**2%**	**1%**	**3%**

Therefore, the Proposed Conduct would result in an incremental increase in market share of approximately 1% - 3%.

(c) All passengers

ALL PASSENGERS – INDIRECT (PER-LON)								
	Passengers				Market share			
Company	S17	W17	S18	W18	S17	W17	S18	W18
BA	1,679	1,159	963	2,047	2%	2%	1%	3%
QR	16,753	12,039	14,975	11,942	19%	17%	17%	18%
Total BA + QR	18,432	13,198	15,938	13,989	21%	18%	18%	21%
Increment	**1,679**	**1,159**	**963**	**2,047**	**2%**	**2%**	**1%**	**3%**

Therefore, the Proposed Conduct would result in an incremental increase in market share of approximately 1% - 3%.

4 CBR-LON

4.1 Direct

BA and QR do not carry time sensitive passengers or non-time sensitive passengers direct on the CBR-LON route.

4.2 Indirect

(a) Time sensitive passengers

TIME SENSITIVE PASSENGERS – INDIRECT (CBR-LON)								
	Passengers				Market share			
Company	S17	W17	S18	W18	S17	W17	S18	W18
BA	392	134	289	100	16%	12%	10%	7%
QR	70	131	544	265	3%	12%	18%	19%
Total BA + QR	462	265	833	365	19%	24%	28%	26%
Increment	**70**	**131**	**289**	**100**	**3%**	**12%**	**10%**	**7%**

Therefore, the Proposed Conduct would result in an incremental increase in market share of approximately 3% - 12%.

(b) Non-time sensitive passengers

NON-TIME SENSITIVE PASSENGERS – INDIRECT (CBR-LON)								
	Passengers				Market share			
Company	S17	W17	S18	W18	S17	W17	S18	W18
BA	714	278	460	205	11%	8%	6%	6%
QR	215	478	1,962	813	3%	14%	25%	24%
Total BA + QR	929	756	2,422	1,018	14%	22%	31%	30%
Increment	**215**	**278**	**460**	**205**	**3%**	**8%**	**6%**	**6%**

Therefore, the Proposed Conduct would result in an incremental increase in market share of approximately 3% - 8%.

(c) All passengers

ALL PASSENGERS – INDIRECT (CBR-LON)								
	Passengers				Market share			
Company	S17	W17	S18	W18	S17	W17	S18	W18
BA	1,106	412	749	305	12%	9%	7%	6%
QR	285	609	2,506	1,078	3%	13%	23%	23%
Total BA + QR	1,391	1,021	3,255	1,383	15%	22%	31%	29%
Increment	**285**	**412**	**749**	**305**	**3%**	**9%**	**7%**	**6%**

Therefore, the Proposed Conduct would result in an incremental increase in market share of approximately 3% - 9%.

5 ADL-MAN

5.1 Direct

None of the airlines carried time sensitive passengers or non-time sensitive passengers direct on the ADL-MAN route in S17, W17, S18 or W18.

5.2 Indirect

(a) Time sensitive passengers

TIME SENSITIVE PASSENGERS – INDIRECT (ADL-MAN)								
	Passengers				Market share			
Company	S17	W17	S18	W18	S17	W17	S18	W18
BA	4	7	0	5	1%	1%	0%	1%
QR	238	224	310	193	33%	28%	34%	27%
Total BA + QR	242	231	310	198	34%	29%	34%	28%
Increment	**4**	**7**	**0**	**5**	**1%**	**1%**	**0%**	**1%**

Therefore, the Proposed Conduct would result in an incremental increase in market share of approximately 0% - 1%.

(b) Non-time sensitive passengers

NON-TIME SENSITIVE PASSENGERS – INDIRECT (ADL-MAN)								
	Passengers				Market share			
Company	S17	W17	S18	W18	S17	W17	S18	W18
BA	15	16	62	339	0%	0%	1%	7%
QR	2,162	2,201	2,180	1,788	38%	38%	38%	36%
Total BA + QR	2,177	2,217	2,242	2,127	38%	39%	39%	43%
Increment	**15**	**16**	**62**	**339**	**0%**	**0%**	**1%**	**7%**

Therefore, the Proposed Conduct would result in an incremental increase in market share of approximately 0% - 7%.

(c) All passengers

ALL PASSENGERS – INDIRECT (ADL-MAN)								
	Passengers				Market share			
Company	S17	W17	S18	W18	S17	W17	S18	W18
BA	19	23	62	344	0%	0%	1%	6%
QR	2,400	2,425	2,490	1,981	38%	37%	37%	35%
Total BA + QR	2,419	2,448	2,552	2,325	38%	38%	38%	41%
Increment	**19**	**23**	**62**	**344**	**0%**	**0%**	**1%**	**6%**

Therefore, the Proposed Conduct would result in an incremental increase in market share of approximately 0% - 6%.

6 MEL-EDI

6.1 Direct

None of the airlines carried time sensitive passengers or non-time sensitive passengers direct on the MEL-EDI route in S17, W17, S18 or W18.

6.2 Indirect

(a) Time sensitive passengers

TIME SENSITIVE PASSENGERS – INDIRECT (MEL-EDI)								
	Passengers				Market share			
Company	S17	W17	S18	W18	S17	W17	S18	W18
BA	31	8	39	7	3%	1%	3%	1%
QR	390	317	401	355	33%	43%	35%	48%
Total BA + QR	421	325	440	362	36%	44%	39%	49%
Increment	**31**	**8**	**39**	**7**	**3%**	**1%**	**3%**	**1%**

Therefore, the Proposed Conduct would result in an incremental increase in market share of approximately 1% - 3%.

(b) Non-time sensitive passengers

NON-TIME SENSITIVE PASSENGERS – INDIRECT (MEL-EDI)								
Company	Passengers				Market share			
	S17	W17	S18	W18	S17	W17	S18	W18
BA	62	45	145	293	1%	1%	2%	8%
QR	2,138	1,711	1,700	1,529	34%	41%	29%	39%
Total BA + QR	2,200	1,756	1,845	1,822	35%	42%	31%	47%
Increment	**62**	**45**	**145**	**293**	**1%**	**1%**	**2%**	**8%**

Therefore, the Proposed Conduct would result in an incremental increase in market share of approximately 1% - 8%.

(c) All passengers

ALL PASSENGERS – INDIRECT (MEL-EDI)								
Company	Passengers				Market share			
	S17	W17	S18	W18	S17	W17	S18	W18
BA	93	53	184	300	1%	1%	3%	6%
QR	2,528	2,028	2,101	1,884	34%	41%	30%	41%
Total BA + QR	2,621	2,081	2,285	2,184	35%	42%	32%	47%
Increment	**93**	**53**	**184**	**300**	**1%**	**1%**	**3%**	**6%**

Therefore, the Proposed Conduct would result in an incremental increase in market share of approximately 1% - 6%.

7 PER-EDI

7.1 Direct

No airlines carried time sensitive passengers or non-time sensitive passengers direct on the PER-EDI route in S17, W17, S18 or W18.

7.2 Indirect

(a) Time sensitive passengers

TIME SENSITIVE PASSENGERS – INDIRECT (PER-EDI)								
Company	Passengers				Market share			
	S17	W17	S18	W18	S17	W17	S18	W18
BA	3	2	7	1	0%	0%	1%	0%
QR	380	389	408	327	51%	62%	57%	62%
Total BA + QR	383	391	415	328	52%	63%	58%	62%
Increment	**3**	**2**	**7**	**1**	**0%**	**0%**	**1%**	**0%**

Therefore, the Proposed Conduct would result in an incremental increase in market share of approximately 0% - 1%.

(b) Non-time sensitive passengers

NON-TIME SENSITIVE PASSENGERS – INDIRECT (PER-EDI)								
Company	Passengers				Market share			
	S17	W17	S18	W18	S17	W17	S18	W18
BA	30	15	61	166	1%	0%	1%	4%
QR	2,861	2,266	2,791	2,467	52%	47%	49%	61%
Total BA + QR	2,891	2,281	2,852	2,633	52%	47%	50%	66%
Increment	**30**	**15**	**61**	**166**	**1%**	**0%**	**1%**	**4%**

Therefore, the Proposed Conduct would result in an incremental increase in market share of approximately 0% - 4%.

(c) All passengers

ALL PASSENGERS – INDIRECT (PER-EDI)								
Company	Passengers				Market share			
	S17	W17	S18	W18	S17	W17	S18	W18
BA	33	17	68	167	1%	0%	1%	4%
QR	3,241	2,655	3,199	2,794	52%	48%	50%	62%
Total BA + QR	3,274	2,672	3,267	2,961	52%	49%	51%	65%
Increment	**33**	**17**	**68**	**167**	**1%**	**0%**	**1%**	**4%**

Therefore, the Proposed Conduct would result in an incremental increase in market share of approximately 0% - 4%.

8 MEL-MAN

8.1 Direct

No airlines carried time sensitive passengers or non-time sensitive passengers direct on the MEL-MAN route in S17, W17, S18 or W18.

8.2 Indirect

(a) Time sensitive passengers

TIME SENSITIVE PASSENGERS – INDIRECT (MEL-MAN)								
Company	Passengers				Market share			
	S17	W17	S18	W18	S17	W17	S18	W18
BA	9	3	6	7	0%	0%	0%	0%
QR	345	314	261	282	11%	10%	8%	11%
Total BA + QR	354	317	267	289	12%	10%	8%	11%
Increment	**9**	**3**	**6**	**7**	**0%**	**0%**	**0%**	**0%**

Therefore, the Proposed Conduct would result in an incremental increase in market share of approximately 0%.

(b) Non-time sensitive passengers

NON-TIME SENSITIVE PASSENGERS – INDIRECT (MEL-MAN)								
	Passengers				Market share			
Company	S17	W17	S18	W18	S17	W17	S18	W18
BA	78	44	197	772	0%	0%	1%	5%
QR	2,218	3,127	1,582	2,503	13%	16%	9%	15%
Total BA + QR	2,296	3,171	1,779	3,275	13%	17%	10%	20%
Increment	**78**	**44**	**197**	**772**	**0%**	**0%**	**1%**	**5%**

Therefore, the Proposed Conduct would result in an incremental increase in market share of approximately 0% - 5%.

(c) All passengers

ALL PASSENGERS – INDIRECT (MEL-MAN)								
	Passengers				Market share			
Company	S17	W17	S18	W18	S17	W17	S18	W18
BA	87	47	203	779	0%	0%	1%	4%
QR	2,563	3,441	1,843	2,785	12%	15%	9%	14%
Total BA + QR	2,650	3,488	2,046	3,564	13%	16%	10%	18%
Increment	**87**	**47**	**203**	**779**	**0%**	**0%**	**1%**	**4%**

Therefore, the Proposed Conduct would result in an incremental increase in market share of approximately 0% - 4%.

9 PER-MAN

9.1 Direct

No airlines carried time sensitive passengers or non-time sensitive passengers direct on the PER-MAN route in S17, W17, S18 or W18.

9.2 Indirect

(a) Time sensitive passengers

TIME SENSITIVE PASSENGERS – INDIRECT (PER-MAN)								
	Passengers				Market share			
Company	S17	W17	S18	W18	S17	W17	S18	W18
BA	10	1	2	3	0%	0%	0%	0%
QR	511	451	432	510	20%	17%	18%	22%
Total BA + QR	521	452	434	513	21%	17%	18%	22%
Increment	**10**	**1**	**2**	**3**	**0%**	**0%**	**0%**	**0%**

Therefore, the Proposed Conduct would result in an incremental increase in market share of approximately 0%.

(b) Non-time sensitive passengers

NON-TIME SENSITIVE PASSENGERS – INDIRECT (PER-MAN)								
Company	Passengers				Market share			
	S17	W17	S18	W18	S17	W17	S18	W18
BA	53	49	193	1,088	0%	0%	1%	6%
QR	6,766	6,083	5,942	7,733	32%	26%	31%	40%
Total BA + QR	6,819	6,132	6,135	8,821	32%	26%	32%	46%
Increment	**53**	**49**	**193**	**1,088**	**0%**	**0%**	**1%**	**6%**

Therefore, the Proposed Conduct would result in an incremental increase in market share of approximately 0% - 6%.

(c) All passengers

ALL PASSENGERS – INDIRECT (PER-MAN)								
Company	Passengers				Market share			
	S17	W17	S18	W18	S17	W17	S18	W18
BA	63	50	195	1,091	0%	0%	1%	5%
QR	7,277	6,534	6,374	8,243	31%	25%	29%	38%
Total BA + QR	7,340	6,584	6,569	9,334	31%	25%	30%	43%
Increment	**63**	**50**	**195**	**1,091**	**0%**	**0%**	**1%**	**5%**

Therefore, the Proposed Conduct would result in an incremental increase in market share of approximately 0% - 5%.

Schedule 6 Complete data set for all airlines on the routes referred to in Schedule 5

TEMPLATE 1 - MIDT O&Ds

All carriers under 1% market share belonging to the same alliance can be grouped as "Others"

ADL-LON

Route	Routing	Alliance	Company	Time sensitive passengers							
				Passengers				Market share			
				S17	W17	S18	W18	S17	W17	S18	W18
ROUTE	Direct (non-stop)		BA								
			IB								
			EI								
		TOTAL BA/IB/EI		0	0	0	0	0%	0%	0%	0%
		TOTAL QR		0	0	0	0	0%	0%	0%	0%
		TOTAL BA/IB/EI/QR		**0**	**0**	**0**	**0**	**0%**	**0%**	**0%**	**0%**
		oneworld	Others								
		TOTAL oneworld		0	0	0	0	0%	0%	0%	0%
		SkyTeam	Others								
		TOTAL SkyTeam		0	0	0	0	0%	0%	0%	0%
		Star									
		Star	Others								
		TOTAL Star		0	0	0	0	0%	0%	0%	0%
		Other									
		Other	Others								
		TOTAL Other		0	0	0	0	0%	0%	0%	0%
	Indirect		BA	161	71	104	41	3%	2%	2%	1%
			IB								
			EI								
		TOTAL BA/IB/EI		161	71	104	41	3%	2%	2%	1%
		TOTAL QR		1,474	1,012	1,789	813	28%	27%	31%	27%
		TOTAL BA/IB/EI/QR		**1,635**	**1,083**	**1,893**	**854**	**31%**	**29%**	**32%**	**28%**
		oneworld	QR	1,474	1,012	1,789	813	28%	27%	31%	27%
		oneworld	QF	1,063	572	995	512	20%	15%	17%	17%
		oneworld	CX	357	375	312	239	7%	10%	5%	8%
		oneworld	MH	245	153	97	47	5%	4%	2%	2%
		oneworld	BA	161	71	104	41	3%	2%	2%	1%
		oneworld	Others	26	5	27	12	0%	0%	0%	0%
		TOTAL oneworld		3,326	2,188	3,324	1,664	63%	58%	57%	54%
		SkyTeam	Others	75	58	45	45	1%	2%	1%	1%
		TOTAL SkyTeam		75	58	45	45	1%	2%	1%	1%
		Star	SQ	451	243	536	196	9%	6%	9%	6%
		Star	Others	34	21	34	15	1%	1%	1%	0%
		TOTAL Star		485	264	570	211	9%	7%	10%	7%
		Other	EK	1,270	1,205	1,755	1,094	24%	32%	30%	36%
		Other	EY	83	52	97	35	2%	1%	2%	1%
		Other	Others	27	17	52	14	1%	0%	1%	0%
		TOTAL Other		1,380	1,274	1,904	1,143	26%	34%	33%	37%
Total direct				*0*	*0*	*0*	*0*	*0%*	*0%*	*0%*	*0%*
Total indirect				*5,266*	*3,784*	*5,843*	*3,063*	*100%*	*100%*	*100%*	*100%*
Total direct + indirect				*5,266*	*3,784*	*5,843*	*3,063*	*100%*	*100%*	*100%*	*100%*
Total BA/IB/EI/QR direct+indirect				*1,635*	*1,083*	*1,893*	*854*	*31%*	*29%*	*32%*	*28%*
Total oneworld direct+indirect				*3,326*	*2,188*	*3,324*	*1,664*	*63%*	*58%*	*57%*	*54%*

Route	Routing	Alliance	Company	Non-time sensitive passengers							
				Passengers				Market share			
				S17	W17	S18	W18	S17	W17	S18	W18
ROUTE	Direct (non-stop)		BA								
			IB								
			EI								
		TOTAL BA/IB/EI		0	0	0	0	0%	0%	0%	0%
		TOTAL QR		0	0	0	0	0%	0%	0%	0%
		TOTAL BA/IB/EI/QR		**0**	**0**	**0**	**0**	**0%**	**0%**	**0%**	**0%**
		oneworld									
		oneworld	Others								
		TOTAL oneworld		0	0	0	0	0%	0%	0%	0%
		SkyTeam									
		SkyTeam	Others								
		TOTAL SkyTeam		0	0	0	0	0%	0%	0%	0%
		Star									
		Star	Others								
		TOTAL Star		0	0	0	0	0%	0%	0%	0%
		Other									
		Other	Others								
		TOTAL Other		0	0	0	0	0%	0%	0%	0%
			BA	551	451	581	930	2%	2%	2%	6%
			IB								
			EI								
		TOTAL BA/IB/EI		551	451	581	930	2%	2%	2%	6%
		TOTAL QR		8,412	7,186	9,723	4,937	30%	34%	33%	30%
		TOTAL BA/IB/EI/QR		**8,963**	**7,637**	**10,304**	**5,867**	**32%**	**36%**	**35%**	**35%**
		oneworld	QR	8,412	7,186	9,723	4,937	30%	34%	33%	30%

	Indirect	oneworld	QF	2,412	1,745	2,610	1,541	9%	8%	9%	9%
		oneworld	CX	1,772	1,407	1,703	1,207	6%	7%	6%	7%
		oneworld	MH	1,263	667	1,082	496	5%	3%	4%	3%
		oneworld	BA	551	451	581	930	2%	2%	2%	6%
		oneworld	Others	49	19	17	3	0%	0%	0%	0%
		TOTAL oneworld		14,459	11,475	15,716	9,114	52%	55%	54%	55%
		SkyTeam	Others	577	218	247	282	2%	1%	1%	2%
		TOTAL SkyTeam		577	218	247	282	2%	1%	1%	2%
		Star	SQ	3,292	2,251	3,833	1,807	12%	11%	13%	11%
		Star	Others	139	101	93	48	1%	0%	0%	0%
		TOTAL Star		3,431	2,352	3,926	1,855	12%	11%	13%	11%
		Other	EK	7,949	6,116	7,989	4,765	28%	29%	27%	29%
		Other	EY	1,156	598	910	304	4%	3%	3%	2%
		Other	Others	387	171	507	207	1%	1%	2%	1%
		TOTAL Other		9,492	6,885	9,406	5,276	34%	33%	32%	32%
Total direct				*0*	*0*	*0*	*0*	*0%*	*0%*	*0%*	*0%*
Total indirect				*27,959*	*20,930*	*29,295*	*16,527*	*100%*	*100%*	*100%*	*100%*
Total direct + indirect				*27,959*	*20,930*	*29,295*	*16,527*	*100%*	*100%*	*100%*	*100%*
Total BA/IB/ EI/QR direct+indirect				*8,963*	*7,637*	*10,304*	*5,867*	*32%*	*36%*	*35%*	*35%*
Total oneworld direct+indirect				*14,459*	*11,475*	*15,716*	*9,114*	*52%*	*55%*	*54%*	*55%*

Route	Routing	Alliance	Company	All passengers							
				Passengers				Market share			
				S17	W17	S18	W18	S17	W17	S18	W18
ROUTE	Direct (non-stop)		BA								
			IB								
			EI								
		TOTAL BA/IB/EI		0	0	0	0	0%	0%	0%	0%
		TOTAL QR		0	0	0	0	0%	0%	0%	0%
		TOTAL BA/IB/EI/QR		**0**	**0**	**0**	**0**	**0%**	**0%**	**0%**	**0%**
		oneworld									
		oneworld	Others								
		TOTAL oneworld		0	0	0	0	0%	0%	0%	0%
		SkyTeam									
		SkyTeam	Others								
		TOTAL SkyTeam		0	0	0	0	0%	0%	0%	0%
		Star									
		Star	Others								
		TOTAL Star		0	0	0	0	0%	0%	0%	0%
		Other									
		Other	Others								
		TOTAL Other		0	0	0	0	0%	0%	0%	0%
	Indirect		BA	712	522	685	971	2%	2%	2%	5%
			IB								
			EI								
		TOTAL BA/IB/EI		712	522	685	971	2%	2%	2%	5%
		TOTAL QR		9,886	8,198	11,512	5,750	30%	33%	33%	29%
		TOTAL BA/IB/EI/QR		**10,598**	**8,720**	**12,197**	**6,721**	**32%**	**35%**	**35%**	**34%**
		oneworld	QR	9,886	8,198	11,512	5,750	30%	33%	33%	29%
		oneworld	QF	3,475	2,317	3,605	2,053	10%	9%	10%	10%
		oneworld	CX	2,129	1,782	2,015	1,446	6%	7%	6%	7%
		oneworld	MH	1,508	820	1,179	543	5%	3%	3%	3%
		oneworld	BA	712	522	685	971	2%	2%	2%	5%
		oneworld	Others	75	24	44	15	0%	0%	0%	0%
		TOTAL oneworld		17,785	13,663	19,040	10,778	54%	55%	54%	55%
		SkyTeam	Others	652	276	292	327	2%	1%	1%	2%
		TOTAL SkyTeam		652	276	292	327	2%	1%	1%	2%
		Star	SQ	3,743	2,494	4,369	2,003	11%	10%	12%	10%
		Star	Others	173	122	127	63	1%	0%	0%	0%
		TOTAL Star		3,916	2,616	4,496	2,066	12%	11%	13%	11%
		Other	EK	9,219	7,321	9,744	5,859	28%	30%	28%	30%
		Other	EY	1,239	650	1,007	339	4%	3%	3%	2%
		Other	Others	414	188	559	221	1%	1%	2%	1%
		TOTAL Other		10,872	8,159	11,310	6,419	33%	33%	32%	33%
Total direct				*0*	*0*	*0*	*0*	*0%*	*0%*	*0%*	*0%*
Total indirect				*33,225*	*24,714*	*35,138*	*19,590*	*100%*	*100%*	*100%*	*100%*
Total direct + indirect				*33,225*	*24,714*	*35,138*	*19,590*	*100%*	*100%*	*100%*	*100%*
Total BA/IB/EI/QR direct+indirect				*10,598*	*8,720*	*12,197*	*6,721*	*32%*	*35%*	*35%*	*34%*
Total oneworld direct+indirect				*17,785*	*13,663*	*19,040*	*10,778*	*54%*	*55%*	*54%*	*55%*

TEMPLATE 1 - MIDT O&Ds

All carriers under 1% market share belonging to the same alliance can be grouped as "Others"

MEL-LON

Route	Routing	Alliance	Company	Time sensitive passengers							
				Passengers				Market share			
				S17	W17	S18	W18	S17	W17	S18	W18
ROUTE	Direct (non-stop)		BA								
			IB								
			EI								
			TOTAL BA/IB/EI	0	0	0	0	0%	0%	0%	0%
			TOTAL QR	0	0	0	0	0%	0%	0%	0%
			TOTAL BA/IB/EI/QR	**0**	**0**	**0**	**0**	**0%**	**0%**	**0%**	**0%**
		oneworld									
		oneworld									
			TOTAL oneworld	0	0	0	0	0%	0%	0%	0%
		SkyTeam									
		SkyTeam	Others								
			TOTAL SkyTeam	0	0	0	0	0%	0%	0%	0%
		Star									
		Star	Others								
			TOTAL Star	0	0	0	0	0%	0%	0%	0%
		Other									
		Other	Others								
			TOTAL Other	0	0	0	0	0%	0%	0%	0%
	Indirect		BA	882	494	1,040	691	3%	2%	3%	4%
			IB								
			EI								
			TOTAL BA/IB/EI	882	494	1,040	691	3%	2%	3%	4%
			TOTAL QR	1,908	1,528	1,708	1,727	6%	7%	6%	9%
			TOTAL BA/IB/EI/QR	**2,790**	**2,022**	**2,748**	**2,418**	**9%**	**10%**	**9%**	**12%**
		oneworld	QF	7,219	5,556	6,696	4,199	24%	26%	22%	22%
		oneworld	QR	1,908	1,528	1,708	1,727	6%	7%	6%	9%
		oneworld	CX	2,058	2,222	2,079	1,471	7%	11%	7%	8%
		oneworld	MH	1,129	520	847	569	4%	2%	3%	3%
		oneworld	BA	882	494	1,040	691	3%	2%	3%	4%
		oneworld	AY	272	147	322	110	1%	1%	1%	1%
		oneworld	Others	73	84	294	81	0%	0%	1%	0%
			TOTAL oneworld	13,541	10,551	12,986	8,848	45%	50%	42%	45%
		SkyTeam	CZ	757	761	638	379	3%	4%	2%	2%
		SkyTeam	VN	408	103	286	51	1%	0%	1%	0%
		SkyTeam	GA	41	228	248	80	0%	1%	1%	0%
		SkyTeam	Others	142	135	157	111	1%	1%	0%	1%
			TOTAL SkyTeam	1,348	1,227	1,329	621	5%	6%	4%	3%
		Star	SQ	3,423	2,349	5,085	2,742	13%	11%	16%	14%
		Star	TG	1,359	706	1,291	329	5%	3%	4%	2%
		Star	Others	926	177	354	219	0%	0%	1%	1%
			TOTAL Star	5,708	3,232	6,730	3,290	19%	15%	22%	17%
		Other	EY	3,966	2,183	2,978	1,799	13%	10%	10%	9%
		Other	EK	3,102	2,667	3,704	2,763	10%	13%	12%	14%
		Other	BI	1,911	915	2,579	1,495	6%	4%	8%	8%
		Other	Others	278	276	739	647	1%	2%	2%	3%
			TOTAL Other	9,257	6,041	10,000	6,704	31%	29%	32%	34%
Total direct				*0*	*0*	*0*	*0*	*0%*	*0%*	*0%*	*0%*
Total indirect				*29,854*	*21,051*	*31,045*	*19,463*	*100%*	*100%*	*100%*	*100%*
Total direct + indirect				*29,854*	*21,051*	*31,045*	*19,463*	*100%*	*100%*	*100%*	*100%*
Total BA/IB/EI/QR direct+indirect				*2,790*	*2,022*	*2,748*	*2,418*	*9%*	*10%*	*9%*	*12%*
Total oneworld direct+indirect				*13,541*	*10,551*	*12,986*	*8,848*	*45%*	*50%*	*42%*	*45%*

Route	Routing	Alliance	Company	Non-time sensitive passengers							
				Passengers				Market share			
				S17	W17	S18	W18	S17	W17	S18	W18
	Direct (non-stop)		BA								
			IB								
			EI								
			TOTAL BA/IB/EI	0	0	0	0	0%	0%	0%	0%
			TOTAL QR	0	0	0	0	0%	0%	0%	0%
			TOTAL BA/IB/EI/QR	**0**	**0**	**0**	**0**	**0%**	**0%**	**0%**	**0%**
		oneworld	QF								
		oneworld	Others								
			TOTAL oneworld	0	0	0	0	0%	0%	0%	0%
		SkyTeam									
		SkyTeam	Others								
			TOTAL SkyTeam	0	0	0	0	0%	0%	0%	0%
		Star									
		Star	Others								
			TOTAL Star	0	0	0	0	0%	0%	0%	0%
		Other									
		Other	Others								
			TOTAL Other	0	0	0	0	0%	0%	0%	0%
			BA	2,081	1,669	2,728	3,685	1%	2%	2%	4%
			IB								

ROUTE											
			EI								
		TOTAL BA/IB/EI		2,081	1,669	2,728	3,685	1%	2%	2%	4%
		TOTAL QR		10,986	10,546	9,248	6,949	8%	11%	7%	8%
		TOTAL BA/IB/EI/QR		**13,067**	**12,215**	**11,976**	**10,634**	**9%**	**12%**	**9%**	**12%**
		oneworld	QF	22,632	17,460	17,318	9,108	16%	18%	12%	10%
		oneworld	QR	10,986	10,546	9,248	6,949	8%	11%	7%	8%
		oneworld	CX	9,258	6,136	11,076	6,927	7%	6%	8%	8%
		oneworld	MH	4,030	2,547	4,885	1,700	3%	3%	4%	2%
		oneworld	BA	2,081	1,669	2,728	3,685	1%	2%	2%	4%
		oneworld	Others	215	531	764	338	0%	1%	0%	1%
		TOTAL oneworld		49,202	38,889	46,019	28,707	35%	40%	33%	33%
		SkyTeam	CZ	4,648	3,597	2,433	2,187	3%	4%	2%	2%
		SkyTeam	Others	1,196	2,485	1,583	1,942	1%	2%	1%	3%
		TOTAL SkyTeam		5,844	6,082	4,016	4,129	4%	6%	3%	5%
		Star	SQ	15,345	7,856	16,522	10,364	11%	8%	12%	12%
		Star	TG	7,495	1,876	10,922	1,462	5%	2%	8%	2%
		Star	Others	2,677	1,680	1,540	1,286	2%	2%	1%	2%
		TOTAL Star		25,517	11,412	28,984	13,112	18%	12%	21%	15%
		Other	BI	23,331	11,110	21,709	17,527	17%	11%	16%	20%
		Other	EY	15,839	16,519	17,996	11,102	11%	17%	13%	13%
		Other	EK	16,730	11,171	14,427	10,016	12%	11%	10%	11%
		Other	VA	3,238	1,702	2,175	680	2%	2%	2%	1%
		Other	Others	1,203	1,531	3,911	3,025	1%	2%	3%	3%
		TOTAL Other		60,341	42,033	60,218	42,350	43%	43%	43%	48%
Total direct				*0*	*0*	*0*	*0*	*0%*	*0%*	*0%*	*0%*
Total indirect				*140,904*	*98,416*	*139,237*	*88,298*	*100%*	*100%*	*100%*	*100%*
Total direct + indirect				*140,904*	*98,416*	*139,237*	*88,298*	*100%*	*100%*	*100%*	*100%*
Total BA/IB/EI/QR direct+indirect				*13,067*	*12,215*	*11,976*	*10,634*	*9%*	*12%*	*9%*	*12%*
Total oneworld direct+indirect				*49,202*	*38,889*	*46,019*	*28,707*	*35%*	*40%*	*33%*	*33%*

Indirect

Route	Routing	Alliance	Company	All passengers							
				Passengers				Market share			
				S17	W17	S18	W18	S17	W17	S18	W18
ROUTE	Direct (non-stop)		BA								
			IB								
			EI								
		TOTAL BA/IB/EI		0	0	0	0	0%	0%	0%	0%
		TOTAL QR		0	0	0	0	0%	0%	0%	0%
		TOTAL BA/IB/EI/QR		**0**	**0**	**0**	**0**	**0%**	**0%**	**0%**	**0%**
		oneworld	QF								
		oneworld	Others								
		TOTAL oneworld		0	0	0	0	0%	0%	0%	0%
		SkyTeam									
		SkyTeam	Others								
		TOTAL SkyTeam		0	0	0	0	0%	0%	0%	0%
		Star									
		Star	Others								
		TOTAL Star		0	0	0	0	0%	0%	0%	0%
		Other									
		Other	Others								
		TOTAL Other		0	0	0	0	0%	0%	0%	0%
	Indirect		BA	2,963	2,163	3,768	4,376	2%	2%	2%	4%
			IB								
			EI								
		TOTAL BA/IB/EI		2,963	2,163	3,768	4,376	2%	2%	2%	4%
		TOTAL QR		12,894	12,074	10,956	8,676	8%	10%	6%	8%
		TOTAL BA/IB/EI/QR		**15,857**	**14,237**	**14,724**	**13,052**	**9%**	**12%**	**9%**	**12%**
		oneworld	QF	29,851	23,016	24,014	13,307	17%	19%	14%	12%
		oneworld	QR	12,894	12,074	10,956	8,676	8%	10%	6%	8%
		oneworld	CX	11,316	8,358	13,155	8,398	7%	7%	8%	8%
		oneworld	MH	5,159	3,067	5,732	2,269	3%	3%	3%	2%
		oneworld	BA	2,963	2,163	3,768	4,376	2%	2%	2%	4%
		oneworld	Others	560	762	1,380	529	1%	0%	1%	1%
		TOTAL oneworld		62,743	49,440	59,005	37,555	37%	41%	35%	35%
		SkyTeam	CZ	5,405	4,358	3,071	2,566	3%	4%	2%	2%
		SkyTeam	Others	1,787	2,951	2,274	2,184	1%	2%	1%	2%
		TOTAL SkyTeam		7,192	7,309	5,345	4,750	4%	6%	3%	4%
		Star	SQ	19,233	10,205	21,607	13,106	11%	9%	13%	12%
		Star	TG	8,975	2,582	12,213	1,791	5%	2%	7%	2%
		Star	Others	3,017	1,857	1,894	1,505	1%	1%	1%	1%
		TOTAL Star		31,225	14,644	35,714	16,402	18%	12%	21%	15%
		Other	BI	25,242	12,025	24,288	19,022	15%	10%	14%	18%
		Other	EY	20,696	13,354	17,405	11,815	12%	11%	10%	11%
		Other	EK	18,941	19,186	21,700	13,865	11%	16%	13%	13%
		Other	VA	3,371	1,820	2,294	711	2%	2%	1%	1%
		Other	Others	1,348	1,689	4,531	3,641	1%	1%	2%	3%
		TOTAL Other		69,598	48,074	70,218	49,054	41%	40%	41%	46%
Total direct				*0*	*0*	*0*	*0*	*0%*	*0%*	*0%*	*0%*
Total indirect				*170,758*	*119,467*	*170,282*	*107,761*	*100%*	*100%*	*100%*	*100%*
Total direct + indirect				*170,758*	*119,467*	*170,282*	*107,761*	*100%*	*100%*	*100%*	*100%*
Total BA/IB/EI/QR direct+indirect				*15,857*	*14,237*	*14,724*	*13,052*	*9%*	*12%*	*9%*	*12%*
Total oneworld direct+indirect				*62,743*	*49,440*	*59,005*	*37,555*	*37%*	*41%*	*35%*	*35%*

TEMPLATE 1 - MIDT O&Ds

All carriers under 1% market share belonging to the same alliance can be grouped as "Others"

LON-PER PER-LON

Route	Routing	Alliance	Company	Time sensitive passengers							
				Passengers				Market share			
				S17	W17	S18	W18	S17	W17	S18	W18
ROUTE	Direct (non-stop)		BA								
			IB								
			EI								
			TOTAL BA/IB/EI	0	0	0	0	0%	0%	0%	0%
			TOTAL QR	0	0	0	0	0%	0%	0%	0%
			TOTAL BA/IB/EI/QR	**0**	**0**	**0**	**0**	**0%**	**0%**	**0%**	**0%**
		oneworld	Others	1,427	1,332	3,801	3,555	10%	12%	26%	31%
			TOTAL oneworld	1,427	1,332	3,801	3,555	10%	12%	26%	31%
		SkyTeam									
		SkyTeam	Others								
			TOTAL SkyTeam	0	0	0	0	0%	0%	0%	0%
		Star									
		Star	Others								
			TOTAL Star	0	0	0	0	0%	0%	0%	0%
		Other									
		Other	Others								
			TOTAL Other	0	0	0	0	0%	0%	0%	0%
	Indirect		BA	246	139	179	124	2%	1%	1%	1%
			IB								
			EI								
			TOTAL BA/IB/EI	246	139	179	124	2%	1%	1%	1%
			TOTAL QR	2,060	1,384	1,816	1,710	15%	12%	12%	15%
			TOTAL BA/IB/EI/QR	**2,306**	**1,523**	**1,995**	**1,834**	**17%**	**14%**	**14%**	**16%**
		oneworld	QR	2,060	1,384	1,816	1,710	15%	12%	12%	15%
		oneworld	MH	808	359	288	277	6%	3%	2%	2%
		oneworld	CX	726	846	482	635	5%	8%	3%	6%
		oneworld	BA	246	139	179	124	2%	1%	1%	1%
		oneworld	Others	39	12	40	27	0%	0%	0%	0%
			TOTAL oneworld	3,879	2,740	2,805	2,773	28%	25%	19%	24%
		SkyTeam	Others	137	85	45	114	1%	1%	0%	1%
			TOTAL SkyTeam	137	85	45	114	1%	1%	0%	1%
		Star	SQ	2,569	1,437	2,576	1,352	19%	13%	18%	12%
		Star	TG	572	313	466	169	4%	3%	3%	1%
		Star	Others	72	14	49	50	1%	0%	0%	0%
			TOTAL Star	3,213	1,764	3,091	1,571	24%	16%	21%	14%
		Other	EK	3,633	4,094	3,669	3,337	27%	37%	25%	29%
		Other	EY	1,244	1,083	810	39	9%	10%	6%	0%
		Other	Others	120	65	355	124	1%	1%	2%	0%
			TOTAL Other	4,997	5,242	4,834	3,500	37%	47%	33%	30%
Total direct				*1,427*	*1,332*	*3,801*	*3,555*	*10%*	*12%*	*26%*	*31%*
Total indirect				*12,226*	*9,831*	*10,775*	*7,958*	*90%*	*88%*	*74%*	*69%*
Total direct + indirect				*13,653*	*11,163*	*14,576*	*11,513*	*100%*	*100%*	*100%*	*100%*
Total BA/IB/EI/QR direct+indirect				*2,306*	*1,523*	*1,995*	*1,834*	*17%*	*14%*	*14%*	*16%*
Total oneworld direct+indirect				*5,306*	*4,072*	*6,606*	*6,328*	*39%*	*36%*	*45%*	*55%*

Route	Routing	Alliance	Company	Non-time sensitive passengers							
				Passengers				Market share			
				S17	W17	S18	W18	S17	W17	S18	W18
ROUTE	Direct (non-stop)		BA								
			IB								
			EI								
			TOTAL BA/IB/EI	0	0	0	0	0%	0%	0%	0%
			TOTAL QR	0	0	0	0	0%	0%	0%	0%
			TOTAL BA/IB/EI/QR	**0**	**0**	**0**	**0**	**0%**	**0%**	**0%**	**0%**
		oneworld	Others	3,416	4,277	18,684	15,439	5%	7%	25%	28%
			TOTAL oneworld	3,416	4,277	18,684	15,439	5%	7%	25%	28%
		SkyTeam									
		SkyTeam	Others								
			TOTAL SkyTeam	0	0	0	0	0%	0%	0%	0%
		Star									
		Star	Others								
			TOTAL Star	0	0	0	0	0%	0%	0%	0%
		Other									
		Other	Others								
			TOTAL Other	0	0	0	0	0%	0%	0%	0%
			BA	1,433	1,020	784	1,923	2%	2%	1%	3%
			IB								
			EI								
			TOTAL BA/IB/EI	1,433	1,020	784	1,923	2%	2%	1%	3%
			TOTAL QR	14,693	10,655	13,159	10,232	20%	17%	18%	18%
			TOTAL BA/IB/EI/QR	**16,126**	**11,675**	**13,943**	**12,155**	**22%**	**19%**	**19%**	**22%**
		oneworld	QR	14,693	10,655	13,159	10,232	20%	17%	18%	18%
		oneworld	CX	4,708	4,141	3,119	3,112	6%	7%	4%	6%
		oneworld	MH	3,189	2,597	2,141	2,803	4%	4%	3%	5%
		oneworld	BA	1,433	1,020	784	1,923	2%	2%	1%	3%

	Indirect	oneworld	Others	64	31	21	29	0%	0%	0%	0%
		TOTAL oneworld		24,087	18,444	19,224	18,099	33%	30%	26%	33%
		SkyTeam	Others	826	860	342	722	1%	1%	0%	1%
		TOTAL SkyTeam		826	860	342	722	1%	1%	0%	1%
		Star	SQ	15,806	10,710	13,011	10,124	21%	17%	17%	18%
		Star	TG	4,294	2,176	3,455	1,846	6%	4%	5%	3%
		Star	Others	223	116	152	66	0%	0%	0%	0%
		TOTAL Star		20,323	13,002	16,618	12,036	27%	21%	22%	22%
		Other	EK	14,110	14,230	12,038	9,041	19%	23%	16%	16%
		Other	EY	9,402	9,096	6,566	85	13%	15%	9%	0%
		Other	Others	2,054	1,512	1,218	287	2%	2%	2%	1%
		TOTAL Other		25,566	24,838	19,822	9,413	34%	40%	27%	17%
Total direct				*3,416*	*4,277*	*18,684*	*15,439*	*5%*	*7%*	*25%*	*28%*
Total indirect				*70,802*	*57,144*	*56,006*	*40,270*	*95%*	*93%*	*75%*	*72%*
Total direct + indirect				*74,218*	*61,421*	*74,690*	*55,709*	*100%*	*100%*	*100%*	*100%*
Total BA/IB/ EI/QR direct+indirect				*16,126*	*11,675*	*13,943*	*12,155*	*22%*	*19%*	*19%*	*22%*
Total oneworld direct+indirect				*27,503*	*22,721*	*37,908*	*33,538*	*37%*	*37%*	*51%*	*60%*

Route	Routing	Alliance	Company	All passengers							
				Passengers				Market share			
				S17	W17	S18	W18	S17	W17	S18	W18
ROUTE	Direct (non-stop)		BA								
			IB								
			EI								
		TOTAL BA/IB/EI		0	0	0	0	0%	0%	0%	0%
		TOTAL QR		0	0	0	0	0%	0%	0%	0%
		TOTAL BA/IB/EI/QR		**0**	**0**	**0**	**0**	**0%**	**0%**	**0%**	**0%**
		oneworld	Others	4,843	5,609	22,485	18,994	6%	8%	25%	28%
		TOTAL oneworld		4,843	5,609	22,485	18,994	6%	8%	25%	28%
		SkyTeam									
		SkyTeam	Others								
		TOTAL SkyTeam		0	0	0	0	0%	0%	0%	0%
		Star									
		Star	Others								
		TOTAL Star		0	0	0	0	0%	0%	0%	0%
		Other									
		Other	Others								
		TOTAL Other		0	0	0	0	0%	0%	0%	0%
	Indirect		BA	1,679	1,159	963	2,047	2%	2%	1%	3%
			IB								
			EI								
		TOTAL BA/IB/EI		1,679	1,159	963	2,047	2%	2%	1%	3%
		TOTAL QR		16,753	12,039	14,975	11,942	19%	17%	17%	18%
		TOTAL BA/IB/EI/QR		**18,432**	**13,198**	**15,938**	**13,989**	**21%**	**18%**	**18%**	**21%**
		oneworld	QR	16,753	12,039	14,975	11,942	19%	17%	17%	18%
		oneworld	CX	5,434	4,987	3,601	3,747	6%	7%	4%	6%
		oneworld	MH	3,997	2,956	2,429	3,080	5%	4%	3%	5%
		oneworld	BA	1,679	1,159	963	2,047	2%	2%	1%	3%
		oneworld	Others	103	43	61	56	0%	0%	0%	0%
		TOTAL oneworld		27,966	21,184	22,029	20,872	32%	29%	25%	31%
		SkyTeam	Others	963	945	387	836	1%	1%	0%	1%
		TOTAL SkyTeam		963	945	387	836	1%	1%	0%	1%
		Star	SQ	18,375	12,147	15,587	11,476	21%	17%	17%	17%
		Star	TG	4,866	2,489	3,921	2,015	6%	3%	4%	3%
		Star	Others	295	130	201	116	0%	0%	0%	0%
		TOTAL Star		23,536	14,766	19,709	13,607	27%	20%	22%	20%
		Other	EK	17,743	18,324	15,707	12,378	20%	25%	18%	18%
		Other	EY	10,646	10,179	7,376	124	12%	14%	8%	0%
		Other	Others	2,174	1,577	1,573	411	3%	2%	2%	0%
		TOTAL Other		30,563	30,080	24,656	12,913	35%	41%	28%	19%
Total direct				*4,843*	*5,609*	*22,485*	*18,994*	*6%*	*8%*	*25%*	*28%*
Total indirect				*83,028*	*66,975*	*66,781*	*48,228*	*94%*	*92%*	*75%*	*72%*
Total direct + indirect				*87,871*	*72,584*	*89,266*	*67,222*	*100%*	*100%*	*100%*	*100%*
Total BA/IB/EI/QR direct+indirect				*18,432*	*13,198*	*15,938*	*13,989*	*21%*	*18%*	*18%*	*21%*
Total oneworld direct+indirect				*32,809*	*26,793*	*44,514*	*39,866*	*37%*	*37%*	*50%*	*59%*

TEMPLATE 1 - MIDT O&Ds

All carriers under 1% market share belonging to the same alliance can be grouped as "Others"

CBR-LON

Route	Routing	Alliance	Company	Time sensitive passengers							
				Passengers				Market share			
				S17	W17	S18	W18	S17	W17	S18	W18
ROUTE	Direct (non-stop)		BA								
			IB								
			EI								
			TOTAL BA/IB/EI	0	0	0	0	0%	0%	0%	0%
			TOTAL QR	0	0	0	0	0%	0%	0%	0%
			TOTAL BA/IB/EI/QR	**0**	**0**	**0**	**0**	**0%**	**0%**	**0%**	**0%**
		oneworld									
		oneworld	Others								
			TOTAL oneworld	0	0	0	0	0%	0%	0%	0%
		SkyTeam									
		SkyTeam	Others								
			TOTAL SkyTeam	0	0	0	0	0%	0%	0%	0%
		Star									
		Star	Others								
			TOTAL Star	0	0	0	0	0%	0%	0%	0%
		Other									
		Other	Others								
			TOTAL Other	0	0	0	0	0%	0%	0%	0%
	Indirect		BA	392	134	289	100	16%	12%	10%	7%
			IB								
			EI								
			TOTAL BA/IB/EI	392	134	289	100	16%	12%	10%	7%
			TOTAL QR	70	131	544	265	3%	12%	18%	19%
			TOTAL BA/IB/EI/QR	**462**	**265**	**833**	**365**	**19%**	**24%**	**28%**	**26%**
		oneworld	QF	662	359	735	328	28%	32%	25%	24%
		oneworld	BA	392	134	289	100	16%	12%	10%	7%
		oneworld	QR	70	131	544	265	3%	12%	18%	19%
		oneworld	AY	55	21	38	14	2%	2%	1%	1%
		oneworld	JL	43	4	21	5	2%	0%	1%	0%
		oneworld	CX	36	7	21	8	2%	1%	1%	1%
		oneworld	MH	24	12	34	1	0%	1%	1%	0%
		oneworld	Others	0	0	0	0	0%	0%	0%	0%
			TOTAL oneworld	1,282	668	1,682	721	53%	60%	57%	52%
		SkyTeam	Others	12	4	8	6	0%	0%	0%	0%
			TOTAL SkyTeam	12	4	8	6	0%	0%	0%	0%
		Star	SQ	642	256	842	422	26%	23%	29%	30%
		Star	Others	26	6	16	4	2%	1%	0%	1%
			TOTAL Star	668	262	858	426	28%	24%	29%	31%
		Other	EY	297	113	225	178	12%	10%	8%	13%
		Other	EK	134	57	158	58	6%	5%	5%	4%
		Other	Others	14	7	15	5	0%	1%	1%	0%
			TOTAL Other	445	177	398	241	18%	16%	14%	17%
Total direct				*0*	*0*	*0*	*0*	*0%*	*0%*	*0%*	*0%*
Total indirect				*2,407*	*1,111*	*2,946*	*1,394*	*100%*	*100%*	*100%*	*100%*
Total direct + indirect				*2,407*	*1,111*	*2,946*	*1,394*	*100%*	*100%*	*100%*	*100%*
Total BA/IB/EI/QR direct+indirect				*462*	*265*	*833*	*365*	*19%*	*24%*	*28%*	*26%*
Total oneworld direct+indirect				*1,282*	*668*	*1,682*	*721*	*53%*	*60%*	*57%*	*52%*

Route	Routing	Alliance	Company	Non-time sensitive passengers							
				Passengers				Market share			
				S17	W17	S18	W18	S17	W17	S18	W18
ROUTE	Direct (non-stop)		BA								
			IB								
			EI								
			TOTAL BA/IB/EI	0	0	0	0	0%	0%	0%	0%
			TOTAL QR	0	0	0	0	0%	0%	0%	0%
			TOTAL BA/IB/EI/QR	**0**	**0**	**0**	**0**	**0%**	**0%**	**0%**	**0%**
		oneworld									
		oneworld	Others								
			TOTAL oneworld	0	0	0	0	0%	0%	0%	0%
		SkyTeam									
		SkyTeam	Others								
			TOTAL SkyTeam	0	0	0	0	0%	0%	0%	0%
		Star									
		Star	Others								
			TOTAL Star	0	0	0	0	0%	0%	0%	0%
		Other									
		Other	Others								
			TOTAL Other	0	0	0	0	0%	0%	0%	0%
			BA	714	278	460	205	11%	8%	6%	6%
			IB								
			EI								
			TOTAL BA/IB/EI	714	278	460	205	11%	8%	6%	6%
			TOTAL QR	215	478	1,962	813	3%	14%	25%	24%
			TOTAL BA/IB/EI/QR	**929**	**756**	**2,422**	**1,018**	**14%**	**22%**	**31%**	**30%**

	Indirect	oneworld	QF	1,385	950	1,268	699	21%	27%	16%	21%
		oneworld	BA	714	278	460	205	11%	8%	6%	6%
		oneworld	QR	215	478	1,962	813	3%	14%	25%	24%
		oneworld	MH	34	7	59	21	1%	0%	1%	1%
		oneworld	CX	30	29	88	85	0%	1%	1%	3%
		oneworld	Others	29	12	17	6	0%	1%	0%	0%
		TOTAL oneworld		2,407	1,754	3,854	1,829	36%	51%	50%	54%
		SkyTeam	Others	4	4	4	5	0%	0%	0%	0%
		TOTAL SkyTeam		4	4	4	5	0%	0%	0%	0%
		Star	SQ	2,925	1,037	2,630	1,102	44%	30%	34%	33%
		Star	Others	50	21	16	10	1%	1%	0%	0%
		TOTAL Star		2,975	1,058	2,646	1,112	45%	31%	34%	33%
		Other	EY	590	279	591	189	9%	8%	8%	6%
		Other	EK	409	213	377	167	6%	6%	5%	5%
		Other	VA	182	136	208	43	3%	4%	3%	1%
		Other	Others	49	16	38	38	1%	1%	1%	1%
		TOTAL Other		1,230	644	1,214	437	19%	19%	16%	13%
Total direct				*0*	*0*	*0*	*0*	*0%*	*0%*	*0%*	*0%*
Total indirect				*6,616*	*3,460*	*7,718*	*3,383*	*100%*	*100%*	*100%*	*100%*
Total direct + indirect				*6,616*	*3,460*	*7,718*	*3,383*	*100%*	*100%*	*100%*	*100%*
Total BA/IB/ EI/QR direct+indirect				*929*	*756*	*2,422*	*1,018*	*14%*	*22%*	*31%*	*30%*
Total oneworld direct+indirect				*2,407*	*1,754*	*3,854*	*1,829*	*36%*	*51%*	*50%*	*54%*

Route	Routing	Alliance	Company	All passengers							
				Passengers				Market share			
				S17	W17	S18	W18	S17	W17	S18	W18
ROUTE	Direct (non-stop)		BA								
			IB								
			EI								
		TOTAL BA/IB/EI		0	0	0	0	0%	0%	0%	0%
		TOTAL QR		0	0	0	0	0%	0%	0%	0%
		TOTAL BA/IB/EI/QR		**0**	**0**	**0**	**0**	**0%**	**0%**	**0%**	**0%**
		oneworld									
		oneworld	Others								
		TOTAL oneworld		0	0	0	0	0%	0%	0%	0%
		SkyTeam									
		SkyTeam	Others								
		TOTAL SkyTeam		0	0	0	0	0%	0%	0%	0%
		Star									
		Star	Others								
		TOTAL Star		0	0	0	0	0%	0%	0%	0%
		Other									
		Other	Others								
		TOTAL Other		0	0	0	0	0%	0%	0%	0%
	Indirect		BA	1,106	412	749	305	12%	9%	7%	6%
			IB								
			EI								
		TOTAL BA/IB/EI		1,106	412	749	305	12%	9%	7%	6%
		TOTAL QR		285	609	2,506	1,078	3%	13%	23%	23%
		TOTAL BA/IB/EI/QR		**1,391**	**1,021**	**3,255**	**1,383**	**15%**	**22%**	**31%**	**29%**
		oneworld	QF	2,047	1,309	2,003	1,027	23%	29%	19%	21%
		oneworld	BA	1,106	412	749	305	12%	9%	7%	6%
		oneworld	QR	285	609	2,506	1,078	3%	13%	23%	23%
		oneworld	AY	74	26	50	16	1%	1%	0%	0%
		oneworld	CX	66	36	109	93	1%	1%	1%	2%
		oneworld	MH	58	19	93	22	1%	0%	1%	0%
		oneworld	Others	53	11	26	9	1%	0%	0%	0%
		TOTAL oneworld		3,689	2,422	5,536	2,550	41%	53%	52%	53%
		SkyTeam	Others	16	8	12	11	0%	0%	0%	0%
		TOTAL SkyTeam		16	8	12	11	0%	0%	0%	0%
		Star	SQ	3,567	1,293	3,472	1,524	40%	28%	33%	32%
		Star	Others	76	27	32	14	0%	1%	0%	0%
		TOTAL Star		3,643	1,320	3,504	1,538	40%	29%	33%	32%
		Other	EY	887	392	816	367	10%	9%	8%	8%
		Other	EK	543	270	535	225	6%	6%	5%	5%
		Other	VA	191	141	216	43	2%	3%	2%	1%
		Other	Others	54	18	45	43	1%	0%	0%	1%
		TOTAL Other		1,675	821	1,612	678	19%	18%	15%	14%
Total direct				*0*	*0*	*0*	*0*	*0%*	*0%*	*0%*	*0%*
Total indirect				*9,023*	*4,571*	*10,664*	*4,777*	*100%*	*100%*	*100%*	*100%*
Total direct + indirect				*9,023*	*4,571*	*10,664*	*4,777*	*100%*	*100%*	*100%*	*100%*
Total BA/IB/EI/QR direct+indirect				*1,391*	*1,021*	*3,255*	*1,383*	*15%*	*22%*	*31%*	*29%*
Total oneworld direct+indirect				*3,689*	*2,422*	*5,536*	*2,550*	*41%*	*53%*	*52%*	*53%*

TEMPLATE 1 - MIDT O&Ds

All carriers under 1% market share belonging to the same alliance can be grouped as "Others"

ADL-MAN

Route	Routing	Alliance	Company	Time sensitive passengers							
				Passengers				Market share			
				S17	W17	S18	W18	S17	W17	S18	W18
ROUTE	Direct (non-stop)		BA								
			IB								
			EI								
		TOTAL BA/IB/EI		0	0	0	0	0%	0%	0%	0%
		TOTAL QR		0	0	0	0	0%	0%	0%	0%
		TOTAL BA/IB/EI/QR		**0**	**0**	**0**	**0**	**0%**	**0%**	**0%**	**0%**
		oneworld									
		oneworld	Others								
		TOTAL oneworld		0	0	0	0	0%	0%	0%	0%
		SkyTeam									
		SkyTeam	Others								
		TOTAL SkyTeam		0	0	0	0	0%	0%	0%	0%
		Star									
		Star	Others								
		TOTAL Star		0	0	0	0	0%	0%	0%	0%
		Other									
		Other	Others								
		TOTAL Other		0	0	0	0	0%	0%	0%	0%
	Indirect		BA	4	7	0	5	1%	1%	0%	1%
			IB								
			EI								
		TOTAL BA/IB/EI		4	7	0	5	1%	1%	0%	1%
		TOTAL QR		238	224	310	193	33%	28%	34%	27%
		TOTAL BA/IB/EI/QR		**242**	**231**	**310**	**198**	**34%**	**29%**	**34%**	**28%**
		oneworld	QR	238	224	310	193	33%	28%	34%	27%
		oneworld	QF	94	92	138	77	13%	11%	15%	11%
		oneworld	CX	13	27	20	39	2%	3%	2%	6%
		oneworld	BA	4	7	0	5	1%	1%	0%	1%
		oneworld	Others	6	7	5	3	1%	1%	0%	1%
		TOTAL oneworld		355	357	473	317	50%	44%	51%	45%
		SkyTeam	Others	1	4	2	0	0%	0%	0%	0%
		TOTAL SkyTeam		1	4	2	0	0%	0%	0%	0%
		Star	SQ	27	29	60	18	4%	4%	7%	3%
		Star	Others	5	5	4	4	0%	0%	0%	0%
		TOTAL Star		32	34	64	22	4%	4%	7%	3%
		Other	EK	295	391	361	353	41%	49%	39%	50%
		Other	EY	23	17	11	11	3%	2%	1%	2%
		Other	Others	6	2	9	3	2%	0%	1%	0%
		TOTAL Other		324	410	381	367	46%	51%	41%	52%
Total direct				*0*	*0*	*0*	*0*	*0%*	*0%*	*0%*	*0%*
Total indirect				*712*	*805*	*920*	*706*	*100%*	*100%*	*100%*	*100%*
Total direct + indirect				*712*	*805*	*920*	*706*	*100%*	*100%*	*100%*	*100%*
Total BA/IB/EI/QR direct+indirect				*242*	*231*	*310*	*198*	*34%*	*29%*	*34%*	*28%*
Total oneworld direct+indirect				*355*	*357*	*473*	*317*	*50%*	*44%*	*51%*	*45%*

Route	Routing	Alliance	Company	Non-time sensitive passengers							
				Passengers				Market share			
				S17	W17	S18	W18	S17	W17	S18	W18
ROUTE	Direct (non-stop)		BA								
			IB								
			EI								
		TOTAL BA/IB/EI		0	0	0	0	0%	0%	0%	0%
		TOTAL QR		0	0	0	0	0%	0%	0%	0%
		TOTAL BA/IB/EI/QR		**0**	**0**	**0**	**0**	**0%**	**0%**	**0%**	**0%**
		oneworld									
		oneworld	Others								
		TOTAL oneworld		0	0	0	0	0%	0%	0%	0%
		SkyTeam									
		SkyTeam	Others								
		TOTAL SkyTeam		0	0	0	0	0%	0%	0%	0%
		Star									
		Star	Others								
		TOTAL Star		0	0	0	0	0%	0%	0%	0%
		Other									
		Other	Others								
		TOTAL Other		0	0	0	0	0%	0%	0%	0%
			BA	15	16	62	339	0%	0%	1%	7%
			IB								

			EI								
		TOTAL BA/IB/EI		15	16	62	339	0%	0%	1%	7%
		TOTAL QR		2,162	2,201	2,180	1,788	38%	38%	38%	36%
		TOTAL BA/IB/EI/QR		**2,177**	**2,217**	**2,242**	**2,127**	**38%**	**39%**	**39%**	**43%**
		oneworld	QR	2,162	2,201	2,180	1,788	38%	38%	38%	36%
		oneworld	QF	583	735	570	430	10%	13%	10%	9%
		oneworld	CX	114	118	112	192	2%	2%	2%	4%
		oneworld	BA	15	16	62	339	0%	0%	1%	7%
	Indirect	oneworld	Others	19	12	16	8	0%	0%	1%	0%
		TOTAL oneworld		2,893	3,082	2,940	2,757	51%	54%	51%	56%
		SkyTeam	Others	17	8	4	7	0%	0%	0%	0%
		TOTAL SkyTeam		17	8	4	7	0%	0%	0%	0%
		Star	SQ	308	207	288	227	5%	4%	5%	5%
		Star	Others	37	18	28	11	1%	0%	0%	0%
		TOTAL Star		345	225	316	238	6%	4%	5%	5%
		Other	EK	2,125	2,220	2,095	1,738	38%	39%	36%	35%
		Other	EY	226	158	369	161	4%	3%	6%	3%
		Other	VA	50	21	65	28	1%	0%	1%	1%
		Other	Others	5	4	23	6	1%	0%	0%	0%
		TOTAL Other		2,406	2,403	2,552	1,933	43%	42%	44%	39%
Total direct				*0*	*0*	*0*	*0*	*0%*	*0%*	*0%*	*0%*
Total indirect				*5,661*	*5,718*	*5,812*	*4,935*	*100%*	*100%*	*100%*	*100%*
Total direct + indirect				*5,661*	*5,718*	*5,812*	*4,935*	*100%*	*100%*	*100%*	*100%*
Total BA/IB/EI/QR direct+indirect				*2,177*	*2,217*	*2,242*	*2,127*	*38%*	*39%*	*39%*	*43%*
Total oneworld direct+indirect				*2,893*	*3,082*	*2,940*	*2,757*	*51%*	*54%*	*51%*	*56%*

Route	Routing	Alliance	Company	All passengers							
				Passengers				Market share			
				S17	W17	S18	W18	S17	W17	S18	W18
ROUTE	Direct (non-stop)		BA								
			IB								
			EI								
		TOTAL BA/IB/EI		0	0	0	0	0%	0%	0%	0%
		TOTAL QR		0	0	0	0	0%	0%	0%	0%
		TOTAL BA/IB/EI/QR		**0**	**0**	**0**	**0**	**0%**	**0%**	**0%**	**0%**
		oneworld									
		oneworld	Others								
		TOTAL oneworld		0	0	0	0	0%	0%	0%	0%
		SkyTeam									
		SkyTeam	Others								
		TOTAL SkyTeam		0	0	0	0	0%	0%	0%	0%
		Star									
		Star	Others								
		TOTAL Star		0	0	0	0	0%	0%	0%	0%
		Other									
		Other	Others								
		TOTAL Other		0	0	0	0	0%	0%	0%	0%
	Indirect		BA	19	23	62	344	0%	0%	1%	6%
			IB								
			EI								
		TOTAL BA/IB/EI		19	23	62	344	0%	0%	1%	6%
		TOTAL QR		2,400	2,425	2,490	1,981	38%	37%	37%	35%
		TOTAL BA/IB/EI/QR		**2,419**	**2,448**	**2,552**	**2,325**	**38%**	**38%**	**38%**	**41%**
		oneworld	QR	2,400	2,425	2,490	1,981	38%	37%	37%	35%
		oneworld	QF	677	827	708	507	11%	13%	11%	9%
		oneworld	CX	127	145	132	231	2%	2%	2%	4%
		oneworld	BA	19	23	62	344	0%	0%	1%	6%
		oneworld	Others	25	19	21	11	0%	1%	1%	0%
		TOTAL oneworld		3,248	3,439	3,413	3,074	51%	53%	51%	54%
		SkyTeam	Others	18	12	6	7	0%	0%	0%	0%
		TOTAL SkyTeam		18	12	6	7	0%	0%	0%	0%
		Star	SQ	335	236	348	245	6%	4%	5%	4%
		Star	Others	42	23	32	15	0%	0%	1%	1%
		TOTAL Star		377	259	380	260	6%	4%	6%	5%
		Other	EK	2,420	2,611	2,456	2,091	38%	40%	36%	37%
		Other	EY	249	175	380	172	4%	3%	6%	3%
		Other	VA	56	23	68	29	1%	0%	1%	1%
		Other	Others	5	4	29	8	0%	0%	0%	0%
		TOTAL Other		2,730	2,813	2,933	2,300	43%	43%	44%	41%
Total direct				*0*	*0*	*0*	*0*	*0%*	*0%*	*0%*	*0%*
Total indirect				*6,373*	*6,523*	*6,732*	*5,641*	*100%*	*100%*	*100%*	*100%*
Total direct + indirect				*6,373*	*6,523*	*6,732*	*5,641*	*100%*	*100%*	*100%*	*100%*
Total BA/IB/EI/QR direct+indirect				*2,419*	*2,448*	*2,552*	*2,325*	*38%*	*38%*	*38%*	*41%*
Total oneworld direct+indirect				*3,248*	*3,439*	*3,413*	*3,074*	*51%*	*53%*	*51%*	*54%*

TEMPLATE 1 - MIDT O&Ds

All carriers under 1% market share belonging to the same alliance can be grouped as "Others"

MEL-EDI

Route	Routing	Alliance	Company	Time sensitive passengers							
				Passengers				Market share			
				S17	W17	S18	W18	S17	W17	S18	W18
ROUTE	Direct (non-stop)		BA								
			IB								
			EI								
			TOTAL BA/IB/EI	0	0	0	0	0%	0%	0%	0%
			TOTAL QR								
			TOTAL BA/IB/EI/QR	**0**	**0**	**0**	**0**	**0%**	**0%**	**0%**	**0%**
		oneworld									
		oneworld									
		oneworld									
		oneworld									
		oneworld	Others								
			TOTAL oneworld	0	0	0	0	0%	0%	0%	0%
		SkyTeam									
		SkyTeam	Others								
			TOTAL SkyTeam	0	0	0	0	0%	0%	0%	0%
		Star									
		Star	Others								
			TOTAL Star	0	0	0	0	0%	0%	0%	0%
		Other									
		Other	Others								
			TOTAL Other	0	0	0	0	0%	0%	0%	0%
	Indirect		BA	31	8	39	7	3%	1%	3%	1%
			IB								
			EI								
			TOTAL BA/IB/EI	31	8	39	7	3%	1%	3%	1%
			TOTAL QR	390	317	401	355	33%	43%	35%	48%
			TOTAL BA/IB/EI/QR	**421**	**325**	**440**	**362**	**36%**	**44%**	**39%**	**49%**
		oneworld	QR	390	317	401	355	33%	43%	35%	48%
		oneworld	QF	85	41	95	66	7%	6%	8%	9%
		oneworld	BA	31	8	39	7	3%	1%	3%	1%
		oneworld	AY	16		33	9	1%	0%	3%	1%
		oneworld	CX	3	27	14	22	0%	4%	1%	3%
		oneworld	Others	1	2	24	7	0%	0%	2%	1%
			TOTAL oneworld	526	395	606	466	45%	54%	54%	64%
		SkyTeam	CZ	25	8	20	6	2%	1%	2%	1%
		SkyTeam	KL	23	6	8	22	2%	1%	1%	3%
		SkyTeam	Others	12	4	6	5	1%	1%	1%	1%
			TOTAL SkyTeam	60	18	34	33	5%	2%	3%	5%
		Star	SQ	22	9	24	5	2%	1%	2%	1%
		Star	TG	13	0	7		1%	0%	1%	0%
		Star	LH	15	0	23	10	1%	0%	2%	1%
		Star	Others	12	1	10	2	1%	0%	1%	0%
			TOTAL Star	62	10	64	17	5%	1%	6%	2%
		Other	EY	478	297	366	25	41%	41%	32%	3%
		Other	EK	9	7	39	189	1%	1%	3%	26%
		Other	Others	30	4	22	2	3%	1%	2%	0%
			TOTAL Other	517	308	427	216	44%	42%	38%	30%
Total direct				*0*	*0*	*0*	*0*	*0%*	*0%*	*0%*	*0%*
Total indirect				*1,165*	*731*	*1,131*	*732*	*100%*	*100%*	*100%*	*100%*
Total direct + indirect				*1,165*	*731*	*1,131*	*732*	*100%*	*100%*	*100%*	*100%*
Total BA/IB/EI/QR direct+indirect				*421*	*325*	*440*	*362*	*36%*	*44%*	*39%*	*49%*
Total oneworld direct+indirect				*526*	*395*	*606*	*466*	*45%*	*54%*	*54%*	*64%*

Route	Routing	Alliance	Company	Non-time sensitive passengers							
				Passengers				Market share			
				S17	W17	S18	W18	S17	W17	S18	W18
	Direct (non-stop)		BA								
			IB								
			EI								
			TOTAL BA/IB/EI	0	0	0	0	0%	0%	0%	0%
			TOTAL QR	0	0	0	0	0%	0%	0%	0%
			TOTAL BA/IB/EI/QR	**0**	**0**	**0**	**0**	**0%**	**0%**	**0%**	**0%**
		oneworld									
		oneworld	Others								
			TOTAL oneworld	0	0	0	0	0%	0%	0%	0%
		SkyTeam									
		SkyTeam	Others								
			TOTAL SkyTeam	0	0	0	0	0%	0%	0%	0%
		Star									
		Star	Others								
			TOTAL Star	0	0	0	0	0%	0%	0%	0%
		Other									
		Other	Others								
			TOTAL Other	0	0	0	0	0%	0%	0%	0%
			BA	62	45	145	293	1%	1%	2%	8%

ROUTE			IB								
			EI								
		TOTAL BA/IB/EI		62	45	145	293	1%	1%	2%	8%
		TOTAL QR		2,138	1,711	1,700	1,529	34%	41%	29%	39%
		TOTAL BA/IB/EI/QR		**2,200**	**1,756**	**1,845**	**1,822**	**35%**	**42%**	**31%**	**47%**
		oneworld	QR	2,138	1,711	1,700	1,529	34%	41%	29%	39%
		oneworld	BA	62	45	145	293	1%	1%	2%	8%
		oneworld	QF	230	163	191	238	4%	4%	3%	6%
		oneworld	Others	114	41	137	56	2%	1%	2%	1%
		TOTAL oneworld		2,544	1,960	2,173	2,116	41%	47%	37%	54%
		SkyTeam	CZ	89	91	92	119	1%	2%	2%	3%
		SkyTeam	AF	15	57	14	47	0%	1%	0%	1%
		SkyTeam	KL	48	94	19	32	1%	2%	0%	1%
		SkyTeam	Others	18	0	1	0	0%	0%	0%	0%
		TOTAL SkyTeam		170	242	126	198	3%	6%	2%	5%
		Star	SQ	94	48	120	217	1%	1%	2%	6%
		Star	LH	84	13	82	27	1%	0%	1%	1%
		Star	Others	18	7	14	9	0%	0%	0%	0%
		TOTAL Star		196	68	216	253	3%	2%	4%	6%
		Other	EY	3,015	1,673	2,797	224	48%	40%	47%	6%
		Other	EK	46	42	243	1,026	1%	1%	4%	26%
		Other	VA	294	118	289		5%	3%	5%	0%
		Other	Others	11	69	67	81	0%	2%	1%	2%
		TOTAL Other		3,366	1,902	3,396	1,331	54%	46%	57%	34%
Total direct				*0*	*0*	*0*	*0*	*0%*	*0%*	*0%*	*0%*
Total indirect				*6,276*	*4,172*	*5,911*	*3,898*	*100%*	*100%*	*100%*	*100%*
Total direct + indirect				*6,276*	*4,172*	*5,911*	*3,898*	*100%*	*100%*	*100%*	*100%*
Total BA/IB/EI/QR direct+indirect				*2,200*	*1,756*	*1,845*	*1,822*	*35%*	*42%*	*31%*	*47%*
Total oneworld direct+indirect				*2,544*	*1,960*	*2,173*	*2,116*	*41%*	*47%*	*37%*	*54%*

Indirect

Route	Routing	Alliance	Company	All passengers							
				Passengers				Market share			
				S17	W17	S18	W18	S17	W17	S18	W18
ROUTE	Direct (non-stop)		BA								
			IB								
			EI								
		TOTAL BA/IB/EI		0	0	0	0	0%	0%	0%	0%
		TOTAL QR		0	0	0	0	0%	0%	0%	0%
		TOTAL BA/IB/EI/QR		**0**	**0**	**0**	**0**	**0%**	**0%**	**0%**	**0%**
		oneworld									
		oneworld	Others								
		TOTAL oneworld		0	0	0	0	0%	0%	0%	0%
		SkyTeam									
		SkyTeam	Others								
		TOTAL SkyTeam		0	0	0	0	0%	0%	0%	0%
		Star									
		Star	Others								
		TOTAL Star		0	0	0	0	0%	0%	0%	0%
		Other									
		Other	Others								
		TOTAL Other		0	0	0	0	0%	0%	0%	0%
	Indirect		BA	93	53	184	300	1%	1%	3%	6%
			IB								
			EI								
		TOTAL BA/IB/EI		93	53	184	300	1%	1%	3%	6%
		TOTAL QR		2,528	2,028	2,101	1,884	34%	41%	30%	41%
		TOTAL BA/IB/EI/QR		**2,621**	**2,081**	**2,285**	**2,184**	**35%**	**42%**	**32%**	**47%**
		oneworld	QR	2,528	2,028	2,101	1,884	34%	41%	30%	41%
		oneworld	QF	315	204	286	304	4%	4%	4%	7%
		oneworld	BA	93	53	184	300	1%	1%	3%	6%
		oneworld	CX	64	49	79	58	1%	1%	1%	1%
		oneworld	Others	70	21	129	36	1%	0%	2%	1%
		TOTAL oneworld		3,070	2,355	2,779	2,582	41%	48%	39%	56%
		SkyTeam	CZ	114	99	112	125	1%	2%	2%	3%
		SkyTeam	KL	71	100	27	54	1%	2%	0%	1%
		SkyTeam	Others	45	61	21	52	1%	1%	0%	1%
		TOTAL SkyTeam		230	260	160	231	3%	5%	2%	5%
		Star	SQ	116	57	144	222	2%	1%	2%	5%
		Star	LH	99	13	105	37	1%	0%	1%	1%
		Star	Others	43	8	31	11	1%	0%	0%	0%
		TOTAL Star		258	78	280	270	3%	2%	4%	6%
		Other	EY	3,493	1,970	3,163	249	47%	40%	45%	5%
		Other	EK	55	49	282	1,215	1%	1%	4%	26%
		Other	VA	314	122	294		4%	2%	4%	0%
		Other	Others	21	69	84	83	0%	1%	1%	2%
		TOTAL Other		3,883	2,210	3,823	1,547	52%	45%	54%	33%
Total direct				*0*	*0*	*0*	*0*	*0%*	*0%*	*0%*	*0%*
Total indirect				*7,441*	*4,903*	*7,042*	*4,630*	*100%*	*100%*	*100%*	*100%*
Total direct + indirect				*7,441*	*4,903*	*7,042*	*4,630*	*100%*	*100%*	*100%*	*100%*
Total BA/IB/EI/QR direct+indirect				*2,621*	*2,081*	*2,285*	*2,184*	*35%*	*42%*	*32%*	*47%*
Total oneworld direct+indirect				*3,070*	*2,355*	*2,779*	*2,582*	*41%*	*48%*	*39%*	*56%*

TEMPLATE 1 - MIDT O&Ds

All carriers under 1% market share belonging to the same alliance can be grouped as "Others"

PER-EDI

Route	Routing	Alliance	Company	Time sensitive passengers							
				Passengers				Market share			
				S17	W17	S18	W18	S17	W17	S18	W18
ROUTE	Direct (non-stop)		BA								
			IB								
			EI								
			TOTAL BA/IB/EI	0	0	0	0	0%	0%	0%	0%
			TOTAL QR	0	0	0	0	0%	0%	0%	0%
			TOTAL BA/IB/EI/QR	**0**	**0**	**0**	**0**	**0%**	**0%**	**0%**	**0%**
		oneworld									
		oneworld	Others								
			TOTAL oneworld	0	0	0	0	0%	0%	0%	0%
		SkyTeam									
		SkyTeam	Others								
			TOTAL SkyTeam	0	0	0	0	0%	0%	0%	0%
		Star									
		Star	Others								
			TOTAL Star	0	0	0	0	0%	0%	0%	0%
		Other									
		Other	Others								
			TOTAL Other	0	0	0	0	0%	0%	0%	0%
	Indirect		BA	3	2	7	1	0%	0%	1%	0%
			IB								
			EI								
			TOTAL BA/IB/EI	3	2	7	1	0%	0%	1%	0%
			TOTAL QR	380	389	408	327	51%	62%	57%	62%
			TOTAL BA/IB/EI/QR	**383**	**391**	**415**	**328**	**52%**	**63%**	**58%**	**62%**
		oneworld	QR	380	389	408	327	51%	62%	57%	62%
		oneworld	QF	13	3	35	48	2%	0%	5%	9%
		oneworld	Others	21	19	13	10	3%	3%	1%	2%
			TOTAL oneworld	414	411	456	385	56%	66%	63%	73%
		SkyTeam	Others	10	9	8	2	1%	1%	1%	0%
			TOTAL SkyTeam	10	9	8	2	1%	1%	1%	0%
		Star	SQ	15	8	17	3	2%	1%	2%	1%
		Star	Others	14	1	13	3	2%	0%	2%	1%
			TOTAL Star	29	9	30	6	4%	1%	4%	1%
		Other	EY	273	185	204	0	37%	30%	28%	0%
		Other	EK	2	1	19	133	0%	0%	3%	25%
		Other	Others	11	8	3	0	2%	1%	0%	0%
			TOTAL Other	286	194	226	133	39%	31%	31%	25%
Total direct				*0*	*0*	*0*	*0*	*0%*	*0%*	*0%*	*0%*
Total indirect				*739*	*623*	*720*	*526*	*100%*	*100%*	*100%*	*100%*
Total direct + indirect				*739*	*623*	*720*	*526*	*100%*	*100%*	*100%*	*100%*
Total BA/IB/EI/QR direct+indirect				*383*	*391*	*415*	*328*	*52%*	*63%*	*58%*	*62%*
Total oneworld direct+indirect				*414*	*411*	*456*	*385*	*56%*	*66%*	*63%*	*73%*

Route	Routing	Alliance	Company	Non-time sensitive passengers							
				Passengers				Market share			
				S17	W17	S18	W18	S17	W17	S18	W18
ROUTE	Direct (non-stop)		BA								
			IB								
			EI								
			TOTAL BA/IB/EI	0	0	0	0	0%	0%	0%	0%
			TOTAL QR	0	0	0	0	0%	0%	0%	0%
			TOTAL BA/IB/EI/QR	**0**	**0**	**0**	**0**	**0%**	**0%**	**0%**	**0%**
		oneworld									
		oneworld	Others								
			TOTAL oneworld	0	0	0	0	0%	0%	0%	0%
		SkyTeam									
		SkyTeam	Others								
			TOTAL SkyTeam	0	0	0	0	0%	0%	0%	0%
		Star									
		Star	Others								
			TOTAL Star	0	0	0	0	0%	0%	0%	0%
		Other									
		Other	Others								
			TOTAL Other	0	0	0	0	0%	0%	0%	0%
	Indirect		BA	30	15	61	166	1%	0%	1%	4%
			IB								
			EI								
			TOTAL BA/IB/EI	30	15	61	166	1%	0%	1%	4%
			TOTAL QR	2,861	2,266	2,791	2,467	52%	47%	49%	61%
			TOTAL BA/IB/EI/QR	**2,891**	**2,281**	**2,852**	**2,633**	**52%**	**47%**	**50%**	**66%**
		oneworld	QR	2,861	2,266	2,791	2,467	52%	47%	49%	61%
		oneworld	QF	16	18	181	266	0%	0%	3%	7%
		oneworld	BA	30	15	61	166	1%	0%	1%	4%
		oneworld	Others	32	70	29	28	1%	1%	1%	1%
			TOTAL oneworld	2,939	2,369	3,062	2,927	53%	49%	54%	73%

		SkyTeam	Others	52	46	15	27	1%	1%	0%	1%
		TOTAL SkyTeam		52	46	15	27	1%	1%	0%	1%
		Star	SQ	66	68	132	206	1%	1%	2%	5%
		Star	Others	33	12	27	7	1%	0%	0%	0%
		TOTAL Star		99	80	159	213	2%	2%	3%	5%
		Other	EY	2,192	2,207	2,095	8	40%	45%	37%	0%
		Other	EK	32	20	173	839	1%	0%	3%	21%
		Other	Others	232	148	168	2	4%	3%	3%	0%
		TOTAL Other		2,456	2,375	2,436	849	44%	49%	43%	21%
Total direct				*0*	*0*	*0*	*0*	*0%*	*0%*	*0%*	*0%*
Total indirect				*5,546*	*4,870*	*5,672*	*4,016*	*100%*	*100%*	*100%*	*100%*
Total direct + indirect				*5,546*	*4,870*	*5,672*	*4,016*	*100%*	*100%*	*100%*	*100%*
Total BA/IB/ EI/QR direct+indirect				*2,891*	*2,281*	*2,852*	*2,633*	*52%*	*47%*	*50%*	*66%*
Total oneworld direct+indirect				*2,939*	*2,369*	*3,062*	*2,927*	*53%*	*49%*	*54%*	*73%*

Route	Routing	Alliance	Company	All passengers							
				Passengers				Market share			
				S17	W17	S18	W18	S17	W17	S18	W18
ROUTE	Direct (non-stop)		BA								
			IB								
			EI								
		TOTAL BA/IB/EI		0	0	0	0	0%	0%	0%	0%
		TOTAL QR		0	0	0	0	0%	0%	0%	0%
		TOTAL BA/IB/EI/QR		**0**	**0**	**0**	**0**	**0%**	**0%**	**0%**	**0%**
		oneworld									
		oneworld	Others								
		TOTAL oneworld		0	0	0	0	0%	0%	0%	0%
		SkyTeam									
		SkyTeam	Others								
		TOTAL SkyTeam		0	0	0	0	0%	0%	0%	0%
		Star									
		Star	Others								
		TOTAL Star		0	0	0	0	0%	0%	0%	0%
		Other									
		Other	Others								
		TOTAL Other		0	0	0	0	0%	0%	0%	0%
	Indirect		BA	33	17	68	167	1%	0%	1%	4%
			IB								
			EI								
		TOTAL BA/IB/EI		33	17	68	167	1%	0%	1%	4%
		TOTAL QR		3,241	2,655	3,199	2,794	52%	48%	50%	62%
		TOTAL BA/IB/EI/QR		**3,274**	**2,672**	**3,267**	**2,961**	**52%**	**49%**	**51%**	**65%**
		oneworld	QR	3,241	2,655	3,199	2,794	52%	48%	50%	62%
		oneworld	QF	29	21	216	314	0%	0%	3%	7%
		oneworld	BA	33	17	68	167	1%	0%	1%	4%
		oneworld	Others	50	87	35	37	0%	2%	1%	1%
		TOTAL oneworld		3,353	2,780	3,518	3,312	53%	51%	55%	73%
		SkyTeam	Others	62	55	23	29	1%	1%	0%	1%
		TOTAL SkyTeam		62	55	23	29	1%	1%	0%	1%
		Star	SQ	81	76	149	209	1%	1%	2%	5%
		Star	Others	47	13	40	10	1%	0%	1%	0%
		TOTAL Star		128	89	189	219	2%	2%	3%	5%
		Other	EY	2,465	2,392	2,299	8	39%	44%	36%	0%
		Other	EK	34	21	192	972	1%	0%	3%	21%
		Other	VA	240	147	162		4%	3%	3%	0%
		Other	Others	3	9	9	2	0%	0%	0%	0%
		TOTAL Other		2,742	2,569	2,662	982	44%	47%	42%	22%
Total direct				*0*	*0*	*0*	*0*	*0%*	*0%*	*0%*	*0%*
Total indirect				*6,285*	*5,493*	*6,392*	*4,542*	*100%*	*100%*	*100%*	*100%*
Total direct + indirect				*6,285*	*5,493*	*6,392*	*4,542*	*100%*	*100%*	*100%*	*100%*
Total BA/IB/EI/QR direct+indirect				*3,274*	*2,672*	*3,267*	*2,961*	*52%*	*49%*	*51%*	*65%*
Total oneworld direct+indirect				*3,353*	*2,780*	*3,518*	*3,312*	*53%*	*51%*	*55%*	*73%*

TEMPLATE 1 - MIDT O&Ds

All carriers under 1% market share belonging to the same alliance can be grouped as "Others"

MEL-MAN

Route	Routing	Alliance	Company	Time sensitive passengers							
				Passengers				Market share			
				S17	W17	S18	W18	S17	W17	S18	W18
ROUTE	Direct (non-stop)		BA								
			IB								
			EI								
		TOTAL BA/IB/EI		0	0	0	0	0%	0%	0%	0%
		TOTAL QR		0	0	0	0	0%	0%	0%	0%
		TOTAL BA/IB/EI/QR		**0**	**0**	**0**	**0**	**0%**	**0%**	**0%**	**0%**
		oneworld									
		oneworld	Others								
		TOTAL oneworld		0	0	0	0	0%	0%	0%	0%
		SkyTeam									
		SkyTeam	Others								
		TOTAL SkyTeam		0	0	0	0	0%	0%	0%	0%
		Star									
		Star	Others								
		TOTAL Star		0	0	0	0	0%	0%	0%	0%
		Other									
		Other	Others								
		TOTAL Other		0	0	0	0	0%	0%	0%	0%
	Indirect		BA	9	3	6	7	0%	0%	0%	0%
			IB								
			EI								
		TOTAL BA/IB/EI		9	3	6	7	0%	0%	0%	0%
		TOTAL QR		345	314	261	282	11%	10%	8%	11%
		TOTAL BA/IB/EI/QR		**354**	**317**	**267**	**289**	**12%**	**10%**	**8%**	**11%**
		oneworld	CX	210	532	354	378	7%	17%	11%	14%
		oneworld	QR	345	314	261	282	11%	10%	8%	11%
		oneworld	QF	200	249	318	199	7%	8%	10%	8%
		oneworld	Others	64	62	191	51	2%	2%	6%	2%
		TOTAL oneworld		819	1,157	1,124	910	27%	37%	34%	35%
		SkyTeam	KL	44	11	7	35	1%	0%	0%	1%
		SkyTeam	Others	28	37	14	24	1%	1%	0%	1%
		TOTAL SkyTeam		72	48	21	59	2%	2%	1%	2%
		Star	SQ	415	240	423	242	14%	8%	13%	9%
		Star	Others	55	59	58	42	3%	2%	2%	1%
		TOTAL Star		470	299	481	284	16%	10%	15%	11%
		Other	EK	726	871	750	800	24%	28%	23%	31%
		Other	EY	871	675	775	528	29%	22%	24%	20%
		Other	Others	51	56	146	40	2%	2%	4%	1%
		TOTAL Other		1,648	1,602	1,671	1,368	55%	52%	51%	52%
Total direct				*0*	*0*	*0*	*0*	*0%*	*0%*	*0%*	*0%*
Total indirect				*3,009*	*3,106*	*3,297*	*2,621*	*100%*	*100%*	*100%*	*100%*
Total direct + indirect				*3,009*	*3,106*	*3,297*	*2,621*	*100%*	*100%*	*100%*	*100%*
Total BA/IB/EI/QR direct+indirect				*354*	*317*	*267*	*289*	*12%*	*10%*	*8%*	*11%*
Total oneworld direct+indirect				*819*	*1,157*	*1,124*	*910*	*27%*	*37%*	*34%*	*35%*

Route	Routing	Alliance	Company	Non-time sensitive passengers							
				Passengers				Market share			
				S17	W17	S18	W18	S17	W17	S18	W18
ROUTE	Direct (non-stop)		BA								
			IB								
			EI								
		TOTAL BA/IB/EI		0	0	0	0	0%	0%	0%	0%
		TOTAL QR									
		TOTAL BA/IB/EI/QR		**0**	**0**	**0**	**0**	**0%**	**0%**	**0%**	**0%**
		oneworld									
		oneworld	Others								
		TOTAL oneworld		0	0	0	0	0%	0%	0%	0%
		SkyTeam									
		SkyTeam	Others								
		TOTAL SkyTeam		0	0	0	0	0%	0%	0%	0%
		Star									
		Star	Others								
		TOTAL Star		0	0	0	0	0%	0%	0%	0%
		Other									
		Other	Others								
		TOTAL Other		0	0	0	0	0%	0%	0%	0%
			BA	78	44	197	772	0%	0%	1%	5%
			IB								
			EI								
		TOTAL BA/IB/EI		78	44	197	772	0%	0%	1%	5%
		TOTAL QR		2,218	3,127	1,582	2,503	13%	16%	9%	15%
		TOTAL BA/IB/EI/QR		**2,296**	**3,171**	**1,779**	**3,275**	**13%**	**17%**	**10%**	**20%**
		oneworld	QR	2,218	3,127	1,582	2,503	13%	16%	9%	15%
		oneworld	CX	1,419	1,614	1,835	1,229	8%	8%	11%	7%

	Indirect	oneworld	QF	1,475	1,503	1,260	946	8%	8%	7%	6%
		oneworld	Others	197	120	304	843	1%	1%	2%	5%
		TOTAL oneworld		5,309	6,364	4,981	5,521	30%	33%	29%	33%
		SkyTeam	CZ	184	236	151	197	1%	1%	1%	1%
		SkyTeam	Others	114	439	46	126	1%	2%	0%	1%
		TOTAL SkyTeam		298	675	197	323	2%	4%	1%	2%
		Star	SQ	2,065	1,197	1,708	1,699	12%	6%	10%	10%
		Star	Others	150	118	99	63	1%	0%	0%	1%
		TOTAL Star		2,215	1,315	1,807	1,762	13%	7%	10%	11%
		Other	EY	5,387	5,562	5,728	5,261	31%	29%	33%	31%
		Other	EK	3,475	4,535	3,649	3,646	21%	24%	21%	22%
		Other	Others	817	678	1,031	267	3%	3%	6%	1%
		TOTAL Other		9,679	10,775	10,408	9,174	55%	56%	60%	55%
Total direct				*0*	*0*	*0*	*0*	*0%*	*0%*	*0%*	*0%*
Total indirect				*17,501*	*19,129*	*17,393*	*16,780*	*100%*	*100%*	*100%*	*100%*
Total direct + indirect				*17,501*	*19,129*	*17,393*	*16,780*	*100%*	*100%*	*100%*	*100%*
Total BA/IB/ EI/QR direct+indirect				*2,296*	*3,171*	*1,779*	*3,275*	*13%*	*17%*	*10%*	*20%*
Total oneworld direct+indirect				*5,309*	*6,364*	*4,981*	*5,521*	*30%*	*33%*	*29%*	*33%*

Route	Routing	Alliance	Company	All passengers							
				Passengers				Market share			
				S17	W17	S18	W18	S17	W17	S18	W18
ROUTE	Direct (non-stop)		BA								
			IB								
			EI								
		TOTAL BA/IB/EI		0	0	0	0	0%	0%	0%	0%
		TOTAL QR		0	0	0	0	0%	0%	0%	0%
		TOTAL BA/IB/EI/QR		**0**	**0**	**0**	**0**	**0%**	**0%**	**0%**	**0%**
		oneworld									
		oneworld	Others								
		TOTAL oneworld		0	0	0	0	0%	0%	0%	0%
		SkyTeam									
		SkyTeam	Others								
		TOTAL SkyTeam		0	0	0	0	0%	0%	0%	0%
		Star									
		Star	Others								
		TOTAL Star		0	0	0	0	0%	0%	0%	0%
		Other									
		Other	Others								
		TOTAL Other		0	0	0	0	0%	0%	0%	0%
	Indirect		BA	87	47	203	779	0%	0%	1%	4%
			IB								
			EI								
		TOTAL BA/IB/EI		87	47	203	779	0%	0%	1%	4%
		TOTAL QR		2,563	3,441	1,843	2,785	12%	15%	9%	14%
		TOTAL BA/IB/EI/QR		**2,650**	**3,488**	**2,046**	**3,564**	**13%**	**16%**	**10%**	**18%**
		oneworld	QR	2,563	3,441	1,843	2,785	12%	15%	9%	14%
		oneworld	CX	1,629	2,146	2,189	1,607	8%	10%	11%	8%
		oneworld	QF	1,675	1,752	1,578	1,145	8%	8%	8%	6%
		oneworld	Others	261	182	495	894	1%	1%	3%	4%
		TOTAL oneworld		6,128	7,521	6,105	6,431	30%	34%	30%	33%
		SkyTeam	CZ	206	263	165	212	1%	1%	1%	1%
		SkyTeam	Others	164	460	53	170	1%	2%	0%	1%
		TOTAL SkyTeam		370	723	218	382	2%	3%	1%	2%
		Star	SQ	2,480	1,437	2,131	1,941	12%	6%	10%	10%
		Star	Others	205	177	157	105	1%	0%	1%	1%
		TOTAL Star		2,685	1,614	2,288	2,046	13%	7%	11%	11%
		Other	EY	6,258	6,237	6,503	5,789	31%	28%	31%	30%
		Other	EK	4,201	5,406	4,399	4,446	20%	24%	21%	23%
		Other	Others	868	734	1,177	307	4%	4%	5%	1%
		TOTAL Other		11,327	12,377	12,079	10,542	55%	56%	58%	54%
Total direct				*0*	*0*	*0*	*0*	*0%*	*0%*	*0%*	*0%*
Total indirect				*20,510*	*22,235*	*20,690*	*19,401*	*100%*	*100%*	*100%*	*100%*
Total direct + indirect				*20,510*	*22,235*	*20,690*	*19,401*	*100%*	*100%*	*100%*	*100%*
Total BA/IB/EI/QR direct+indirect				*2,650*	*3,488*	*2,046*	*3,564*	*13%*	*16%*	*10%*	*18%*
Total oneworld direct+indirect				*6,128*	*7,521*	*6,105*	*6,431*	*30%*	*34%*	*30%*	*33%*

TEMPLATE 1 - MIDT O&Ds

All carriers under 1% market share belonging to the same alliance can be grouped as "Others"

PER-MAN

Route	Routing	Alliance	Company	Time sensitive passengers							
				Passengers				Market share			
				S17	W17	S18	W18	S17	W17	S18	W18
ROUTE	Direct (non-stop)		BA								
			IB								
			EI								
		TOTAL BA/IB/EI		0	0	0	0	0%	0%	0%	0%
		TOTAL QR		0	0	0	0	0%	0%	0%	0%
		TOTAL BA/IB/EI/QR		**0**	**0**	**0**	**0**	**0%**	**0%**	**0%**	**0%**
		oneworld									
		oneworld	Others								
		TOTAL oneworld		0	0	0	0	0%	0%	0%	0%
		SkyTeam									
		SkyTeam	Others								
		TOTAL SkyTeam		0	0	0	0	0%	0%	0%	0%
		Star									
		Star	Others								
		TOTAL Star		0	0	0	0	0%	0%	0%	0%
		Other									
		Other	Others								
		TOTAL Other		0	0	0	0	0%	0%	0%	0%
	Indirect		BA	10	1	2	3	0%	0%	0%	0%
			IB								
			EI								
		TOTAL BA/IB/EI		10	1	2	3	0%	0%	0%	0%
		TOTAL QR		511	451	432	510	20%	17%	18%	22%
		TOTAL BA/IB/EI/QR		**521**	**452**	**434**	**513**	**21%**	**17%**	**18%**	**22%**
		oneworld	QR	511	451	432	510	20%	17%	18%	22%
		oneworld	QF	18	217	227	236	7%	8%	10%	10%
		oneworld	Others	230	100	38	74	2%	4%	1%	3%
		TOTAL oneworld		759	768	697	820	30%	29%	29%	35%
		SkyTeam	Others	7	3	0	2	0%	0%	0%	0%
		TOTAL SkyTeam		7	3	0	2	0%	0%	0%	0%
		Star	SQ	288	174	279	169	12%	6%	12%	7%
		Star	Others	23	3	15	15	0%	0%	0%	1%
		TOTAL Star		311	177	294	184	12%	7%	12%	8%
		Other	EK	934	1,237	929	1,267	37%	46%	39%	55%
		Other	EY	441	470	334	19	18%	17%	14%	1%
		Other	Others	50	38	130	32	2%	2%	5%	1%
		TOTAL Other		1,425	1,745	1,393	1,318	57%	65%	58%	57%
Total direct				*0*	*0*	*0*	*0*	*0%*	*0%*	*0%*	*0%*
Total indirect				*2,502*	*2,693*	*2,384*	*2,324*	*100%*	*100%*	*100%*	*100%*
Total direct + indirect				*2,502*	*2,693*	*2,384*	*2,324*	*100%*	*100%*	*100%*	*100%*
Total BA/IB/EI/QR direct+indirect				*521*	*452*	*434*	*513*	*21%*	*17%*	*18%*	*22%*
Total oneworld direct+indirect				*759*	*768*	*697*	*820*	*30%*	*29%*	*29%*	*35%*

Route	Routing	Alliance	Company	Non-time sensitive passengers							
				Passengers				Market share			
				S17	W17	S18	W18	S17	W17	S18	W18
ROUTE	Direct (non-stop)		BA								
			IB								
			EI								
		TOTAL BA/IB/EI		0	0	0	0	0%	0%	0%	0%
		TOTAL QR		0	0	0	0	0%	0%	0%	0%
		TOTAL BA/IB/EI/QR		**0**	**0**	**0**	**0**	**0%**	**0%**	**0%**	**0%**
		oneworld									
		oneworld	Others								
		TOTAL oneworld		0	0	0	0	0%	0%	0%	0%
		SkyTeam									
		SkyTeam	Others								
		TOTAL SkyTeam		0	0	0	0	0%	0%	0%	0%
		Star									
		Star	Others								
		TOTAL Star		0	0	0	0	0%	0%	0%	0%
		Other									
		Other	Others								
		TOTAL Other		0	0	0	0	0%	0%	0%	0%
	Indirect		BA	53	49	193	1,088	0%	0%	1%	6%
			IB								
			EI								
		TOTAL BA/IB/EI		53	49	193	1,088	0%	0%	1%	6%
		TOTAL QR		6,766	6,083	5,942	7,733	32%	26%	31%	40%
		TOTAL BA/IB/EI/QR		**6,819**	**6,132**	**6,135**	**8,821**	**32%**	**26%**	**32%**	**46%**
		oneworld	QR	6,766	6,083	5,942	7,733	32%	26%	31%	40%
		oneworld	QF	1,198	1,489	1,462	1,402	6%	6%	8%	7%
		oneworld	BA	53	49	193	1,088	0%	0%	1%	6%
		oneworld	Others	432	483	250	279	2%	2%	1%	1%

		TOTAL oneworld		8,449	8,104	7,847	10,502	40%	34%	40%	54%
		SkyTeam	Others	73	224	56	70	0%	1%	0%	0%
		TOTAL SkyTeam		73	224	56	70	0%	1%	0%	0%
		Star	SQ	2,226	2,426	2,065	2,679	11%	10%	11%	14%
		Star	Others	102	82	39	51	0%	1%	0%	0%
		TOTAL Star		2,328	2,508	2,104	2,730	11%	11%	11%	14%
		Other	EK	4,281	5,624	4,534	5,649	20%	24%	23%	29%
		Other	EY	5,014	6,581	4,297	132	24%	28%	22%	1%
		Other	Others	916	769	585	207	4%	3%	3%	1%
		TOTAL Other		10,211	12,974	9,416	5,988	48%	54%	48%	31%
Total direct				*0*	*0*	*0*	*0*	*0%*	*0%*	*0%*	*0%*
Total indirect				*21,061*	*23,810*	*19,423*	*19,290*	*100%*	*100%*	*100%*	*100%*
Total direct + indirect				*21,061*	*23,810*	*19,423*	*19,290*	*100%*	*100%*	*100%*	*100%*
Total BA/IB/ EI/QR direct+indirect				*6,819*	*6,132*	*6,135*	*8,821*	*32%*	*26%*	*32%*	*46%*
Total oneworld direct+indirect				*8,449*	*8,104*	*7,847*	*10,502*	*40%*	*34%*	*40%*	*54%*

Route	Routing	Alliance	Company	All passengers							
				Passengers				Market share			
				S17	W17	S18	W18	S17	W17	S18	W18
			BA								
			IB								
			EI								
		TOTAL BA/IB/EI		0	0	0	0	0%	0%	0%	0%
		TOTAL QR		0	0	0	0	0%	0%	0%	0%
		TOTAL BA/IB/EI/QR		**0**	**0**	**0**	**0**	**0%**	**0%**	**0%**	**0%**
		oneworld									
		oneworld	Others								
		TOTAL oneworld		0	0	0	0	0%	0%	0%	0%
		SkyTeam									
		SkyTeam	Others								
		TOTAL SkyTeam		0	0	0	0	0%	0%	0%	0%
		Star									
		Star	Others								
		TOTAL Star		0	0	0	0	0%	0%	0%	0%
		Other									
		Other	Others								
		TOTAL Other		0	0	0	0	0%	0%	0%	0%
ROUTE			BA	63	50	195	1,091	0%	0%	1%	5%
			IB								
			EI								
		TOTAL BA/IB/EI		63	50	195	1,091	0%	0%	1%	5%
		TOTAL QR		7,277	6,534	6,374	8,243	31%	25%	29%	38%
		TOTAL BA/IB/EI/QR		**7,340**	**6,584**	**6,569**	**9,334**	**31%**	**25%**	**30%**	**43%**
		oneworld	QR	7,277	6,534	6,374	8,243	31%	25%	29%	38%
		oneworld	QF	1,381	1,706	1,689	1,638	6%	6%	8%	8%
		oneworld	BA	63	50	195	1,091	0%	0%	1%	5%
		oneworld	Others	487	582	286	350	2%	2%	1%	1%
		TOTAL oneworld		9,208	8,872	8,544	11,322	39%	33%	39%	52%
		SkyTeam	Others	80	227	56	72	0%	1%	0%	0%
		TOTAL SkyTeam		80	227	56	72	0%	1%	0%	0%
		Star	SQ	2,514	2,600	2,344	2,848	11%	10%	11%	13%
		Star	Others	125	85	54	66	0%	0%	0%	0%
		TOTAL Star		2,639	2,685	2,398	2,914	11%	10%	11%	13%
		Other	EK	5,215	6,861	5,463	6,916	22%	26%	25%	32%
		Other	EY	5,455	7,051	4,631	151	23%	27%	21%	1%
		Other	Others	966	807	715	239	4%	4%	4%	1%
		TOTAL Other		11,636	14,719	10,809	7,306	49%	56%	50%	34%
Total direct				*0*	*0*	*0*	*0*	*0%*	*0%*	*0%*	*0%*
Total indirect				*23,563*	*26,503*	*21,807*	*21,614*	*100%*	*100%*	*100%*	*100%*
Total direct + indirect				*23,563*	*26,503*	*21,807*	*21,614*	*100%*	*100%*	*100%*	*100%*
Total BA/IB/EI/QR direct+indirect				*7,340*	*6,584*	*6,569*	*9,334*	*31%*	*25%*	*30%*	*43%*
Total oneworld direct+indirect				*9,208*	*8,872*	*8,544*	*11,322*	*39%*	*33%*	*39%*	*52%*

Schedule 7 Persons who may be impacted by the Proposed Conduct

Person potentially affected	Phone number	Email address (where a Party can provide an address for a specific and relevant contact)
Actual or potential competitors		
Qantas	[redacted]	
Virgin Australia	[redacted]	
Singapore Airlines	[redacted]	
Emirates	[redacted]	
Etihad Airways	[redacted]	
Malaysia Airlines	[redacted]	
Cathay Pacific	[redacted]	
Deutsche Lufthansa	[redacted]	
China Southern Airlines	[redacted]	
Iberia Airlines	[redacted]	
Aer Lingus Cargo	[redacted]	
Finnair	[redacted]	
KLM	[redacted]	
Thai Airways	[redacted]	
Air France	[redacted]	
Vietnam Airlines	[redacted]	
Garuda Indonesia	[redacted]	
Royal Brunei Airlines	[redacted]	
Philippine Airlines	[redacted]	
Virgin Atlantic Airways	[redacted]	

Person potentially affected	Phone number	Email address (where a Party can provide an address for a specific and relevant contact)
Japan Airlines		
Key customers (and contact person)		
[CONFIDENTIAL TO QR]		
Key suppliers (and contact person)		
[CONFIDENTIAL TO QR]		
Trade / industry associations		
International Air Transport Association		
Regulators		
Civil Aviation Safety Authority		

Schedule 8 Robert J Calzaretta, Jr., Yair Eilat, and Mark A Israel, Competitive Effects of International Airline Co-operation, Journal of Competition Law & Economics, Volume 13, Issue 3, September 2017

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COMPETITIVE EFFECTS OF INTERNATIONAL AIRLINE COOPERATION

Robert J. Calzaretta, Jr.[*], *Yair Eilat*[†] *& Mark A. Israel*[‡]

ABSTRACT

This article analyzes the impact of varying degrees of airline cooperation on nonstop and connecting international traffic using detailed datasets of travel between the United States and other countries from 1998 to 2015. For connecting passengers, we find that antitrust immune alliances (ATIs) generate fare reductions (relative to interline or simple codeshare itineraries), although these reductions are not significantly larger than those generated by alliances without antitrust immunity. In contrast, "metal neutral" joint ventures (JVs) lead to substantially larger fare reductions, similar to those associated with online service in which a single carrier serves the entire connecting itinerary. For nonstop passengers we find that the formation of an ATI or JV between two or more airlines serving a route does not generate higher fares. Finally, we find that ATIs and JVs are associated with increased segment traffic and net entry on routes. Our results collectively demonstrate that, on the whole, ATI grants—particularly when coupled with the formation of JVs—have been strongly procompetitive, generating lower fares on connecting routes and increased traffic on segments served by multiple alliance partners, with no associated increase in nonstop fares where partner airlines overlap operations.

JEL: L4; L42; L93

I. INTRODUCTION

A. History of Airline Cooperation

In contrast to United States domestic airline travel, international travel often involves flights on different carriers—typically a U.S. and a foreign carrier.

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For example, from 1998 to 2015, about a third of all international connecting travel between the United States and transoceanic destinations (that is, not including Canada and Mexico) involved a domestic and a foreign carrier cooperating to various degrees to serve the itinerary.[1]

For air travel between relatively smaller (non-hub) cities, no one carrier can offer a trip between the United States and a foreign destination because the trip requires both a domestic "leg" and a foreign "leg." For example, consider a flight from Huntsville, Alabama to Marseille, France. A traveler can fly from Huntsville to Atlanta, Atlanta to Paris, and Paris to Marseille. A European carrier cannot offer service within the United States, and a U.S. carrier cannot offer service within Europe, so that a trip from Huntsville to Marseille necessarily requires travel on at least one domestic and one foreign carrier.[2] In other cases, a single carrier could offer an entire trip (for example, a domestic carrier could offer a two-leg trip such as Chicago to Los Angeles and Los Angeles to Auckland, New Zealand), but may not find it profitable to offer the international flight. In such cases, a traveler would again need to fly on different carriers. More generally, passengers can expand substantially their international travel options by considering itineraries that combine travel on domestic and foreign carriers.

To facilitate international trips that involve domestic and foreign airlines, carriers can engage in various degrees of cooperation. Although passengers have the option to purchase separate tickets on multiple airlines for different segments of their trip (referred to as a "simple interline" trip), purchasing such tickets is made more convenient by sales of a single ticket by a single carrier. Historically, such sales have been made by airlines that implement "codeshare" arrangements in which one carrier sells tickets and publishes its airline code on flights operated by another airline. Often, these arrangements are reciprocal, so that each carrier can sell tickets on the other carrier's flights. Notably, however, although codesharing simplifies the purchase of interline itineraries, it involves little or no cooperation beyond this.

Our analysis evaluates the effect of greater degrees of cooperation relative to simple interline or codeshare arrangements. In particular, beginning in 1989, airlines started deepening their cooperation beyond simple codesharing into broader "alliance" relationships.[3] As "open skies" agreements liberalized air travel for foreign carriers flying to and from the United States

[1] Due to data limitations explained below, international connecting traffic to or from the United States involving only foreign carriers (for example, consisting of a segment in Europe connecting to a flight from Europe to the United States on a foreign carrier) is not included in this analysis.

[2] Although most countries prohibit foreign airlines from operating domestic routes or routes between a domestic market and a third foreign market, there are a few exceptions referred to as fifth, sixth, and seventh degree "freedom charters." *See* U.S. DEP'T OF TRANSP., FOREIGN AIR CARRIER ECONOMIC LICENSING, https://cms.dot.gov/policy/aviation-policy/licensing/foreign-carriers. For example, Air New Zealand operates between Los Angeles International Airport (LAX) and London Heathrow Airport (LHR).

[3] Any arrangement in which an operating airline allows other carriers to market tickets and publish their designated airline code on flights can be referred to as a codeshare. We use the term

(and vice versa),[4] airlines started consolidating various operations, ranging from sales and marketing to aircraft maintenance, under alliance agreements. Some alliances then petitioned airline regulatory bodies for approval to be permitted to communicate and coordinate on pricing, capacity, and flight frequency through antitrust immunity (ATI) grants.[5] In some cases, alliance partners with ATI have sought to implement revenue or profit sharing joint ventures (JVs),[6] sharing the revenue, and, in some cases, the costs (and, thus, profits) of operating on international routes.[7] Figure 1 summarizes these different cooperative arrangements.

Since 1998, the share of international connecting traffic on "online" (that is, connecting travel on a single carrier) or simple interline/codeshare itineraries has declined as more passengers travel on airlines with deeper cooperative arrangements such as alliances, alliance agreements with ATI, or JV agreements. Indeed, as Figure 2 demonstrates, since 2013, JV partners carried more traffic between the United States and abroad than all other multi-carrier arrangements combined.[8]

B. Effects of Airline Cooperation on Consumers

In principle, airline cooperation, particularly when involving ATI, could be associated with either passenger benefits or harm, meaning that the net effect

"simple codeshare" to describe codeshare arrangements between two or more airlines with no other formal cooperative agreements.

[4] Open skies agreements override various government-imposed restrictions on airlines flying to or from countries of which they are not considered "flag" or "domiciled" carriers. The regulatory bodies of open skies partner countries agree to allow foreign carriers unrestricted access to domestic ports and eliminate any constraints on pricing, capacity, and frequency on all routes. Open skies agreements also facilitate new marketing and codesharing opportunities between domestic and foreign airlines. *See* U.S. DEP'T OF STATE, OPEN SKIES PARTNERSHIPS: EXPANDING THE BENEFITS OF FREER COMMERCIAL AVIATION (Jan. 21, 2017), https://www.state.gov/e/eb/rls/fs/2017/267131.htm; EUR. COMM'N & U.S. DEP'T OF TRANSP., TRANSATLANTIC AIRLINE ALLIANCES: COMPETITIVE ISSUES AND REGULATORY APPROACHES 10–13 (Nov. 16, 2010).

[5] A grant of antitrust immunity (ATI) is an authorization from regulators that allows "airlines to coordinate their fares, services and capacity as if they were a single carrier in these markets, subject to certain conditions." U.S. DEP'T OF TRANSP., ALLIANCES AND CODESHARES, https://www.transportation.gov/policy/aviation-policy/competition-data-analysis/alliance-codeshares.

[6] In this article, we refer to a joint venture (JV) as an agreement among immunized carriers (that is, those with an ATI grant) to share revenue or profits on certain routes.

[7] Although ATI grants allow airlines to coordinate fares, capacity, and frequency on routes, ATI partners do not always take advantage of these grants absent a JV agreement. For instance, industry sources have documented a lack of coordination between Korean Air and Delta Air Lines, with the latter at times limiting codeshare opportunities and frequent flyer benefit transfers despite the two being ATI partners since 2002. *See* CAPA CENTRE FOR AVIATION, KOREAN AIR PART 2: DELTA AIR LINES DIFFICULT BUT POTENTIAL JV PARTNER. PAUSE ON US-LATAM GROWTH (May 18, 2015), https://centreforaviation.com/insights/analysis/korean-air-pt-2-delta-air-lines-difficult-but-potential-jv-partner-pause-on-us-latam-growth-224067.

[8] Figure 2 excludes itineraries that involve only non-U.S. carriers as these are not recorded in the International O&D data. We describe the data in more detail in the next Part and Appendix E.

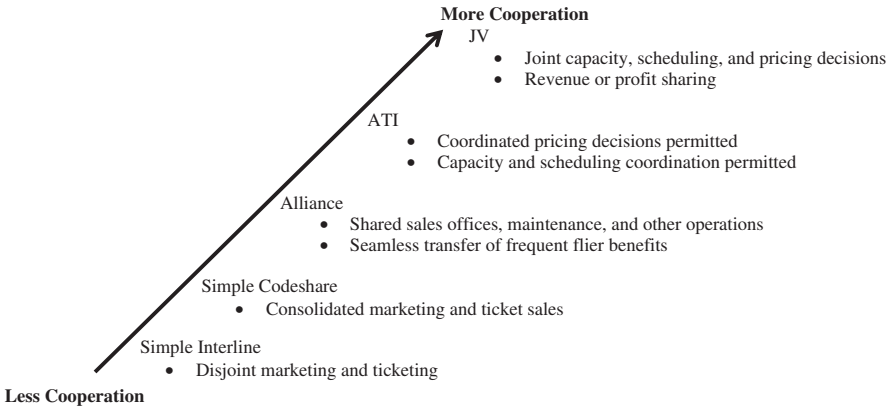

Figure 1. Degrees of airline cooperation
Sources: U.S. DEP'T OF TRANSP., PRESS RELEASES, https://www.transportation.gov/press-releases; EUR. COMM'N & U.S. DEP'T OF TRANSP., TRANSATLANTIC AIRLINE ALLIANCES: COMPETITIVE ISSUES AND REGULATORY APPROACHES 5 and fig. 1 (Nov. 16, 2010).

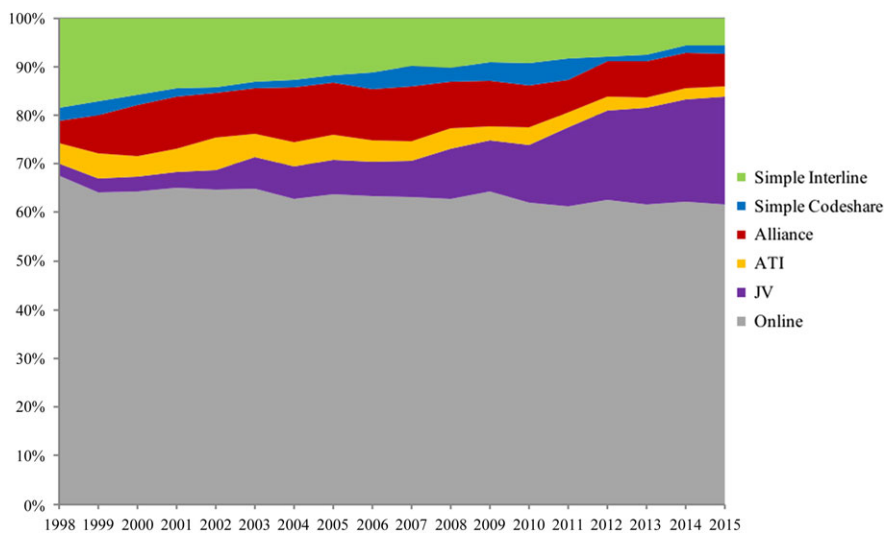

Figure 2. Fraction of connecting transoceanic passengers by year and type
Notes: Traffic carried exclusively on non-U.S. carriers is not recorded in these data and, thus, is excluded from the figure. Excludes one-way itineraries.

is ultimately an empirical question. Benefits can potentially result for connecting passengers from the removal of "double-marginalization" on interline travel (or, more generally, better alignment of incentives across cooperating carriers).[9] Specifically, on an interline flight, each carrier will choose a price

[9] Benefits for *connecting* passengers associated with closer cooperation could also create benefits for *nonstop* passengers. All else equal, reductions in connecting fares and/or

(and, thus, profit margin) without regard to the negative externality that a higher price will have on the other carrier as a result of the reduced overall demand for the joint product. As a matter of economic theory, this will result in a price that is above the joint optimization price, hence "double marginalization." By increasing cooperation, alliances can help to overcome this problem, and, with a JV, perhaps eliminate it, as the carriers seek to maximize combined profits, thereby internalizing the effects of their pricing decisions on one another. The expected result would be a direct benefit to passengers in the form of lower prices on connecting fares. Similar incentives exist with regard to capacity additions, schedule alignment, and so on—in a JV, each carrier internalizes the effect of its decisions on its partner(s), leading to decisions that maximize the value that the full alliance can create. The associated capacity expansions, improved network planning, seamless ticketing, and integrated frequent flier and corporate programs provide direct benefit to nonstop as well as connecting passengers. In addition, these types of benefits would be expected to increase demand for the cooperating carriers' services, and as traffic increases, airlines' costs may be lower due to economies of density. These reduced costs would be expected to be passed on to passengers, at least in part, in the form of lower fares.[10]

On the other hand, airline cooperation could potentially soften airline competition on routes on which alliance partners compete, particularly on nonstop routes. Such anticompetitive effects could take the form of capacity reductions (perhaps even full exit) or increased fares.

Although airlines that codeshare or participate in an alliance are typically better coordinated than carriers that simply interline, each airline continues to price its legs independently, to maximize its own profit. Therefore, each carrier does not fully internalize the effect of its pricing on the demand for its partner's services. Thus, participating in a codesharing or alliance arrangement, by itself, is unlikely to fully address the double-marginalization issue. A grant of ATI allows two carriers to jointly set the price of a ticket, which, as a matter of economics, should mitigate the remaining double-marginalization problem. However, absent the sharing of revenues or profits associated with a JV, each carrier continues to maximize its own profit, meaning that it will not set prices optimally and will retain the economic incentive to place passengers on its own "metal."[11] This can, among other

improvements in the partners' joint network will lead to increases in total traffic over that network, including on the "gateway-to-gateway" routes over which much of the connecting traffic flows. As a result, the partners may have an incentive to increase capacity and/or frequency on those routes, which can benefit nonstop travelers.

[10] Regulatory bodies in the United States and Europe have acknowledged such demand and supply side benefits as crucial features of increased airline cooperation. *See* EUR. COMM'N & U.S. DEP'T OF TRANSP., *supra* note 4.

[11] The incentive derives from the fact that revenue allocation in codesharing agreements favors the carrier operating the service flown by the passenger over the carrier marketing the service.

things, reduce the incentive of each carrier to offer codeshares on connecting routes and potentially result in the two carriers not fully exploiting the benefits of combining their networks. Similarly, each carrier makes capacity decisions to maximize its own profits, not combined profits.

Conversely, when JV partners operate international flights as a joint business they attempt to maximize joint profits by internalizing the effect of their actions on their partners' operations.[12] They do not markup fares on a segment or on the sale of a ticket on a partner-operated flight beyond the joint optimal markup. And they make scheduling, capacity, and other network-management decisions taking into account effects on combined profits. Therefore, a JV can be expected to more closely align the incentives of two carriers than other forms of cooperative arrangements, likely leading to greater consumer benefits.

Despite these potential benefits, the coordination afforded by closer forms of cooperation—specifically ATIs and JVs—permits capacity and price decisions that could theoretically diminish competition, particularly on nonstop routes. Diminished competition between the ATI or JV partners that overlap on international nonstop "gateway" routes may spur a reduction in the number of seats and/or lead to increased fares.[13] Closer forms of cooperation could also, in theory, lead to an airline's exit from certain routes that are served by its partner, or lead an airline not to enter a route served by its partner that it would otherwise have entered.

In this article, we evaluate both the connecting and nonstop effects of increased degrees of cooperation in order to determine the net effect of increases in cooperation between international carriers.

C. Existing Literature and Contribution

Earlier studies of connecting traffic found that cooperation reduced fares significantly below the level of interline fares.[14] Subsequent studies found that

[12] The theoretical framework by which cooperating airlines internalize the externalities present in uncoordinated interline fare-setting decisions is laid out in Jan K. Brueckner & W. Tom Whalen, *The Price Effects of International Airline Alliances*, 43 J.L. & ECON. 503 (2000).

[13] As we discuss later in this article, the U.S. DOT has required in the past that carriers in an alliance "carve out" certain nonstop routes because of such concerns. However, more recently, the U.S. DOT has abandoned carve-out requirements for ATI approvals in favor of making a JV agreement among core members a precondition of ATI grants. *See, e.g.*, Final Order, Docket OST-2008-0234, at 5, 20 (Dep't of Transp. July 10, 2009) ("where an integrated 'metal-neutral' joint venture is present, carve outs inhibit the realization of efficiencies and thereby consumer benefits resulting from those efficiencies."); Jan K. Brueckner & Stef Proost, *Carve-Outs Under Airline Antitrust Immunity*, 28 INT'L J. INDUS. ORG. 657 (2009) (discussing the theory behind carve outs and how carve outs theoretically restrict the consumer welfare benefits generated by JVs).

[14] *See* Jan K. Brueckner, Darin N. Lee & Ethan S. Singer, *Alliances, Codesharing, Antitrust Immunity, and International Airfares: Do Previous Patterns Persist?*, 7 J. COMPETITION L. & ECON. 573 (2011) (providing a summary of prior studies). Exceptions to the finding that increased cooperation results in lower connecting fares are two studies by the U.S.

implementing an alliance reduced connecting fares below the codesharing level, and a grant of ATI further reduced fares beyond alliance without ATI.[15] However, the prior literature did not distinguish between alliances with ATI that operate as JVs and alliances with ATI that do not have such "metal neutrality." Thus, the "ATI effect" estimated in prior studies reflects the average effect of JVs and non-JVs. A possible explanation for differences in results across studies is that ATIs with or without associated JVs can receive different weights, depending on, for example, the time period and geographic areas studied.

A key contribution of this article is that we expand upon the existing literature by analyzing the effect of JV cooperation separately from ATI arrangements that do not involve JVs. We are able to do so because we have constructed, from a variety of sources, a comprehensive list of ATIs and JVs in the worldwide airline industry.[16]

Our study makes several additional contributions to the literature. First, we analyze traffic on segments served by members of an ATI or JV.[17] An analysis of traffic allows us to capture the effect of quality changes (whether positive or negative) that are not reflected in fares. For example, if improved connections are the result of more closely integrating two carriers' networks, traffic would be expected to increase even if fares remain unchanged.[18] More generally, since demand ultimately depends on quality-adjusted fares, traffic

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Department of Justice (DOJ) that do not find such an effect. *See* Comments of the Department of Justice on the Show Cause Order (Public Version), Regarding Joint Application of Air Canada, The Austrian Group, British Midland Airways Ltd, Continental Airlines, Inc., Deutsche Lufthansa Ag, Polskie Linie Lotniecze Lot S.A., Scandinavian Airlines System, Swiss International Air Lines Ltd., Tap Air Portugal, United Air Lines, Inc. to Amend Order 2007-2-16 under 49 U.S.C. §§ 41308 and 41309 so as to Approve and Confer Antitrust Immunity, Docket OST-2008-0234, at app. B (Dep't of Justice June 26, 2009); Comments of the Department of Justice (Public Version), Regarding Joint Application of American Airlines, British Airways, Iberia Líneas Aéreas de España S.A., Finnair, Royal Jordanian Airlines under 49 U.S.C. §§ 41308 and 41309 for approval of and antitrust immunity for alliance agreements, Docket OST-2008-0252, at app. A & B. (Dep't of Justice Dec. 21, 2009). Jan Brueckner, Darin Lee, and Ethan Singer, however, reject those findings, concluding that "the results show that incremental increases in cooperation, where codesharing or antitrust immunity is added to basic alliance service, yield incremental reductions in the fare, overturning the counterintuitive, contrary conclusions presented in the DOJ studies." Brueckner, Lee & Singer, *supra* note 14, at 594.

[15] *See* Brueckner, Lee & Singer, *supra* note 14. This study analyzed panel data from 1998 to 2009 involving flights between the United States and international markets excluding those in Canada, Mexico, or the Caribbean.

[16] *See* the Appendices for a description of the database we have compiled.

[17] The traffic on these segments includes both connecting ("flow") traffic and nonstop traffic on the specific nonstop route corresponding to the segment. Most of the prior literature on international airline travel focuses on fares rather than traffic. *But see* W. Tom Whalen, *A Panel Data Analysis of Code-Sharing, Antitrust Immunity, and Open Skies Treaties in International Aviation Markets*, 30 REV. INDUS. ORG. 39 (2007), (analyzing both fares and traffic on connecting travel).

[18] Analyses of traffic also reflect the effect of non-fare charges (for example, baggage and change fees).

levels—which, as a matter of economics, are determined in equilibrium by quality-adjusted fares—provide a way to assess all-in effects of cooperation.

Additionally, we analyze both nonstop and connecting international fares using consistent datasets and assumptions. As described above, because the net effect of airline cooperation on international fares and traffic is theoretically ambiguous, evaluating that effect requires an empirical examination of both nonstop and connecting fares and traffic. Analyzing both nonstop and connecting fares and traffic using a consistent approach improves our ability to make such an evaluation.[19]

Lastly, we have compiled a worldwide panel dataset that involves a longer time period than earlier studies, employing quarterly fare and traffic data from 1998 to 2015. We also account for a large number of mergers, acquisitions, and startups that (to the best of our knowledge) were not completely accounted for by previous studies.

D. Summary of Results

Our results show that greater cooperation among international airlines generally benefits passengers. In particular, we find there is a large and statistically significant reduction in fares paid by passengers on connecting itineraries involving multiple members of the same alliance, ATI or JV, relative to simple interline or simple codeshare. Fare benefits are greater as the degree of cooperation between airlines operating between end points increases. Specifically, ATIs lead to fare reductions of about 5.6 percent, a slightly greater reduction than alliances without ATI. JVs lead to substantially larger fare reductions of about eight percent, comparable to online travel. Moreover, our results show that ATIs and JVs lead to increased traffic (nonstop and connecting) on segments on which members of the same alliance operate. Comparing the volume of traffic two years around ATI and JV formations, we find that traffic on ATI/JV member carriers increased by 8.9 to 11.6 percent. These changes are substantially larger than traffic changes of non-ATI and non-JV members on the same routes over the same time periods.

With respect to nonstop travel, our study finds that there is no evidence of average fare increases on nonstop routes when members of the same ATI or JV provide overlapping service relative to routes with the same number of carriers but without any ATI/JV relationship among carriers serving the route. Furthermore, our results indicate that there are substantially more entries than exits on routes between countries of ATI and JV partners. For both ATI and JV formation events, the ratio of entries to exits is similar to or

[19] Most of the prior literature on international airline travel focuses on either connecting or nonstop travel. *But see* William Gillespie and Oliver M. Richard, *Antitrust Immunity Grants to Joint Venture Agreements: Evidence from International Airline Alliances*, 78 ANTITRUST L.J. 443 (2012) (analyzing both types of traffic). The dataset used in their study is limited to U.S.-to-Europe international travel between 2005 and 2011.

higher than for the long-term average ratio of entries to exits on nonstop international routes between the United States and transoceanic destinations.

II. DATA SOURCES AND PREPARATION

We construct panel datasets in which each observation is an aggregate itinerary (for our connecting analysis, as described below),[20] or non-directional route (for our nonstop analysis, as described below) between 1998 and 2015. Our empirical models focus on fare, traffic and departure data between the United States and the rest of the world (excluding other North American countries) collected by the U.S. DOT.[21] These data are supplemented with information from various sources, including data used to classify the level of cooperation between carriers serving an itinerary or route as well as data used to control for various factors that could impact international passenger travel. Specific data sources and processing methods are described below and in Appendix E.

A. City Markets

Airports are aggregated into city markets using the U.S. DOT's Master Coordinate table.[22] This resource provides historical information on domestic and foreign airports including a U.S. DOT identifier for the city market of each airport. Focusing on city-pairs rather than airport-pairs is largely consistent with the existing literature referenced above.[23]

[20] An aggregate itinerary is defined as a combination of city markets travelled in sequence (that is, in the order traveled), leg type (that is, base or return), the sequence of operating carriers, the sequence of marketing carriers, fare class, and the alliance, ATI, or JV affiliation of the carriers during a given year and quarter.

[21] We do not analyze nonstop fares or connecting fares where the U.S.-international segment is between the United States and Canada or Mexico. The market for passenger travel between the United States and Canada or Mexico is structurally different than other international travel. Within North America, there are more transportation options such as motor vehicle, passenger train, or boat. Furthermore, there are a plethora of U.S. and non-U.S. regional carriers operating between these markets. The viability of alternative modes of transport and the presence of lower-cost, lower-capacity regional airlines with operations between smaller international markets render transborder travel distinct from longer-haul international travel and much closer in structure to domestic travel.

[22] *See* U.S. DEP'T OF TRANSP., AVIATION SUPPORT TABLES: MASTER COORDINATE, http://www.transtats.bts.gov/Fields.asp?Table_ID=288.

[23] In analyzing U.S. domestic markets, Brueckner, Lee, and Singer found evidence "that city-pairs, rather than airport-pairs, are the appropriate market definition for analyses of passenger air transportation involving... metropolitan areas." *See* Jan K. Brueckner, Darin Lee & Ethan Singer, *City-Pairs Versus Airport-Pairs: A Market-Definition Methodology for the Airline Industry*, 44 REV. OF INDUS. ORG. 1 (2014). The authors argue that many, but *not* all, airports in a metropolitan area should be grouped. While the authors put forth a methodology to group airports into city markets, their work is limited to domestic travel. Without conducting a comparable study on international markets, we defer to the U.S. DOT's groupings of airports into cities for our analyses. Given the distances and fares involved, it seems reasonable that many international passengers would consider all airports in a given city when selecting an itinerary.

B. Airline Cooperation Information and Timelines

Airline alliance memberships are determined by an airline's affiliation with one of the major current or defunct alliance groups: Atlantic Excellence, oneworld, Skyteam, Star, or Wings. We rely on various sources to determine an airline's association with an alliance at a given point in time, including OAG, the website of the respective alliance, as well as historical news sources and press releases. Alliance arrangements include full members and member affiliates.[24]

ATI arrangements are determined using the U.S. DOT's "Airline Alliances Operating with Antitrust Immunity" report, updated on May 17, 2016, including the materials submitted to the listed DOT-OST dockets.[25] Additional research was conducted to determine the actual implementation of ATI cooperation.[26] Table 1 displays the airlines in each ATI partnership providing overlapping service in our data.[27] In the analysis, an ATI "event" (change in ATI status) can occur on a route or itinerary if: (1) an ATI is granted by the U.S. DOT; (2) a carve-out restriction is removed;[28] (3) an ATI carrier enters or exits a route; (4) an Open Skies agreement is signed between countries with an approved ATI; or (5) a merger or divestiture between a non-ATI carrier and an ATI carrier occurs.

JV arrangements are based on U.S. DOT or other regulatory body filings, airline press releases, and financial reports. Carriers are considered in a JV if their joint business arrangement is approved by the relevant regulatory bodies and the companies share revenue or profits on some international routes. We only consider JVs involving at least one U.S. airline, and require that an ATI is in place between the JV members.[29] Specific JVs, presented in Table 2, are

[24] *See* Appendix A for a list of alliance arrangements considered in our analyses.

[25] *See* U.S. DEP'T OF TRANSP., AIRLINE ALLIANCES OPERATING WITH ANTITRUST IMMUNITY (May 17, 2016), https://www.transportation.gov/sites/dot.gov/files/docs/160517%20-%20All%20Immunized%20Alliances%20updated.pdf. The referenced dockets are available at Regulations.Gov, HOME PAGE, http://www.regulations.gov/.

[26] *See* Appendix B for a list of ATI arrangements considered in our analyses.

[27] A bilateral ATI exists between SAS and Icelandair; however, these carriers do not have overlapping nonstop service to the United States. The same is true for the former ATI between America West and Royal Jordanian.

[28] A carve out is a route or set of routes that the U.S. DOT designates as excluded from an ATI grant and that typically have overlapping nonstop service among members of the same ATI. Members of an ATI cannot coordinate pricing, capacity, and so on, for nonstop operations on routes carved out of an ATI. Typically, carve outs do not apply to connecting operations; however, the language of the U.S. DOT's ATI grant extending the Star Alliance ATI to Continental suggests that both connecting and nonstop transpacific U.S. to Beijing routes would be carved out of the ATI. *See* Order 2009-7-10, Docket OST-2008-0234, at 21, Appendix A (Dep't of Transp. July 10, 2009). More recently, the U.S. DOT has removed carve-out conditions in the event of a JV agreement among overlapping ATI members.

[29] It was impractical to collect data on the relationship status between every pair of non-U.S. airlines. Moreover, as the connecting fare data lack information on itineraries involving only foreign carriers, the presence of JVs without U.S. airlines is likely to be limited to connections beyond the types of connecting trips on which we focus. *See* Appendix C for a list of JV arrangements considered in our analyses.

Table 1. ATI arrangements considered in fare and output analyses

oneworld	Star	Skyteam	Northwest-KLM	Atlantic Excellence	Other ATIs
American-British Airways-Iberia-Finnair-Royal Jordanian	United-Air Canada-Brussels-Lufthansa-Swiss-Austrian-SAS-LOT-TAP	Delta/Northwest-Air France/KLM-Alitalia-Czech Airlines-Korean Air Lines	Northwest-KLM	Delta-Austrian-Sabena-Swissair	American-SN Brussels
American-JAL	United-ANA				American-Swiss International
American-LAN-LAN Peru	United-Asiana United/Continental-Copa United-New Zealand				American-Swissair-Sabena America West-Royal Jordanian Delta-Virgin Atlantic-Air France/KLM-Alitalia Delta-Virgin Australia

Notes: Figure does not show active ATI arrangement between SAS and Icelandair. As this arrangement involves foreign carriers only, itineraries with only these carriers would not appear in the fare data and the carriers do not overlap on any nonstop segments. US Airways officially joined oneworld in March/April of 2014, but it is treated as part of American Airlines and its respective oneworld partnerships starting in 2013Q4 when US Airways merged with American Airlines and was granted regulatory approval to join the oneworld partnerships. United includes Continental in some periods prior to merger.

Table 2. JV arrangements considered in fare and output analyses

oneworld	Star	Skyteam	Northwest-KLM	Other JVs
American-British Airways-Iberia-Finnair	United-Air Canada-Brussels-Lufthansa-Swiss-Austrian	Delta/Northwest-Air France/KLM-Alitalia	Northwest-KLM	Delta-Virgin Atlantic
American-JAL	United-ANA			Delta-Virgin Australia

Notes: US Airways officially joined oneworld in in March/April of 2014, but it is treated as part of American Airlines and its respective oneworld partnerships starting in 2013Q4 when US Airways merged with American Airlines and was granted regulatory approval to join the oneworld partnerships. United includes Continental in some periods prior to merger.

organized similarly to specific ATIs, although the groups are composed of different partnerships.

We treat regional affiliates as having their mainline carrier's cooperative arrangements. We exclude subsidiaries or startups from parent-company cooperative arrangements where the cooperation does not extend to the affiliate.[30]

C. Open Skies Agreements

Information on the timing and parties of Open Skies agreements with the United States is based on the U.S. Department of State's Open Skies Partners list as of April 2017.[31] All active agreements are included regardless of application classification.[32] Each partner country name is matched to a world area code ("WAC") using the U.S. DOT's World Area Codes aviation support table.[33]

[30] For example, IAG, the parent company of British Airways and Iberia Airlines, acquired Irish carrier Aer Lingus in the second half of 2015. This acquisition did not bring Aer Lingus under the oneworldoneworld alliance, nor did it make the carrier part of British Airways' ATI or JV arrangements. Therefore, although we treat Aer Lingus and British Airways as a single competitor after the merger, we do not treat routes or itineraries operated by Aer Lingus post-merger as part of any alliance, ATI, or JV unless those arrangements exist based on the presence of other carriers.

[31] *See* U.S. DEP'T OF STATE, OPEN SKIES PARTNERS (Apr. 7, 2017), https://www.state.gov/e/eb/rls/othr/ata/267129.htm.

[32] Specifically, we treat "Provisional" and "C&R" (or comity and reciprocity) applications as "In Force" applications. This treatment appears appropriate as countries with "Provisional" and "C&R" applications are included in the U.S. DOT's list of current Open Skies partners. *See, e.g.*, U.S. DEP'T OF TRANSP., OPEN SKIES AGREEMENTS CURRENTLY BEING APPLIED (recognizing Nigeria and Indonesia), https://www.transportation.gov/policy/aviation-policy/open-skies-agreements-being-applied.

[33] *See* U.S. DEP'T OF TRANSP., AVIATION SUPPORT TABLES: WORLD AREA CODES, http://www.transtats.bts.gov/Fields.asp?Table_ID=315.

D. Carrier Adjustments

Regional carriers are assigned to the regional carrier's mainline affiliate. This is done using two distinct methodologies for domestic carriers and international carriers and supplemented with manual adjustments to exclude well-known mainline carriers and ensure that well-known regional affiliates or subsidiaries are assigned to their respective mainline carriers.[34]

We have also adjusted our dataset to account for industry consolidation and various subsidiary startups during the data period. We account for 151 mergers, acquisitions, and subsidiary startups across the globe. These adjustments reflect the approximate quarters an airline existed as a joint entity or subsidiary of another airline.[35] The timeline of consolidation and startups used for these adjustments can be found in Appendix D.[36]

These adjustments for consolidation and startups have two primary effects. First, itineraries involving an airline and its subsidiary or merger partner are considered online itineraries. Second, when accounting for a carrier's presence or the total number of competitors on a route, all members of the same parent company are treated as a single competitor.

E. Fare Data

Connecting and nonstop fares are calculated using Data Base Products, Inc.'s "GatewaySup" O&D Survey dataset from 1998 to 2015.[37] These data

[34] Domestic regional carriers are recoded to their mainline affiliates primarily using revenue shares according to *domestic* Origin and Destination Survey ("DB1B") data. Carriers with a ratio of marketing to operating revenues less than 0.95 in a given year and quarter are treated as regional airlines and recoded to the indicated marketing carrier in the domestic DB1B data. Non-U.S. regional carriers are recoded to their mainline affiliates primarily using the ratio of published to operated scheduled departures according to the *Schedules Analyser* database from OAG. Specifically, if a non-U.S. carrier's ratio of marketing to operating flights is less than or equal to the 25th percentile by carrier and year-quarter, it is considered a regional carrier. We also treat carriers with marketing to operating flight ratios greater than the 25th percentile as regional airlines if this ratio was below 0.98 and the carrier operated fewer than 90 total seats in the given quarter. The resulting list of domestic and foreign regional carriers is further supplemented by industry and company-specific research. Well-known mainline carriers are excluded and well-known regional affiliates or subsidiaries are assigned to their respective mainline carriers regardless of revenue shares, ratio of marketing to operating flights, or indicated marketing carrier.

[35] For example, British Midland International (alternatively known as BMI) is treated as independent before 2009Q3, as part of Lufthansa from 2009Q3 to 2012Q1, and as part of British Airways/IAG from 2012Q2 to 2012Q4, after which the company ceased to exist as a business entity.

[36] This timeline is based on research from a variety of sources, including: company websites and financial reports; U.S. AIRLINES MERGERS AND ACQUISITIONS, AIRLINES FOR AMERICA, http://airlines.org/data/u-s-airline-mergers-and-acquisitions; CAPA—THE CENTRE FOR AVIATION, HOME PAGE, http://centreforaviation.com; FLIGHT GLOBAL, HOME PAGE, https://www.flightglobal.com.

[37] *See* AIRLINE DATA FOR THE WELL INFORMED, O&D SURVEY, http://www.airlinedata.com/products/#od_survey. Public access to these data is restricted. Researchers must obtain

originate from the U.S. DOT Bureau of Transportation Statistics' international Origin and Destination Survey database that contains a ten percent sample of airline tickets involving a U.S. airport which are summarized to the level of itinerary (that is, combinations of fare class, trip leg, city markets, and operating and marketing carriers), fare class, and average fare paid by quarter. The data are initially processed by Data Base Products, Inc. These data exclude itineraries operated and marketed exclusively by non-U.S. carriers.[38] Additional data processing that we have applied, including preparation methods specific to either the connecting or nonstop analyses are discussed further in Appendix E.

F. Low-Cost Carriers

We create an indicator variable for the presence of low-cost carriers ("LCCs") on nonstop routes. We identify whether a LCC operates on a route by matching T-100 international segment-level data to a list of carriers considered to be LCCs by OAG. Between January 1996 and December 2015, OAG identifies 199 operating or defunct LCCs. The data are by IATA code, airline name, and effective date range. We convert these data to the carrier-year-quarter level.

III. ANALYSIS OF CONNECTING FARES

As explained above, economic theory indicates that fares for connecting passengers will decline as cooperation increases. These benefits arise due to the internalization of what would otherwise be externalities—for example the ability of a lower price charged by one carrier to attract passengers for partner carriers offering other legs of a connecting itinerary, or the effect of schedule or capacity choices by one carrier to increase demand for a partner carrier's flights.

Most of the existing research and regulatory discussion around airline cooperation in connecting markets focus on reduced fares due to the elimination of double marginalization and on economies of density through network expansion. Another topic of interest involves benefits from coordinated scheduling. For instance, increased cooperation among airline partners may allow for more efficient distribution of departures to account for partner connections, and increases in codesharing. In addition, as more

authorization from the U.S. DOT to use these data. Instructions for accessing these data can be found at BUREAU OF TRANSPORTATION STATISTICS, SOURCES OF AVIATION DATA, http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/subject_areas/airline_information/sources/index.html#RESTRICT.

[38] Therefore, these data are not useful for analyses of total traffic on a route that can be served exclusively by non-U.S. carriers (for example, nonstop international routes).

passengers connect through hubs, international gateway traffic increases as well. This improved demand reduces per-passenger costs on the overall network which in turn can be transferred to consumers in the form of lower fares.

Our work affirms the theory of pro-consumer fare effects in the case of international connecting travel, finding that passengers purchasing travel involving multiple cooperating airlines tend to pay lower fares than those passengers purchasing tickets involving simple codeshare or simple interline arrangements. We also find that the benefits increase as the level of cooperation increases.

A. Connecting Fare Model

We examine the impact on fares of various degrees of cooperation among carriers serving a given connecting aggregate itinerary by specifying a regression model that compares connecting fares involving multiple alliance, ATI, or JV partners with fares on itineraries between the same city pairs that are simple interline or simple codeshare.[39] We regress the log of passenger-weighted fares on four indicators for the degree of cooperation: online, JV, ATI or alliance.[40] These indicators are mutually exclusive classifications with priority given to the higher degree of cooperation—so, for example, a JV itinerary must not be entirely online (that is, it must involve at least two different carriers serving the itinerary) and must have all marketing or operating carriers be part of a single JV; an ATI alliance must not be entirely online or have all carriers in a single JV, but must have all carriers in a single ATI

[39] We exclude from this analysis city pairs with material nonstop service. We combine simple interline and simple codeshare into a single category because too few passengers fly on simple codeshare flights to provide a meaningful benchmark group. *See* Figure 2.

[40] The indicators are based on the combination of marketing and operating carriers for a given itinerary after making adjustments for regional and affiliate carriers. Thus, an aggregate itinerary is considered an online itinerary if all segments are operated and marketed by a single carrier; it is considered a JV itinerary if two carriers of the same JV each operates or markets at least one segment; it is considered an ATI itinerary if two carriers of the same ATI each operates or markets at least one segment and do not have a JV arrangement; and, it is considered an alliance itinerary if two carriers of the same alliance each operates or markets at least one segment and have neither an ATI, nor a JV arrangement. The remainder of itineraries are considered interline or codeshare itineraries and serve as our control group. The alliance, ATI and JV indicators are turned on for an itinerary even if the partners do not codeshare on the itinerary. This approach allows us to measure the full effect of different levels of cooperation (for example, if implementing a JV increases the extent of codesharing, our approach will capture that effect in the estimated JV coefficient) and is consistent with the treatment of the same issue in Brueckner, Lee & Singer, *supra* note 14 (although the researchers in that study measure the effect of codeshares separately, rather than include codeshare itineraries in their reference group).

alliance; and an alliance itinerary must not be entirely online and must involve carriers not in the same JV or ATI, but all in the same alliance.[41]

We do not include indicators for simple interline and codeshare itineraries, making these itineraries the reference group. That is, the coefficient for any indicator can be interpreted as the difference in fares between the itinerary of the indicated arrangement and similarly situated itineraries involving simple interline or codeshare arrangements.

We include fixed effects for fare class; controls for the top operating carriers (that is, variables for each major airline's share of the itinerary distance, as described in Appendix E); fixed effects for non-directional O&D cities interacted with quarter (as controls for the average fare on the city-pair, allowing for seasons to affect different routes in distinct ways); and interacted year, quarter and region (that is, transoceanic segment) fixed effects (to control for time-varying trends of each region). Our controls also include the number of coupons (that is, segments) on an itinerary and the total distance traveled (both measures of travel inconvenience), an indicator for whether or not the round trip originated in the United States,[42] and an indicator for whether or not the trip involved a connection between non-U.S. airports. Our baseline regressions are weighted by number of passengers at the level of the aggregate itinerary because of the large variance in the number of passengers between O&Ds, airline combinations, and fare classes.[43]

B. Descriptive Statistics

The worldwide sample contains over 12.3 million observations and over 95.5 thousand non-directional origin and destination city-pairs. Table 3 displays

[41] As described in Appendix E, for tractability we only include in the analysis itineraries with up to two different operating or marketing carriers (after adjusting for regional affiliates, subsidiaries, startups, and mergers).

[42] Some research has indicated that tickets originating in the United States or those purchased with a U.S. point of sale tend to be more expensive than tickets purchased from other localities. *See, e.g.*, Scott McCartney, *Airline Fare Riddle: One Route, Two Prices*, WALL ST. J., Jan. 7, 2015.

[43] Models estimated by OLS embed an assumption of homoscedasticity, or the constant variance of the error term. Applying weights, in this case, reduces the impact of noise (variance) that may be introduced by fares on smaller routes or less popular trips, thereby reducing heteroscedasticity and increasing the reliability of our estimates. *See* JEFFERY M. WOOLDRIDGE, INTRODUCTORY ECONOMETRICS: A MODERN APPROACH 52–56, 276–82 (Cengage 4th ed. 2009). Weighting is especially important when using the itinerary-level connecting fare data that includes a "long tail" of rare itineraries. Ideally, we would calculate robust standard errors clustered at the market level. However, the large sample size creates computing limitations that do not allow calculating robust standard errors. Given the large sample size and the highly significant coefficients on the variables of interest, this simplification is unlikely to make a material difference to the significance level.

Table 3. Summary statistics for connecting fare sample

Variables	Mean (Weighted)	Median	Std. Dev. (Weighted)	Min	Max
Fare	$634.98	$594.19	$553.78	$50.50	$13,376.18
Online Indicator	0.63	0.00	0.48	0.00	1.00
Alliance Indicator	0.09	0.00	0.28	0.00	1.00
ATI Indicator	0.04	0.00	0.19	0.00	1.00
JV Indicator	0.11	0.00	0.31	0.00	1.00
Coupons	2.18	2.00	0.39	2.00	3.00
Fare Class	3.00	3.00	0.39	1.00	4.00
Distance	5,241	5,614	2,336	174	18,582
U.S. Origin	0.62	1.00	0.49	0.00	1.00
Foreign Connection	0.30	1.00	0.46	0.00	1.00
Quarterly GatewaySup Passengers (Unweighted)	30	10	76	10	12,930

Notes: Summary statistics are limited to baseline regression sample. There are 12,308,118 observations in our baseline regression accounting for 95,628 city-pairs. Fare class values can be interpreted in the following manner: 1 is Unrestricted Business Class, 2 is Restricted Business Class, 3 is Restricted Economy Class, and 4 is Unrestricted Economy Class. GatewaySup Passengers are passenger counts reported in the GatewaySup O&D database and the same variable used to weight the baseline regressions.

summary statistics for key metrics in the worldwide baseline connecting fare regression data.

C. Connecting Fare Results

The results of our baseline regression are presented in Table 4. The results show that as the degree of airline cooperation intensifies, fares incrementally decrease.[44] In particular, alliances reduce fares by about 4.5 percent, with ATIs reducing fares by an additional one percent on top of alliances without ATIs (that is, a total effect of about 5.6 percent).

JVs have a stronger impact on fares, reducing fares by about eight percent relative to simple interline/codeshare, which is nearly as much as the reduction associated with online itineraries. Hence, it appears that, while ATIs, absent a JV, do not allow realization of the full benefits of airline cooperation, JVs allow carriers to internalize the externalities that each carrier's decisions have on its partner, such that they approximately replicate the fare benefits of online service.

We also run several modified specifications to test the robustness of our model, as shown in Table 5. First, in Column 1, we investigate the result of giving each observation equal weight (that is, removing the passenger weights). Second, in Column 2, we run the regression for economy fares only (including both restricted and unrestricted economy), to test whether

[44] The underlying coefficients are converted into a percentage impact on fares by taking the exponential function of each coefficient and subtracting 1.

Table 4. Effects of airline cooperation on connecting fares

Variables	Baseline
Online	–8.17%***
Alliance	–4.51%***
ATI	–5.62%***
JV	–7.98%***
Coupons	–7.05%***
US POS	1.19%***
Foreign Connection	2.99%***
Distance	0.00%***
Log(Distance)	–6.81%***
Observations	12,308,118
R-squared	0.736
Adj. R-squared	0.730
F-statistic	7,665
Prob > F	0.000

Notes: Statistical significance of underlying coefficients: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$. The reported F-statistic and associated p-value are calculated for the joint significance of the parameters indicated in the regression table and exclude the fixed effects applied to the regression.

the inclusion of multiple fare classes in the regression is driving the results. Third, in Column 3, we limit the sample to years after 2001 to account for the possibility that the industry was altered by the September 11, 2001 terrorist attacks. Fourth, in Column 4, we include one-way itineraries and introduce an indicator for such trips to test whether restricting the data to roundtrip itineraries affects our results. Fifth, in Column 5, we exclude trips with origins and destinations that serve as international gateways, where foreign carriers operate more than 60 aggregate nonstop departures in a given quarter. In this way, we test whether our findings hold in markets with less foreign carrier service, and, thus, markets that are less likely to be affected by the lack of fare data for flights operated exclusively by foreign carriers. Lastly, in Columns 6 and 7, we include a control for the extent of competition for a given origin/destination pair in a given quarter. We define this control in two alternative ways: in one, we count unique combinations of operating airlines carrying at least three percent of total passengers, and in another we count unique combinations of operating airlines carrying at least ten percent of total passengers. These controls test the extent to which competition between end points on a trip impact our results.[45]

[45] Note that due to the limitations of the O&D data described above, these counts omit itineraries consisting only of non-U.S. carriers. The number of competitors has a statistically significant effect on connecting fares, but that effect is small in magnitude (about 0.5 percent per carrier combination). As we discuss below, this effect is far smaller than the effect of removing a second or third carrier from a nonstop route.

Table 5. Connecting fare effects robustness checks

Variables	(1) Unweighted	(2) Economy Fares	(3) Start 2002	(4) Incl. One-way Itineraries	(5) Excl. International Gateways	(6) Incl. Unique Operating Carrier Combination Counts (3% Passenger Threshold)	(7) Incl. Unique Operating Carrier Combination Counts (10% Passenger Threshold)
Online	–7.80%***	–7.59%***	–5.85%***	–8.35%***	–8.19%***	–8.39%***	–8.24%***
Alliance	–4.16%***	–4.41%***	–2.54%***	–4.73%***	–3.76%***	–4.64%***	–4.56%***
ATI	–7.13%***	–5.52%***	–3.47%***	–5.85%***	–4.30%***	–5.76%***	–5.66%***
JV	–6.33%***	–8.32%***	–6.09%***	–8.38%***	–8.84%***	–8.18%***	–8.05%***
Coupons	–8.58%***	–6.07%***	–7.49%***	–7.01%***	–5.37%***	–6.89%***	–6.98%***
US POS	2.64%***	0.58%***	0.35%***	0.23%***	–2.53%***	1.19%***	1.19%***
Foreign Connection	4.52%***	2.03%***	2.90%***	2.92%***	1.02%***	2.92%***	2.97%***
Distance	0.00%***	0.00%***	0.00%***	0.00%***	0.00%***	0.00%***	0.00%***
Log(Distance)	–3.33%***	–6.78%***	–6.60%***	–7.14%***	–0.93%**	–6.67%***	–6.66%***
One-way Itinerary				23.65%***			
Number of Competitors						–0.58%***	–0.41%***
Observations	12,308,118	11,118,888	10,290,316	14,674,185	8,489,229	12,308,118	12,308,118
R-squared	0.630	0.677	0.735	0.719	0.748	0.736	0.736
Adj. R-squared	0.622	0.670	0.728	0.714	0.741	0.730	0.730
F-statistic	8,367	6,852	4,679	57,492	5,350	7,457	7,026
Prob > F	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Notes: Statistical significance of underlying coefficients: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$. The reported F-statistics and associated p-values are calculated for the joint significance of the parameters indicated in the regression table and exclude the fixed effects applied to each regression.

As indicated by the results below, all our substantive conclusions are robust to these various model specifications. Hence, our findings do not depend on specific details of our model specification.

IV. ANALYSIS OF SEGMENT TRAFFIC

In the previous Part, we found that increasing degrees of cooperation among airlines involved in international travel reduced fares for passengers on trips involving a connection. In this Part, we investigate the output effects of these partnerships, focusing on the overall impact that ATI or JV formations have on "segment" traffic (that is, including both nonstop and connecting traffic on the same flight). If increased cooperation, and in particular JV participation, properly aligns incentives among partners in a way that makes the partners' joint network more attractive to consumers, one would expect increases in output on segments involving one or more partner airline. And, indeed, we find that traffic increases on ATI and JV partner airlines as well as overall on routes impacted by the formation of these partnerships.

A. Segment Traffic

To the extent that closer cooperation results in more connecting traffic, we expect that total "flow" traffic over international nonstop segments would increase. For example, if better pricing and/or connections between country A and country B increase connecting traffic carried behind or beyond A and B by the partner airlines, that traffic will include a nonstop segment between the two countries. Similarly, as we have discussed, increased density on nonstop segments could result in lower costs and fares for nonstop passengers, which also could stimulate additional nonstop traffic on those segments. For this reason, we study the effects of ATI or JV formation on segment-level traffic, including both connecting and nonstop traffic, to capture the full set of benefits from such alliances.

We evaluate output effects using the nonstop segment data derived from the U.S. DOT's Form 41 T-100 database described in Appendix E. We select the relevant routes for this analysis using several conditions. First, we identify events in which a carrier domiciled in a foreign country entered into an ATI or JV partnership with a U.S. airline operating between the United States and that country. We exclude ATI and JV events in which the U.S. and the foreign carrier (or its parent company) do not overlap on any route at any time in our dataset.[46] Second, we identify all the routes between the United States and the

[46] The domicile and overlap conditions are intended to exclude cases in which the ATI or JV are expected to have a minor impact on travel between the United States and the foreign country. For example, the United Airlines ATI with Air New Zealand does not trigger the inclusion of all flights between the United States and the United Kingdom in our analysis despite Air New Zealand's operation of daily flights between LAX and LHR. This is because Air

foreign country in which at least one member of the partnership operated on the route within a one-year or a two-year time window around the ATI or JV event.[47] We define a one-year time window as the fourth quarter before the event compared to the fourth quarter after the event. Similarly, we define a two-year time window as the eighth quarter before the event compared to the eighth quarter after the event. For example, when we analyze the effect of the ATI between American Airlines and British Airways initiated in 2010Q3 within a two-year time window, we include in the analysis all routes between the United States and the United Kingdom on which at least one of these two airlines operated *during* 2008Q3 or *during* 2012Q3.[48]

The time of the event is considered to be the first quarter where at least two members of the same ATI or JV overlap operations on at least one route between the United States and the foreign country after the ATI or JV was approved.[49] We analyze segments between the countries where at least one of the ATI or JV members operated during a one-year or a two-year time-window around each formation event.[50] We then measure how traffic carried by ATI or JV members and other airlines changed on the segments in question during these time windows.

B. Segment Traffic Results

We find that segment traffic of ATI and JV members increases substantially following partnership events, as shown in Table 6. This increase in traffic is larger in the two-year window than the one-year window, suggesting that the full benefits of cooperation take time to materialize.

To control for changes unrelated to the formation of an ATI or JV, we compare traffic changes on the partner carriers to traffic changes on non-partner airlines on routes affected by partnership formations (that is, we use as a benchmark non-member traffic changes on routes that experience an

New Zealand is not based in the United Kingdom. Additionally, the United Airlines ATI with BMI Airways does not trigger the inclusion of all flights between the United States and the United Kingdom in our analysis despite BMI being based in the United Kingdom because the two airlines do not overlap (with a significant departure frequency) on any route between the United States and the United Kingdom.

[47] We exclude routes in which a carve out ended within the indicated time windows.

[48] If an ATI becomes a JV within one or two years, traffic in the post-periods for the ATI event will reflect any effect of the JV. For example, if an ATI event occurs in 2010Q3, and that ATI becomes a JV in 2012Q1, the post-period for the two-year window comparison (that is, 2008Q3 vs. 2012Q3) will reflect any change in traffic caused by the implementation of the JV.

[49] We consider a member of the ATI or JV as present on a nonstop route in a given quarter if it meets or exceeds the 25th percentile of departures performed for a given region.

[50] These time windows were chosen to balance two effects. On the one hand, a window that is too short will not give the ATI and JV enough time to have an impact, as airline integration could take some time to materialize. On the other hand, a window that is too long will make it more likely that market changes unrelated to the ATI or JV formation will confound the effect of the ATI or JV.

Table 6. The effect of ATI and JV formation on segment traffic

Window Length	Change in ATI Member Traffic	Change in non-ATI Member Traffic	Change in JV Member Traffic	Change in non-JV Member Traffic
1 Year	3.8%	2.0%	2.3%	2.6%
2 Year	8.9%	7.6%	11.6%	2.8%

Notes: ATI events include ATI formations among carriers that may also be JV partners. Non-member traffic changes are measured on routes which experience an ATI or JV event.

ATI or JV event). The results show that non-ATI and non-JV members also experience increases in traffic, but with the exception of the one-year results for JVs, at lower levels. The two-year results indicate that JVs have a substantially larger effect than ATIs on member traffic. We conclude that ATIs and JVs increase total traffic and are therefore beneficial to international passengers, as demonstrated by an increase in demand for and thus output of international travel.

V. ANALYSIS OF NONSTOP FARES

In this Part, we analyze the effect of cooperative arrangements on nonstop fares.[51] On these routes, economic theory indicates that the cooperative agreements could reduce competition and thereby increase average fares. Indeed, this logic has motivated past decisions by the U.S. DOT to carve out routes (that is, exclude routes) from ATI grants where overlapping partner airlines have a large presence.

However, this theoretical possibility of higher fares following grants of ATI or formation of JVs is countered by the importance of the affected segments for overall networks and the associated incentives for post-cooperation capacity expansion, which could put downward pressure on fares. In addition, increased traffic from feeder routes may attract more competitors and a greater number of departure frequencies which could lead to fare reductions. Moreover, cooperation among partner airlines could reduce operational redundancies and improve the distribution of flights (within a given day or across days), making it more profitable for partnered carriers to continue overlapping service and making it possible to pass cost savings to consumers through lower fares.

Hence, the ultimate effect on fares of increased cooperation among the carriers serving a given nonstop route is an empirical question, which we address in this Part. As detailed below, we find no evidence of fare increases when carriers on a nonstop route enter into an ATI or JV, relative to the same route before ATI or JV formation.

[51] A few previous studies analyzed the effects of airline cooperation on nonstop fares, generally focusing on hub-to-hub markets with overlapping operations by partner airlines. *See, e.g.*, Brueckner & Whalen, *supra* note 12.

A. Nonstop Fare Model

We analyze whether the formation of an ATI or JV on a route affects fares on the route, holding constant the number of competitors. We specify regression models that explain changes in nonstop fares after a route switches from a situation in which all of the carriers are independent to a situation in which two or more of the carriers are in an ATI or JV together, or *vice versa*, controlling for the number of carriers serving the route and other route characteristics, described below. To focus on routes where competitive effects from cooperation are most plausible, we limit the analysis to routes with no more than four competitors in a given quarter.

The dependent variable in our analysis is the natural log of passenger-weighted fares. The main explanatory variables of interest are an indicator for the presence of two or more members of the same ATI on the route and an indicator for the presence of two or more members of the same JV on the route. The coefficients on these indicators represent the change in fares on a route after two airlines on the route become (or cease to be) ATI or JV members—either through the formation (or cancellation) of an ATI or JV between carriers that operate on the route, the termination of a carve out, or through entry (or exit) of a partner airline on a route in which another ATI or JV partner operates.

We control for the number of competitors on a route with indicators for two or more competitors, three or more competitors, and four competitors.[52] These indicators show how the addition (or subtraction) of carriers from a route affects fares. We count each ATI or JV member as a separate competitor so that the ATI or JV indicator measures the competitive effect of cooperation, holding the total number of competitors fixed. We include an indicator to control for whether one or more LCCs are present on a route. We also include as controls fixed effects for each combination of non-directional O&D cities and quarter (to control for the average difference in fares between routes, while allowing the fare on each route to vary based on the route-specific seasonality). In addition, we include a fixed effect for each of the four fare classes (to control for fare differences between classes); a fixed effect for each of the largest operating carriers (to control for fare differences due to quality of carriers); and fixed effects for the interactions of year, quarter and transoceanic segment (to control for trends that similarly impact all routes in a region). Our regressions are passenger weighted.[53]

[52] In our baseline regression, we consider a carrier as present on a nonstop route in a given quarter if it meets or exceeds the 25th percentile of departures performed for a given region. Including controls for the number of carriers on a route rather than other measures of market concentration such as the Herfindahl-Hirschman Index is consistent with recent literature. *See, e.g.*, Jan K. Brueckner, Darin Lee & Ethan S. Singer, *Airline Competition and Domestic US Airfares: A Comprehensive Reappraisal*, 2 ECON. TRANSP. 1 (2013).

[53] We weight our baseline nonstop fare regressions by total passengers associated with each observation (that is, the combination of city markets travelled, operating carrier, and fare class

Table 7. Summary statistics for nonstop fare sample

Variables	Mean (Weighted)	Median	Std. Dev. (Weighted)	Min	Max
Fare	$475.60	$607.00	$474.89	$52.50	$10,291.38
ATI Indicator	0.01	0.00	0.12	0.00	1.00
JV Indicator	0.04	0.00	0.20	0.00	1.00
LCC Indicator	0.21	0.00	0.40	0.00	1.00
Total Competitors	2.29	2.00	1.04	1.00	4.00
Fare Class	3.06	3.00	0.48	1.00	4.00
Quarterly GatewaySup Passengers (Unweighted)	1,923	170	5,124	10	135,040

Notes: Summary statistics are limited to baseline regression sample. There are 126,170 observations in our baseline regression accounting for 923 city-pairs. Fare class values can be interpreted in the following manner: 1 is Unrestricted Business Class, 2 is Restricted Business Class, 3 is Restricted Economy Class, and 4 is Unrestricted Economy Class. GatewaySup Passengers are passenger counts reported in the GatewaySup O&D database and the same variable used to weight the baseline regressions.

B. Descriptive Statistics

Table 7 displays summary statistics for key metrics in the worldwide baseline nonstop fare regression sample.

The number of overlap markets (that is, routes) and passengers by cooperative arrangement are shown in Table 8.

C. Nonstop Fare Results

The results of our baseline model are presented in Table 9. Our main result is straightforward: Neither the presence of overlapping ATI, nor overlapping JV partners on a nonstop route has an effect on fares that is significantly distinguishable from zero. In contrast, we *do* find that the fares on nonstop routes are affected by the number of competitors and the presence of LCCs on the route. Specifically, an increase in the number of competitors on a route from one to two reduces fares by about four and a half percent, and an increase in the number of competitors on a route from two to three reduces fares by an additional about four percent. Adding a fourth competitor does not have a significant impact on fares. The presence of one or more LCCs on nonstop international travel reduces fares by about 10 percent.

In sum, our results are consistent with previous findings in the literature that, on average, additional carriers—particularly LCCs[54]—are associated

during a given year-quarter). We use robust standard errors clustered at the non-directional O&D level.

[54] *See* Markus Franke, *Competition Between Network Carriers and Low-Cost Carriers—Retreat, Battle, or Breakthrough to a New Level of Efficiency?*, 10 J. AIR TRANSP. MGMT. 15 (2004); Austan Goolsbee & Chad Syverson, *How Do Incumbents Respond to the Threat of Entry? Evidence from the Major Airlines*, 123 Q.J. ECON. 1611 (2008); Grant Martin, *International Low-Cost Airlines Drive Transatlantic Fares into the Ground*, FORBES, Oct. 30, 2014, http://

Table 8. Nonstop overlap metrics by alliance and arrangement

Year	ATI		JV	
	Markets	**GatewaySup Passengers (in thousands)**	**Markets**	**GatewaySup Passengers (in thousands)**
1998	0	0.0	2	19.0
1999	0	0.0	2	30.2
2000	1	24.5	2	33.8
2001	3	58.1	1	6.2
2002	5	468.0	1	13.6
2003	4	113.1	4	49.0
2004	5	196.9	2	44.1
2005	5	315.0	3	69.2
2006	4	152.3	4	153.6
2007	5	172.7	5	131.0
2008	6	234.0	7	366.9
2009	10	301.6	7	217.2
2010	12	383.2	16	725.8
2011	9	210.4	25	1,760.0
2012	6	206.7	28	1,737.3
2013	5	175.2	33	1,785.6
2014	5	126.7	33	1,767.9
2015	5	128.1	35	1,737.2
1998–2015	**26**	**3,266.5**	**42**	**10,647.5**

Notes: Figures are limited to baseline regression sample. Passenger figures are totals for all carriers on routes in which the indicated partnership have overlapping members in a given time period. Routes and passengers with both an overlapping ATI and an overlapping JV are only counted in the JV columns.

with lower fares. However, our results show that these competitive effects do not extend to ATI or JV relationships between carriers, which are not associated with statistically detectable fare increases.

We test the robustness of our model by running several modifications, as shown in Table 10. First, in Column 1, we run an unweighted version of the regression. Second, in Columns 2 and 3, we use alternative thresholds for defining carrier presence on a route.[55] Third, in Column 4, we analyze the impact of including routes with more than four competitors in a given quarter. Fourth, in Column 5, we limit the sample to economy fares. Fifth, in Column 6, we limit the sample to years after 2001 to account for the possibility that the industry was altered by the September 11, 2001 terrorist attacks. Sixth, in Column 7, we replace the operating-carrier fixed effects with marketing-carrier fixed effects. Finally, in Column 8, we expand our sample

www.forbes.com/sites/grantmartin/2014/10/30/international-low-cost-airline-drive-transatlantic-fares-into-the-ground/#36d9026e7703.

[55] As we have discussed, our baseline regression counts a carrier as a competitor in a given quarter if it meets the 25th percentile of departures performed for a given region. We test our results against thresholds of 20 and 60 total departures per quarter.

Table 9. Effect of overlapping ATI and JV partners on nonstop fares

Variables	Baseline
ATI on Route	2.17%
JV on Route	–1.13%
LCC on route	–9.61%***
Adding 2nd Carrier	–4.63%***
Adding 3rd Carrier	–4.21%**
Adding 4th Carrier	–0.86%
Observations	126,170
R-squared	0.924
Adj. R-squared	0.922
F-statistic	12.42
Prob > F	0.000

Notes: Statistical significance of underlying coefficients: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$. The reported F-statistic and associated p-value are calculated for the joint significance of the parameters indicated in the regression table and exclude the fixed effects applied to the regression.

to include one-way trips and include an indicator variable to control for the effect that purchasing only one direction of a trip might have on fares.[56]

All of our substantive conclusions hold up across these various alternative specifications, demonstrating that our findings are robust to these modifications and not driven by specific details of the model specification.

VI. ANALYSIS OF SEGMENT-LEVEL ENTRY AND EXIT

The results above find no support for higher fares when two or more of the carriers on a route enter an ATI or JV relationship, *conditional on the number of competitors on a route*. However, this finding does not preclude the possibility that the coordination permitted by ATI and JV arrangements motivates

[56] Separately, to further validate our findings, we also run the regression treating multiple ATI and JV members as a single competitor on a given route. To be more precise, recall that, in our baseline regression, ATI and JV members are counted separately, so the ATI and JV dummy variables in the baseline regression in essence asks: for a given number of operating airlines on a route, what is the fare effect of having two or more of these airlines being in an ATI or a JV? The alternative specification treats ATI and JV members as one competitor, and thus the dummy for ATI or JV allows us to answer a related but slightly different question: does the regression reject treating ATI and JV members as single competitors? If the coefficient on ATI or JV is negative and significant, the assumption is rejected; that is, there is evidence that the formation of ATI or JV is not equivalent to a loss of a competitor. Our results for this alternative specification find a negative and statistically significant coefficient at a 10-percent significance level on the JV dummy of a magnitude that nearly offsets the supposed loss of competitor from the assumption. Thus, our results demonstrate that JVs do not have the same fare-increasing effects as actual reductions in the number of carriers serving a route. In contrast, the ATI coefficient in this alternative specification is not significant. Hence, the ATI results are more ambiguous. While there is no significant evidence for a fare increase above the potential effect from reducing the number of carriers serving a route, there is also no significant evidence to reject treating ATI partners as one competitor.

Table 10. Nonstop fare effects robustness checks

Variables	(1) Unweighted	(2) 20 Dept. Threshold	(3) 60 Dept. Threshold	(4) No Carrier Count Restrictions	(5) Economy Fares	(6) Start: 2002	(7) Marketing Carrier Fixed Effects	(8) Incl. One-way Itineraries
ATI on Route	0.90%	2.58%	2.11%	2.06%	2.00%	3.54%	2.14%	2.27%
JV on Route	–1.57%	–0.92%	–1.22%	1.42%	–1.39%	–0.48%	0.35%	–1.39%
One-way Itinerary								24.86%***
LCC on route	–3.36%*	–9.50%***	–8.42%***	–9.43%***	–10.08%***	–9.37%***	–9.43%***	–9.99%***
Adding 2nd Carrier	–3.51%***	–4.21%***	–4.18%***	–5.22%***	–4.74%***	–5.15%***	–4.68%***	–4.36%***
Adding 3rd Carrier	–1.99%*	–4.30%**	–5.06%***	–3.28%*	–4.30%**	–5.28%***	–4.30%**	–4.02%**
Adding 4th Carrier	0.46%	–0.92%	–1.52%	–2.84%	–0.81%	–1.13%	–0.93%	–0.71%
Observations	126,170	127,148	120,392	137,067	79,770	100,123	145,721	219,741
R-squared	0.796	0.925	0.925	0.917	0.918	0.929	0.922	0.915
Adj. R-squared	0.789	0.922	0.923	0.914	0.914	0.926	0.919	0.913
F-statistic	4.86	11.60	9.88	11.88	12.64	20.33	12.18	34.31
Prob > F	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Notes: Statistical significance of underlying coefficients: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$. The reported F-statistics and associated p-values are calculated for the joint significance of the parameters indicated in the regression table and exclude the fixed effects applied to each regression.

member airlines to cease serving certain markets on which their partner carriers operate. In this Part we consider—and rule out—the possibility that ATI and JV arrangements systematically reduce the number of carriers serving a route, and therefore confirm the lack of competitive harm from these arrangements.

Events and routes are identified in the same way as in the traffic analysis we presented earlier. We look at the occurrence of airline entry and exit in one-year and two-year time windows before and after an ATI or JV event on nonstop routes. The focus of our analysis is the number of route-event combinations that experience entry and exit of one or more carriers during each window (excluding cases where carve outs terminate within these windows).[57]

We evaluate the number of routes on which the total number of carriers increase, stay the same, or decrease. We also measure ATI and JV partner decisions regarding entry and exit on routes. We find that the number of routes that experience an increase in the total number of carriers substantially exceeds the number of routes that experience a decrease in the number of carriers. Specifically, of the 164 route-ATI event combinations, 33 experience an increase in the number of carriers a year after the grant of ATI. In contrast, only 14 experience a decrease in the number of carriers a year after the grant of ATI (and 117 routes see no change in the number of carriers present between the year before the grant of ATI and the year after). A similar pattern holds for a two-year window (46 increases compared to 25 reductions). We also find that ATI members enter more routes than they exit, as shown in Table 11.

Our findings for JV formations are similar. Of the 142 route-JV event combinations, 29 experience an increase in the number of carriers a year after the grant of JV. Only 15 experience a decrease in the number of carriers a year after the grant of JV (and 98 routes see no change in the number of carriers present between the year before the grant of JV and the year after). Again, a similar pattern holds for a two-year window (32 increases compared to 15 reductions). We also find that JV members enter more routes than they exit, as shown in Table 12.

The ratio between the exits and entries on routes with ATI or JV events is similar to or exceeds the "normal" long-term ratio between entries and exits across all routes. Specifically, the long-term ratio of routes experiencing entries to routes experiencing exits measured across all nonstop routes in our analysis (that is, from 1998 to 2015) is 1.5 applying a one-year window and 1.6 applying a two-year window. We conclude that ATI grants or the

[57] As in our analysis of segment traffic, if an ATI becomes a JV within one or two years, post-periods for the ATI event will reflect any effect of the JV. For example, if an ATI event occurs in 2010Q3, and that ATI becomes a JV in 2012Q1, the post-period for the two-year window comparison (that is, 2008Q3 vs. 2012Q3) will reflect any entries or exits caused by the implementation of the JV. ATI or JV events formed outside the 1998 to 2015 data period, such as the formation of the Northwest-KLM ATI partnership, are excluded from the analysis.

Table 11. The effect of ATI formation on the number of ATI members

Window Length:	**One Year**		**Two Years**	
Change in Carriers	**# of Routes**		**# of Routes**	
	Overall	**ATI Members**	**Overall**	**ATI Members**
Increase	33	18	46	31
No Change	117	138	91	115
Decrease	14	8	25	16
Total	164	164	162	162
Entry/Exit Ratio	2.4 : 1	2.3 : 1	1.8 : 1	1.9 : 1

Notes: The table classifies specific route-ATI events. If a route experiences multiple different ATI events it will be counted more than once, even if the events occur in the same quarter.

Table 12. The effect of JV formation on the number of JV members

Window Length:	**One Year**		**Two Years**	
Change in Carriers:	**# of Routes**		**# of Routes**	
	Overall	**JV Members**	**Overall**	**JV Members**
Increase	29	18	32	24
No Change	98	112	83	97
Decrease	15	12	15	9
Total:	142	142	130	130
Entry/Exit Ratio:	1.9 : 1	1.5 : 1	2.1 : 1	2.7 : 1

Notes: The table classifies specific route-JV events. If a route experiences multiple different JV events it will be counted more than once, even if the events occur in the same quarter.

creation of JVs did not lead, on average, to a substantial reduction in the number of carriers serving those routes. Instead, we find that ATI and JV events are associated with a ratio of entries to exits that is similar to, or greater than, the ratio of entries to exits across all routes.

In sum, the results presented in this Part showing that ATI and JV events tend to increase the number of competitors on a route (by about the same or more than the average route)—together with the nonstop fare results presented in Part V, showing no significant fare increases associated with the ATI or JV partnerships and significant fare reductions associated with growth in the number of carriers serving a route—demonstrate that ATI and JV partnerships are more likely to benefit than to harm nonstop passengers.

VII. CONCLUSION

In this article we have analyzed the impact of varying degrees of airline cooperation on nonstop and connecting international traffic using a detailed dataset of international travel between the United States and other countries

for the years 1998 to 2015. We have made two critical advances on the existing literature. First, by compiling a detailed, worldwide dataset covering nearly 20 years and carefully defining relevant alliance relationships worldwide, we have developed an overall, bottom-line answer to the competitive effect of various forms of alliances, incorporating effects on both nonstop "overlap" routes and connecting "cooperation" routes. Second, by breaking out three forms of alliances—JVs, alliances that are not JVs but *do* have ATI, and simple alliances that are neither JVs nor antitrust immune—we have isolated the effect of each successive level of increased cooperation.

Our results demonstrate that, on the whole, ATI grants—particularly when coupled with the formation of JVs—have been strongly procompetitive, generating lower fares on connecting routes and increased traffic on segments served by multiple alliance partners, with no associated increase in nonstop fares where partner airlines have overlapping operations.

APPENDIX A: MAJOR AIRLINE ALLIANCE AFFILIATIONS

Table 13. Major airline alliance affiliations

Carrier Name (IATA Code)	Alliance	Status	From	To
Adria Airways (JP)	Star	Member	Nov. 2004	Present
Aegean (A3)	Star	Member	June 2010	Present
Aer Lingus (EI)	oneworld	Former Member	June 2000	Mar. 2007
Aeroflot Russian Airlines (SU)	Skyteam	Member	Apr. 2006	Present
Aerolineas Argentinas (AR)	Skyteam	Member	Aug. 2012	Present
Aeromexico (AM)	Skyteam	Member	June 2000	Present
Air Berlin (AB)	oneworld	Member	Mar. 2012	Present
Air Canada (AC)	Star	Member	May 1997	Present
Air Europa (UX)	Skyteam	Member	Sept. 2007	Present
Air Europe (AE)	Qualiflyer	Former Member	May 1999	Feb. 2002
Air France (AF)	Skyteam	Member	June 2000	Present
Air India (AI)	Star	Member	July 2014	Present
Air Liberte AOM (IJ)	Qualiflyer	Former Member	Apr. 1998	Feb. 2002
Air Littoral (FU)	Qualiflyer	Former Member	Sept. 1998	Dec. 2001
Air New Zealand (NZ)	Star	Member	Mar. 1999	Present
Air Nostrum (YW)	oneworld	Affiliate	Sept. 1999	Present
AirChina (CA)	Star	Member	Dec. 2007	Present
Alitalia (AZ)	Wings	Former Member	Nov. 1999	Aug. 2000
Alitalia (AZ)	Skyteam	Member	July 2001	Present
American (AA)	oneworld	Member	Feb. 1999	Present
American Connection (A440)	oneworld	Affiliate	Dec. 2001	Present
American Eagle (MQ)	oneworld	Affiliate	Feb. 1999	Present
ANA (NH)	Star	Member	Oct. 1999	Present
Ansett Australia (AN)	Star	Former Member	Mar. 1999	Sept. 2001
Asiana Airlines Inc. (OZ)	Star	Member	Mar. 2003	Present
Austrian Airlines (OS)	Qualiflyer	Former Member	Apr. 1998	Dec. 1999
Austrian Airlines (OS)	Atlantic Excellence	Former Member	June 1996	Aug. 2000
Austrian Airlines (OS)	Star	Member	Mar. 2000	Present
Avianca (AV)	Star	Member	June 2012	Present
Avianca Brasil (O6)	Star	Member	July 2015	Present
BA Cityflyer (CJ)	oneworld	Affiliate	Feb. 1999	Present
Blue1 (KF)	Star	Affiliate	Nov. 2004	Present
BMI British Midland (BD)	Star	Former Member	July 2000	Apr. 2012
British Airways (BA)	oneworld	Member	Feb. 1999	Present
Brussels (SN)	Star	Member	Dec. 2009	Present
Canadian Airlines (CP)	oneworld	Former Member	Feb. 1999	June 2000
Cathay Pacific (CX)	oneworld	Member	Feb. 1999	Present
China Airlines (CI)	Skyteam	Member	Sept. 2011	Present
China Eastern (MU)	Skyteam	Member	June 2011	Present
China Southern (CZ)	Skyteam	Member	Nov. 2007	Present
Comair-BA (MN)	oneworld	Affiliate	Feb. 1999	Present
Continental (CO)	Wings	Former Member	Nov. 1998	Aug. 2004
Continental (CO)	Skyteam	Former Member	Sept. 2004	Oct. 2009
Continental (CO)	Star	Member	Nov. 2009	Present
Copa Airlines (CM)	Skyteam	Associate Member	Sept. 2007	Oct. 2009
Copa Airlines (CM)	Star	Member	June 2012	Present

Continued

Table 13. *Continued*

Carrier Name (IATA Code)	Alliance	Status	From	To
Croatia Airlines (OU)	Star	Member	Nov. 2004	Present
Crossair (LX)	Qualiflyer	Former Member	Apr. 1998	Feb. 2002
Czech Airlines (OK)	Skyteam	Member	Mar. 2001	Present
Delta (DL)	Global Excellence	Former Member	Jan. 1989	Sept. 1999
Delta (DL)	Atlantic Excellence	Former Member	June 1996	Aug. 2000
Delta (DL)	Skyteam	Member	June 2000	Present
Egyptair (MS)	Star	Member	July 2008	Present
Ethiopian Airlines (ET)	Star	Member	Dec. 2011	Present
EVA Air (BR)	Star	Member	June 2013	Present
Finnair (AY)	oneworld	Member	Sept. 1999	Present
Garuda Indonesia (GA)	Skyteam	Member	Mar. 2014	Present
Globus (GH)	oneworld	Affiliate	Nov. 2010	Present
Hong Kong Dragonair (KA)	oneworld	Affiliate	Nov. 2007	Present
Iberia (IB)	oneworld	Member	Sept. 1999	Present
Iberia Express (I2)	oneworld	Affiliate	Mar. 2012	Present
J-Air (XM)	oneworld	Affiliate	Apr. 2007	Present
JAL Express (JC)	oneworld	Affiliate	Apr. 2007	Sept. 2014
Jalways (JO)	oneworld	Affiliate	Apr. 2007	Dec. 2010
Japan Air Lines (JL)	oneworld	Member	Apr. 2007	Present
Japan Transocean Air (NU)	oneworld	Affiliate	Apr. 2007	Present
Jet Connect (A507)	oneworld	Affiliate	June 2001	Present
Kenya Airways (KQ)	Skyteam	Member	Sept. 2007	Present
KLM (KL)	Wings	Former Member	Jan. 1989	Aug. 2004
KLM (KL)	Skyteam	Member	Sept. 2004	Present
Korean Air Lines (KE)	Skyteam	Member	June 2000	Present
LAN Argentina (4M)	oneworld	Affiliate	Apr. 2007	Present
LAN Colombia (L7)	oneworld	Affiliate	Oct. 2013	Present
LAN Ecuador (XL)	oneworld	Affiliate	Apr. 2007	Present
LAN Express (LU)	oneworld	Affiliate	June 2000	Present
LAN Peru Airlines (LP)	oneworld	Affiliate	June 2000	Present
LAN Chile Airlines (LA)	oneworld	Member	June 2000	Present
Lauda Air (NG)	Qualiflyer	Former Member	Apr. 1998	Feb. 2002
Lauda Air (NG)	Star	Affiliate	Mar. 2000	Present
LOT (LO)	Qualiflyer	Former Member	Jan. 2000	Feb. 2002
LOT (LO)	Star	Member	Oct. 2003	Present
Lufthansa (LH)	Star	Member	May 1997	Present
Malaysia Airlines (MH)	oneworld	Member	Feb. 2013	Present
Malev Hungarian Airlines (MA)	oneworld	Former Member	Apr. 2007	Feb. 2012
MEA (ME)	Skyteam	Member	June 2012	Present
Mexicana de Aviacion (MX)	Star	Former Member	July 2000	Mar. 2004
Mexicana de Aviacion (MX)	oneworld	Inactive Member	Nov. 2009	Present
MexicanaClick (QA)	oneworld	Affiliate	Nov. 2009	Present
MexicanaLink (I6)	oneworld	Affiliate	Nov. 2009	Present
NIKI (HG)	oneworld	Affiliate	Mar. 2012	Present
Northwest (NW)	Wings	Former Member	Jan. 1989	Aug. 2004
Northwest (NW)	Skyteam	Member	Sept. 2004	Present
OpenSkies (EC)	oneworld	Affiliate	Dec. 2012	Present
Portugalia (NI)	Qualiflyer	Former Member	Jan. 2000	Feb. 2002
Qantas (QF)	oneworld	Member	Feb. 1999	Present

Continued

Table 13. *Continued*

Carrier Name (IATA Code)	Alliance	Status	From	To
Qatar Airways (QR)	oneworld	Member	Oct. 2013	Present
Royal Jordanian (RJ)	oneworld	Member	Apr. 2007	Present
S7 Airlines (S7)	oneworld	Member	Nov. 2010	Present
Sabena (SN)	Atlantic Excellence	Former Member	June 1996	Aug. 2000
Sabena (SN)	Qualiflyer	Former Member	Apr. 1998	Dec. 2001
SAS (SK)	Star	Member	May 1997	Present
Saudia (SV)	Skyteam	Member	May 2012	Present
Shanghai Airlines (FM)	Star	Former Member	Dec. 2007	Oct. 2010
Shanghai Airlines (FM)	Skyteam	Affiliate	June 2011	Present
Shenzhen Airlines (ZH)	Star	Member	Dec. 2012	Present
Singapore Airlines (SQ)	Global Excellence	Former Member	Jan. 1989	Sept. 1999
Singapore Airlines (SQ)	Star	Member	Apr. 2000	Present
South African Airways (SA)	Star	Member	Apr. 2006	Present
Spanair S.A. (JK)	Star	Former Member	Apr. 2003	Jan. 2012
SriLankan Airlines (UL)	oneworld	Member	May 2014	Present
Sun-Air Skandanavia- BA (EZ)	oneworld	Affiliate	Feb. 1999	Present
SWISS (LX)	Star	Member	Apr. 2006	Present
Swissair (SR)	Global Excellence	Former Member	Jan. 1989	Sept. 1999
Swissair (SR)	Atlantic Excellence	Former Member	June 1996	Aug. 2000
Swissair (SR)	Qualiflyer	Former Member	Apr. 1998	Feb. 2002
Taca (TA)	Star	Affiliate	June 2012	Present
TAM (JJ)	Star	Former Member	May 2010	Mar. 2014
TAM (JJ)	oneworld	Member	Apr. 2014	Present
Tap-Portuguese Airlines (TP)	Qualiflyer	Former Member	Apr. 1998	Feb. 2002
Tap-Portuguese Airlines (TP)	Star	Member	Mar. 2005	Present
Tarom (RO)	Skyteam	Member	June 2010	Present
Thai Airways (TG)	Star	Member	May 1997	Present
Turkish Airlines (TK)	Qualiflyer	Former Member	Apr. 1998	Oct. 2000
Turkish Airlines (TK)	Star	Member	Apr. 2008	Present
Tyrolean Airways (VO)	Qualiflyer	Former Member	Apr. 1998	Feb. 2002
Tyrolean Airways (VO)	Star	Affiliate	Mar. 2000	Mar. 2015
United (UA)	Star	Member	May 1997	Present
US Airways (US)	Star	Member	May 2004	Mar. 2014
US Airways (US)	oneworld	Member	Apr. 2014	Present
VARIG Brazilian Airlines (RG)	Star	Former Member	Oct. 1997	Feb. 2007
Vietnam Airlines (VN)	Skyteam	Member	June 2010	Present
Volare (VE)	Qualiflyer	Former Member	Jan. 2000	Feb. 2002
Xiamen Air (MF)	Skyteam	Member	Nov. 2012	Present

Sources: Oneworld, Home Page, http://www.oneworld.com; SkyTeam, Home Page, htttp://www.skyteam.com; Star Alliance, Home Page, http://www.staralliance.com; Air France-KLM, Annual Reports, 2006-2015; American Airlines, Forms 10-K, FY1998-2015; Delta Air Lines, Forms 10-K, FY1998-2015; Lufthansa Group, Annual Reports 1998-2015; United Airlines, Forms 10-K, FY1998-2015; KLM Royal Dutch Airlines, History, https://www.klm.com/corporate/en/about-klm/history/index.html; OAG, Home Page, https://www.oag.com/; Charles Goldsmith, *Swissair Widens Europe Alliance, Unveils New "Qualiflyer Group*," Wall St. J., Mar. 31, 1998.

Notes: US Airways officially joined oneworld in in March/April of 2014, but it is treated as part of American Airlines and its respective oneworld partnerships starting in 2013Q4 when US Airways merged with American Airlines and was granted regulatory approval to join the oneworld partnerships.

APPENDIX B: MAJOR AIRLINE ATI GRANTS AND PARTNERS

Table 14. Major airline ATI grants and partners

Partnership	ATI Partners	From	To	Carve Outs
American-Swiss-Brussels	American (AA) SWISS (LX)	Nov. 2002	Aug. 2005	
	American (AA) Brussels (SN)	Apr. 2004	Oct. 2009	
	American (AA) Brussels (SN) Swissair (SR)	Aug. 2000	Nov. 2001	Chicago-Zurich Chicago-Brussels
	American (AA) Brussels (SN)	Aug. 2000	Mar. 2002	Chicago-Zurich Chicago-Brussels
Atlantic Excellence	Delta (DL) Austrian Airlines (OS) Brussels (SN) Swissair (SR)	June 1996	Aug. 2000	Atlanta-Brussels Atlanta-Zurich Cincinnati-Zurich New York-Brussels New York-Zurich New York-Geneva New York-Vienna
Delta-Virgin	Delta (DL) Virgin Atlantic (VS) KLM (KL) Air France (AF) Alitalia (AZ)	Sept. 2013	Present	
	Delta (DL) Virgin Australia (VA)	June 2011	Present	
America West-Royal Jordanian	America West (HP) Royal Jordanian (RJ)	Jan. 2005	May 2007	
Nordic	Icelandair (FI) SAS (SK)	Oct. 2000	Present	
Northwest-KLM	Northwest (NW) KLM (KL)	Jan. 1993	May 2008	
	Northwest (NW) KLM (KL) Alitalia (AZ)	Dec. 1999	Oct. 2001	
American-JAL	American (AA) Japan Air Lines (JL)	Nov. 2010	Present	
	American (AA) Japan Air Lines (JL) US Airways (US)	Nov. 2013	Present	
American-LAN-LAN Peru	American (AA) LAN Chile Airlines (LA)	May 2001	Present	Miami-Santiago
	American (AA) LAN Chile Airlines (LA) US Airways (US)	Nov. 2013	Present	Miami-Santiago
	American (AA) LAN Chile Airlines (LA) LAN Peru Airlines (LP)	Oct. 2005	Present	Miami-Santiago Miami-Lima
	American (AA) LAN Chile Airlines (LA)	Nov. 2013	Present	Miami-Santiago Miami-Lima

Continued

Table 14. *Continued*

Partnership	ATI Partners	From	To	Carve Outs
	LAN Peru Airlines (LP)			
	US Airways (US)			
oneworld	American (AA)	July 2002	Present	
	Finnair (AY)			
	American (AA)	July 2010	Present	
	British Airways (BA)			
	Finnair (AY)			
	Iberia (IB)			
	Royal Jordanian (RJ)			
	American (AA)	Nov. 2013	Present	
	British Airways (BA)			
	Finnair (AY)			
	Iberia (IB)			
	Royal Jordanian (RJ)			
	US Airways (US)			
Skyteam	Delta (DL)	Jan. 2002	June 2009	Atlanta-Paris
	Air France (AF)			Cincinnati-Paris
	Alitalia (AZ)			
	Czech Airlines (OK)			
	Delta (DL)	June 2002	June 2009	Atlanta-Paris
	Air France (AF)			Cincinnati-Paris
	Alitalia (AZ)			
	Czech Airlines (OK)			
	Korean Air Lines (KE)			
	Delta (DL)	May 2008	June 2009	Atlanta-Paris
	Air France (AF)			Cincinnati-Paris
	Alitalia (AZ)			
	Czech Airlines (OK)			
	Korean Air Lines (KE)			
	KLM (KL)			
	Northwest (NW)			
	Delta (DL)	June 2009	Present	
	Air France (AF)			
	Alitalia (AZ)			
	Czech Airlines (OK)			
	Korean Air Lines (KE)			
	KLM (KL)			
	Northwest (NW)			
United-ANA	United (UA)	Nov. 2010	Present	
	Continental (CO)			
	ANA (NH)			
	Air Japan Co. (NQ)			
Star	United (UA)	May 1996	Dec. 2010	Chicago-Frankfurt
	Lufthansa (LH)			Washington-Frankfurt
	United (UA)	Nov. 1996	Dec. 2010	Chicago-Frankfurt
	Lufthansa (LH)			Washington-Frankfurt
	SAS (SK)			
	United (UA)	Jan. 2001	Dec. 2010	Chicago-Frankfurt
	Austrian Airlines (OS)			Washington-Frankfurt
	Lufthansa (LH)			

Continued

Table 14. *Continued*

Partnership	ATI Partners	From	To	Carve Outs
	SAS (SK)			
	Lauda Air (NG)			
	United (UA)	Feb. 2007	Dec. 2010	Chicago-Frankfurt
	Lufthansa (LH)			Washington-Frankfurt
	SAS (SK)			Chicago-Toronto
	Austrian Airlines (OS)			San Francisco-Toronto
	Air Canada (AC)			
	LOT (LO)			
	SWISS (LX)			
	Tap-Portuguese Airlines (TP)			
	United (UA)	Mar. 2008	Dec. 2010	Chicago-Frankfurt
	Lufthansa (LH)			Washington-Frankfurt
	SAS (SK)			Chicago-Toronto
	Austrian Airlines (OS)			San Francisco-Toronto
	Air Canada (AC)			
	LOT (LO)			
	SWISS (LX)			
	Tap-Portuguese Airlines (TP)			
	BMI British Midland (BD)			
	United (UA)	July 2009	Dec. 2010	Chicago-Frankfurt
	Lufthansa (LH)			Washington-Frankfurt
	SAS (SK)			Chicago-Toronto
	Austrian Airlines (OS)			San Francisco-Toronto
	Air Canada (AC)			New York-Copenhagen
	LOT (LO)			New York-Geneva
	SWISS (LX)			New York-Lisbon
	Tap-Portuguese Airlines (TP)			New York-Stockholm
	BMI British Midland (BD)			All U.S.-Beijing
	Continental (CO)			New York-Ottawa
				Houston-Calgary
				Houston-Toronto
				Cleveland-Toronto
Star	United (UA)	Dec. 2010	Apr. 2011	Chicago-Toronto
	Lufthansa (LH)			San Francisco-Toronto
	SAS (SK)			New York-Copenhagen
	Austrian Airlines (OS)			New York-Geneva
	Air Canada (AC)			New York-Lisbon
	LOT (LO)			New York-Stockholm
	SWISS (LX)			All U.S.-Beijing
	Tap-Portuguese Airlines (TP)			New York-Ottawa
	BMI British Midland (BD)			Houston-Calgary
	Continental (CO)			Houston-Toronto
				Cleveland-Toronto
	United (UA)	Apr. 2011	May 2011	Chicago-Toronto
	Lufthansa (LH)			San Francisco-Toronto
	SAS (SK)			New York-Geneva
	Austrian Airlines (OS)			New York-Lisbon
	Air Canada (AC)			All U.S.-Beijing
	LOT (LO)			New York-Ottawa

Continued

Table 14. *Continued*

Partnership	ATI Partners	From	To	Carve Outs
	SWISS (LX)			Houston-Calgary
	Tap-Portuguese Airlines (TP)			Houston-Toronto
	BMI British Midland (BD)			Cleveland-Toronto
	Continental (CO)			
	United (UA)	May 2011	June 2011	Chicago-Toronto
	Lufthansa (LH)			San Francisco-Toronto
	SAS (SK)			New York-Geneva
	Austrian Airlines (OS)			New York-Lisbon
	Air Canada (AC)			New York-Ottawa
	LOT (LO)			Houston-Calgary
	SWISS (LX)			Houston-Toronto
	Tap-Portuguese Airlines (TP)			Cleveland-Toronto
	BMI British Midland (BD)			
	Continental (CO)			
	United (UA)	June 2011	Apr. 2012	Chicago-Toronto
	Lufthansa (LH)			San Francisco-Toronto
	SAS (SK)			New York-Lisbon
	Austrian Airlines (OS)			New York-Ottawa
	Air Canada (AC)			Houston-Calgary
	LOT (LO)			Houston-Toronto
	SWISS (LX)			Cleveland-Toronto
	Tap-Portuguese Airlines (TP)			
	BMI British Midland (BD)			
	Continental (CO)			
Star	United (UA)	Nov. 2011	Apr. 2012	Chicago-Toronto
	Lufthansa (LH)			San Francisco-Toronto
	SAS (SK)			New York-Lisbon
	Austrian Airlines (OS)			New York-Ottawa
	Air Canada (AC)			Houston-Calgary
	LOT (LO)			Houston-Toronto
	SWISS (LX)			Cleveland-Toronto
	Tap-Portuguese Airlines (TP)			
	BMI British Midland (BD)			
	Continental (CO)			
	Brussels (SN)			
	United (UA)	Apr. 2012	Present	Chicago-Toronto
	Lufthansa (LH)			San Francisco-Toronto
	SAS (SK)			New York-Lisbon
	Austrian Airlines (OS)			New York-Ottawa
	Air Canada (AC)			Houston-Calgary
	LOT (LO)			Houston-Toronto
	SWISS (LX)			Cleveland-Toronto
	Tap-Portuguese Airlines (TP)			
	Continental (CO)			
	Brussels (SN)			
United/ Continental-Copa	Continental (CO)	May 2001	Present	
	Copa Airlines (CM)			
	United (UA)	Mar. 2011	Present	
	Continental (CO)			
	Copa Airlines (CM)			

Continued

Table 14. *Continued*

Partnership	ATI Partners	From	To	Carve Outs
United-Air New Zealand	United (UA) Air New Zealand (NZ)	Apr. 2001	Present	Los Angeles-Sydney Los Angeles-Auckland
	United (UA) Continental (CO) Air New Zealand (NZ)	Mar. 2011	Present	Los Angeles-Sydney Los Angeles-Auckland
United-Asiana	United (UA) Asiana Airlines Inc. (OZ)	May 2003	Present	
	United (UA) Continental (CO) Asiana Airlines Inc. (OZ)	Mar. 2011	Present	

Sources: U.S. Dep't of Transp., Airline Alliances Operating with Antitrust Immunity (May 17, 2016), https://www.transportation.gov/sites/dot.gov/files/docs/160517%20-%20All%20Immunized%20Alliances%20updated.pdf; Regulations.Gov, Home Page, http://www.regulations.gov.
Notes: US Airways officially joined oneworld in in March/April of 2014, but it is treated as part of American Airlines and its respective oneworld partnerships starting in 2013Q4 when US Airways merged with American Airlines and was granted regulatory approval to join the oneworld partnerships.

APPENDIX C: MAJOR AIRLINE JOINT VENTURE PARTNERS

Table 15. Major airline joint venture partners

Partnership	JV Partners	From	To
Northwest-KLM	Northwest (NW) KLM (KL)	Sept. 1997	June 2009
Star	United (UA) Lufthansa (LH)	Jan. 2003	Dec. 2009
	United (UA) Lufthansa (LH) Continental (CO) Air Canada (AC)	Jan. 2010	Present
	United (UA) Lufthansa (LH) Continental (CO) Air Canada (AC) BMI British Midland (BD)	Apr. 2011	Apr. 2012
	United (UA) Lufthansa (LH) Continental (CO) Air Canada (AC) BMI British Midland (BD) SWISS (LX) Austrian Airlines (OS)	July 2011	Apr. 2012
	United (UA) Lufthansa (LH) Continental (CO) Air Canada (AC) BMI British Midland (BD) SWISS (LX) Austrian Airlines (OS) Brussels (SN)	Mar. 2012	Apr. 2012
	United (UA) Lufthansa (LH) Continental (CO) Air Canada (AC) SWISS (LX) Austrian Airlines (OS) Brussels (SN)	Apr. 2012	Present
Skyteam	Delta (DL) Air France (AF)	Apr. 2008	Present
	Northwest (NW) Delta (DL) KLM (KL) Air France (AF)	June 2009	Present
	Northwest (NW) Delta (DL) KLM (KL) Air France (AF) Alitalia (AZ)	July 2010	Present

Continued

Table 15. *Continued*

Partnership	JV Partners	From	To
oneworld	American (AA) British Airways (BA) Iberia (IB)	Oct. 2010	Present
	American (AA) British Airways (BA) Iberia (IB) Finnair (AY)	July 2013	Present
	American (AA) British Airways (BA) Iberia (IB) Finnair (AY) US Airways (US)	Mar. 2014	Present
American-JAL	American (AA) Japan Air Lines (JL)	Apr. 2011	Present
United-ANA	United (UA) Continental (CO) ANA (NH)	Apr. 2011	Present
Delta-Virgin Australia	Delta (DL) Virgin Australia (VA)	Nov. 2012	Present
Delta-Virgin Atlantic	Delta (DL) Virgin Atlantic (VS)	Jan. 2014	Present

Sources: U.S. Dep't of Transp., Airline Alliances Operating with Antitrust Immunity (May 17, 2016), https://www.transportation.gov/sites/dot.gov/files/docs/160517%20-%20All%20Immunized%20Alliances%20updated.pdf; Regulations.Gov, Home Page, http://www.regulations.gov; Air France-KLM, Annual Reports, 2006-2015; American Airlines, Forms 10-K, FY1998-2015; Delta Air Lines, Forms 10-K, FY1998-2015; Lufthansa Group, Annual Reports 1998-2015; United Airlines, Forms 10-K, FY1998-2015; KLM Royal Dutch Airlines, History, https://www.klm.com/corporate/en/about-klm/history/index.html

Notes: American Airlines and Qantas have an approved JV absent ATI approval, but the arrangement is not metal neutral, and, therefore, it is not counted as a JV in our analysis. US Airways officially joined oneworld in in March/April of 2014, but it is treated as part of American Airlines and its respective oneworld partnerships starting in 2013Q4 when US Airways merged with American Airlines and was granted regulatory approval to join the oneworld partnerships.

APPENDIX D: TIMELINE OF MERGERS, ACQUISITIONS, AND SUBSIDIARY STARTUPS

Table 16. Timeline of mergers, acquisitions, and subsidiary startups

Carrier Name (IATA Code)	Acquiring/Parent Carrier Name (IATA Code)	From	To
Air Nippon Co. (EL)	ANA (NH)	Jan. 1974	Apr. 2012
Japan Air Commuter (3X)	Japan Airlines (JL)	Dec. 1983	Present
VOTEC (KK)	TAM (JJ)	June 1986	Jan. 2001
Executive Airlines (OW)	American Airlines (AA)	Sept. 1986	Dec. 2003
Horizon Air (QX)	Alaska Air (AS)	Dec. 1986	Present
PSA Airlines (16)	US Airways (US)	May 1987	July 2015
Envoy Air/American Eagle (MQ)	American Airlines (AA)	June 1988	Present
Aeroliteral (5D)	Aeromexico (AM)	Jan. 1989	Present
LACSA (LR)	TACA (TA)	Jan. 1989	Present
SANSA (RZ)	TACA (TA)	Jan. 1989	Present
Aviateca (GU)	TACA (TA)	Jan. 1989	Present
Piedmont Airlines (17)	US Airways (US)	Aug. 1989	Mar. 2015
KLM City Hoppper (WA)	KLM (KL)	Jan. 1991	Present
Mount Cook (NM)	Air New Zealand (NZ)	Apr. 1991	Sept. 2004
JALways (JO)	Japan Airlines (JL)	July 1991	Dec. 2010
NICA (6Y)	TACA (TA)	Jan. 1992	Mar. 2001
SilkAir (MI)	Singapore Air (SQ)	Apr. 1992	Present
dba (DI)	British Airways (BA)	June 1992	Aug. 2006
Lufthansa CityLine (CL)	Lufthansa (LH)	Jan. 1993	Present
Continental Micronesia (CS)	Continental (CO)	Apr. 1993	Dec. 2010
SAM Colombia (MM)	Avianca (AV)	Jan. 1994	Dec. 2010
Ladeco (UC)	LAN (LA)	Aug. 1995	Present
Lapsa/Mercosur (PZ)	TAM (JJ)	Sept. 1996	Present
Air Nostrum (YW)	Iberia (IB)	May 1997	Present
ValuJet (J7)	AirTran (FL)	Nov. 1997	Apr. 2000
Trump Shuttle (TB)	US Airways (US)	Jan. 1998	Dec. 2000
KLM uk/Buzz (UK)	KLM (KL)	Jan. 1998	Apr. 2003
Blue1 (KF)	SAS (SK)	Jan. 1998	Sept. 2015
Tyrolean (VO)	Austrian (OS)	Mar. 1998	Present
Aviaco (AO)	Iberia (IB)	Mar. 1998	Dec. 1999
Go Fly (GO)	British Airways (BA)	May 1998	June 2001
JAL Express (JC)	Japan Airlines (JL)	July 1998	Present
Denim Air (3D)	Iberia (IB)	Jan. 1999	Oct. 2002
Reno Air (QQ)	American Airlines (AA)	Feb. 1999	Dec. 2001
ASA (ExpressJet) (EV)	Delta (DL)	Mar. 1999	Sept. 2005
TACA Peru (T0)	TACA (TA)	July 1999	Present
LAN Peru (LP)	LAN (LA)	July 1999	Present
Flandre (IX)	Proteus (YS)	Oct. 1999	Apr. 2001
Comair (OH)	Delta (DL)	Oct. 1999	Dec. 2012
Canadian Airlines (CP)	Air Canada (AC)	Dec. 1999	Dec. 2002
Regional (VM)	Air France (AF)	Jan. 2000	Apr. 2001
CityJet (WX)	Air France (AF)	Feb. 2000	Present
Proteus (YS)	Air France (AF)	Mar. 2000	Present
Donavia (D9)	Aeroflot (SU)	Apr. 2000	Present

Continued

Table 16. *Continued*

Carrier Name (IATA Code)	Acquiring/Parent Carrier Name (IATA Code)	From	To
Ansett Australia (AN)	Air New Zealand (NZ)	June 2000	Mar. 2002
Chang An Airlines (2Z)	Hainan Airlines (HU)	Aug. 2000	Dec. 2002
Brit Air (DB)	Air France (AF)	Oct. 2000	Mar. 2013
Lauda (NG)	Austrian (OS)	Dec. 2000	Aug. 2013
Jazz Aviation (QK)	Air Canada (AC)	Jan. 2001	Present
Air Japan Co (NQ)	ANA (NH)	Jan. 2001	Present
China Xinhua Airlines (XW)	Hainan Airlines (HU)	Feb. 2001	Dec. 2002
ANA Wings/Air Nippon Network (EH)	ANA (NH)	Apr. 2001	Present
TWA (TW)	American Airlines (AA)	Apr. 2001	Dec. 2001
Shanxi Airlines (8C)	Hainan Airlines (HU)	July 2001	Dec. 2002
LAN Express (LU)	LAN (LA)	Oct. 2001	Present
Impulse Airlines (VQ)	Quantas (QF)	Nov. 2001	May 2004
ACES Columbia (VX)	Avianca (AV)	Mar. 2002	Dec. 2003
Go Fly (GO)	EasyJet (U2)	Aug. 2002	Mar. 2003
Japan Air System (JD)	JAL (JL)	Aug. 2002	June 2004
Australian Airlines (AO)	Quantas (QF)	Oct. 2002	July 2006
Buzz (UK)	Ryanair (FR)	Apr. 2003	Oct. 2004
LAN Ecuador (XL)	LAN (LA)	Apr. 2003	Present
LAN Dominicana (4M)	LAN (LA)	June 2003	May 2004
Transavia (HV)	KLM (KL)	June 2003	Present
Air Dolomiti (EN)	Lufthansa (LH)	July 2003	Present
Vigina Australia (New Zealand) (DJ)	Virgin Blue (VA)	Jan. 2004	Dec. 2013
Thai AirAsia (FD)	AirAsia (AK)	Feb. 2004	Present
Japan Asia Airways (EG)	JAL (JL)	Apr. 2004	Dec. 2008
KLM (KL)	Air France (AF)	May 2004	Present
JetStar (JQ)	Quantas (QF)	May 2004	Present
Air Next (7A)	ANA (NH)	Aug. 2004	Oct. 2010
Tigerair (TR)	Singapore Airlines (SQ)	Sept. 2004	Present
Atlas Blue (8A)	Royal Air Maroc (AT)	Oct. 2004	Feb. 2011
Nakanihon Airlines Co./Air Central (NV)	ANA (NH)	Nov. 2004	Oct. 2010
Indonesia AirAsia (QZ)	AirAsia (AK)	Dec. 2004	Present
Virgin Express (TV)	Brussels Airlines (SN)	Apr. 2005	Mar. 2007
Air India Express (IX)	Air India (AI)	Apr. 2005	Present
LAN Argentina (4M)	LAN (LA)	June 2005	Present
Valuair (VF)	Jetstar Asia (3K)	July 2005	Present
America West (HP)	US Airways (US)	Sept. 2005	Dec. 2007
EuroWings (EW)	Lufthansa (LH)	Dec. 2005	Present
Alitalia CityLiner (CT)	Air One (AP)	June 2006	Present
dba (DI)	AirBerlin (AB)	Aug. 2006	Nov. 2008
Dragonair (KA)	Cathay Pacific (CX)	Sept. 2006	Present
Mango Airlines (JE)	South African Airlines (SA)	Nov. 2006	Present
Colgan Air (9L)	Pinnacle/Express/Endeavor (9E)	Jan. 2007	Sept. 2012
BA CityFlyer (CJ)	British Airways (BA)	Mar. 2007	Present
LTU (LT)	AirBerlin (AB)	Mar. 2007	June 2009
VARIG (RG)	GOL (G3)	Apr. 2007	June 2009
Firefly (FY)	Malaysia Airlines (MH)	Apr. 2007	Present

Continued

Table 16. *Continued*

Carrier Name (IATA Code)	Acquiring/Parent Carrier Name (IATA Code)	From	To
Tianjin (GS)	Hainan Airlines (HU)	May 2007	Present
Transavia France (TO)	Air France (AF)	May 2007	Present
Swiss International (LX)	Lufthansa (LH)	July 2007	Present
India Air (IC)	Air India (AI)	Aug. 2007	Present
AirAsia X (D7)	AirAsia (AK)	Nov. 2007	Present
Grand China Air (CN)	Hainan Airlines (HU)	Nov. 2007	Present
FlyYeti (0Y)	Air Arabia (G9)	Jan. 2008	July 2008
OpenSkies (EC)	British Airways (BA)	June 2008	Present
Jin Air (LJ)	Korean Air (KE)	July 2008	Aug. 2013
Air Busan (BX)	Asiana (OZ)	Oct. 2008	Present
Northwest (NW)	Delta (DL)	Oct. 2008	Present
Edelweiss Air (WK)	Lufthansa (LH)	Nov. 2008	Present
ATA Airlines (TZ)	Southwest Airlines (WN)	Nov. 2008	Dec. 2008
Austral (AU)	Aerolineas Argentinas (AR)	Dec. 2008	Present
SBA (S3)	Aserca (R7)	Dec. 2008	Present
Martinair (MP)	Air France (AF)	Dec. 2008	Present
Germanwings (4U)	Lufthansa (LH)	Jan. 2009	Present
Air One (AP)	Alitalia (AZ)	Jan. 2009	Dec. 2014
Air Arabia Maroc (3O)	Air Arabia (G9)	May 2009	Present
BMI (BD)	Lufthansa (LH)	July 2009	Apr. 2012
clickair (XG)	Vueling (VY)	July 2009	Dec. 2009
Austrian Airlines (OS)	Lufthansa (LH)	Sept. 2009	Present
TUIfly City Carrier (X3)	AirBerlin (AB)	Sept. 2009	Present
TACA (TA)	Avianca (AV)	Feb. 2010	Present
Shanghai Airlines (FM)	China Eastern (MU)	Feb. 2010	Present
Shenzhen Airlines (ZH)	Air China (CA)	Mar. 2010	Present
Air Arabia Egypt (E5)	Air Arabia (G9)	June 2010	Present
Mesaba Air (XJ)	Pinnacle/Express/Endeavor (9E)	July 2010	Dec. 2011
Continental (CO)	United (UA)	Oct. 2010	Present
Aeres/LAN Colombia (4C)	LAN (LA)	Nov. 2010	Present
AeroGal (2K)	TACA (TA)	Nov. 2010	Present
Iberia (IB)	British Airways (BA)	Jan. 2011	Present
AirTrain Airways (FL)	Southwest Airlines (WN)	May 2011	Dec. 2014
Air Jamaica (JM)	Caribbean Airlines (BW)	May 2011	Present
Orenburg/Oren (R2)	Aeroflot (SU)	Nov. 2011	Present
Niki (HG)	AirBerlin (AB)	Nov. 2011	Present
AirAsia Philippines (PQ)	AirAsia (AK)	Mar. 2012	Present
Iberia Express (I2)	British Airways (BA)	Mar. 2012	Present
BMI (BD)	British Airways (BA)	Apr. 2012	Dec. 2012
Scoot (TZ)	Singapore Air (SQ)	June 2012	Present
TAM (JJ)	LAN (LA)	June 2012	Present
WebJet (WH)	VARIG (G3)	Aug. 2012	Nov. 2012
ANA Wings/Air Next (EH)	ANA (NH)	Oct. 2012	Present
Iceland Express (5W1)	WOW air (WW)	Oct. 2012	Present
AirAsia Zest (Z2)	AirAsia (AK)	Mar. 2013	Present
HOP! (A5)	Air France (AF)	Mar. 2013	Present
Vueling (VY)	British Airways (BA)	Apr. 2013	Present
Pinnacle/Express/Endeavor (9E)	Delta (DL)	May 2013	Present

Continued

Table 16. *Continued*

Carrier Name (IATA Code)	Acquiring/Parent Carrier Name (IATA Code)	From	To
Air Canada Rouge (RV)	Air Canada (AC)	July 2013	Present
US Airways (US)	American Airlines (AA)	Dec. 2013	Present
Vanilla Air (JW)	ANA (NH)	Dec. 2013	Present
Rossiya (FV)	Aeroflot (SU)	Mar. 2014	Present
TRIP (T4)	Azul Brasileiras (AD)	May 2014	Dec. 2014
AirAsia India (I5)	AirAsia (AK)	June 2014	Present
Thai AirAsia X (XJ)	AirAsia (AK)	June 2014	Present
Indonesia AirAsia X (XT)	AirAsia (AK)	Jan. 2015	Present
Tigerair Australia (TT)	Virgin Blue (VA)	Feb. 2015	Present
Piedmont Airlines (PT)	American Airlines (AA)	Apr. 2015	Present
PSA Airlines (OH)	American Airlines (AA)	July 2015	Present
Aer Lingus (EI)	British Airways (BA)	Sept. 2015	Present
Blue1 (KF)	CityJet (WX)	Oct. 2015	Present

Sources: Air France-KLM, Annual Reports, 2006-2015; American Airlines, Forms 10-K, FY1998-2015; Delta Air Lines, Forms 10-K, FY1998-2015; Lufthansa Group, Annual Reports 1998-2015; United Airlines, Forms 10-K, FY1998-2015; KLM Royal Dutch Airlines, History, https://www.klm.com/corporate/en/about-klm/history/index.html; U.S. Airlines Mergers and Acquisitions, Airlines for America, http://airlines.org/data/u-s-airline-mergers-and-acquisitions/; FlightGlobal, Home Page, https://www.flightglobal.com/.

APPENDIX E: DATA PROCESSING METHODS

A. Processing Fare Data

Our processing of the fare data is generally consistent with the existing literature.[58] Specifically, the universe of itineraries is limited to those international trips with three or fewer one-directional segments,[59] trips with both a base and a return ticket (for example, roundtrip passengers),[60] and trips with fares greater than zero. We also exclude itineraries with a ground-transport segment,[61] highly circuitous routing,[62] zero passengers, and/or an unknown fare class coupon for the transoceanic segment. Additionally, to allow tractable classification of international itineraries, we exclude trips with more than one segment behind or beyond the U.S.-foreign segment.[63] After these restrictions are applied, the data are further processed to exclude itineraries with outlier fares defined as itineraries with passenger-weighted fares below the first or above the 99th percentiles of fares by transoceanic region, transoceanic fare class, year-quarter, and nonstop/connecting (binary) classification.[64] We drop itineraries involving first-class fares on the transoceanic segment.[65] As described above, we do not analyze nonstop or connecting fares where the U.S.-international segment is between the United States and Canada or Mexico.

[58] *See, e.g.*, Brueckner, Lee & Singer, *supra* note 14.

[59] In 2015, for example, less than two percent of passengers purchased itineraries involving more than three segments in a single leg of their trip. In that year, the passenger-weighted mean number of segments on a single leg of a trip was 1.8 and the median number was two.

[60] The data indicate that one-way trips are far less common than roundtrips and one-way tickets are often priced substantially higher than base or return legs of roundtrip tickets; nevertheless, we include one-way itineraries in robustness tests.

[61] Itineraries with at least one segment missing the two-character airline code are classified as those with ground transport segment.

[62] Highly circuitous itineraries are defined as those itineraries with a total distance travelled that is more than three times the nonstop distance between an itinerary's origin and destination.

[63] For example, an itinerary involving two connections within the U.S. before the international segment would not be included in our sample.

[64] Transoceanic regions are determined by the U.S. DOT-designated WAC of the foreign airport on the U.S.-international segment. Transoceanic regions are classified by the following WAC ranges: 1) Central America: 101 to 199, excluding 148 (Mexico); 2) Caribbean: 200 to 299; 3) South America: 300 to 399; 4) Europe: 400 to 499, including 611 (Cyprus), 679 (Turkey), 770 (eastern Russia); 5) Africa: 500 to 599; 6) Middle East: 600 to 699, excluding 611 and 679; 7) Asia: 700 to 799, excluding 770; 8) Oceania: 800 to 899; 9) North America: 900 to 999, including 148.

[65] Remaining fare classes include restricted economy, unrestricted economy, restricted business, and unrestricted business. The transoceanic segment is identified as the segment between a U.S. airport (including U.S. territories) and a foreign airport. An analysis of the distribution of fares for itineraries with a first-class segment reveal substantial variation in pricing and many outlier fares, likely attributable to special pricing/benefits offered to first class travelers, but not characteristic of the fares paid by typical airline passengers.

B. Processing Nonstop Data

Data on nonstop routes, competition, and cooperation are derived from the U.S. DOT's Form 41 T-100 International Segment database for all carriers.[66] These data contain nonstop segment data such as departures scheduled, departures performed, passengers transported, and available seats by operating carrier for both U.S. and foreign airlines. The data are released at the monthly level and aggregated to the quarterly level. We analyze records classified as scheduled passenger operations and exclude any remaining records with zero passengers.[67]

After adjusting for mergers, we calculate the total passengers traveled and departures performed by operating carrier, year-quarter, and city-pair.[68] This aggregation is non-directional; that is, a flight to Paris from Chicago is treated the same as a flight to Chicago from Paris. We identify the city-pair market of a given airport-pair using the U.S. DOT's Master Coordinate aviation support table. This source, compiled by the U.S. DOT, assigns city market identifiers to each unique airport. We then calculate the 25th percentile of departures performed by transoceanic region and use these results as thresholds for defining competitive presence. That is, we count as operating on a given city-pair in a year-quarter only carriers with departures exceeding the 25th percentile of departures for the region. Likewise, the presence of an ATI or JV on a route also requires member carriers to exceed the 25th percentile of departures for the region.[69]

Data for nonstop fares are calculated from the GatewaySup database. Average fares for nonstop city-pairs are calculated using passenger counts from GatewaySup as weights. We restrict the nonstop segment data to city-pairs and year-quarters with single coupon itineraries according to the GatewaySup database. An observation in our nonstop fare analysis is a unique combination of year, quarter, non-directional city-pair, operating carrier, and fare class. We also rely on the GatewaySup data to create operating-carrier fixed effects in each of our nonstop fare regressions.[70]

[66] These data are freely available to the public. *See* U.S. DEP'T OF TRANSP., AIR CARRIER STATISTICS (FORM 41) T-100 INTERNATIONAL SEGMENT (ALL CARRIERS), http://www.transtats.bts.gov/Tables.asp?DB_ID=111.

[67] Schedule passenger operations are identified using the service class field, where service class is either "Scheduled First Class Passenger/Cargo Service," "Scheduled Passenger/Cargo Service," "Schedule Mixed First Class and Coach, Passenger/Cargo Service," or "Scheduled Passenger/Cargo Service." We exclude any record associated with non-scheduled service or cargo-only service.

[68] Unless otherwise indicated, references to "routes" in the context of our analyses concern city-pairs.

[69] We test the robustness of our results to these thresholds by alternatively using fixed thresholds of twenty and sixty departures.

[70] We also employ marketing-carrier fixed effects in a separate specification as a robustness check.

C. Processing Connecting Data

Data on connecting routes, fares, and cooperation are primarily derived from the processed GatewaySup database. Since these data are used for analyses that focus on connecting markets, we exclude itineraries with origin and destination ("O&D") cities that have substantial nonstop markets, defined as city-pairs with more than 60 nonstop departures for that quarter according to T-100. Itineraries with a U.S.-foreign segment involving Canada or Mexico are also excluded.

An observation in our connecting fare analysis is a combination of year, quarter, city-level route, leg type, marketing carriers, operating carriers, fare class, and alliance, ATI or JV affiliation. Data are directional—for example, an economy flight from New York City to London to Madrid is treated as distinct from an economy flight from Madrid to London to New York City. The fare class for an observation is the fare class of the transoceanic, (that is, U.S.-foreign country) segment.

In order to be able to define the cooperative arrangements on itineraries cleanly, we implement several additional restrictions to the data: (1) we only analyze itineraries with up to three coupons (that is, trips with no more than three segments on one travel leg, and no more than six segments round trip); (2) we exclude itineraries involving more than two carriers operating and/or marketing on the flights (after adjusting for mergers, acquisitions, subsidiaries, and regional affiliates); and (3) we exclude itineraries with more than one U.S. carrier after making the carrier adjustments listed above.

We create indicator variables for each cooperative arrangement: online, alliance, ATI, and JV, based on the combination of marketing and operating carrier after making the carrier adjustments listed above. These indicators are mutually exclusive with priority given to the higher level of cooperation. Thus, an aggregate itinerary is considered an online itinerary if all segments are operated and marketed by a single carrier; it is considered a JV itinerary if two carriers of the same JV each operates or markets at least one segment; it is considered an ATI itinerary if two carriers of the same ATI each operates or markets at least one segment and do not have a JV arrangement; and, it is considered an alliance itinerary if two carriers of the same alliance each operates or markets at least one segment and have neither an ATI, nor a JV arrangement.[71] The remainder of itineraries are considered interline or codeshare itineraries and serve as our control group.

[71] We turn off the ATI and JV indicators if any segment on an itinerary involves a country that does not have an active Open Skies agreement with the U.S. at the time of the trip. U.S. DOT ATI grants are contingent on the signing of Open Skies agreements between the U.S. and the country in which a foreign partner is domiciled. For example, in the ATI grant to All Nippon Airways, Continental Airlines and United Air Lines as well as to Japan Airlines and American Airlines, the U.S. DOT stated the grant was "conditioned upon the U.S.-Japan Open Skies aviation agreement being applied." *See* Final Order, Docket OST-2010-0059, at 1 (Dep't of Transp. Nov. 10, 2010).

We also create "weighted" fixed effects, accounting for the operating carrier(s) on the itinerary. Given the large number of carriers in the dataset, we only account for the top 20 operating carriers by share of total passengers in each region.[72] These indicators are weighted by the fraction of distance flown by the airline for a given itinerary.[73]

[72] These passenger shares are calculated across the entire data period.

[73] For example, in 2015 Delta Air Lines marketed tickets originating in Lexington, Kentucky and terminating in Zagreb, Croatia with connections in Atlanta and Paris. Delta Air Lines operated the first two legs of the trip accounting for 4,709 miles flown whereas Air France operated the last leg accounting for 672 miles flown. As Delta Air Lines and Air France make up two of the top 20 operating carriers between the U.S. and Europe, the Delta-specific carrier effect included in our regression for this aggregate itinerary is 0.875 (4,709 miles divided by the total distance flown of 5,381 miles), whereas the Air France-specific carrier effect included in our regression for this aggregate itinerary is 0.125.