BEFORE THE
U.S. DEPARTMENT OF TRANSPORTATION
WASHINGTON, D.C.

Joint Application of AMERICAN AIRLINES, INC. and QANTAS AIRWAYS LIMITED under 49 U.S.C. §§ 41308 and 41309 for approval of and antitrust immunity for proposed joint business agreement	Docket DOT-OST-2018-

JOINT APPLICATION OF AMERICAN AIRLINES AND QANTAS AIRWAYS FOR APPROVAL OF AND ANTITRUST IMMUNITY FOR PROPOSED JOINT BUSINESS AGREEMENT

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American and Qantas (the "Parties") apply to the Department under 49 U.S.C. §§ 41308 and 41309 for approval of, and antitrust immunity ("ATI") for, a proposed joint business agreement, copies of which are submitted in Appendix 1 (the "Proposed JBA"). This is the Parties' second application for ATI for the Proposed JBA – the first application was tentatively denied in an Order to Show Cause ("OSC") in November 2016.[1]

As explained in this Application, the Proposed JBA will generate significant consumer benefits not achievable through other means and does not result in any lessening of competition. The Proposed JBA therefore meets the legal standard for approval and ATI, and the Parties respectfully request that this Application be granted.

[1] American-Qantas, DOT-OST-2015-0129, Show Cause Order 2016-11-16.

SUMMARY OF APPLICATION

Cooperation between airlines is essential to provide the kind of seamless international air travel that passengers demand. A carrier can create a seamless travel experience between the United States and major international gateways, as well as points behind and beyond those gateways, only by providing efficient access to complementary route networks in concert with other carriers. As the Department itself has historically recognized, a "metal-neutral" or revenue-pooling joint business agreement is the most effective – and achievable – means of obtaining those efficiencies. Airlines cannot obtain these efficiencies alone, because virtually all countries prohibit foreign carriers from providing service between two points within their country. So the metal-neutral joint business arrangement, where carriers agree to coordinate fundamental aspects of service, including flight schedules, pricing, and capacity, while sharing revenue on the international segment is the next-best alternative to operating as a fully-integrated international carrier.

American and Qantas have had a more limited codesharing relationship for decades. The Parties are now seeking approval and ATI for the Proposed JBA, a revenue-pooling joint business agreement that will provide passengers with seamlessly integrated, efficient service between points in American's comprehensive U.S. network and points in Qantas' complementary Australasian network. The Proposed JBA will unlock hundreds of millions of dollars in annual consumer benefits that are not achievable through any other form of cooperation. The bold promise of metal-neutral joint businesses like the Proposed JBA has proven accurate, empirically, time and again, as further substantiated in this Application.

1. Revenue-pooling JBAs enable the most efficient cooperation between international airlines and offer passengers benefits not achievable through less integrated forms of cooperation (*see* Section I)

The Department has repeatedly found that revenue-pooling joint business agreements give participating carriers "common incentives to promote the success of the alliance over [their] individual corporate interests," thereby allowing them to achieve "efficiencies and deliver public benefits that would not otherwise be possible."[2] Consistent with the Department's precedents and as demand for international travel has increased, more and more international trips are served by metal-neutral joint businesses – over half of mixed-metal (connecting) international travel to and from the United States is on metal-neutral joint businesses.[3]

There is good reason for this: other forms of coordination, such as traditional (non-JBA) codesharing, where an operating carrier allows another (marketing) carrier to sell seats on the operating carrier's flight, cannot produce the same integrative efficiencies as a metal-neutral joint business. This is because codeshare partners that do not pool revenue will always have an incentive to fill seats on flights that they operate, where they will receive the full fare instead of just the portion of a fare received from a codeshare. This limits codeshare partners' willingness to share capacity and fails to capture integrative efficiencies that are possible under metal neutrality; thus, passengers are presented with fewer and less optimal choices. Revenue-pooling solves this problem by maximizing incentives for carriers to open their complementary networks and inventory to the joint business partner, unlocking hundreds or thousands of connecting flight options not economically feasible through simple codesharing.

[2] Continental-United-Air Canada-Austrian-bmi-Brussels-LOT-Lufthansa-SAS-TAP, DOT-OST-2008-0234, Show Cause Order 2009-4-5, at 4, 19.
[3] Based on data from Data Base Products, Inc. "Gateway Superset" O&D Survey; U.S. DOT; company documents.

When the commercial trade-offs under a simple codeshare are no longer in play, operational concerns become the only meaningful limit on the extent of cooperation. As carriers in a JBA add more destinations, flights, and available seats to what their simple codesharing arrangement produced, choices for consumers multiply across thousands of potential routings. As each destination is added to the scope of cooperation, it creates connecting opportunities for the hundreds of other destinations that the joint business partners serve via their large, and complementary, networks. These newly created options shorten travel times, give consumers more options to make their specific connections, and provide access to more seats. Moreover, the deep level of coordination in a joint business enables the relevant carriers to make more lower-priced fares available for enhanced codesharing, lowering prices for consumers.

These benefits are not hypothetical. Thanks in large part to the Department's prior grants of ATI, there is now empirical evidence of the pro-consumer price and output effects of metal-neutral joint businesses. In a comprehensive worldwide study of international airline cooperation, analyzing airline passenger, capacity, and fare data over a 17-year period, Calzaretta, Eilat, and Israel have shown that revenue-pooling joint businesses are "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."[4] In fact, as shown in the table below, the study shows that revenue-pooling JBAs produce the lowest average fares for connecting service—about 8% lower than codeshare and interline fares and nearly as low as the fares for connecting service provided on a single carrier's network, also known as "online" service.

[4] Robert J. Calzaretta, Jr., Yair Eilat, and Mark Israel, *Competitive Effects of International Airline Cooperation*, J. Comp. L. & Econ. (Oct. 2017), https://doi.org/10.1093/joclec/nhx016, at 1 ("CEI Study") (Appendix 2).

Table 1: Summary of Types of Airline Cooperation

	Interline /Codesharing	Alliance Without ATI	Metal-Neutral Joint Business	Merger/ Online Service
Level of Integration	**Least** ← → **Most**			
Feasibility	Yes	Yes	Only practically feasible with a grant of ATI	Not legally possible
Level of Cooperation	Minimal	Limited integration; cross-selling of seats but incentive to limit access to increase sales on "own" metal	Alignment of incentives through contractual revenue sharing; cross-selling without regard to operating carrier	Full integration
Extent of Codesharing	None/ Limited	Limited due to a misalignment of incentives	Broad and deep across entire joint business	Not applicable as all service "online"
Passenger Traffic Effects	Muted, because without revenue-pooling, incentives not aligned, limiting cooperation and codesharing		Increased connectivity, higher quality of service, and lower fares stimulates demand and substantially increases traffic	Full, actual integration and associated benefits
Capacity Effects	Minimal	Limited incentive to expand capacity	Strong (and proven) incentive to expand capacity on major connecting "trunk routes"	Strong incentive to expand capacity on major connecting "trunk routes"
Fare Effects (vs. Interline/ Codeshare)	–	4.51% lower	7.98 % lower	8.17% lower

American's own experience with JBAs confirms these points. In 2010, the Department granted ATI for American's transatlantic joint business with British Airways and Iberia. That revenue-pooling joint business has seen dramatic growth – since 2010, the carriers:

- Increased the number of codeshare flights five-fold from about 1,200 to over 6,000, increasing the number of codeshare destinations by 85%;
- Dramatically increased capacity, even on the one overlapping route that went from two competitors to one (Dallas to London), where capacity grew by almost 50%; and
- Launched 36 new transatlantic routes from 2010 to 2016, a 157% increase over the 14 transatlantic routes launched in the six years prior to the joint business.

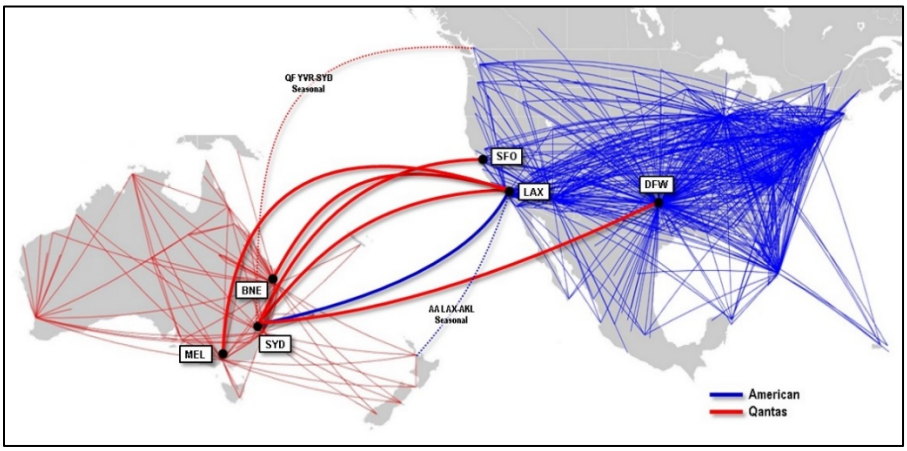
These facts point to one clear conclusion: revenue-pooling JBAs unlock tremendous integrative efficiencies from combining complementary route networks, expanding output and achieving consumer benefits not possible through other forms of cooperation.

2. The Proposed JBA will significantly improve service, stimulate demand, and generate up to $310 million annually in quantifiable consumer benefits (*see* Section II.A-II.C.)

American and Qantas have cooperated on service between the United States and Australasia for decades, but their relationship has never extended to revenue-pooling, which has limited their willingness and ability to cooperate and caused them to miss opportunities for significant integrative efficiencies. The Proposed JBA solves this problem by aligning the Parties' incentives to open their complementary networks and invest in ways that are only possible with deep coordination and revenue-pooling, unlocking tremendous consumer benefits.

The immediate effect of the Proposed JBA will be to incentivize far greater codesharing throughout American's U.S. network and Qantas' Australasian network, efficiently connecting passengers to hundreds of destinations behind and beyond major gateways like Los Angeles (LAX), Dallas-Fort Worth (DFW), and Sydney (SYD), as shown below.

Figure 1: Proposed JBA Route Network



The benefits of this increased connectivity are real and quantifiable. Economists at Compass Lexecon conservatively estimate that the Proposed JBA will:

- Generate up to **$310 million in annual benefits** to existing passengers, through quality-of-service benefits (such as improved connections, connection times, and frequencies) and lower connecting fares; and
- Stimulate up to **180,000 "new" passengers** – new demand for air travel – by aligning the Parties' incentives to expand capacity and improve service on major "trunk" routes between the United States and Australasia.

Compounding these benefits will be improved schedule coordination, new flights and route options, greater capacity, increased investment in infrastructure, and other integrative efficiencies such as enhanced frequent flyer programs that can only be generated by integration at the level of revenue-pooling in an immunized relationship. And of course these estimates do not account for rival carriers' response to the increased competition of the Proposed JBA. An immunized Qantas-American joint business will impose an even greater competitive constraint on the two other alliances operating immunized joint business to Australasia, who will be forced to respond with quality, schedule, and price improvements of their own, adding to the public benefit of the Proposed JBA.

3. The Parties' Cooperation Will Deteriorate Without The Proposed JBA (*see* Section II.D.)

The $310 million in annual consumer benefits from the Proposed JBA are not achievable through the Parties' existing cooperation on service to Australasia. The OSC questioned whether the Parties could offer comparable benefits without revenue-pooling—and thus whether a grant of ATI was needed—because the Parties had recently expanded their existing cooperation.[5] Yet

[5] American-Qantas, DOT-OST-2015-0129, Show Cause Order 2016-11-16, at 22.

this expansion was only in anticipation of an immunized, revenue-pooling joint business like the Proposed JBA. Since the OSC, the Parties' cooperation has, by economic necessity, retrenched. The Parties are not supporting each other's service, American has been forced to downgrade its service to Australia and New Zealand, and the Parties have stopped codesharing on flights between the United States and Sydney.

These are clear indications that without a grant of ATI to facilitate the Proposed JBA, the Parties' existing cooperation will at best stagnate or, more likely, continue to deteriorate. Without the deeper level of integration allowed by ATI, the Parties' incentives focus inward to maximize their own profits from their own aircraft to the detriment of the joint business and the traveling public. For example, without codesharing support to connect its passengers onto American's flights beyond DFW, Qantas' A380 service from Sydney to DFW is unsustainable – Compass Lexecon estimates that the loss of that flight alone would destroy up to $133 million annually in passenger value.[6] American's services are also at risk without Qantas' codesharing support beyond Sydney and Auckland – American has already down-gauged its Los Angeles-Sydney flight and downgraded its Auckland flight to seasonal service. When considered in context as shown below, a denial of ATI would not only forgo up to $310 million in annual consumer benefits generated by the Proposed JBA, but it also risks an even greater loss of consumer benefits as the Parties' incentives to cooperate continue to unravel.

[6] This assumes that the capacity is not reallocated to another route and that passengers are not able to travel with other carriers, but in either case the loss to consumers would be significant. *See* Section II.D. below.

Table 2: Consumer Benefits Comparison: Immunized Proposed JBA vs. Counterfactual

Metric	ATI Denied (Counterfactual)	Effects of OSC	ATI Granted
Cooperation & Codesharing	▪ Parties revert to more limited cooperation at levels at or below those before 2011 JBA	▪ Parties scaling back codesharing and service level ▪ Qantas removed code from SYD-LAX flight ▪ American removed code from SYD-DFW and SYD-LAX ▪ American down-gauged LAX-SYD ▪ American reduced LAX-AKL frequencies to a seasonal service	▪ Significant integrative efficiencies ▪ Broad and deep incentives to codeshare across entire network
# Codeshare Connections	▪ Loss of up to 125 codeshare connections		▪ 100s of new connections ▪ 1000s of new itineraries
# Flights (United States to Australasia)	▪ Several routes at risk; service at risk of downgrade		▪ Incentives to add new routes, additional frequency, more seats
Impact On Consumer Value	▪ Loss of up to $133 million annually as codesharing and service degrade ▪ Further dis-integration of service, reducing quality of travel		▪ Up to $310 million in annual consumer benefits compared to status quo ▪ Up to 180,000 new passengers annually ▪ Deeper integration improves travel experience

In short, there is a choice to be made between a grant of ATI leading to incremental consumer benefits estimated at up to $310 million annually, or continued deterioration of the Parties' existing cooperation and respective networks that leaves passengers worse off.

4. Contrary To The Tentative Conclusions In The OSC, The Proposed JBA Will Not Reduce Competition (*see* Section III)

The Department has repeatedly recognized the competitive nature of the market for travel between the United States and Australasia, most recently when it immunized the Delta-Virgin Australia joint business in 2011. *See* United-Air New Zealand, DOT-OST-1999-6680, Show Cause Order 2001-3-4, at 12 ("We therefore tentatively find that the U.S.-South Pacific market is competitive . . . ."). Delta-Virgin Blue DOT-OST-2009-0155, Show Cause Order 2011-5-8, at 10 ("This indicates a generally competitive market."). The Parties view the OSC as an unfounded departure from Department precedents. The Proposed JBA will not reduce competition.

First, shares are well within Department precedent. The OSC expressed concern that Qantas has the largest share of passengers for travel to many Australasian destinations,[7] but the Department has granted ATI to joint businesses where an incumbent national carrier had far greater shares than the 41% passenger share that the OSC identified in 2016. For example, the Department granted ATI in *SkyTeam II* when pre-existing market shares were 67% in the U.S.-France market and 74% in the U.S.-Netherlands market.[8] In any event, Qantas has steadily lost share over the past decade, and American is a much smaller carrier on these routes – having only entered in anticipation of the Proposed JBA being approved.

Second, there is fierce competition. There are seven competitors and two other immunized alliances competing for traffic from the United States to Australasia. The Parties' only overlapping route is Los Angeles (LAX)–Sydney, which is presently served on a nonstop basis by four carriers (counting United-Air New Zealand and Delta-Virgin Australia as two), making the Proposed JBA at worst a "4-to-3." The Proposed JBA will in fact create a more viable third competitor to the existing, immunized joint businesses.

Third, there are significant integrative efficiencies. For some reason, the OSC viewed the market between the United States and Australia as a "terminal market" without significant flow to regions beyond Australia and New Zealand, such that the "potential to achieve . . . positive network competitive effects. . . is likely to be very minor."[9] This conjecture is incorrect and has now been thoroughly disproven. The Proposed JBA is likely to generate up to $310

[7] American-Qantas, DOT-OST-2015-0129, Show Cause Order 2016-11-16, at 2, 12.
[8] SkyTeam II, DOT-OST-2007-28644, Show Cause Order 2008-4-17, at 8–9. Even when taking into account connecting traffic, the combined market share for U.S.-France was 49.4% and U.S.-Netherlands was 53.5%. Despite the high shares, the Department still concluded that the alliance "would not substantially lessen competition" and granted ATI on the basis that "efficiencies and cost reductions would increase the likelihood that consumers would benefit from the alliance." SkyTeam II, DOT-OST-2007-28644, Final Order 2008-5-32, at 2–3.
[9] American-Qantas, DOT-OST-2015-0129, Show Cause Order 2016-11-16, at 11–13.

million annually in quantifiable consumer benefits for existing passengers (*see* section II.A.), and this does not include additional benefits of stimulated demand and increased inter-alliance competition spurred by the Proposed JBA. The $310 million also excludes real consumer benefits derived from additional travel quality improvements, such as optimization of schedules, reduction of connection times, integration and standardization of frequent flyer benefits, lounge access, in-flight services, and baggage handling – all made possible by revenue-pooling.

Finally, the Proposed JBA is non-exclusive. The OSC cited as a concern that the Proposed JBA may somehow limit feed traffic available to unaligned carriers.[10] This concern was unexplained and unsubstantiated in the OSC, and respectfully does not make sense given the intensity of competition today. In any event, the Parties have amended the Proposed JBA to remove the exclusivity provisions that were present in 2015, so Qantas and American remain free to enter into codeshare and frequent flyer relationships with other carriers. Any potential concerns about access to feed traffic is therefore misplaced.

* * *

Meeting passenger demand for better options, more convenience, and less expensive international service is both the essence of the public benefit that the Federal Aviation Act charges the Department to advance and the purpose of the Proposed JBA. Once immunized, the Proposed JBA will bolster the Department's long and distinguished record of immunizing metal-neutral joint businesses, generating immense consumer benefits. These benefits are summarized in the table below and detailed in this Application. Given the absence of any threat to competition, the Proposed JBA easily meets the Department's statutory standards for approval and ATI. The Parties respectfully request that this Application be granted.

[10] Show Cause Order 2016-11-16, at 18.

Table 3: Summary of Public Benefits

More And Better Travel Options	
Codesharing	Alignment of incentives maximizes codesharing, generating up to $221 in annual consumer benefits (*see* Section II.A.) and preserves important existing codeshare relationships (*see* Section II.D.).
Route Options	Feed traffic from increased codesharing makes new, otherwise unprofitable routes viable (*see* Section II.A.) and preserves important existing routes, including DFW-SYD, valued at up to $133 million annually to consumers (*see* Section II.D.).
Connection Time Optimization	Proposed JBA incentivizes Parties to revise flight schedules to improve connection times, increasing passenger choice and improving overall network (*see* Section II.C.).
Demand For Travel	Lower fares and higher quality will stimulate additional demand of up to 180,000 new passengers (*see* Section II.A.).
Mixed Metal Ticket Combinability	A passenger can travel on American one direction and Qantas on the return flight (*see* Section I.A.).
Lower Fares	
Efficiently Priced Connecting Fares	Joint pricing of connecting itineraries eliminates double marginalization and generates up to $89 million in annual consumer benefits (*see* Section II.A.).
Integrated Yield Management	Full sharing of information incentivizes Parties to open up more lower-fare seats (*see* Section II.A.; Appendix 5).
Corporate Discounts	Alignment of incentives encourages carriers to increase the availability and value of the discounts in order to attract more high-value business passengers (*see* Section II.A.).
Inter-alliance Competition	Added competitive pressure on the two already immunized joint businesses—United-Air New Zealand and Delta-Virgin Australia (*see* Section II.C.).
Better Travel Experience (*see* Section II.B.)	
Flight Schedules	Spreading of schedules to provide more departure options (*see* Figure 6).
Sales and Check-in Process	Integrated process allows viewing and reviewing of itineraries and prices, reservation of seats, and check-in on either carrier's websites.
Frequent Flyer Programs	Enhanced mileage accrual and redemption proposition and additional elite benefits that go well beyond oneworld alliance accrual/redemption/benefits program.
Co-location	Relocation of gates at airports closer to JBA partner to facilitate faster connections.
Terminal Access	Further improved connection times by granting access to pre-clearance facilities in Brisbane.
In-flight Services	Improved quality of complimentary services (food, drink, pajamas, amenity kits, etc.).
Lounges	Heavy investment in increasing quality and size of airport lounges shared with JBA partners.
Baggage Handling	Joint initiatives and investment in integration and automation to improve baggage handling.
Cancellations	Cooperation to link Qantas with American's Auto-Reaccom system to efficiently rebook passengers from cancelled flights.
Infrastructure	Increased incentives to invest in airport and airline infrastructure to support JBA services (*e.g.*, maintenance facility at LAX).

BACKGROUND & CONTEXT

The Proposed JBA is an important point of evolution in the long history of cooperation between Qantas and American on routes between the United States and Australasia. Cooperation between carriers is essential on these "long and thin" routes because there is insufficient demand specific to the route ("local, non-stop demand") to economically fill the large planes needed to reach Australasia. These flights are economically sustainable only if and when the airline can also serve connecting passengers. Moreover, almost 70% of passenger traffic between North America and Australasia is foreign point-of-sale, which is much harder for a U.S. carrier to attract. Taken together, these factors explain why United and Delta each needed to form an immunized joint business with an Australasian counterpart in order to sustain their competitive service to Australasia. Although American and Qantas have had at least some form of codesharing relationship for decades, American had no business case for starting its own service to Australasia until December 2015 after first reaching agreement with Qantas on the Proposed JBA and only in anticipation of its approval.

Since at least 2011, American and Qantas have been planning a deeper level of network integration with more widespread codesharing, seeking to unlock the integrative efficiencies achievable through broadly connecting their complementary networks. They realized, however, that such cooperation could only be achieved through a metal-neutral, revenue-pooling joint business that would require ATI.

Qantas and American originally approached the Department to obtain ATI for a joint business in 2011 (the "2011 JBA"). Deeper integration through a joint venture would enable them to better compete with the two rival alliances that the Department had immunized – United-Air New Zealand and Delta-Virgin Australia, which had their own metal-neutral cooperative

relationships.[11] But the Parties faced a unique constraint at the time: American did not operate service on U.S.–Australasia routes, and it could not fly those routes due to fleet limitations and restrictive labor agreements.[12] As a result, when the Parties approached the Department to obtain ATI in 2011, the Department informed them that it would not consider granting ATI for American and Qantas because the Parties had no near-term prospect of offering competing service and therefore no compelling business need for a revenue-pooling structure and no basis to seek an exemption from the antitrust laws. Nevertheless, the Department was quick to approve the 2011 JBA without ATI, recognizing numerous benefits, including "improved network schedules, aligned frequent flyer benefits, new corporate and leisure fare products, lower fares, and greater availability."[13]

While the codesharing provided for by the 2011 JBA benefited the traveling public, the Parties had always intended for deeper, metal-neutral integration that would provide for revenue-pooling to fully align the Parties' incentives to cooperate. Following American's merger with US Airways and its emergence from bankruptcy restructuring in 2013, American was able to invest in its fleet and renegotiate its labor agreements, making American service between the U.S. mainland and Australasia possible. These changes also meant that a revenue-pooling JBA was feasible, and in 2015 the Parties signed the Proposed JBA, agreeing to open their respective domestic networks and marketing efforts to support existing and expanded North America–Australasia operations, including new flights that both carriers planned to launch.

[11] United-Air New Zealand, DOT-OST-1999-6680, Show Cause Order 2001-3-4, at 6; United-Air New Zealand, DOT-OST-1999-6680, Final Order 2001-4-2; Delta-Virgin Blue DOT-OST-2009-0155, Show Cause Order 2011-5-8; Delta-Virgin Blue DOT-OST-2009-0155, Final Order 2011-6-9.
[12] American-Qantas,-DOT-OST-2011-0111, Order 2011-11-12, at 3.
[13] *Id*. at 1–2.

The Parties submitted their Proposed JBA to the Department and the competition authorities of Australia and New Zealand in June 2015, expecting a swift grant of approval based on (a) the long line of precedents approving similar JBAs, and (b) the Department's conclusion just a few years earlier when it immunized the Delta-Virgin joint business, that the "three major competitive entities on the network level with a significant share of passengers" . . . "indicates a generally competitive market."[14] No extensive analysis of consumer benefits was conducted for the Parties' 2015 application because, as the Department noted in 2011, the Parties had "no overlapping nonstop transpacific routes"[15] so there was no prospect for any loss of competition.

In line with the Parties' expectations, the Australian Competition and Consumer Commission and the New Zealand Minister of Transport quickly approved the Proposed JBA,[16] and the Parties believed the Department's approval would soon follow. Based on this expectation and given the approaching peak demand season, American introduced service from Los Angeles to Sydney in December 2015, and the same month Qantas shifted one daily flight from Los Angeles–Sydney to San Francisco–Sydney, creating a new nonstop offering in competition with United-Air New Zealand, the sole operator on that route. Qantas also added capacity on its Dallas-Sydney route. Nine months later, in June 2016, in expectation of the Department's approval, American introduced service from Los Angeles to Auckland. American and Qantas knew that sustaining these new flights would be commercially challenging, and they would not have introduced them outside the Proposed JBA.

[14] Delta-Virgin Blue, DOT-OST-2009-0155, Show Cause Order 2011-5-8, at 10.
[15] American-Qantas, DOT-OST-2011-0111, Final Order 2011-11-12, at 3.
[16] *ACCC re-authorizes Qantas-American Airlines Alliance*, Feb. 25, 2016, https://www.accc.gov.au/media-release/accc-re-authorises-qantas-%E2%80%93-american-airlines-alliance.; Authorisation of the Qantas-American Airlines Alliance, Nov. 6, 2015, http://www.transport.govt.nz/assets/Uploads/Air/Documents/QFAA-for-website.pdf.

To the Parties' surprise, in November 2016 the Department tentatively rejected their application after an unprecedented 17-month review. The Parties were given only two weeks to prepare the thorough analysis of consumer benefits that would be needed to effectively respond, and after their request for an extension of time to respond to the OSC was denied, the Parties withdrew their application in December 2016. The OSC was an abrupt departure from the Department's well-established precedent in reviewing revenue-pooling JBA proposals. This Application presents the factual and legal circumstances that support the Parties' request for ATI for the Proposed JBA, supported by new research, new evidence, an updated factual record, and a grounding in Department precedent, all of which strongly support approval of this Application.

DISCUSSION

I. Revenue-Pooling JBAs Enable Efficient Cooperation Between International Airlines and Offer Passengers Benefits Not Achievable Through Less Integrated Forms of Cooperation

Cooperation among carriers is essential to international aviation. But as the Department has recognized, codesharing and even more elaborate non-revenue-pooling alliances are ineffective at fully capturing the public benefits that could be generated from more thorough airline integration. Recognizing these shortcomings, the Department has encouraged the development of revenue-pooling joint business agreements (JBAs) as the next refinement in the evolution of international airline cooperation. Revenue-pooling JBAs align carriers' incentives to open their networks to more fully capture the integrative efficiencies of combining those networks, unlocking tremendous consumer benefits. Recently released detailed economic research has confirmed that joint businesses like the Proposed JBA provide unique consumer benefits not achievable through lesser forms of coordination. This context is essential to an

understanding of the integrative efficiencies and real and quantifiable consumer benefits of the Proposed JBA.

A. Revenue-Pooling Joint Businesses Are Uniquely Capable of Creating Consumer Benefits By Combining International Networks

The Department has granted ATI to ten international carrier relationships in the past two decades, repeatedly finding that properly structured joint businesses—ones that align the commercial incentives of international carriers by pooling revenue on long-haul international routes—deliver powerful consumer benefits that cannot be achieved through less integrative forms of cooperation, particularly codesharing agreements without revenue-pooling ("simple codesharing"). And, fare and traffic data collected since the late 1990s establishes a compelling empirical case for these revenue-pooling JBAs, as they have grown passenger traffic, launched new routes, and reduced fares for hundreds of millions of international passengers. The reasons for these successes are straightforward: revenue-pooling JBAs create the necessary incentive for each carrier to allow the other to broadly codeshare across its network, and only broad codesharing by both carriers gives them the incentive to invest in service and quality improvements that meaningfully enhance consumers' travel experience. When this integration brings together into a single cohesive network two large-scale, complementary operations anchored in different regions of the world, the impact is all the more powerful—more options for consumers, a higher-quality flying experience, more opportunities for profitable capacity additions, and more vigorous competition. The revenue-pooling JBA is better able to respond to the demand of consumers than other less-integrated forms of cooperation.

Passengers fly on an incredibly large array of international itineraries, but airlines are legally prohibited from operating all the flights necessary to serve all of those itineraries whether independently or by merging with or acquiring a foreign carrier. International travelers seek to

fly, as conveniently as possible, between millions of possible pairings of origins and destinations. Demand on international routes between the very largest U.S. and foreign cities, like New York to London, is capable of supporting direct service, and that service can be provided by airlines certificated by either the U.S. government or by the government in the other country. The Department's Open Skies initiative, together with advances in aircraft technology, have expanded the number of international city pairs that can be legally and economically served directly, and millions of passengers every year enjoy nonstop international air travel on these routes that is almost as convenient as traveling domestically. But those city-pairs remain a very small percentage of all of the routes that international passengers want to fly.

Most international journeys, tens of millions each year, are on itineraries that either begin or end (or both) somewhere other than an international gateway. For these journeys, the travel experience is more complicated, in part, because the national aviation laws of the United States and most other countries prohibit foreign airlines from providing passenger service beyond that country's international gateways (*e.g.*, to another city in that country or a city in a third country). These same laws in effect prohibit mergers between U.S. carriers and foreign carriers. As a result, no carrier, regardless of nationality, can provide ubiquitous international service to all of the destinations sought by travelers. Passengers connecting on one end of an international flight must change aircraft and have limited choices if they wish to make the entire journey on one airline. Passengers connecting on both ends not only must change aircraft, they must navigate between separate international carriers as well.

First, consider the experience of an international traveler who has to make one connection. For example, a traveler whose journey will take her from an international gateway in her home country to a smaller (non-gateway) city in another country can avoid the

inconvenience of transiting between different airlines, but only if she chooses to fly on a foreign carrier. She must select a foreign carrier because her home (and likely preferred) carrier can only get her to an international gateway in the foreign country. Her home carrier cannot legally operate the beyond gateway (or "domestic") flight needed to reach her destination. Conversely, a traveler whose journey will take her from a secondary city in her home country to an international gateway in another country can avoid changing airlines only by choosing an airline certificated in her home country. For these single connecting passengers, online service is possible, but the options for that service are limited by national laws.

The inconveniences facing the tens of millions of passengers flying on itineraries that neither begin nor end at an international gateway are even more pronounced. These passengers must make connections on both ends of the international flight and, because of the legal restrictions on where airlines can operate, these passengers must transit between international carriers to reach their destinations.

International travelers originally had to navigate between international carriers on their own, which meant buying separate tickets, moving between airlines, and gathering and re-checking their own bags along the way. However, as international travel grew, carriers developed forms of cooperation that allowed passengers to purchase a single ticket from one airline and have their bags travel with them without having to be re-checked. As international travel continued to expand, competition for these international passengers led to better coordination among airlines and further enhancements in the quality of connecting air service between airlines. These efforts—continuously spurred on by competition—have led to more seamless, and fairly-priced, services for connecting international travelers. Given that airlines

cannot operate ubiquitous online international services, they have sought to approximate online travel to the greatest extent possible through a variety of evolving economic arrangements.

The earliest form of international airline cooperation was interlining, a process developed through the International Air Transport Association ("IATA"), which allowed an airline to purchase connecting service from other airlines to package with their own services. By purchasing a seat on the connecting flight from another airline, the selling carrier could offer one-stop shopping to connecting travelers. The airline, rather than the passenger, purchased this "interline" service from the second carrier, and settled up separately with the second carrier through an IATA clearinghouse process. Over time, however, interlining became a disfavored form of cooperation, as airlines preferred to negotiate bilateral agreements that gave them better access and more control over the passenger experience. These individually-negotiated relationships between carriers have largely displaced industry interlining in the marketplace. Today, interline tickets are the most expensive form of cooperation between international carriers, and interline itineraries are the best option only when they are the only option—typically on only the most obscure, and thinly-traveled, itineraries.

As competition drove airlines to move beyond interlining, simple codeshare agreements became a more effective way for an international carrier to serve international passengers. Simple codesharing is the practice of allowing a carrier to put its marketing code on the services operated by another carrier; in other words, under this arrangement, the carriers can market and sell each other's services as their own. This innovation made it easier for consumers to discover and purchase connecting itineraries because these options were now marketed by a carrier that was widely-recognized in their home markets. Consumers could now purchase their tickets under a brand and a set of terms and conditions defined by an airline that they know and trust,

even if that carrier could not economically or legally operate all of the services in their international itineraries. These bilateral codeshare agreements could also provide a platform to improve customer experience by, for example, allowing passengers to earn frequent flyer miles/points or enjoy access to airport lounges. Indeed, many codeshare relationships are buttressed by multi-lateral marketing alliances, which establish customer standards among a group of international carriers. In turn, by placing codes on each other's flights, international carriers could win a larger share of the passengers originating in countries where they had limited brand recognition. Moreover, through these individually-negotiated agreements, airlines could trade on the relative value of their brands and networks to obtain better, and more reliable, access to the beyond gateway inventory they needed to create and sell more codeshare itineraries. Codesharing is now common, and consumers have shown that, when they need to take a flight on a foreign carrier, they prefer one that is marketed and sold by their preferred carrier through a codeshare relationship.

Although it represents an improvement over interlining, carriers have limited incentives—and thus willingness—to engage in simple codesharing where both carriers operate the long-haul route. A codeshare partner that sells a seat on the operating carrier's flight receives only a portion of the fare. When the codesharing partners have competing long-haul international operations, codesharing inevitably will fail to provide the optimal solution for international travelers because, whenever possible, codeshare partners prefer to sell seats on flights that they operate so as to capture the full fare. Consequently, each simple codesharing partner has incentives to keep for itself the connections that can be expected to make passengers choose it instead of the other carrier. Following these incentives leads carriers to hold back on the kind of broad integration that optimizes consumer benefits, resulting in fewer choices and

lower-quality service for international travelers than would result from more integrated cooperation. Carriers need stronger economic incentives to make their networks and inventory broadly available to each other than simple codesharing agreements are capable of delivering.

It is helpful to illustrate these points with examples, but to do so we must first describe the two models airlines use to divide revenue under a simple codeshare agreement. These models can be understood by considering a hypothetical passenger who would pay $1,000 to travel from San Antonio to London. Two carriers—one based in the United States, the other in the U.K.—operate competing service between Dallas and London, but only the U.S. carrier can provide a connection on to San Antonio. If the passenger travels with the U.S. carrier from San Antonio to Dallas and on to London, the U.S. carrier would earn the entire $1,000. If, on the other hand, the passenger made the journey on a codesharing itinerary and flew the U.K. carrier from Dallas to London, the U.S. carrier would be left providing service only on the much shorter San Antonio to Dallas leg.

One form of simple codesharing establishes fixed rates for the short-haul leg of the journey depending on the route and the inventory sought. Under this model, the marketing carrier (here the U.K. carrier) might have to pay the operating carrier (here the U.S. carrier) $100 for a restricted coach seat on the flight that connects beyond the gateway. The marketing carrier then would set the fare for this connecting itinerary and would keep the difference between the fare it collects and the $100 it pays its codeshare partner for the connecting service.

A second form of simple codesharing, known as a pro-rate agreement, divides the fare using the carriers' relative share of the itinerary based on miles flown. Because the nautical miles between San Antonio and Dallas are roughly 5% of the nautical miles for the full San

Antonio to Dallas to London itinerary, the U.S. carrier would receive $50 out of the $1,000 fare, while the U.K. carrier would keep the remaining $950.

Under any simple codeshare agreement—whether fixed rate or pro-rate—the carrier that operates the international (or long-haul) segment retains a much larger share of the fare. The revenue the other airline receives for providing the service beyond the international gateway is far less than what it would have earned by flying the passenger on its own aircraft for the more valuable international segment. Thus, without a countervailing incentive, each carrier has an overwhelming incentive to attract a connecting international passenger to its own international operations where possible rather than to an alternative international flight operated by its codeshare partner. The best way for the U.S. carrier to attract that passenger to its Dallas to London flight—and for it to collect the full fare—is to not offer codesharing to the U.K. carrier on its domestic San Antonio to Dallas flights at all. In practice, that is what airlines do: they restrict codesharing and limit access both to destinations and inventory on their short-haul domestic networks. As a result, the economic incentives inherent in a simple codeshare agreement preclude the parties from ever achieving the optimal scope of codesharing that their respective networks could support. These economic arrangements always leave international connecting travelers with fewer and inferior choices.[17]

Given these shortcomings in simple codeshare relationships, competition for international travelers led airlines to develop revenue-pooling JBAs, which align carriers' incentives and, in the process, create significantly better service for international passengers. With revenue-pooling, the carriers agree to pool all revenue attributable to the long-haul international segment, regardless of which carrier operates the flight. That pooled revenue is then divided according to

[17] *See also* Appendix 5, which describes this effect in greater detail.

a pre-determined formula that makes the carriers indifferent as to which airline carries each individual passenger on the international segment. Thus, the revenue-pooling joint business alleviates the disincentives in a simple codeshare agreement and creates incentives to maximize the extent of codesharing between the carriers and, in doing so, deliver the substantially greater consumer benefits than are possible under simple codesharing.

To illustrate, return to the traveler flying between London and San Antonio. If that service was covered by an agreement that had not only the standard mileage-based prorate but also included a 50/50 revenue-pooling arrangement, the U.S. carrier would receive the same $50 for carrying the passenger on the short-haul flight, as well as half of the $950 allocated to the international flight, for a total of $525, regardless of whether the passenger traveled on the long-haul flight operated by it or its codeshare partner. With $525, as opposed to $50, at stake, the U.S. carrier now has a much larger incentive to codeshare with its U.K. partner on its San Antonio to Dallas flights. Furthermore, it has an incentive to expand capacity both to San Antonio and other places that create feeder traffic for its partner's Dallas-London flight.

This example of a single passenger on a London to San Antonio routing illustrates the impact of the revenue-pooling JBA in just one instance. But when evaluating the full competitive effects of a revenue-pooling JBA versus a simple codeshare, these same incentives, and the resulting benefits for consumers, get multiplied across millions of international itineraries that are flown by tens of millions of international passengers every year. Airlines, after all, are network businesses, and integrating large but complementary networks leads to a massive expansion in consumer options. When a city like San Antonio is added to the codeshare relationship in the above example, consumers are not just given better options to fly between

London and San Antonio, they are given better options to fly between San Antonio and potentially every other city that can be served by the U.K. partner through London.

More broadly, consumer benefits are maximized when carriers fully open up their networks to facilitate codesharing and maximum connectivity. However, building large airline networks is extraordinarily expensive, and without adequate compensation, a carrier is incentivized to prioritize passenger flows that utilize its own trunk routes and grant less access. Following the example above, when American allows a foreign carrier broad rights to put its code on one of American's domestic U.S. flights, that allows the competitor to capture (connecting) passenger demand created by American's service to or from, for example, San Antonio, Omaha, Milwaukee, and potentially *hundreds* of other cities in American's U.S. network. Losing those connecting passengers means fewer passengers for American's own international flights, making those flights less profitable, and ultimately jeopardizing their viability altogether. This misalignment of incentives from a simple codeshare relationship leads to less cooperation, fewer codeshare destinations, fewer codeshare flights, and more restricted inventory. This effect is not merely theoretical; it is evident in the data as studied by Compass Lexecon, discussed in detail below.

By contrast, revenue-pooling JBAs are extraordinarily effective in creating consumer benefits that are multiplied across thousands of routes when networks are more closely integrated. A revenue-pooling JBA rewards deeper integration without any countervailing effects. Under a revenue-pooling JBA, neither carrier has an incentive to attract passengers exclusively to its long-haul flights and each carrier has a direct interest in the financial success of its partner's international operations, which means both carriers are incentivized to open their networks through codesharing as broadly as possible to their international partners. Under these

revenue-pooling arrangements, the carriers focus on growing the combined business and are motivated to ensure the success of every international flight. With the commercial trade-offs under a simple codeshare no longer in play, operational concerns become the only meaningful limit on the extent of cooperation. Choices for consumers multiply across thousands of potential routings as carriers add more destinations and flights, at more convenient times (as opposed to just the "best" times). As each destination is added to the scope of cooperation, it creates connecting opportunities for the hundreds of other destinations that the codeshare partners serve via their large, and complementary, networks. These newly created options shorten travel times, give consumers more options to make their specific connections, and provide access to more seats. This increased connectivity and shared interest (and risk) among joint business carriers can also facilitate entry into new direct routes to smaller, non-hub (or smaller hub) airports (as was the case with American's transatlantic joint business, which launched direct service from London to U.S. cities like Austin, TX and Nashville, TN).

Revenue-pooling JBAs also price more efficiently. In a simple codeshare relationship, each carrier needs its own profit margin, one that is large enough to motivate it to give a competing international carrier access to its network. In numerous studies, economists have observed these pricing effects on connecting itineraries involving two international carriers, which is an airline version of the familiar concept called "double marginalization." Airlines can take "their" margin by a variety of means, including demanding a premium above its pro-rata share, exempting the lowest-priced seats from available inventory, or some combination of these actions. These efforts to protect two separate profit margins lead to higher fares.

By contrast, a revenue-pooling JBA focuses the carriers on maximizing the combined profitability of the joint business flights, and, thus, reduces or eliminates inefficient pricing

practices, including double marginalization. Revenue-pooling JBAs are therefore economically efficient and uniquely capable of generating the lowest fares for passengers that need to connect between international carriers.

The consumer benefits of revenue-pooling JBAs go beyond expanded codesharing and lower connecting fares. With their interests aligned and broad codesharing in place, the carriers have the incentive to invest in the joint product to make it superior to what either carrier could offer on its own. In other words, broad codesharing justifies the planning, development, and implementation of new forms of cooperation. Through governance and other committees, the carriers share best practices, find new opportunities to expand product offerings, and make adjustments for the benefit of the combined business that neither would ever do its own. Carriers in a joint business are, for example, willing to adjust the schedules within their networks to improve connectivity with their partner's flights, adjustments not warranted by the lesser economic return of a codesharing relationship. If, for instance, a large number of international passengers arriving in Dallas on the foreign partner's flight consistently connect on domestic flights to San Antonio, the U.S. carrier can adjust its schedule, as well as the size of the aircraft that it operates, between Dallas and San Antonio to better serve those passengers. Similarly, if both carriers operate a number of flights on a heavily traveled route, such as New York to London, they will adjust their schedules to create more time-of-day options for travel. These adjusted schedules across large and complementary networks can increase convenience and reduce travel times for millions of passengers.

Carriers in revenue-pooling joint businesses make other investments that are commercially feasible only in the context of the broad codesharing enabled by a revenue-pooling JBA. They are more likely to spend the money required to improve service, including co-

locating gates to shorten the distance passengers must navigate in unfamiliar foreign airports, grant or facilitate access to U.S. customs pre-clearance facilities at airports like Brisbane to improve connection times, and improve the reliability of baggage handling for their joint customers. JBA partners are also more likely to standardize and make improvements to food, drinks, and other in-flight amenities. These and other investments are all behind the scenes, but they meaningfully improve the quality of the travel experience. Consumers have noticed, and taken advantage of, the growth in options and the differences in quality created by the enhanced cooperation in a joint business. They consistently prefer these services to those provided under interlining or simple codeshare agreements.

Revenue-pooling JBAs also provide unique benefits for passengers who are only flying between international gateways, such as Dallas to London. As the carriers put their codes on more of each other's international flights, their customers have more direct flights to choose from, including many that are not served directly by their preferred carrier. Even on those routes served by both carriers, customers are given valuable new options. For example, since the airlines no longer care which airline provides the international service, they are more likely to allow mixed-metal round-trip itineraries that allow passengers to depart on one airline and return on the other. And, as noted above, the carriers can now adjust their combined schedule to create more time-of-day options by moving one or more flights from peak travel times where both airlines previously operated services that departed at virtually the same time. With more schedule options and more seats, passengers are more likely to find a pair of flights that closely matches their preferred travel times at a good price.

Perhaps most importantly for nonstop passengers, revenue-pooling JBAs grow capacity on these routes. By integrating complementary networks, and offering broader and deeper

service to more international destinations, carriers are able to stimulate demand and thus generate more traffic. In order to serve that incremental traffic, the carriers are incentivized to expand capacity, even on routes where they have no direct competition. The economic evidence and American's own experience in like situations unequivocally confirms this fact – revenue-pooling JBAs do not result in lower capacity or increased fares. In fact, the opposite is observed: capacity increases while non-stop fares are unaffected.

Finally, revenue-pooling JBAs raise the competitive bar for all carriers. International aviation is intensely competitive, with three large marketing alliances, a growing number of joint businesses, strong regional players, and low-cost operators that have become the fastest growing segment of the market. None of these competitors are standing still, and as revenue-pooling JBAs present consumers with superior products and lower prices, other revenue-pooling JBAs and independent competitors are required to compete even more vigorously. And they do. The empirical evidence shows that as revenue-pooling JBAs expand output, competitors not only stay on these routes, they enter more frequently than they do elsewhere.

In sum, revenue-pooling JBAs create the broadest, most powerful consumer benefits by:

- Opening up more destinations and flights for codesharing, with exponential impact on consumer benefits as these additions are multiplied across complementary networks;
- Pricing more efficiently by eliminating duplicative profit margins, giving consumers access to more inventory, and making discounts more widely available;
- Adjusting the schedules at their hubs to improve connectivity with their partner's incoming flights;
- Adding flights both to accommodate increasing demand for their international services and take advantage of new route opportunities for profitable flying;
- Investing in the joint business to improve the quality of travel and better serve customers; and
- Stimulating even greater competition.

With years of experience with revenue-pooling JBAs, there is evidence on all these points. Take, for example, American's relationship with British Airways and Iberia, which is American's oldest and most mature joint business relationship. These carriers established alliance and codeshare relationships in the 1990s, but did not have a revenue-pooling JBA until 2010. After ATI was granted, passengers enjoyed the following benefits:

- The carriers increased the number of codeshare destinations by 85%, and increased the number of codeshare flights from approximately 1,200 to over 6,000, a five-fold increase. With hundreds of new destinations, and thousands of new flights, the carriers were able to create new online service on tens of thousands of international itineraries, serving millions of passengers.
- The carriers grew transatlantic capacity (measured in seats) by almost 50% and served four million new passengers.
- The carriers re-timed their schedules at their hubs, creating better connectivity and more time-of-day travel options.
- On the one overlap that went from two competitors to one (Dallas to London), the carriers dramatically increased capacity by almost 50%.
- The carriers launched 36 new routes from 2010 to 2016, a 157% increase over the 14 transatlantic new routes launched in the six years prior to the revenue-pooling JBA.
- Revenue-pooling made it possible to enter numerous smaller markets, including new transatlantic routes to U.S. destinations like Austin, TX and Nashville, TN.

In sum, in a world where mergers between international carriers are impossible, revenue-pooling JBAs between international carriers are the most efficient way to unlock the significant consumer benefits created by combining international networks, and they have proven tremendously successful.

B. The Unique Consumer Benefits Created By Revenue-Pooling Are Recognized By The Department's Precedents And Empirically Confirmed by Economic Studies

The consumer benefits of revenue-pooling JBAs are not merely anecdotal. Recent economic studies, including a comprehensive 17-year retrospective on international airline cooperation and a separate 10-year analysis specific to Air New Zealand have validated the

Department's confidence in the revenue-pooling JBA structure. Revenue-pooling JBAs have proven to generate a wide range of public benefits not achievable with other forms of cooperation.

1. The Department's Precedents Have Repeatedly Endorsed Revenue-Pooling JBAs

In a series of precedents spanning decades,[18] the Department has found that revenue-pooling joint business structures give the partners "common incentives to promote the success of the alliance over [their] individual corporate interests" and thereby allow them "to achieve merger-like efficiencies and deliver public benefits that would not otherwise be possible."[19]

Integral to its previous orders are the Department's findings that revenue-pooling JBAs achieve greater codeshare connectivity and higher-quality service,[20] and lower average fares for connecting service through the elimination of double markups (or double marginalization) for inter-carrier connections.[21] The recognition that this joint business structure, with ATI, effectively eliminates double marginalization has been a staple of the Department's analysis over the past decade.[22] The Department has also found that revenue-pooling JBAs lead to increased

[18] United-Air New Zealand, DOT-OST-1999-6680-7, Final Order 2001-4-2; Sky Team II, DOT-OST-2007-28644, Final Order 2008-5-32; Continental-United-Air Canada-Austrian-bmi-Brussels-LOT-Lufthansa-SAS-TAP, DOT-OST-2008-0234, Final Order 2009-7-10; American-British Airways-Finnair-Iberia-Royal Jordanian, DOT-OST-2008-0252, Final Order 2010-7-8; U.S.-Japan Alliance Case, DOT-OST-2010-0059, Final Order 2010-11-10; Delta-Virgin Blue Group, DOT-OST-2009-0155, Final Order 2011-6-9; Delta-Virgin Atlantic, DOT-OST-2013-0068, Final Order 2013-9-14; Delta-Aeromexico, DOT-OST-2015-0070, Final Order 2016-12-13; Delta-Korean Air, DOT-OST-2002-11842, Order 2017-11-8.

[19] Continental-United-Air Canada-Austrian-bmi-Brussels-LOT-Lufthansa-SAS-TAP, DOT-OST-2008-0234, Show Cause Order 2009-4-5, at 4, 19.

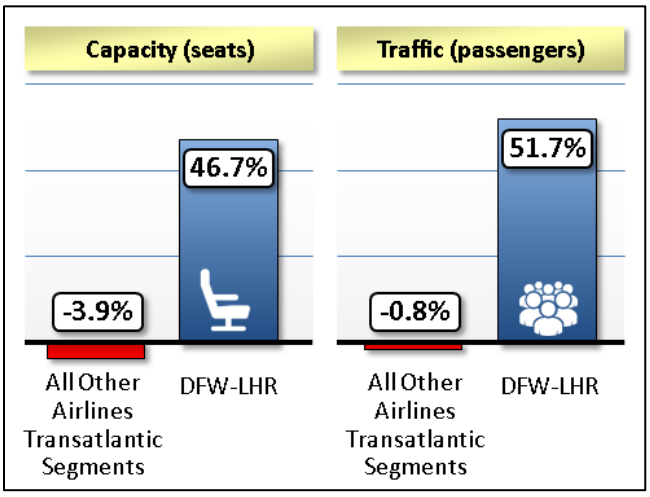
[20] American-British Airways-Finnair-Iberia-Royal Jordanian, DOT-OST-2008-0252, Show Cause Order 2010-2-8, at 4 n.6.

[21] Delta-Virgin Blue Group, DOT-OST-2009-0155, Response to Show Cause Order 2010-9-4, at 32 n. 103.

[22] *See* Delta-Aerovias de Mexico, DOT-OST-2015-0070, Show Cause Order 2016-11-2, at 19 (concluding that alignment of interests from revenue-pooling would result in "a further decrease in double marginalization); Delta-Virgin Atlantic, DOT-OST-2013-0068, Show Cause Order 2013-8-21, at 11 (accepting that the proposed metal-neutral JBA "may eliminate double marginalization pricing and other inefficiencies that burden consumers"); Delta-Virgin Blue, DOT-OST-2009-0155, Show Cause Order 2011-5-8 at 14 n. 41 (recognizing expected benefits from the "elimination of double marginalization, which occurs when two producers in a supply chain each charge a separate markup and thus impose a negative externality on the other entity's demand" and acknowledging that "[a] joint revenue model that is disciplined by adequate competition incentivizes the firms to eliminate these double markups, potentially lowering prices for the consumer."); U.S.-Japan Alliance Case, DOT-OST-2010-0059, at 13

network capacity, in order to accommodate the increased traffic flows resulting from higher quality service and lower average fares.[23] This expansion of passenger traffic is the best demonstration of the consumer benefits resulting from revenue-pooling JBAs. For example, passenger traffic increased after American and British Airways received ATI for their transatlantic JBA in 2010, and in response to higher demand, American and British Airways substantially increased seat capacity on the key London Heathrow (LHR)-Dallas (DFW) trunk route between their networks, a route not flown by any competing carrier:

Figure 2: Capacity and Traffic Increases Between LHR and DFW Airports Before and After Revenue-Pooling Between American and British Airways (2008 vs. 2012)[24]



The lack of a comparable increase in other transatlantic capacity and passenger traffic during the same period strongly suggests that the capacity increase in the LHR-DFW service was stimulated by the formation of the American-British Airways JBA. With these benefits, the

(finding it likely that consumers would benefit from an estimated "reduction in fares through elimination or reduction of double marginalization" based on earlier economic literature); American-British Airways-Finnair-Iberia-Royal Jordanian, DOT-OST-2008-0252, Show Cause Order 2010-2-8, at 32 n. 103 ("Consistent with economic theory and the experience of other alliances, the proposed alliance is likely to significantly reduce fares on 'interline' routes in which only one partner operates one segment and only another partner operates another segment.").

[23] Continental-United-Air Canada-Austrian-bmi-Brussels-LOT-Lufthansa-SAS-TAP, DOT-OST-2008-0234, Show Cause Order 2009-4-5, at 19.

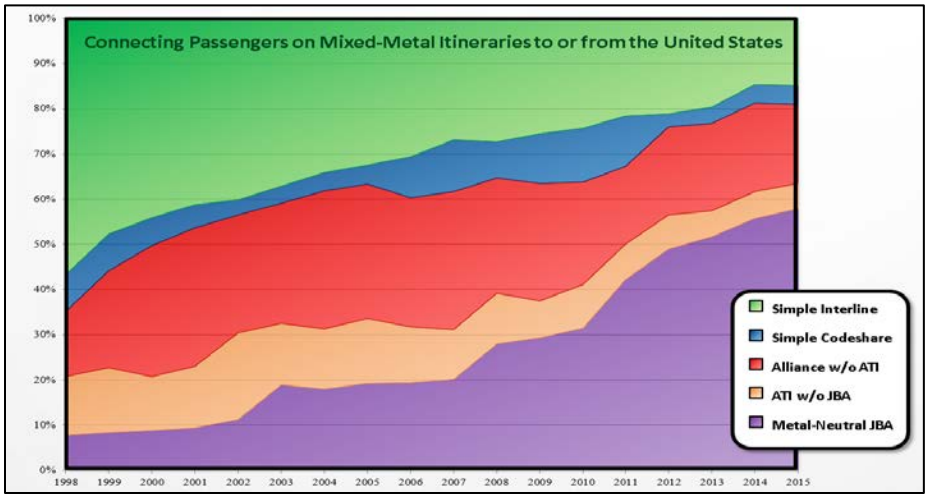
[24] BTS T100 Nonstop Segment Data.

Department has concluded, revenue-pooling JBAs spur greater inter-alliance competition.[25] In approving the Delta-Virgin Atlantic joint venture, for example, the Department found that, because New York to London was an important "trunk route for multiple airlines and alliances," the competitors on this route would have incentives "to maintain or expand capacity," and these incentives would "preserve the quality of services at competitive prices."[26]

The public benefits of revenue-pooling JBAs are so powerful that, since 2008, the Department has in fact required revenue-pooling (the implementation of a metal-neutral joint business) as a condition to every grant of ATI.[27] As a result, revenue-pooling joint businesses now fly to every region of the world and, as shown below, account for more than 60% of passengers who fly to or from the United States on inter-carrier connections.

[25] American-British Airways-Finnair-Iberia-Royal Jordanian, DOT-OST-2008-0252, Show Cause Order 2010-2-8, at 28 ("The enhanced inter-alliance competition is beneficial for consumers across many markets, in particular the hundreds of transatlantic markets in which the applicants become more competitive as a direct result of the alliance. Travelers in those markets instantly gain new competitive options.").
[26] Delta-Virgin Atlantic, DOT-OST-2013-0068, Show Cause Order 2013-8-21, at 11.
[27] *Compare* Delta-Northwest-Air France/KLM-Alitalia-Czech (Sky Team II), DOT-OST-2007-28644, Show Cause Order 2008-4-17, at 15 (tentatively granting ATI to the SkyTeam transatlantic JBA where "the Joint Applicants now supply a detailed joint venture agreement that integrates international operations to such an extent as to suggest metal neutrality and seamless travel across one joint network"), with SkyTeam I, DOT-OST-2004-19214, Show Cause Order 2005-12-12, at 37 (tentatively denying ATI where applicants had not made sufficient progress toward "implementation of an economic benefit sharing agreement among the alliance partners"). *See also* American-British Airways-Finnair-Iberia-Royal Jordanian, DOT-OST-2008-0252, Show Cause Order 2010-2-8, at 33-34 (concluding that conditioning grant of ATI on metal neutrality is "in the best interest of consumers").

Figure 3: Trend Towards Closer Cooperation in International Airline Service[28]



Source: Data Base Products, Inc.

2. Recent Economic Research Confirms that Revenue-Pooling JBAs Maximize the Public Benefits of Airline Cooperation

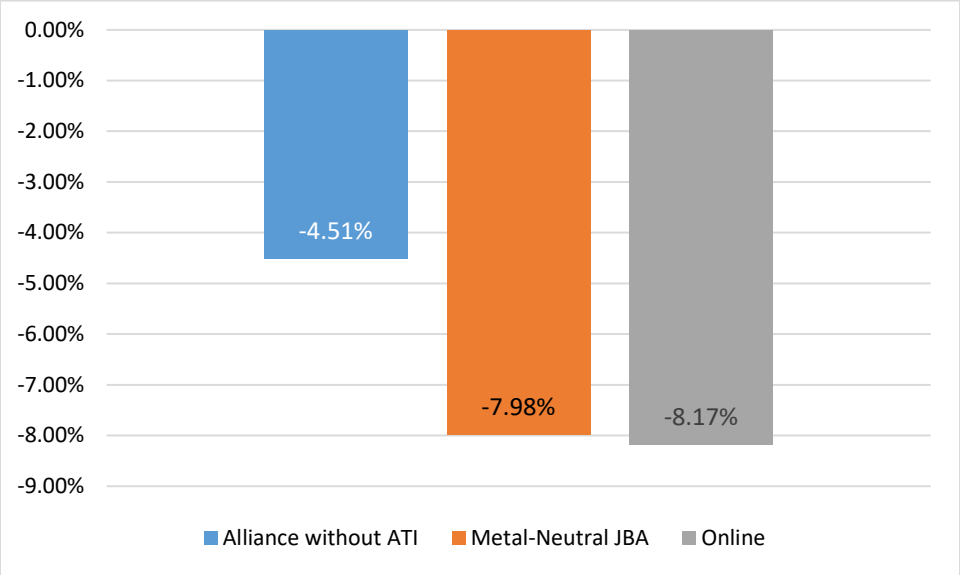
The Department's confidence in the potential for revenue-pooling JBAs to maximize public benefits from airline cooperation was well-founded. Two recent studies of airline cooperation have empirically confirmed the benefits of revenue-pooling JBAs.

In October 2017, Calzaretta, Eilat and Israel published a comprehensive study of international airline cooperation (the "CEI Study") in the *Journal of Competition Law and Economics*, a respected peer-reviewed journal, confirming that revenue-pooling JBAs create significant consumer benefits beyond those created by less integrated forms of cooperation.[29] The CEI Study is based on data tracking 17 years (1998-2015) of actual market performance by international airlines and examines separately the effect of interline/codesharing agreements, alliances, and revenue-pooling JBAs on nonstop and connecting fares, entry and exit events, and segment traffic.

[28] Data Base Products, Inc. "Gateway Superset" O&D Survey; U.S. DOT; company documents.
[29] *See* Robert J. Calzaretta, Jr., Yair Eilat, and Mark Israel, *Competitive Effects of International Airline Cooperation*, J. Comp. L. & Econ. (Oct. 2017), https://doi.org/10.1093/joclec/nhx016 (Appendix 2).

Most significantly, the CEI Study demonstrates that, as compared to both interline/codesharing relationships and alliances without revenue-pooling, revenue-pooling JBAs produce the lowest average fares for connecting service—7.98% lower than interline/codeshare fares and nearly as low as the fares for connecting online service.

Figure 4: Average Effect on Connecting Fares Relative to Interline/Simple Codesharing Based on Level of Airline Cooperation[30]



Source: CEI Study

The CEI Study also shows that, relative to less integrated forms of cooperation, revenue-pooling joint businesses attract increased passenger traffic on the partners' networks,[31] result in more entry than exit by competing carriers on nonstop trunk routes served by JBAs,[32] and do not produce any increase in nonstop fares on routes where the partners provide overlapping service.[33]

[30] *See* CEI Study at 18 (Appendix 2). The Study's findings with respect to connecting fares were substantially similar across several different specifications, such as limiting the analysis to economy fares only and running the regressions for just the 2002-2015 (*i.e.*, post-September 11, 2001) time period. *See id.* at 18.
[31] *See id.* at 20–22.
[32] *See id*. at 29.
[33] *See id*. at 26.

Also, the study showed that revenue-pooling joint businesses do not result in the same price effects that may occur from a merger. Specifically, the study found that where the actual number of carriers was reduced from three-to-two or two-to-one as a result of merger or a unilateral decision to exit, nonstop fares increased. In contrast, the CEI Study found that nonstop fares *did not increase* where the reduction in carriers came about by virtue of a revenue-pooling joint business agreement like the Proposed JBA.[34] Moreover, the study found no statistically significant increase in fares when the number of carriers was reduced from four-to-three, whether part of a JBA or not.[35]

A separate analysis authored by Jan Brueckner, Darin Lee, and Ethan Singer (the "BLS 2016 Study"), three economists who have been at the forefront of research into the effects of international airline alliances,[36] also demonstrates that the consumer benefits of a revenue-pooling JBA between carriers that serve long, thinly trafficked trunk routes (such as the transpacific routes between North America and Australasia) can be even greater than the average benefits documented by the CEI Study.[37] The BLS 2016 Study analyzed non-public data from Air New Zealand's revenue-pooling JBAs and found that passengers realized an average of 8.8% lower connecting fares as a result of those revenue-pooling JBAs as compared to interline or simple codeshare fares. Notably, these experienced analysts concluded that revenue-pooling

[34] *See id*. at 24.
[35] *Id*.
[36] *See, e.g.*, Jan K. Brueckner, Darin N. Lee & Ethan S. Singer, "Alliances, Codesharing, Antitrust Immunity, and International Airfares: Do Previous Patterns Persist?," 7 J. Comp. L. & Econ. 573 (2011); Jan. K. Brueckner, "The Benefits of Codesharing and Antitrust Immunity, with an Application to the Star Alliance," Journal of Air Transportation Management 9, 83-89 (2003); Jan K. Brueckner, "International Airfares in the Age of Alliances: The Effects of Codesharing and Antitrust Immunity," 85 The Review of Economics and Statistics 105 (2003); Jan K. Brueckner and W. Tom Whalen, The Price Effects of International Alliances, 43 J. L. & Econ. 503 (2000).
[37] *See* Darin Lee, "Do Metal-Neutral JVs Price as Efficiently as Individual Carriers?," Presentation to IATA Legal Symposium 2017, at 7 (July 17, 2017) (citing Jan Brueckner, Darin Lee, and Ethan Singer, *Ex Post Analysis of Air New Zealand Revenue-Sharing Joint Venture Agreements* (June 13, 2016) as the non-public source of the analysis) (attached as Appendix 3).

"incents JV partners to price as if they were a single carrier," while "[l]ess-integrated forms of cooperation (*i.e.*, non-immunized alliance codesharing) are not sufficient to eliminate double marginalization."[38]

Taken together, the empirical findings of the CEI Study and the BLS 2016 Study demonstrate the benefits of revenue-pooling JBAs over more limited forms of cooperation and confirm the Department's longstanding conclusion that the quality-of-service improvements and fare reductions obtained by revenue-pooling JBAs cannot be achieved through less integrated forms of cooperation.

II. The Proposed JBA Is Essential To Maintain The Parties' Cooperation And Will Unlock Significant Consumer Benefits Not Otherwise Achievable

American and Qantas have cooperated on service between the United States and Australasia for decades, but their relationship has never extended to revenue-pooling, practically limiting their willingness and ability to cooperate and missing opportunities for significant integrative efficiencies. The Proposed JBA solves this problem by aligning the Parties' incentives to open their complementary networks and invest in ways that are only possible with revenue-pooling, unlocking tremendous consumer benefits. Under the Proposed JBA, American and Qantas will:

(1) Maximize codesharing and more efficiently price itineraries, which Compass Lexecon estimates will generate **up to $310 million in annual value to passengers**. Compass further estimates that these benefits will stimulate additional demand of **up to 180,000 new passengers** (*see* Section II.A);[39]

(2) Invest in **increased quality, convenience, and availability** of value-added services to improve the quality of travel and **grow demand** (*see* Section II.B.); and

[38] *Id*. at 14.
[39] *See* Compass Lexecon, Economic Analysis of the Benefits and Costs of the Proposed American Airlines – Qantas Airways Limited Joint Business Agreement, February 26, 2018 (the "Compass Report"), (Appendix 4). Compass' estimates are based on American's internal QSI modeling of codesharing under the Proposed JBA.

(3) Create a third metal-neutral joint business serving Australasia, **intensifying competition** with United-Air New Zealand and Delta-Virgin Australia (*see* Section II.C).

These benefits are not achievable through the Parties' existing cooperation on service to Australasia, which until 2017 had been expanding in anticipation of an immunized, revenue-pooling joint business like the Proposed JBA. The OSC and denial of ATI unfortunately marked a significant inflection point in the Parties' relationship and cast serious doubt over the future of the Parties' cooperation. As a result of this uncertainty, that cooperation, by economic necessity, has retrenched in the past year. As recent developments foretell, without a grant of ATI for the Proposed JBA, the Parties' existing cooperation will continue to deteriorate as the Parties' incentives focus inward to maximize their own profits from their own aircraft to the detriment of the traveling public (*see* Section II.D.).[40]

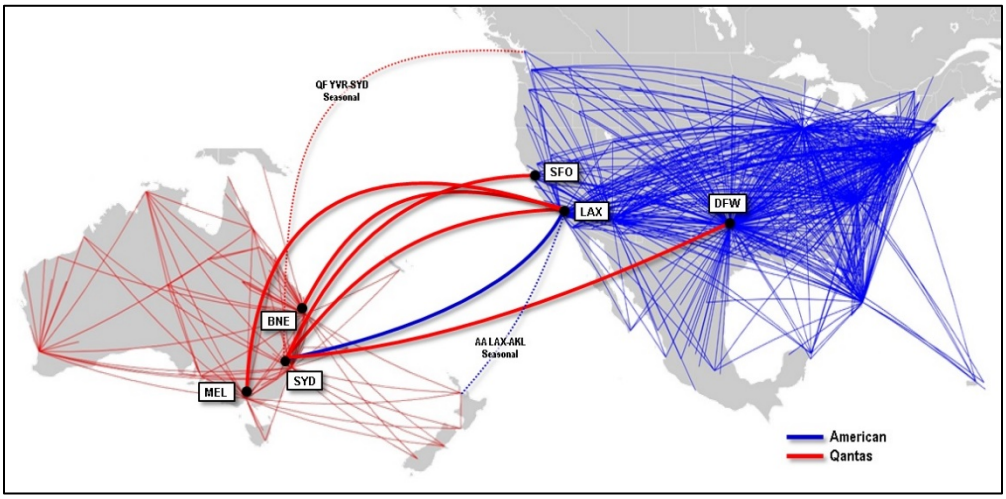
A. Revenue-Pooling Will Incentivize Vastly Expanded Codesharing, Increase Connectivity, Reduce Fares, And Stimulate Demand

Today, American and Qantas operate under a non-revenue-pooling joint business framework that in effect is simple codesharing, where each retains an incentive to steer traffic to their own international flights in order to capture the lion's share of a codeshare fare. The revenue-pooling in the Proposed JBA eliminates this incentive, significantly increasing the Parties' willingness to codeshare, creating significantly more (and more convenient) options for customers. As explained in Section I.A. above, this expanded codesharing is the fundamental – indeed automatic – benefit of metal-neutral joint businesses: they incentivize the parties to open their complementary networks to a joint business partner, creating hundreds or thousands of

[40] The OSC assumed that the Parties would continue to codeshare at historical levels and could achieve the public interest benefits offered by the Proposed JBA without a grant of ATI. *See* OSC at 21-22. The facts since November 2016 prove otherwise, as the Parties have significantly pared back the level of codesharing and other areas of cooperation. *See* Section II.D.

connecting flight options not economically feasible without revenue-pooling. The opportunities for integrative efficiencies between American and Qantas are immense: the Proposed JBA will open up to 115 new codeshare destinations in North America for Qantas and almost 50 codeshare destinations in Australasia for American.

Figure 5: Complementary Route Networks[41]



By its terms, the Proposed JBA obligates the Parties to coordinate schedules to minimize connections and connection times to maximize passenger convenience. As an example, to travel from Perth, Australia to Jackson Hole, WY (or any destination served only from DFW) today, a passenger flying American would have to travel on four flights, connecting three times – in Sydney, in Los Angeles (because, since the OSC, American has removed its code on Sydney-DFW), and then again in Dallas (DFW, because American only flies to Jackson Hole from DFW). The Proposed JBA will connect Sydney to Jackson Hole on the joint business, with only the DFW connection, once American's code is added to Qantas' Sydney to Dallas service under

[41] Networks shown are limited to trunk routes between North America and Australasia and behind-and-beyond destinations within North America and Australasia. Qantas' service includes flights from Sydney, Melbourne, and Brisbane to New York (JFK), but these flights are "tag" flights that stop in Los Angeles and the service is dependent on Qantas' flights to LAX from Australasia.

the Proposed JBA. This is but one example of thousands of new connections and itineraries created by expanded codesharing under the Proposed JBA.[42]

The value of these benefits to passengers are real and quantifiable. The Parties estimate these benefits using Quality of Service Index ("QSI") analysis, the same analytical tool that American uses to plan its network in the ordinary course of business. QSI forecasts passenger behavior under the Proposed JBA by quantifying the attractiveness of newly available itineraries resulting from increased codesharing under the Proposed JBA and estimating the number of passengers that would switch to a new itinerary. By calculating the price decrease necessary to attract that same number of new passengers predicted by the QSI forecast, the Compass analysis provides a measure of consumer benefits in monetary terms.[43] Here, the QSI results estimate the increased codesharing arising from the Proposed JBA will produce up to $221 million in annual consumer benefits, based on current demand.[44]

These benefits are specific to the Proposed JBA and are in addition to any beneficial effects from the Parties' existing relationship (QSI analysis takes the existing level of codesharing, and therefore available itineraries, as a starting point). In fact, Compass' estimates of consumer benefits from expanded codesharing are highly conservative, for at least two reasons. First, the analysis is static – it keeps the Parties' networks, including the number of flights, schedules, routes, and equipment, fixed.[45] But of course a significant benefit of metal-neutral cooperation under the Proposed JBA is that it creates flexibility to optimize the Parties'

[42] This also allows American to become a viable competitor against United and Delta, which through their joint businesses offer two-stop services.
[43] The Department and DOJ have relied on QSI analysis in prior cases. *See* Delta-Virgin Atlantic, DOT-OST-2013-0068, Show Cause Order 2013-8-21, at 14–15 (noting Delta's Quality of Service predictions for efficiencies that will result from the Delta-Virgin Atlantic Joint Venture); Discussion of Northwest/Delta merger in Ken Heyer, Carl Shapiro, and Jeffrey Wilder (2009), "The Year in Review: Economics at the Antitrust Division, 2008-2009," *Review of Industrial Organization*, 35(4) ("Heyer, Shapiro, Wilder (2009)").
[44] Compass Report at 18 (Appendix 4).
[45] *Id*. at 14-15 (Appendix 4).

combined network, creating even more options, and consumer benefits, for travelers which, in turn, stimulates demand, throughput, and likely also capacity growth. Second, the estimates are conservative because they assume that the status quo – *i.e.*, Parties' *present* level of cooperation and codesharing is sustainable without the immunized Proposed JBA. As explained in Section II.D. below, this is a faulty assumption and is not the right counterfactual, as the Parties have already begun to pull back on codesharing in the wake of the OSC. Without ATI, it is conceivable that reduced codesharing out of Dallas, for example, would force Qantas to significantly reduce or even eliminate its service from Sydney to DFW. As explained in Section II.D., Compass Lexecon estimates the quality-of-service impact from eliminating the Sydney to DFW service alone would be severe – with a loss of up to $133 million in annual value to passengers.[46]

Optimal Pricing Benefits Consumers. When pricing connecting flights today, American and Qantas each establish a fare (and a margin) for the leg of a mixed-metal itinerary that they operate, resulting in connecting fares that are higher than would result from a single carrier optimally pricing both legs together. This is the "double marginalization" problem that the Department has recognized in prior cases.[47] When pricing separately, each carrier also has an incentive to limit the number of codeshare seats available at lower fare levels, because those seats generate the least possible revenue (only a portion of the lowest fares, given the fare must be shared with the codeshare partner).[48] Because of double marginalization and the tendency to

[46] Compass Report at 19 (Appendix 4).
[47] *See, e.g.*, American-British Airways-Finnair-Iberia-Royal Jordanian, DOT-OST-2008-0252, Show Cause Order 2010-2-8, at 5 n.14; Delta-Virgin Atlantic, DOT-OST-2013-0068, Show Cause Order 2013-8-21, at 2; U.S.-Japan Alliance Case, DOT-OST-2010-0059, Show Cause Order 2010-10-4, at 13.
[48] *See also* Appendix 5, which describes this effect in greater detail.

restrict lower fare codeshare seats, mixed-metal connecting codeshare fares can be significantly higher than single-carrier alternatives.

The Proposed JBA eliminates these perverse incentives because it allows the Parties to jointly (and optimally) price connecting itineraries, fully internalizing demand from each carrier's network, avoiding double marginalization and opening up lower fare options to the full customer base, regardless of operating carrier. Based on observed price effects in other metal-neutral joint businesses, Compass Lexecon estimates that by eliminating double marginalization and more efficiently pricing under the Proposed JBA, the Parties will generate additional, annual consumer benefits of between $21 million and $89 million.[49]

These estimates do not include other pricing and revenue management benefits of the Proposed JBA. For example, today, the Parties' revenue management systems, which determine whether and how many seats are available at different fare levels for each flight, receive limited information about codeshare passengers – they do not know the connecting itineraries, the fares, and in many cases the carrier itself. As a result, when making seats available, the Parties' treat connecting codeshare passengers like "local" passengers, effectively ignoring that the passenger would connect from a more lucrative long-haul flight. As a practical matter, the revenue management systems end up making fewer seats available to codeshare passengers because they do not have enough information to credit the value of the long-haul flight leading up to the connection. As described in more detail in Appendix 5, the Proposed JBA solves these problems by allowing American and Qantas to provide each other with full information about connecting

[49] Compass Report at 22 (Appendix 4). Compass' estimates are based on results in the CEI study, which used observed price effects from carriers entering into metal-neutral joint businesses. The lower estimate is based on the average fare effect across all metal-neutral joint businesses in the sample, where the observed average price reduction was 3.45%. The higher estimate is based on the fare effect of **one**world carriers moving from the **one**world alliance into a metal-neutral joint business within that alliance, where the observed average price reduction was 14.65%.

passengers' itineraries and connecting fares, making more seats, including those in lower fare classes, available for codeshare passengers.

The Proposed JBA will also increase the value and availability of corporate discounts, making more flights booked on Qantas metal eligible for American corporate discounts and *vice versa*. For example, as of January 2018, flights operated by Cathay Pacific—which partners with American under a traditional codeshare agreement—were included in only nine of American's corporate contracts, whereas flights operated by JBA partner British Airways were included in 1,544 corporate contracts. Consistent with American's transatlantic experience, the Proposed JBA will preserve and dramatically increase the availability and value of these discounts.

Demand Stimulation, New Flights, And New Route Options. The significant increase in codeshare connections, better schedule coordination, and improved joint sales efforts in the Proposed JBA will not occur in isolation. These changes will stimulate significant, quantifiable increases in consumer demand. Applying published estimates of demand elasticity, Compass Lexecon has concluded that the quality-of-service improvements and average-fare reductions estimated above will attract between 43,000 and 180,000 new passengers per year to these routes over and above current traffic levels.[50]

American and Qantas plan to meet this demand by increasing capacity on flights between North America and Australasia, by up-gauging to larger equipment, and by adding frequencies to their existing trunk routes. The terms of the Proposed JBA contemplate that American will grow the capacity of its flights on trunk routes between North America and Australasia. American has a strong incentive to increase its capacity because for each percentage increase in its share of the

[50] *Id*. at 24.

Parties' combined North America-Australasia capacity it receives an identical increase in its share of the Parties' combined revenue attributable to all passengers flying on those routes, not just the incremental passengers utilizing the new capacity. The Parties currently expect to initiate new service on up to three additional international routes in the U.S.-Australasia market within two years. These new flights will provide new nonstop options for passengers and enable a considerable number of new and improved codeshare connections not currently available.

These flights would simply not be viable without the broad codesharing on behind-and-beyond connections and robust year-round passenger traffic that can only be delivered by joint sales and distribution efforts under the Proposed JBA. The OSC incorrectly found that the Parties' projected five-year capacity growth at a compounded annual growth rate ("CAGR") of 4.5% from 2016-2020 could be obtained with or without revenue-pooling because this projected growth was "comparable to the . . . growth in the U.S.-Australia market" from 2011 to 2015."[51] First, in 2011-2015, Delta-Virgin Australia was expanding service following the Department's approval of their joint business in 2011, and American and Qantas were expanding codesharing in anticipation of an eventual joint business (which became the Proposed JBA), so relying on this time period as a baseline to compare to growth under the Proposed JBA is not appropriate. Second, the OSC analysis mistakenly compared the Parties' U.S.-Australasia growth to the Department's U.S.-Australia growth data. An apples-to-apples comparison of U.S.-Australasia growth shows that the Parties' growth estimate under the Proposed JBA (4.5%) was almost double the growth for Australasia from 2011-2015 (2.5%).

* * *

[51] Joint Applicants' Response, December 18, 2015, DOT-OST-2015-0129-0012, at Table 3.A; Show Cause Order 2016-11-16, at 20.

In sum, the Proposed JBA will generate up to $310 million in annual value to consumers resulting from increased codesharing (greater connectivity across the integrated joint business network) and more efficient pricing. These benefits are in addition to the value in the Parties' existing codesharing relationship. The estimates are conservative because they do not account for dynamic efficiencies unlocked as part of the Proposed JBA and assume that the Parties' existing cooperation is sustainable. As explained in Section II.D. below, when considering likely counterfactual scenarios – which is not the status quo but instead further reduced codesharing and, in turn, service levels (fewer routes) – the benefits of granting ATI increase significantly.[52]

Table 4: Summary of Quantified Consumer Benefits

Consumer Benefit	**Estimated Annual Value To Passengers** (Equivalent Fare Reductions)
Expanded Codesharing/ Improved Connectivity	$88 million – $221 million[53]
Lower Fares From More Efficient Pricing	$21 million – $89 million
Quantifiable Benefits From Proposed JBA (Conservative – based solely on existing passengers and capacity)	**$109 million – $310 million[54]**
Dynamic Efficiencies from Demand Stimulation and Capacity/Route Expansions	**43,000-180,000 new passengers**
Total New Consumer Benefit	**Up to $310 million**

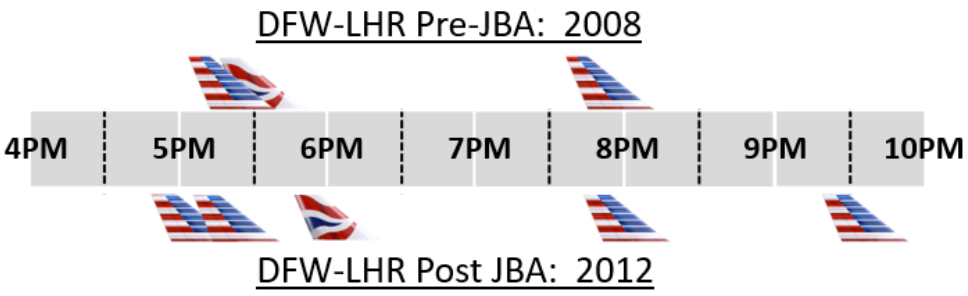
[52] Section II.D. sets out the "losses" incurred in the counterfactual. If the Sydney-DFW route were eliminated, for example, the benefits of granting ATI amount to over $440 million.
[53] These estimates reflect February 2017 changes in codesharing (Qantas removed its code from American's LAX–Sydney service, and American removed its code from Qantas' flights to Sydney from DFW and LAX).
[54] Equivalent to between 4.5 and 18 percent of the total annual revenue generated from all of the Parties' international trunk-route flights between North America and Australasia for the year ending June 2017.

B. The Proposed JBA Will Significantly Improve The Quality Of Travel

By aligning the Parties' incentives to improve and grow the joint business, the Proposed JBA will create opportunities for integrative efficiencies and investments in the joint business that would not be feasible with lesser forms of cooperation. These benefits include better and more flexible schedule coordination; deeper integration in sales and marketing; improved frequent flyer program integration; expanded lounges; more effective baggage handling; refined procedures for re-accommodation and disruption management; and increased investment in infrastructure and the joint service proposition.

Better, More Flexible Schedule Coordination. When combined with the expected expansion in codeshare connections, the improved coordination and alignment of business incentives made possible with the Proposed JBA will allow American and Qantas together to offer passengers more convenient, streamlined connections.[55] This is precisely what American's transatlantic joint business accomplished after obtaining ATI. For example, American and British Airways coordinated to offer consumers more departure options in the DFW-LHR route.

Figure 6: Dallas-London JBA Scheduling Improvements



Source: Internal Schedule Information: Aug. 21, 2008 vs. Aug. 23, 2012

[55] The OSC attempts to minimize this benefit by citing that current departures all leave at the same time. But there is no reason – assuming the demand is there – that American and Qantas could not offer service departing at 8am in Los Angeles, arriving 15 hours later at 6 pm in Sydney.

Sales And Connectivity Benefits. American has made substantial investments to improve the customer purchase experience by establishing direct connections called "deep links" between American's website and the websites of its JBA partners. The Proposed JBA will extend this type of connectivity to Qantas, significantly improving the purchase experience, for example by allowing passengers to:

- Immediately and automatically view all available JBA itineraries and corresponding prices on a carrier-agnostic basis, allowing passengers to compare across all options;
- Reserve seats on flights operated by Qantas directly through the American website at the time of booking;
- Check-in on all flights in a trip at once, including those operated by Qantas.

These deep links enhance the customer experience by making it far easier for passengers to interact with American and its JBA partners through a single portal, but they can be costly to implement. As a result, American has only invested in developing these types of deep links with its existing JBA partners (and will with Qantas, once approved).

Enhanced frequent flyer benefits. By removing the incentive to favor passengers who travel on their own international flights, American and Qantas under the Proposed JBA will create a more generous frequent-flyer proposition for passengers who fly on the combined network. In anticipation of the Proposed JBA, Qantas and American had harmonized and improved frequent flyer benefits across American and Qantas flights. However, following the OSC, these benefits were significantly reduced to be in line with the benefits provided as part of the **one**world marketing alliance. Since the OSC, American and Qantas have significantly reduced (from three fare classes to just one fare class) the number of fare classes that offer full mileage accrual (*i.e.*, one mile for every mile flown) across American and Qantas operated

flights, and in general mileage accrual has been reduced across the board. These reductions have had real effects on redemption: American passenger frequent flyer redemption on Qantas' long haul flights has declined by 40% in the past year, with hundreds of millions of miles of frequent flyer benefits lost to consumers.

The Parties will also aim to create a more customized and personalized experience for its top tier customers. Similar to American's transatlantic joint business, Qantas and American plan to create additional elite benefits beyond those that are offered through the oneworld alliance. Examples of these incremental elite tier benefits/enhanced recognition that have been introduced on the transatlantic joint business include cross-carrier upgrades (*e.g.*, an AA Advantage member can redeem miles for a cabin upgrade on British Airways flights), and "meet and greet" services for top frequent flyers.

Enhanced customer experience. Revenue-pooling ensures the carriers jointly aim to provide customers the best in-flight and on-ground experience across both brands, to attract customers. Qantas is well-known as one of the world's highest-quality airlines, and because the Proposed JBA incentivizes the Parties to share best practices and jointly invest in designing and delivering an optimal customer experience, this high quality will be extended to benefit passengers across American's network.

In anticipation of the Proposed JBA, Qantas and American have worked closely together to deliver multiple initiatives to significantly improve the customer experience. Examples include:

- American increased its meal sizes in the Economy cabin and worked with Qantas' suppliers in Sydney to improve meal quality;
- American and Qantas cabin crew jointly participated in epicurean events to support a service culture and improve customer service more broadly; and

- Qantas explored relocating its gates at JFK to co-locate with the American gate at terminal eight to facilitate a faster and more seamless connecting experience for customers.

- American worked with Qantas to improve its business class cabin proposition by introducing complimentary pajamas and seat mattresses on transpacific flights, aspects which have subsequently been introduced across other parts of American's network;

Further development of, and investment in, such joint initiatives and customer experience working groups have stopped since the OSC, as this level of carrier cooperation and alignment only occurs under a joint business structure, not a under a codeshare agreement.

Baggage Handling. The Proposed JBA will facilitate investments in baggage handling integration and improvements that are not feasible outside a revenue-pooling joint business. American's transatlantic joint business with British Airways is a prime example – in 2014, American launched an initiative to reduce the number of mishandled bags transferred to its transatlantic JBA partners at London Heathrow Airport. This effort included the development of a third party link between American's baggage systems and those operated by London Heathrow Airport, allowing a real-time connection between American's and British Airways' baggage tracking data. As shown below, this initiative has resulted in a dramatic reduction in the number of mishandled bags at the airport.

Figure 7: American Rate of Mishandled Baggage at London Heathrow Airport

Because of the success of these initiatives, American is now considering similar investments to improve its coordination with JBA partner Japan Airlines in Tokyo (NRT). While American and Qantas had worked together jointly on baggage handling processes in key gateways such as LAX, approval of the Proposed JBA would justify a similar investment in time and money similar to that expended with British Airways to materially improve baggage handling between Qantas and American. The current codesharing relationship, like other codesharing relationships maintained by American, cannot support such an involved effort.

Automatic Re-accommodation. American also has worked with its JBA partners to improve the manner in which passengers traveling with its JBA partners are re-booked when flights are cancelled. The processes and systems developed are only made available to JBA partners and would be made available to Qantas passengers as part of the Proposed JBA. For more than a decade, for example, American has relied on a tool it developed called "Auto-Reaccom" to identify all re-booking options for passengers from cancelled flights and automatically assign those passengers new seats based on an algorithm designed to minimize passenger disruption. In 2011, American agreed to expand access to this tool to British Airways and Iberia following the launch of their transatlantic JBA. American, British Airways, and Iberia each can now automatically re-book their passengers on the most convenient new itinerary available regardless of which carrier operated the segments on the passenger's original or new itinerary. Notably, segments considered by the tool extend beyond codeshare flights and include segments operated by each JBA partner that do not carry the code of its partners.

Over the last year, the Auto-Reaccom tool has been used to re-accommodate nearly 50,000 passengers from cancelled or delayed American, British Airways, and Iberia flights to those of their JBA partners. American has discussed extending Auto-Reaccom to its JBA partner

Japan Airlines, as well as Qantas and other prospective JBA partners. American does not, however, make Auto-Reaccom available to any non-JBA partners.

In September 2017, American also introduced a new customer-facing tool called "Dynamic Re-accommodation" that allows passengers to directly re-book themselves in the event of delays and cancellations.[56] This new tool is only currently allowing passengers to re-book themselves after being affected by delayed or cancelled flights on American-operated segments, but American foresees "a time when it will support rebooking onto joint business partners as well."[57]

When Qantas and American were working together in anticipation of JBA approval (prior to the OSC), there were other examples of how the commercial alignment and operational proximity of both teams meant better customer service was delivered in the case of disruptions. For example, when a large number of Qantas customers travelling to an onward American destination were going to misconnect to their domestic American flight due to a delayed Qantas long-haul flight into Dallas/Fort Worth, Qantas' and American's operational teams worked together closely and American was able to quickly up-gauge its next flight to accommodate the misconnected Qantas passengers. Such best-practice customer service and disruption management can only occur under the Proposed JBA where each carrier has the financial interest to treat all customers as its own and when their related operational teams are able to work closely with each other to deliver a higher level of service.

Qantas investments in U.S. airport infrastructure. Again in anticipation of the Proposed JBA, Qantas announced it would invest more than $30 million in a 14-acre maintenance facility

[56] *See, e.g.*, Gary Leff, *American Now Lets You Re-Route Yourself When Flights Go Wrong*, View from the Wing, Sept. 30, 2017, http://viewfromthewing.boardingarea.com/2017/09/30/american-now-lets-re-route-flights-go-wrong/.
[57] *Id*.

at LAX, one of the largest commercial hangars in North America.[58] Completed in February 2017, the facility is the only one in the United States specifically designed for the A380 aircraft, accommodating up to four A380s at once, and provides space for 40 corporate employees alongside a team of local engineers.[59] With approval of the Proposed JBA, Qantas will continue to invest in its LAX facilities and other infrastructure projects to support the Parties' combined operation. In addition, Qantas launched its Dreamliner 787 services between Melbourne and LAX in December 2017, and Qantas' 787 airplanes are serviced at LAX, again creating opportunities for additional employment. These investments in aviation infrastructure will continue to benefit the passengers who travel on the combined networks of the Proposed JBA, and the wider traveling public.

Lounges. Passenger lounge capacity, access, and quality are a significant element of airline competition, and the Proposed JBA will facilitate increased investment in American's and Qantas' passenger lounge infrastructure, resulting in significant benefits to passengers. American has launched a new shared Admirals Club and Flagship Lounges in JFK, LAX, and ORD in the context of its transatlantic and transpacific joint businesses. These lounge improvements are just one part of the nearly $3 billion American has invested in recent years in new customer initiatives, many of which are designed to catch up with the service levels of American's joint business partners while keeping pace with the increased traffic levels made possible by closer cooperation. For example, American has worked with its transatlantic and transpacific joint business partners to develop and subsequently roll out the new American

[58] Los Angeles Times, *Qantas Unveils $30-Million Hangar at LAX to Hold the Massive A380* (Jan. 28, 2017), http://www.latimes.*com*/business/la-fi-qantas-hangar-20170127-story.html.
[59] The facility is used not just by Qantas, but also by other airlines that operate A380s at LAX, including British Airways, China Southern, Emirates, and Korean Air.

Flagship Dining concept, now available across the United States in American's new Flagship Lounges.

The Proposed JBA will bolster these efforts and incentivize continued improvements. For example, American is planning a nearly $30 million lounge expansion in Terminal D at DFW, including the addition of nearly 14,000 square feet—a 67% increase in size and capacity over the existing space, benefiting approximately 1.3 million passengers a year. American estimates that gross annual operating expenses for the complex will amount to $15.5 million a year, driven primarily by enhanced food and beverage, increased lease costs, and additional staffing requirements. Without the expected traffic from the existing transatlantic and transpacific joint businesses and the Proposed JBA, however, American would not be able to justify an expansion of more than 4,000 square feet to the existing lounge facilities. Qantas has taken similar steps to expand and improve its lounges in anticipation of the Proposed JBA. After the 2011 JBA, for example, the number of passengers flying on Qantas through LAX to connecting destinations increased so much that in 2015, Qantas tripled its lounge space at LAX to accommodate up to 800 business and first class passengers flying on either Qantas or American services.[60] Without the Proposed JBA, there will be neither the incentive nor the revenue support to maintain such collaboration.

C. Increased Connectivity And Lower Fares Will Increase Inter-alliance Competition Between The United States And Australasia

The Department has consistently recognized the value in fostering competition between multiple different alliances on long-haul international routes. In 2010, the Department granted ATI to the transatlantic joint business of several **one**world carriers, predicting that it "will

[60] Donna Demaio, *LAX airport: Qantas officially opens Los Angeles international airport business lounge*, NEWCASTLE HERALD (May 7, 2015), http://www.theherald.com.au/story/3063087/lax-airport-qantas-officially-opens-los-angeles-international-airport-business-lounge/?cs=34.

provide a third global network that can better discipline the fares and services offered by the [already immunized] Star and SkyTeam alliances."[61] Three years later, the Department observed that transatlantic competition indeed "remain[ed] robust and healthy."[62] Similarly, in the U.S.-Asia market, the Department predicted in 2010 that adding a third "immunized **one**world . . . would create a more effective competitor in the marketplace" to the existing immunized Star and SkyTeam carriers.[63] Seven years later, the Department again found that the U.S.-Asia market was "competitive."[64]

American and Qantas are in a similar position today in the U.S.-Australasia market – seeking approval to become a metal-neutral rival to the well-established and immunized revenue-pooling joint businesses of the Star and SkyTeam alliances. The Department has immunized joint businesses of two of the three alliances operating from the United States to Australasia: United-Air New Zealand in 2001[65] and Delta-Virgin Australia in 2011.[66] The pattern is striking, and the outcome is not in doubt – just as in the U.S.-Europe and U.S.-Asia markets, the Proposed JBA will create a third immunized revenue-pooling joint business between the United States and Australasia and increase joint business rivalry to the benefit of consumers. The Proposed JBA is no different from these other precedents where approval of a third joint business rival in fact delivered the very same integrative efficiencies and consumer benefits described in this Application. As explained when the Department immunized Delta-Virgin Australia, "[t]hree

[61] American-British Airways-Finnair-Iberia-Royal Jordanian, DOT-OST-2008-0252, Show Cause Order 2010-2-8, at 28. The Department's conclusion has now been empirically validated by Compass Lexecon, which used the methodology in the CEI study to show that the average global fare reduction on connecting routes resulting from approvals of **one**world revenue-pooling joint businesses was 14.65 percent, more than three times the average fare reductions that followed from the earlier approvals of SkyTeam and Star joint businesses. *See* Compass Report at 21 (Appendix 4).
[62] Delta-Virgin Atlantic, DOT-OST-2013-0068, Show Cause Order 2013-8-21, at 6.
[63] U.S.-Japan Alliance Case, DOT-OST-2010-0059, Show Cause Order 2010-10-4, at 7.
[64] Delta-Korean Air, DOT-OST-2002-11842, Show Cause Order 2017-11-8, at 6.
[65] United-Air New Zealand, DOT-OST-1999-6680, Final Order 2001-4-2.
[66] Delta-Virgin Blue, DOT-OST-2009-0155, Final Order 2011-6-9.

carrier groups, each with its own alliance, in a long-haul market, are likely to continue to operate in a competitive environment that benefits the traveling and shipping public."[67]

The other joint businesses' commercial response to the Parties' 2015 application for ATI demonstrates the reality of enhanced inter-alliance competition. In September 2017, United and Air New Zealand deepened their partnership in a deal that "was touted to deter American Airlines—from the rival **one**world alliance and a potential threat to Air New Zealand—from entering the transpacific market."[68] As part of that competition, United launched, and now plans to up-gauge, flights between San Francisco and Auckland.[69] United has also recently launched new daily nonstop service between Houston and Sydney.[70] Similarly, SkyTeam alliance's "presence in the Australian market has been growing steadily" after formally opening the "[f]irst SkyTeam lounge in [the] Southern Hemisphere" in Sydney in January 2015.[71] Absent ATI and revenue-pooling, inter-alliance rivalry in the U.S.-Australasia market will suffer because Qantas and American cannot achieve the same level of procompetitive integration necessary to impose a meaningful competitive constraint on United-Air New Zealand and Delta-Virgin Australia.

Moreover, the concerns expressed in the OSC about the "unusual character of the U.S.-Australasia market . . . characterized by long routes, with limited intermediate connections . . . "[72] makes granting ATI to a third alliance all the more critical. As described in Section II.D.,

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[67] Delta-Virgin Blue, DOT-OST-2009-0155, Show Cause Order 2011-5-8, at 12; *see also* Delta-Virgin Blue, DOT-OST-2009-0155, Final Order 2011-6-9, at 2. *See also* American-Qantas, DOT-OST-2011-0111, Final Order 2011-11-12, at 3 ("Additionally, we find that approving the JBA [between American and Qantas] will lead to enhanced inter-alliance competition across the South Pacific.").

[68] *United Airlines to resume nonstop flights to San Francisco with new bigger Boeing 777-300ER*, New Zealand Herald (Sept. 4, 2017), available at http://www.nzherald.co.nz/business/news/article.cfm?c_id=-3&objectid=11916930.

[69] *Id*.

[70] Press Release, *United will offer all Boeing 787-9 Dreamliner service between three hubs and Australia*, (Sept. 7, 2017), http://newsroom.united.com/2017-09-07-United-Airlines-Strengthens-Commitment-to-Houston-with-Nonstop-*Service*-Between-Houston-and-Sydney.

[71] Press Release, *SkyTeam Officially Opens Lounge at Sydney Airport*, https://www.skyteam.com/en/about/press-releases/press-releases-2015/skyteam-officially-opens-lounge-at-sydney-airport/.

[72] American-Qantas, DOT-OST-2015-0129, Show Cause Order 2016-11-16, at 11.

these long routes depend heavily on behind/beyond travelers. Without ATI and with misaligned incentives, American and Qantas will find it difficult to sustain sufficient feeder traffic to compete effectively against the already immunized Delta-Virgin Australia and United-Air New Zealand joint ventures.

In sum, the Department has taken substantial steps toward creating a U.S.-Australasia market with healthy inter-alliance competition by granting ATI to two carrier groups. In this setting, American cannot be viewed as a serious contender to these groups; its ability to compete independently against two immunized joint businesses and a legacy carrier all within the same market is highly questionable. U.S. carriers have simply failed to establish viable service on the U.S.-Australasian market on their own, and American lacks the incentives absent revenue-pooling to make another attempt at failure. Instead, the Department should build on its distinguished track record of promoting inter-alliance competition by immunizing the Proposed JBA to facilitate increased competition to Australasia.[73]

D. The Parties' Cooperation Will Deteriorate Without The Proposed JBA

The OSC assumed that the Parties' cooperation would continue, and indeed thrive, without the Proposed JBA.[74] That has not happened and will not happen. In fact, since November 2016 the Parties have scaled back their cooperation. Qantas has removed its code from American's flights from LAX to SYD, American has removed its code from Qantas' DFW to SYD flight and LAX to SYD flight, and the Parties have revised their frequent flyer programs to provide separate mileage accrual (American no longer gives equal credit for miles on Qantas

[73] American-British Airways-Finnair-Iberia-Royal Jordanian, DOT-OST-2008-0252, Final Order 2010-7-8; U.S.-Japan Alliance Case, DOT-OST-2010-0059, Final Order 2010-11-10.
[74] American-Qantas, DOT-OST-2015-0129, Show Cause Order 2016-11-16, at 22.

flights).[75] The Parties have been forced to reduce service offerings as well: American has downsized its service offering on Los Angeles-Auckland to seasonal service, and down-gauged its Los Angeles-Sydney service to a smaller aircraft.

These changes, coming in the wake of the Department's denial of ATI, signal a retrenchment in the Parties' cooperation as they pivot, by necessity, to preserve profitability of their own metal to/from Australia and New Zealand, putting further strain on the Parties' codesharing relationship.[76] The retrenchment is a product of commercial necessity because, as described at the outset, these are "long and thin" routes that rely most heavily on connecting passenger feed. This reliance on connecting passengers for commercial viability only intensifies the misalignment of incentives that revenue-pooling solves, and in this case is already leading to reductions in service that only hurt, rather than help, competition. A denial of ATI for the Proposed JBA will put the Parties' codesharing relationship at further significant risk.

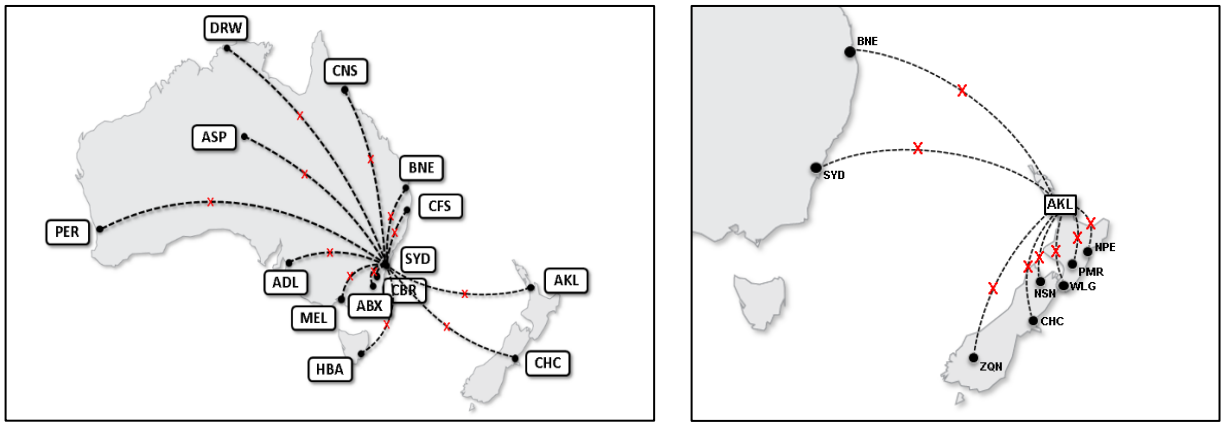
American Codesharing Beyond Sydney And Auckland Is At Risk. In anticipation of a fully-immunized joint business, and in return for American's willingness to cooperate with Qantas in the United States, Qantas has in recent years allowed American to codeshare to 13 Australasian destinations beyond Sydney and 8 destinations beyond Auckland. Without ATI for the Proposed JBA, Qantas will have significantly less incentive to allow American to codeshare

[75] Stephen Johnson & Ashleigh Davis, *Qantas dumps frequent flyer points deal with American Airlines for Sydney to Los Angeles route – meaning customers will lose rewards*, Jan. 28, 2017, http://www.dailymail.co.uk/news/article-4166158/Qantas-dumps-frequent-flyer-deal-American-Airlines.html.; *Partner Airlines: Qantas*, https://www.aa.com/i18n/travel-info/partner-airlines/qantas.jsp.

[76] The history of similar codeshare agreements that have collapsed due to the lack of revenue-pooling offers a cautionary tale. Without revenue-pooling, codeshare relationships are fragile and easily break down where either partner perceives that it has more to lose than to gain. Delta and El Al, for example, maintained a successful codeshare relationship for more than seven years beginning in 2000 until Delta launched its own service to Tel Aviv on a nonstop basis, at which point, Delta has explained, the partners' relationship began to unravel, even though El Al did not operate overlapping service on the same route. The partners ultimately terminated the relationship after Delta launched service to Tel Aviv from New York that did overlap with El Al service and which caused El Al to lose the benefit of U.S. codeshare connections from Delta to support its overlapping JFK–Tel Aviv flights. *See* Joint Applicants' Response to Show Cause Order 2010-9-4, Docket DOT-OST-2009-0155, at 42.

to these destinations. Loss of these extensive codeshare flights (depicted below) would have a significant impact on the viability of American's service (especially to Sydney, as 24% of American's traffic to Sydney connects to points beyond).

Figure 8: American Codeshare Connections from Sydney & Auckland At Risk Without ATI



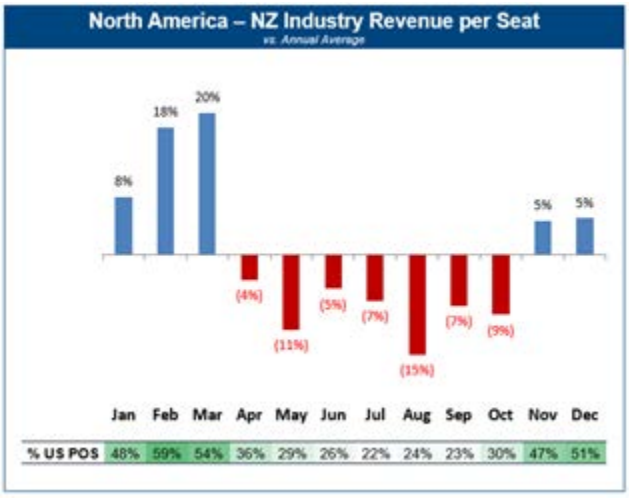
Now that Qantas has removed its code from American's Sydney flight, American has already had to down-gauge its Sydney flight and has downgraded its Auckland flight to seasonal service.[77]

Moreover, rejection of the Proposed JBA will deprive American of Qantas' local sales support, which is critical for a U.S. carrier to attract Australasian passengers. Given the significant proportion of all foreign point-of-sale passengers traveling between North America and Australasia (upwards of 70%), the absence of a local sales partner would leave American scrambling to attract passengers. Even with limited Qantas support, American's Los Angeles to Sydney service has consistently been unprofitable. Without Qantas support, this flight becomes economically unsustainable. Similar concerns apply to American's service from Los Angeles to Auckland. Without ATI and revenue-pooling, the viability of this service is in question, as recognized by the New Zealand authority, which concluded that it is "questionable whether

[77] *American says Auckland-Los Angeles will operate between October and March*, Aug. 21, 2017, http://australianaviation.com.au/2017/08/american-says-auckland-los-angeles-will-operate-between-october-to-march/.

American Airlines would be able to operate an economically viable service [to New Zealand] without Qantas' support . . . ."[78] As shown below, the volume of U.S. point-of-sale passengers on American's flight to Auckland drops significantly during winter in the Southern Hemisphere, and this fall off makes service on this route not viable without the close cooperation of an Australasian partner. Cooperation under the Proposed JBA would facilitate American restoring its New Zealand service to year-round.

Figure 9: Importance of Qantas To American For New Zealand POS Traffic[79]



Qantas Codesharing To Points In the United States Is At Risk. As with American's service to Australasia, the impact on Qantas of reduced codesharing with American on connecting flights from LAX, SFO, and DFW will be severe. Currently American allows Qantas to codeshare to 125 destinations in North America from those three U.S. gateways. If the Proposed JBA is not approved, American plans to eliminate codesharing on all 53 destinations from Los Angeles and all 8 destinations from San Francisco. American will remove over half of

[78] New Zealand Ministry of Transport, Report to the Minister of Transport ¶ 34 (Nov. 6, 2015). *See also* AA-QF-00069 ("AA's forecast is similar to QF's performance" on LAX-AKL, which was cancelled in May 2012 "due to weak performance".).
[79] Based on 2016/2017 flown traffic. Demand seasonality based on DDS data for Oct. 2013 – Oct. 2016.

the codeshare connections from Dallas (37 of 64). The choice of codeshare cuts is limited to where American can flow the affected passengers over LAX and onto its own LAX-SYD service. As shown below, the loss of codeshare connectivity will be expansive and eliminate many convenient options for passengers traveling between the Midwest or East Coast of the United States and Australia.

Figure 10: Qantas Codeshare Connections from DFW At Risk Without ATI

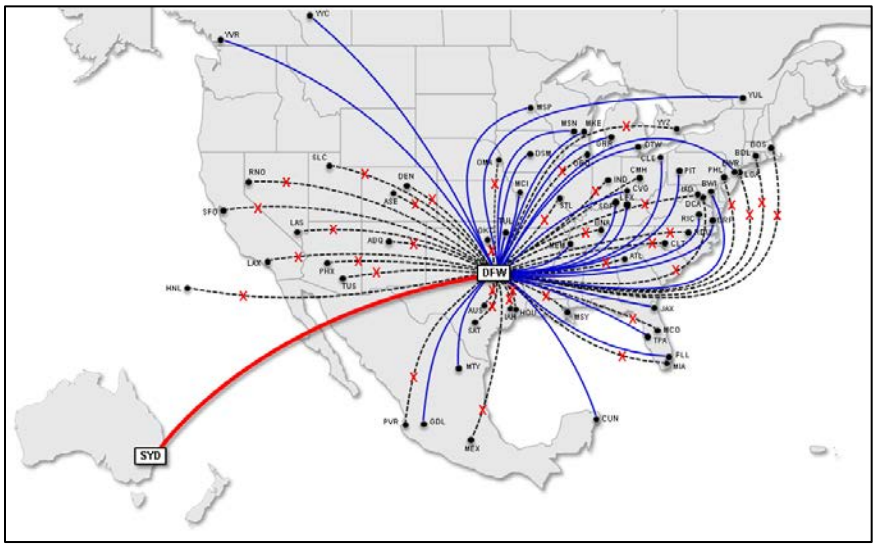
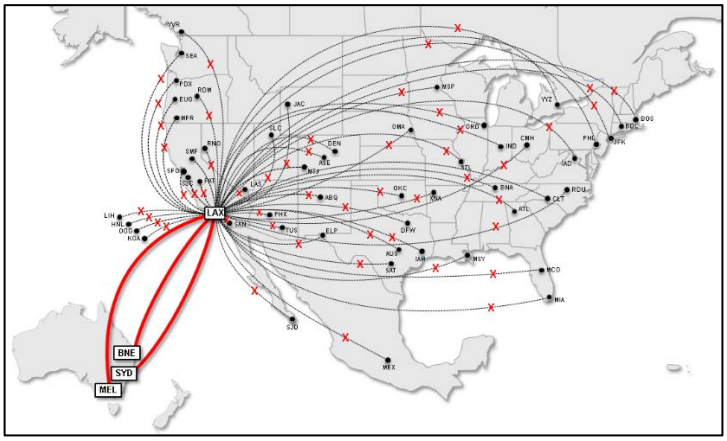
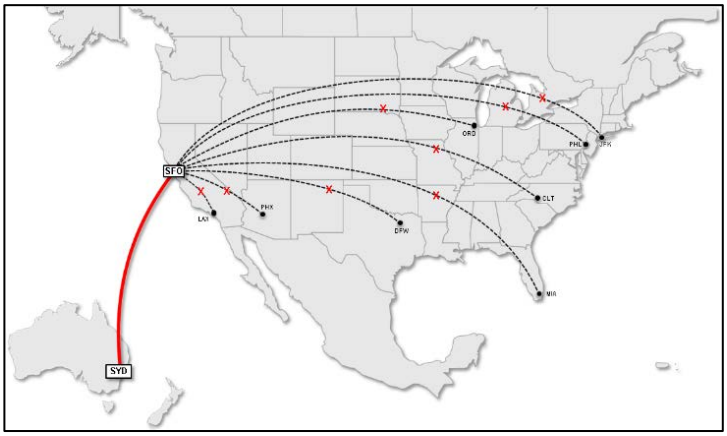


Figure 11: Qantas Codeshare Connections from LAX & SFO At Risk Without ATI





Without the Proposed JBA it will be more profitable for American to serve passengers directly on American equipment out of Los Angeles, for as long as those flights remain viable. The

codeshare destinations that remain will account for roughly the same number of passengers as are accommodated through American's codesharing on Qantas flights in Australasia.

Based on actual passenger traffic for the year ended November 2017, the loss of passengers who flew on Qantas trunk-route service to points beyond DFW, LAX, and SFO will substantially reduce Qantas' load factors, and Qantas' DFW–Sydney flight will be the most significant casualty of reduced codesharing, with a nearly 20 point reduction.[80] Launched and up-gauged in connection with the 2011 JBA, this service is simply not economically sustainable at its current capacity without the support of American's codeshare connections. Such a dramatic loss in passenger traffic will likely force Qantas to down-gauge this service or potentially terminate it entirely. Qantas' LAX-BNE, LAX-MEL and LAX-SYD flights are similarly imperiled by load factor reductions of 9.5-14.3 points.[81] Loss of American support at these gateways will exacerbate the effect of the reduction in codesharing. Absent the JBA, American will not have the incentive to provide the same level of support currently provided in anticipation of the JBA, such as scheduling, gate location, and preferential baggage handling. Consequently, service quality will decline and Qantas will risk losing passengers to other carriers. The potential impact on Qantas from the loss of support could be significant, with DFW-SYD at the greatest risk. Qantas' service between Australia and the United States, and particularly its DFW-SYD service, has always been heavily dependent on connecting passengers. Indeed, as shown below, passengers connecting to points beyond U.S. gateways constituted the

[80] American's analysis based on MIRS Flown Data for the year ending November 2017 demonstrates that without codesharing, Qantas' load factor will decrease by 19.9 for DFW-SYD, 14.3 for LAX-BNE, 12.6 for LAX-MEL, 9.5 for LAX-SYD, and 3.6 for SFO-SYD. The nearly 20-point reduction on DFW-SYD would render that service unsustainable. This effect is exacerbated by the loss of American's service support such as scheduling, gate location, and preferential baggage handling, which will contribute a decline of load factor by an additional 17.4 for DFW-SYD, 10.6 for LAX-BNE, 15.2 for LAX-MEL, 4.7 for LAX-SYD, and 3.5 for SFO-SYD.
[81] *Id*.

majority of passengers for all but one of Qantas' trunk routes in 2016, including 71% of passengers flying between SYD and DFW.

Table 5: Qantas Traffic Mix On Flights To/From The United States 2016

Route[82]	Behind U.S. Gateway to Beyond Australia Gateway (Bridge)	Behind U.S. Gateway to Australia Destination	% Connecting To/From U.S. Flight	U.S. Origin to Beyond Australia Gateway	U.S. Origin to Australia Destination
DFW-SYD	33%	38%	71%	14%	15%
LAX-BNE	13%	44%	57%	13%	30%
LAX-SYD	14%	40%	54%	11%	35%
LAX-MEL	6%	46%	52%	8%	39%
SFO-SYD	6%	13%	19%	38%	43%

If rejection of the Proposed JBA leads Qantas to down-gauge or cancel its DFW–Sydney service, the harm to passengers will be enormous. Relying on the same QSI analysis methodology used to calculate consumer benefits of the Proposed JBA, Compass Lexecon estimates that the withdrawal of this service would reduce incremental passengers per year by about 121,000 based on January 2017 schedules. In monetary terms, this represents annual harm to consumers of up to $133 million.[83] This degree of harm is not surprising given the value unlocked by this flight, which bridges the largest American and Qantas hubs.

[82] MIDT (adjusted).

[83] Compass Report at 19 (Appendix 4). The A380 presently dedicated to this service represents a substantial portion of capacity currently flown by passengers on routes between North America and Australasia. As an economic matter, some of that demand could potentially be met by other carriers, but likely at higher prices and reduced convenience. That is the product of less competition and another important reason this Application should be approved.

Table 6: Summary of Codesharing & Consumer Benefits With & Without ATI

	Loss If ATI Denied	Status Quo	Benefits If ATI Granted
Overall	▪ Loss of 119 codeshare destinations, more if trunk service discontinued ▪ Potential loss of QF's SYD-DFW service results in loss of up to $133 million in annual passenger value ▪ Additional loss if further reductions in existing AA or Qantas service	▪ Cooperation has stagnated in wake of OSC ▪ QF code on 125 U.S. destinations ▪ AA code on 21 Australasia destinations	▪ Hundreds of new codeshare connections, thousands of new itineraries ▪ Gain of up to $310 million in annual value to passengers ▪ Improved, more integrated travel experience ▪ Demand stimulation: up to 180,000 new passengers annually
Impact for American			
LAX-SYD	▪ 13 codeshare connections beyond Sydney eliminated, impacting 24% of AA passengers ▪ End of codeshare beyond Sydney and ground sales support may require AA exit	▪ Viability of service at risk in light of OSC ▪ AA code on 13 QF flights beyond Sydney ▪ QF removed its code as of February 2017 (incentive to fly instead on its own metal to DFW)	▪ Up to 46 new codeshare destinations in Australasia, creating hundreds of new itineraries ▪ Integrated, improved travel experience and frequent flyer programs ▪ Stronger, more viable competitor to United-Air New Zealand and Delta-Virgin Australia
LAX-AKL	▪ 8 codeshare connections beyond AKL eliminated ▪ End of codeshare and ground sales support may require exit	▪ AA seasonal service with limited codesharing ▪ AA code on 8 QF flights beyond AKL ▪ Viability of service at risk in light of OSC	
Impact for Qantas			
SYD-DFW	▪ 37 out of 64 codeshare connections beyond DFW eliminated, leaving only 27 ▪ Viability of service at risk where AA flying connections through LAX	▪ QF code on 64 AA flights beyond DFW ▪ AA has removed code, prefers to fly passengers on its own metal to LAX instead	▪ Unlocks hundreds of new codeshare destinations from DFW, SFO, and LAX, creating thousands of new itineraries ▪ Integrated, improved travel experience and frequent flyer programs ▪ Stronger, more viable competitor to United-Air New Zealand and Delta-Virgin Australia
SYD-SFO	▪ 8 codeshare connections beyond SFO eliminated, putting overall viability of service at risk	▪ QF code on 8 AA flights beyond SFO ▪ American prefers to fly passengers on its own metal to LAX instead[84]	
SYD-LAX MEL-LAX BNE-LAX	▪ 53 codeshare connections beyond LAX eliminated ▪ No codesharing means QF forced to review all services	▪ QF code on 53 AA flights beyond LAX ▪ AA removed its code on LAX-SYD, prefers to fly passengers on its own metal	

[84] Qantas' flights to LAX are able to continue on and carry passengers to New York (JFK), but following the OSC American has removed its code on this "tag" route from Australia to JFK as well.

III. Contrary To The Tentative Conclusions In The OSC, The Proposed JBA Will Not Reduce Competition

The Department recognized the competitive nature of the market for travel between the United States and Australasia twice before, when immunizing the United-Air New Zealand and Delta-Virgin Australia joint businesses.[85] American entered this competitive market in 2016, but only in anticipation of the Department approving the Parties' original 2015 application for ATI. Surprisingly, the OSC tentatively denied the Parties' original application,[86] essentially relying on four broad findings that are now firmly refuted by the record presented with this Application.

First, the OSC expressed concern that Qantas has the largest share of passengers for travel to many Australasian destinations.[87] But American is much smaller, is active on only one city-pair where Qantas is active (Los Angeles to Sydney, where it launched only in anticipation of the Proposed JBA), and may not be able to sustain service without the Proposed JBA (*see* Section II.D.) while Qantas' share has steadily decreased over the last decade. Regardless, any higher shares are not an issue where there are robust alliance competitors,[88] as there are here, because "partners that have long operated the majority of the long-haul service from their homelands" will inevitably have higher market shares within that same market.[89] That has long been a feature of joint business ATI applications and the precedent overwhelmingly shows that approvals of revenue-pooling joint businesses produce tight network integration and large efficiencies to the benefit of consumers and competition. Moreover, the Department has granted

[85] United-Air New Zealand, DOT-OST-1999-6680, Show Cause Order 2001-3-4, at 12 ("We therefore tentatively find that the U.S.-South Pacific market is competitive . . . ."). Delta-Virgin Blue OST-2009-0155, Show Cause Order 2011-5-8, at 10 ("This indicates a generally competitive market.").
[86] American-Qantas, DOT-OST-2015-0129, Show Cause Order 2016-11-16, at 17.
[87] *Id*.
[88] *Id*.
[89] Continental-A++, DOT-OST-2008-0234, Show Cause Order 2009-4-5, at 10.

ATI to joint businesses where an incumbent national carrier had far greater shares than the 41% passenger share that the OSC identified in 2015.[90]

Second, the OSC concluded that the market had little scope for additional competitive constraints, with few competitors connecting through third countries and limited prospects for new entry.[91] The OSC accordingly treated new competition from American as if it were a scarce and essential resource for a more competitive market, *e.g.*, "American is likely to be the last carrier to offer new entry and add meaningful competition in a timely manner."[92] That is not true *in the absence of the Proposed JBA,* which is the relevant counterfactual. American launched its service from LAX while its 2015 ATI application was pending because the Parties were expecting swift approval and the timing was important, with peak season approaching. American would not have entered otherwise. Even more importantly, American's track record with revenue-pooling joint business demonstrates that new competition *enabled by a JBA* is a far more powerful force for consumer benefits. As reflected in Figure 2, after American entered its transatlantic JBA with British Airways, it doubled its capacity on the DFW-LHR route where there was no other city-pair competition, and it added new routes because of the procompetitive integrative efficiencies enabled by that JBA.

There is in fact robust competition from connecting services and continuing entry and expansion from rivals into and out of Australasia. Connecting passenger traffic in the U.S.

[90] American-Qantas, DOT-OST-2015-0129, Show Cause Order 2016-11-16, at 12. For example, the Department granted ATI in *SkyTeam II*, pre-existing market shares were 67% in the U.S.-France market and 74% in the U.S.-Netherlands market. Even when taking into account connecting fares, the combined market share for U.S.-France was 49.4% and U.S.-Netherlands was 53.5%. SkyTeam II, DOT-OST-2007-28644, Show Cause Order 2008-4-17, at 8–9. Despite the high shares, the Department still concluded that the alliance "would not substantially lessen competition" and granted ATI on the basis that "efficiencies and cost reductions would increase the likelihood that consumers would benefit from the alliance." SkyTeam II, DOT-OST-2007-28644, Final Order 2008-5-32, at 2–3.
[91] American-Qantas, DOT-OST-2015-0129, Show Cause Order 2016-11-16, at 12–13.
[92] *Id*. at 11.

mainland-Australasia market accounted for almost 71.1% of overall passenger traffic in 2017.[93] And as discussed above in Section II.C., United-Air New Zealand and Air Canada expanded their operations in response to the Parties' 2015 application. United launched new flights between San Francisco and Auckland and between Houston and Sydney,[94] while Air Canada added seasonal service from Vancouver to Melbourne and has since increased to have year-round services from Sydney, Melbourne, and Brisbane to Vancouver with connecting flights to the east coast of the United States.[95] So it makes little sense to worry about a highly speculative "loss" of competitive pressure from American at the expense of sacrificing the clear gains from JBA expansion.

Third, the OSC singled out travel between the United States and Australia because it is a "terminal market" without significant flow to regions beyond Australia and New Zealand, such that the "potential to achieve . . . positive network competitive effects. . . is likely to be very minor."[96] This conjecture is incorrect. As explained above (see Section II.A.), the Proposed JBA will significantly expand codesharing, creating more and better connections for American and Qantas passengers. These are "positive network competitive effects," with significant value – Compass has estimated that the Proposed JBA is likely to generate up to $310 million annually in quantifiable consumer benefits within Australasia and North America, not including the significant benefits likely to flow from demand stimulation and increased investment in overall

[93] MIDT Data (adjusted). "Australasia" is defined as Australia and New Zealand.
[94] *United Airlines to resume nonstop flights to San Francisco with new bigger Boeing 777-300ER*, New Zealand Herald (Sept. 4, 2017), available at http://www.nzherald.co.nz/business/news/article.cfm?c_id=-3&objectid=11916930; Press Release, *United will offer all Boeing 787-9 Dreamliner service between three hubs and*
Australia (Sept. 7, 2017), http://newsroom.united.com/2017-09-07-United-Airlines-Strengthens-Commitment-to-Houston-with-Nonstop-Service-Between-Houston-and-Sydney.
[95] Chris Chamberlin, *Air Canada Plans Year-Round Melboune-Vancouver Flights*, AUSTRALIAN BUSINESS TRAVELER, Sept. 1, 2017, https://www.ausbt.com.au/air-canada-plans-year-round-melbourne-vancouver-flights.
[96] American-Qantas, DOT-OST-2015-0129, Show Cause Order 2016-11-16, at 11–13.

quality of travel.[97] Considering the loss in codesharing and subsequent down-gauging of services if the Proposed JBA is not approved and ATI is not granted, which amounts to at least $133 million in annual consumer harm,[98] the potential effects are far from minor; over $440 million in annual consumer benefits are at stake. (*see* Section II.D.)

The OSC's "terminal market" hypothesis also misses the point. These are long and thin routes that depend heavily on connecting passengers to sustain service in the first place. This means that airlines need to be as efficient and attractive to passengers as they possibly can be to grow traffic. They need to stimulate demand, and partnering airlines need to align their incentives to that goal as only a joint business can. Few if any of the efficiencies and consumer benefits of the Proposed JBA will be realized without ATI—and in large measure *because* the markets are so thin.

Finally, the OSC cited the risk of foreclosure – *i.e.*, a concern that the Proposed JBA may somehow limit feed traffic available to unaligned carriers.[99] This concern was unexplained and unsubstantiated in the OSC, as unaligned carriers are thriving within the market. Air Canada has a codeshare relationship with Virgin Australia that gives it access to the ten largest airports in Australia. Qantas has interline relationships with United, Air Canada, Hawaiian, Alaska Airlines, WestJet, Fiji Airways and Air Tahiti Nui. These relationships will continue and can even expand, as the Parties have amended the Proposed JBA to remove the exclusivity provisions that were present when the Parties originally applied for ATI in 2015. Any potential concerns from foreclosing competing unaligned carriers is therefore misplaced.

[97] *See* Compass Report at 2 (Appendix 4).
[98] *See* Compass Report at 19 (Appendix 4).
[99] *Id*. at 18.

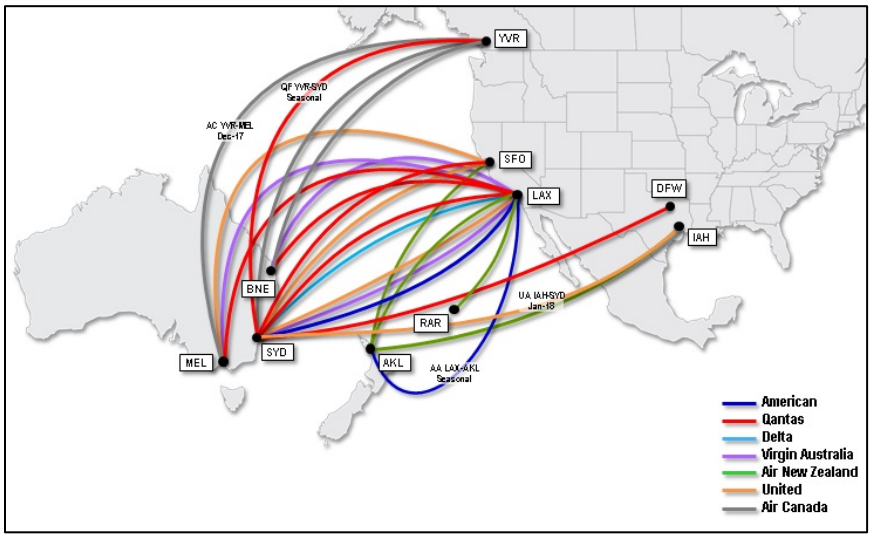
For these reasons, the OSC's tentative conclusion that the Proposed JBA would lessen competition is unfounded. On the contrary, competition for travel between the United States and Australasia is intense and will remain so under the Proposed JBA, as explained below.

A. U.S.-Australasia Competition Is And Will Remain Intense

The U.S.-Australasia market remains just as competitive as the Department found it in 2001 and in 2011 when it immunized the United-Air New Zealand and Delta-Virgin Australia joint businesses, respectively.[100] In fact, competition in the U.S.-Australasian market has steadily intensified as those immunized alliances – and Qantas' relationship with American – have taken shape. Ten years ago, only Qantas and the immunized United-Air New Zealand served nonstop North America-Australasia routes. Since then, Delta and Virgin Australia launched service and formed a revenue-pooling joint business with ATI, and American launched service in anticipation of the Proposed JBA with Qantas. At the same time, the rise of Air New Zealand and Air Canada as increasingly effective one-stop competitors to the United States from Australia has increased competition on these routes. As shown below, consumers can now take advantage of a diverse range of nonstop flights between the United States and Australasia.

[100] *See* United-Air New Zealand, DOT-OST-1999-6680, Show Cause Order 2001-3-4, at 12; Delta-Virgin Blue, DOT-OST-2009-0155, Show Cause Order 2011-5-8, at 10.

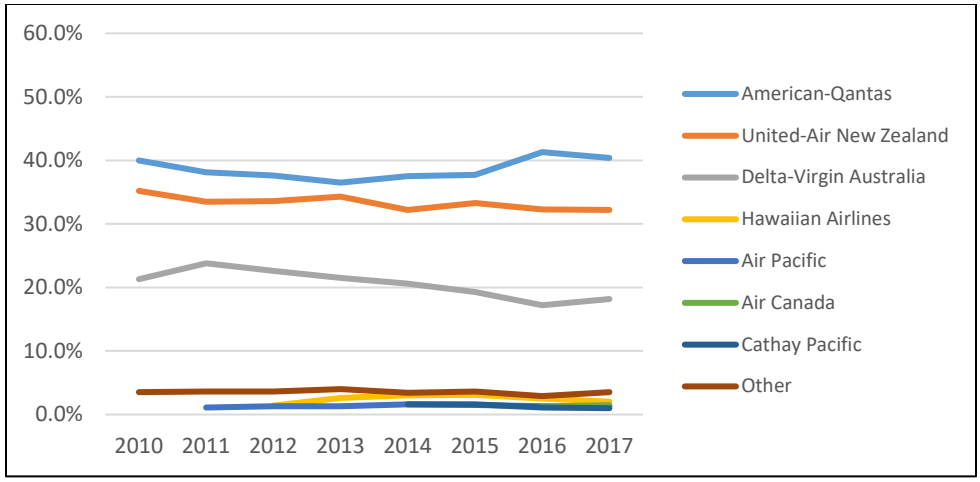
Figure 12: Trunk-Route Flights Operated Between North America and Australasia



When immunizing Delta-Virgin Australia in 2011, the Department noted that there are "three major competitive entities on the network level with a significant share of passengers" between the United States and Australasia, which "indicates a generally competitive market."[101] This remains the case today – United-Air New Zealand and Delta-Virgin Australia, continue to exert competitive pressure, operating 32% and 18% of the total origin-destination passenger market shares between the U.S. mainland and Australasia respectively.[102]

[101] Delta-Virgin Blue, DOT-OST-2009-0155, Show Cause Order 2011-5-8, at 10.
[102] MIDT Data (adjusted).

Figure 13: U.S. Mainland-Australasia Total Origin & Destination Passenger Traffic Shares 2010-2017



Source: Adjusted MIDT Data[103]

The Parties' combined shares are also modest, at 40.4%. These shares are not as high as those of United-Air New Zealand's U.S.-Australasian nonstop passenger market share (48.1%) when the Department immunized that alliance.[104]

B. Competition To/From Australia Will Remain Intense

Competition for travel to Australia specifically is also robust.[105] The OSC concluded that the U.S.-Australia market was highly concentrated, citing a combined Qantas-American nonstop seat share from July 2016 of nearly 60%.[106] In 2017, Qantas and American's combined passenger share on the U.S. mainland-Australia market was 45.7%.[107] In 2001, the Department granted ATI for United-Air New Zealand despite a combined nonstop seat share of 70% of flights between the United States and New Zealand.[108] The Department concluded that "even if a transaction creates a partnership with a preponderant market share, the transaction would not

[103] "Australasia" defined as Australia and New Zealand.
[104] United-Air New Zealand, DOT-OST-1999-6680, Show Cause Order 2001-3-4, at 12.
[105] There is no overlap on service to New Zealand so New Zealand is not separately considered, but for similar reasons the Proposed JBA will not lessen competition for travel to New Zealand.
[106] American-Qantas, DOT-OST-2015-0129, Show Cause Order 2016-11-16, at 2.
[107] MIDT (adjusted).
[108] *See* United-Air New Zealand, DOT-OST-1999-6680, Show Cause Order 2001-3-4, at 12.

substantially reduce competition if competitors have free and open access to the marketplace."[109] The same principle should apply here, especially where, unlike in United-Air New Zealand, two other immunized alliances exert significant competitive discipline. As shown below, United-Air New Zealand and Delta-Virgin Australia each have over 20% share of passenger traffic, and American adds a much smaller increment of only about 6%.

Table 7: U.S. Mainland-Australia Total Origin and Destination Passenger Shares (2017)[110]

Carrier	Passenger Share	Combined Passenger Share
Qantas	40.0%	45.7%
American	5.7%	
Virgin Australia	17.1%	22.9%
Delta	5.8%	
United	14.2%	21.9%
Air New Zealand	7.7%	
Hawaiian	1.5%	1.5%
Air Canada	1.8%	1.8%
Other	6.2%	6.2%

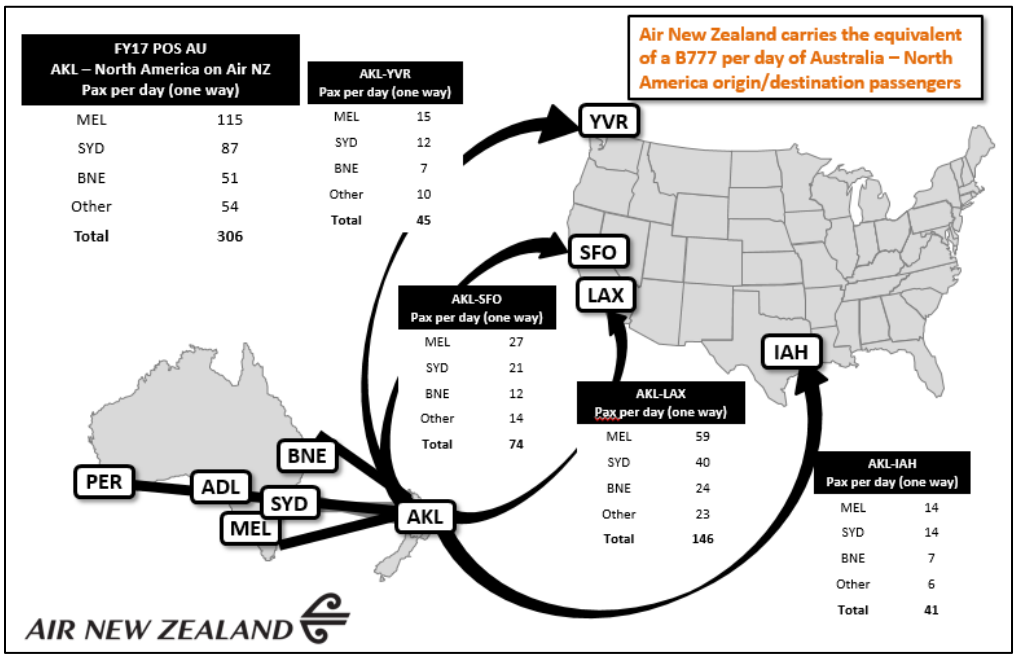
Source: Adjusted MIDT

Moreover, rival carriers are well-positioned to expand. United-Air New Zealand, with service to major international gateways including Houston, Los Angeles, San Francisco, and Vancouver, provides access to points throughout the domestic United States and Canada. Similarly, Air Canada has significantly increased capacity between Vancouver and Australia and is a viable one-stop operator. Air Canada is investing heavily in future network growth out of its hubs, including from Vancouver to points across North America, and announced a new nonstop three-flights-per-week service between Vancouver and Melbourne.[111] Air New Zealand's and Air Canada's share of total passenger traffic between Australia and the U.S. mainland has grown

[109] *Id*.
[110] MIDT (adjusted).
[111] *See* David Flynn, Air Canada to Fly Melbourne-Vancouver from December, Australian Business Traveler (May 3, 2017), https://www.ausbt.com.au/air-canada-to-fly-melbourne-vancouver-from-december.

in the past year, while Qantas' share of total passenger traffic has continued to shrink. In fact, as shown below, Air New Zealand now flies the equivalent of a 777 worth of passengers a day from Australia to North America through its Auckland hub, which is significantly more than the number American flies between Australia and North America.

Figure 14: Air New Zealand One-Stop Service Over Auckland



Finally, the Department expressed concern about the ability of Qantas to "command a revenue premium over its competitors."[112] Perceived revenue premiums are not uncommon in international markets and, as the OSC recognized, can often be the result of differing aircraft configurations, mix of business and leisure passengers, as well as differences in product quality and brand association.[113] Qantas has made considerable investments in larger A380 and B787-9 aircraft, which consumers often prefer, and in improving in-flight experiences on some of the

[112] American-Qantas, DOT-OST-2015-0129, Show Cause Order 2016-11-16, at 15.
[113] *Id*. at 15 ("[S]ome of the revenue premium could be attributed to factors such as cabin layout, service quality, and slightly longer stage lengths . . . .").

world's longest flights. In fact, Qantas has been rated the safest airline in the world by AirlineRatings.com for four years in a row and has won numerous accolades for its service, cabin layouts, catering options, and award winning lounges.[114] Thus, any perceived premium cannot justify a finding of market power where Qantas offers higher-quality services amid an abundance of other indicators of competitive discipline in the market. And in any event, revenue-pooling joint businesses stimulate demand and increased capacity to meet that demand which, when coupled with more efficient joint business pricing on connecting flights, puts downward pressure on fares. These effects have been empirically verified – Compass Lexecon's work demonstrates empirically that fares in revenue-pooling joint businesses are on average 3.5% lower relative to interline fares (and over 14% lower for joint businesses among **one**world members).

C. The Proposed JBA Will Not Lessen Competition Between Los Angeles–Sydney

Out of 276 city-pairs between the United States and Australia that the OSC identified, the Proposed JBA involves a single overlap – Los Angeles to Sydney.[115] Treating the immunized United-Air New Zealand and Delta-Virgin Australia as two competitors, the Proposed JBA could be viewed as reducing the number of independent carriers from four to three. However, because this overlap exists only because of American's decision to launch the service in anticipation of swift Department approval of the Proposed JBA, the situation is better viewed as creating a stronger third option, not eliminating a fourth. In 2011, for this very city pair, the Department found that a reduction in the number of carriers from four to three "would not substantially

[114] *See AirlineRatings* Editors, *Who are the world's safest airlines for 2017?* (Jan. 5, 2017), http://www.airlineratings.com/news.php?s&id=997.

[115] The OSC's tentative conclusion that the Proposed JBA may lessen competition is all the more surprising in light of the Department's more favorable treatment of the limited overlaps in Delta-Virgin Atlantic, where the Department concluded that as a result, "the application does not raise the same complex issues at the city-pair level that [the Department has] addressed in recent transatlantic and transpacific cases. . . .". *See* Delta-Virgin Blue at 9.

reduce competition."[116] In fact, the Department found that immunizing Delta-Virgin Australia would ensure that "each of the competitive entities would have a sufficient stake in the market to impart competitive discipline on the others."[117] Again, the same reasoning applies here.

Even if, for the sake of argument, the Proposed JBA were analyzed as a traditional merger (which it is not), empirical evidence from the CEI study and a separate study conducted by Brueckner, Lee, and Singer in 2013 show that such a "4-to-3" merger would not have any statistically significant impact on fares.[118] To illustrate the sheer net beneficial impact of the Proposed JBA, Compass Lexecon, using methodology from the CEI study, calculated the *hypothetical* harm *assuming* that the joint business was actually a merger to monopoly (as opposed to the 4-to-3, which is the worst it could be said to be). The annual "harm" to consumers in that hypothetical case would be $15.7 million.[119] As shown in Table 3, the Proposed JBA is projected to generate up to $310 million in annual consumer benefits, dwarfing the projected harm even under the most drastic assumptions.[120]

Moreover, the three competitive entities in 2011—United-Air New Zealand, Delta-Virgin Australia, and Qantas-American—have maintained similar share levels since then and will continue to impose competitive discipline on each other. In 2017, American and Qantas had a combined passenger share of 41%, bearing in mind that, before entering in 2016 in anticipation of the Proposed JBA, American was not active (0% share). Delta-Virgin accounted for about 33% of total passenger share and United-Air New Zealand accounted for about 18% of passenger

[116] *Id*. at 11.
[117] *Id*.
[118] CEI Study at 25-26 (Appendix 2); Jan K. Brueckner, Darin Lee, Ethan S. Singer, *Airline competition and domestic US airfare: A comprehensive reappraisal*, 2 Econ. of Transp. 1, 6 (2013).
[119] *See* Compass Report at 38 (Appendix 4).
[120] *Id*.

traffic. The Department has consistently found that these market conditions foster, rather than diminish, robust competition.[121]

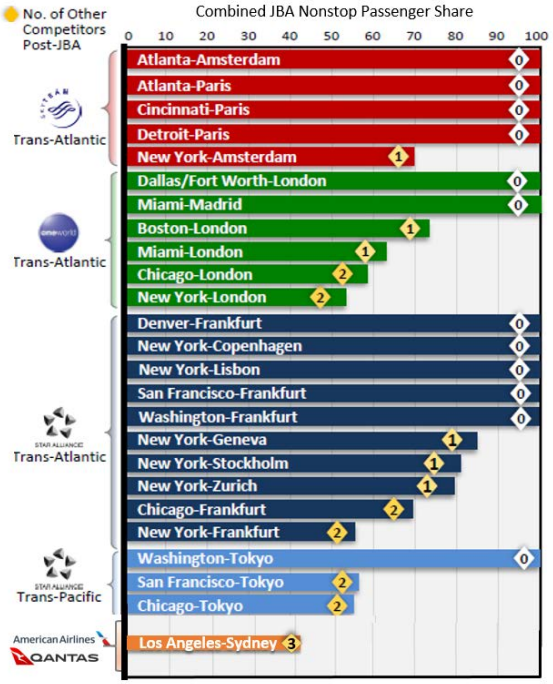
Table 8: LAX-SYD Total Origin and Destination Passenger Shares 2017[122]

Carrier	Passenger Share	Combined Passenger Share
Qantas	29.1%	41.0%
American	11.9%	
Virgin Australia	22.3%	32.9%
Delta	10.6%	
United	11.2%	18.3%
Air New Zealand	7.1%	
Air Pacific	3.5%	3.5%
Hawaiian	2.3%	2.3%
Other	2.0%	2.0%

The combined share of Qantas and American compares even more favorably to nearly two dozen previously immunized joint businesses:

[121] American-British Airways-Finnair-Iberia-Royal Jordanian, DOT-OST-2008-0252, Show Cause Order 2010-2-8, at 23 (summarily concluding that a market with a third, fourth, or fifth competitor will remain competitive); Delta-Virgin Atlantic, DOT-OST-2013-0068, Show Cause Order 2013-8-21, at 8 (finding that three competitive joint ventures with shares of 54%, 27%, and 15%, along with other non-aligned carriers, will have sufficient size and scope to ensure robust competition in the market).
[122] MIDT (adjusted).

Figure 15: Sample Nonstop Passenger Shares Prior To Grant Of ATI



Source: MIDT (adjusted)

Each route listed above was served by fewer carriers *and* fewer revenue-pooling JBAs than LAX–Sydney, but still received ATI. The evidence simply does not support the OSC's tentative conclusion that the Proposed JBA may lessen competition for service from Los Angeles to Sydney.[123]

IV. The Proposed JBA Satisfies The Statutory Standards For ATI

This Joint Application meets the applicable legal standards for approval and ATI as interpreted and applied by the Department.

First, under 49 U.S.C. § 41309(b), the Department must determine whether a proposed agreement is "adverse to the public interest," and as long as it is not adverse to the public interest, the Department must approve it.[124] In making the public interest determination, the

[123] American-Qantas, DOT-OST-2015-0129, Show Cause Order 2016-11-16, at 17.
[124] 49 U.S.C. § 41309(b).

Department considers the agreement's competitive effects. The mere fact that the agreement presents the potential for harm "in certain specific nonstop overlap markets" is not dispositive.[125] Rather, the Department considers the competitive effects of the proposed joint business *as a whole*, "weigh[ing] both pro- and anti-competitive effects across a number of different markets, consistent with statute and precedent."[126] Even where the Department finds that the agreement will substantially reduce or eliminate competition in the aggregate, approval is appropriate under section 41309(b)(1) where the agreement is "necessary to meet a serious transportation need or to achieve important public benefits" that "cannot be achieved by reasonably available alternatives that are materially less anticompetitive."[127]

Second, where an agreement is approved under section 41309, the Department is authorized to exempt the parties to the agreement from the antitrust laws (*i.e.*, grant ATI) under section 41308(b) where "required by the public interest" and "to the extent necessary to allow" the parties to implement the agreement.[128] This determination, too, "entails a comparison of anti-competitive effects and public benefits," and the Department has found that where a proposed joint business agreement meets the requirements of section 41309, it is appropriate to grant ATI.[129]

Given the very substantial consumer benefits described and quantified above, and because the Proposed JBA will increase rather than decrease competition, the Proposed JBA is not adverse to the public interest and warrants approval. Moreover, the significant pro-competitive and pro-consumer benefits outlined above are only achievable through the deep level

[125] *See* American-British Airways-Finnair-Iberia-Royal Jordanian, DOT-OST-2008-0252, Final Order 2010-7-8, at 9 (rejecting this approach as "too narrow").
[126] *Id*.
[127] 49 U.S.C. § 41309(b)(1).
[128] *Id*. § 41308(b).
[129] American-British Airways-Finnair-Iberia-Royal Jordanian, DOT-OST-2008-0252, Final Order 2010-7-8, at 8.

of coordination contemplated by the Proposed JBA, which in turn can only be implemented with a grant of ATI under section 41308.[130]

CONCLUSION

For the reasons set forth above, the Parties respectfully request that the Department approve of, and grant ATI for, the Proposed JBA.

Dated: February 26, 2018

Respectfully submitted,

[130] *See id*. at 17 (recognizing that integrated, pro-competitive joint businesses require ATI because they involve "revenue and benefit-sharing arrangements that create a greater risk of antitrust litigation and potential antitrust liability").

Therefore, the Parties respectfully request that the Department approve, and grant antitrust immunity for, the Proposed JBA pursuant to 49 U.S.C. §§ 41308 and 41309.

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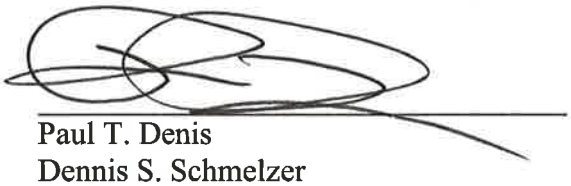

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ADDITIONAL DOCUMENTS AND INFORMATION

To expedite the Department's consideration of the Proposed JBA, the Parties are providing the Department with additional information and documents typically requested by the Department for purposes of evaluating applications for antitrust immunity.

A. Document Production

American and Qantas are producing Joint Business Management and Steering Committee materials prepared in the ordinary course of business during the existence of the Parties' prior Joint Business that was approved by the Department in 2011.

American is also producing presentations, studies, surveys, analyses, reports, and other documents that were prepared for the purpose of: (1) explaining the strategic objectives or rationale in forming the Proposed JBA; (2) describing the structure and process contemplated for coordination pursuant to the Proposed JBA; (3) evaluating and analyzing the Proposed JBA and the impact of the Proposed JBA with respect to market shares, competition, competitors, markets, synergies, and potential for sales growth or expansion into product or geographic markets; and (4) evaluating or analyzing existing competition in air services between the United States and Australasia.

Qantas is also preparing relevant documents for submission to the Department and expects to provide them in the near future.

American and Qantas are producing these materials in order to assist the Department in its review and approval of the antitrust immunity application, and for no other purpose. These documents contain confidential, proprietary, and commercially-sensitive information, and are being furnished pursuant to the Department's Rule 12 procedures as described further in the Parties' Joint Motion for Confidential Treatment. The confidential document production, including complete indices, will be provided under separate cover.

B. Routes And Services Between North America And Australasia

The scope of services for the Proposed JBA includes routes between North America, including the U.S. mainland, the U.S. Caribbean territories (Puerto Rico and the U.S. Virgin Islands), Canada, Mexico, and Australasia (limited to Australia and New Zealand).

As described in the Joint Application, the Parties intend to launch additional nonstop services within the next few years. The Department's approval of this Joint Application will allow existing services to continue and grow and enable the introduction of additional future routes and services.

C. Codeshare Partners

American is a codeshare partner with the following airlines:

oneworld Member Airlines	Other Airlines
▪ British Airways ▪ Cathay Pacific ▪ Finnair ▪ Iberia ▪ Japan Airlines ▪ LATAM ▪ Malaysia Airlines ▪ Qantas Airways ▪ Royal Jordanian Airlines ▪ SriLankan Airlines	▪ Air Tahiti Nui ▪ Alaska Airlines / Horizon Air ▪ Cape Air ▪ China Southern ▪ Fiji Airways ▪ Gulf Air ▪ Hainan Airlines ▪ Hawaiian Airlines ▪ Interjet ▪ Korean Air ▪ Seaborne Airlines

Qantas is a codeshare partner with the following airlines:

oneworld Member Airlines	Other Airlines	
▪ American Airlines ▪ British Airways ▪ Finnair ▪ Japan Airlines ▪ LATAM ▪ SriLankan Airlines	▪ Aircalin ▪ Air Niugini ▪ Airnorth ▪ Air Tahiti Nui ▪ Air Vanuatu ▪ Alaska Airlines ▪ Asiana Airlines ▪ Bangkok Airways	▪ China Airlines ▪ China Eastern Airlines ▪ China Southern Airlines ▪ EL AL ▪ Emirates ▪ Fiji Airways ▪ Jet Airways ▪ Jetstar ▪ Jetstar Asia ▪ Jetstar Japan ▪ Solomon Airlines ▪ WestJet

D. Alliances

one*world.* American and Qantas were founding members of the **one**world alliance, which was formed in 1999. In addition to American and Qantas, **one**world has the following members that fly across the Pacific Ocean: Japan Airlines (which has two hubs in Tokyo and separately operates an immunized alliance with American) and Cathay Pacific (which operates in Hong Kong).

Star. Star has the following members that fly across the Pacific Ocean: Air New Zealand (which operates a hub in Auckland, and participates in an immunized alliance with United); United (which has hubs at Tokyo and Guam); ANA (which operates at Tokyo and separately operates an immunized alliance with United); Asiana (which operates two hubs at Seoul and separately operates an immunized alliance with United); Air China (which operates hubs at Beijing, Chengdu, and Shanghai); Singapore Airlines (which operates a hub at Singapore

Changi); EVA Air (which operates a hub at Taipei); Air Canada (which operates hubs at Toronto, Montreal, and Vancouver); and Thai Airlines (which operates hubs at Bangkok, Chiang Mai, Phuket, and Hat Yai).

SkyTeam. SkyTeam has the following members that fly across the Pacific Ocean: Delta (which operates a hub at Tokyo); Korean Airlines (which operates a hub in Seoul and participates in an immunized alliance with Delta); China Airlines (which operates a hub at Taipei); and China Eastern (which operates hubs at Shanghai, Kunming Wujiaba, and Xi'an Xianyang).

E. Other Antitrust-Immunized Relationships

American has received antitrust immunity from the Department for partnerships with the following carriers:

- British Airways, Iberia, Finnair, and Royal Jordanian. *See* American-British Airways-Finnair-Iberia-Royal Jordanian, Docket No. DOT-OST-2008-0252 and DOT-OST-2002-13861, Final Order 2010-7-8 (Dep't of Transp. July 20, 2010).

- LAN Chile. *See* American-LAN Chile, Docket No. DOT-OST-1997-3285, Final Order 1999-9-9 (Dep't of Transp. Sept. 13, 1999).

- LAN Peru. *See* American-LAN Airlines-LAN Peru, Docket No. DOT-OST-2004-19964, Final Order 2005-10-08 (Dep't of Transp. Oct. 13, 2005).

- Japan Airlines. *See* U.S.-Japan Alliance Case, Docket No. DOT-OST-2010-0059, Final Order 2010-11-10 (Dep't of Transp. Nov. 10, 2010).

The Department also previously approved an earlier American-Qantas joint business without a grant of antitrust immunity. *See* American-Qantas Airways, DOT-OST-2011-0111, Final Order 2011-11-12.

Qantas is currently a party to separate alliances with Emirates for services between Australia and New Zealand, Europe, the Middle East, and Northern Africa; and China Eastern for services between Australia and China. The Qantas alliance with Emirates was authorized by the ACCC on March 27, 2013 and, on February 16, 2018, the ACCC issued a Draft Determination proposing to reauthorize the alliance for a further five years. A Final Determination will be issued in March 2018. The Qantas-China Eastern alliance was authorized for five years on August 21, 2015.

Jetstar is part of Qantas' operations. Jetstar operates low-cost, value-based services on domestic Australian routes and international destinations. Since its establishment in 2004, the Jetstar Group has evolved into a mature and successful low cost carrier with an expanded brand presence as follows:

- Domestic Australia and New Zealand services (operated by Jetstar Airways);

- International Services from Australia to destinations in Asia, the Pacific, and New Zealand (operated by Jetstar Airways); and

- Services within and between various countries in Asia under the Jetstar business model, operated by the following joint ventures:

  – Jetstar Asia Airways Private Limited ("Jetstar Asia") in which the Qantas Group has a 49% shareholding through its sharing of Jetstar Asia's parent company, Newstar Investment Holdings Pte Ltd (a Singapore Company) ("Newstar"), which is incorporated in Singapore and operates flights from Singapore to various destinations in Asia;

  – Jetstar Pacific Airlines Joint Stock Aviation Company ("Jetstar Pacific") in which the Qantas Group has a 30% shareholding. Jetstar Pacific is incorporated in Vietnam and operates flights from Vietnam to Singapore and Bangkok; and

  – Jetstar Japan Co Ltd ("Jetstar Japan") in which the Qantas Group has a 33% shareholding. Jetstar Japan is incorporated in Japan and began operating flights within Japan from July 2012 and internationally in early 2015.

The ACCC authorized coordination between the Qantas Group and the various Jetstar branded joint ventures in December 2012 and, on February 16, 2018, the ACCC reauthorized the relationship through March 2023.

F. Exchange of Equity or Ownership Interests

The Proposed JBA does not involve any exchange of equity or ownership interests.

G. Hub Airports for American and Qantas

American Airlines maintains hubs in Charlotte, Chicago, Dallas/Fort Worth, Los Angeles, Miami, New York, Philadelphia, Phoenix, and Washington, D.C.

Qantas operates hubs in Sydney, Melbourne and Brisbane, with a new hub in Perth for European flying.

The Parties request that the Department take official notice of published schedules for these hubs, pursuant to Rule 24 of the Department's Rules of Practice.

H. Competitive Access to Airport Facilities

The U.S. gateways for American and Qantas between North America and Australasia are Dallas/Fort Worth, Los Angeles, and San Francisco.[1] None of these airports are slot-controlled.

[1] "Gateway" is defined as airports on either side of a nonstop segment between North America and Australasia, and is consistent with past Department filings. *See, e.g.*, American-British Airways-Finnair-Iberia-Royal Jordanian, DOT-OST-2008-0252 and DOT-OST-2002-13861, Order Requesting Additional Information 2008-12-11, at Figure 1 (defining "U.S. gateway" and "foreign gateway").

The Australasian gateways for American and Qantas between North America and Australasia are Auckland, Brisbane, Melbourne, and Sydney. Sydney is slot-controlled, but slots are available and do not impose a material impediment to entry or expansion by other carriers.

I. Labor Issues

American believes that the Proposed JBA raises no significant labor issues. Indeed, the Parties believe that the long-term impact of the transaction will be positive for all existing employees, and no significant impact on unionized employees is anticipated.

J. Civil Reserve Air Fleet (CRAF) Commitments

Granting antitrust immunity for the Proposed JBA will have no impact on American's CRAF commitments.

K. Global Distribution Systems (GDS)

The grant of antitrust immunity should cover the coordination of (1) the presentation and sale of the Parties' airline services in GDSs and (2) the operations of their respective reservations systems. The Department has previously extended antitrust immunity to GDS activities.

L. Conditions

In addition to the GDS-related condition above, the Parties will accept the standard conditions that the Department has attached to previous grants of antitrust immunity relating to: (a) non-participation in certain IATA-related tariff coordination activities; (b) O&D survey data reporting requirements; (c) operation under a common brand or common name; and (d) the submission for prior review of subsequent subsidiary agreements implementing the Proposed JBA.

CERTIFICATE OF SERVICE

I certify that on February 26, 2018, I served a copy of the foregoing American Airlines, Inc. and Qantas Airways Limited Joint Application upon the following persons via email.

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Appendix 1:

CONFIDENTIAL

SEE JOINT MOTION FOR CONFIDENTIAL TREATMENT UNDER 14 C.F.R. § 302.12

(February 26, 2018) (DOT-OST-2018-_____)

Appendix 1.A:	Amended and Restated Alliance Agreement
Appendix 1.B:	Amended and Restated Alliance Settlement Agreement
Appendix 1.C:	Amendment No. 1 to the Codeshare Agreement
Appendix 1.D:	Amended and Restated Joint Business Agreement

EXECUTION VERSION

AMENDED AND RESTATED ALLIANCE AGREEMENT

This **AMENDED AND RESTATED ALLIANCE AGREEMENT** (this "**Agreement**") is made as of November 3, 2017, by and between American Airlines, Inc., a Delaware corporation ("**American**"), and Qantas Airways Limited (ABN 16 009 661 901), an Australian company ("**Qantas**"). Capitalized terms not otherwise defined in the main text of this Agreement will have the meanings set forth in Schedule 1 hereto.

WHEREAS, the parties entered into that certain Amended and Restated Joint Business Agreement, dated as of June 9, 2015, as amended (the "**2015 Joint Business Agreement**") and that certain Alliance Settlement Agreement, dated June 9, 2015 (the "**2015 Alliance Settlement Agreement**"), in contemplation of entering into an alliance;

WHEREAS, the parties have also entered into that certain Amended and Restated Codeshare Agreement, dated on or around December 31, 2016 (together with any amendments and successor agreements, the "**Codeshare Agreement**"); that certain Qantas Frequent Flyer Participating Carrier Agreement, dated as of April 1, 2004, as amended, and that certain AAdvantage Participating Carrier Agreement, dated as of April 1, 2004, as amended, and any amendments or successor agreements (together the "**Frequent Flyer Agreements**"); and that certain **one**world Lounge Access Agreement, dated as of January 27, 1999, as amended, and any amendments or successor agreements (the "**Lounge Access Agreement**"), pursuant to which the parties have endeavored to improve their ability to offer seamless, competitive, high quality and cost effective passenger air transport services;

WHEREAS, to further the parties' business relationship and to continue to improve the parties' quality of service, the parties wish to amend and restate the 2015 Joint Business Agreement and the 2015 Alliance Settlement Agreement and amend the Codeshare Agreement for the alliance (the "**Alliance**") which will enable them to compete more effectively with air transportation services of other airlines and airline alliances, and offer customers a wider choice of travel and shipping options at competitive prices as described more fully below;

WHEREAS, to provide benefits to the traveling and shipping public and to facilitate efficiency-enhancing integration and coordination of their services, the parties desire to create a system for integration and coordination between them that will enable the parties to establish and implement the Alliance;

WHEREAS, to facilitate the integration and coordination of each party's route networks, including services provided by Affiliates, to enhance the efficiency of the parties' operations and to facilitate their ability to provide a seamless transportation service to the public, the parties intend to seek appropriate antitrust review, including immunity from U.S. antitrust laws pursuant to 49 U.S.C. §§ 41308 and 41309, and authorization pursuant to the Competition and Consumer Act 2010 (Commonwealth of Australia) and in any other required jurisdictions, without which the parties will not proceed with the implementation of certain aspects of this Agreement as contemplated herein;

NOW THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, the parties agree as follows:

1. Scope of the Alliance.

A. As permitted by Applicable Law, and subject to the terms and conditions of this Agreement and the Alliance Implementation Agreements, the parties agree to:

(1) Create and implement the Joint Business in accordance with the Joint Business Agreement;

(2) Continue to codeshare on certain flights operated by each other and their respective airline Affiliates and Franchisees in accordance with an amended Codeshare Agreement;

(3) Continue to coordinate their respective frequent flyer programs in accordance with the Frequent Flyer Agreements; and

(4) Continue to provide airport lounge and club access in accordance with the Lounge Access Agreement.

B. In addition, in furtherance of the Alliance, the parties will consult from time to time with a view to reaching agreement on marketing, selling and providing passenger and cargo transportation throughout the world as a seamless transportation system to the maximum extent that is commercially feasible and permitted by Applicable Law, including with respect to the following between themselves and with their Affiliates:

(1) cooperating in the marketing, advertising, sale and distribution of passenger air transportation services;

(2) cooperating to identify mutual commercial and strategic opportunities with respect to cargo services;

(3) coordinating flight schedules in selected markets;

(4) cooperating in pricing strategies, including coordinating fares, fare categories and rates;

(5) cooperating in the control of inventories and yield management functions;

(6) cooperating in determining distribution strategies, including Internet and GDS distribution;

(7) cooperating in travel agency and GSA commission levels and override and incentive programs;

(8) harmonizing service and product standards in order to provide a seamless product to passengers;

(9) reducing costs and redundancies through coordinated or joint acquisition of goods and services from third party suppliers and vendors or through acquisition of goods and services from each other or from Affiliates;

(10) harmonizing of IT systems;

(11) sharing of facilities;

(12) cooperating on the methodology for the settlement of revenue and costs from certain codeshare flights and other flights, including, if mutually agreed, the settlement of revenue and costs on selected routes and optimizing pricing opportunities; and

(13) coordinating frequent flyer programs and lounge facilities.

2. Term. Subject to the terms and provisions of Section 7, this Agreement shall be effective from the date of this Agreement until the expiration of an initial term of ten years from the Implementation Date and shall, subject to Applicable Law, continue indefinitely thereafter until termination of the Joint Business Agreement.

3. Non-Exclusivity. This Agreement is non-exclusive and will not preclude either party or its Affiliates from entering into and maintaining relationships, including alliance, codesharing, frequent flyer cooperation and benefit sharing arrangements, with other airlines.

4. Notices. Any notice or communication required or permitted hereunder must be in writing and sent by (i) personal delivery, (ii) expedited delivery service with proof of delivery, or (iii) registered or certified mail, postage prepaid, addressed as follows:

To American:
American Airlines, Inc.
4333 Amon Carter Blvd.
MD 5675
Fort Worth, Texas 76155
U.S.A.
Attn: Corporate Secretary
Copy: Deputy General Counsel
Phone: 1-817-963-3598

To Qantas:
Qantas Airways Limited
Qantas Centre, 10 Bourke Road
Mascot NSW 2020
Australia
Attn: Head of Alliance Partnerships
Copy: General Counsel
Phone: +61-2-9691-0592

or to such other address or to the attention of such other person as the applicable party hereafter designates by written notice sent in accordance herewith. Any such notice or communication will be deemed to have been given either at the time of personal delivery or, in the case of delivery by service or mail, as of the date of proof of delivery at the address and in the manner provided herein.

5. Governing Law and Arbitration.

A. THIS AGREEMENT AND THE RIGHTS AND OBLIGATIONS OF THE PARTIES ARISING OUT OF OR DIRECTLY RELATING TO THIS AGREEMENT SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF ENGLAND AND WALES (WITHOUT REGARD TO THEIR CONFLICT OF LAWS PRINCIPLES) INCLUDING ALL MATTERS OF CONSTRUCTION, VALIDITY AND PERFORMANCE.

B. Without limiting Section 9.3 of the Joint Business Agreement, in the event either party seeks to have a controversy or claim determined by an arbitrator, such party agrees to provide the other party prior written notice of such intent and comply with this Section 5.B before filing for arbitration. Such notice shall include a request for a special meeting of the Steering Committee (as defined in the Joint Business Agreement) to commence no later than 15 Business Days after the date of the notice. If no special meeting of the Steering Committee is held, or if the Steering Committee is not able to resolve the dispute, then the party seeking arbitration may send an additional notice at the end of such 15 Business Day period of its continuing intent to seek arbitration. At the end of an additional 15 Business Day period from delivery of this follow-up notice of intent to file for arbitration, the party seeking arbitration may file for arbitration without further delay. Following delivery of the initial notice of intent to arbitrate, the parties agree to use good faith efforts to resolve such controversy or claim; provided that the foregoing shall not prevent the party seeking arbitration from filing for arbitral review at the end of the second 15 Business Day period, unless a mutually-agreed resolution of the dispute has been found by such date or the parties have agreed otherwise. All disputes arising out of or in connection with this Agreement shall be submitted to the International Court of Arbitration of the International Chamber of Commerce and shall be finally settled under the Rules of Arbitration of the International Chamber of Commerce by three arbitrators appointed in accordance with the said Rules, at least one of whom will be knowledgeable about the legal, marketing and other business aspects of the airline industry. The place of arbitration shall be London, England. The language of arbitration shall be English. The arbitrators shall award only such damages as are permitted to be awarded pursuant to this Agreement, the Joint Business Agreement and the Alliance Settlement Agreement. The arbitrators must render their award within 30 days following the last hearing scheduled by the arbitrators and at that time state the reasons for their award in writing. Nothing in this Agreement shall prevent either party or its Affiliates from seeking provisional measures from any court of competent jurisdiction, and any such request shall not be deemed incompatible with the agreement to arbitrate or a waiver of the right to arbitrate.

6. Representations and Warranties. Each party represents and warrants to the other party, as of the date hereof:

   A. It is a duly incorporated and validly existing corporation or company, as the case may be, in good standing under the laws of its jurisdiction of incorporation and has the requisite corporate power and authority to enter into and perform its obligations under this Agreement. It is an air carrier authorized to act as such by the government of its country of incorporation. The execution, delivery and performance of this Agreement by it have been duly authorized by all necessary corporate action. This Agreement has been duly executed and delivered by it, and, assuming due authorization, execution and delivery by the other party, this Agreement constitutes its legal, valid and binding obligation, enforceable against it in accordance with each of its terms, except to the extent otherwise determined by Applicable Law.

   B. The execution, delivery or performance by it of this Agreement and each Alliance Implementation Agreement shall not: (i) contravene, conflict with or cause a default under (a) any Applicable Law, rule or regulation binding on it (assuming the Governmental Approvals have been obtained) or (b) any provision of its charter, certificate of incorporation, bylaws or other documents of corporate governance; or (ii) contravene, or cause a breach or violation of any alliance or other agreement or instrument to which it is a party or by which it or its assets are bound, except in the case of clauses (i)(a) and (ii) for such contraventions, conflicts, defaults, breaches or violations as, individually or in the aggregate, could not reasonably be expected to have a material adverse effect on such party or such party's ability to perform its obligations under this Agreement.

   C. The execution, delivery and performance by it of this Agreement and each Alliance Implementation Agreement shall not require the consent or approval of or the giving of notice to, the registration with, the recording or filing of any documents with, or the taking of any other action in respect of any trustee or holder of any of its indebtedness or obligations, any stockholder or any other person or entity, except for such consents, approvals, notices, registrations, recordings, filings or other actions the failure of which to be obtained, given, made or taken, individually or in the aggregate, could not reasonably be expected to have a material adverse effect on such party or such party's ability to perform its obligations under this Agreement.

   Each of the foregoing representations and warranties shall survive the execution and delivery of this Agreement.

7. Termination Rights. This Agreement will terminate automatically upon the termination of the Joint Business Agreement for any reason. This Agreement sets out the only circumstances in which this Agreement will terminate.

8. Relationship to Other Agreements. Notwithstanding anything to the contrary herein or in any Alliance Implementation Agreement, neither party shall have the right to terminate the Alliance Settlement Agreement unless this Agreement is being concurrently terminated. Upon termination of this Agreement, in addition to any rights of termination

under the respective Alliance Implementation Agreements, either party shall have the right to terminate any other Alliance Implementation Agreement effective on the effective date of termination of this Agreement. For the avoidance of doubt, nothing in this Section 8 shall limit the ability of a party to exercise a termination right in accordance with Section 7 of the Joint Business Agreement.

9. Effect of Termination. Upon termination, each party shall provide reasonable assistance to the other party to wind down the Alliance. Sections 4, 5, 9, 10, 12 (with respect to the last sentence only), 14.B, 17, 21, 22.A and 23.B and Schedule 1 shall survive any termination or expiration of this Agreement.

10. Consequential Damages. EXCEPT FOR DAMAGES ARISING FROM PERSONAL INJURY OR DEATH CAUSED BY NEGLIGENCE, FRAUD OR WILLFUL MISCONDUCT, AND EXCEPT FOR DAMAGES ARISING FROM THE BREACH OF ANY CONFIDENTIALITY OBLIGATION, NEITHER PARTY NOR ITS AFFILIATES WILL BE LIABLE FOR ANY LOSS OF PROFITS, LOSS OF REVENUE, LOSS OF CONTRACT, LOSS OF ANTICIPATED SAVINGS, OR ANY INDIRECT OR CONSEQUENTIAL LOSS, WHETHER BASED ON A CLAIM OF CONTRACT, TORT (INCLUDING NEGLIGENCE), BREACH OF STATUTORY DUTY, OR ARISING FROM ANY BREACH OR FAILURE TO PERFORM OR IMPROPER PERFORMANCE UNDER THIS AGREEMENT, THE ALLIANCE SETTLEMENT AGREEMENT OR THE JOINT BUSINESS AGREEMENT OR ANY TERMINATION OF THIS AGREEMENT, THE ALLIANCE SETTLEMENT AGREEMENT OR THE JOINT BUSINESS AGREEMENT, EVEN IF SUCH PARTY OR ITS AFFILIATES KNEW OR SHOULD HAVE KNOWN OF THE EXISTENCE OF SUCH DAMAGES, AND EACH PARTY HEREBY IRREVOCABLY RELEASES AND WAIVES ANY CLAIMS AGAINST THE OTHER PARTY REGARDING SUCH DAMAGES.

11. Data Protection and Privacy. The parties will each comply with all Applicable Law and regulation regarding privacy and protection of personal data.

12. Affiliates. To the extent this Agreement or an Alliance Implementation Agreement provides for or contemplates participation of a party's Affiliates in the cooperative relationships described herein or therein, the parties will include such Affiliates (including for the avoidance of doubt any Affiliates acquired after the date of this Agreement) in the coordination and cooperation contemplated in this Agreement, subject to receipt of all necessary approvals of Competent Authorities. The parties agree that, subject to receipt of such approvals, the inclusion of the other party's Affiliates will be pursuant to this Agreement or the relevant Alliance Implementation Agreement and will not require the execution of separate subsidiary coordination agreements, except as otherwise agreed by the parties. If and to the extent the transactions or activities contemplated by this Agreement include the cooperation or participation of a party's Affiliates, such party will cause such Affiliates to cooperate or participate in such transaction or activity. The participation of an Affiliate in such coordination and cooperation activities will automatically terminate when the party to which it is affiliated ceases participating in the coordination and cooperation activities contemplated by this

Agreement. Each party shall be responsible for its Affiliates' compliance with this Agreement.

13. Compliance with Laws and Regulations. Each party represents, warrants, and agrees that performance of its respective obligations under this Agreement shall be conducted in compliance in all material relevant respects with, and it shall have all required licenses under, any Applicable Law including, when obtained, all Government Approvals.

14. Amendment; Waiver.

A. Amendment. This Agreement may be amended only by a written instrument signed by each party.

B. Waiver. No failure to exercise and no delay in exercising, on the part of any party, any right, remedy, power or privilege hereunder, will operate as a waiver thereof, nor will any single or partial exercise of any right, remedy, power or privilege hereunder preclude any other or further exercise thereof or the exercise of any other right, remedy, power or privilege. The rights, remedies, powers and privileges herein provided are cumulative and not exclusive of any rights, remedies, powers and privileges provided by law. The failure of a party to insist upon a strict performance of any of the terms or provisions of this Agreement, or to exercise any option, right or remedy herein contained, will not be construed as a waiver or as a relinquishment for the future of such term, provision, option, right or remedy, but the same will continue and remain in full force and effect. No waiver by a party of any term or provision of this Agreement will be deemed to have been made unless expressed in writing and signed by such party.

15. Assignment. Neither party may assign, novate or transfer or permit the assignment, novation or transfer of this Agreement (or any rights hereunder) without the prior written consent of the other party, which consent may be withheld in such party's sole discretion. Notwithstanding any provision herein to the contrary, Qantas hereby agrees and consents to any merger, stock transfer, asset transfer or other corporate restructuring that is necessary or convenient to achieve American's merger with US Airways and that involves American and American Airlines Group Inc. ("**AAL**") and/or any other wholly-owned subsidiary or subsidiaries of AAL (an "**Internal Restructuring**" and such subsidiaries, together with AAL, each an "**AAL Party**") and any related assignment or transfer of this Agreement to an AAL Party that may occur as a result of such Internal Restructuring, provided that the resulting party to this Agreement is the carrier that operates American's Codeshared Routes (as defined under the Codeshare Agreement). Qantas waives any right Qantas may have to terminate, amend or modify this Agreement and any claim of breach or default hereunder in each case arising in connection with or as a result of such Internal Restructuring.

16. Independent Contractor. Each party is an independent contractor. Nothing in this Agreement is intended or will be construed to create or establish any agency relationship (except to the extent a party is expressly in writing designated to serve as agent for the other party), partnership or fiduciary relationship between the parties. Neither party has

authority to act for or to incur any obligations on behalf of or in the name of the other party and neither party shall be liable to any third party for actions of the other party. Each party will remain an entirely separate corporate entity, and unless otherwise expressly provided herein or in an Alliance Implementation Agreement, will retain independent decision-making and managerial authority regarding all matters.

17. Third parties. This Agreement is binding upon and inures to the benefit of the parties and their successors and permitted assigns. Subject to Section 12, all rights, remedies and obligations of the parties hereunder will accrue and apply solely to such parties and their successors and assigns and there is no intent to benefit any third parties. In particular, a person who is not a party to this Agreement shall have no right under the Contracts (Rights of Third Parties) Act 1999 to enforce any of its terms.

18. Force Majeure. Neither party will be liable for delays or failures to perform under this Agreement caused by a Force Majeure Event, provided that no obligation to make a payment shall be excused or limited by virtue of any Force Majeure Event.

19. Further Assurances. Subject to Applicable Law, each party will perform such further acts and execute and deliver such further instruments and documents at such party's expense, as may be required by Applicable Law or as may be reasonably requested by the other party to carry out and effectuate the purposes of this Agreement.

20. Counterparts. This Agreement may be executed in counterparts, which taken together will constitute one and the same instrument. Execution may be effected by delivery of facsimiles of signature pages (and the parties will follow such delivery by prompt delivery of originals of such pages or the signed Agreement in full).

21. Headings; Construction. The headings used in this Agreement are for convenience only and are not intended to change the meanings of the provisions hereof. As used in this Agreement, the words "include" and "including," and variations thereof, will be deemed to be followed by the words "without limitation" and the words "commercially reasonable efforts" will mean "all reasonable but commercially prudent endeavors." Each party agrees to act in good faith in relation to the exercise of its rights and performance of its obligations under this Agreement.

22. Severability.

    A. If any provision of this Agreement is or becomes illegal, invalid or unenforceable under Applicable Law, such provision shall be severed from this Agreement in the jurisdiction in question and shall not affect the legality, validity or enforceability of the remaining provisions of this Agreement nor the legality, validity or the enforceability of such provision under the law of any other jurisdiction.

    B. If, in the reasonable opinion of either party, any such severance affects the commercial basis of this Agreement, the party shall so inform the other party and the parties shall negotiate in good faith to agree upon modification of this Agreement so as to maintain the balance of the commercial interests of the

parties. If, however, such negotiations are not successfully concluded within 90 days from the date a party has informed the other that the commercial basis has been affected, either party may terminate this Agreement by giving at least a further 180 days' prior written notice to the other party.

23. Entire Agreement.

A. This Agreement, the Joint Business Agreement and the Alliance Settlement Agreement represent the entire agreement of the parties with respect to their subject matter and, as of the date first written above, terminate and supersede any prior or contemporaneous agreements, discussions, undertakings and understandings, whether written or oral, expressed or implied, between the parties with respect to the same subject. To the extent there is any conflict between this Agreement and any Alliance Implementation Agreements, the terms of the applicable Alliance Implementation Agreement shall control solely as to the subject matter thereof.

B. Neither party has entered into this Agreement, the Joint Business Agreement or the Alliance Settlement Agreement in reliance upon any statement, representation, warranty, undertaking, assurance, promise, understanding or other provision made by or on behalf of the other party, any of its representatives or any other person which is not expressly set out in this Agreement, the Joint Business Agreement or the Alliance Settlement Agreement.

24. Costs and Expenses. Each party will be liable for its own legal, accounting, consulting and any and all other costs and expenses, incurred with respect to the negotiation, preparation and execution of this Agreement and the Alliance Implementation Agreements.

EXECUTION VERSION

AMENDED AND RESTATED ALLIANCE AGREEMENT – EXECUTION PAGE

IN WITNESS WHEREOF, the parties have caused this Agreement to be duly executed and delivered effective as of the date written above.

AMERICAN AIRLINES, INC.

By:_____
Name: Doug Parker
Title: Chief Executive Officer
Date:

QANTAS AIRWAYS LIMITED

By:_____
Name: Alan Joyce
Title: Chief Executive Officer
Date:

EXECUTION VERSION

AMENDED AND RESTATED ALLIANCE AGREEMENT – EXECUTION PAGE

IN WITNESS WHEREOF, the parties have caused this Agreement to be duly executed and delivered effective as of the date written above.

AMERICAN AIRLINES, INC.

By:_____
Name: Doug Parker
Title: Chief Executive Officer
Date:

QANTAS AIRWAYS LIMITED

By:_____
Name: Alan Joyce
Title: Chief Executive Officer
Date: 3 NOVEMBER 2017

SCHEDULE 1
to
AMENDED AND RESTATED ALLIANCE AGREEMENT

DEFINITIONS

"**Alliance Implementation Agreement**" means any of the following agreements between the parties, individually or collectively, as the context requires: this Agreement, the Joint Business Agreement, the Alliance Settlement Agreement, the Codeshare Agreement, each Frequent Flyer Agreement and the Lounge Access Agreement, and any amendments or successor agreements.

"**Alliance Settlement Agreement**" means that certain Amended and Restated Alliance Settlement Agreement by and between American and Qantas of even date herewith, and any amendments or successor agreements.

"**Affiliate**" means, with respect to any person or entity, any other person or entity, directly or indirectly, as of or after the effective date of this Agreement Controlling, Controlled by, or under Common Control with, such person or entity. Where a party has an equity interest in another carrier, but does not have Control of the other carrier, the other carrier would not be deemed an "Affiliate." For example, as of the Effective Date, (a) Qantas has an equity interest in Jetstar Asia Airways Pte Ltd ("**Jetstar Asia**") and Valuair Ltd ("**Valuair**"), but does not Control Jetstar Asia or Valuair, so as of the effective date of this Agreement, Jetstar Asia and Valuair are not deemed Affiliates of Qantas, but (b) Qantas does have Control of Jetstar Airways Pty Ltd ("**Jetstar Australia**"), so as of the Effective Date, Jetstar Australia is deemed an Affiliate of Qantas.

"**Applicable Law**" means all applicable laws of any jurisdiction including ordinances, judgments, decrees, injunctions, writs, and orders or like actions of any Competent Authority and the rules, regulations, orders or like actions of any Competent Authority and the interpretations, licenses and permits of any Competent Authority.

"**Australian Antitrust Immunity**" means authorization or interim authorization under the Competition and Consumer Act 2010 (Commonwealth of Australia) of the transactions and activities contemplated in this Agreement, the Joint Business Agreement, and if applicable, in any of the other Alliance Implementation Agreements.

"**Australian Region**" means Australia and New Zealand.

"**Business Day**" means any day other than Saturday, Sunday or any other day on which banking institutions either in New York or in Sydney (or both) are required by law to be closed.

"**Competent Authority**" means any supranational, national, federal, state, county, local or municipal government body, bureau, commission, board, board of arbitration, instrumentality, authority, agency, court, department, minister, ministry, official or public or statutory person (whether autonomous or not) having jurisdiction over this Agreement or either party, including, for the avoidance of doubt, the United States Departments of Justice and Transportation and the Australian Department of Infrastructure and Regional Development, the Civil Aviation Safety

Authority, the Australian Competition and Consumer Commission, and any similar authority that replaces them.

"**Control**" (which shall be deemed to refer interchangeably to "**Controlling**," "**Controlled by**" and "**under Common Control with**") shall mean the power of any person, or persons acting as a group, directly or indirectly, to direct or cause the direction of the management and policies of another person or entity, whether through the ownership of voting securities or by contract or otherwise. Where a party to this Agreement is a shareholder in another carrier, but absent Controlling other shareholders or being under Common Control with other shareholders in the carrier, the party cannot unilaterally direct or cause the direction of management and policies of the carrier, then that party will not be deemed to "Control" such carrier for purposes of this Agreement.

"**Force Majeure Event**" means acts of God, war, terrorism, sabotage, strikes, labor disputes, work stoppage, fire or events beyond the reasonable control of a party.

"**Franchisee**" means in relation to a party, another carrier, other than an Affiliate of such party, that operates generally using the service standards and the branding and livery of such party.

"**Governmental Approvals**" means all orders, permits, licenses, registrations, waivers, authorizations, exemptions, confirmations and approvals of any Competent Authority, including US Antitrust Immunity and Australian Antitrust Immunity, which are necessary, or are reasonably considered by a party to be material and appropriate to be obtained in connection with this Agreement and the transactions contemplated hereby.

"**Implementation Date**" means the date when the parties have received both Australian Antitrust Immunity and US Antitrust Immunity, as evidenced by the date of notice letter received from the Competent Authority which is last to provide the US Antitrust Immunity or Australian Antitrust Immunity, as applicable.

"**Joint Business Agreement**" means that certain Amended and Restated Joint Business Agreement by and between American and Qantas of even date herewith, and any amendments or successor agreements.

"**Joint Business**" means the joint business arrangements contemplated by the Joint Business Agreement regarding the operation of non-stop routes between North America and the Australian Region.

"**North America**" means the United States of America (including Puerto Rico and the U.S. Virgin Islands but excluding Guam and other U.S. territories), Canada and Mexico.

"**oneworld Alliance**" means the multilateral global airline alliance branded as such, or any successor thereto.

"**US Antitrust Immunity**" means the approval, exemption, and immunization of the parties, pursuant to 49 U.S.C. sections 41308 and 41309, from the application of all United States antitrust laws, as defined therein, for all transactions and activities contemplated in this Agreement, the Joint Business Agreement, the Alliance Settlement Agreement, and if applicable,

in any of the other Alliance Implementation Agreements.

EXECUTION VERSION

CONFIDENTIAL

AMENDED AND RESTATED

ALLIANCE SETTLEMENT AGREEMENT

between

AMERICAN AIRLINES, INC.

and

QANTAS AIRWAYS LIMITED

AMENDED AND RESTATED ALLIANCE SETTLEMENT AGREEMENT

This **AMENDED AND RESTATED ALLIANCE SETTLEMENT AGREEMENT**, dated as of November 3, 2017 (the "Effective Date"), is made by and between

American Airlines, Inc., a corporation organized under the laws of the State of Delaware, having its principal office at 4333 Amon Carter Boulevard, Fort Worth, Texas 76155, United States of America ("American"); and

Qantas Airways Limited (ABN 16 009 661 901), having its registered office at Qantas Centre, 10 Bourke Road, Mascot, New South Wales 2020 Australia ("Qantas").

RECITALS

1. American and Qantas are entering into an Amended and Restated Joint Business Agreement (together with any amendments or successor agreements, the "Joint Business Agreement") on the same date as this Agreement.

2. The Joint Business Agreement contemplates that the parties will enter into this Agreement as of the Effective Date and that this Agreement will become effective on the Implementation Date. This Agreement provides for settlement between the parties in recognition that each party separately derives revenue from its separate airline business which in turn contributes to the objectives of the Alliance.

3. This Agreement expressly supersedes, as of the Effective Date, the Alliance Settlement Agreement between the parties, dated June 9, 2015 (the "2015 Alliance Settlement Agreement").

NOW THEREFORE, in consideration of the mutual covenants and promises in this Agreement, the parties hereby agree as follows:

1 DEFINITIONS, EFFECTIVENESS AND SUPREMACY

1.1 Definitions. Terms herein with their initial letters capitalized shall have the meanings ascribed to them in Appendix 1 to this Agreement or where they are elsewhere defined in this Agreement (including in the Appendices hereto). Such ascribed meanings shall be equally applicable to both the singular and the plural forms of such terms. References in this Agreement to Sections shall refer to Sections of the main text of this Agreement unless stated otherwise. As used in this Agreement, the words "include" and "including," and variations thereof, will be deemed to be followed by the words "without limitation" and the words "commercially reasonable efforts" will mean "all reasonable but commercially prudent endeavors." Each party agrees to act in good faith in relation to the exercise of its rights and performance of its obligations under this Agreement.

1.2 Implementation of this Agreement. The parties agree that this Agreement shall be implemented as of and from the Implementation Date.

1.3 Supremacy of this Agreement. This Agreement shall take precedence over any provisions of the Joint Business Agreement, the Alliance Agreement and the Codeshare Agreement that are inconsistent herewith with regard to the subject matter of this Agreement.

2 ALLIANCE SETTLEMENT

2.1 Formula for Alliance Settlement. For each Accounting Period, except for either party's Excess Capacity Revenue Amount, each party will receive an amount (its "Retained Revenue") equal to the product of its Attributed Proportion multiplied by the Joint Services Revenue Amount; provided, however, that for the purposes of this Section 2.1, the Revenue Amount for Qantas shall first be reduced by the Qantas RESK Adjustment. Qantas shall retain the amount of the Qantas RESK Adjustment for the applicable Accounting Period. The Alliance Settlement provisions regarding any Excess Capacity are set forth in Section 3.1. Each party's Retained Revenue, the Joint Services Revenue Amount, the Qantas RESK Adjustment, and any Excess Capacity Revenue Amounts will each be calculated in AUD, following conversion, if applicable, from other currencies as specified in Appendix 2.

2.2 Duration of Alliance Settlement. The parties will engage in Alliance Settlement from the Implementation Date until the effective date of termination of this Agreement.

3 CERTAIN OTHER PAYMENTS

The parties agree that, in addition to Alliance Settlement pursuant to Section 2, certain other deposits and payments shall be made by the parties hereunder. These deposits and payments are (a) payment for any Excess Capacity pursuant to Section 3.1, and (b) payment of any Carrier Surcharges pursuant to Section 3.2.

3.1 Valuation and Settlement of Excess Capacity. Excess Capacity will be subject to settlement under the Alliance Settlement provisions specified in this Section 3.1 at the end of each Year. Each party will be entitled to receive an equal portion (its "Excess Capacity Retained Revenue") of the aggregate Excess Capacity Revenue Amounts of the parties, regardless of which party actually accrued such Excess Capacity Revenue Amount. For clarity, the Qantas RESK Adjustment will not be deducted when calculating Excess Capacity Revenue Amounts for the parties. Excess Capacity Payments will be set off between the parties for the applicable annual Accounting Period so that only one payment will be made from one party to the other in any annual Accounting Period.

3.2 Carrier Surcharge Remittance. Where a party acts as a Ticketing Carrier with respect to the Services of an Operating Carrier (the "Operating Carrier Services"), the Ticketing Carrier will collect any Carrier Surcharges for the Operating Carrier Services on behalf of the Operating Carrier and shall remit to the Operating Carrier any Carrier Surcharges applicable to an uplifted flight coupon for the Operating Carrier Services that are attributable to the Operating Carrier in

accordance with the methodologies and procedures described in the QAJB Accounting Manual. Carrier Surcharges will be remitted at least monthly at a time and frequency to be agreed by the parties. Carrier Surcharges do not include government taxes or fees that are remitted to third parties such as airports. The parties intend and agree that the QAJB Accounting Manual will include, among other items or procedures relating to Carrier Surcharges, the items specifically listed below in Sections 3.2.1 to 3.2.3. Notwithstanding the above, any Carrier Surcharges applicable to any tickets issued pursuant to any frequent flyer program agreements between the parties shall be dealt with in accordance with the provisions of the applicable agreement.

3.2.1 For sector-based Carrier Surcharges, the Ticketing Carrier will remit to the Operating Carrier the Carrier Surcharges actually collected for the sectors included in the Operating Carrier Services.

3.2.2 For Carrier Surcharges based on the origin and destination ("O&D") of the applicable flight, the Ticketing Carrier will prorate the Carrier Surcharges actually collected by the Ticketing Carrier across the O&D sectors for which the Carrier Surcharges were collected (based on a straight rate pro-ration using IATA weighted miles). The Ticketing Carrier will then remit to the Operating Carrier its prorated proportion of the applicable Carrier Surcharges for the O&D sectors included in the Operating Carrier Services.

3.2.3 For the avoidance of doubt, Carrier Surcharges collected by a Ticketing Carrier and remitted to the Operating Carrier that are attributable to Operating Carrier Services that are: (a) included in the Joint Services will be deemed Included Revenue of the Operating Carrier; and (b) not included in the Joint Services will not be deemed Included Revenue of the Operating Carrier, in each case for purposes of Alliance Settlement under Section 2.

4 MONTHLY AND ANNUAL PROCEDURES FOR THE CALCULATION AND AUDIT OF ALLIANCE SETTLEMENT

4.1 Monthly Procedures for Calculation of Carrier Reporting Items and Final Calculations.

4.1.1 Periodic Revenue Statement. On a date (each, a "Periodic Delivery Date") within 15 Business Days after the end of each monthly Accounting Period, each party agrees to prepare, or cause to be prepared, and deliver to the other party a preliminary report (a party's "Periodic Revenue Statement") containing its Carrier Reporting Items for such Accounting Period, in the currencies for each line item specified in Appendix 2, in a format to be mutually-agreed by the parties. The Carrier Reporting Items shall include any adjustments to amounts reported in a previous Accounting Period as a result of such adjusted amounts becoming available in the ordinary course in accordance with the Alliance Accounting Standard Principles. Any

such adjusted amounts shall reflect the IATA Exchange Rate effective at the date of conversion in accordance with Appendix 2. The calculations of Carrier Reporting Items shall be made cumulatively. The Periodic Revenue Statement will contain explanations of material trends or changes, such as any material customer policy changes or similar developments that occurred during the applicable Accounting Period. The Carrier Reporting Items set forth in the first Periodic Revenue Statement include, to the extent applicable, the Carrier Reporting Items applicable to any Scheduled Passenger Services of the parties between North America and the Australian Region, beginning on the Implementation Date.

4.1.2 Reporting of Periodic Final Calculations. Following review by each party of the other party's Periodic Revenue Statements, but in any event by no later than the fifth Business Day following the Periodic Delivery Date, each party shall prepare, or cause to be prepared, and deliver to the other party the final calculations of its Carrier Reporting Items for that Accounting Period (the "Periodic Final Calculations") in an updated Periodic Revenue Statement, marked to show any changes from such party's initial Periodic Revenue Statement for that Accounting Period, including an explanation of any material variances from such party's initial Periodic Revenue Statement.

4.1.3 Final Determination of Relevant Amounts. Subject to the provisions of Section 4.9, each party's Periodic Settlement Payment for a monthly Accounting Period shall be calculated based on the Periodic Final Calculations of each party. If the parties are then in a good faith dispute regarding their respective Periodic Final Calculations for that Accounting Period, they shall each make any Periodic Settlement Payment that they in good faith believe is required and seek to resolve their dispute regarding the disputed portion as soon as possible thereafter.

4.2 Periodic Settlement Payments. Upon completion of the calculation process outlined in Section 4.1 for each monthly Accounting Period, each party agrees to pay the other party any Periodic Settlement Payment due for that Accounting Period as a result of the calculations specified in Section 4.1 in AUD. Each party agrees to make any payments required by this Section 4.2 through the IATA Clearing House in accordance with its procedures, within 25 Business Days following the end of the applicable Accounting Period. Periodic Settlement Payments will be set off between the parties for the applicable monthly Accounting Period so that only one payment will be made from one party to the other in any monthly Accounting Period.

4.3 Periodic Correcting Payments. Without limiting Section 4.9, if during any Year, before the Final Settlement Payment is determined pursuant to Section 4.4, the parties determine that prior Periodic Settlement Payments within that Year were not calculated in accordance with this Agreement or the Alliance Standard

Accounting Principles, then the next Periodic Settlement Payment shall be adjusted accordingly.

4.4 Annual Procedures for Calculation of Carrier Reporting Items and Final Calculations.

4.4.1 Annual Revenue Statement. Each party's final Periodic Revenue Statement for each Year will also serve as its "Annual Revenue Statement" for purposes of this Section 4.4.

4.4.2 Review of Annual Revenue Statements.

4.4.2.1 As soon as reasonably practicable after receipt of the other party's Annual Revenue Statement, each party shall instruct its external auditors to carry out and complete an agreed-upon procedures review, or other review as agreed between the parties, of its Annual Revenue Statement for the purposes of issuing, within 180 days after receipt of the other party's Annual Revenue Statement, a report of factual findings to confirm whether the Included Revenue, Included Costs and Capacity for that Year have been calculated in accordance with the terms of this Agreement and the Alliance Standard Accounting Principles ("Annual Auditor Report"). The review following Year One will also include each party's Included Revenue, Included Costs and Capacity for the Pre-Implementation Period.

4.4.2.2 Each party agrees to provide its Annual Auditor Report to the other party following receipt of the same by its auditors. If, as a result of the agreed procedures review, a party's auditors notify that party in writing that they are unable to issue the Annual Auditor Report or that adjustments are required (and specifying, where possible, the adjustments required) to be made to that party's Included Revenue, Included Costs and Capacity for the relevant Year in order to issue the Annual Auditor Report, then each party agrees to discuss with its auditors the basis upon which any conclusion is to be issued in place of the Annual Auditor Report or such adjustments, as the case may be, in each case in good faith.

4.4.2.3 Following determination of each party's respective Carrier Reporting Items, each party shall instruct its auditors to issue the Annual Auditor Report, if they have not already done so, and each party's respective Carrier Reporting Items for the relevant Year shall be amended accordingly. No separate Annual Auditor Report is required for Year One if it is less than six months in which case Year One will be included in the Annual Auditor Report for the first Year.

4.4.2.4 If either party's review of the Pre-Implementation Period reveals a variance (whether positive or negative), the parties will review and discuss the reason for the variance and (a) Qantas will correct and restate the Qantas RESK Adjustment (which corrections will be reflected in the Alliance Standard Accounting Principles) and/or (b) a party will adjust its Revenue Amount and General Capacity Unit Revenue for the Pre-Implementation Period, as applicable, to conform with the review results and the Alliance Standard Accounting Principles, which may have a follow-on effect on affected Periodic Settlement Payments and Final Settlement Payments.

4.4.3 Reporting of Annual Final Calculations. On a date (each, an "Annual Delivery Date") within 15 days following each party's receipt of its Annual Auditor Report, each party agrees to prepare, or cause to be prepared, and deliver to the other party the final calculations of its Carrier Reporting Items for that Year, which reflect the findings of the Annual Auditor Report (the "Annual Final Calculations"). Each party agrees to present its Annual Final Calculations in an updated Annual Revenue Statement, marked to show any changes from such party's initial Annual Revenue Statement for that Year, including an explanation of any material variances from such party's initial Annual Revenue Statement.

4.4.4 Objections to Annual Final Calculations. Within 30 days after the Annual Delivery Date, each party will complete its review of the other party's Annual Final Calculations and notify the other party in writing regarding any aspect of such party's Annual Final Calculations that it believes may not have been prepared in accordance with this Agreement or the Alliance Standard Accounting Principles (or if based on estimates, any aspect it believes may not have been reasonably estimated) and specifying the changes proposed to be made in order for such Annual Final Calculations to be viewed as conforming to this Agreement and the Alliance Standard Accounting Principles. The other party shall then have 15 days after the receipt of such objection to review and to respond to the objection.

4.4.5 Final Determination of Relevant Amounts. Subject to the provisions of Section 4.9, each party's Final Settlement Payment for a Year shall be calculated based on the Annual Final Calculations of each party. If the parties are then in a good faith dispute regarding their respective Annual Final Calculations for that Year, they shall each make any Final Settlement Payment that they in good faith believe is required and seek to resolve their dispute regarding the disputed portion as soon as possible thereafter.

4.5 Final Settlement Payment. Upon completion of the calculation process outlined in Section 4.4 for each Year, each party agrees to pay the other party (a) any Final Settlement Payment due for that Year as a result of the calculations specified in

Section 4.4; and (b) any Excess Capacity Payment due the other party for such Year as a result of the calculations specified in Section 3.1, in each case in AUD. Each party agrees to make any payments required by this Section 4.5 through the IATA Clearing House in accordance with its procedures, within 30 days following delivery of the Annual Final Calculations for that Year. Each party's payments under this clause will be set off between the parties for the applicable Year so that only one payment will be made from one party to the other in the applicable Final Settlement Payment.

4.6 [redacted]

4.6.1 [redacted]

4.6.2 [redacted]

4.7 Interest on Late Payments. If any payment amount hereunder is overdue, and it is determined that a party owed such amount to the other party, then the party owing such amount shall pay interest at the Default Rate on the amount owed to the other party, from the last date on which the proper payment was due until the date actually paid.

4.8 Interest Accrual. Interest shall not accrue except in accordance with Section 4.7.

4.9 Errors in Calculation of Joint Services Revenue Amount. If it is determined by the parties or the auditors that any Annual Revenue Statement was not calculated in accordance with this Agreement or the Alliance Standard Accounting Principles (the Year represented by such Annual Revenue Statement, an "Incorrect Year"), then each party's Retained Revenue or other payments under this Section 4 shall be restated for each such Incorrect Year and a corresponding correcting payment (a "Correcting Payment") will be made by the party that received more than it was due; provided, however, that no such Correcting Payment shall be made if the Annual Revenue Statement was settled more than three years before the date on which such error was identified. A party that wishes to claim that a Year is an Incorrect Year shall promptly notify the other party of its claim in order that discussions among the parties may be commenced.

4.10 Open Books Policy; Access; Retention of Records.

4.10.1 Open Books. From the Implementation Date, subject to Applicable Law, each party agrees to, and agrees to cause its Affiliates to, promptly make available to the other party and the other party's auditors any financial and operating data and other information directly or indirectly related to the Joint Services as reasonably required by the other party in order to review and confirm the accuracy of such party's payments in accordance with this Agreement and the Alliance Standard Accounting Principles. For the purposes of the foregoing sentence, promptly shall be deemed to mean within ten Business Days with respect to information that is readily available and, with respect to other information, as promptly as reasonably practicable. Neither party will be required to disclose information to the other party in breach of any confidentiality obligation to a third party but will disclose it to the other party's auditors if required under this Section 4.10 provided that the auditors are subject to confidentiality obligations.

4.10.2 Access. From the Implementation Date, for the purposes of Section 4.10.1 upon reasonable notice, and subject to Applicable Law, the parties shall, and shall cause each of their respective Affiliates to, afford the other party and the other party's auditors reasonable access during normal business hours upon reasonable prior notice to all of their, and their respective Affiliates' personnel, books and records (including their accounting information and the outputs of their accounting systems), each to the extent directly or (subject to Applicable Law) indirectly related to the Joint Services as reasonably required by the other party to review and confirm the accuracy of each party's payments, including any work papers of either party's, or its Affiliates', respective auditors with respect thereto.

4.10.3 Retention of Records. Each party shall retain such output and backup as may reasonably be required to verify the calculations of payments due under this Agreement, for at least three years after the end of each Year.

5 TAXES

5.1 The consideration payable under this Agreement ("Base Amount") for the supply of any goods, services or any other thing is exclusive of Consumption Tax. If Consumption Tax is imposed on a supply made pursuant to this Agreement, the recipient of the supply must pay, in addition to the Base Amount and subject to receiving a tax invoice, an amount equal to the Consumption Tax payable by the supplier in respect of the supply.

5.2 Each party shall be solely responsible for any Income Taxes imposed with respect to any income or profits received or recognized for tax purposes by such party in connection with the transactions contemplated by this Agreement.

5.3 Nothing in this Agreement is intended or shall be construed to constitute a transfer of any assets or to create or establish any partnership, joint venture or any

other separate incorporated or unincorporated entity or fiduciary relationship between the parties for tax purposes in the United States, Australia or any other country where provisions of this Agreement may need to be implemented. Furthermore, unless required by Applicable Law no party will make any tax election, file a declaration and/or statement or tax return that is or may be construed to be inconsistent with or detrimental to the intent of the parties to not create a partnership for tax purposes in any jurisdiction, national, provincial, state or local subdivision in any country, nor withhold or deduct tax payments under this Agreement on the assumption that there is a partnership or like entity. The parties shall promptly consult from time to time with respect to appropriate disclosure by the parties and in response to any tax audit, tax appeal, tax litigation or request for a tax ruling in which tax aspects of this Agreement are subject to review. Each party agrees not to bind the other party with respect to any tax audit, tax appeal or tax litigation. Without limiting the preceding sentence, each party shall be considered to have retained such rights and obligations (if any) as are provided for under any Applicable Law with respect to any tax examination, proposed adjustment or proceeding relating to this Agreement.

5.4 Each party agrees to notify the other party promptly upon receipt from any governmental tax authority of any notice or request for information relating to this Agreement, or the assessment of any tax relating to this Agreement. The parties agree to consult with each other in connection with the drafting of responses made to the government tax authority. Each party will use its reasonable endeavors to provide information or other documentation to enable or assist the other party to comply with its taxing authority's requirements or to meet any tax compliance, registration or administration obligations that may arise in any jurisdiction.

5.5 Each party agrees to promptly notify the other party in the event such party becomes aware of a threat or requirement to withhold any tax, impost or other governmental charge in connection with payments made or received under this Agreement, and each party agrees to discuss with the other party how best to address and mitigate the effects of any such threat or requirement. It is agreed that the payments to the payee shall be exclusive of withholding such that the payee will receive the net amount after deduction of such withholding tax.

5.6 The parties shall consult on the selection of outside tax counsel and other tax advisors retained to jointly represent the parties on tax matters relating to this Agreement and the sharing of expenses for the retention of the tax advisor on an equal basis or such other formula as agreed to by the parties.

5.7 Each party shall have the right to seek the opinion of independent tax counsel relating to this Agreement with the understanding and intent to share information with the other party as appropriate. Each party agrees to consult with the other party prior to disclosing any tax opinion with respect to this Agreement to any governmental tax authority.

5.8 Notwithstanding Section 2, this Agreement does not change the obligation or liability of either party to timely collect and remit any transportation taxes, government user fees, Consumption Tax, security fees or other taxes or government imposed fees required to be collected from passengers in connection with the sale of air transportation.

5.9 In the event one party pays a tax upon revenue attributed to the other party under the Alliance Settlement arrangements, such other party shall promptly reimburse the party for taxes paid on its behalf to the extent not creditable or refundable. Advance notice shall be provided to such other party and applicable documentation of taxes paid.

5.10 The provisions of this Section 5 shall survive the termination of this Agreement (a) for the period of time during which either of the parties may be liable for any Income Taxes under the applicable statute of limitations, and (b) for the duration of any audit, contest or controversy arising under this Agreement if still ongoing at the expiration of the applicable statutory time limit, and shall apply to any successors or additional parties to this Agreement.

6 TERM AND TERMINATION

6.1 Term. This Agreement will remain in effect for as long, but only for as long, as the Joint Business Agreement remains in effect. A party shall be entitled to terminate this Agreement only in accordance with the Joint Business Agreement and Section 21.2. This Agreement, the Alliance Agreement and the Joint Business Agreement set out the only circumstances in which this Agreement will terminate.

6.2 Effect of Termination. Termination of this Agreement shall be without prejudice to any rights or liabilities that accrued under this Agreement prior to termination. Sections 1, 4.10.3, 5.10, 6.2, 6.3, 7, 8, 9, 10, 13.2, 16 (with respect to the first sentence only), 20, 21.1, 22.2 and Appendix 1 shall survive any termination or expiration of this Agreement.

6.3 Payments upon Termination. If this Agreement terminates, the effective end date for Alliance Settlement will be deemed to be the date of the last Joint Services flight's scheduled departure from North America on the effective date of termination. Following the conclusion of the final monthly or annual Accounting Period, as applicable, the parties will calculate the amounts and adjustments for such Accounting Period and determine all payments to be made in accordance with the procedures for determining the Final Settlement Payment in Section 4.5.

7 CONFIDENTIALITY

7.1 Except for discussions with, and the provision of this Agreement and the other agreements contemplated hereby to, the relevant Competent Authorities and except as expressly provided in this Agreement or the relevant Alliance Implementation Agreement, neither party may sell, transfer, publish, disclose, display or otherwise make available the Confidential Information of the other

party to any third party without the prior written consent of the party whose Confidential Information is at issue except as may be required by Applicable Law (including requirements by oral questions, interrogatories, subpoenas, civil investigative demands or similar processes), in which case the party from whom disclosure is sought (the "Disclosing Party") will promptly notify the other party (the "Affected Party"). To the extent that the Affected Party objects to the disclosure of its Confidential Information, the Disclosing Party will (at the Affected Party's expense) use all reasonable efforts to (i) resist making any disclosure of such Confidential Information, (ii) limit the amount of such Confidential Information to be disclosed, and (iii) obtain a protective order or other appropriate relief to minimize the further dissemination of any Confidential Information to be disclosed. In addition, the parties shall not disclose the Confidential Information received to any of their respective Representatives except on a need-to-know basis for the purposes of implementing and administering this Agreement; provided, however, that prior to any such disclosure the Disclosing Party will inform all such Representatives of the confidential nature of the information, and that it is subject to this non-disclosure obligation, and will further instruct such Representatives to treat such information confidentially. Each party agrees to be responsible for any breach of the provisions set forth in this Section 7 by its respective Representatives. Neither party will use the Confidential Information of the other party for any purpose other than as expressly provided in this Agreement.

7.2 Each party acknowledges and agrees that each Affected Party will have no adequate remedy at law if there is a breach or threatened breach of this Section 7 and, accordingly, each Affected Party will be entitled to seek an injunction or other equitable or similar preventative relief available under the laws of any jurisdiction against the breaching or potentially breaching party or its Representatives for such breach or threatened breach. Nothing herein will be construed as a waiver of any other legal or equitable remedies which may be available to any Affected Party in the event of a breach or threatened breach of this Section 7 and any Affected Party may pursue any other such remedy, including the recovery of damages, notwithstanding the terms of Section 9.

7.3 The restrictions and obligations of a party receiving Confidential Information and the rights of the Affected Party under this Section 7 will survive the termination of this Agreement indefinitely.

8 NOTICES

8.1 Any notice or communication required or permitted hereunder must be in writing and sent by (i) personal delivery, (ii) expedited delivery service with proof of delivery, or (iii) registered or certified mail, postage prepaid, addressed as follows:

To American: American Airlines, Inc.
4333 Amon Carter Blvd.

MD 5675
Fort Worth, Texas 76155
U.S.A.
Attn: Corporate Secretary
Copy: Deputy General Counsel

To Qantas:

Qantas Airways Limited
Qantas Centre, 10 Bourke Road
Mascot NSW 2020
Australia
Attn: Head of Alliance Partnerships
Copy: General Counsel

or to such other address or to the attention of such other person as the applicable party hereafter designates by written notice sent in accordance herewith. Any such notice or communication will be deemed to have been given either at the time of personal delivery or, in the case of delivery by service or mail, as of the date of proof of delivery at the address and in the manner provided herein.

9 GOVERNING LAW AND ARBITRATION

9.1 THIS AGREEMENT AND THE RIGHTS AND OBLIGATIONS OF THE PARTIES ARISING OUT OF OR DIRECTLY RELATING TO THIS AGREEMENT SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF ENGLAND AND WALES (WITHOUT REGARD TO THEIR CONFLICT OF LAWS PRINCIPLES) INCLUDING ALL MATTERS OF CONSTRUCTION, VALIDITY AND PERFORMANCE.

9.2 Without limiting Section 7.2, in the event either party seeks to have a controversy or claim determined by an arbitrator, such party agrees to provide the other party prior written notice of such intent and to comply with this Section 9.2 before filing for arbitration. Such notice shall include a request for a special meeting of the Steering Committee (as defined in the Joint Business Agreement) to commence no later than 15 Business Days after the date of the notice. If no special meeting of the Steering Committee is held, or if the Steering Committee is not able to resolve the dispute, then the party seeking arbitration may send an additional notice at the end of such 15 Business Day period of its continuing intent to seek arbitration. At the end of an additional 15 Business Day period from delivery of this follow-up notice of intent to file for arbitration, the party seeking arbitration may file for arbitration without further delay. Following delivery of the initial notice of intent to arbitrate, the parties agree to use good faith efforts to resolve such controversy or claim; provided that the foregoing shall not prevent the party seeking arbitration from filing for arbitral review at the end of the second 15 Business Day period, unless a mutually-agreed resolution of the dispute has been found by such date or the parties have agreed otherwise. All disputes arising out of or in connection with this Agreement shall be submitted to the International Court of Arbitration of the International Chamber of Commerce

and shall be finally settled under the Rules of Arbitration of the International Chamber of Commerce by three arbitrators appointed in accordance with the said Rules, at least one of whom will be knowledgeable about the legal, marketing and other business aspects of the airline industry. The place of arbitration shall be London, England. The language of arbitration shall be English. The arbitrators shall award only such damages as are permitted to be awarded pursuant to this Agreement, the Joint Business Agreement and the Alliance Agreement. The arbitrators must render their award within 30 days following the last hearing scheduled by the arbitrators and at that time state the reasons for their award in writing. Nothing in this Agreement shall prevent either party or its Affiliates from seeking provisional measures from any court of competent jurisdiction, and any such request shall not be deemed incompatible with the agreement to arbitrate or a waiver of the right to arbitrate.

10 CONSEQUENTIAL DAMAGES

10.1 EXCEPT FOR DAMAGES ARISING FROM PERSONAL INJURY OR DEATH CAUSED BY NEGLIGENCE, FRAUD OR WILLFUL MISCONDUCT, AND EXCEPT FOR DAMAGES ARISING FROM THE BREACH OF ANY CONFIDENTIALITY OBLIGATION, NEITHER PARTY NOR ITS AFFILIATES WILL BE LIABLE FOR ANY LOSS OF PROFITS, LOSS OF REVENUE, LOSS OF CONTRACT, LOSS OF ANTICIPATED SAVINGS, OR ANY INDIRECT OR CONSEQUENTIAL LOSS, WHETHER BASED ON A CLAIM OF CONTRACT, TORT (INCLUDING NEGLIGENCE), BREACH OF STATUTORY DUTY, OR ARISING FROM ANY BREACH OR FAILURE TO PERFORM OR IMPROPER PERFORMANCE UNDER THIS AGREEMENT, THE ALLIANCE AGREEMENT OR THE JOINT BUSINESS AGREEMENT OR ANY TERMINATION OF THIS AGREEMENT, THE ALLIANCE AGREEMENT OR THE JOINT BUSINESS AGREEMENT, EVEN IF SUCH PARTY OR ITS AFFILIATES KNEW OR SHOULD HAVE KNOWN OF THE EXISTENCE OF SUCH DAMAGES, AND EACH PARTY HEREBY IRREVOCABLY RELEASES AND WAIVES ANY CLAIMS AGAINST THE OTHER PARTY REGARDING SUCH DAMAGES.

11 DATA PROTECTION AND PRIVACY

11.1 The parties will each comply with all Applicable Law and regulation regarding privacy and protection of personal data.

12 COMPLIANCE WITH LAWS AND REGULATIONS

12.1 Each party represents, warrants, and agrees that performance of its respective obligations under this Agreement shall be conducted in compliance in all material relevant respects with, and it shall have all required licenses under, any Applicable Law including, when obtained, all Government Approvals.

13 AMENDMENT; WAIVER

13.1 Amendment. This Agreement may be amended only by a written instrument signed by each party.

13.2 Waiver. No failure to exercise and no delay in exercising, on the part of a party, any right, remedy, power or privilege hereunder, will operate as a waiver thereof, nor will any single or partial exercise of any right, remedy, power or privilege hereunder preclude any other or further exercise thereof or the exercise of any other right, remedy, power or privilege. The rights, remedies, powers and privileges herein provided are cumulative and not exclusive of any rights, remedies, powers and privileges provided by law, unless expressly provided otherwise in this Agreement. The failure of a party to insist upon a strict performance of any of the terms or provisions of this Agreement, or to exercise any option, right or remedy herein contained, will not be construed as a waiver or as a relinquishment for the future of such term, provision, option, right or remedy, but the same will continue and remain in full force and effect. No waiver by a party of any term or provision of this Agreement will be deemed to have been made unless expressed in writing and signed by such party.

14 ASSIGNMENT

14.1 Neither party may assign, novate or transfer or permit the assignment, novation or transfer of this Agreement (or any rights hereunder) without the prior written consent of the other party, which consent may be withheld in such party's sole discretion. Notwithstanding any provision herein to the contrary, Qantas hereby agrees and consents to any merger, stock transfer, asset transfer or other corporate restructuring that is necessary or convenient to achieve American's merger with US Airways and that involves American and American Airlines Group Inc. ("**AAL**") and/or any other wholly-owned subsidiary or subsidiaries of AAL (an "**Internal Restructuring**" and such subsidiaries, together with AAL, each an "**AAL Party**") and any related assignment or transfer of this Agreement to an AAL Party that may occur as a result of such Internal Restructuring provided that the resulting party to this Agreement is the carrier that operates American's Codeshared Routes (as defined under the Codeshare Agreement). Qantas waives any right Qantas may have to terminate, amend or modify this Agreement and any claim of breach or default hereunder in each case arising in connection with or as a result of such Internal Restructuring.

15 INDEPENDENT CONTRACTOR

15.1 Each party is an independent contractor. Nothing in this Agreement is intended or will be construed to create or establish any agency relationship (except to the extent a party is expressly in writing designated to serve as agent for the other party), partnership or fiduciary relationship between the parties. Neither party has authority to act for or to incur any obligations on behalf of or in the name of the other party and neither party shall be liable to any third party for actions of the other party. Each party will remain an entirely separate corporate entity, and unless otherwise expressly provided herein or in an Alliance Implementation

Agreement, will retain independent decision-making and managerial authority regarding all matters.

16 THIRD PARTIES

16.1 This Agreement is binding upon and inures to the benefit of the parties and their successors and permitted assigns. All rights, remedies and obligations of the parties hereunder will accrue and apply solely to such parties and their successors and assigns and there is no intent to benefit any third parties, other than Affiliates of the parties to the extent provided in this Agreement. In particular, a person who is not a party to this Agreement shall have no right under the Contracts (Rights of Third Parties) Act 1999 to enforce any of its terms.

17 FORCE MAJEURE

17.1 Neither party will be liable for delays or failures to perform under this Agreement caused by a Force Majeure Event, provided that no obligation to make a payment shall be excused or limited by virtue of any Force Majeure Event.

18 FURTHER ASSURANCES

18.1 Subject to Applicable Law each party will perform such further acts and execute and deliver such further instruments and documents at such party's expense, as may be required by Applicable Law or as may be reasonably requested by the other party to carry out and effectuate the purposes of this Agreement.

19 COUNTERPARTS

19.1 This Agreement may be executed in counterparts, which taken together will constitute one and the same instrument. Execution may be effected by delivery of facsimiles of signature pages (and the parties will follow such delivery by prompt delivery of originals of such pages or the signed Agreement in full).

20 HEADINGS; CONSTRUCTION

20.1 The headings used in this Agreement are for convenience only and are not intended to change the meanings of the provisions hereof.

21 SEVERABILITY

21.1 If any provision of this Agreement is or becomes illegal, invalid or unenforceable under Applicable Law, such provision shall be severed from this Agreement in the jurisdiction in question and shall not affect the legality, validity or enforceability of the remaining provisions of this Agreement nor the legality, validity or the enforceability of such provision under the law of any other jurisdiction.

21.2 If, in the reasonable opinion of either party, any such severance affects the commercial basis of this Agreement, the party shall so inform the other party and

the parties shall negotiate in good faith to agree upon modification of this Agreement so as to maintain the balance of the commercial interests of the parties. If, however, such negotiations are not successfully concluded within 90 days from the date a party has informed the other that the commercial basis has been affected, either party may terminate this Agreement by giving at least a further 180 days' prior written notice to the other party.

22 ENTIRE AGREEMENT

22.1 This Agreement, the Alliance Agreement and the Joint Business Agreement represent the entire agreement of the parties with respect to their subject matter and, as of the date first written above, terminate and supersede any prior or contemporaneous agreements, discussions, undertakings and understandings, whether written or oral, expressed or implied, between the parties with respect to the same subject, including the 2015 Alliance Settlement Agreement. To the extent there is any conflict between this Agreement and any other Alliance Implementation Agreement, the terms of this Agreement shall control as to the subject matter hereof.

22.2 Neither party has entered into this Agreement, the Joint Business Agreement or the Alliance Agreement in reliance upon any statement, representation, warranty, undertaking, assurance, promise, understanding or other provision made by or on behalf of the other party, any of its representatives or any other person which is not expressly set out in this Agreement, the Joint Business Agreement or the Alliance Agreement.

AMENDED AND RESTATED ALLIANCE SETTLEMENT AGREEMENT – EXECUTION PAGE

IN WITNESS WHEREOF, the parties have caused this Agreement to be duly executed and delivered by their proper and duly authorized representatives as of the date first above written.

AMERICAN AIRLINES, INC.

By: _____
Name: Doug Parker
Title: Chief Executive Officer
Date:

QANTAS AIRWAYS LIMITED

By: _____
Name: Alan Joyce
Title: Chief Executive Officer
Date:

Appendix 1 – Definitions
Appendix 2 – Accounting Principles
Appendix 3 – Equivalent Seat Calculations for LAX-JFK and SYD-DFW

AMENDED AND RESTATED ALLIANCE SETTLEMENT AGREEMENT – EXECUTION PAGE

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AMERICAN AIRLINES, INC.

By: _____
Name: Doug Parker
Title: Chief Executive Officer
Date:

QANTAS AIRWAYS LIMITED

By: _____
Name: Alan Joyce
Title: Chief Executive Officer
Date: 3 NOVEMBER 2017

Appendix 1 – Definitions
Appendix 2 – Accounting Principles
Appendix 3 – Equivalent Seat Calculations for LAX-JFK and SYD-DFW

APPENDIX 1

DEFINITIONS

As used in this Agreement, terms with their initial letters capitalized (or otherwise defined) in the headings, recitals or elsewhere in this Agreement shall have the meanings ascribed to them below (or where otherwise defined) and references herein to Sections shall refer to Sections of the main text of this Agreement unless otherwise noted:

"Accounting One-off Item" has the meaning assigned to such term in Appendix 2.

"Accounting Period" means, as the context requires, (a) a calendar month calculated by calendar month and cumulatively with all previous months during that calendar year; (b) a Year, although Year One will be comprised of the partial calendar year measuring from the Implementation Date until the end of the calendar year when the Implementation Date occurs and for the Year in which Alliance Settlement ends, the Accounting Period that includes the last day of Alliance Settlement will end on (and include) the last day of Alliance Settlement; or (c) the Pre-Implementation Period, but only for the calculation of a party's Revenue Amount during the Pre-Implementation Period.

"Ad Hoc Changes" shall mean short term changes of up to three months of aircraft type or configuration on Joint Services operated by the applicable carrier due to the operating carrier's operational constraints, and does not include adding routes, scheduled frequencies or Capacity to take advantage of seasonal or specific opportunities that were not set forth in the Business Plan.

"Affiliate" means, with respect to any person or entity, any other person or entity, directly or indirectly, as of or after the Effective Date Controlling, Controlled by, or under Common Control with, such person or entity. Where a party has an equity interest in another carrier, but does not have Control of the other carrier, the other carrier would not be deemed an "Affiliate." For example, as of the Effective Date, (a) Qantas has an equity interest in Jetstar Asia Airways Pte Ltd ("Jetstar Asia") and Valuair Ltd ("Valuair"), but does not Control Jetstar Asia or Valuair, so as of the Effective Date, Jetstar Asia and Valuair are not deemed Affiliates of Qantas, and (b) Qantas has Control over Jetstar Airways Pty Ltd ("Jetstar Australia"), so as of the Effective Date, Jetstar Australia is a deemed Affiliate of Qantas.

"Agreed Route Distances" means the route distances listed in Appendix 2, which are based upon the Great Circle Distances obtained from the U.S. Department of Transportation's Bureau of Transportation Statistics.

"Agreement" means this Amended and Restated Alliance Settlement Agreement, including all Appendices hereto, as may be amended or modified from time to time in accordance herewith or therewith.

"Alliance Agreement" means that certain Amended and Restated Alliance Agreement by and between American and Qantas of even date herewith, and any amendments or successor agreements.

"Alliance Implementation Agreement" means any of the following agreements between the parties, individually or collectively, as the context requires: this Agreement, the Alliance Agreement, the Joint Business Agreement, the Codeshare Agreement, each Frequent Flyer Agreement, and the Lounge Access Agreement.

"Alliance Settlement" means the methodology, as set out in this Agreement, used by the parties to settle the Joint Services Revenue Amount.

"Alliance Standard Accounting Principles" means a mutually-acceptable accounting manual that the parties will develop to further document the accounting policies and principles agreed upon by the parties regarding Alliance Settlement, and any amendments thereto.

"Applicable Law" means all applicable laws of any jurisdiction including ordinances, judgments, decrees, injunctions, writs, and orders or like actions of any Competent Authority and the rules, regulations, orders or like actions of any Competent Authority and the interpretations, licenses and permits of any Competent Authority.

"Attributed Proportion" means, for each party, the quotient, expressed as a percentage, of (a) such party's Capacity on the Joint Services (not including any Excess Capacity) in an Accounting Period divided by (b) the Joint Services Capacity in such Accounting Period.

"AUD" means Australian Dollars.

"Australian Antitrust Immunity" means authorization or interim authorization under the Competition and Consumer Act 2010 (Commonwealth of Australia) of the transactions and activities contemplated in the Alliance Agreement, the Joint Business Agreement, this Agreement, and if applicable, in any of the other Alliance Implementation Agreements.

"Australian Region" means Australia and New Zealand.

"Business Day" means any day other than Saturday, Sunday or any other day on which banking institutions either in New York or in Sydney (or both) are required by law to be closed.

"CAD" means Canadian Dollars.

"Capacity" means, (i) as to a specific route and time period the product of (a) the aggregate number of Equivalent Seats flown on Joint Services during such period from the origin airport to the destination airport on such route, and vice versa, multiplied by (b) the Agreed Route Distances between such airports, and (ii) as to an individual party and time period, (a) the aggregate number of Equivalent Seats flown on Joint Services during such period from the origin airport to the destination airport by that party or its Affiliates, multiplied by (b) the Agreed Route Distances between such airports.

"Carrier Reporting Items" means, for the applicable Accounting Period and for each party, its Included Revenue (by flight pair), Included Costs (by flight pair), Revenue Amount (by flight pair), Capacity (by flight pair), Attributed Proportion, Retained Revenue, Carrier Surcharges for that Accounting Period and any of its data or information necessary to determine such Carrier Surcharges. For purposes of each party's Annual Revenue Statement, such party's Carrier Reporting Items shall also include its Excess Capacity, Excess Capacity Revenue Amount and

Excess Capacity Retained Revenue. Unless otherwise specified, each Carrier Reporting Item will be calculated and reportable based on the departure date for the applicable Joint Service to which each such Carrier Reporting Item relates.

"Carrier Surcharges" means any carrier imposed surcharges that are passenger revenue components collected at the time of ticket sale such as fuel surcharges, security surcharges and insurance surcharges (which in accordance with IATA coding convention would typically be filed as a "YR," "Q" or "YQ").

"Codeshare Agreement" means that certain Amended and Restated Codeshare Agreement, dated on or around December 31, 2016, by and between American and Qantas, and any amendments or successor agreements.

"Competent Authority" means any supranational, national, federal, state, county, local or municipal government body, bureau, commission, board, board of arbitration, instrumentality, authority, agency, court, department, minister, ministry, official or public or statutory person (whether autonomous or not) having jurisdiction over this Agreement or either party, including, for the avoidance of doubt, the United States Departments of Justice and Transportation and the Australia Department of Infrastructure and Regional Development, the Civil Aviation Safety Authority, the Australian Competition and Consumer Commission, and any similar authority that replaces them.

"Confidential Information" means (i) all confidential or proprietary information of a party and its Affiliates, including trade secrets, information concerning past, present and future research, development, business activities and affairs, finances, properties, methods of operation, processes and systems, customer lists, customer information (such as passenger name records or data) and computer procedures and access codes, and (ii) the terms and conditions of this Agreement and any reports, invoices or other communications between the parties given in connection with the negotiation or performance of this Agreement, and (iii) excludes (A) information already in a party's possession prior to its disclosure by the other party, (B) information obtained from a third person or entity that is not prohibited from transmitting such information to the receiving party as a result of a contractual, legal or fiduciary obligation to the party whose information is being disclosed, (C) information that is or becomes generally available to the public, other than as a result of disclosure by a party in violation of this Agreement, and (D) information that has been or is independently acquired or developed by a party, or its Affiliate, without violating any of its obligations under this Agreement.

"Consumption Tax" means any goods and services tax or value added tax imposed by the legislation of any jurisdiction on supplies of goods, services and any other thing.

"Control" (which shall be deemed to refer interchangeably with "Controlling," "Controlled by" and "under Common Control with") shall mean the power of any person or persons acting as a group, directly or indirectly, to direct or cause the direction of the management and policies of another person or entity, whether through ownership of voting securities or by contract or otherwise. Where a party to this Agreement is a shareholder in another carrier, but absent Controlling other shareholders or being under Common Control with other shareholders in the carrier, the party cannot unilaterally direct or cause the direction of management and policies of

the carrier, then that party will not be deemed to "Control" such carrier for purposes of this Agreement.

"Default Rate" shall mean 80 basis points above the interest rate per annum at which deposits in AUD are offered for three months using the Bank Bill Swap Rate as shown under the ticker 'ADBB3M' in Bloomberg Financial Markets, or if such service is not available, Page BBSW of the Reuters Money Service Monitor System (or such other page as may replace Reuters Page BBSW), at approximately 10:30 A.M., Sydney time, on the second full Business Day preceding the date on which interest shall begin to accrue pursuant to a provision of this Agreement.

"Direct" means any flight between two points, which includes one or more stops at an intermediate point. The flights between any intermediate points do not have local traffic rights and are not required to have the same flight number.

"Equivalent Seats" with respect to an aircraft type (a) means the number of seats specified in Appendix 2 or (b) if not specified in Appendix 2 for a specific aircraft type means the maximum number of high-density Y-cabin seats that can be configured on an aircraft type as provided by the manufacturer and which fall within the following criteria:

- Minimum seat pitch of 32"
- Minimum seat width of 17"
- Minimum cart/pax ratio of 0.05
- Maximum pax/lav ratio of 64
- Meet legal criteria for minimum aisles, cross aisles and door assist spaces

For any aircraft type not specified in Appendix 2, each party will submit a manufacturer-provided Equivalent Seat configuration for review by the other party at least three months prior to introducing a new aircraft type and the parties shall agree to the Equivalent Seats for such new aircraft type at least one month prior to introduction of such new aircraft type. Each submission must include a drawing of the configuration consistent with the criteria herein.

The Equivalent Seats for the Joint Services as at the Effective Date are set forth in Appendix 2 except, for the purpose of determining each party's Attributed Proportion for Qantas' LAX-JFK and SYD-DFW routes the Equivalent Seats will be calculated in accordance with Appendix 3. These shall remain fixed for the term of this Agreement unless otherwise agreed by the parties in writing.

"ESK" or "Equivalent Seat Kilometer" means one Equivalent Seat flown one kilometer.

"Excess Capacity" of a party means the portion of such party's Capacity attributable to its Joint Services, if any, that (a) was not specified in the Business Plan under the Joint Business Agreement or consented to or permitted by the other party in accordance with Section 3.2.2 of the Joint Business Agreement, including any Capacity attributable to new routes not previously flown by the parties between North America and the Australian Region that were not specified in the Business Plan or consented to by the other party; or (b) that is attributable to an Ad Hoc

Change that continues without the consent of the other party for more than three months unless consented to or permitted under Section 3.2.2 of the Joint Business Agreement.

"Excess Capacity Payment" equals (a) a party's Excess Capacity Revenue Amount for the Accounting Period, as adjusted in accordance with Section 4; less (b) its Excess Capacity Retained Revenue for that annual Accounting Period.

"Excess Capacity Revenue Amount" for each party means the product of (a) the quotient of the parties' total Revenue Amount in the annual Accounting Period divided by the parties' total Capacity on the Joint Services for that annual Accounting Period multiplied by (b) the number of ESKs represented by such party's Excess Capacity.

"Final Settlement Payment" means the excess, if any, of (a) a party's cumulative Revenue Amount for the Year, as adjusted in accordance with Section 2.1 and Section 4, over (b) the sum of (i) such party's earlier Periodic Settlement Payments for that Year that were actually previously paid by such party, and (ii) its Retained Revenue for that Year.

"Force Majeure Event" means an act of God, war, terrorism, sabotage, strikes, labor disputes, work stoppage, fire or events beyond the reasonable control of a party.

"Frequent Flyer Agreement(s)" means, as the context requires, that certain Qantas Frequent Flyer Participating Carrier Agreement, dated as of April 1, 2004, and that certain AAdvantage Participating Carrier Agreement, dated as of April 1, 2004, by and between American and Qantas, as amended, and any amendments or successor agreements.

"General Capacity Joint Services Unit Revenue" for each Accounting Period shall equal the Joint Services Revenue Amount (excluding the Excess Capacity Revenue Amount, if any) divided by the Joint Services Capacity.

"General Capacity Unit Revenue" for each Accounting Period shall equal a party's Revenue Amount (excluding such party's Excess Capacity Revenue Amount, if any) divided by its Capacity (excluding any Excess Capacity).

"IATA" means the International Air Transport Association.

"IATA Exchange Rate" means the 5-day currency exchange rate as published by IATA. For clarity, IATA publishes exchange rates between the 24th and 28th calendar day of each month. For purposes of this Agreement, the IATA Exchange Rate will be effective for the month following its publication. For example, a rate published on January 25th would be effective for the month of February.

"Implementation Date" means the Implementation Date as specified in the Joint Business Agreement as evidenced by the date of notice letter received from the Competent Authority which is last to provide the US Antitrust Immunity or Australian Antitrust Immunity, as applicable.

"Included Costs" has the meaning assigned to such term in Appendix 2.

"Included Revenue" has the meaning assigned to such term in Appendix 2.

"Income Taxes" means taxes imposed on any measure of income, whether gross or net, including withholding at a source.

"Joint Business" shall mean the business activities and arrangements conducted jointly by the parties under this Agreement and the Joint Business Agreement.

"Joint Business Agreement" means that certain Amended and Restated Joint Business Agreement by and between American and Qantas of even date herewith, and any amendments or successor agreements.

"Joint Services" means all Scheduled Passenger Services of the parties and their Affiliates flying Direct between the Australian Region and North America including the existing daily Qantas flight from Sydney to New York which stops in Los Angeles.

"Joint Services Capacity" for each Accounting Period shall equal the aggregate of both parties' Capacity (excluding any Excess Capacity).

"Joint Services Revenue Amount" for each Accounting Period shall equal the aggregate of both parties' Revenue Amount in AUD, each calculated in accordance with this Agreement.

"Lounge Access Agreement" means that certain **one**world Lounge Access Agreement by and between American and Qantas, dated January 27, 1999, as amended, and any amendments or successor agreements.

"North America" means the United States of America (including Puerto Rico and the US Virgin Islands but excluding Hawaii, Guam and other U.S. territories), Canada and Mexico.

"NZD" means New Zealand Dollars.

"Operating Carrier" means, with respect to a Service, the party having operational control of an aircraft used for the Service or the party whose Affiliate has operational control of an aircraft used for the Service.

"Periodic Settlement Payment" means the excess, if any, of (a) a party's cumulative Revenue Amount for the Accounting Period, as adjusted in accordance with Section 2.1 and Section 4, over (b) the sum of (i) its earlier Periodic Settlement Payments for that Accounting Period that were actually previously paid or received by such party, and (ii) its Retained Revenue for that Accounting Period.

"Pre-Implementation Period" means the twelve-month period ending on the last date of the calendar month immediately preceding the Implementation Date.

"QAJB Accounting Manual" has the meaning assigned to such term in Appendix 2.

"Qantas RESK Adjustment" is a fixed dollar amount that equals [redacted] of Qantas's Revenue Amount attributable to the Pre-Implementation Period, calculated on a monthly basis for each month of the Pre-Implementation Period. The parties will set forth the Qantas RESK Adjustment in the Alliance Standard Accounting Principles and will update the amount, as

necessary, following the review of Qantas's Pre-Implementation Period financial results in accordance with Section 4.2.

"Representatives" means a party's directors, officers, employees, professional advisors and the party's agents and contractors involved in the Joint Business, or in the case of Affiliates the directors, officers, employees, professional advisors and agents and contractors of the Affiliates involved in the Joint Business, as the context indicates.

"Retained Revenue" has the meaning assigned to such term in Section 2.1.

"Revenue Amount" has the meaning assigned to such term in Appendix 2.

"Scheduled Passenger Service" means any Service that is published for display and sale to the public (either directly or through industry agents or other approved intermediary parties) in industry schedule information systems and airline/airport operational systems with Service Type "J," as defined in IATA Standard Schedules Information Manual, Appendix C.

"Services" means any and all flights operated by a party or any of its Affiliates.

[redacted]

"Standards" has the meaning assigned to such term in Appendix 2.

"Stub Period" means Year One and any Year that is not a full twelve months due to termination of the Joint Business.

"Ticketing Carrier" means, with respect to a Service, the party whose traffic documents or whose Affiliate's traffic documents are used to issue a ticket for the Service.

"US Antitrust Immunity" means the approval, exemption, and immunization of the parties, pursuant to 49 U.S.C. sections 41308 and 41309, from the application of all United States antitrust laws, as defined therein, for all transactions and activities contemplated in the Alliance Agreement, this Agreement, and if applicable, in any of the other Alliance Implementation Agreements.

"Year" means a calendar year, except for Year One.

"Year One" means the period from the Implementation Date to (and including) December 31 of that year.

APPENDIX 2

ACCOUNTING PRINCIPLES

A. INTRODUCTION

The Alliance Standard Accounting Principles is a working document that will evolve over time and may be amended at any time by mutual written agreement of the parties. The most recently dated Alliance Standard Accounting Principles and Appendices 2 and 3 shall collectively constitute the "QAJB Accounting Manual." To the extent of a conflict between the Agreement (including its Appendices) and the Alliance Standard Accounting Principles, the Agreement will control.

B. GENERAL PRINCIPLES

Joint Services Revenue

Each party's "Revenue Amount" for any Accounting Period shall equal its Included Revenue minus its Included Costs, in each case, for such Accounting Period. Each party's Revenue Amount for any Accounting Period shall be calculated in accordance with this Appendix 2 and the Alliance Standard Accounting Principles.

Included Revenue

"Included Revenue" of a party shall mean all of the following revenue of such party and its Affiliates attributed to Joint Services, as defined in and calculated pursuant to the Alliance Standard Accounting Principles:

(i) Passenger Revenue (Includes all uplifted passenger revenue. Every seat uplifted will be assigned a value greater than or equal to zero.);

(ii) Carrier Surcharges;

(iii) Net Frequent Flyer Revenue (including values associated with passengers earning miles or points (i.e., cost to parties) and values associated with passengers redeeming miles or points on uplift (i.e., revenue to the parties), except as otherwise covered in (i) above);

(iv) Pre-Paid Seating; and

(v) Any other sources of revenue driven directly by incremental passenger volume and mutually agreed by the parties to be included in Included Revenue.

Included Costs

"Included Costs" of a party shall mean all of the following costs incurred by and allocated (as agreed) to such party and its Affiliates (whether as Marketing Carrier or Operating Carrier) attributed to the Joint Services, as defined in and calculated pursuant to the Alliance Standard Accounting Principles:

(i) Travel Agency Commissions and Incentives;

(ii) CRS Fees;

(iii) Net Credit Card Fees;

(iv) Passenger Variable Fuel;

(v) Catering; and

(vi) Any costs driven directly by incremental passenger volume and mutually agreed by the parties to be included in Included Costs.

Following receipt of the first Annual Revenue Statement, the parties agree to discuss and evaluate using mutually-agreed standard costs instead of actual costs for certain of the Included Cost categories. If the parties do not agree to implement standard costs instead of actual costs following such discussions, the parties agree to renew the discussion after receipt of the second Annual Revenue Statement.

Lounges

Lounge access costs are not an Included Cost. However, in the event of a material change in the lounge access policies of the parties as of the Effective Date, the parties will discuss the treatment of any resulting changes in costs.

Accounting One-off Items

If an accounting item such as a one-off, non-recurring, accrual, accounting adjustment or prior-year item affects any party's Revenue Amount by greater than $AUD300,000 for a given period, the parties agree to discuss the nature of the item and agree in good faith the amount that is appropriate to be included in the Joint Services Revenue Amount and for which Accounting Periods ("Accounting One-Off Item"). Such amount will represent the most accurate accounting of the actual revenues and costs attributed to the Joint Business from such item for each Accounting Period. Accounting One-Off Items arising after termination of this Agreement, even though they may relate to a party's Revenue Amount during the term of this Agreement, shall not be included in either party's Revenue Amount or the Joint Services Revenue Amount.

Interest

Unless specifically provided for in this Appendix 2, interest receivable (income) or interest payable (expense), capitalized interest or other financing charges shall not be included in or allowed as a deduction from either party's Revenue Amount or the Joint Services Revenue Amount.

Currency Exchange

All revenues and costs used to calculate each party's Included Revenue will be converted from the underlying currencies to AUD at the time of sale and Included Costs will be converted from the underlying currencies to AUD at the time of uplift. If the underlying currency of the Included Revenue or Included Cost, as applicable, is not AUD, USD, CAD or NZD, the Included Revenue or Included Cost, as applicable, will first be converted to the functional (as defined below) currency of the party and then converted to AUD as set forth above. Notwithstanding the foregoing, each party will make its Periodic Revenue Statements and Annual Revenue Statements in the currencies specified in the table below and will also include in such statements the IATA Exchange Rate applicable for its conversion of reported amounts (if not in AUD) into AUD.

Currency Reporting Table		
Alliance Standard Accounting Principles Chapter	**American**	**Qantas**
1. Passenger Revenue	AUD	Functional
2. Carrier Surcharges	AUD	Functional
3. Net Frequent flyer Revenue	AUD	AUD
4. Passenger Fees and Charges	Functional	Functional
5. Travel Agency Commissions and Incentives	Functional	Functional
6. CRS Fees	Functional	Functional
7. Credit Card Fees	Functional	Functional
8. Passenger Variable Fuel	Functional	Functional

Functional =	USD	AUD

For purposes of this section, "functional" refers to revenue and expenses of a party as accounted for by such party in accordance with its standard internal accounting practices.

Standards

It is acknowledged that each party will use its respective internal standard accounting practices, procedures and methodologies including in relation to costs, rates, amounts, charges and weightings (referred to as the "Standards") in the allocation of costs and revenues to segments and routes, as laid out in the QAJB Accounting Manual. Any material revision to any of the Standards shall be discussed and agreed by the parties.

Implementation Costs

The costs of implementing the provisions of this Agreement and the other Alliance Implementation Agreements shall be borne by the party incurring the cost unless

otherwise expressly specified in the applicable agreement, unless specifically mutually agreed, shall not be included in the calculation of either party's Revenue Amount or the Joint Services Revenue Amount.

Transaction costs

No amount, unless otherwise agreed by the parties, shall be included in either party's Revenue Amount or the Joint Services Revenue Amount for any attorneys' or accountants' fees or any other fees, costs and expenses incurred in connection with the negotiation, execution and ongoing performance of this Agreement or any of the other Alliance Implementation Agreements.

Final and Periodic Settlement Payment

Any payment made by one party to the other regarding a Periodic Settlement Payment or a Final Settlement Payment or any interest on such payments shall not be included in either party's Revenue Amount or the Joint Services Revenue Amount.

Wind down costs

In the event of termination of this Agreement, each party shall bear its own costs in making arrangements for the parties to operate as they did prior to the Implementation Date, and such costs shall not be included in either party's Revenue Amount or the Joint Services Revenue Amount.

Exhibit 1 – Agreed Route Distances

Route	GCD (In Kms)
LAX-SYD	12,049
LAX-MEL	12,744
LAX-BNE	11,525
LAX-AKL	10,467
LAX-JFK	3,983
ORD-SYD	14,808
SFO-SYD	11,937
YVR-SYD	12,482
DFW-SYD	13,790
DFW-AKL	11,974
DFW-BNE	13,356

The source for Agreed Route Distances for any new routes will be the site administered by the United States Department of Transport which, at the Effective Date is at: http://www.transtats.bts.gov/distance.asp.

Exhibit 2 – Equivalent Seats by aircraft type

Equipment Type	Equivalent Seats
B747-400	582
B777-200	424
B777-300	523
B787-800	340
B787-900	411
A350-900	430
A380-800	806

APPENDIX 3

EQUIVALENT SEATS FOR LAX-JFK AND SYD-DFW

1. LAX-JFK

For the purposes of calculating the Capacity for the LAX-JFK portion of Qantas' SYD-JFK route (the "LAX-JFK Route"),

- Beginning January 1, 2019,
  - if the aggregate number of Actual Equivalent Seats on the LAX-JFK Route is less than or equal to the aggregate number of Equivalent Seats that would have been based on daily B787-900 operation, then 100% of the Actual Equivalent Seats for the LAX-JFK Route will be included;
  - if the aggregate number of Actual Equivalent Seats on the LAX-JFK Route exceeds the aggregate number of Equivalent Seats that would have been based on daily B787-900 operation and the quotient of the LAX-JFK Revenue Amount (as defined below) divided by the aggregate number of ESKs for the LAX-JFK Route (the "LAX-JFK RESK") is greater than or equal to the Other Joint Services RESK (as defined below), then 100% of the Actual Equivalent Seats for the LAX-JFK Route will be included; and
  - if the aggregate number of Actual Equivalent Seats on the LAX-JFK Route exceeds the aggregate number of Equivalent Seats based on daily B787-900 operation and the LAX-JFK RESK is less than the Other Joint Services RESK, then the Equivalent Seats for the LAX-JFK Route will be reduced until the LAX-JFK RESK is equal to the Other Joint Services RESK.
- For purposes of this Section 1, "Other Joint Services" means the rest of the Joint Services excluding the LAX-JFK Route (but including the DFW-SYD Route defined below, as adjusted); the "Other Joint Services RESK" means the quotient of the Other Joint Services Revenue Amount divided by the aggregate number of ESKs for the Other Joint Services; the "Other Joint Services Revenue Amount" means the Revenue Amount in an Accounting Period attributable to the Other Joint Services; and the "LAX-JFK Revenue Amount" means the Revenue Amount in an Accounting Period attributable to the LAX-JFK Route.

2. DFW-SYD

For the purposes of calculating the Capacity for A380 or B747 Services operated by Qantas on its DFW-SYD route (the "DFW-SYD Route"), the quotient of the DFW-SYD Revenue Amount (as defined below) divided by the aggregate number of ESKs for the DFW-SYD Route (the "DFW-SYD RESK") will be monitored on an annual basis and:

- If the DFW-SYD RESK is greater than or equal to the Other Joint Services RESK (as defined below), then 100% of the Actual Equivalent Seats for the DFW-SYD Route will be included; and

- If the DFW-SYD RESK is less than the Other Joint Services RESK, then the Equivalent Seats for the DFW-SYD Route will be reduced until the DFW-SYD RESK is equal to the Other Joint Services RESK, provided that in no event will the Equivalent Seats be reduced for the DFW-SYD Route by more than the number of non-saleable seats due to applicable weight restrictions.
- For purposes of this Section 2, "Other Joint Services" means the rest of the Joint Services excluding the DFW-SYD Route (but including the LAX-JFK Route, as adjusted); the "Other Joint Services RESK" means the quotient of the Other Joint Services Revenue Amount divided by the aggregate number of ESKs for the Other Joint Services; the "Other Joint Services Revenue Amount" means the Revenue Amount in an Accounting Period attributable to the Other Joint Services; and the "DFW-SYD Revenue Amount" means the Revenue Amount in an Accounting Period attributable to the DFW-SYD Route.

EXECUTION VERSION

AMENDMENT NO. 1 TO THE CODESHARE AGREEMENT

This AMENDMENT NO. 1 (this "**Amendment**"), dated as of November 3, 2017 (the "**Amendment Effective Date**"), amends the Amended and Restated Codeshare Agreement, dated on or around December 31, 2016 (the "**Agreement**"), and is

between **American Airlines, Inc.**, a corporation organized under the laws of the State of Delaware, United States of America, having its principal office at 4333 Amon Carter Boulevard, Fort Worth, Texas 76155 United States of America ("**American**"),

and **Qantas Airways Limited** (ABN 16 009 661 901), a corporation organized under the laws of Australia, having its principal office at Qantas Centre, 10 Bourke Road, Mascot, New South Wales 2020, Australia ("**Qantas**").

RECITALS

1. American and Qantas each provide air transportation and seek to attain high standards of quality service and value for the benefit of the traveling public; and

2. American and Qantas have each previously agreed to place their Code on certain flights operated by the other party or its Authorized Affiliates, in accordance with the terms and subject to the conditions set forth in Agreement; and

3. American and Qantas wish to amend the Agreement, effective as of the Amendment Effective Date, with respect to their codesharing relationship in light of their concurrently entering into an Amended and Restated Joint Business Agreement of even date herewith (together with any amendments or successor agreements, the "**Joint Business Agreement**").

AGREEMENT

In consideration of the mutual covenants and promises in this Agreement, American and Qantas hereby agree as follows:

1. The following sentence is hereby added following the first sentence of Section 2.1 of the Agreement:

   "Following the Implementation Date, the parties intend to supplement Annex B with additional Codeshared Routes."

2. The last sentence of Section 2.5 of the Agreement is hereby deleted in its entirety and replaced with the following:

   "In the event of such change or discontinuation, both the Marketing Carrier and the Operating Carrier will publish as soon as reasonably possible the resulting changes to affected Codeshared Flights in the Airline Guides, CRSs, Reservations Systems, and other sources of airline schedule information."

3. Section 16.2(b) of the Agreement is hereby deleted in its entirety and replaced with the following:

"from and after the third anniversary of the Implementation Date, by notice of not less than one (1) full IATA season, by either party to the other party;"

4. The following is hereby added as a new Section 16.2(d) to the Agreement:

"by notice from either party provided any time following a party's delivery of notice of termination of the Joint Business Agreement but in no event later than ninety (90) days following the effective date of termination of the Joint Business Agreement; such termination of this Agreement to be effective upon the later of (A) the effective date of termination of the Joint Business Agreement, and (B) ninety (90) days following the delivery of the termination notice for this Agreement."

5. The following is hereby added as a new Section 20.5 of the Agreement:

"Article 20 shall only be operative until the Implementation Date, after which time it will be superseded by the terms regarding surcharges set forth in the Alliance Settlement Agreement entered into by the parties on the Amendment Effective Date."

6. The second paragraph of Article 22 of the Agreement shall continue to apply until the Implementation Date. Following the Implementation Date, the dispute escalation and arbitration processes set forth in Article 11 of the Joint Business Agreement shall supersede the second paragraph of Article 22 of the Agreement in its entirety.

7. Section 31.1 of the Agreement is amended by adding the following sentence at the end of the Section: "Without limiting the foregoing, the parties acknowledge and agree that they intend to negotiate in good faith and enter into an addendum setting forth additional data ownership and security terms."

8. The following definition is hereby added to Annex A of the Agreement:

""**Implementation Date**" has the meaning given to such term in the Joint Business Agreement."

9. The following definitions in Annex A of the Agreement are hereby deleted in their entirety and replaced with the following:

""**Authorized Affiliate**" means (a) with respect to American, (i) Envoy Air Inc. (f/k/a American Eagle Airlines, Inc.), Piedmont Airlines, Inc., and PSA Airlines, Inc., each to the extent it operates flights with American's Code under the "American Eagle" brand and (ii) any other carrier to the extent it operates flights with American's Code under the name "American Eagle"; and (b) with respect to Qantas, Jetconnect Limited (New Zealand)."

""**Change of Control**" with respect to a party occurs if such party: (i) merges or consolidates with or into any other person or entity; except when such merger or consolidation is with an Affiliate of such party, or where immediately after such merger or consolidation, the shareholders of the party immediately prior to the merger or consolidation continue to own more than 49.99% of the common equity of the surviving entity and, if the party is not the surviving entity, the surviving entity assumes in writing all of the obligations and responsibilities of the party under this Agreement and the Alliance Implementation Agreements (as defined in the Joint Business Agreement), (ii) sells or otherwise transfers all or substantially all of its assets to any other person or entity

except to an Affiliate of such party, (iii) if a third party (or third parties acting as a group), except for an Affiliate of a party, acquires 50.01% or more of the party's common equity in one or more transactions, or (iv) if a third party airline (not being an Affiliate of a party) or the parent of a third party airline, acquires Control directly or indirectly of a party."

10. The following sentence is hereby added to Annex C of the Agreement:

"From and after the Implementation Date, the Codeshare Commission will be [redacted]."

11. All other terms and conditions of the Agreement not affected or expressly amended by this Amendment shall remain in full force and effect in accordance with the terms of the Agreement.

[remainder of page intentionally left blank]

AMENDMENT NO. 1 TO CODESHARE AGREEMENT – EXECUTION PAGE

IN WITNESS WHEREOF, the parties have caused this Amendment to be duly executed and delivered by their proper and duly authorized officers, as of the Amendment Effective Date.

	QANTAS AIRWAYS LIMITED		**AMERICAN AIRLINES, INC.**
By:		By:	
Name:	Alan Joyce	Name:	Doug Parker
Title:	Chief Executive Officer	Title:	Chief Executive Officer
Date:	3 NOVEMBER 2017	Date:	3 NOVEMBER 2017

AMENDMENT NO. 1 TO CODESHARE AGREEMENT – EXECUTION PAGE

IN WITNESS WHEREOF, the parties have caused this Amendment to be duly executed and delivered by their proper and duly authorized officers, as of the Amendment Effective Date.

QANTAS AIRWAYS LIMITED		**AMERICAN AIRLINES, INC.**	
By:		By:	
Name:	Alan Joyce	Name:	Doug Parker
Title:	Chief Executive Officer	Title:	Chief Executive Officer
Date:		Date:	

CONFIDENTIAL

AMENDED AND RESTATED

JOINT BUSINESS AGREEMENT

between

AMERICAN AIRLINES, INC.

and

QANTAS AIRWAYS LIMITED

AMENDED AND RESTATED JOINT BUSINESS AGREEMENT

This **AMENDED AND RESTATED JOINT BUSINESS AGREEMENT** dated as of November 3, 2017 ("Effective Date") is by and between

American Airlines, Inc., a corporation organized under the laws of the State of Delaware, having its principal office at 4333 Amon Carter Boulevard, Fort Worth, Texas 76155, United States of America ("American"); and

Qantas Airways Limited (ABN 16 009 661 901), having its registered office at Qantas Centre, 10 Bourke Road, Mascot, New South Wales 2020 Australia ("Qantas").

RECITALS

1. The parties aim to deliver significant customer benefits by achieving "metal-neutral" selling of the Joint Services in which the parties will seek to align their economic incentives and organize their sales functions to enable them to be indifferent as to which Joint Service the customer chooses. The selling processes established by the parties will endeavor to provide customers with the widest available choice of flights for their journey, using either party's brands, services or products.

2. Therefore, American and Qantas have entered into an Amended and Restated Alliance Agreement dated as of the date hereof (the "Alliance Agreement");

3. The Alliance Agreement contemplates that the parties have entered into or shall enter into as of the date hereof certain Alliance Implementation Agreements;

4. American and Qantas entered into that certain Joint Business Agreement, dated as of May 6, 2011, as amended, which expired January 1, 2017, and was replaced by that certain Amended and Restated Codeshare Agreement between American and Qantas, dated on or around December 31, 2016 (together with any amendments and successor agreements, the "Codeshare Agreement");

5. American and Qantas entered into that certain Amended and Restated Joint Business Agreement, dated June 9, 2015, as amended (the "2015 Joint Business Agreement");

6. American and Qantas now desire to replace the 2015 Joint Business Agreement in its entirety to restate the terms and conditions of their continuing joint business activities and to set forth the terms and conditions pursuant to which, following the Implementation Date, certain of the revenue, net of certain costs, of each party and its Affiliates attributable to the Joint Services will be calculated on a consistent basis, year on year, and thereafter settled between the parties;

7. The parties will establish the Alliance Standard Accounting Principles as a revenue accounting method for consistent attribution year on year of certain of each party's and its Affiliates' revenues and expenses from the Joint Services; and

8. The Alliance Standard Accounting Principles will take into account and augment the parties' and their Affiliates' respective existing revenue and expense allocation systems, which are reconcilable to the parties' and their Affiliates' respective audited financial statements.

NOW THEREFORE, in consideration of the mutual covenants and promises in this Agreement, the parties hereby agree as follows:

1 DEFINITIONS AND EFFECTIVENESS

1.1 Definitions. Terms with their initial letters capitalized shall have the meanings ascribed to them in Appendix A to this Agreement or where they are elsewhere defined herein (including the Appendices hereto). Such ascribed meanings shall be equally applicable to both the singular and the plural forms of such terms. References in this Agreement to Sections shall refer to sections of the main text of this Agreement unless stated otherwise. As used in this Agreement, the words "include" and "including," and variations thereof, will be deemed to be followed by the words "without limitation" and the words "commercially reasonable efforts" will mean "all reasonable but commercially prudent endeavors." Each party agrees to act in good faith in relation to the exercise of its rights and performance of its obligations under this Agreement.

1.2 Implementation of this Agreement. The parties agree to negotiate expeditiously and in good faith any amendments or additional detailed provisions for the implementation of this Agreement and the applicable Alliance Implementation Agreements, following the grant of US Antitrust Immunity and Australian Antitrust Immunity, if either party deems it necessary to do so based on the exchange of certain confidential competitive information. The parties agree that the operational and revenue settlement provisions of this Agreement shall only be implemented as of and from the Implementation Date. The parties acknowledge that such final details will not be negotiated until after the grant of US Antitrust Immunity and Australian Antitrust Immunity, when they will be able to discuss certain confidential competitive information. During the period following receipt of US Antitrust Immunity and Australian Antitrust Immunity when they are endeavoring to finalize the detailed terms of this Agreement, the parties will review the status of any investigation by non-U.S. and non-Australian Competent Authorities, and the parties will take account of any such investigation in their endeavors to finalize the detailed terms of this Agreement.

2 STRUCTURE AND SCOPE OF THE JOINT BUSINESS

2.1 Alliance Settlement. In an effort to improve customer experience, increase customer benefit and facilitate a "metal-neutral" Joint Business, the parties hereby agree to settle certain revenues that each party and its Affiliates derive separately from their respective airline businesses which in turn contribute to the objectives of the Joint Business, net of certain costs, on the terms and subject to the conditions set forth in the Alliance Settlement Agreement.

2.2 Basic Structure of the Joint Business. In order to ensure an equitable settlement of revenue, each party will contribute a proportion of its net revenue attributable to the Joint Services included in the Joint Business to the other party based on the other party's Capacity Share, as described in more detail in the Alliance Settlement Agreement.

2.3 Revenues and Costs Included in the Joint Business. Passenger revenue, certain ancillary revenue and incremental passenger variable costs for the Joint Services will generally be included in the Joint Business for the purpose of Alliance Settlement. The specific

revenue and costs to be included in the Joint Business are set forth in the Alliance Settlement Agreement.

2.4 Geographic Scope of the Joint Business. The Joint Business will cover all Joint Services and, to the extent provided in this Agreement, Services Connecting to and from the Joint Services. While Scheduled Passenger Services on routes within the Australian Region or North America Connecting to or from the Joint Services will also be included in the Joint Business, they will not be included with respect to Alliance Settlement. Scheduled Passenger Services on non-stop or Connecting routes to or from Other Destinations will not be included in the Joint Business.

2.5 Affiliates. Each party's Affiliates will be included in the Joint Business to the extent provided in this Agreement. Each party shall have decision-making authority under this Agreement both for itself and its Affiliates, and each party shall be responsible for its Affiliates' compliance with this Agreement.

3 OPERATION OF THE JOINT BUSINESS

3.1 Schedule Coordination.

3.1.1 The parties agree to use commercially reasonable efforts to coordinate the schedules of (i) the Joint Services and (ii) those other Scheduled Passenger Services that Connect to or from the Joint Services, particularly with regard to Codeshared Flights, in order to minimize connecting passenger waiting time and to maximize passenger convenience and service, subject to their respective operational constraints and commercial considerations.

3.1.2 The parties agree to use commercially reasonable efforts to jointly plan the schedules of the Joint Services, taking into account Services Connecting to or from the Joint Services, subject to their respective operational constraints and commercial considerations. Without limiting the generality of the foregoing, the parties shall:

3.1.2.1 endeavor in good faith to develop joint network plans regarding the Joint Services and Services Connecting to or from the Joint Services, throughout the term of the Business Plan, and when possible in conjunction with the revenue planning process outlined in Section 3.3, after due consultation on all aspects of the joint network plans, including with respect to each party's usage of terminal facilities;

3.1.2.2 communicate with the other party regarding the proposed filing for Joint Services, for each IATA slot conference at least two weeks in advance of the applicable IATA slot conference submission deadline; and

3.1.2.3 develop a process to ensure timely communication of such schedules between the parties to allow adequate lead times for each party to plan resources effectively.

3.1.3 Any changes in the type and configuration of aircraft scheduled for deployment on the Joint Services will be discussed by the parties prior to the implementation of such changes; provided, however, that Ad Hoc Changes will not require any such discussion. A party will use commercially reasonable efforts to notify the other party prior to making any Ad Hoc Changes.

3.2 Capacity Management.

3.2.1 Business Development. The parties agree to develop a mutually acceptable rolling, five-year business plan for the Joint Services (the "Business Plan"). The initial Business Plan will be developed by the parties and approved by the Steering Committee but not implemented until the Implementation Date. The Business Plan will be updated annually by the applicable Functional Committees under the direction and with the approval of the Management Committee and should include terms regarding (i) schedule coordination and capacity planning (the "Network Plan"), (ii) General Pricing Guidelines (as set forth in more detail in Section 5.4), and (iii) sales policies and objectives (as set forth in more detail in Section 5). The Business Plan will then be submitted to the Steering Committee for approval. The Business Plan will not be implemented without Steering Committee approval. The initial two years of each Network Plan are binding on the parties and any changes to the Network Plan regarding the then-current two-year period require the unanimous consent of the Steering Committee. For the three-year period of the Network Plan beyond the initial binding two-year period of each rolling Network Plan, the terms are non-binding and are for general discussion and planning purposes only. Further Capacity growth will be discussed in the context of the Network Plan and require consensus of the parties. Subject to Sections 3.2.4 and 3.2.2.4, the intent of the parties is in general, to strive to reach and then maintain respective Capacity Shares of approximately [redacted] for American and approximately [redacted] for Qantas. However, this Capacity Share goal will not be the primary reason for withholding consent to a New Capacity Proposal.

3.2.2 New Capacity. It is the intent of the parties that each of them be encouraged to explore and pursue new growth opportunities, which would create new customer benefits in addition to revenue benefits for the Joint Business. This may include the parties exploring new potential gateways in North America and the Australian Region. The initial Network Plan will provide for American engaging in the Initial Capacity Introduction. Subject to agreement only as to the timing of the Initial Capacity Introduction for the [redacted] (i.e., excluding the two routes currently flown by American as of the Effective Date), the Initial Capacity Introduction will be deemed consented and included in American's Capacity Share.

3.2.2.1 Either party may propose the addition of New Capacity on the Joint Services. If a New Capacity Proposal is made as part of the Network Plan approval or update process under Section 3.2.1, it

must be specifically identified at the time as a New Capacity Proposal. Any other New Capacity Proposals need to be made in accordance with the procedures specified in this Section 3.2.2.

3.2.2.2 Minor fluctuations in Capacity that occur as the result of Ad Hoc Changes shall not be deemed New Capacity. Since such Ad Hoc Changes are not treated as New Capacity for purposes of this Agreement, the acquiescence of one party to such Ad Hoc Changes shall not be deemed consent to the addition of New Capacity for purposes of this Agreement. In addition, notwithstanding anything to the contrary in this Agreement, either party may make changes to frequency on existing routes, or changes to aircraft type or gauge, that change such party's Capacity, provided that in each case such changes do not result (other than Ad Hoc Changes) in an overall increase of such party's aggregate Capacity for the applicable year as set forth in the then-current Network Plan. In the event that either party desires to make a change to its operation of its Joint Services that would materially change its patterns of service, by making material changes to the frequency on existing routes, or to aircraft type or gauge, it shall first notify the other party that it intends to make such change by sending a written notice describing such change to the Functional Committee lead of the other party. If the parties cannot agree on the change at the Functional Committee level, such proposed change shall be escalated to the Management Committee and then the Steering Committee, as applicable.

3.2.2.3 Either party shall be entitled to propose the addition of New Capacity on any Joint Services by sending a New Capacity Proposal in writing to the designated Functional Committee lead of the other party at least 30 days in advance of the next scheduled Functional Committee meeting, with a copy to the Management Committee representatives of the other party. New Capacity Proposals will then be discussed at the next meeting of the designated Functional Committee. If approved by the Functional Committee, such proposal will be submitted to the Management Committee for approval. If approved by the Management Committee, such proposal will be submitted to the Steering Committee for final approval. If unanimous written consent is not obtained at all applicable levels, the New Capacity Proposal will be deemed rejected and Section 3.2.2.6 applies.

3.2.2.4 American may unilaterally add Capacity as part of its Initial Capacity Introduction. Qantas acknowledges that American's Initial Capacity Introduction will reduce Qantas' Capacity Share and Qantas may not unilaterally add New Capacity to maintain the Capacity Share it had as of the Implementation Date. In addition, American acknowledges that Qantas anticipates replacing its B747 aircraft on the Joint Services. The Network Plan will provide for

reasonable, necessary adjustments to Qantas' Capacity to facilitate the replacement of such aircraft.

3.2.2.5 Nothing contained in this Agreement shall preclude (i) the acquisition by a party of, or merger or other combination of a party with, any other carrier or (ii) the acquisition by a party of a new Affiliate or operational control of a third party. However, any New Capacity that would result from a Change of Control or acquisition of a new Affiliate or operational control of a third party involving one of the parties will for the purposes of the Alliance Settlement Agreement be treated as Excess Capacity pursuant to (and as defined in) the Alliance Settlement Agreement unless the other party has consented to its inclusion. The other party will not withhold or delay consent if the inclusion of such New Capacity would not be reasonably expected to adversely affect the overall long-term economic performance of the Joint Business.

3.2.2.6 If either party adds New Capacity on the Joint Services other than in accordance with this Section 3.2.2, such New Capacity shall be deemed non-consensual. Except as set forth below, each party's only liability, and the other party's only remedy, for adding non-consensual New Capacity on the Joint Services shall be the treatment of any such capacity as Excess Capacity pursuant to (and as defined in) the Alliance Settlement Agreement. Unconsented New Capacity resulting from the assignment by a party to any of its Affiliates of any Joint Services previously scheduled in the Network Plan to be operated by such party shall also be deemed a material breach by such party.

3.2.3 Performance Monitoring. The parties will regularly review performance of the Joint Services. If any routes within the Joint Services are underperforming when measured against the expected performance forecast for such routes by the party operating such Services or as jointly agreed by the parties, the parties will endeavor in good faith to agree to a course of remedial action. Such remedial action may include cancellation of such route or Service.

3.2.4 Capacity Reductions. Neither this Section 3.2 nor any other provision of this Agreement will give either party the right to force the cancellation of any route or Service operated by the other party or its Affiliates, require any reduction in the Capacity flown by the other party or its Affiliates or prevent a party from cancelling a route or Service operated, or reducing the Capacity flown, by such party or its Affiliates (including through (a) discontinuation of a route, (b) decreases in frequency, (c) changes to aircraft type that decrease Capacity or (d) changes to configurations that decrease Capacity, whether or not having a material impact on revenue).

3.3 Revenue Planning.

3.3.1 The parties agree to use commercially reasonable efforts to jointly coordinate the development of revenue plans for the Joint Services.

3.3.2 Each party will monitor, record and share the results of the performance of the Joint Services and the parties will individually and jointly measure performance against the Business Plan as well as against the previous Year's performance. The parties will jointly maintain agreed records of performance against the then-current Business Plan, together with explanations of key issues and suggested remedies, if appropriate. If the parties disagree regarding the results of performance, the parties will endeavor in good faith to resolve the differences in their records to agree upon a joint analysis of the results of performance each Year.

3.3.3 Each party agrees to allow the other party reasonable access to its revenue data regarding the Joint Services. Each party shall provide agreed information in agreed formats and on agreed frequencies.

3.4 Passenger Processing. The parties agree to use commercially reasonable efforts to align their policies and procedures regarding their internal passenger processing systems to support the objectives of the Joint Business.

3.5 **one**world Alliance Agreements. Unless otherwise stated herein or as otherwise agreed in writing, nothing in this Agreement or the Alliance Implementation Agreements will affect the continued operation of the terms and conditions and procedures of all **one**world Alliance agreements to which the parties are parties.

3.6 Quality Control. The parties agree to use commercially reasonable efforts to work together to achieve reasonable target customer satisfaction levels for the Joint Services in the following quality categories: overall customer satisfaction, comfort, ground experience, entertainment, catering, crew, reservations, ticket counter efficiency, boarding efficiency, lounges, baggage delivery, punctuality and any other attribute as may be mutually agreed.

3.7 Cost Synergies. The parties agree to use good faith efforts to identify, discuss and reach agreement on mutually agreed areas of cooperation to derive cost synergies including the following:

- information technology systems;
- aircraft, engine and ground service equipment purchases;
- insurance, including aviation insurance;
- aircraft maintenance and inventories;
- purchasing, including catering and supplies;
- frequent flyer programs;
- airport facilities;
- cargo;
- sales, marketing and reservations, including ticket office consolidation;
- airport lounges; and
- jet fuel.

3.8 Charter Flights. Charter flights are not part of the Joint Business. On a quarterly basis, each party agrees to provide to the other party reasonable information regarding such party's charter flights between the Australian Region and North America. If either party believes that the charter flights of the other party between the Australian Region and North America are materially impacting the Joint Business, the parties agree to discuss the impact at the Functional Committee level and escalate the issue to the Management Committee and Steering Committee, if necessary.

4 GOVERNANCE OF THE JOINT BUSINESS

4.1 Management Committee. The parties shall appoint a Management Committee to oversee the Joint Business on behalf of the parties in the manner and to the extent set forth herein. Decisions of the Management Committee must be made by a unanimous vote of its members present (either in person or by telephone) and any unresolved matters shall be referred to the Steering Committee. A quorum shall exist at meetings of the Management Committee if at least one member from each party is present. The Management Committee shall be responsible for and is hereby authorized to (i) coordinate the development of strategy and a joint Business Plan in accordance with Section 3.2.1, (ii) facilitate the coordination required by the parties to engage in the Joint Business in accordance with the joint Business Plan, (iii) monitor and report on the performance of the Joint Business, and (iv) monitor and manage the Functional Committees. Any disputes that cannot be resolved by the Management Committee shall be escalated to the Steering Committee for resolution; provided that the foregoing shall not prevent either party from separately seeking appropriate remedy at law or in equity. The Management Committee shall consist of four representatives, two appointed by each party, at least one of which will be at a level in terms of functionality within each organization substantially equivalent to Managing Director in the case of American and "Head of" in the case of Qantas. A member of the Management Committee may resign at any time. Upon the resignation, removal, death or disability of a member of the Management Committee, the appointing party shall have the exclusive right to appoint another individual subject to the qualifications set forth above. Each party agrees to provide the other party with prompt written notice of any change in the identity of its respective appointees to the Management Committee. Regular meetings of the Management Committee shall be held at least quarterly (in person or by telephone) at mutually agreed times and locations.

4.2 Steering Committee. The Management Committee will report to a Steering Committee, which will consist of not more than two officers (at least one of whom will be at the level of Executive Manager in the case of Qantas and Vice President in the case of American) of each party who has responsibility for such party's marketing, sales, planning or alliance activities. Decisions of the Steering Committee must be made by a unanimous vote of its members present (either in person or by telephone). A quorum will exist if at least one member of each party is present. The Steering Committee will be responsible for approving any business plans and major policy decisions, and for seeking resolution regarding any disagreements or disputes (including disagreements or disputes among the members of the Management Committee). Without limiting the foregoing, either party may raise for discussion at

the Steering Committee the financial performance of one or both carriers and other matters pertaining to the operation of the Joint Business and the financial model. The Steering Committee must discuss such issues in good faith with the goal of achieving consensus. Any dispute resolution activities by the Steering Committee may be conducted in parallel with any dispute resolution activities being conducted in accordance with Section 11. Regular meetings of the Steering Committee will be held at least twice per year or as otherwise agreed by the parties, on such dates and at such places as established in advance by the Steering Committee. Special meetings of the Steering Committee may be called by any member of the Steering Committee by written notice sent to each member of the Steering Committee in accordance with the notice provisions set forth in Section 10. Any such special meeting shall be set for a date no sooner than 15 Business Days after the date such notice is sent, unless a shorter time period is specified elsewhere in this Agreement. Special meetings of the Steering Committee may be conducted in person or telephonically.

4.3 Commercial Board. The parties will seek to establish a commercial board composed of executives from each party representing the key commercial functional areas, as may be agreed by the parties, such as sales, revenue management, marketing, loyalty and customer experience. The parties intend for the Commercial Board to meet at least two times per Year to review current commercial activities and manage the commercial development of the Joint Business.

4.4 Functional Committees.

4.4.1 In addition to the Functional Committees specified in Section 5, the Management Committee may from time to time designate and appoint standing or temporary Functional Committees. The Management Committee may authorize these Functional Committees to exercise any powers, responsibilities and duties consistent with this Agreement. Each Functional Committee may include any reasonable number of representatives appointed by each party, provided that each party shall only have one vote regardless of the number of representatives it appoints to a Functional Committee. The Functional Committees are intended to be tasked with the following functional areas:

- revenue management and pricing;
- network planning and schedule management;
- sales;
- reservations and online distribution;
- marketing, customer experience and product, including frequent flyer programs;
- airports;
- finance and accounting;
- procurement and cost reduction;
- IT and other infrastructure;
- legal/regulatory; and
- quality assurance.

Each Functional Committee shall (i) assist in the development of business plans for each traffic season, (ii) set procedures for implementing Joint Business policies and decisions, and (iii) be the first point of contact for resolution of problems. Subject to Section 11, any unresolved matters shall be escalated to the Management Committee for resolution.

5 SALES AND MARKETING

5.1 Metal-Neutral Selling. The parties intend to achieve "metal neutral" selling for the Joint Services in order to maximize customer benefit by increasing service options as well as fare benefits, providing customers with a broad range of competitively priced products. The parties intend to achieve this by organizing their sales functions in a manner that provides each party with access to the entire combined available Capacity of the parties on the Joint Services through a joint sales model. Each party's sales organization shall sell, and be incentivized to sell, the Joint Services without having regard to which party is operating the applicable Joint Services, as described in more detail in this Section 5.

5.2 Sales Organization. The parties agree to develop a joint business organizational structure to ensure the alignment of the parties across the Joint Business, to enable the parties to respond swiftly and efficiently on a consensus basis to market demand and facilitate the delivery of improved customer benefits. The joint business organization structure for sales and marketing aspects shall include a Functional Committee responsible for the Joint Business sales function, which will report to the Management Committee and which will be responsible for the following:

- Segmentation of account management;
- Performance of sales channels;
- Communication of trans-pacific dealing strategy;
- Tactical activity and marketing;
- Corporate and trade communications; and
- Account development planning.

5.3 Sales Force.

5.3.1 The parties will set mutually agreed sales objectives for the Joint Business and communicate such objectives to each party's sales organization to ensure metal neutral selling.

5.3.2 Any incentives for carriers' respective sales forces to sell the Joint Services will include all routes of the Joint Services regardless of operating carrier.

5.4 Pricing.

5.4.1 The parties shall endeavor to satisfy market demand through joint development of consistent pricing methodologies and associated rules and conditions regarding the Joint Services and Services Connecting to or from the Joint Services, supporting a metal neutral approach. The parties will establish General Pricing Guidelines and Unpublished/Dealt Pricing Guidelines that take into account the composition, scope and dealing

rationale of each party's existing business within the territories covered by the Joint Business and with sufficient latitude and flexibility as to permit the continuation of each party's business practices. The parties will endeavor in good faith to establish the initial General Pricing Guidelines and Unpublished/Dealt Pricing Guidelines ahead of the Implementation Date so they may be implemented for Joint Services and Services Connecting to or from the Joint Services as soon as possible after the Implementation Date. The parties agree to review the General Pricing Guidelines and Unpublished/Dealt Pricing Guidelines against the objectives in Section 5.4.2 every twelve months or more frequently as dictated by the commercial environment at the request of either party.

5.4.2 By adopting the General Pricing Guidelines, the parties intend to enable the Joint Business to (i) provide customers with a broad range of competitively priced Services on as many city-pair routings within the Joint Business as practicable, (ii) remain competitive in the markets served, (iii) respond swiftly and efficiently to market demand, (iv) standardize the price distribution process and (v) maximize selling opportunities.

5.4.3 The parties agree to examine whether the Joint Business could benefit from centralizing or co-locating the pricing functions for the Joint Services.

5.5 Inventory Management.

5.5.1 The parties shall coordinate the inventory management of the Joint Services to ensure a level of availability for customers on the Joint Services in accordance with the Business Plan. Each party will use commercially reasonable efforts to provide the other party with inventory access to Services Connecting to or from the Joint Services on a metal-neutral basis within the confines of existing technology. Each party will define a set of inventory guidelines for its own Services within which any pricing standards and guidelines relating to the Joint Services and Services Connecting to or from the Joint Services must operate.

5.5.2 The parties agree to examine whether the Joint Business could benefit from pursuing greater integration of yield management systems, such as through the sharing of "bid prices" or other demand forecast data relevant to calculating inventory availability for the Joint Services.

5.5.3 Until such time as the parties agree on initiatives to more closely integrate yield management systems as referenced in Section 5.5.2, each party will provide the other party with the same inventory class mapping on Joint Services that was in place on December 1, 2016. For clarity, the foregoing does not limit Section 2.5 of the Codeshare Agreement nor does it restrict a party's ability to add, discontinue or change any of its Connecting Services.

5.5.4 The parties agree to periodically exchange agreed historic and forward-looking data, which will include passenger and revenue data by cabin, relating to each party's traffic demand regarding each of the Joint Services.

5.6 Fares. The parties will use commercially reasonably efforts to establish fares for Joint Services and Services Connecting to or from the Joint Services that are combinable and have substantially similar fare rules irrespective of which of the parties is operating the relevant Service.

5.7 Dealing Strategy.

5.7.1 In order to introduce new Capacity and greater availability of discounted fares, the parties agree to discuss in good faith (with the goal of reaching consensus) adopting a Dealing strategy (by customer segment or distribution channel) that will be applicable to the Joint Services. This will be in addition to any element of the Unpublished/Dealt Pricing Guidelines relating to Deals. Deal strategies should use common data sources and metrics.

5.7.2 The Dealing strategy and Unpublished/Dealt Pricing Guidelines are intended to feature a range of models including private fares, rebates, discounts, share performance, and agency net fares.

5.7.3 To better promote each party's brands within the Joint Business and to provide customers with a broader range of product offerings, the parties will make reasonable efforts to ensure Deals are applicable to the marketed flights (both prime and codeshare) of each party, unless agreed otherwise.

5.8 Existing Deals.

5.8.1 Where the parties each have Deals in relation to the Joint Services with the same third party as of the Implementation Date, the parties agree to discuss the optimal means to manage such Deals for the benefit of the Joint Business.

5.8.2 For those Deals in relation to the Joint Services where only one of the parties has a relationship at the Implementation Date, that party will initially lead the relationship and will add the other party's network to the Deal as commercially reasonable, in accordance with Section 5.9. The parties agree to facilitate this through the Joint Business sales function, using guidelines agreed by the parties, and shall at all times act within Applicable Laws.

5.9 Deal Structures. The parties agree to use commercially reasonable efforts to jointly seek to implement an umbrella agreement for each Deal within the scope of the Joint Business so that each Deal will cover the Joint Services and as applicable Services Connecting to or from the Joint Services.

5.10 Commitment Levels. Subject to Applicable Law, the parties agree to align and integrate the contractual commitment levels for Deals within the scope of the Joint Business on a metal neutral basis across the applicable portions of each party's network.

5.11 Sales and Marketing Activity. The parties agree to align and coordinate planning and implementation of sales and marketing activities, including Tactical Marketing to actively promote the Joint Services on a metal neutral basis to provide customers with greater availability of discounted fares and a broader range of benefits. The parties will seek to jointly plan Tactical Marketing activities at each point of sale with a frequency as may be agreed by the parties, and to provide each other with access to promote such sales and activities via each party's owned channels (e.g., aa.com and qantas.com). The parties will also seek to market to each party's FFP Members through these and other communications channels controlled by the parties.

6 FREQUENT FLYER PROGRAMS

6.1 Reciprocal Programs. Subject to the terms and conditions of this Agreement, the parties shall continue to offer separate frequent flyer programs in accordance with the Frequent Flyer Agreements and **one**world Alliance agreements in place between them. The Joint Business may offer opportunities to engage in additional coordination of frequent flier programs applicable to the Joint Services. This coordination may include, if agreed, the following:

6.1.1 Delivering enhanced in-journey benefits to FFP Members of each party and to elite tier members across their respective networks, for which purpose the parties agree to negotiate in good faith the harmonization of member recognition, service recovery and access to pre-reserved seating at time of booking; and

6.1.2 Providing FFP Members of each program with more access to offers, incentives and promotions from the other party.

6.2 FFP Governance. The parties shall manage the development of marketing plans and business processes through the applicable Functional Committee to leverage the strengths of the frequent flyer programs of the parties for the benefit of customers. Without limiting the foregoing, the parties shall agree upon objectives and metrics of such plans and processes to ensure that employees of the parties work in a metal neutral manner to maximize customer benefits. This will include using commercially reasonable efforts to align frequent flyer tier members' lounge access to encourage metal neutrality.

7 TERM AND TERMINATION

7.1 Term. Subject to Section 1.2, this Agreement commences on the Effective Date and will end on the tenth anniversary of the Implementation Date unless terminated earlier in accordance with its terms.

7.2 Termination Rights. Either party shall be entitled to terminate this Agreement in accordance with Sections 7.3, 7.4, 7.5, 7.6, 7.7 or 24.2. Sections 7.3, 7.4, 7.5, 7.6, 7.7 and 24.2 set out the only circumstances in which either party may terminate this Agreement. Either party's termination of this Agreement shall be without prejudice to any rights or liabilities that accrued under this Agreement prior to termination.

7.3 Termination for Cause. Either party (the "Non-Defaulting Party") may terminate this Agreement upon 90 days' prior written notice (unless another notice period is explicitly provided for) to the other party (the "Defaulting Party") upon the occurrence of any of the following events:

7.3.1 a Material Default by the Defaulting Party that is not remedied to the Non-Defaulting Party's reasonable satisfaction within 90 days after the date on which the Non-Defaulting Party provides written notice thereof to the Defaulting Party.

7.3.2 a Force Majeure Event under this Agreement with respect to the Defaulting Party, which Force Majeure Event (i) has prevented such Defaulting Party from performing its obligations under this Agreement for at least 60 consecutive days and (ii) has had a material adverse effect on the Non-Defaulting Party.

7.4 Termination for Convenience. From and after the [redacted] of the Implementation Date, either Party may provide notice to terminate this Agreement for its convenience upon no less than [redacted] advance written notice to the other party.

7.5 Termination for Change of Control. In the event either party undergoes a Change of Control or a transaction is announced which if consummated will result in a Change of Control, the other party may terminate this Agreement upon no less than six calendar months advance notice and the parties will commence disengagement during the notice period; provided that the right to give notice to terminate with respect to such Change of Control shall begin upon the earlier of (i) public announcement of a binding agreement of the subject party, which if consummated will result in a Change of Control, (ii) public announcement of the recommendation of a transaction by the subject party which if consummated will result in a Change of Control, or (iii) the occurrence of a Change of Control, and expire one year after consummation of such Change of Control.

7.6 Termination for Insolvency or Cessation of Operation. In the event of the dissolution, liquidation, winding up (or equivalent action) of one of the parties, or the failure by one of the parties to maintain its corporate existence, either in whole or with respect to a substantial portion of its business, or the cessation of operations of one of the parties for a period of more than ten days, or the suspension or revocation of a party's authority to operate as an airline for a period of more than ten days, the other party shall be entitled to terminate this Agreement immediately upon delivery of written notice; provided that a solvent reconstruction or reorganization of a party following which the reconstructed or reorganized entity owns all or substantially all of the assets owned by such party prior to the solvent reconstruction or reorganization shall not give rights to a termination right under this Section 7.6.

7.7 Termination for Lack of Governmental Approval.

7.7.1 If US Antitrust Immunity or Australian Antitrust Immunity is not granted by [redacted] then at any time thereafter but prior to US Antitrust Immunity and Australian Antitrust Immunity being granted, either party

may terminate this Agreement by giving no less than 30 days' advance written notice to the other party.

7.7.2 If US Antitrust Immunity or Australian Antitrust Immunity is granted on terms that include a Burdensome Condition for either party, then the affected party may terminate this Agreement by giving no less than 30 days' advance written notice to the other party (such notice to be given no later than 30 days after the grant of Antitrust Immunity).

7.7.3 If either party terminates this Agreement pursuant to Sections 7.7.1 or 7.7.2 above, the Alliance Agreement, and the Alliance Settlement Agreement shall also terminate as of the effective date of such termination.

7.7.4 In the event that any Governmental Approval, including US Antitrust Immunity or Australian Antitrust Immunity, is subsequently revoked or altered by any Competent Authority, or if any part of this Agreement is, or shall become, or shall be declared illegal, invalid or unenforceable in any jurisdiction, then unless the parties are able within 30 days thereof to modify this Agreement or the Alliance Implementation Agreements or take other action to remove or otherwise address such revocation, alteration, illegality, invalidity or unenforceability in good faith without causing a Burdensome Condition, the affected party shall have the right to terminate this Agreement upon a further 30 days' advance written notice to the other party (such notice to be given no later than 40 days after the date of such revocation, alteration or declaration).

7.8 Effect of Termination. Upon termination, each party shall provide reasonable assistance to the other party to wind down the Joint Business and, if such termination occurs after the Implementation Date, each party shall promptly provide to the other party: the aggregate data related to revenue, yield, passengers, market share and expected share by route, cabin and inventory for each corporate account and agency account for the Joint Services which it or any of its Affiliates has operated or on flights marketed with its code during the shorter of the following periods (i) the three year period prior to termination, or (ii) the period between the Implementation Date and the date of such termination. All information which a party receives from the other party pursuant to this Section 7.8 shall be Confidential Information for purposes of Section 9. Each party will use its commercially reasonable efforts to minimize any disruption caused to customers and to mitigate the costs incurred by the parties on termination or expiration of this Agreement. Sections 1.1, 2.5 (with respect to the last sentence only), 7.8, 9, 10, 11, 12, 16.2, 19, 24.1, 25.2 and Appendix A shall survive any termination or expiration of this Agreement.

8 REGULATORY FILINGS

8.1 The parties will (i) submit (and cause their Affiliates if necessary to submit, as applicable) as soon as possible following the Effective Date, and to gain approval on terms reasonably acceptable to the parties for, applications for US Antitrust Immunity and Australian Antitrust Immunity, and (ii) to obtain on terms reasonably acceptable to the parties such other regulatory approvals as may be necessary to fulfill the

obligations contemplated hereby and by the other Alliance Implementation Agreements.

9 CONFIDENTIALITY

9.1 Except for discussions with, and the provision of this Agreement and the other agreements contemplated hereby to, the relevant Competent Authorities and except as expressly provided in this Agreement, neither party may sell, transfer, publish, disclose, display or otherwise make available the Confidential Information of the other party to any third party without the prior written consent of the party whose Confidential Information is at issue except as may be required by Applicable Law (including requirements by oral questions, interrogatories, subpoenas, civil investigative demands or similar processes), in which case the party from whom disclosure is sought (the "Disclosing Party") will promptly notify the other party (the "Affected Party"). To the extent that the Affected Party objects to the disclosure of its Confidential Information, the Disclosing Party will (at the Affected Party's expense) use all reasonable efforts to (i) resist making any disclosure of such Confidential Information, (ii) limit the amount of such Confidential Information to be disclosed, and (iii) obtain a protective order or other appropriate relief to minimize the further dissemination of any Confidential Information to be disclosed. In addition, the parties shall not disclose the Confidential Information received to any of their respective Representatives except on a need-to-know basis for the purposes of implementing and administering this Agreement; provided, however, that prior to any such disclosure the Disclosing Party will inform all such Representatives of the confidential nature of the information, and that it is subject to this non-disclosure obligation, and will further instruct such Representatives to treat such information confidentially. Each party agrees to be responsible for any breach of the provisions set forth in this Section 9 by its respective Representatives. Neither party will use the Confidential Information of the other party for any purpose other than as expressly provided in this Agreement.

9.2 The initial public announcement relating to this Agreement and the transactions contemplated herein will be made jointly by the parties in an agreed format. Such announcement will be prepared jointly and will be made at a time agreed by the parties. Neither party shall unreasonably withhold its agreement to such format and timing.

9.3 Each party acknowledges and agrees that each Affected Party will have no adequate remedy at law if there is a breach or threatened breach of this Section 9 and, accordingly, each Affected Party will be entitled to seek an injunction or other equitable or similar preventative relief available under the laws of any jurisdiction against the breaching or potentially breaching party or its Representatives for such breach or threatened breach. Nothing herein will be construed as a waiver of any other legal or equitable remedies which may be available to any Affected Party in the event of a breach or threatened breach of this Section 9 and any Affected Party may pursue any other such remedy, including the recovery of damages, notwithstanding the terms of Section 11.

9.4 The restrictions and obligations of a party receiving Confidential Information and the rights of the Affected Party under this Section 9 will survive the termination of this Agreement indefinitely.

10 NOTICES

10.1 Any notice or communication required or permitted hereunder must be in writing and sent by (i) personal delivery, (ii) expedited delivery service with proof of delivery, or (iii) registered or certified mail, postage prepaid, addressed as follows:

To American:

American Airlines, Inc.
4333 Amon Carter Blvd.
MD 5675
Fort Worth, Texas 76155
U.S.A.
Attn: Corporate Secretary
Copy: Deputy General Counsel
Phone: 1-817-963-3598

To Qantas:

Qantas Airways Limited
Qantas Centre, 10 Bourke Road
Mascot NSW 2020
Australia
Attn: Head of Alliance Partnerships
Copy: General Counsel
Phone: +61-2-9691-0592

or to such other address or to the attention of such other person as the applicable party hereafter designates by written notice sent in accordance herewith. Any such notice or communication will be deemed to have been given either at the time of personal delivery or, in the case of delivery by service or mail, as of the date of proof of delivery at the address and in the manner provided herein.

11 GOVERNING LAW AND ARBITRATION

11.1 THIS AGREEMENT AND THE RIGHTS AND OBLIGATIONS OF THE PARTIES ARISING OUT OF OR DIRECTLY RELATING TO THIS AGREEMENT SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF ENGLAND AND WALES (WITHOUT REGARD TO THEIR CONFLICT OF LAWS PRINCIPLES) INCLUDING ALL MATTERS OF CONSTRUCTION, VALIDITY AND PERFORMANCE.

11.2 Without limiting Section 9.3, in the event either party seeks to have a controversy or claim determined by an arbitrator, such party agrees to provide the other party prior written notice of such intent and to comply with this Section 11.2 before filing for arbitration. Such notice shall include a request for a special meeting of the Steering Committee to commence no later than 15 Business Days after the date of the notice. If no special meeting of the Steering Committee is held, or if the Steering Committee is not able to resolve the dispute, then the party seeking arbitration may send an

additional notice at the end of such 15 Business Day period of its continuing intent to seek arbitration. At the end of an additional 15 Business Day period from delivery of this follow-up notice of intent to file for arbitration, the party seeking arbitration may file for arbitration without further delay. Following delivery of the initial notice of intent to arbitrate, the parties agree to use good faith efforts to resolve such controversy or claim; provided that the foregoing shall not prevent the party seeking arbitration from filing for arbitral review at the end of the second 15 Business Day period unless a mutually-agreed resolution of the dispute has been found by such date or the parties have agreed otherwise. All disputes arising out of or in connection with this Agreement shall be submitted to the International Court of Arbitration of the International Chamber of Commerce and shall be finally settled under the Rules of Arbitration of the International Chamber of Commerce by three arbitrators appointed in accordance with the said Rules, at least one of whom will be knowledgeable about the legal, marketing and other business aspects of the airline industry. The place of arbitration shall be London, England. The language of arbitration shall be English. The arbitrators shall award only such damages as are permitted to be awarded pursuant to this Agreement, the Alliance Agreement and the Alliance Settlement Agreement. The arbitrators must render their award within 30 days following the last hearing scheduled by the arbitrators and at that time state the reasons for their award in writing. Nothing in this Agreement shall prevent either party or its Affiliates from seeking provisional measures from any court of competent jurisdiction, and any such request shall not be deemed incompatible with the agreement to arbitrate or a waiver of the right to arbitrate.

12 CONSEQUENTIAL DAMAGES

12.1 EXCEPT FOR DAMAGES ARISING FROM PERSONAL INJURY OR DEATH CAUSED BY NEGLIGENCE, FRAUD OR WILLFUL MISCONDUCT, AND EXCEPT FOR DAMAGES ARISING FROM THE BREACH OF ANY CONFIDENTIALITY OBLIGATION, NEITHER PARTY NOR ITS AFFILIATES WILL BE LIABLE FOR ANY LOSS OF PROFITS, LOSS OF REVENUE, LOSS OF CONTRACT, LOSS OF ANTICIPATED SAVINGS, OR ANY INDIRECT OR CONSEQUENTIAL LOSS, WHETHER BASED ON A CLAIM OF CONTRACT, TORT (INCLUDING NEGLIGENCE), BREACH OF STATUTORY DUTY, OR ARISING FROM ANY BREACH OR FAILURE TO PERFORM OR IMPROPER PERFORMANCE UNDER THIS AGREEMENT, THE ALLIANCE AGREEMENT OR THE ALLIANCE SETTLEMENT AGREEMENT OR ANY TERMINATION OF THIS AGREEMENT, THE ALLIANCE AGREEMENT OR THE ALLIANCE IMPLEMENTATION AGREEMENT EVEN IF SUCH PARTY OR ITS AFFILIATES KNEW OR SHOULD HAVE KNOWN OF THE EXISTENCE OF SUCH DAMAGES, AND EACH PARTY HEREBY IRREVOCABLY RELEASES AND WAIVES ANY CLAIMS AGAINST THE OTHER PARTY REGARDING SUCH DAMAGES.

13 DATA PROTECTION AND PRIVACY

13.1 The parties will each comply with all Applicable Law and regulation regarding privacy and protection of personal data.

14 AFFILIATES

14.1 To the extent this Agreement or an Alliance Implementation Agreement provides for or contemplates participation of a party's Affiliates in the cooperative relationships described herein or therein, the parties will include such Affiliates (including for the avoidance of doubt any Affiliates acquired after the date of this Agreement) in the coordination and cooperation contemplated in this Agreement, subject to receipt of all necessary approvals of Competent Authorities. The parties agree that, subject to receipt of such approvals, the inclusion of the other party's Affiliates will be pursuant to this Agreement or the relevant Alliance Implementation Agreement and will not require the execution of separate subsidiary coordination agreements, except as otherwise agreed by the parties. If and to the extent the transactions or activities contemplated by this Agreement include the cooperation or participation of a party's Affiliates, such party will cause such Affiliates to cooperate or participate in such transaction or activity. The participation of an Affiliate in such coordination and cooperation activities will automatically terminate when the party to which it is affiliated ceases participating in the coordination and cooperation activities contemplated by this Agreement.

15 COMPLIANCE WITH LAWS AND REGULATIONS

15.1 Each party represents, warrants, and agrees that performance of its respective obligations under this Agreement shall be conducted in compliance in all material relevant respects with and it shall have all required licenses under, any Applicable Law including, when obtained, all Government Approvals.

16 AMENDMENT; WAIVER

16.1 Amendment. This Agreement may be amended only by a written instrument signed by each party.

16.2 Waiver. No failure to exercise and no delay in exercising, on the part of a party, any right, remedy, power or privilege hereunder, will operate as a waiver thereof, nor will any single or partial exercise of any right, remedy, power or privilege hereunder preclude any other or further exercise thereof or the exercise of any other right, remedy, power or privilege. The rights, remedies, powers and privileges herein provided are cumulative and not exclusive of any rights, remedies, powers and privileges provided by law. The failure of a party to insist upon a strict performance of any of the terms or provisions of this Agreement, or to exercise any option, right or remedy herein contained, will not be construed as a waiver or as a relinquishment for the future of such term, provision, option, right or remedy, but the same will continue and remain in full force and effect. No waiver by a party of any term or provision of this Agreement will be deemed to have been made unless expressed in writing and signed by such party.

17 ASSIGNMENT

17.1 Neither party may assign, novate or transfer or permit the assignment, novation or transfer of this Agreement (or any rights hereunder) without the prior written consent of the other party, which consent may be withheld in such party's sole discretion.

Notwithstanding any provision herein to the contrary, Qantas hereby agrees and consents to any merger, stock transfer, asset transfer or other corporate restructuring that is necessary or convenient to achieve American's merger with US Airways and involving American and American Airlines Group Inc. ("**AAL**") and/or any other wholly-owned subsidiary or subsidiaries of AAL (an "**Internal Restructuring**" and such subsidiaries, together with AAL, each an "**AAL Party**") and any related assignment or transfer of this Agreement to an AAL Party that may occur as a result of such Internal Restructuring, provided that the resulting party to this Agreement is the carrier that operates American's Codeshared Routes (as defined under the Codeshare Agreement). Qantas waives any right Qantas may have to terminate, amend or modify this Agreement and any claim of breach or default hereunder in each case arising in connection with or as a result of such Internal Restructuring.

18 INDEPENDENT CONTRACTOR

18.1 Each party is an independent contractor. Nothing in this Agreement is intended or will be construed to create or establish any agency relationship (except to the extent a party is expressly in writing designated to serve as agent for the other party), partnership or fiduciary relationship between the parties. Neither party has authority to act for or to incur any obligations on behalf of or in the name of the other party and neither party shall be liable to any third party for actions of the other party. Each party will remain an entirely separate corporate entity, and unless otherwise expressly provided herein or in an Alliance Implementation Agreement, will retain independent decision-making and managerial authority regarding all matters.

19 THIRD PARTIES

19.1 This Agreement is binding upon and inures to the benefit of the parties and their successors and permitted assigns. Subject to Section 14, all rights, remedies and obligations of the parties hereunder will accrue and apply solely to such parties and their successors and assigns and there is no intent to benefit any third parties. In particular, a person who is not a party to this Agreement shall have no right under the Contracts (Rights of Third Parties) Act 1999 to enforce any of its terms.

20 FORCE MAJEURE

20.1 Neither party will be liable for delays or failures to perform under this Agreement caused by a Force Majeure Event, provided that no obligation to make a payment shall be excused or limited by virtue of any Force Majeure Event.

21 FURTHER ASSURANCES

21.1 Subject to Applicable Law, each party will perform such further acts and execute and deliver such further instruments and documents at such party's expense, as may be required by Applicable Law or as may be reasonably requested by the other party to carry out and effectuate the purposes of this Agreement.

22 COUNTERPARTS

22.1 This Agreement may be executed in counterparts, which taken together will constitute one and the same instrument. Execution may be effected by delivery of facsimiles of signature pages (and the parties will follow such delivery by prompt delivery of originals of such pages or the signed Agreement in full).

23 HEADINGS; CONSTRUCTION

23.1 The headings used in this Agreement are for convenience only and are not intended to change the meanings of the provisions hereof.

24 SEVERABILITY

24.1 If any provision of this Agreement is or becomes illegal, invalid or unenforceable under Applicable Law, such provision shall be severed from this Agreement in the jurisdiction in question and shall not affect the legality, validity or enforceability of the remaining provisions of this Agreement nor the legality, validity or the enforceability of such provision under the law of any other jurisdiction.

24.2 If, in the reasonable opinion of either party, any such severance affects the commercial basis of this Agreement, the party shall so inform the other party and the parties shall negotiate in good faith to agree upon modification of this Agreement so as to maintain the balance of the commercial interests of the parties. If, however, such negotiations are not successfully concluded within 90 days from the date a party has informed the other that the commercial basis has been affected, either party may terminate this Agreement by giving at least a further 180 days' prior written notice to the other party.

25 ENTIRE AGREEMENT

25.1 This Agreement, the Alliance Agreement and the Alliance Settlement Agreement represent the entire agreement of the parties with respect to their subject matter and, as of the date first written above, terminate and supersede any prior or contemporaneous agreements, discussions, undertakings and understandings, whether written or oral, expressed or implied, between the parties with respect to the same subject, including the 2015 Joint Business Agreement. To the extent there is any conflict between this Agreement and any other Alliance Implementation Agreement, the terms of this Agreement shall control as to the subject matter hereof.

25.2 Neither party has entered into this Agreement, the Alliance Agreement or the Alliance Settlement Agreement in reliance upon any statement, representation, warranty, undertaking, assurance, promise, understanding or other provision made by or on behalf of the other party, any of its representatives or any other person which is not expressly set out in this Agreement, the Alliance Agreement or the Alliance Settlement Agreement.

AMENDED AND RESTATED JOINT BUSINESS AGREEMENT – EXECUTION PAGE

IN WITNESS WHEREOF, the parties have caused this Agreement to be duly executed and delivered by their proper and duly authorised representatives as of the date first above written.

QANTAS AIRWAYS LIMITED

By: _____
Name: Alan Joyce
Title: Chief Executive Officer
Date:

AMERICAN AIRLINES, INC.

By: _____
Name: Doug Parker
Title: Chief Executive Officer
Date:

AMENDED AND RESTATED JOINT BUSINESS AGREEMENT – EXECUTION PAGE

IN WITNESS WHEREOF, the parties have caused this Agreement to be duly executed and delivered by their proper and duly authorised representatives as of the date first above written.

QANTAS AIRWAYS LIMITED

By: _____
Name: Alan Joyce
Title: Chief Executive Officer
Date: 3 NOVEMBER 2017

AMERICAN AIRLINES, INC.

By: _____
Name: Doug Parker
Title: Chief Executive Officer
Date:

APPENDIX A

DEFINITIONS

As used in this Agreement, terms with their initial letters capitalized (or otherwise defined) in the headings, recitals or elsewhere in this Agreement shall have the meanings ascribed to them below (references herein to Sections shall refer to sections of the main text of this Agreement unless otherwise noted):

"Ad Hoc Changes" shall mean short term changes of up to three months of aircraft type or configuration on Joint Services operated by the applicable carrier due to the operating carrier's operational constraints, and does not include adding routes, scheduled frequencies or Capacity to take advantage of seasonal or specific opportunities that were not set forth in the Business Plan.

"Affiliate" means, with respect to any person or entity, any other person or entity, directly or indirectly, as of or after the Effective Date Controlling, Controlled by, or under Common Control with, such person or entity. Where a party has an equity interest in another carrier, but does not have Control of the other carrier, the other carrier would not be deemed an "Affiliate." For example, as of the Effective Date, (a) Qantas has an equity interest in Jetstar Asia Airways Pte Ltd ("Jetstar Asia") and Valuair Ltd ("Valuair"), but does not Control Jetstar Asia or Valuair, so as of the Effective Date, Jetstar Asia and Valuair are not deemed Affiliates of Qantas, and (b) Qantas has Control over Jetstar Airways Pty Ltd ("Jetstar Australia"), so as of the Effective Date, Jetstar Australia is a deemed Affiliate of Qantas.

"Agreed Route Distances" means the route distances referred to in Appendix 2 to the Alliance Settlement Agreement, which are based upon the Great Circle Distances obtained from the U.S. Department of Transportation's Bureau of Transportation Statistics.

"Agreement" means this Amended and Restated Joint Business Agreement, including all Appendices hereto, as may, from time to time, be amended or modified in accordance herewith or therewith.

"Alliance Implementation Agreement" means any of the following agreements between the parties, individually or collectively, as the context requires: this Agreement, the Alliance Agreement, the Alliance Settlement Agreement, the Codeshare Agreement, each Frequent Flyer Agreement and the Lounge Access Agreement.

"Alliance Settlement" means the methodology set out in the Alliance Settlement Agreement to settle each party's net revenues resulting from the Joint Services.

"Alliance Settlement Agreement" means that certain Amended and Restated Alliance Settlement Agreement by and between American and Qantas of even date herewith, that governs the specific terms of the revenue settlement arrangements between the parties, and any amendments or successor agreements.

"Alliance Standard Accounting Principles" means the accounting policies and principles to be described by the parties under the Alliance Settlement Agreement, as may be amended or modified in accordance therewith.

"Applicable Law" means all applicable laws of any jurisdiction including ordinances, judgments, decrees, injunctions, writs, and orders or like actions of any Competent Authority and the rules, regulations, orders or like actions of any Competent Authority and the interpretations, licenses and permits of any Competent Authority.

"Australian Antitrust Immunity" means authorization or interim authorization under the Competition and Consumer Act 2010 (Commonwealth of Australia), of the transactions and activities contemplated in the Alliance Agreement, this Agreement, and if applicable, in any of the other Alliance Implementation Agreements.

"Australian Region" means Australia and New Zealand.

A "Burdensome Condition" shall arise in relation to a party if, as a condition to implementing any aspect of the relationships contemplated by this Agreement, the DOT or any other Competent Authority would require that party to make payments or accept commitments, to accept contract terms, to limit its operations, to impair any right with respect to the use of its assets or to otherwise affect the party, in each case, in a manner or to a degree that, after giving effect to the sharing of any burden between the parties, materially and adversely affects the collective benefits to such party, in the affected party's judgment acting reasonably, under the relationships contemplated by this Agreement taken as a whole.

"Business Day" means any day other than Saturday, Sunday or any other day on which banking institutions either in New York or in Sydney (or both) are required by law to be closed.

"Business Plan" is defined in Section 3.2.1.

"Capacity" means, (i) as to a specific route and time period the product of (a) the aggregate number of Equivalent Seats flown on Joint Services during such period from the origin airport to the destination airport on such route, and vice versa, multiplied by (b) the Agreed Route Distances between such airports , and (ii) as to an individual party and time period, (a) the aggregate number of Equivalent Seats flown on Joint Services during such period from the origin airport to the destination airport by that party or its Affiliates, multiplied by (b) the Agreed Route Distances between such airports.

"Capacity Share" shall mean each party's proportionate percentage of the overall agreed Capacity for the Joint Services.

"Change of Control" with respect to a party occurs if such party: (i) merges or consolidates with or into any other person or entity; except when such merger or consolidation is with an Affiliate of such party, or where immediately after such merger or consolidation, the shareholders of the party immediately prior to the merger or consolidation continue to own more than 49.99% of the common equity of the surviving entity and, if the party is not the surviving entity, the surviving entity assumes in writing all of the obligations and responsibilities of the party under this Agreement and the Alliance Implementation Agreements, (ii) sells or otherwise transfers all or substantially all of its assets to any other person or entity except to an Affiliate of such party, (iii) if a third party (or third parties acting as a group), except for an Affiliate of a party, acquires 50.01% or more of the party's common equity in one or more transactions, or (iv) if a third party airline (not being an Affiliate of a party) or the parent of a third party airline, acquires Control directly or indirectly of a party.

"Codeshared Flight" means any flight on which both parties place their flight designator codes.

"Competent Authority" means any supranational, national, federal, state, county, local or municipal government body, bureau, commission, board, board of arbitration, instrumentality, authority, agency, court, department, minister, ministry, official or public or statutory person (whether autonomous or not) having jurisdiction over this Agreement or either party, including, for the avoidance of doubt, the United States Departments of Justice and Transportation and the Australia Department of Infrastructure and

Regional Development, the Civil Aviation Safety Authority, the Australian Competition and Consumer Commission, and any similar authority that replaces them.

"Confidential Information" means (i) all confidential or proprietary information of a party and its Affiliates, including trade secrets, information concerning past, present and future research, development, business activities and affairs, finances, properties, methods of operation, processes and systems, customer lists, customer information (such as passenger name records or data) and computer procedures and access codes, and (ii) the terms and conditions of this Agreement and the Alliance Agreement and any reports, invoices or other communications between the parties given in connection with the negotiation or performance of this Agreement or the Alliance Agreement, and (iii) excludes (A) information already in a party's possession prior to its disclosure by the other party, (B) information obtained from a third person or entity that is not prohibited from transmitting such information to the receiving party as a result of a contractual, legal or fiduciary obligation to the party whose information is being disclosed, (C) information that is or becomes generally available to the public, other than as a result of disclosure by a party in violation of this Agreement, and (D) information that has been or is independently acquired or developed by a party, or its Affiliate, without violating any of its obligations under this Agreement.

"Connect" (including "Connecting") in reference to routes or Services, means those routes or Services that permit passengers to transfer between routes or Services at the same city within a time frame to be agreed, where at least one route is a non-stop route between North America and the Australian Region and a single ticket has been issued using a through or combinable fare.

"Control" (which shall be deemed to refer interchangeably to "Controlling," "Controlled by" and "under Common Control with") shall mean the power of any person or persons acting as a group, directly or indirectly, to direct or cause the direction of the management and policies of another person or entity, whether through the ownership of voting securities or by contract or otherwise. Where a party to this Agreement is a shareholder in another carrier, but absent Controlling other shareholders or being under Common Control with other shareholders in the carrier, the party cannot unilaterally direct or cause the direction of management and policies of the carrier, then that party will not be deemed to "Control" such carrier for purposes of this Agreement.

"Deal" is a special Pricing arrangement with either a party's corporate customer or travel intermediary for business or leisure travel (or both) such as fare reductions or rebates and other value added offerings.

"Direct" means any flight between two points, which includes one or more stops at an intermediate point. The flights between any intermediate points do not have local traffic rights and are not required to have the same flight number.

"DOT" means the United States Department of Transportation or any successor thereto.

"ESK" or "Equivalent Seat Kilometer" means one Equivalent Seat flown one kilometer.

"Equivalent Seats" has the meaning defined in the Alliance Settlement Agreement.

"FFP Member" means a customer enrolled in a party's frequent flyer program.

"Frequent Flyer Agreement(s)" means, as the context requires, that certain Qantas Frequent Flyer Participating Carrier Agreement, dated as of April 1, 2004, and that certain AAdvantage Participating Carrier Agreement, dated as of April 1, 2004, by and between American and Qantas, as amended, and any successor agreements.

"Force Majeure Event" means acts of God, war, terrorism, sabotage, strikes, labor disputes, work stoppage, fire or events beyond the reasonable control of a party.

"Functional Committee" means standing or temporary committees appointed by the Management Committee in accordance with Section 4.4.1.

"General Pricing Guidelines" means pricing standards and guidelines relating to the Joint Services and Services Connecting to or from the Joint Services, including those that provide delegation of day-to-day pricing management, which may include delegation to joint pricing teams or delegation on a geographic basis.

"Governmental Approvals" means all orders, permits, licenses, registrations, waivers, authorizations, exemptions, confirmations and approvals of any Competent Authority, including US Antitrust Immunity and Australian Antitrust Immunity, which are necessary, or are reasonably considered by a party to be material and appropriate to be obtained in connection with this Agreement and the transactions contemplated hereby.

"IATA" means the International Air Transport Association.

"Implementation Date" means the date when the parties have received both Australian Antitrust Immunity and US Antitrust Immunity as evidenced by the date of notice letter received from the Competent Authority which is last to provide the US Antitrust Immunity or Australian Antitrust Immunity, as applicable.

"Initial Capacity Introduction" means (a) the operation of two existing routes of Scheduled Passenger Services by American (between Los Angeles and Sydney and between Los Angeles and Auckland), as well as (b) an additional [redacted] by American on any routes between the Australian Region and North America that do not overlap with Qantas routes.

"Joint Business" shall mean the business activities and arrangements conducted jointly by the parties under this Agreement and the Alliance Settlement Agreement.

"Joint Services" means all Scheduled Passenger Services of the parties and their Affiliates flying Direct between the Australian Region and North America including the existing daily Qantas flight from Sydney to New York which stops in Los Angeles.

"Lounge Access Agreement" means that certain **one**world Lounge Access Agreement by and between American and Qantas, dated January 27, 1999, as amended, and any amendments or successor agreements.

"Management Committee" means a joint management committee to oversee the Joint Business appointed by the parties in accordance with Section 4.1.

"Material Default" means a party's (the "Defaulting Party's") failure to perform or observe any term of this Agreement, or the Alliance Agreement, the Alliance Settlement Agreement or the Codeshare Agreement which, individually or collectively with any other such failure by such Defaulting Party under the terms of any such agreement, would (or would reasonably be expected to) materially and adversely affect the collective benefits to the other party ("Non-Defaulting Party") under all of such agreements considered as a whole over the remaining terms of such agreements.

"New Capacity" with respect to the Joint Services means (a) the addition of new routes, (b) increases in frequency on existing routes, (c) changes to aircraft type or gauge that increase Capacity, (d) the assignment by a party to any of its Affiliates of any Joint Services previously scheduled in the Network Plan to be operated by such party, and (e) more than one daily Qantas tag flight from Australia to a city within North America that stops at a North American gateway. New Capacity excludes any changes in Capacity due to the Initial Capacity Introduction or due to Ad Hoc Changes.

"New Capacity Proposal" means a business case prepared by the party proposing New Capacity, which shall include a proposal on the Capacity Share for the New Capacity.

"North America" means the United States of America (including Puerto Rico and the U.S. Virgin Islands but excluding Hawaii, Guam and other U.S. territories), Canada and Mexico.

"oneworld Alliance" means the multilateral global airline alliance branded as such, or any successor thereto.

"Other Destinations" means destinations outside of the Australian Region and North America.

"Pricing" means any form of gross or net price sold to any of the parties' customers or agents and shall include all published fares and all forms of agency or corporate net rate arrangements.

"Representatives" means a party's directors, officers, employees, professional advisors and the party's agents and contractors involved in the Joint Business, or in the case of Affiliates the directors, officers, employees, professional advisors and agents and contractors of the Affiliates involved in the Joint Business, as the context indicates.

"Scheduled Passenger Service" means any Service that is published for display and sale to the public (either directly or through industry agents or other approved intermediary parties) in industry schedule information systems and airline/airport operational systems with Service Type "J," as defined in IATA Standard Schedules Information Manual, Appendix C.

"Services" means any and all flights operated by a party or any of its Affiliates.

"Steering Committee" means a Steering Committee appointed by the parties in accordance with Section 4.2.

"Tactical Marketing" means short term sales promotions and activities such as price promotions, upgrade offers and mileage promotions, including joint marketing with tourism bodies.

"Unpublished/Dealt Pricing" means a price, including any related special conditions, that is only available to specific agents or corporations and is therefore not available in all distribution channels.

"Unpublished/Dealt Pricing Guidelines" means pricing and dealing guidelines for Unpublished/Dealt Pricing and policies for Deals.

"US Antitrust Immunity" means the approval, exemption, and immunization of the parties, pursuant to 49 U.S.C. sections 41308 and 41309, from the application of all United States antitrust laws, as defined therein, for all transactions and activities contemplated in the Alliance Agreement, this Agreement, the Alliance Settlement Agreement, and if applicable, in any of the other Alliance Implementation Agreements.

"Year" means a calendar year, provided however that the first year will begin on the Implementation Date and conclude on December 31 of that year.

Appendix 2:

Robert J. Calzaretta, Jr., Yair Eilat & Mark A. Israel, *Competitive Effects of International Airline Cooperation*, 13 J. COMP. LAW & ECON. 501 (2017)

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COMPETITIVE EFFECTS OF INTERNATIONAL AIRLINE COOPERATION

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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.

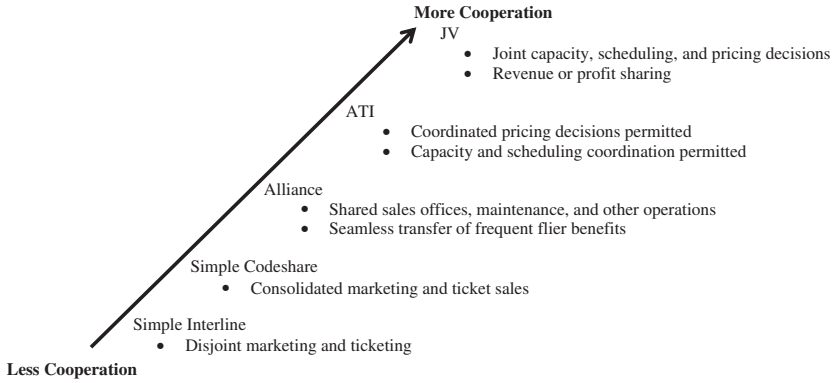

Figure 1. Degrees of airline cooperation
Sources: U.S. Dep't of Transp., Press Releases, https://www.transportation.gov/press-releases; Eur. Comm'n & U.S. Dep't of Transp., Transatlantic Airline Alliances: Competitive Issues and Regulatory Approaches 5 and fig. 1 (Nov. 16, 2010).

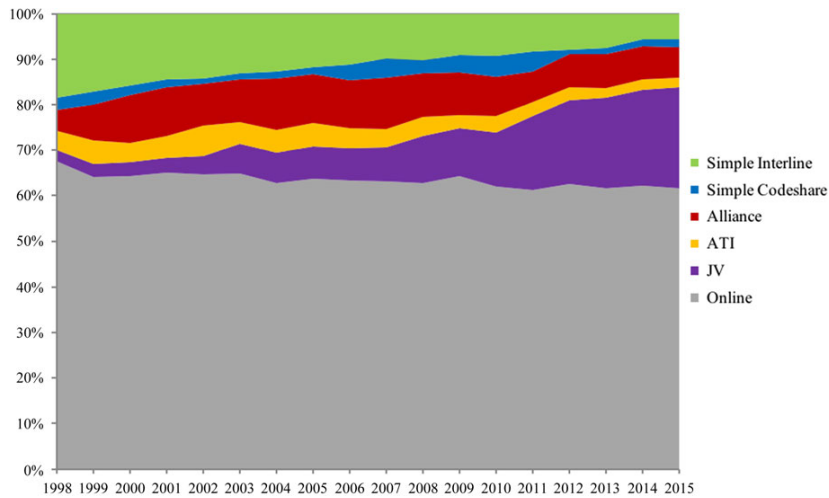

Figure 2. Fraction of connecting transoceanic passengers by year and type
Notes: Traffic carried exclusively on non-U.S. carriers is not recorded in these data and, thus, is excluded from the figure. Excludes one-way itineraries.

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				American-Swissair-Sabena America West-Royal Jordanian
	United-New Zealand				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 (CO)	May 2001	Present	
Continental-	Copa Airlines (CM)			
Copa	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.

Appendix 3:

Darin Lee, Compass Lexecon, *Do Metal-Neutral JVs Price as Efficiently as Individual Carriers?*, Presentation at Georgetown Airline Competition Conference (July 17, 2017)

COMPASS LEXECON

Do Metal-Neutral JVs Price as Efficiently as Individual Carriers?

Darin Lee, Compass Lexecon

Georgetown Airline Competition Conference

July 17, 2017

Revenue-Sharing Joint Ventures Have Transformed International Airline Competition…

- A major development in the global airline industry has been the proliferation of revenue-sharing joint venture agreements ("JVs").
  - JVs enable carriers to offer more **ubiquitous network coverage** by offering "quasi-online" service to destinations that are uneconomic for them to serve on their own (e.g., Austin, Texas-Wellington, New Zealand).
  - JVs are often required to be **"metal-neutral"** to ensure that they provide the maximum benefits to passengers.
  - Partners enjoy **antitrust immunity** ("ATI") allowing them to coordinate pricing and capacity decisions.

- JVs and their predecessors—immunized alliances—have been predicated on **findings from the academic literature** showing that increased coordination lowers fares by reducing a pricing-inefficiency known as **"double marginalization"**.
  - Double marginalization results from the fact that on interline tickets, each carrier sets the price of its own segments **without considering the impact of its price on the other carrier's profits**, leading to higher fares than those of a single carrier.

… But Have Also Been the Target of Increased Scrutiny

The Economic Predicate For Immunized JVs Is Rooted In a Series of Academic Studies

THE PRICE EFFECTS OF INTER
AIRLINE ALLIANCES*

JAN K. BRUECKNER and W. TOM WH
University of Illinois at Urbana-Cham

ABSTRACT

This paper provides evidence on the effect of inter
fares. The main finding is that alliance partners charg
proximately 25 percent below those charged by nonalli
theoretical model, the main source of this fare reduct
negative externality that arises from the uncoordina
fares" in the absence of an alliance. The paper also
competitive alliance effect in the gateway-to-gatewa
mates show that an alliance between two previou
raise fares by about 5 percent, this effect is not sta

I. INTRODUCTIO

DEREGULATION of U.S. airlines spurred th
jor innovations by the industry. In the 1980
route structures into hub-and-spoke netwo
flier programs and building computerized
novation has swept the industry in the 199
airline alliances.

The oldest of the major alliances is o
and it is currently expanding to include
was initiated by United and Lufthansa,
SAS, Air Canada, Thai, Varig. Air New
"oneworld" alliance, anchored by Am
cludes Canadian, Qantas, Cathay Pac
Delta and Air France recently formed
Aeromexico as the first of a number o
of the industry envision an ongoing c
fic among these four alliances.

Through international alliances, U

* We thank Dan Bernhardt, Dennis Ca
for helpful comments and discussion. Any
our responsibility.

[*Journal of Law & Economics*, vol. XLI
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INTERNATIONAL AIRFARES IN THE AGE
EFFECTS OF CODESHARING AND ANTIT

Jan K. Brueckner*

Abstract—This paper provides empirical evidence showing the effect of airline cooperation on the interline fares paid by international passengers. The analysis focuses on two measures of cooperation, codesharing and antitrust immunity, and the results show that their partial effects are both negative. The presence of codesharing on an international interline itinerary reduces the fare by 8%–17%, with the exact number depending on the sample used and the estimation method. Moreover, the presence of antitrust immunity reduces the fare by 13%–21%. Codesharing and immunity are substitutes, however, in the sense that their combined effect is smaller than the sum of their partial effects. Taking account of this difference, which is captured by an interaction variable in the regressions, the combined effect ranges between 17% and 30%. These results provide strong evidence that airline cooperation in the fare-setting process generates substantial benefits for interline passengers.

I. Introduction

As international airline traffic has expanded in recent decades, a new development has swept the industry: extensive cooperation among international carriers in the provision of service. This cooperation represents the industry's strategic response to regulatory barriers that prevent any one carrier from substantially expanding its international route network. These barriers include restrictive bilateral agreements that limit service between countries, and prohibitions on cross-border airline mergers.

The most visible form of cooperation is found in the international airline alliances that link U.S. carriers to partners in other countries. These alliances are designed to offer the international passenger a seamless travel experience by minimizing some of the inconveniences of a traditional interline (multicarrier) trip. Schedule coordination by the alliance partners along with gate proximity at hub airports eases passenger connections between the carriers, and these conveniences are typically reinforced by a merger of the partners' frequent-flier programs. In addition, in those cases where the alliance partners enjoy antitrust immunity, cooperation extends into the realm of pricing. With immunity, the partners can collaborate in the determination of fares for interline trips in a fashion that was impossible under traditional pricing arrangements.

Cooperation is also widespread among carriers that are not formal alliance partners. Such cooperation arises through a web of international codesharing arrangements, which are common among alliance partners but also link many nonallied carriers. With codesharing, a trip is ticketed

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* University of Illinois at Urbana-Champaign.

This paper makes use of an empirical framework developed jointly by Tom Whalen and myself in previous work (Brueckner and Whalen, 2000). As a result, Whalen is effectively a coauthor of this paper even though his name is not explicitly listed. I also thank him for many helpful discussions while the present work was carried out. George Deltas and an anonymous referee also provided useful comments.

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support of a codesharin
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as if they were formal
share trips are usually
under traditional arrang
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immunity.

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the fares charged for interline
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passengers, over and above any co
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Because the extent of cooperat
determined in part by government r
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Transportation (DOT) is the agency
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identifies substantial benefits to inte
might be considered when DOT acts
munity. DOT also must approve c
ments, and the present results point to
that could also help guide its decisions

The paper's results extend the earlier
of Brueckner and Whalen (2000), who
national alliances lead to lower fares. Bot
from the Passenger Origin-Destination Sur
the DOT, which shows fares for thousan
itineraries (i.e., route-carrier combinations)
and international. However, the 1999 da
present study provide key additional inform
not available in the 1997 data used by
Whalen (BW). In particular, the 1999 data ind
operating carrier and the ticketed carrier fo
segment of an itinerary, with the two being di
segment involves codesharing. As a result, i
codesharing on fares can be measured at the cit

Rev Ind Organ (2007) 30:39–61
DOI 10.1007/s11151-007-9125-0

ORIGINAL ARTICLE

A panel data analysis of code-sharing, antitrus
immunity, and open skies treaties in internatio
aviation markets

W. Tom Whalen

Published online: 15 February 2007
© Springer Science+Business Media, LLC 2007

Abstract This paper estimates the effects of code-sha
and Open Skies treaties on prices, output, and capac
panel of U.S.-Europe data. Code-sharing and immur
to have significantly lower prices than does traditiona
service, but the effects are smaller in magnitude tha
results that rely on cross-sectional data. Statistical t
nized alliance service are equal to online (single carri
rejected, providing additional evidence that immuni
carriers to internalize a double marginalization p
effects, consistent with the price effects, show that
large increases in passenger volumes. Lastly, esti
expansions associated with "Open Skies" treaties
by immunized carriers on routes between their hu

Keywords Airline Alliances · Antitrust Immur
Skies Treaties

1 Introduction

Increasing demand for international air travel
airlines to forge strategic alliances with their

I would like to thank the editor and an anonymous refe
expressed in this paper do not reflect those of the US D

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ALLIANCES, CODESHARING, ANTITRUST IMMUNITY, AND INTERNATIONAL AIRFARES: DO PREVIOUS PATTERNS PERSIST?

Jan K. Brueckner, Darin N. Lee† & Ethan S. Singer‡*

ABSTRACT

This paper revisits the effect of airline cooperation on international airfares, using a panel data set from 1998 to 2009. The findings mostly confirm previous results, showing that full airline cooperation lowers the fares paid by interline passengers, and that incremental improvements to cooperation individually lead to fare reductions. The results, which show that codesharing, alliance service, and antitrust immunity each separately reduces fares below the traditional interline level, overturn contrary and counterintuitive findings in recent U.S. Department of Justice (DOJ) studies. The findings thus buttress the consumer-benefit arguments used in many past antitrust-immunity cases, which were called into question by the DOJ studies.

JEL: L4; L93

I. INTRODUCTION

International alliances have become a permanent fixture in the airline industry. Spurred by a desire to provide seamless international service in a world that prohibits most cross-border airline mergers, alliances first emerged in the early 1990s. With a dramatic expansion and some reshuffling of memberships, alliances now carry the great majority of international passengers, with traditional interline trips on nonaligned carriers fading in importance, especially across the Atlantic.[1] But despite the key role that alliances play in international travel, they are still frequently embroiled in regulatory controversy. The recent bid for antitrust immunity (ATI) by American Airlines (AA), British Airways (BA), and Iberia (IB), for example, was praised by its

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‡ University of Minnesota. Email: singe119@umn.edu. The research reported in this article was carried out with financial support from United Airlines. However, the views expressed in this article are ours alone.
[1] For example, based on the ConCRS MIDT database, during 2009, approximately 84% of U.S. transatlantic and 72% of U.S. transpacific passengers were transported by members of one of the three global alliances: oneworld, Star, and SkyTeam.

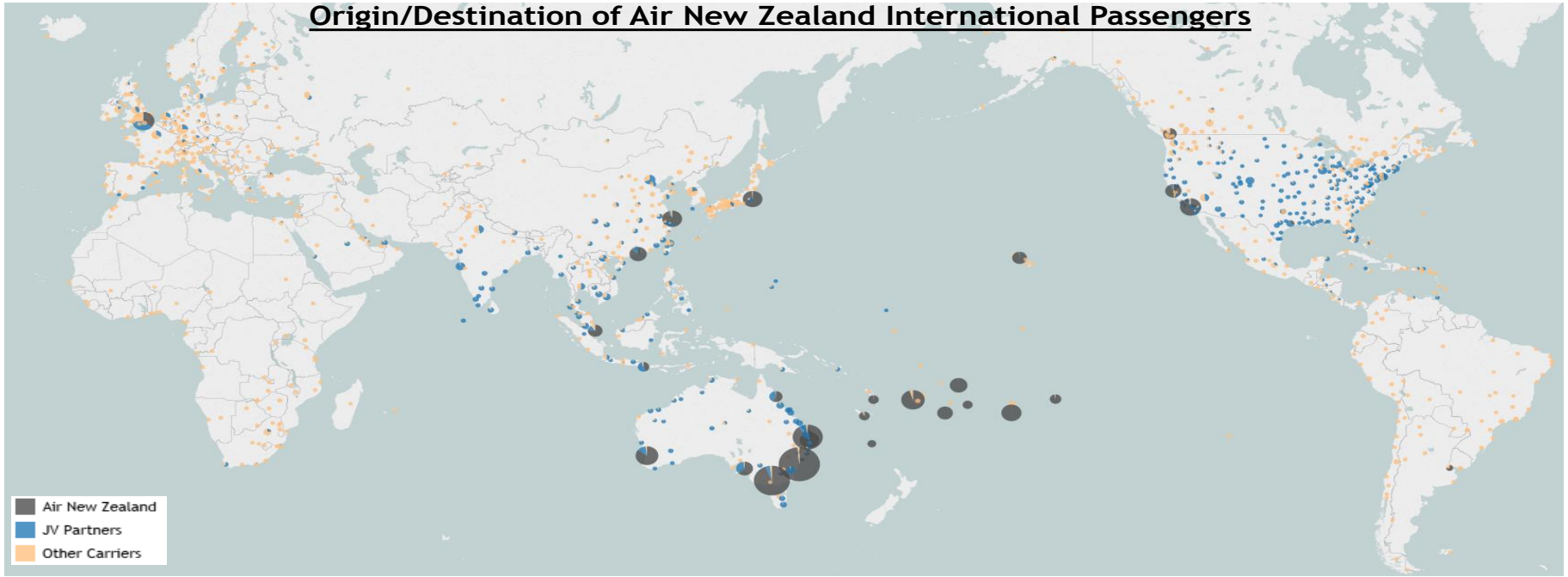
Empirical Question: *Do Metal-Neutral JVs Achieve The Same Degree of Pricing Efficiency as a Carrier's Online Service?*

- Recognizing that increased cooperation reduces double marginalization, regulators usually *require* metal-neutral JVs **as a condition of new grants of immunity**.
- While most JV applications to date have relied on findings from the academic literature showing the fare savings from increased cooperation, data limitations have precluded these studies from explicitly measuring **JV fare effects independent of ATI**.
- Availability of additional data has enabled us to address a key question in the debate regarding the effect of immunized JVs in two ways:
  1. We have used **internal fare data** from **Air New Zealand** to analyze whether its JVs achieve the same level of pricing efficiency as its online service.
  2. The increasing prevalence of JVs has allowed us to extend our previously published analysis of U.S. DOT data to **separately estimate the "JV" effect** from the ATI effect.

Study of Air New Zealand's Internal Ticket Data

- Unique study based on a **carrier's internal data** to analyze fare effects from revenue-sharing JVs separate from other cooperative effects
  - Based on **ten years** (2005-2015) of Air New Zealand ticket data
    - Covers the time period in which Air New Zealand's began revenue-sharing JVs with Virgin Australia (2010), Cathay Pacific (2012), Singapore Airlines (2015).
  - Measures Air New Zealand fares vs. its interline fares and identifies price effects for **non-JV codeshare**, **JV** and **online** connecting tickets.
  - Use of carrier-specific data allows us to **control for a broad range of ticket characteristics** previous studies have been unable to observe (e.g., days of advance purchase, trip length, etc.)
- Unique nature of **New Zealand market** makes Air New Zealand an ideal candidate to study revenue-sharing JVs.

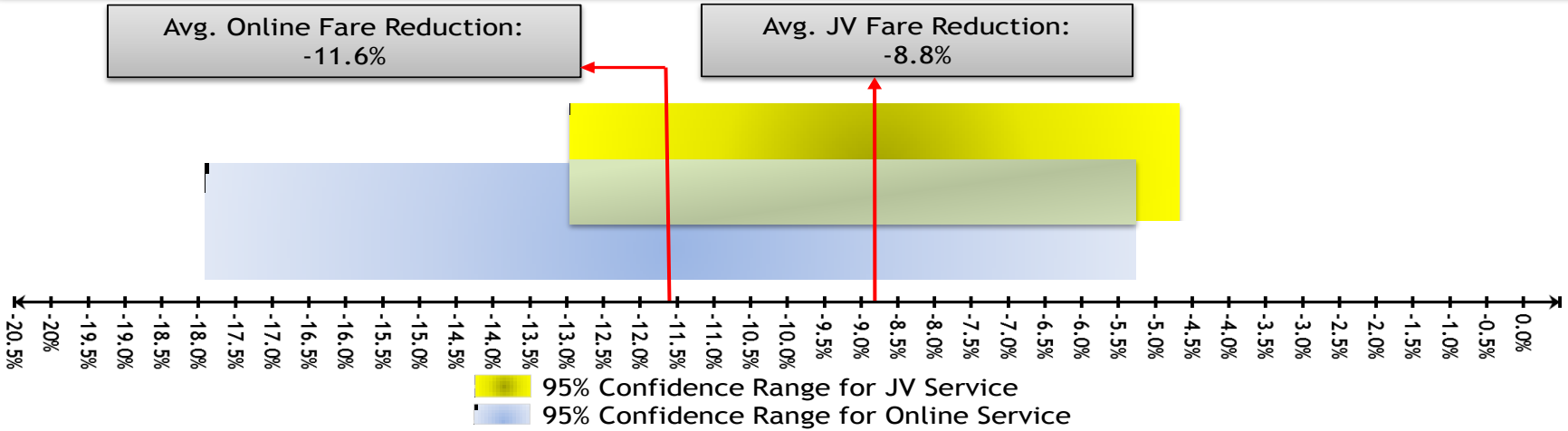
Air New Zealand's Native Network Extends to Only a Small Fraction of the Destinations Its Passengers Want to Reach



Source: Analysis of Air New Zealand data. Pie chart reflects the share of last operating carrier on ANZ marketed international itineraries to a destination in 2015. Limited to flights originating in New Zealand. JV Partners include Cathay Pacific, Singapore Airlines, Virgin Australia, Air China and United Airlines.

We Find That The Relative Fare Savings From Air New Zealand's JVs Are Statistically Equivalent To Its Online Fares

"This finding provides compelling statistical evidence that the incentives inherent in a metal-neutral revenue-sharing agreement have resulted in Air NZ and its JV partners behaving like a single online carrier in pricing their connecting trips. Moreover, although this finding is consistent with both the economic theory and the predictions of regulatory authorities and carriers alike, it is (to the best of our knowledge) the first empirical validation of the proposition that metal-neutral JVs eliminate double marginalization altogether."

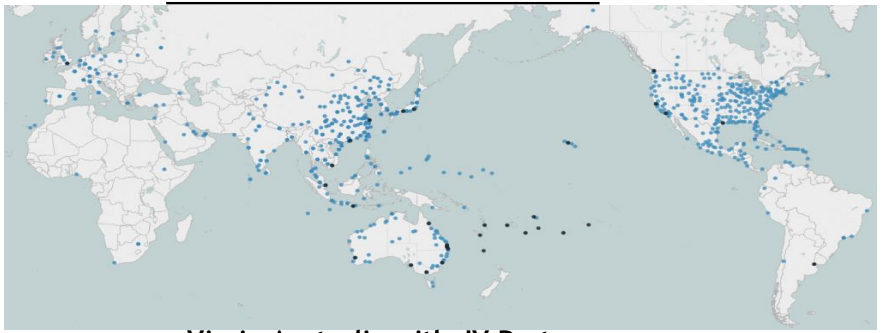


Source: "*Ex Post* Analysis of Air New Zealand Revenue-Sharing Joint Venture Agreements", Jan Brueckner, Darin Lee and Ethan Singer, Compass Lexecon, June 13, 2016, page 34. Avg. Fare savings are for connecting passengers are across all fare classes relative to interline fares.

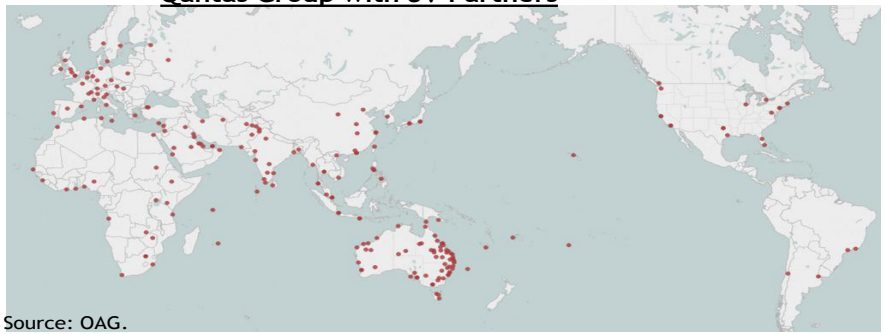
Air New Zealand's JVs Have Created a More Comprehensive "Virtual Network", Thereby Enhancing Network Competition With Other JVs on More City-Pairs

Air New Zealand *without* JV Partners

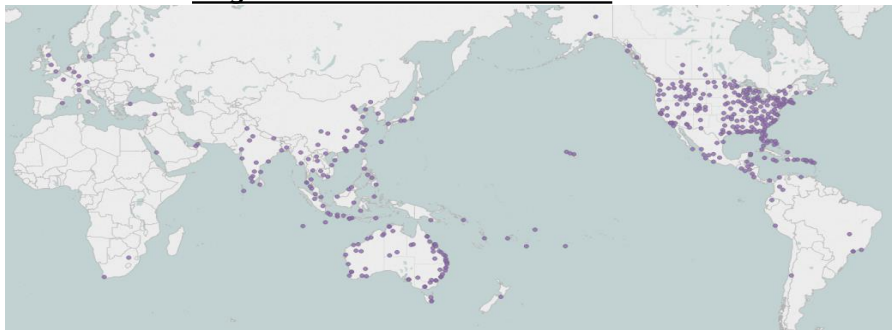
Air New Zealand with JV Partners



Qantas Group with JV Partners



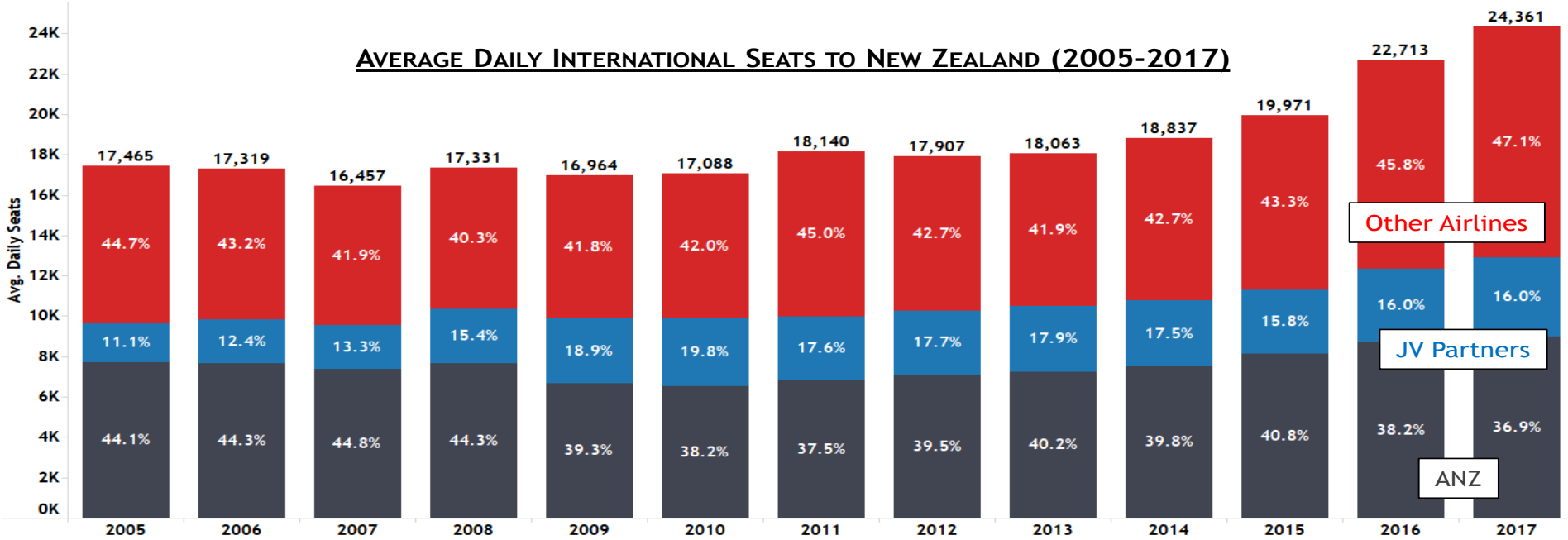
Virgin Australia with JV Partners



Source: OAG.

Notes: Air New Zealand JV partners include Virgin Australia, Singapore Airlines, Cathay Pacific, Air China and United. Qantas JV partners include Emirates. Virgin Australia JV partners include Singapore Airlines and Delta Air Lines but excludes destinations served exclusively by Air New Zealand. Destinations served as of 2016.

There is No Evidence That ANZ's JVs Have Precluded Other International Carriers From Entering/Expanding New Zealand Service



Source: OAG.
Notes: JV Partners include United Airlines, Virgin Australia, Cathay Pacific, Air China and Singapore Airlines.

An Extension of Our Previously Published Study Using U.S. DOT Data Confirms That JV Fares Are Equivalent To Online Fares

- The increasing prevalence of JVs has also enabled us to extend our previously published analysis of U.S. DOT data to assess whether today's JVs reach the **same level of pricing efficiency** as a single carrier.
- The published literature has posited—but never shown—that metal neutrality incents JV partners to price as if they were a single carrier, thereby **eliminating double marginalization**.
- Results using U.S.-Transatlantic ticket data from 1998-2016Q1 confirm that **JV fares are statistically equivalent to online fares** for connecting tickets.

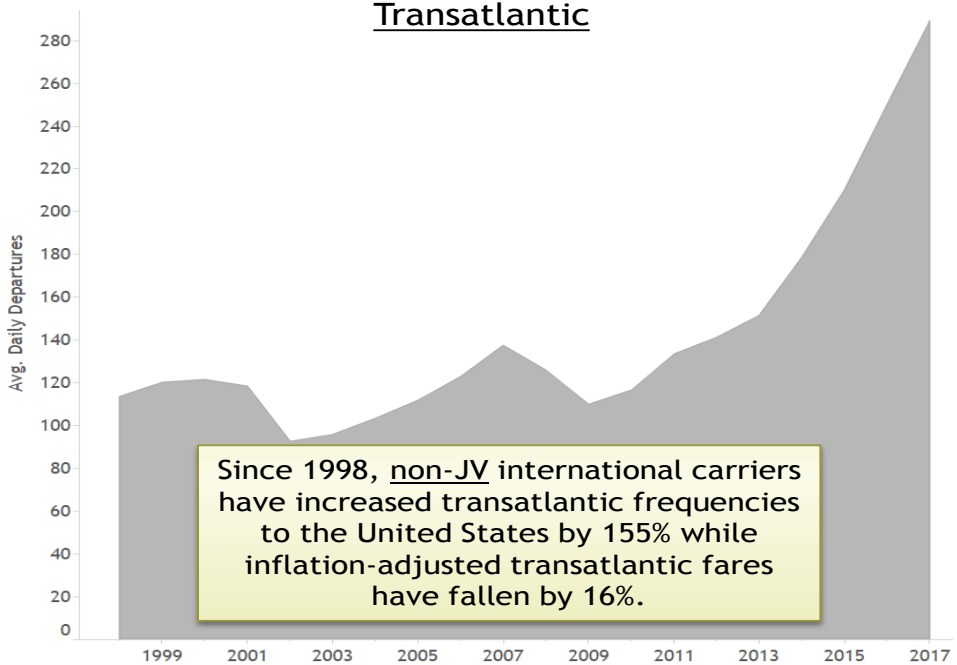
	Fare discount relative to interline
Online fares*	**-13.8%**
JV Effect	-1.3%
ATI Effect	-5.1%
Alliance Effect	-5.2%
Codeshare Effect	-1.6%
Total JV Effect*	**-13.3%**

*Statistically equivalent at the 99% confidence level

Immunized JVs Have Also Not Precluded Entry and Expansion to the United States by Non-JV Carriers

Transpacific

Transatlantic

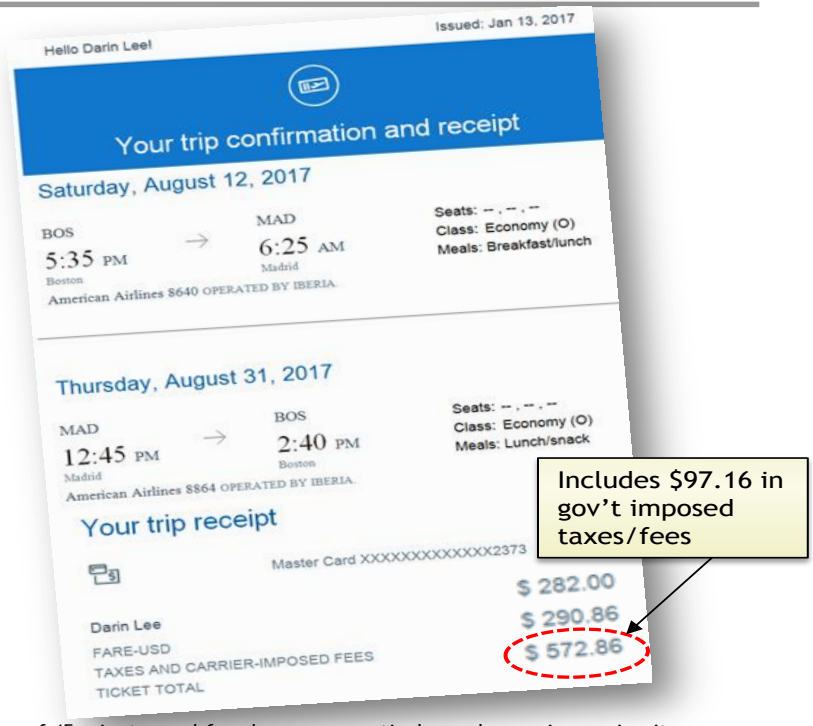


Source: OAG and US DB1B Database.
Notes: Flights exclude those on American/Delta/United and their transpacific (ANA, JAL, Virgin Australia, Air New Zealand) and transatlantic (Air France-KLM, British-Iberia, Lufthansa Group, Virgin Atlantic) JV partners. Transpacific defined as Asia and Australia; transatlantic defined as Europe, Middle East and Africa.

Anecdotal Evidence Also Suggests That Passengers Are Benefitting From Robust Competition in Transatlantic Markets

Online and JV Flight Options Between Boston and Madrid, Spain

	Type of Flight	Online/JV	Departure Time	Carrier 1	Connect Airport	Carrier 2	Arrival Time
1	one-stop	Online	11:01 AM	American	CLT	American	7:00 AM
2	one-stop	JV	12:00 PM	American	ORD	Iberia	7:45 AM
3	one-stop	Online	12:59 PM	American	CLT	American	7:00 AM
4	one-stop	JV	1:10 PM	American	JFK	Iberia	6:05 AM
5	one-stop	JV	2:05 PM	American	ORD	Iberia	7:45 AM
6	one-stop	Online	3:00 PM	Air Canada	YYZ	Air Canada	7:55 AM
7	one-stop	Online	3:00 PM	American	PHL	American	8:05 AM
8	one-stop	Online	3:00 PM	Delta	JFK	Delta	9:15 AM
9	one-stop	Online	3:05 PM	United	IAD	United	7:40 AM
10	one-stop	JV	4:56 PM	Delta	AMS	KLM	9:35 AM
11	one-stop	JV	4:56 PM	Delta	AMS	KLM	12:05 PM
12	one-stop	Online	5:00 PM	SWISS	ZRH	SWISS	9:15 AM
13	one-stop	Online	5:05 PM	Lufthansa	FRA	Lufthansa	12:05 PM
14	one-stop	Online	5:10 PM	Delta	JFK	Delta	9:15 AM
15	one-stop	Online	5:20 PM	United	EWR	United	9:50 AM
16	nonstop	Online	5:35 PM	Iberia			6:25 AM
17	one-stop	JV	5:45 PM	American	JFK	Iberia	10:15 AM
18	one-stop	Online	5:50 PM	Aer Lingus	DUB	Aer Lingus	9:55 AM
19	one-stop	Online	6:20 PM	Tap-Portuguese Airlines	LIS	Tap-Portuguese Airlines	9:10 AM
20	one-stop	Online	6:20 PM	Tap-Portuguese Airlines	LIS	Tap-Portuguese Airlines	11:40 AM
21	one-stop	JV	6:53 PM	Delta	AMS	KLM	12:05 PM
22	one-stop	JV	7:06 PM	Delta	CDG	Air France	11:10 AM
23	one-stop	JV	7:06 PM	Delta	CDG	Air France	2:25 PM
24	one-stop	Online	7:20 PM	Air France	CDG	Air France	11:10 AM
25	one-stop	Online	7:20 PM	BA	LHR	BA	12:40 PM
26	one-stop	Online	7:20 PM	BA	LHR	BA	2:10 PM
27	one-stop	Online	9:20 PM	Norwegian Air Shuttle	LGW	Norwegian Air Shuttle	1:30 PM
28	one-stop	Online	9:25 PM	BA	LHR	BA	2:10 PM
29	one-stop	Online	9:25 PM	BA	LHR	BA	3:05 PM
30	one-stop	Online	9:45 PM	SWISS	ZRH	SWISS	2:50 PM
31	one-stop	Online	10:15 PM	Lufthansa	FRA	Lufthansa	3:45 PM
32	one-stop	Online	10:40 PM	BA	LHR	BA	3:05 PM
33	one-stop	Online	10:40 PM	BA	LHR	BA	5:30 PM
34	one-stop	Online	10:45 PM	Alitalia	FCO	Alitalia	5:05 PM
35	nonstop	Online	11:40 PM	Air Europa			12:30 PM



Source: OAG for Wednesday August 16, 2017.
Notes: Options based on scheduled flights. Includes connections with a minimum and maximum connection time of 45 minutes and four hours, respectively, and a maximum circuity (relative to great circle distance) of 1.5.

Key Takeaways

- Our new empirical results show that:
  - Air New Zealand's metal-neutral JVs reach the same level of fare savings relative to interline tickets as its online service (i.e., **JVs can eliminate double marginalization altogether**).
  - Preliminary analysis also shows that metal-neutral **JVs between U.S. carriers and their tranatlantic JV partners** have eliminated double marginalization on connecting tickets.
  - Less-integrated forms of cooperation (i.e., non-immunized alliance codesharing) are not sufficient to eliminate double marginalization.
- Findings are consistent with the expectation posited—but not previously tested—that **metal neutrality incents JV partners to price as if they were a single carrier**.
- JVs do not appear to have hindered entry and expansion by non-JV carriers in New Zealand or the United States.

Appendix 4:

CONFIDENTIAL

SEE JOINT MOTION FOR CONFIDENTIAL TREATMENT UNDER 14 C.F.R. § 302.12

(February 26, 2018) (DOT-OST-2018-_____)

Compass Lexecon, Economic Analysis of the Benefits and Costs of the Proposed American Airlines – Qantas Joint Business Agreement (February 26, 2018)

Appendix 5:

CONFIDENTIAL

SEE JOINT MOTION FOR CONFIDENTIAL TREATMENT UNDER 14 C.F.R. § 302.12

(February 26, 2018) (DOT-OST-2018-_____)