



KEY POLICY ISSUE

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REVISITING ALLIANCES, CODESHARING, ANTITRUST IMMUNITY AND INTERNATIONAL AIRFARES: FINDINGS FROM A NEW ECONOMIC STUDY¹

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International alliances have become a permanent fixture in the airline industry. 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 advocates for the better integration of the **oneworld** alliance, while simultaneously being criticized by other interested parties as anticompetitive.

Such controversies arise because the impact of alliances on airfares is potentially complex, with both positive and possibly negative elements. On the one hand, alliances can lead to lower fares for “interline” passengers, who must fly on two airlines to make their trip. In setting interline fares, alliance partners eliminate “double marginalization,” where each carrier introduces a separate “markup” over cost in determining the overall fare. The resulting fare should be well below the interline fare charged by non-aligned carriers, and in principle, it should approach the single-carrier “online” fare. Past studies from the economics literature found the fare savings from immunized alliances vis-à-vis interline fares to be as large as 27 percent.⁵

Another type of passenger, who flies between the international gateway cities of the alliance partners, could in principle experience a different outcome. Alliance partners typically provide overlapping service on these routes, and since ATI gives the airlines license for full cooperation, they could theoretically choose to reduce the total number of seats offered to gateway-to-gateway passengers and charge a higher fare. This effect could arise even if total capacity on the gateway-to-gateway route expands as a result of increased interline traffic. However, the empirical evidence to date fails to demonstrate that this anticompetitive outcome actually occurs.

¹ The views expressed in this editorial are those of the authors and do not reflect those of LECG, LCC or any other of its experts.

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⁵ See Brueckner, J.K., “International airfares in the age of alliances: The effects of codesharing and antitrust immunity,” *Review of Economics and Statistics* 85 (2003), 105-118, Brueckner, J.K. and W.T. Whalen, “The price effects of international airline alliances,” *Journal of Law and Economics* 43 (2000), 503-545 and Whalen, W.T., “A panel data analysis of code sharing, antitrust immunity and open skies treaties in international aviation markets,” *Review of Industrial Organization* 30 (2007), 39-61.

Recently, the previous empirical results on alliances have been challenged in work carried out as part of regulatory proceedings. The US Department of Justice (DOJ), in two studies produced as part of its review of expanded ATI for the Star Alliance and the subsequent AA/BA/IB antitrust-immunity case, argued that the beneficial effects of alliance cooperation on interline fares is no longer present. Instead of finding that ATI reduces interline fares, putting them close to online fares, the DOJ studies argue that lower alliance fares can be achieved without ATI. The first study found that unimmunized alliance fares (those where the carriers lack ATI) are *indistinguishable* from online fares, while immunized alliance fares are actually 3.5 percent *higher* than online fares.⁶ The second DOJ study found that immunized fares for each of the three main global alliances were significantly higher (by 6.0-16.5 percent) than *unimmunized* fares of the same alliance.⁷ Not only do these findings diverge from those in the previous literature, but they are also difficult to explain theoretically.

The notion that alliances generate fare benefits for interline passengers, coupled with actual dollar measures of these benefits, has played a prominent role in regulatory actions on alliances, both in the US and in Europe. But the recent controversy over whether such benefits even exist calls these findings into question, while casting a shadow over ATI approvals in previous cases. As carriers seek to expand the reach of ATI (both American and JAL as well as United and ANA have pending applications for transpacific ATI), policymakers across the globe need to know whether the benefits of ATI that were shown to exist throughout the 1990s persist to the present day. A recent research paper of ours attempts to shed light on this question by revisiting the issue of the fare benefits of alliances, but in a dispassionate fashion removed from any of the recent (or pending) regulatory applications.⁸

To carry out the research, we followed earlier studies and used the US Department of Transportation's Origin and Destination survey, which consists of a quarterly 10 percent ticket sample of all US-international passengers who fly at least one route segment on a US carrier. Our data cover the period 1998-2009, and attention is restricted to itineraries (a routing with one or more carriers) where one endpoint lies in the US and the other is in a foreign country (endpoints in Canada, Mexico, or the Caribbean, however, are excluded). The fare is the passenger weighted average of the different fares observed on the itinerary, excluding first class, and we apply the standard filters in preparing the data to take account of the fact that trips solely on non-US carriers are not included in the data.⁹ Although some previous studies view the airport-pair as the relevant airline market, we use city-pairs instead, with airports in most multiple-airport metro areas grouped and treated as a single endpoint.

We estimate standard "fare regressions" and use a variety of control variables to allow the effects of time, market characteristics and individual carrier identities on fares to be netted out. We also control for the level of competition in the market, the number of coupons on the itinerary (a proxy for convenience), and whether the ticket was bought in the US rather than overseas. Our main focus, however, is on the fare effects from airline cooperation, which are captured by four "dummy" variables:¹⁰

⁶ US Department of Justice. "Public version, Comments of the Department of Justice on the show cause order," Appendix A. Regarding Joint Application of Air Canada, The Austrian Group, British Midland Airways Ltd, Continental Airlines, Inc., Deutsche Lufthansa Ag, Polskie Linie Lotnicze 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 USC. §§ 41308 and 41309 so as to Approve and Confer Antitrust Immunity, in Department of Transportation Docket OST-2008-0234 (June 26, 2009).

⁷ US Department of Justice, "Public Version, Comments of the Department of Justice," Appendix B. Regarding joint application of American Airlines, British Airways, Iberia, Finnair, Royal Jordanian Airlines for antitrust immunity, in Department of Transportation Docket OST-2008-0252 (December 21, 2009).

⁸ See Brueckner, J.K., D. Lee and E. Singer, "Alliances, codesharing, antitrust immunity and international airfares: Do previous patterns persist?" Unpublished paper, LECG, LLC available at http://www.lecgaviation.com/thought_leadership/international%20airfares.pdf.

⁹ For example, we exclude US endpoints served by non-US carriers. We also require that each itinerary must have 3 or fewer ticket coupons in each direction, and service on the itinerary must be provided by no more than 2 carriers. When 2 airlines are present, one must be a US carrier and one a foreign carrier. When a single carrier is present (indicating an online itinerary), it is necessarily a US carrier.

¹⁰ A dummy variable in a regression simply captures the incremental impact of whether or not the characteristic is present, holding all other factors constant.

1. **ONLINE:** indicates whether the itinerary is flown on a single carrier.
2. **CODESHARE:** indicates whether a two-carrier itinerary involves codesharing.
3. **ALLIANCE:** indicates whether the two carriers are alliance partners.
4. **ATI:** indicates whether the carriers on a two-carrier itinerary are alliance partners who enjoy antitrust immunity.

The default case, against which the effects of airline cooperation are measured, is a traditional interline itinerary, where the carriers do not codeshare and are not alliance partners.

Table 1 summarizes the estimated fare effects from our regression model relative to the non-alliance interline base case. To understand how to read the table, consider the column 1, which shows the results for the full US-World sample, focusing on all passengers (economy plus business class). The first number in the column shows that the fare for a non-alliance CODESHARE itinerary is 3.6% cheaper than the traditional interline fare. The second number shows that the fare for an ALLIANCE itinerary that does not involve either codesharing or ATI is 2.7% cheaper than the traditional interline fare. The sum of these two numbers then gives the fare reduction for an alliance itinerary that involves codesharing, but where ATI is absent, a reduction equal to 3.6% + 2.7% = 6.3%. If ATI is added to any alliance itinerary, the fare goes down by a further 4.9%. Thus, the fare for an immunized alliance itinerary that involves codesharing is lower than the traditional interline fare by the sum of all three numbers. The fare reduction is thus 3.6% + 2.7% + 4.9%, or 11.2%, a number that is listed in the “full cooperation” row of the table. While full cooperation therefore yields a large reduction in the interline fare, the reduction is not quite as large as the one associated with online (single-carrier) service. The ONLINE number in the first column shows that the online fare is 14.4% lower than the traditional interline fare.

Table 1: The Effect of International Airline Cooperation on Interline Fares

Cooperation Measure	(1) <i>US-World</i> All pax	(2) <i>Transatlantic</i> All pax	(3) <i>US-World</i> Economy	(4) <i>Transatlantic</i> Economy	(5) <i>US-World</i> Business	(6) <i>Transatlantic</i> Business
CODESHARE	-3.6%	-3.9%	-4.2%	-3.6%	-1.0%	+1.5%
ALLIANCE	-2.7%	-7.6%	-2.5%	-7.7%	-0.0%	-7.1%
ATI	-4.9%	-4.4%	-2.7%	-1.2%	-6.8%	-5.8%
Full cooperation	-11.2%	-15.9%	-9.5%	-12.6%	-8.1%	-11.4%
ONLINE	-14.4%	-18.9%	-10.5%	-14.7%	-16.4%	-24.6%

These findings mirror the results from earlier research by showing that successive increments to airline cooperation each reduce the fare relative to the traditional interline level. The combined effect, while large, is not quite as big as the online effect, falling short by about 3 percentage points.

Column 2 of Table 1 shows the all-passengers results for the subset of transatlantic passengers. Since immunized alliances have played a crucial role in providing transatlantic service, the transatlantic results should give a good prediction of what might happen in other parts of the world where alliance travel has yet to blossom. Relative to the US-World results in column 1, the main differences in column 2 are the somewhat larger fare discounts for ALLIANCE and ONLINE service.

Columns (3) and (4) repeat the analysis with the focus restricted to only economy class passengers. In both the US-World and transatlantic samples, the ATI and ONLINE discounts are smaller than the corresponding discounts in the all-passengers case. But the overall pattern of effects is the same as before.

Finally, columns (5) and (6) show the results for business-class passengers. Now, both the ATI and ONLINE discounts are larger, not smaller, than in the previous cases, with the CODESHARE effect either small or positive. Another notable difference is that the full-cooperation effect, instead of being just a few percentage points less than the ONLINE fare discount, is now only half as large.

Two broad policy conclusions can be drawn from our study. First, unlike the recent puzzling findings from the DOJ studies, which cast doubt on the view that airline cooperation leads to lower interline fares, our study confirms what previous studies had found using the most up-to-date data. Importantly, our findings show that ATI, which gives alliance partners license to fully cooperate, leads to an incremental fare reduction for all types of passengers (economy and business and across all regions). The fare reduction from ATI, which ranges from 2.7% to 6.8%, is smaller than that found in earlier studies, but this is also true of the ONLINE fare discount. One interpretation of the narrower gap might be that airline cooperation is less effective than before. However, a more plausible interpretation could be that traditional interline fares, which are determined via IATA fare conferences, are themselves falling relative to alliance fares, with this waning type of service attempting to stave off its loss of market share by offering more attractive prices.

The second policy implication from our study is that fully cooperative alliance service is still not equivalent to online service. This difference is shown by the online/full-cooperation fare gap, which is small but always present in the all-passengers and economy cases, but much larger in the business-class case. Evidently, despite the great successes of alliances at providing seamless service, alliance travel is viewed by business travelers as significantly less convenient than online service. The growth of more-integrated, joint venture alliances may eventually erase this perceived difference, driving the fare gap to zero.

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