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## The effect of joint ventures on airline competition: the case of American airlines, British airways and Iberia joint business

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### Abstract

Regulatory obstacles have led international airlines to make extensive cooperation in the provision of service. The global airline alliances that link U.S. airlines to members in other states is the most visible form of cooperation. Moreover, when the alliance members obtain antitrust immunity, they can determine fares for interline trips that were not possible under traditional pricing arrangements. This research attempts to explain the effect of BA, AA and IB joint venture on transatlantic competition.

Paired samples t-test results indicate that there is no significant difference in AA's economy airfare after the introduction of joint venture. Similarly, there is no significant difference in AA's business airfare. As for BA, the picture is vice versa in terms of economy airfare. There is a significant difference in BA's economy airfare. On the other hand, there is no significant difference in BA's business airfare.

*Keywords:* Joint ventures, Airline competition, Airline joint venture drivers

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### 1. Introduction

Globalization in most industry sectors, the fall of the eastern block, the improvement of living standards of the most part of the world population and the limitation of widespread war have all made air travel more affordable and accessible to the average person. People have been using airplanes to meet their different needs such as business, visit to friends and relatives or tourism. Therefore, the air transport service has turned from a luxury service to service directly related to the current way of life. The high demand has led to the quest for cheaper fares as well as to an ever-spreading network. The answer to this demand came from the evolving international economic conditions which have led to a full deregulation of the air transport industry, in certain areas of the world (Iatrou, 2004).

As international airline traffic has increased in recent decades, international airlines have made extensive cooperation in the provision of service. This cooperation aims to get over regulatory obstacles that hinder any one airline from extensively enlarging its international route network. The international airline alliances that connect U.S. airlines to members in other states is the most visible form of cooperation. These alliances provide the international passenger with a seamless travel experience by eliminating some of the troubles of a traditional multicarrier trip. Gate

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proximity at hub airports along with schedule coordination by the alliance members facilitates passenger connections between the airlines. Moreover, when the alliance members obtain antitrust immunity, they can cooperate on pricing. Thanks to immunity, the members can team up to determine fares for interline trips that was unlikely under traditional pricing arrangements (Brueckner, 2003).

This research is focusing on quantifying the impact of cooperation on international airfares. For this purpose, the effect of British Airways (BA), American Airlines (AA) and Iberia (IB) joint venture on transatlantic airfares will be examined to determine whether there is a significant change in transatlantic airfares after joint venture was formed.

## **2. Literature Review**

### *2.1. Theories behind Formation of Joint Ventures*

A transaction cost explanation for joint ventures deal with the question of how a company needs to form its boundary activities with other firms. Williamson (1985) argues that companies decide how to transact according to the criterion of minimizing the sum of transaction and production costs. Other explanation for the use of joint ventures is strategic behaviour theory. Strategic behaviour presumes that companies transact by the aim which maximizes profits through enhancing a firm's competitive position against competitors (Kawagoe, 2008). The main motivation behind joint venture formation is the strategic behaviour to prevent entry of rivals. Vickers (1985) examines joint ventures in research as a method to block entry through pre-emptive patenting.

### *2.2. Motivations Leading to Airline Joint Venture Formation*

#### *2.2.1. Overcoming Regulatory Constraints*

All commercial aspects of international air transport have been governed by bilateral air service agreements since the 1944 Chicago Convention. Each international carrier deals with a complex web of bilateral agreements signed by its home country. The existence of the bilateral agreements has substantially limited the freedom of individual scheduled carriers, and has constrained competition in the international air transport industry. Facing these restrictions, entering into joint ventures is the major means for international airlines to obtain access to new markets, and to offer new services (Wang, 2002).

Since the increasing privatization of airlines in Europe and the deregulation of the US airline market, the desire to expand route networks internationally has increased competition between carriers. However, existing regulatory policies that limit the takeover and use of foreign resources pose challenges to international air travel.

Although there are examples of firms holding equity stakes in international airlines, most governments do not allow complete foreign ownership of domestic carriers and airport facilities. Therefore, alliances become an essential recourse for carriers to expand internationally. The industry has seen the formation of several alliances between airlines, especially during the 1990s. Estimates show that more than 80 per cent of global airlines conducted some form of alliance in 2000 (Lazzarini, 2007).

### 2.2.2. *Customer Benefits*

Airline strategic alliances can benefit passengers in two ways: (1) through scale effects; and (2) through link effects. Scale effects are related to the size of the network, particularly geographical scope, containing proportion of direct flights and access to new services in the post alliance period. On the other hand, link effects are related to service connectivity, such as the ease for passengers in making connections where multiple members are involved (Wang, 2007).

AA, BA and Iberia joint business enhanced service in non-hub markets. Open skies agreement enables AA and BA to operate four flights a day between New York City and Paris. Similarly, direct flights are available from Boston, Miami, Chicago and Dallas. Great connections available via London Heathrow and Madrid enable joint business to serve a larger network. In terms of network depth, the joint venture offers more convenient timings for flights to its passengers. As an example, in 2010, there was no schedule coordination between London and New York. Therefore, American Airlines and British Airways were departing at similar times. This created 3 hour gap in the schedule. However, the joint venture enabled carriers to expand their flights more equally across the schedule (Grunow, 2012).

### 2.2.3. *Cost Reduction*

Alliances enable partners to increase efficiency, reducing expenses by cutting back on fixed costs and wedding out redundant operations. By coordinating aircraft and schedules, members can reduce their fleet requirements or take more advantage of the capacity available, as operating a larger aircraft is more suitable for matching the aircraft size with the demand of a particular route. Shared use of ground handling arrangements and airport facilities and staff, joint procurement of fuel and amenities, cooperative advertising and promotional campaigns, mutual handling of baggage transfers and passenger check-in, and combined development of computer systems and software are some of the ways alliances help foster economies of scale. For instance, oneworld Alliance has 12 members with access to 664 airports in 134 countries and carries annually over 318.5 million passengers. It also employs 275,991 staff members at various offices and airports on its behalf. This range of facilities enables partners to combine usage of airport facilities, including airport terminals, check-in counters, and lounges that provide one-stop check-in, which reduce duplicated activities among partners, hence, decrease cost. Moreover, due to global presence and coordination of activities, oneworld membership enabled members to boost sales by 20% to gain \$900 million in 2006. More so, oneworld also benefited from cost reductions of about \$250 million in 2006 through joint purchasing (Amoah, 2011).

### 2.2.4. *Reducing Level of the Competition*

Alliances have allowed carriers to increase their ability to exercise market power and reduce the level of competition. Carriers which previously competed on a route can agree to cooperate and thus obtain competitive advantages over their incumbent. Traffic feed boosts each carrier's dominance at its respective hub, creating network effects that increase entry barriers (Iatrou, 2007).

### 2.2.5. *Efficiency Gains form Density Economics*

Another key reason for airline cooperation is the importance of economies from the density of passenger flows. Although economies of scale in operations seem to be relatively limited, there are very clear economies to be obtained from generating denser flows of passengers, which boosts seat utilization and enables the use of larger and lower unit cost aircraft (Pearce, 2011).

## 3. **Research Methodology**

### 3.1. *Research Goal*

We aim to analyse the effect of transatlantic joint venture on AA, BA and IB airfare. Paired samples t-test is utilized to measure whether there is a significant change in joint venture partners' airfare.

### 3.2. *Sample and Data Collection*

For analysis, secondary data were collected through Marketing Information Data Transfer (MIDT). Original airfare data were obtained for fifteen parallel joint venture routes between January of 2008 and December of 2012. Appendix A illustrates these parallel joint venture routes.

### 3.3. *Analyses and Results*

Statistical analysis focuses on paired samples t-test. Lind (2010) states that paired samples t-test is used for hypothesis testing to two samples. Random samples from two different populations are selected to determine whether the population means are equal. Paired samples t-test was applied to BA's and AA's economy airfare and business airfare. For comparison reason, January of 2008 and January of 2012 were selected. These two dates represent the time period which covers two years before and two years after the joint venture formation. The month January was preferred because it does not reflect extremes in airfare on holiday seasons. Paired samples t-test could not be applied to Iberia because its observation number was too small for this kind of analyses.

#### 3.3.1. *AA's Economy Airfare*

There are two related populations, a population consisting of AA's January of 2008 average economy airfare and a population consisting of AA's January of 2012 average economy airfare. Firstly, H<sub>0</sub> and H<sub>1</sub> need to be identified. The null hypothesis is: "There is no difference in AA's 2008 economy airfare and AA's 2012 economy airfare." The alternate hypothesis is that the two airfares are not equal. The .05 significance level was chosen. According to p-value of .062, it is concluded that the null hypothesis cannot be rejected. That means there is no significant difference in AA's economy airfare during this period.

Table 1: AA’s Economy Airfare Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair AA 1 Economy Class Fare in Jan 2008 - AA Economy Class Fare in Jan 2012	225,961	261,313	98,767	15,713	467,635	2,288	6	,062

3.3.2. AA’s Business Airfare

There are two related populations, a population consisting of AA’s January of 2008 average business airfare and a population consisting of AA’s January of 2012 average business airfare. Firstly, H0 and H1 need to be identified. The null hypothesis is: ‘‘There is no difference in AA’s 2008 business airfare and AA’s 2012 business airfare.’’ The alternate hypothesis is that the two airfares are not equal. The .05 significance level was chosen. According to p-value of .000, it is concluded that the null hypothesis should be rejected. That means there is significant difference in AA’s business airfare during this period.

AMR Corporation, American Airlines’ parent company, filed for Chapter 11 bankruptcy protection in 2011. Chapter 11 refers to a section of the U.S Bankruptcy Code. It protects a firm from its creditors, giving time to reorganize its debts (BBC, 2014). Because of this, AA might have needed urgent cash. Therefore, it might have decreased its business airfare during this period.

Table 2: AA’s Business Airfare Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 AA Business Class Fare in January 2008- AA Business Class Fare in Jan 2012	1825,186	329,445	124,519	1520,500	2129,872	14,658	6	,000

3.3.3. BA’s Economy Airfare

There are two related populations, a population consisting of BA’s January of 2008 average economy airfare and a population consisting of BA’s January of 2012 average economy airfare. Firstly, H0 and H1 need to be identified. The null hypothesis is: “There is no difference in BA’s 2008 economy airfare and BA’s 2012 economy airfare.” The alternate hypothesis is that the two airfares are not equal. The .05 significance level was chosen. According to p-value of .026, it is concluded that the null hypothesis should be rejected. That means there is significant difference in BA’s economy airfare during this period. This shows that BA was able to increase its economy airfare after the introduction of joint venture.

Table 3: BA's Economy Airfare Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	BA Economy Class Fare in Jan 2008-BA Economy Class Fare in Jan 2012	-66,692	73,671	24,557	123,321	-10,063	-2,716	8	,026

3.3.4. BA's Business Airfare

There are two related populations, a population consisting of BA's January of 2008 average business airfare and a population consisting of BA's January of 2012 average business airfare. Firstly, H0 and H1 need to be identified. The null hypothesis is: "There is no difference in BA's 2008 business airfare and BA's 2012 business airfare." The alternate hypothesis is that the two airfares are not equal. The .05 significance level was chosen. According to p-value of .820, it is concluded that the null hypothesis cannot be rejected. That means there is no significant difference in BA's business airfare during this period.

Table 4: BA’S Business Airfare Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	BA Business Class Fare in Jan 2008-BA Business Class Fare in Jan 2012	26,765	342,213	114,071	236,283	289,814	,235	8	,820

**4. Conclusion**

The goal of this thesis is to quantify the impact of cooperation on international airfares. The effect of BA, AA and IB joint venture on transatlantic airfares were examined to determine whether there was a significant change in airfares after joint venture was formed.

Paired samples t-test results indicate that there is no significant difference in AA’s economy airfare after the introduction of joint venture. On the other hand, there is significant difference in AA’s business airfare. In terms of BA, there is a significant difference in BA’s economy airfare. On the other hand, there is no significant difference in BA’s business airfare.

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Appendix A: AA, BA and IB JV Routes

				JV	
				Effective	
Origin	Destination	Operated By	American Airlines	British Airways	Iberia
JFK	London(LHR)	AA and BA	November 2010	November 2010	
Chicago(ORD)	LHR	AA and BA	November 2010	November 2010	
Miami(MIA)	LHR	AA and BA	November 2010	November 2010	
Dallas(DFW)	LHR	AA and BA	November 2010	November 2010	
Boston(BOS)	LHR	BA		November 2010	
LHR	Mexico(MEX)	BA		November 2010	
Vancouver(YVR)	LHR	BA		November 2010	
San Diego(SAN)	LHR	BA		April 2011	