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Airline Economics: An Essay on International Airline Alliances

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Abstract

This article describes the factors supporting inter-firm cooperation in the form of international airline alliances. It presents the benefits of such cooperative agreements by drawing conclusions from related empirical literature examination under a structure-conduct-performance paradigm. The review shows some factors, that is, legislation and government policies, can result in changes in the demand for air travel and that the characteristics of the airline business can lead to collaborations to form international airline alliances. The review demonstrates that members of airline alliances gain five beneficial consequences from making such mutual pacts - passenger traffic boosting, improved cost efficiency, enhanced exercise of market power, global network expansion and service quality improvements. These all represent competitive advantages compared to non-aligned airlines. This study, consequently, offers compact guidelines for firms seeking strategies to improve performance which are open to considering international airline alliances as a solution. Additionally, policy recommendations are provided.

Keywords: Strategies, International Airline Alliance, Competitive Advantage
JEL Classifications: L1, L2, L93

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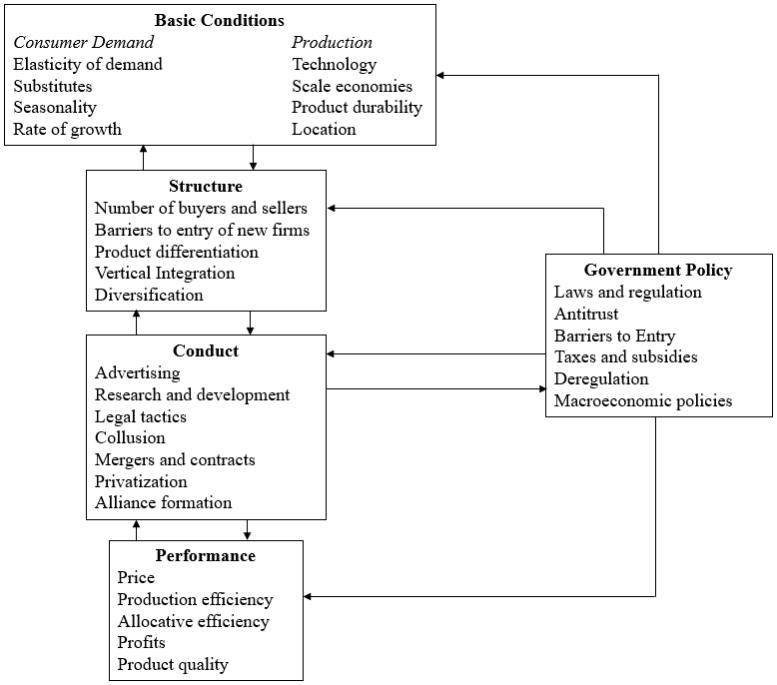
1. Introduction

Deregulation in an airline industry causes a rise in low cost carriers and charter flights which affect the competitive intensity within the industry. To adapt to changes, efficiency improvements together with maintaining core competencies in order to retain competitive advantages seems to be crucial for national airlines incumbent in the market. To remain in a competitive position, most airlines worldwide implement mergers and acquisitions (M&As) as a principal strategy to survive in the market (Gross & Luck, 2013). However, M&As are limited to airlines sharing a common nationality or operating in the same regions due to the national ownership laws. Consequently, airlines need to find other strategies that substitute for M&As without engendering cross broader majority constraints. As a result of such a situation, the formation of international airline alliances emerged in 1990. Although the development of international airline alliances has continued on for more than 20 years, the trend towards collaborative behavior among airlines is still growing steadily. Zou and Chen (2017) reported that the incidence of joining international airline alliances during 2004-2012 increased by 58%. Accordingly, to understand the rationale of international airline alliance formation, this article intends to illustrate the factors supporting such inter-firm cooperation. It also presents details of the various benefits to potentially be gained from joining an international airline alliance by drawing conclusions from both a literature review and other empirical evidence underpinned by the Structure-Conduct-Performance Paradigm (Figure 1). The conclusions of the paper will represent a comprehensive, but compact guideline for airlines seeking not only strategies to improve their efficiency, but also more information to help consider international airline alliances as a possible operational option.

Figure 1: Structure-Conduct-Performance Paradigm



Source: Adapted from Carlton and Perloff (2015)

Since the literature using an industrial organization framework in describing international airline alliance formation is limited and does not provide sufficient detail on the origins of such cooperative behavior among airlines, this paper will begin by illustrating the industry evolution during the period of deregulation which both affected market structure and changed airline conduct. After that, the factors driving cooperative behavior, that is changes in demand for air transport, legal and government policies and airline business characteristics, are presented. Lastly, conclusion and policy recommendations for interested parties are provided.

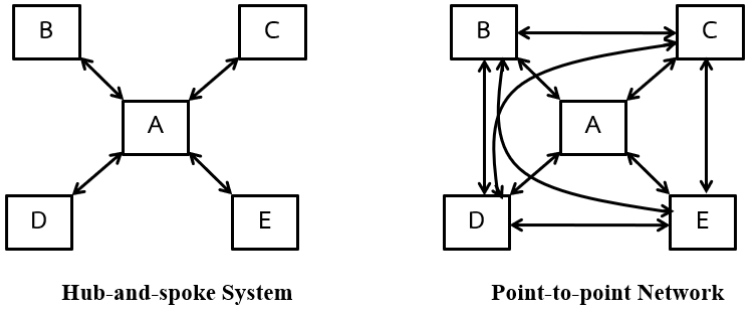
2. Evolution of the Airline Industry after Deregulation

After 1978, governments around the world began to relax the bilateral air service agreement system which had limited market access, airline designation, flight frequencies and airfare settings. (Doganis, 2006) The United States was the pioneer in enforcing the Airline Deregulation Act of 1978 (ADA) which opened the skies for domestic airlines. This was followed with an undertaking outlined in the Open Skies Air Service Agreement with the Netherlands government in 1992. Liberalization in the USA was supported by various countries, such as Belgium, Germany, France, Singapore, South Korea, Philippine, Japan, New Zealand, Australia and also Thailand which negotiated an agreement with the USA. Apart from the deregulation in the USA, the European Union also announced the December 1987 Package of Measures. The ensuing deregulating of EU skies tremendously affected aviation liberalization within the region (Oum, Park, & Zhang, 2000), especially the third package of measures. This completely devastated international air service agreements; there were no limitations on airline designations, flight frequencies, passenger traffic and route planning. What is more, cross-border majority ownership was possible during the deregulation period. The merger between KLM Royal Dutch Airlines and Air France represents a good example. In summary, deregulation, both in the USA and the EU, had significant effects on barriers to entry within the industry. This is because it allowed market access to newcomers - private airlines, LCCs and charter flights - while incumbent airlines during the pre-deregulation only constituted national airlines operating between countries in order to maintain national defense programs and foster economic and social benefits to the nations involved. (Doganis, 2006; Sinha, 2001)

National airlines operations under the flag-carrier regime and bilateral air service agreements allowed airlines to operate point-to-point or linear networks (Figure 2); that is, a national airline would only fly on the designated routes specified under agreements, such as travelling from A to B or B to C. With linear networks, passenger volume for each flight was diminutive due to passengers being scattered between each national airline. Thus, inefficient management prevailed. Since the flag-carrier regimes were managed and controlled by governments, they were under less pressure to strive for profits and struggle to develop strategies to improve efficiency. (Sinha, 2001) Brueckner and Pels (2007) further explained that airlines operating under such regimes lacked efficiency due to the abundance of transiting that occurred during trips because of point-to-point networks which affected passenger volumes for each flight. Therefore, the diminished amounts of passengers on each flight led to smaller aircraft being assigned, triggering an increase in the average cost per seat. Moreover, after the deregulation period, airline market structure changed (Castiglioni, Gallego, & Galán, 2018), from being monopolized by national airlines to becoming more competitive. The liberalization allowed airlines to be operated

by private companies, no-frills carriers, low cost carriers and charter flights were now able to compete in the market. Changes in the market structure arising from the deregulation affected national airline conduct and performance, that is the pivoted from non-profit management regimes to becoming profit and efficiency-oriented organizations. With the relaxation of bilateral air service agreements, national airlines had the freedom to choose and plan route networks in an efficient manner. Hence, hub-and-spoke networks emerged. Referring to Figure 2, if the airline wants to fly from D to C, flying through A, which is the hub of that airline under the hub-and-spoke network, is mandatory. Therefore, a trip from D to C involves three group of passengers, that is passengers from D to C, D to A and A to C. An increase in passenger volume from the hub-and-spoke system reduces the average cost per seat relative to the point-to-point network (Brueckner & Pels, 2007). Although adopting the hub-and-spoke system helps airlines boost passenger traffic, its effects were still insufficient for national airlines to survive in the industry because of factors of the prevailing dynamic business environment, such as the nature of the airline business (cost structure, products and services and performance) and changes in air transport demand. (Doganis, 2006, 2010; O'Connor, 2001; Sinha, 2001; Tretheway & Oum, 1992; Vasigh et al., 2013)

Figure 2: Hub-and-Spoke System and Point-to-Point Network



Source: Adapted from Vasigh, Vasigh, and Fleming (2013)

3. International Airline Alliances – A Last Way Out for Airlines?

The industry also faced a crisis resulting from the nature of the airline business itself in which cost structures comprise jet oil and labor costs as their highest constituents (Tables 1 and 2) compared to other factors of production. (Doganis, 2006, 2010; Sinha, 2001) Jet oil represents a highly volatile input and experienced a consistently upward trend in price during the period as it is a finite economic resource. Additionally, political unrest within MENA countries negatively influenced oil prices, such as the Persian Gulf War in 1980, the Iraq War in 2003, the Libyan Civil War in 2011 and the Qatar Diplomatic Crisis in 2017. In view of the dynamics of oil prices, the International Air Transport Association (IATA) forecasted that an increase in one USD/barrel would affect an airline's total cost of production by 1,600 million USD. Apart from oil prices, Sinha (2001) outlined that an airline is a labor-intensive industry since its service production involves staffing starting from passengers checking-in all the way through to passengers disembarking at their destinations. Therefore, a considerable amount of staff is needed for arranging ground handling procedures, providing inflight service, baggage claiming and other services upon passenger requests. For wage expenditures, Doganis (2006) and International Air Transport

Association (2010) reported that labor cost represents one of the inputs with a high cost compared to other costs of production. The rate is approximately 20-30%, with an especially high amount being accounted for by the wages of pilots and flight attendants.

Table 1: Percentage of oil price proportionate to cost of production

Year	Percentage of oil price proportionate to cost of production
2005	17.3
2006	22.2
2007	28.1
2008	29.8
2009	35.6
2010	28.3
2011	30.7
2012	33.2
2013	33.2
2014	31.3
2015	27.3
2016 (estimated)	19.2

Source: International Air Transport Association (2016b)

Table 2: Percentage of labor cost proportionate to cost of production

	North America (percentage)		Europe (percentage)		Asia (percentage)	
	2001	2008	2001	2008	2001	2008
Wages	36.2	21.5	27.2	24.8	17.2	14.7

Source: International Air Transport Association (2010)

Moreover, changes in demand for air travel determinants are one exogenous factor affecting airline performance. Since deregulation causes a lot of new airlines to compete in the market, it creates the overcapacity reflected in average seat-kilometers (ASKs), a unit measuring seat supply for each flight, which then tends to increase steadily. (Doganis, 2006, 2010) Due to various choices being available for travel, if passengers consider prices between newcomers and national airlines, they often choose the lower prices offered by newcomers. An increase in substitution effect influences higher price elasticity. (O'Connor, 2001) Consequently, airline price setting impacts their revenue. If airlines adopt a high price strategy for price-sensitive holiday-makers that normally travel on long-haul and medium-haul flights, they will lose revenue from those markets. (Oum, Waters, & Yong, 1992) Doganis (2010) added that air transport has homogeneous characteristics. Although airlines invest in product differentiation and service quality improvements, such investments are intangible, with passengers still making decisions based on the prices set by airlines. However, price is not the only factor determining air transport demand, disposable income also represents a demand determinant. (Holloway, 2016; O'Connor, 2001; Tretheway & Oum, 1992; Vasigh et al., 2013) Disposable income variations depend on economic cycles. When an economy expands, the purchasing power of people in the country rises due to increased investment and employment. On the other hand, when an

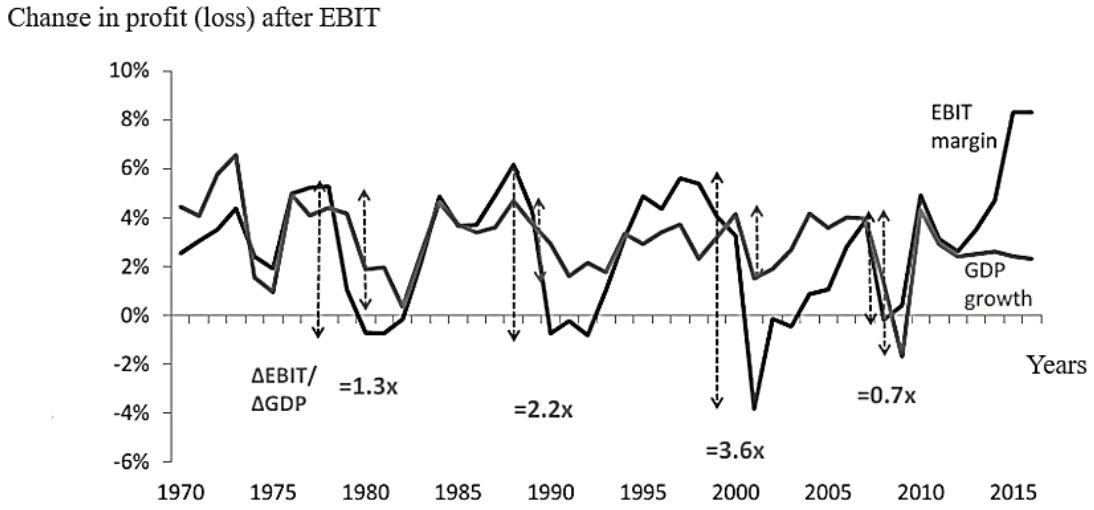
economy is in recess, disposable income tends to decrease owing to a consequent lack of business expansion and incremental employment. Since the income elasticity of demand for air travel is sensitive (Table 3), an increase in disposable income affects airline revenues. Hence, passengers consider air travel as a luxury good (InterVISTAS Consulting Inc, 2007; Pearce, 2008). Accordingly, airline performance alters cyclically (Figure 3). (Doganis, 2006, 2010; International Air Transport Association, 2016a; Tretheway & Oum, 1992)

Table 3: Income elasticity of demand for air travel

Flights	USA	Developing countries	Developed countries
Short -haul	1.8	2.0	1.5
Medium-haul	1.9	2.0	1.6
Long-haul	2.0	2.2	1.7
Extra long-haul	2.2	2.7	2.4

Source: InterVISTAS Consulting Inc (2007)

Figure 3: Relationship between airline performance and economic cycles



Source: International Air Transport Association (2016a)

In addition to price, disposable income and demand elasticity influencing airline performance, safety and security is also a factor determining demand for air travel. (Tretheway & Oum, 1992) An infamous event which impacted the safety and security image of commercial airlines was the September 11 Attacks. The tragedy extremely affected both the United States and worldwide airline industries. Ito and Lee (2005a) reported that domestic demand for air travel in USA decreased by more than 30% and kept declining by a further 7.4% up until November 2003. Even though the event had happened more than two years previously, its effects still remained and reduced international demand for air travel by 15-38% around the world. (Ito & Lee, 2005b) Though the 9-11 catastrophe affected airlines' short-term performance in general, it caused many specific airlines to go bankrupt, such as Swissair, Ansett Australia, Sabena, Air Canada, Korean Air, Trans World Airlines and so on. After the aforementioned deregulation, together with nature of

airline business and the demand for air travel determinants, all these factors combined affected airline performance around the world - which was reflected in net profit margins (Table 4). To survive in the market, some airlines chose to acquire other operations, for instance Lufthansa Airlines acquired Swissair and Austrian Airlines. Some airlines decided to merge with other entities, such as the merger between Air France and KLM Royal Dutch Airlines to form Air France-KLM airlines, Ansett Australia and Air New Zealand, Canadian Airlines and Air Canada, Continental Airlines and United Airlines, Trans World Airlines and US Airways. Some airlines liquidated their business, such as Cyprus Airways. M&As are relatively common in the airline industry since operations can quickly merge and pool airline business resources, such as route networks, management teams, manpower and so on. Not only can this lessen competition in the market through flight reductions, but such strategies also lead to higher passenger traffic and the creation of market and bargaining power for airlines. Therefore, the outcome of an M&A generates competitive advantage for an airline over their competitors due to better network coverage and cost efficiency. (Fan, Vigeant-Langlois, Geissler, Bosler, & Wilmking, 2001; Iatrou & Alamdari, 2005; Ireland, Hoskisson, & Hitt, 2009) Even though M&As bring benefits to airlines, these strategies were limited to airlines sharing either the same nationality or region due to legal restrictions. Accordingly, joining an international airline alliance seems to represent a substitute for M&As (Oum, Yu, & Zhang, 2001) since it provides the same benefits as implementing M&As. Consequently, not surprisingly airlines tend to cooperatively behave to form international airline alliances. (Pels, 2001) From 2004 to 2012, the number of airlines entering international airline alliances, consisting of Star Alliance, Oneworld and SkyTeam, rose by 58%. (Zou & Chen, 2017) (Table 5)

Table 4: Net profit margin of airlines around the world

Year	Profit margin (%)
2547	(1.5)
2548	(1.0)
2549	(1.1)
2550	2.9
2551	(4.6)
2552	(1.0)
2553	3.1
2554	1.3
2555	1.3
2556	1.5
2557	2.3
2558	4.6
2559	5.1

Source: International Air Transport Association (2016a)

Table 5: International airline alliance information and their member airlines

Alliance	Star Alliance*	SkyTeam**	oneworld***	Value****	U-FLY****
Member airlines	Adria	Aeroflot	Airberlin	Cebu Pacific	Eastar Jet
	Aegan	Aerolineas Argentina	American Airlines	Jeju Air	HK Express
	AirCanada	Aeromexico	British Airways	Nok Air	Lucky Air
	Air China	Air Europa	Cathay Pacific	Nok Scoot	Urumqi Air
	Air India	Air France	Finnair	Scoot	West Air
	Air New Zealand	Alitalia	Iberia	Vanilla Air	
	ANA	China Airlines	Japan Airlines	Tigerair	
	Asiana Airlines	China Eastern	LATAM	Tigerair Australia	
	Austrian	China Southern	Malaysia Airlines		
	Avianca	Czech Airlines	Qantas		
	Brussels Airlines	Delta	Qatar Airways		
	Copa Airlines	Garuda Indonesia	Royal Jordanian		
	Croatia Airlines	Kenya Airways	S7 Airlines		
	Egypt Air	KLM	SriLankan Airlines		
	Ethiopian	Korean Air			
	EVA Air	MEA			
	LOT Polish Airlines	Saudia			
	Lufthansa	Tarom			
	SAS	Vietnam Airlines			
	Shenzhen Airlines	Xiamenair			
	Singapore Airlines				
	South African Airways				
	Swiss				
	TAP Portugal				
	Thai				
	Turkish Airlines				
	United				
Year founded	2540	2543	2542	2559	2559
Members	27	20	14	8	5
Route network	1,300	1,062	1,015	160	-
Departures	> 18,450	17,343	13,199	-	-
Countries	190	177	157	20	-
Fleet	4,631	3,946	3,586	176	-
Passengers carried (million)	689.98	665.4	556.8	47	-

Note: * Information as of 2015
** Information as of 2016
*** Information as of March 31, 2017
**** Low cost airline alliances firstly founded in 2016
Source: Gathering from airline alliances' website

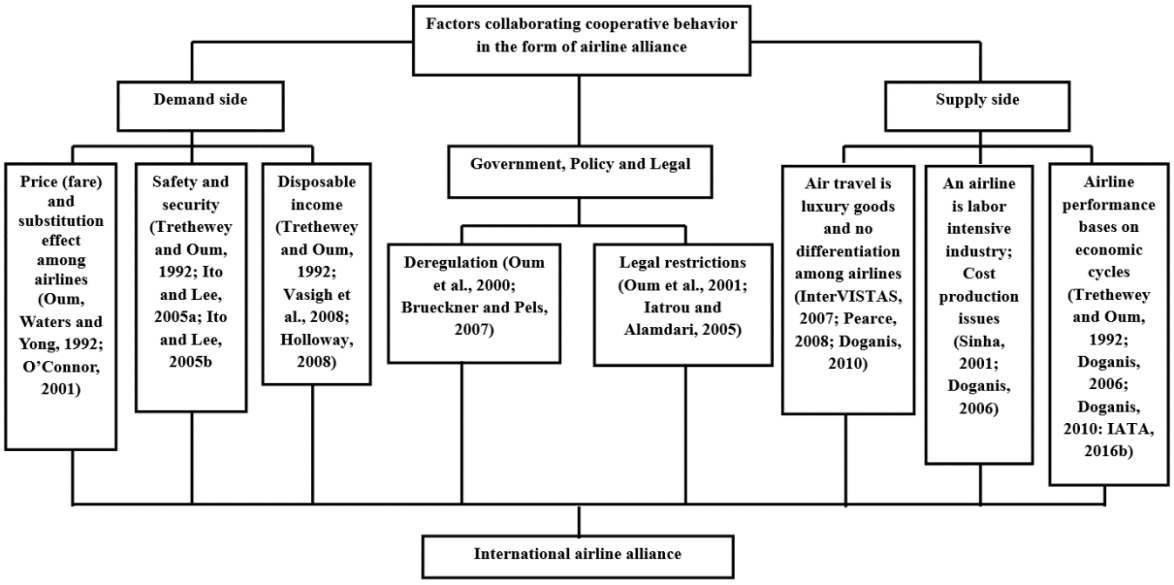
4. An International Airline Alliance – a Source of Competitive Advantage

Figure 4 illustrates the related factors influencing cooperative behaviors in the form of international airline alliances which Dr. Tae Hoon Oum, Professor Emeritus of Sauder School of Business, University of British Columbia identified as defining an alliance from an airline perspective. In his opinion:

"A strategic alliance may be defined as being a long-term partnership of two or more firms who attempt to enhance competitive advantages collectively vis-à-vis their competitors by sharing scare resources including brand assets and market access capability, enhancing service quality, and thereby, improving profitability."

(Oum et al., 2001)

Figure 4: Factors collaborating cooperative behavior in the form of international airline alliance

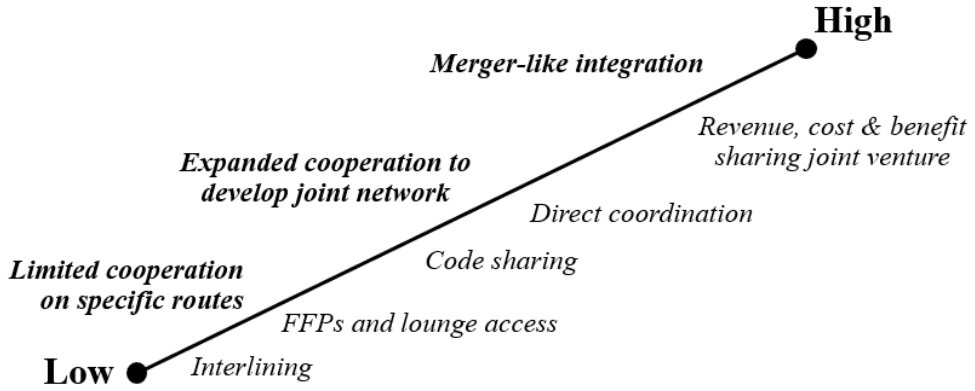


Source: Oum et al., 2001

Referring to the definition given by Oum et al. (2001) together with the literature relevant to airline economics and strategic management, we can summarize that an airline alliance represents a cooperative behavior between airline members in which a level of cooperation (Figure 5) can be initiated from limited collaboration (interlining, joint FFPs and lounge access) to merger-like integration (cost and benefits sharing), but no matter how complex the cooperative level is, the objectives of the airline alliance are to share business resources, such as route networks, aircraft, bays, take-off and landing slots, boarding gates, passenger handling staff and so on. The ultimate goal of joining an international airline alliance is to retain the competitive advantages resulting from cost reductions and passenger increases which eventually brings about the significant profitability of airline members. (Brueckner & Pels, 2007; Iatrou & Alamdari, 2005; Kuzminykh & Zufan, 2014; Lazzarini, 2007; Morrish & Hamilton, 2002; Oum et al., 2000;

Park & Zhang, 1998; Pearce & Doernhoefer, 2011; Pels, 2001; Productivity Commission, 1997; Tretheway & Oum, 1992; Vasigh et al., 2013; Zou & Chen, 2017) Moreover, the literature review reveals that member airlines gain five benefits from joining international airline alliances; boosts in traffic, improved cost efficiency, greater exercise of market power, global network expansion and service quality improvements.

Figure 5: Level of airline cooperative behaviors

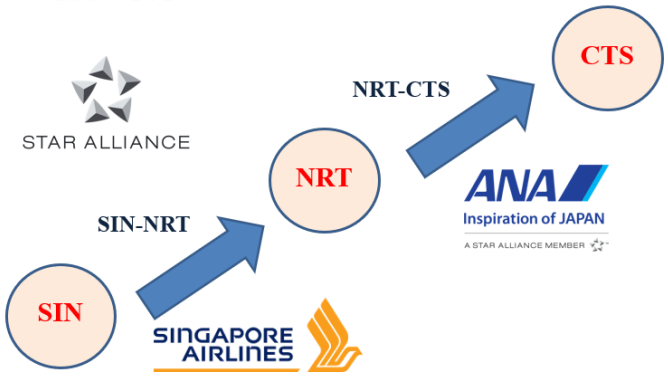


Source: Pearce and Doernhoefer (2011)

4.1 Boost in passenger traffic

Pels (2001) explained that passenger volume increases due to hub-spoke-system implementation under international airline alliances since they transform direct flights into connecting flights. For example (Figure 6), if a passenger would like to travel from Singapore Changi International Airport (SIN) to New Chitose Airport (CTS), he needs to transit at Narita International Airport (NRT) before proceeding to CTS. Under Star Alliance, instead of boarding a direct flight from SIN to CTS, Singapore Airlines (SQ) will transit SIN-CTS to NRT which is the hub of All Nippon Airways (NH), which shares the same alliance as SQ. After that, NH will finally offer a service from NRT to CTS. Since travelling from SIN to CTS comprises three groups of passengers, SIN to CTS, SIN to NRT and NRT to CTS, the mutual service production under the same alliance helps member airlines boost passenger traffic. Many empirical research studies have confirmed international airline alliances result in significant increases in passenger numbers; for example the United States General Accounting Office (1995) investigated passenger traffic on 17 transatlantic routes operated by the BA/USAir/KLM/NW alliance and the LH/UA alliance and compared them to non-allied airlines. They found that allied airlines had 36,000 greater passengers annually. These results were mirrored in Oum et al. (2001), who found that passengers increased due to airline alliances by 11-17%. The passenger estimation of Iatrou and Skourias (2005) and Iatrou and Alamdari (2005) produced similar results, a 9-16% increasing in passenger volume was discovered.

Figure 6: Passenger increasement due to hub-spoke-system usage

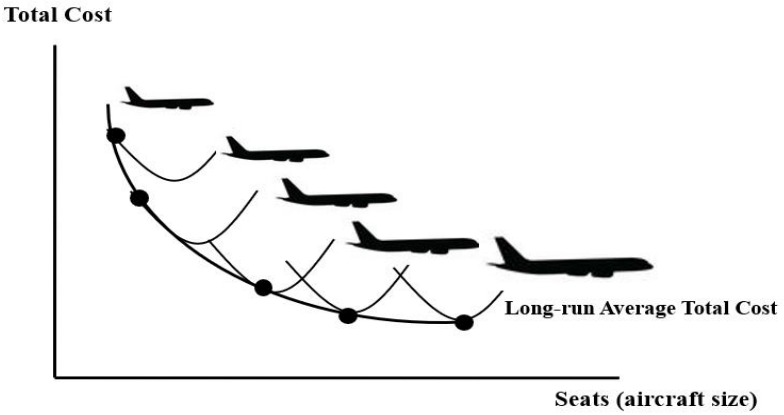


Source: Pels (2001)

4.2 Cost efficiency

If we consider a route under the hub-spoke-system, an increase of one passenger for each flight results in a decrease in marginal costs (Brueckner & Pels, 2007; Brueckner & Whalen, 2000; Oum et al., 2000), or economies of density occur. Whenever a great deal of passengers are achieved, airlines are able to expand their service production by using larger aircraft to serve passengers. An additional seat filled with a passenger on a larger aircraft affects the average total cost of production (Figure 7). Although using a bigger plane may affect the wages paid to added flight attendants, the proportion of extra payment to seat density is less. (Button, 2010; Prentice & Prokop, 2016) Hence, operating flights under the same airline alliance creates economies of scale since passenger increments allow the use of larger aircrafts.

Figure 7: Relationship between total cost of production and aircraft size

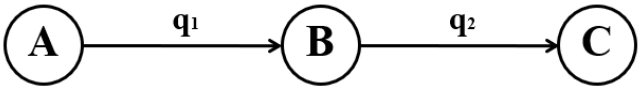


Source: Adapted from Prentice and Prokop (2016); Tretheway and Oum (1992)

Moreover, the joint production of air travel services among allied airlines creates economics of scope. (Brueckner & Pels, 2007; Carlton & Perloff, 2015; Prentice & Prokop, 2016) Referring to figure 8, if we assume that the cost of production from offering service from A to B (q_1) is equal to $C(0, q_1)$ and the cost of production from offering service from B to C (q_2) is equal to $C(0, q_2)$; then, if there are no additional allied airlines within routes,

the total cost of production represents the sum of costs from A to B and B to C, which can be written as equation (1):

Figure 8: Joint production between allied airlines



Source: Author

$$C(0, q_1) + C(0, q_2) \quad (1)$$

While if there are allied airlines operating from A to C, then the joint cost of production between member airlines can be referred to as in equation (2):

$$C(q_1, q_2) \quad (2)$$

The collaboration of allied airlines can be in the form of sharing ground and in-flight service staff, joint advertisement, input procurement and also in pooling resources for mutual sales. (Brueckner & Pels, 2007; Doganis, 2006; Kleymann & Seristö, 2001) Therefore, when comparing allied and non-allied airlines, it can be assumed that the cost of production of allied airlines is less than that of non-allied, which can be written according in equation 3 (Besanko & Braeutigam, 2006; Button, 2010; Carlton & Perloff, 2015):

$$C(0, q_1) + C(0, q_2) > C(q_1, q_2) \quad (3)$$

Consequently, flight operations under a hub-spoke-network with the cooperative behavior among member airlines creates cost efficiency due to the lack of cost double marginalization. (Brueckner, 2001; Brueckner & Pels, 2007; Gaggero & Bartolini, 2012; Wan, Zou, & Dresner, 2009; Zou, Oum, & Yu, 2011) In addition, mutual price setting due to fare coordination between member airlines and cost efficiency puts downward pressure on overall prices. Thus, an airfare under an international airline alliance is cheaper than non-allied airlines. Park and Zhang (1998) found that airfares decreased by 19-22% while Brueckner and Whalen (2000) similarly reported that airfares under an alliance are cheaper than in non-allied airlines by 25%. Several years later, Brueckner, Lee, and Singer (2011) and Zou and Chen (2017) still insisted that cooperative behavior under international airline alliances cause airfares to be cheaper. Moreover, they also found the level of cooperative intensity among airlines affects airfare reduction.

4.3 Exercise of market power

The cooperative behavior of member airlines tends to create increased market power on inter-hub routes. Doganis (2006) gave some examples (Table 6) from

international airline alliances between Scandinavian Airlines (SK) and Lufthansa Airlines (LH) on Frankfurt (FRA) to Copenhagen (CPH), Stockholm (ARN) and Oslo (OSL) and Dusseldorf (DUS) to Copenhagen (CPH), Stockholm (ARN) and Oslo (OSL). Prior to the airline alliance in 1995, the flight frequencies of LH and SK from FRA to CPH were four and three, respectively, but after the SAS-Lufthansa 1995 alliance formation was approved by the European Commission, the flight frequencies of SK/LH rose to eight flights a day. Although the European Commission approved the alliance formation under some conditions allowing other airlines to compete on the routes, it was not easy for new airlines to draw away custom from passengers. This implied that if newcomers needed to acquire customers from the SAS-Lufthansa 1995 alliance, they needed to provide greater flight frequencies and also offer attractive prices compared to SK/LH. However, eventually there were no other airlines competing on the routes, leaving SK/LH as a monopoly providing service from FRA to CPH. In connection with this, some scholars suspected collusive behaviors among member airlines, such as Youssef and Hansen (1994), United States General Accounting Office (1995), Park and Zhang (1998), Brueckner and Whalen (2000), Wan et al. (2009) and Brueckner et al. (2011). Nonetheless, no significant study has been able to prove collusion on the inter-hub routes of international airline alliances.

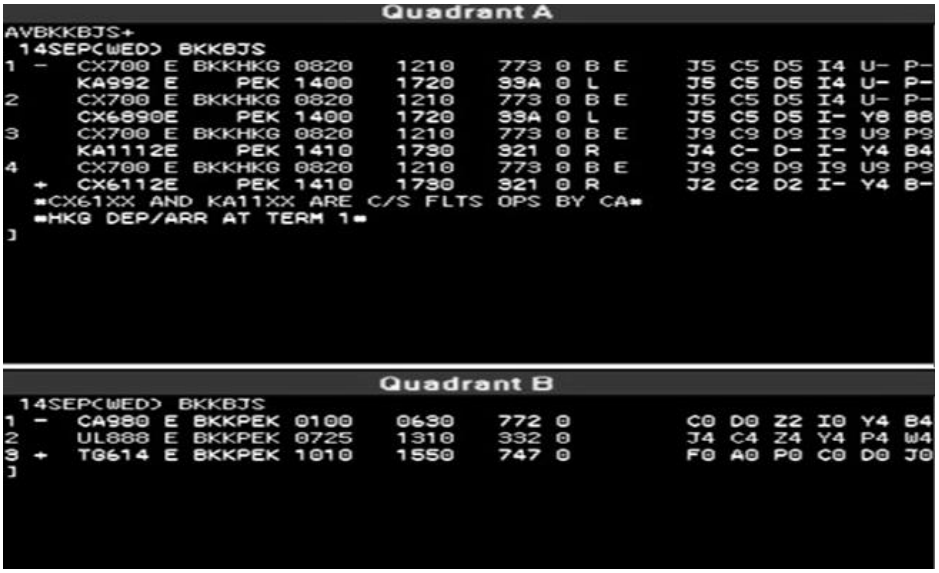
Table 6: Pre and post flight frequencies of Lufthansa Airlines (LH) and Scandinavian Airlines (SK) alliance

Routes	Flight frequencies prior to alliance		Flight frequencies after alliance
	LH	SK	
FRA-CPH	4	3	LH/SK 8
FRA-ARN	3	2	LH/SK 8
FRA-OSL	1	1	LH/SK 5
DUS-CPH	2	2	LH/SK 5
DUS-ARN	2	1	LH/SK 2
DUS-OSL	-	1	LH/SK 1

Source: Doganis (2006)

Additionally, member airlines still gain marketing benefits form the Computer Reservation System (CRS) used by travel agents. Since the CRS screen normally has multiple airline listing features, a list of airlines under the same airline alliance appears twice on the first screen causing other lists of airlines that are not in the alliance to be pushed away to the next screen. Referring to figure 9, it shows the first screen (quadrant A) of the reservation on BKK-HKG-PEK operated by Cathay Pacific Airways (CX) and Dragon Air (KA) which are members of the same airline alliance, Oneworld. The multiple listing feature of CRS causes other airlines outside Oneworld, Air China (CA), Sri Lankan Airlines (UL) and Thai Airways International (TG), to be pushed to the second screen (quadrant B). Therefore, this feature of CRS represents a barrier to entry for non-allied airlines in competing against member airlines in the same alliance. Moreover, some research projects have also reported that 90% of travel agents offered ticket reservations to passengers only considering the first page of CRS screens. (Doganis, 2006; Oum et al., 2001; United States General Accounting Office, 1995)

Figure 9: Sample of computer reservation system (CRS) screen



Source: Chutiphongdech (2014)

4.4 Global network expansion

The route diversity of the hub-spoke system under airline alliances allows member airlines to expand their network without negotiating further air service agreements. Therefore, the network coverage of airline alliances is more extensive compared to non-allied. (Doganis, 2006) Since airline production is intensive in terms of capital and labor (Sinha, 2001); airlines do not need to purchase additional aircraft and hire extra staff to provide services for passengers. (Brueckner, 2001) In addition, network expansion under member alliances reduces the marketing risks due to new flight operations. (Oum et al., 2001) This is because member airlines understand passenger behavior better and also have acquired cost advantages over LCCs due to regional hub linkages to long-haul connections. (Pels, 2008) Hazledine (2011) also suggested that joint FFPs among member airlines represent a crucial tool to fighting LCCs.

4.5 Service quality improvements

Service quality in the airline industry is reflected in flight frequencies and the smoothness of flight connections. (Brueckner & Flores-Fillol, 2018; Oum et al., 2001) One outcome of airline alliances is that they allow relatively seamless travel or online connections throughout a trip. Passengers can use the facilities of member airlines as if they were using only one airline, such as joint frequent flyer programs, lounge access and schedule coordination which reduces connecting times. (Doganis, 2006; Oum et al., 2001; Youssef & Hansen, 1994) Moreover, seamless travel allows the reduced chance of lost baggage owing to check-through systems which are adopted through collaboration among member airlines.

Even though member airlines derive the aforementioned five benefits from joining international airline alliances, there are some limitations and different agreements which are diverse and peculiar to each alliance. For example, if airlines would like to join

SkyTeam, they are required to agree on lounge access, being monitored on the IATA Operational Safety Audit (IOSA), accepting elite recognition, and so on. Moreover, joining an international airline alliance engenders investment in a huge amount of sunk costs on factors such as mutual marketing expenditure, resource allocation costs among airports and variables arising from business decision making dependency. (Kleymann & Seristö, 2001) With these restrictions, some airlines do not choose to join international airline alliances. Emirates Airlines (EK) represents a good example. Since its strategies focus on building and developing brand identity; it is assumed that because of its cost structure and hub development in Dubai, the airline has occupied a positive performance position for more than 20 years. Subsequently, it is not common for Emirates to join international airline alliances in order to exploit the five benefits outlined earlier. However, EK still cooperates primarily in the form of bilateral partnerships with some airlines, such as code sharing or joint FFPs. (O'Connell, 2011)

5. Conclusions and Policy Recommendations

Our literature review shed light on five beneficial aspects to potentially be gained from joining international airline alliances; that is, boosting passenger traffic, improved cost efficiency, increased market power exploitation, global network expansion and service quality improvements. These can lead to improved competitive advantages over non-allied airlines. Therefore, the outcomes from the review are expected to constitute strategic guidelines for airlines seeking efficiency improvements and considering international airline alliances as a potential solution to perceived under-performance. Although passengers seem to derive several notable benefits from airline alliances, such as more seamless travel or increased flight connections, from a government perspective as policymakers, antitrust issues should never be neglected. While there is a widely held belief that there is a tendency for cooperative behavior to cause collusion on inter-hub routes, our literature review revealed no significant evidence for this. To prevent monopolistic behaviors occurring during the ASEAN Single Aviation Market (ASAM), related government units such as the Civil Aviation Authority of Thailand (CAAT) or the Office of Trade Competition Commission (OTCC) should continue to monitor the issue so that international airline alliances can truly offer benefits to passengers.

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