With Increased Market Power, Do Aircraft Industry Stock Returns Beat Global Market?

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ABSTRACT

The purpose of this study is to evaluate the stock price total return performance of the four major companies in the airplane manufacturing industry and answer the research question: With increased market power, do aircraft industry stock returns beat global market? The methodology utilizes quantitative methods and employs three independent data providers which supply data related to company performance and comparative benchmarks during the fifteen year study time frame from 2002 through 2016. The findings show that the performance of the group of four largest airplane companies is inferior to the global market. These results are in line with other studies that document potentially lower profitability in companies with high levels of industry concentration. Bombardier is the performance laggard in the group during the study time frame. Practical implications include potential shifts in the airplane manufacturing industry as two new players prepare their entrance while one of the four established players deals with negative financial issues. The value of the study is in the development of new markets and how new entrants compete in those markets against the established players.

Keywords: Airplane Manufacturers, Boeing, Airbus, Bombardier, Embraer, COMAC, Irkut
JEL Classifications: D43, L13, L93

1. INTRODUCTION

The objective of this study is to evaluate the stock price total return performance of the major companies in the airplane manufacturing industry from 2002 through 2016. The research question for the study is: With increased market power, do aircraft industry stock returns beat global market? Based on the research methods used, the aircraft industry performs inferior to the global market.

The civil aircraft industry provides the infrastructure for the transportation of individuals in the global economy (Horng, 2007). The late 1990s serve as creating the foundation for the current competitive environment for the plane manufacturer industry (Economist, 2000). During this time, four companies, Boeing, Airbus, Bombardier, and Embraer, emerge as the major players in the civil aircraft industry, but possess differing degrees of market power (Ghemawat et al., 2009; Larson, 2014).

All four companies see revenue growth during the fifteen year period. However, two of the four players grow market share at the expense of the other two players. The dynamics of the market

are that each competitor focuses only on one major rival as the market is split between the larger jets and the smaller regional jets (Ghemawat et al., 2009).

When there are high entry costs for new competitors, this can result in an industry with high concentration of market power (Chen et al., 1989). Between 2002 and 2016, this concentration of market power actually grows due to the dynamics of the four players. The group of four players also generates a backlog of orders, or unmet demand, which more than doubles for the three biggest players as measured in backlog years.

In the global market, gaining market power does not always lead to improved profitability and there are studies which conclude there is not always a link between market power and profitability (Bain, 1951; Salinger, 1984; Chen et al., 1989). One reason for this is that the industry players may compete in rivalries when there are high levels of industry concentration (Chen et al., 1989).

Over the next 20 years, the civil aircraft market is expected to see continued growth with further market developments in Asia,

Africa, and Latin America (Larson, 2014). The number of players in the airplane manufacturer industry is also growing with the imminent addition of two new players from China and Russia (AFP, 2017; Reuters, 2017c).

There is also the issue of high debt levels with one of the established players, and given its high debt level, the company is assumed to be financially weaker going forward (Financial Post, 2017).Other studies confirm this dynamic (Ayotte and Skeel, 2010; Nixon and Bacon, 2012). The potential for this player to align itself with another to move forward is a distinct possibility.

2. LITERATURE REVIEW

2.1. Background
Airplane manufacturers provide products to both the civilian and defense sectors (Hetrick, 1996). Throughout most of the 1980s, defense spending grows in the United States. According to Robert F. Hale of the Congressional Budget Office, "between 1980 and 1987, real budget authority for investment grew by 82% while operating funds grew by 25%" (CBO, 1987). 1987 is the peak year for US Department of Defense spending in the United States (Hetrick, 1996). By the end of 1991, the Soviet Union collapses.

With the collapse of the Soviet Union, cuts in defense spending come quickly along with those to related industries such as civil aircraft manufacturing (Hetrick, 1996). Consolidations come as well, reducing the overall number of industry players (Horng, 2007). As a result, between 1990 and 1995, US employment in aircraft manufacturing falls by 37% (Ilg, 1996).

By 1994, defense spending is 36% lower than in 1987 and the environment of shrinking defense dollars spurs consolidations in the defense industry (Hetrick, 1996). It also spurs consolidations in related industries such as the civil aircraft industry with the largest being the 1997 merger between number one Boeing and number three McDonnell Douglas (Macharzina, 2001). The results of this merger set forth for the industry configuration that exists today (Horng, 2007).

2.2. The Competitive Environment
According to Laurent Beaudoin, the former Chairman and CEO of Bombardier Inc., "aerospace is a very small world. There are not many players" (Baghai et al., 1997). However small it is perceived to be, it is growing, and in 2014, Boeing estimates the civil aircraft market will be $5.2 trillion over the coming two decades (Larson, 2014). In 2017, Airbus estimates that the market will be $5.3 trillion over the coming two decades (AFP, 2017).

Boeing and Airbus use their own internal methodologies to enable customer optimizations with relation to operations, maintenance and training (Macharzina, 2001). The two players have global networks for support making it easier to raise aircraft financing (Reuters, 2017b). Given the large investments needed for development and production of airplanes, there are only a small number of players in the industry (Luz, 1999). The four represent the major players in the global commercial aircraft manufacturing industry (Ghemawat et al., 2009; Larson, 2014).

In the aircraft manufacturing industry, there are also significant barriers to entry because of the high fixed costs required for manufacturing infrastructure and this provides for an industry with a high concentration of market power (Luz, 1999). This market power can be quantified, according to a 1993 Federal Reserve Bulletin, by using the Herfindahl-Hirschman Index (HHI). "The HHI accounts for the number of firms in a market, as well as concentration, by incorporating the relative size (that is, market share) of all firms in a market (Rhoades, 1993).

The determination is made from the market shares of the participants. "It is calculated by squaring the market shares of all firms in a market and then summing the squares" (Rhoades, 1993). According to the US Department of Justice, any HHI above 2500 points to a market that is highly concentrated (Justice, 2017). An HHI of 10,000 would represent a monopoly, two equally sized firms would provide an HHI of 5,000, and five equally sized firms would provide an HHI of 2,000 (Rhoades, 1993).

Using data from company published documents supplied to investors sees revenue related to commercial and business aircraft increase for all four companies between 2002 and 2016, with Boeing at 129%, Airbus at 155%, Bombardier at 36%, and Embraer at 121% (Airbus, 2017; Boeing, 2017; Bombardier, 2017; Embraer, 2017).

The following table shows the HHI in 2002 and in 2016. Boeing's share of the market grows from just under 50% to just over 50% while Airbus share grows from under 34% to 38%. Bombardier falls from 12.7% to 7.7% while Embraer falls from 4.2% to 4.1%. The combined Boeing-Airbus share grows from 83.2% to 88.3% while the Bombardier-Embraer share shrinks from 16.9% to 11.8%. Please Table 1 for more information.

The overall size of the market more than doubles as it increases from $57 billion in 2002 to over $129 billion in 2016. The HHI level in 2002 is at 3763 then increases to 4047 in 2016, due primarily due to the growth in the Airbus share of the market. The increased reading points to an industry market that is even more highly concentrated (Justice, 2017). As the market share is computed based on revenues, the larger plane revenues have a bigger impact than those for regional jets and the growth of the market favors Boeing and Airbus until the regional jet market grows substantially more than for that of the larger jets.

2.3. Industry Concentration and Profitability
Though gaining market power is sometimes a sought after goal, achieving it may not always lead to improved profitability Previous studies show a puzzling phenomenon where there is not necessarily a strong connection between industry concentration and levels of profitability (Bain, 1951). There remains a generally agreed premise that barriers to entry are necessary for excess returns (Chen et al., 1989). However, it is sometimes argued that when an industry has very high entry barriers, the resultant higher concentration of market power potentially "is associated with lower profitability" (Salinger, 1984). One argument is that the dynamics switch to one of rivalry between the players when there are high degrees of market power in the industry (Chen et al., 1989).

Table 1: Revenue related to commercial and business aircraft and HHI

Revenue related to commercial and business aircraft (in billions of USD)					HHI
Year	Boeing n (%)	Airbus n (%)	Bombardier n (%)	Embraer n (%)	Total n (%)	
2002	28.4 (49.5)	19.3 (33.7)	7.3 (12.7)	2.4 (4.2)	57.3 (100)	3763
2016	65.1 (50.3)	49.2 (38.0)	9.9 (7.7)	5.3 (4.1)	129.5 (100)	4047

HHI: Herfindahl-hirschman index

The dynamics of the airplane manufacturers industry are that each of the four major competitors focuses only on one rival as the market is split between the larger jets and the smaller regional jets (Ghemawat et al., 2009). This provides for the potential of focused rivalries within the industry segments. There are also high entry costs which, at least in the short run, keep new competitors out (Luz, 1999). This dynamic tends to keep the market concentration at a higher level and may impede excess profitability. This lower profitability may help deter potential entrants to the industry.

Studies confirm that market concentration may not always have positive influences on profitability. One study comparing the Lithuanian banking system concludes "concentration does not have a significant impact of profitability" (Rinkeviciute and Martinkute-Kauliene, 2014). Another study on the financial performance of banks in Hong Kong "has found that market structure is not a significant contributing factor" (Wong et al., 2007). While a study of the banking system in Indonesia states that "both concentration ratio and market share are not significant in ROA" or return on assets (Jumono et al., 2015).

2.4. Boeing
Boeing is founded in 1916, initially as a builder of wooden planes, then military bombers, and finally the jets that "revolutionized global travel" (Boeing Seeks New Home, 2001). Boeing grows to become the largest exporter in the US (Fisher, 2002). Boeing's most successful plane is the 737 which is first flown in 1967 and is still flying today (Reuters, 2017a). Perhaps Boeing's most iconic plane is its 747 model. The 747 is a plane built for long-haul routes and utilization of the hub and spoke operation (Horng, 2007).

As Boeing moved into the twenty-first century, the company switched focus from providing commercial airplanes for hub and spoke patterns to point to point schemes (Macharzina, 2001). Airlines are looking increasingly at more fuel-efficient options and the 747 with its four engines does not provide this efficiency (Bloomberg News, 2012). Boeing's answer to this new market is the 787 Dreamliner which has only two engines and uses lighter, more fuel efficient construction materials (Horng, 2007).

2.5. Airbus
Airbus Industrie is formally established as an entity in December of 1970 (First Order, First Flight, 2017). The Airbus product line is started in the mid-1970s with the A300 which is known as the "world's first twin-engine wide body" (double aisle) airplane then it later introduces the A320 which is a single aisle fuel efficient plane which becomes its best-selling plane (Technology Leaders, 2017). By the early 1990s, Airbus has planes in every segment except the long-haul, high-passenger plane which Boeing monopolized with its 747 (Horng, 2007).

With development efforts which begin in the 1990s, the Airbus A380 represents a direct competitor to Boeing's 747 and an entrant to a market which the 747 could not serve, that being a plane that could carry up to 825 passengers (Macharzina, 2001). With the introduction of the A380, Airbus would be the sole provider to the market of the largest commercial airliner plus all of the Airbus models have similar technologies and operational qualities across the entire product line (Horng, 2007).

2.6. Bombardier
Bombardier Inc., begins in 1942 as a manufacturer of recreational equipment which then morphs into a transportation company (Baghai et al., 1997). Bombardier grows into the largest manufacturer of trains and the third largest player in the commercial aircraft industry (Marowits, 2012). Bombardier enters the commercial aircraft industry through a series of acquisitions in the five years between 1986 and 1991 then between 1992 and 1997, organic growth accounts for over two-thirds of the gains (Baghai et al., 1997).

Bombardier's commercial aircraft business, also known as its aerospace segment, is its "largest and most profitable business" (Ghemawat et al., 2009). By 2000, Bombardier's aerospace business grows to approximately 60% of its revenues as Bombardier aerospace business is positioned as the number one maker in the combined business jet and regional jet markets (Bombardier 2017). In spite of its dominant position in the business jet market, Bombardier announces a suspension of its Learjet 85 program in 2015 (Owram, 2015).

This has a deleterious impact on its earnings in 2014, 2015, and 2016. According to the Financial Post, "Bombardier has an astonishing $8.7B in debt, which they will have trouble paying off due to their inability to bring in cash" (Financial Post, 2017). Other studies document issues related to debt. One study states that a company "may be forced to forego profitable investments because of debt" (Ayotte and Skeel, 2010). While another study states that "profitability is…negatively correlated with debt decisions" (Nixon and Bacon, 2012).

2.7. Embraer
"Founded by the Brazilian Government in 1969, Embraer was privatized in December 1994—the same year it lost $310 million" (Ghemawat et al., 2009). Despite this setback, and because of the growing travel demand in developing nations, Embraer sees its revenues increase (Chan, 2015). As such, Embraer grows to be the fourth largest commercial aircraft manufacturer (Ghemawat et al., 2009). Because of the Boeing – Airbus duopoly on the production of the larger jets, the regional jets market is the only area where other players can currently compete, with Bombardier and Embraer as the leaders of this segment (Economist, 2000).

"Although it was the smallest of the four competitors that dominated the global aircraft market, Embraer was the most profitable in 1999" (Ghemawat et al., 2009). Embraer's reputation is for planes with reliable operations with low maintenance, and in 1999, Embraer, broadens its slate of jet offerings to include models seating 70 to over 100 passengers and grows to be Brazil's largest exporter (Embraer 2017). Embraer's reputation is that it possesses substantial technological prowess (Ghemawat et al., 2009). In 2005, "Embraer launched the first commercial aircraft to fly on biofuels, a feat that drew on more than 30 years of local development work on extracting ethanol from sugarcane" (Collins, 2009).

2.8. Backlog Orders
Participants in the airplane manufacturing industry often cite their firm orders or backlog orders as a performance metric. The measurements cited in this study for firm backlog orders come from the companies themselves (Airbus, 2017; Boeing 2017; Bombardier 2017; Embraer 2017). These firm backlog orders are divided by the sales revenue for the current year in order to calculate the backlog year figures. Obviously, the higher the better to a large extent, assuming these are indeed firm orders and the company has the wherewithal to manufacture the planes at the agreed prices.

With this in mind, Airbus is the clear winner with a 2016 reading of 15.9 years of backlog orders. Boeing is next with 4.8 years. Bombardier and Embraer are at 3.5 years and 3.2 years, respectively. For more information on backlog orders, please Table 2.

From 2002 to 2016, the backlog orders grow for every company except Embraer. Airbus grows by 2.8 times. Boeing grows by 2.5 times and Bombardier grows by 1.7 times. The growth in backlog orders represents unmet demand for products of the manufacturers. Having a large backlog is perceived as an asset (Chan, 2015). However, price discounts or other compensation may arise if orders are not fulfilled per contract (Airbus Compensation Talks, 2007).

2.9. New Segment
The current market configuration sees two major players Boeing and Airbus competing for the largest, most expensive planes which also have the largest profit margins (Economist, 2000). The other two major players, Bombardier and Embraer, offer smaller options in the regional jet market which include seating for approximately 100 passengers (Ghemawat et al., 2009). In the market place, there emerges a new "mid-range" segment for planes with a single aisle for medium and shorter flight durations (AFP, 2017).

Table 2: Backlog orders

Company	Firm backlog orders (in billions)		Revenues (in billions)		Backlog years	
	2002	2016	2002	2016	2002	2016
Boeing	104	458	54.1	94.6	1.9	4.8
Airbus	168	1,060	29.9	66.6	5.6	15.9
Bombardier	28	57	14.0	16.3	2.0	3.5
Embraer	9	20	2.5	6.2	3.6	3.2

The current "mid-range" market includes upgraded versions of the Boeing 737 and the Airbus A320 models in addition to proposed offerings from new Chinese and Russian manufacturers, COMAC and Irkut, respectively (AFP, 2017). Boeing is looking to modify its ubiquitous 737 to add more seats in configurations called the Max 9 and Max 10X while Airbus is adding a version of its A320 in an all economy arrangement to seat up to 236 passengers called the A321neo (Reuters, 2017a).

The new entrants from China and Russia offer plane sizes from 130 to 210 passengers (Reuters, 2017c). Even if successful in their indigenous markets, introduction of the planes from new manufacturers will face technical, regulatory, and political issues before plane certification approval in western markets (Larson, 2014). Since both COMAC and Irkut are new players to the industry, expect potential delays with production (AFP, 2017). According to Ray Jaworowski, of Forecast International, "In North America and Europe, most airlines can be expected to stick with the established manufacturers.", but, he believes the targets for these new planes will be in Asia, Africa, and Latin America (Larson, 2014).

2.10. New Players
COMAC is a Chinese state run aircraft manufacturer that is initially targeting sales to the state-owned airlines operating in China (Reuters, 2017b). COMAC is founded in 2008 (Larson, 2014). Over the next twenty years, Chinese airlines are expected to buy approximately 7,000 planes (Reuters, 2017b).With a target of providing planes to this growing market, in 2012, Bombardier of Canada signs an agreement with COMAC of China to develop issues primarily related to the airplane cockpit, electric system and battery specifications (Marowits, 2012). COMAC's planes will utilize western suppliers for engines and electronics (Larson, 2014). The cockpit design will be similar to one of Bombardier's models which will reduce issues related to flight training (Marowits, 2012).

According to the head of strategy and marketing at Airbus, COMAC should be competing directly against Airbus and Boeing by 2025 (Larson, 2014). According to Karl Moore, a professor at the McGill University, "Bombardier's quest to sell into China means that it has little choice but to transfer some of its technology to China" (Marowits, 2012). COMAC represents the biggest potential competitor to Boeing and Airbus duopoly on the larger jets (Reuters, 2017b). COMAC's flagship product is the C919 which will carry 170 to 190 passengers (Marowits, 2012). In addition, COMAC will offer a regional jet, the ARJ21 which will compete directly with Bombardier and Embraer (Larson, 2014).

Russia is looking to improve its image in the airline industry while reinvigorating its industrial base in order to make it more self-sufficient (Reuters, 2017c). The state-controlled firm United Aircraft Corporation is established in 2006 to aggregate the plane manufacturers in Russia (Russian Bank Buys New Stake in EADS 2006). The Irkut Corporation is one of these manufacturers and it offers a wide range of aircraft, two of which are focused on models carrying between 130 and 211 passengers, the MS-21–200 and the MS-21–300 (Reuters, 2017c).

3. METHODOLOGY

The methodology to collect and evaluate data is based on using the empirical-analytic approach. This type of research is focused on using objective knowledge acquired from deductive reasoning using the collection of objective data from independent third-party providers. Since the research question is based on share price performance, quantitative methods are used and the data enables the determination of this performance with few ambiguities. There are three independent third-party providers in use to assemble the necessary data for this study: Thomson Reuters, Dartmouth College, and the US energy information administration (EIA).

The data points in the stock price total return monthly percent change format for the four companies are accessed through the Eikon product from Thomson Reuters (Thomson Reuters, 2017). Other data include the comparative benchmarks utilizing the CRSP Global market and the CRSP Aircraft industry - number 24 of 49 industries encompassing sic (standard industry classification) codes 3720-9 (Dartmouth, 2017). The third benchmark used is the Brent Oil market price from the EIA (EIA, 2017). The returns exclude the US one month Treasury-bill risk free rate. The study time frame under review is from January 2002 through December 2016.

The objective of this study is to evaluate the stock price total returns of the companies during the 15-year time frame. Below is the research question of this study.

Research question: With increased market power, do aircraft industry stock returns beat global market?

The stock price total return of the companies is the dependent variable in this analysis. The independent variables are comprised of the comparative benchmarks. The research approach is classified as causal and correlational. The intent is to establish a causal connection and quantify the relationship of the stock price total return performance of the four companies to the comparative benchmarks. To further explore this topic and focus on quantifying the research question, two hypotheses are considered.

H_1: During the study time frame, the stock returns for the group of top four companies are superior relative to the global market.

H_2: Not all of the four companies have superior returns to the global market.

The research approach matches the monthly portfolio to other factors and is a version of the three-factor model of Fama and French (Fama and French, 1993). This method adheres with the strategy that long-run abnormal returns should be calculated as the long-run return of a sample less the long-run return of an appropriate benchmark (Barber and Lyon, 1997). The regression variables include the comparative benchmarks listed in the previous section. The simplified formula uses three factors. Another formula using only two factors is also used. If alpha is positive, the companies outperform the market. If alpha is negative, the companies underperform the market. The two formula formats are listed below.

$$\text{Return less RF Rate} = \alpha + \beta(\text{Global market} - \text{RF rate}) + \beta(\text{oil market} - \text{RF rate})$$

$$\text{Return less RF Rate} = \alpha + \beta(\text{Global market or Aircraft industry} - \text{RF rate})$$

This analytic approach utilizes nine cases which examine the stock price total return monthly percent changes during the study time frame. For more information, please Table 3.

4. RESULTS

The summary results of the cases analyzed are included in Table 4. The negative alpha in case one shows the top four manufacturer group's inferior performance to the global market at a 0.05 statistical significance. The top four manufacturer group also has a small negative alpha in comparison to the aircraft industry, but it is not statistically significant.

The aircraft industry performs inferior to the global market, but the measurement is not statistically significant. The inclusion of the oil market in the regressions improves the performance of the aircraft industry and also makes the comparison statistically significant at the 0.05 level. Including the oil market does not improve the performance of the group of top four manufacturers, but it does make the measurement statistically significant at the 0.01 level. Comparing the individual companies to the global market and the oil market puts Airbus as the top performer with an alpha at 0.20 at a statistically significant level of 0.05, followed Embraer with an alpha at 0.16 then Boeing at 0.10, both at the 0.01 level. Bombardier is the only company with a negative alpha at (0.69), and at a 0.01 significance level.

The adjusted R^2 readings in the first seven cases averages above 0.92 which shows the high correlation between the aircraft industry and the top four manufacturers group to the various comparative benchmarks. Boeing and Airbus also have readings at 0.95 and 0.86, respectively. Bombardier at 0.20 and Embraer at 0.45 show much less correlation than what would be expected. Bombardier also has the worst alpha in the group.

On the subject of hypothesis testing, using the regression techniques stipulated in the Methodology section, seven out of the nine cases have alphas at a statistically significant level of 0.05 or better with four out of the seven having alphas at the 0.01 level.

Table 3: Analytical cases

Analytical cases	Global market	Aircraft industry	Oil market
Top 4 airplane manufacturers	X		
Top 4 airplane manufacturers		X	
Aircraft industry	X		
Aircraft industry	X		X
Top 4 airplane manufacturers	X		X
Boeing	X		X
Airbus	X		X
Bombardier	X		X
Embraer	X		X

Table 4: Regression statistics table

Regressions of analytical cases	Alpha (Y intercept)	T-stat	Beta one	Beta two	Adj. R²
Top 4 manufacturers - global market	(0.04)**	(2.09)	1.24***	NA	0.91
Top 4 manufacturers - aircraft industry	(0.01)	(0.41)	0.52***	NA	0.88
Aircraft industry - global market	(0.01)	(0.28)	2.28***	NA	0.94
Aircraft Industry - global market, oil market	0.09**	2.41	2.34***	(0.06)***	0.94
Top 4 manufacturers - global market, oil market	(0.17)***	(8.20)	1.15***	0.08***	0.94
Boeing - global market, oil market	0.10***	3.05	2.34***	(0.07)***	0.95
Airbus - global market, oil market	0.20**	2.39	3.34***	(0.25)***	0.86
Bombardier - global market, oil market	(0.69)***	(34.52)	(0.17)***	0.02**	0.20
Embraer - global market, oil market	0.16***	2.46	0.62***	0.16***	0.45

*=10%, **=5%, ***=1% denote significance levels

With regard to the first of the hypotheses considered, H_1: During the study time frame, the stock returns for the group of top four companies are superior relative to the global market. The group of four companies performs inferior to the global market at a 0.05 level when comparing against the global market and at a 0.01 level when comparing against the global market and the oil market. The regressions reject the premise that the group of four airplane manufacturers performs superior to the global market and in a statistically significant manner. These results reject the H_1 null hypothesis.

With regard to the second of the hypotheses considered, H_2: Not all of the four companies have superior returns to the global market. Bombardier is the worst performer and is the only one of the group to perform inferior to the others in relation to the comparative benchmarks when assessed at the individual company level. These results confirm the H_2 null hypothesis.

The research question for this study is: With increased market power, do aircraft industry stock returns beat global market? Based on the research methods in this study and the significance of the resultant measurements, a rejection of the hypothesis is warranted. Even with increased aircraft industry market power, its stock returns perform inferior to the global market.

These inferior returns in an industry that has a high concentration of market power is in line with a set of studies which document this phenomenon (Bain, 1951; Salinger, 1984; Chen et al., 1989). These dynamics may also be linked to studies which show that market concentration may not have a significant impact on profitability (Wong et al., 2007; Rinkeviciute and Martinkute-Kauliene, 2014; Jumono et al., 2015). The rivalries and resultant competitive practices may drive down the profitability of the whole industry (Chen et al., 1989). This could be the case even if the industry market has continued growth.

5. CONCLUSIONS

The current competition sees four players in an industry which possess a concentration of market power. From 2002 through 2016, the revenue related to commercial and business aircraft grows substantially for each of the four companies studied. However, both Boeing and Airbus grow their market share during this time at the expense of the other two. More specifically, the revenues for the larger jets grow faster than the revenues for the regional jets.

Further market developments are forecasted in Asia, Africa, and Latin America (Larson, 2014). New ventures in China and Russia expect to gain sales in these new markets (AFP, 2017). Changes in the number and structure of the competitors may also be affected with Bombardier as the wild card: will it rise from its financial woes; will it merge with another; or will it sell its aerospace business?

As the market for civil aircraft grows, history shows that the two big players tend to receive a larger share of the market as time goes on. The backlog order book also grows tremendously during the study time frame which shows unmet demand. With the potential additions of new players plus the markets further evolving in developing countries, this may change somewhat as the industry as a whole is poised to see tremendous growth over the coming decades.

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