



Assessing the Stock Market Performances of EU Low-cost Airlines

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Received: 22 April 2019

Accepted: 30 June 2019

DOI: <https://doi.org/10.32479/ijefi.8160>

ABSTRACT

The top seven low-cost airlines in the EU, as ranked by 2018 passenger travel, are evaluated over a 4 year time frame using stock market performance in order to ascertain which airlines provide superior performance in relation to the others in the group and in relation to the European stock market. Several topics are discussed relating to this group of airlines including business models, operating strategies, airline networks, regional airports, and standardized fleets. Three airlines emerge with superior stock market performance: Jet2, WizzAir, and Ryanair.

Keywords: EU, Low-cost Airlines, Stock Market Performance

JEL Classifications: G11, L93, R40

1. INTRODUCTION

Before deregulation and liberalization of the civil aviation industry in the EU, air travelers were limited to using mainly country-flagged carriers on the majority of routes (Diaconu, 2012). The full liberalization of the EU civil aviation industry in 1997 laid the foundation for substantial expansion of the airline industry (Dobson and Piga, 2013). Through this process, fares were deregulated and competition was allowed on all EU routes (Carmona-Benitez and Lodewijks, 2008). In the last 20 years, the market for air travel has seen substantial growth with new players emerging (Akguc et al., 2018).

The increased activity in the low-cost airline (LCA) segment are the fruits of these deregulation and liberalization efforts (Diaconu, 2012). All airlines, including LCAs are now able to fly on any routes within the EU (Dobson and Piga, 2013). These developments fostered increased competition from airlines throughout the EU. (Dobruszkes, 2013). Despite these developments, however, the ticket “price of air transport often remains a limiting factor for a large portion of the population”

(Dobruszkes, 2006). The rise of the LCAs have become a savior for these potential passengers. The LCAs offer lower fares targeting a wider range of travelers (Akguc et al., 2018).

Airline competition is a direct result of the implementation of deregulation and liberalization (Gillen and Ashish, 2004). As a result, the rise of the LCAs have provided more affordable travel opportunities in the EU (Dobruszkes, 2013). The subsequent development and profitability of LCAs has meant that low-cost air travel has enabled a larger proportion of the public the ability to fly (Gillen and Ashish, 2004). This is a market segment which was previously ignored (Akguc et al., 2018). This new market segment has been a real game changer. Now passengers are “enjoying a wider choice of routes, more frequent flights and lower prices” (Dobson and Piga, 2013).

2. LITERATURE REVIEW

The topic of LCAs has been well documented. There are numerous studies which present and analyze various aspects of the EU airline industry and the LCAs which operate within that industry. Akguc

et al. (2018) provide a robust report on the deregulation process and subsequent development of the LCA segment including networks and airports with a focus on mobility in the EU along and a qualitative study which concentrates on commuting strategies. Aldamari and Fagan (2005) also document the Southwest Airlines low-cost model and some of the low-cost model variants and show that these models also achieve cost savings, offer low air fares and generate profits.

All LCA business model roads lead back to the Southwest model. However, evolutions from the Southwest model result in business model variants which emphasize certain individual LCA capabilities or strengths. Hunter (2006) explores some of these various LCA business models and their differences. Lawton (2002) also presents various LCA business models and strategies plus their impacts during difficult economic times.

Much of the literature either references or focuses on Ryanair, as Ryanair was and is currently seen as the leader of the LCA segment in the EU. Diaconu (2012) reviews the evolution of low-cost business models with a focus on Ryanair. Malighetti et al. (2009) evaluate Ryanair's fare data for a year, analyze its business model and pricing policy then present the results. Box and Byus (2007) also provide a case study of Ryanair's low-cost leadership and related strategies for achievement. These studies and others document various impacts Ryanair has had in the LCA segment.

There are also studies which document airline industry issues and how full service airlines (FSAs) and LCAs face the individual industry issues and how they compete differently with each other. Hanaoka et al. (2014) document the benefits of LCAs compared to FSAs and review the competitive market as a result of the liberalization policies. Carmona-Benitez and Lodewijks (2008) provide a comparison between FSAs, LCAs, and charter operator models plus examine the different strategies in use for each. Pitfield (2009) reviews LCA pricing strategies and their impacts on passenger demand and competition, while Doganis (2001) documents much about the airline industry from cost structures to strategies and most everything in between.

Airline networks is one area where the FSAs and LCAs diverge. For the most part, FSAs utilize hub systems and LCAs utilize point-to-point networks. Reynolds-Feighan (2001) reviews airline networks, both for FSAs and LCAs then notes that the EU network expansion was due to the introduction and expansion of LCA networks. There are also modifications to these two network variants. Dobruszkes (2006) provides an analysis of European LCA networks finding that concentrations can be found in certain portions of these networks. These network differences can lead to different strategies as well. As Graham (2009) carries this theme further and reviews networks plus different strategies and business models used by LCAs.

Related to networks, airports are also a differentiating factor. Francis and Humphreys (2002) document issues surrounding the use of smaller airports. From the airport perspective, Francis et al. (2003) presents the LCA impacts on airports and list how airports compete to gain the LCA business. Gillen and Ashish

(2004) further the discussion on the use of smaller airports for LCAs and include the impacts of the first mover advantage in new markets. Warnock-Smith and Potter (2005) continue the focus on airports and look at the factors influencing the choice of airports by LCAs and find that low-cost airport service is the dominant factor. Dobruszkes (2013) documents the use of secondary airports, increased flight distances, and growing the airline network through niche markets, and notes there is no single low-cost model.

Other issues also impact the competitive landscape, not only for LCAs, but for the airline industry in general. Kim and Singal (1993) focus on airline mergers and issues surrounding routes and market power of airlines. Barrows (2018a) continues these topics and includes fare impacts based on airport size. Dobson and Piga (2013) document the growth of LCAs in the EU and the potential impacts of mergers on air fares. Flouris and Walker (2005) examine financial and stock performances FSAs and LCAs during difficult economic times, while Barrows (2018b) evaluates stock performance of airline portfolios based on service quality. This study ranks the stock market performance of the top seven LCAs in the EU over the most recent 4 year time frame (2015-2018) and provides research not currently included in previous studies.

2.1. Business Models

LCAs, in order to provide an increased number of routes at more attractive prices, have relied on business models which provide advantages over previous standard practices. There is not one standard LCA business model (Warnock-Smith and Potter, 2005). But there is a new paradigm, new business models with many new attributes. The new attributes usually include the following: open seating plans; no free meals; no paper tickets; direct flights using smaller airports; simplified aircraft configurations with more flying hours; and multi-tasking employees (Dobson and Piga, 2013). Ryanair and EasyJet were among the first to implement aspects of the low-cost model in the early to mid-1990s (Malighetti et al., 2009). The different LCAs may use different business models (Akguc et al., 2018). However, many employ common attributes of a low-cost model.

Dublin-based Ryanair is the largest LCA in the EU, and since its inception it has used a model based on the Southwest model (Box and Byus, 2007). As with most other LCA models, reductions in costs and fares are the two main drivers (Hunter, 2006). With the implementation of lower costs, the use of lower fares is easier to implement (Pitfield, 2009). The LCA segment is also known as the provider of a "no-frills service" (Warnock-Smith and Potter, 2005). This segment calls for lowering fares by eliminating services normally associated with flying, such as free refreshments and luggage (Malighetti et al., 2009). Its primary focus is the tourist traveler with lower fares as a primary feature (Flouris and Walker, 2005).

Though cost reduction efforts are widely touted, there are other aspects to a low-cost model (Malighetti et al., 2009). There are indeed other items impacting profitability. In the simplest terms, there is "a fragile balance between fare levels, load factors and operating costs" (Malighetti et al., 2009). In fact, profit is based on both revenues and costs, and reducing costs are important.

For airlines in general, but even more so for LCAs, as “the marginal costs” related to the incremental passenger is almost zero (Malighetti et al., 2009). Therefore, the reduction of overall costs are seen as imperative.

The two big impacts are cost reductions and fare structures (Malighetti et al., 2009). The use of a simplified fare structure based on cheap one way travel is perhaps just as important as the focus on cost reductions (Carmona-Benitez and Lodewijks, 2008). This is because LCA fares can be less than half the cost of FSA fares (Akguc et al., 2018). These cheap fares can open markets for new travelers. Due to the nature of flight patterns, markets can be said to be established for each route (Kim and Singal, 1993). In these LCA markets, the LCAs operate routes that have high passenger volume and low fares (Hanaoka et al., 2014). The result is that a wider set of travelers can take advantage of these services (Akguc et al., 2018).

2.2. Operating Strategies

The operating strategies for the various LCAs may be different individually. However, each “has developed their own cost leadership, differentiation and focus strategies to attract passengers and growth” (Carmona-Benitez and Lodewijks, 2008). Usually, the early market entrants tend to see initial market share benefits (Francis et al., 2003). This is reflected by the early entrants Ryanair and EasyJet garnering 36% and 28%, respectively, of the LCA segment (Dobruszkes, 2013). Gaining the initial market share is imperative. Many times, LCAs are implementing routes connecting new markets so the initial travel demand is somewhat unknown which is a concern for the development of these new markets (Warnock-Smith and Potter, 2005).

In its simplest approach, LCAs provide basic transportation from one point to another (Gillen and Ashish, 2004). Potential strategies to improve profitability are not limited to only pricing and route development. One strategy employed by both Ryanair and EasyJet, among others, “is the outsourcing of everything other than cabin crew, pilots, reservation agents, head office functions and to some extent, maintenance” (Carmona-Benitez and Lodewijks, 2008). For existing routes with known demand and load factors, this may not be so beneficial. However, for new routes, such a strategy, allows for cost containment in the face of uncertain passenger demand (Carmona-Benitez and Lodewijks, 2008).

2.3. Airline Networks

The LCAs have been “considered as a main driver of the European airline network’s expansion” (Dobruszkes, 2013). Liberalization has primarily led to the development of new routes as opposed to competing only on the existing routes (Dobruszkes, 2006). The LCA networks also connect smaller, regional markets to larger cities (Akguc et al., 2018). The average flight distance has increased by 41% from 2002 to 2014, but most flights are considered short-haul with over three-fourths of LCA seats on flights <1500 km (Dobruszkes, 2013).

The development of LCA networks has been important to the development of the airline industry in the EU (Dobruszkes, 2006). Generally, most LCA networks do not use connecting flights,

known as “interlining flights” (Doganis, 2001). Also, some LCAs do not utilize facilities for cargo loading (Diaconu, 2012). With regard to LCA networks, there are many variables to consider, but at minimum, they include “connections, frequency and number of routes” (Dobruszkes, 2006). As with the LCA strategies being different individually, the LCA networks supporting those strategies are also not always the same (Graham, 2009).

The previously established hub networks for FSAs allow for numerous points of travel like spokes on a wheel (Aldamari and Fagan, 2005). FSAs predominately use these hub networks (Carmona-Benitez and Lodewijks, 2008). In contrast, LCA networks typically use point-to-point patterns with key points or nodes as the drivers of the networks (Reynolds-Feighan, 2001). As a result, the nodes in the networks, “focus on point-to-point flights” (Carmona-Benitez and Lodewijks, 2008). However, to adequately compete, the LCA networks must achieve a certain size (Dobruszkes, 2006). Thus, the network structure influences the ability to compete in the market (Carmona-Benitez and Lodewijks, 2008).

To adequately compete in certain markets, LCAs also may utilize point-to-point flights along with occasional connections to FSA hubs (Akguc et al., 2018). As a result, some of these LCA networks can have high traffic concentrations (Reynolds-Feighan, 2001). Unlike FSA hub and spoke networks which support long-haul flights, LCA networks typically do not include long-haul flights (Dobruszkes, 2006). Also, many LCA networks do not have connecting flights (Carmona-Benitez and Lodewijks, 2008).

2.4. Regional Airports

Airport costs are a key factor in the implementation of the LCA networks (Warnock-Smith and Potter, 2005). Airport charges can represent ten to fifteen percent of LCA operating costs (Doganis, 2001). LCA networks tend to focus “on point-to-point flights and secondary airports” (Akguc et al., 2018). LCA networks increasingly include the use of smaller airports to reduce costs and utilize spare capacity which is not always available at the hub airports (Warnock-Smith and Potter, 2005). LCAs negotiate with several smaller airports concurrently in order to gain economic advantages (Francis et al., 2003). As a result, the smaller airports typically have “relatively low airport charges” due to this competition (Akguc et al., 2018).

There is less congestion at the smaller airports (Barrows, 2018a). This is important as the LCAs strive for shorter turnaround times and better on-time service as compared to FSAs (Lawton, 2002). In addition, fleet utilization can be increased at the smaller airports with the scheduling of more available slots during the day as opposed to early morning or late night slots (Doganis, 2001). The situation at the FSA hubs is different as FSAs usually hold the majority of available slots (Akguc et al., 2018).

Utilizing the smaller, regional airports also allow certain LCA players to focus on niche markets, those which may not be targeted by existing players (Dobruszkes, 2013). These smaller airports don’t have the congestion and backlogs at hub airports and thus realize reduced turnaround times which provides for

higher fleet utilization (Dobruszkes, 2006). The result being a potential “25 min turnaround” (Dobson and Piga, 2013). The lower turnaround times have a significant impact on aircraft costs (Pitfield, 2009).

Another consideration is the number of passengers within a commuting distance to the airport (Warnock-Smith and Potter, 2005). This is due to the fact that a certain number of passengers will travel further to a regional airport in order to save money on air fares (Francis and Humphreys, 2002).

2.5. Standardized Fleets

While strategies around the LCA networks and airports provide for certain synergies, LCA fleets also contribute to the benefits as well. LCA strategies include efforts to: “Minimize turnaround times, increase flying hours, maximize aircraft utilization, and increment the number of seats in the aircrafts to the maximum available” (Carmona-Benitez and Lodewijks, 2008). In order to reduce costs and provide streamlined processes, most LCAs use a standardized fleet (Dobruszkes, 2006).

Standardized fleets reduce the costs for maintenance and training plus the single seating configuration also requires less staffing (Pitfield, 2009). Such standardized fleets have the following advantages: (1) Reduces training costs which adds crew flexibility; (2) reduces maintenance costs on parts including engines; (3) realizes better efficiencies through specialization (Flouris and Walker, 2005).

These LCA fleets are usually operated with either one or two aircraft models (Dobson and Piga, 2013). With regard to aircraft in the standardized fleet, there is some consensus. A new, standardized fleet will reduce costs related to maintenance and repair (Akguc et al., 2018). Because of this, LCA fleets “typically operate only one type of aircraft, either Boeing’s 737 or Airbus’ A320 series” (Flouris and Walker, 2005).

An airline may expand to two models if it does not increase its costs (Carmona-Benitez and Lodewijks, 2008). The maximum distance of 2500 km for most flights means that these two aircraft models are among the best suited for this segment (Hanaoka et al., 2014). EasyJet uses Airbus A320s and A319s which is a close relative to the A320s (Carmona-Benitez and Lodewijks, 2008). Ryanair exclusively uses Boeing 737s (Box and Byus, 2007). Ryanair enlarged their fleet with new planes and now its fleet is “the youngest and most fuel efficient in Europe” (Diaconu, 2012).

3. METHODOLOGY

Using company stock market returns is a common technique to gauge company performance. The stock market performance assessment utilizes the stock price total return monthly percent change format (Thomson Reuters, 2019). In order to adjust the

results to provide more meaningful comparisons, a comparative benchmark is used which is the European market from the Center for Research in Securities Prices, known as CRSP (Dartmouth, 2019). Regressions performed allow each airline to be measured against the returns for the European market.

This process adheres to 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). For comparison, the stock market prices and benchmark exclude the US 1 month Treasury-bill risk free rate. Two previous airline studies utilized similar methodologies to evaluate airline stock market performance (Flouris and Walker, 2005; Barrows, 2018b).

A two-factor model is utilized and regressions are run using the monthly stock market prices for the airlines and the comparative benchmark. In the statistical analysis included, the first measurement is the Y-Intercept. The Y-Intercept is the value of Y when X is zero. For the analytical purposes here, the Y-Intercept equates to alpha. If alpha is positive, the companies outperform the benchmark. If alpha is negative, the companies underperform the benchmark. The two-factor formula is:

$$\text{Return less RF rate} = \alpha + \beta (\text{European market less RF rate}).$$

The airlines selected for the study are the top seven LCAs as ranked in the top twenty-five European airlines groups 2018 ranking based on passenger numbers as listed in Table 1 (CFA, 2019). In addition, a portfolio of all seven is included in the regression analysis. The study time frame is from February 2015 through December 2018. This time frame was selected in order to provide full participation for all as there was one airline, WizzAir, which began stock market trading in February 2015.

4. RESULTS

The results of the regressions have three of the airlines, Jet2, WizzAir, Ryanair, plus the portfolio case with positive alphas which indicate superior performance relative to the European market benchmark. The remaining four airlines, Norwegian, Flybe, EasyJet, and Pegasus, have negative readings which indicate inferior performance relative to the European market during the study time frame. The summary results of the cases analyzed are included in Table 2.

The rankings based on stock market performance are: (1) Jet2, (2) WizzAir, (3) Ryanair, (4) Norwegian, (5) Flybe, (6) EasyJet, and (7) Pegasus. Six out of the eight cases have alphas with significance levels at 1%, one at 10%, and another that was not statistically significant. All of the readings for beta are statistically significant at the 1% level. The top two betas are also the top two alphas. This “suggests that market volatility has a much bigger influence on the return of each airline” (Flouris and Walker, 2005).

Table 1: LCAs in study

LCA	Ryanair	EasyJet	Norwegian	WizzAir	Pegasus	Jet2	Flybe
Passengers (millions)	139	92	37	34	29.9	12.2	9.5

LCA: Low-cost airline

Table 2: Stock market regressions table

Regressions	Alpha (Y intercept)	t-statistic	Beta	Adjusted R ²
Ryanair	0.31***	9.51	1.15***	0.38
EasyJet	(0.20)***	(6.35)	0.56***	0.13
Norwegian	(0.05)*	(1.69)	(1.30)***	0.49
WizzAir	0.40***	7.04	3.97***	0.71
Pegasus	(0.47)***	(18.93)	1.55***	0.65
Jet2 (Dart group)	0.86***	8.27	3.25***	0.32
Flybe	(0.06)	(1.04)	(1.42)***	0.23
Portfolio of 7	0.09***	3.27	1.12***	0.47

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

The Adjusted R Squared readings which compare the cases to the European market benchmark are not as high as would be normally expected with WizzAir and Pegasus at 0.71 and 0.65, respectively, followed by Norwegian and the Portfolio at 0.49 and 0.47, respectively, with the others below these readings with EasyJet at the bottom with 0.13.

With regard to stock market returns, there is the old adage: “Past performance is the best predictor of future performance” (Flouris and Walker, 2005). This may be directionally correct, at least in the short term. As time goes by, stock prices may change due to changing underlying operational performance. If stock markets are truly liquid, at all times, a stock price should reflect all publicly available information in the market (Kim and Singal, 1993). The stock price each day should encompass the various aspects of a firm’s operation, from utilization to profitability to liquidity to solvency.

5. CONCLUSION

Since the deregulation and liberalization of the EU airlines, competition has increased (Gillen and Ashish, 2004). Business models in the new paradigm have many new attributes ranging from utilization of planes, to meals, to airports, to employees (Dobson and Piga, 2013). The two common themes are lower costs and lower fares (Hunter, 2006). As a result of these two themes, the LCAs have enabled more passengers to utilize more air travel in the EU.

In evaluating these LCAs, it is perhaps no surprise that Ryanair is included in the group of three best performing airlines since it is the largest of the LCAs in terms of passengers carried. The results of WizzAir and Jet2 may be somewhat surprising given that they are ranked in fourth and sixth place, respectively, based on passengers carried. This could signal that they may be poised to have higher growth in the future. What is clear is that there has been substantial growth in EU air travel in the last 20 years (Akguc et al., 2018). Whether this growth continues at the same pace or slows will certainly impact the performance of these airlines.

6. ACKNOWLEDGMENTS

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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