Passenger Volumes Post-accession to the European Union:

Signs of Southwest Airlines' Model in Central and Eastern Europe

by

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ABSTRACT

In 2004 the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, and Slovenia joined the European Union (EU) as part of the EU's greatest enlargement to date. These countries were followed by Bulgaria and Romania in 2007. One benefit of joining the EU was the freedom for residents in the new EU member states to migrate to western European nations, notably the United Kingdom (UK). A result of this new freedom was an increased need for air travel. The intersection of the expansion of the EU with the introduction of low-cost airline service was the topic addressed in this study. Yearly traffic statistics obtained from the UK Civil Aviation Authority were used to formulate a trend line of passenger volume growth from 1990 to 2003. Through a time series regression analysis, a confidence interval was calculated that established that, beginning with the year 2004, passenger volumes exceeded the probable margin of error, despite flat population growth. Low-cost carriers responded to these market conditions through the introduction of new flights across the region. These carriers modeled themselves after Southwest Airlines, a strategy that appeared to be more effective at meeting the needs of the post-accession travel boom. The result was a dramatic rise in both passenger volumes and low-cost airline routes in an east-west direction across the continent.

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Chapter 1

INTRODUCTION

On May 1, 2004, the European Union (EU) underwent its largest expansion to date. Ten new nations officially entered the economic and political partnership bringing the total membership to 27 European countries. The so-called EU-8 included the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, and Slovenia. Two other Eastern European nations, Romania and Bulgaria, later officially joined in 2007 (European Union, 2011a). As a result of admittance to the Union, citizens of the new member states were afforded free access to travel or relocate to and from any other member state. This caused a significant migration of workers from Eastern Europe to the more prosperous countries in the west, notably the United Kingdom (UK) and Ireland. Since many other EU members placed varying levels of restrictions on movement from the new member states, the British Isles were an attractive destination as they did not enact these restrictions, had high standards of living, and provided numerous economic opportunities (Drinkwater, Eade, & Garapich, 2009).

During this same time period, the low-cost airline component of the air transport industry in Europe continued rapid growth. The market share for discount airlines rose from 2% of intra-EU passenger traffic in 1998 to 9% in 2002 (Graham & Shaw, 2008). As of 2005, low-cost carriers (LCCs) accounted for about 20% of all European air traffic. An even greater figure was reported for flights between the British Isles and continental Europe, with low-cost airlines holding a market share of 50%. The two largest, Ryanair and easyJet, transported

42.5 million and 28.0 million customers, respectively, in 2006, ranking them both among the top 20 airlines in the world by total passengers.

One commonality of these LCCs was a business model based on operating principles developed by Southwest Airlines, the carrier credited as the originator of the LCC concept. The impact of Southwest's entrance into new markets has been so significant that its impact has been described as a phenomenon called the "Southwest Effect." This is characterized by average airfares dramatically declining as well as a large increase in the overall number of passengers flown once the airline begins service. For example, the Transportation Research Board analyzed new Southwest routes between 1990 and 1998 and found that passenger trips increased 174% while average fares fell 54% (Boguslaski, Ito, & Lee, 2004). Overall, the US Department of Transportation has estimated that the existence of Southwest and the impact it has had on pricing has resulted in annual fare savings of $12.9 billion. Despite the low fares, the airline has been the only US airline in history to be profitable every year since its inception. As of 2004, its market capitalization exceeded that of all its competitors combined.

The enactment of a European Open Skies policy in April 1997 facilitated the rapid development of this business model outside of the domestic United States (Skurla, Radacic, & Curepic, 2003). Open Skies provided freedom of movement for airlines in Europe to transport passengers between countries without governmental route or pricing approval. It also opened up the opportunity for carriers based in one country to fly between two other nations. By taking advantage of this market liberalization, airlines were able to establish

international point-to-point service. Following the Southwest model of low fares and market expansion, new European LCCs were able to begin operations across the continent. For example, Ryanair has successfully followed this business strategy to grow into the largest low-cost carrier in Europe with over 75 million passengers carried in 2010. The airline carried these customers via more than 1,300 routes, flying out of 44 different bases located in both the UK and continental Europe (Ryanair, 2011a).

The intersection of the EU expansion with the introduction of LCC service was the issue examined through this study. Through a time series regression analysis, the impact of accession into the EU by new central and eastern European member states was measured. This was cross-referenced with data on the service start dates of routes between the UK and those countries by LCCs. By comparison, Southwest Airlines has produced remarkable increases in market size in the contiguous United States. However, this investigation expanded upon existing research on LCC growth in western and southern Europe (Pitfield, 2007; 2008b) to discover if signs of expansion following the Southwest model could be seen in new LCC service to the eastern parts of Europe. Given further expansion of the EU on the horizon, the outcomes of this study are potentially significant for future air travel projections.

Chapter One introduces the problem and establishes the parameters of this study. Chapter Two, the literature review, provides background into several aspects of the EU and LCCs. A brief history of the EU is presented along with information on the leading LCCs linking the UK and eastern portions of Europe,

as well as an overview on Southwest Airlines and its business model. Discussion is also provided on previous research on the effect airlines, notably Ryanair, created on markets it entered in Western and Southern Europe. Chapter Three discusses the methodology used to plan, design, and execute the project and analyze the data. Chapter Four details the results. Chapter Five discusses the statistical results and presents conclusions on European passenger levels in the regions examined, as well as opportunities for future study.

Statement of Purpose

The purpose of this investigation was to determine the impact LCC air transportation had on passenger volumes between the UK and 2004/2007 EU new member states in Central and Eastern Europe. In order to accomplish this task, this investigation:

1. Reviewed previous literature on the impact of LCC service in Europe.
2. Determined passenger volumes from 1990 through 2010 between the UK and ten central and eastern European nations admitted to the EU since 2004.
3. Identified service entry dates for air travel by LCCs on routes between the UK and new EU nations.
4. Analyzed traffic levels pre-2004 to formulate a passenger volume trend line.
5. Determined the statistical significance of variance from this trend line for passenger volumes post-2004 up to 2010.

Scope

The scope of this study was to measure passenger volumes between the years 1990 to 2010. Annual statistics were obtained from the United Kingdom Civil Aviation Authority (CAA). This organization serves as the UK's specialist aviation regulator. The CAA publishes an annual report on international air passenger counts for flights to and from the UK. Data was extrapolated from these figures to isolate routes operating between the UK and the ten countries studied: Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia. Particular note was then made of any changes to the data after EU enlargement or entrance of LCC service to that nation from the UK.

Assumptions

The need for air travel can be due to many reasons. Customers fly for business, vacation, and to visit family and friends. Traffic flows are thereby influenced by many variables. These include economic stability, fuel prices, political climate, and natural disasters, amongst others. For the purposes of this investigation, two primary criteria have been selected as determinants of passenger volumes above all others: (1) membership in the EU and (2) availability of LCC service. Other factors are assumed to be secondary to these two primary influences. Also, when looking for signs of the Southwest Effect, two factors are considered: lower airfares and increased passenger volumes. However, due to the lack of complete historical information on airfares across the European continent, only passenger volumes were researched in this study.

Limitations

A few limitations of the data source exist. For one, the CAA only records passenger volumes for non-stop service. Therefore, any connecting service was not able to be included in the statistics. As LCCs typically fly point-to-point without a change of planes, this omission was not deemed significant. Data spanning the entire length of the study period was only available on an annual basis. In the year 1998, reports began being published monthly. However, in order to provide consistency, figures were only tracked using the annual numbers that were accessible throughout the 20-year period researched. Due to this, the direct impact of new air service may have been less discernable during the initial years of this study than if monthly statistics were used. An additional limitation of the data was that the directionality of movement was not indicated. Passenger volumes were not broken down by the CAA to specify whether traffic originated from or was arriving to the UK. Furthermore, as noted by the CAA, this data compilation was validated but no warranties were made to its accuracy, integrity, or reliability. However, the CAA's data on international passenger statistics have proven to be a reliable source to determine traffic trends, as evidenced in its usage as the basis for studies of low-cost traffic such as the one by Pitfield (2007) mentioned in Chapter 2.

Hypothesis

The results of this study were expected to show that passenger volumes significantly increased between the United Kingdom and the ten new EU member states. Several factors were predicted to be shown as influencing this growth. One

was the freedom of movement between nations provided by membership in the EU. This would be reflected in a dramatic rise in passenger volumes immediately after the dates of accession. Second, due to the market liberalization in air travel, LCCs quickly started service on routes between these two regions, creating an additional influx of traffic. The combined effect was expected to far outpace the trend line of passenger volumes established during the 14 years preceding the 2004 EU expansion.

Summary

The 21st Century has been one of great change in Europe. In 2004, the EU grew overnight in population from 388 million to approximately 460 million with the addition of the new member states (Eurostat, 2011a). The admission of Bulgaria and Romania in 2007 added another 30 million residents. At the same time, airlines such as Ryanair, easyJet, and Wizzair were able to enter these underserved markets with access granted through Open Skies policies and business strategies guided by the Southwest Airlines model. The LCCs had already demonstrated success in growing the market for passengers exponentially in Western and Southern Europe. This research expanded on that knowledge to determine whether the market changes seen in Central and Eastern Europe followed expected growth patterns, and if expansion continued to exhibit characteristics of the Southwest business model seen in the rest of the continent as well.

Chapter 2

LITERATURE REVIEW

The European Union (EU) was created in the aftermath of World War II by Belgium, France, Germany, Italy, Luxembourg, and the Netherlands. The original goal was to reconstruct and unite Europe economically and politically to preserve peace across the continent. Initially called the European Coal and Steel Community, the organization was formally established in Paris on April 18, 1951. The object of this partnership was to create through a common market of coal and steel resources for economic expansion, growth of employment, and elevation of the standard of living. In order to accomplish this, each member had to be assured equal access to a common market of production. This facilitated lower prices and improved working conditions by increasing international trade and modernizing production. Other benefits included the establishment of free movement of products without taxes and duty as well as the prohibition of practices, subsidies or special charges imposed by member states on one another (European Union, 2011b).

The EU has since expanded numerous times in the ensuing years. Countries to subsequently join were the United Kingdom (UK), Ireland, Denmark, Greece, Spain, Portugal, Austria, Finland, and Sweden. Similarly, the scope of the EU has increased. The 1987 Simple Market Treaty added numerous reforms to the EU, including the goal of establishing a common currency (European Union, 2011b). The organization also changed names in 1992 to the European Community and finally to the EU in 2007. The Amsterdam Treaty of

1997 made the territories free from internal border countries in what is known as the “Schengen Area.” This enabled free movement of its citizens both for employment and leisure. This benefit was particularly attractive to the new eastern European members.

The process for a country to join the EU is long and complex. Applicants first must fulfill economic and political conditions called the Copenhagen Criteria which outline the requirement for democracy, rule of law, protection of human rights, and other freedoms (European Commission, 2012). Pre-accession funding is then provided to assist candidate countries in introducing institutional reforms conforming to EU standards. Ultimately, all existing member states and the European Parliament must agree to the admission of any nation. A definitive vote only occurs at the end of the process. It has been described that negotiations are “conducted on the principle that ‘nothing is agreed until everything is agreed.’” As an example of the timeline, Poland first signed an agreement for trade with the European Community in 1989. The European Commission invited Poland to start the process of accession in 1997. Negotiations were finalized in 2002 and the Accession Treaty was signed on April 16, 2003 with membership officially commencing on May 1, 2004, 15 years after the process began.

Though the central and eastern European nations were now members, restrictions still existed on migration from the east to the west. Only Ireland, Sweden, and the UK placed minimal limits on movement. However, British immigration regulations stipulated that workers from the new member states had to register with the Worker Registration Scheme (WRS) as soon as they started to

work in the UK. Between April 2004 and December 2007, a total of 766,000 workers were registered, although this figure is likely below the actual amount as not all individuals followed this process (e.g. students and the self-employed) (Bachan & Sheehan, 2011). In terms of nationality, by far the largest group of foreign arrivals was from Poland. Two-thirds (66%) of applications to the WRS from 2004 to 2006 (508,000) were Polish. While not all necessarily stayed, this figure represented 1.1% of the UK population. This was far greater than the 40,000 per annum that were expected. Demographers have noted that the enlargement of the EU that took place in May 2004 produced the largest wave of immigration to the UK ever (Drinkwater, Eade, & Garapich, 2009).

Though this significant migration from the east to the west occurred post-accession, overall populations of the respective new EU entrants remained remarkably steady over the 20 year time frame of this study. According to Eurostat figures (2011), the population of the ten new members of the EU totaled 106 million in 1990. By 2010, population actually dropped 3.7% to 102 million. The essentially flat growth rate of each of these countries is illustrated in Figure 1. Meanwhile, in the UK population over the same time period grew from 56.5 million to 61.6 million, an increase of 9%. However, it cannot be assumed that this growth in the UK population was completely attributable to post-accession migration, as the UK remained a popular destination for immigrants from around the world. For example, 170,000 immigrants from Asia to the UK were also recorded in the year 2004 (Eurostat, 2011a).

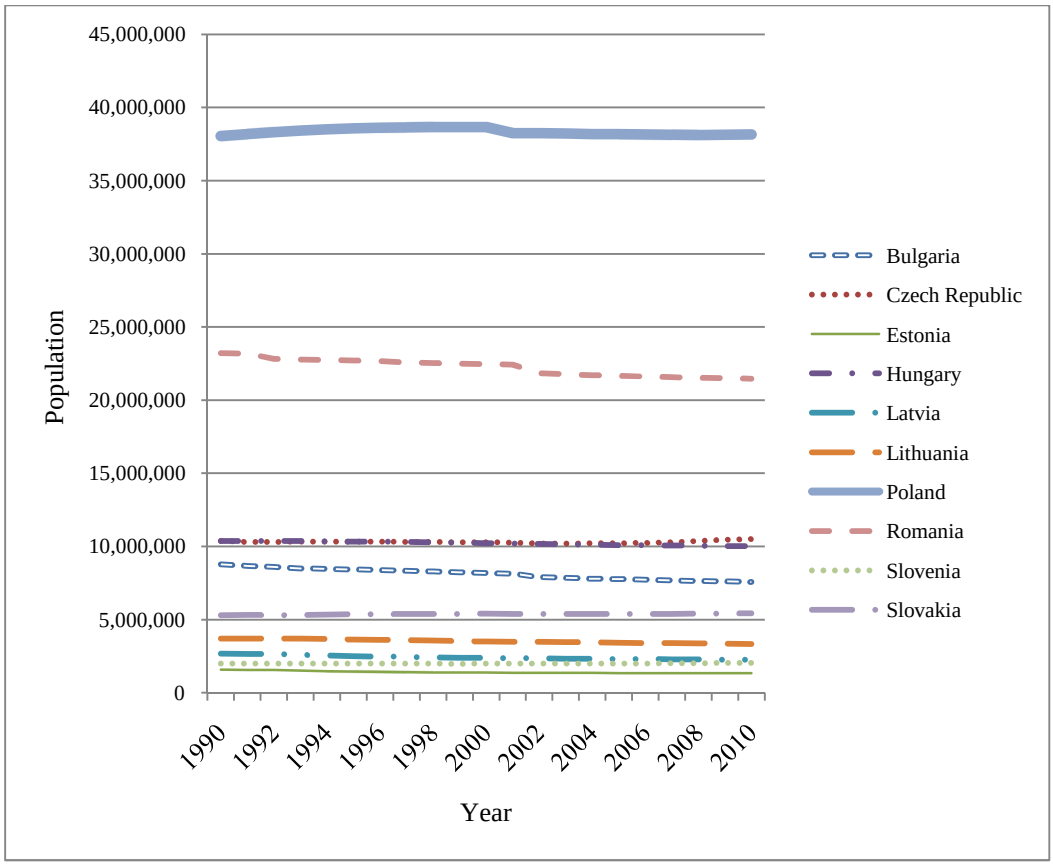

Figure 1

Central and Eastern European Populations by Year

In contrast to population, the Gross Domestic Product (GDP) of the ten new members grew substantially between 2002 and 2010. As illustrated in Table 1, the increase in GDP purchasing power standard from 2002 to 2010 ranged from 3,300 to 6,800 Euros per inhabitant amongst the ten countries. Though overall growth for the entire time period showed an increase, fluctuations existed between the various years. Two countries (Czech Republic and Estonia) showed a decline in GDP from 2007 to 2008 while nine nations experienced a decrease between 2008 and 2009, with Poland being the exception (Eurostat, 2011b). These declines were reflective of the global recession that occurred during these time periods.

Table 1

GDP Purchasing Power Standard (Euros)

Country\ Year	Bulgaria	Czech Republic	Estonia	Hungary	Latvia
2002	6,500	15,000	10,200	12,500	8,300
2003	7,000	15,900	11,300	13,000	8,900
2004	7,500	16,900	12,400	13,600	9,900
2005	8,200	17,800	13,800	14,200	10,800
2006	9,000	18,900	15,600	14,900	12,200
2007	10,000	20,700	17,500	15,400	13,900
2008	10,900	20,200	17,300	16,000	14,100
2009	10,300	19,300	14,900	15,200	12,000
2010	10,700	19,400	15,700	15,800	13,000
Change 2002-2010	**4,200**	**4,400**	**5,500**	**3,300**	**4,700**

Country\ Year	Lithuania	Poland	Romania	Slovakia	Slovenia
2002	9,100	9,900	6,000	11,100	16,900
2003	10,200	10,100	6,500	11,500	17,300
2004	11,000	11,000	7,400	12,300	18,800
2005	11,900	11,500	7,900	13,500	19,600
2006	13,100	12,300	9,100	15,000	20,700
2007	14,800	13,600	10,400	16,900	22,100
2008	15,400	14,100	11,700	18,100	22,700
2009	12,800	14,300	11,000	17,000	20,500
2010	14,000	15,300	11,400	17,900	20,700
Change 2002-2010	**4,900**	**5,400**	**5,400**	**6,800**	**3,800**

This economic downturn was not only reflected in GDP but in passenger volumes worldwide. For instance, in the United States 151 million passengers transited between the US and rest of the world. This was a 5.9% decrease in passengers from 2008. Statistics also indicated a 13.4% drop in travelers from the UK to Central and Western Europe (US Department of Transportation, 2010). The decrease in GDP along with the decrease in passenger volumes was consistent in reflecting lower demand for airline routes across the globe.

Rise of Low-Cost Carriers

During this same time period the low-cost carrier (LCC) component of the air transport industry in Europe was growing. This type of airline encompasses a wide spectrum of carriers. For example, Aer Lingus evolved from the national airline of Ireland to an up-market LCC with transatlantic service, while others have transformed from all charter services to focusing primarily on scheduled flights. These included Air Berlin from Germany and Thomsonfly from the UK. Though pioneered in the United States with Southwest Airlines, the low-cost carrier market exploded in Europe since the liberalization of the European skies in April 1997. By 2005, approximately 50 airlines following the LCC model were in operation. The two largest, Ryanair and easyJet, transported 42.5 million and 28.0 million customers, respectively, in 2006, ranking them among the top 20 airlines in the world by total passengers (Graham & Shaw, 2008).

Ryanair is credited as the original LCC in Europe, evolving from having one 15-seat turboprop plane in 1985 servicing Waterford to London Gatwick airport, to the largest LCC on the continent with 272 airplanes by 2010. It was in

1990 that the founding Ryan family, in an attempt to make the fledgling carrier profitable, decided to pursue the no-frills business model of Southwest Airlines. By 1998, discount airlines carried an estimated 2% of intra-European Union passenger traffic. In 2002, that figure rose to 9%. As of 2005, LCCs accounted for about 20% of all European air traffic. An even greater figure was reported for flights between the British Isles and continental Europe, with airlines like Ryanair, easyJet, and their competitors holding a market share of 50%. This reflected a dramatic change as historically, the European aviation industry was dominated by national flag carriers that transported 70% of passenger traffic (Vlaar, De Vries & Willenborg, 2005).

After Ryanair was restructured to emulate the LCC model of Southwest Airlines, in 1991 it posted its first ever profit of £293,000 (US $467,000), despite the negative impact of the Persian Gulf War (Ryanair, 2011a). Passenger numbers grew 45% the following year to exceed one million, providing sufficient capital to purchase six Boeing 737 aircraft. By 1994, the carrier had transitioned to an all 737 fleet totaling eight aircraft. Its impact on the aviation market was dramatic as the nearly 60-year-old carrier Aer Lingus withdrew from the Dublin to London Gatwick route, ousted by the nine year old upstart. The very next year, Ryanair overtook both Aer Lingus and British Airways to be the largest carrier from Dublin to all London airports combined, effectively winning the busiest scheduled international route in Europe (Ryanair, 2011a) and the second busiest in the world after Tokyo to Taipei (Barrett, 2006).

With the enactment of Open Skies in 1997, all of Europe became available to service from any airline in the continent. Ryanair benefited from this and quickly started service to international destinations including Stockholm, Oslo, Paris, and Brussels (Ryanair, 2011a). However, all four routes were to secondary airports, some a considerable distance from the major city purportedly served. The airline also became a publicly traded company on both the Dublin and New York stock exchanges. By 1999, it shifted its London operations to Stansted airport and opened a brand new base at Glasgow Prestwick airport with three aircraft. The year 2002 saw the development of its first two bases in continental Europe, Frankfurt Hahn and Brussels Charleroi, as well as an order for 125 Boeing 737's, with options for 125 more. As of 2005, Ryanair had 15 bases throughout Europe and had acquired a competitor, Buzz (formerly part of KLM Royal Dutch Airlines). The airline's exponential growth continued the rest of the decade and by 2010, the carrier boasted 272 Boeing 737 aircraft, 44 bases, over 1,300 routes, and nearly 74 million passengers carried (Ryanair, 2011a).

Europe's second largest LCC, easyJet, was founded ten years later in 1995 by Sir Stelios Haji-Ioannou. Inaugural flights were from London Luton airport to both Edinburgh and Glasgow in Scotland. The next year, the carrier began international service to Amsterdam. Additions included the 1998 purchase of Swiss charter operation TEA Basel AG and 2002's acquisition of rival Go from British Airways. Over the time period of 2000 through 2003, easyJet filed for its initial public offering, valuing the company at £777 million (US $1.2 billion), as

well as initiated a massive capital expansion, with an order signed for 240 aircraft (easyJet, 2012).

In 2004, easyJet took advantage of the EU-8's expansion by opening up routes to Hungary and Slovenia. Throughout the remainder of the decade growth continued and as indicated in their 2010 annual report, the LCC flew to 125 airports in 29 countries, carrying 48.8 million passengers. easyJet does have several significant operating differences from its competitor. Unlike Ryanair's all Boeing fleet, easyJet operates a mixed fleet of 737s and Airbus A319 and A320 aircraft. It is currently the largest A319 operator in the world (easyJet plc, 2011). easyJet also flies to the principle airports for its destination cities along with some secondary airports. Examples include London Gatwick, Paris Charles de Gaulle, and Rome-Fiumicino airports in addition to London Luton, Paris Orly, and Rome-Ciampino.

In contrast to the comparatively long histories of Ryanair and easyJet, Wizzair is a new airline based in Budapest, Hungary. It was conceived in June 2003 by a group of six individuals who partnered with Jozsef Varadi, the company's initial Chief Executive Officer and former CEO of national carrier Malev Hungarian Airlines. Just three months later, the company was ready to start operations. The first flight took off on May 19th, 2004 from Katowice, Poland. As of 2008 the airline had grown to 5.9 million passengers. Among LCCs operating in Eastern Europe it ranked number one in market share at 27.7%, leading Ryanair at 19.5% and easyJet at 9.9% (Centre for Aviation, 2009). With its 15 operating bases spanning eight countries, Wizzair exhibits considerable strength

in its home markets. For example, in Poland the airline carries 43.0% of LCC passengers (Ryanair is second with 37.1%), with market share rising as high as 93.4% in the Ukraine (Centre for Aviation, 2009). Expansion continues to be on track as the fleet of 36 Airbus A320 aircraft will be augmented via an additional 132 to be delivered by 2017 (Wizzair, 2012).

The Southwest Effect

The aforementioned European LCCs and others across Europe derived much of their operating strategy from Southwest Airlines. The US carrier was founded in 1971 as an intrastate Texan airline operating between Dallas, Houston, and San Antonio. It operated in a hostile business environment with challenges to both its fares and routes from competitors such as Braniff, along with restrictions placed on operations departing Dallas Love Field, its home airport. It was out of these obstacles that the foundations of the Southwest business model were borne. Key elements included offering lower fares and fewer amenities than full service network carriers (FSNCs). Fleet commonality, quick airport turnaround times, and point-to-point service were integral components of this model. Eventually, Southwest developed into an airline that either offered, or created the image of offering, lower fares than the competition while achieving profitability through lower unit costs (Ben Abda, Belobaba, & Swelbar, 2012).

Other operational elements of the Southwest business model were identified by Boguslaski et al. (2004). They included significantly more productive labor and equipment utilization. Distribution costs for tickets were also lowered through a proportionately higher percentage of internet bookings.

Further, service was operated to secondary airports when possible saving on fees as well as minimizing congestion. Finally, Southwest strategically selected its routes to focus on dense short and medium haul markets.

Southwest's pricing strategies have had such a powerful impact that sources have attributed its continued expansion in the 1990s as the most significant development in the US airline industry during that decade (Morrison, 2001). As noted earlier in Chapter 1, of the $12.9 billion in savings Southwest provided to consumers, it was calculated that $9.5 billion represented the fare decreases made by all other carriers in response to competition from Southwest. These savings totaled 20% of the airline industry's 1998 revenue. Perhaps most remarkable of all was that Southwest at the time only accounted for about 7% of scheduled passenger miles, illustrating how this one airline had an impact far greater and widespread than any other carrier has had since deregulation.

When the Southwest Effect was quantified on several key routes, two scenarios were discovered. In some situations, such as between Washington and Chicago, Southwest grew the market but did not take traffic from its competitors. Yet between Philadelphia and Chicago, Southwest did not increase passenger volumes significantly but did take traffic from its competitors (Pitfield, 2008a). A similar situation occurred between the San Francisco Bay area and Chicago. However between Denver and Las Vegas, its entry resulted in an 18% increase in traffic and a 20% market share. Southwest, while producing substantial change, had a smaller initial impact than Ryanair achieved when launching new routes.

Although Southwest's reputation for driving passenger volumes through low fares is legendary, Ryanair has, in several measurements, surpassed the performance of its American counterpart. However, this conclusion was tempered by the caveat that Southwest's competitors are more aggressive in maintaining market share through price matching and product differentiation (Pitfield, 2008a). Ryanair also benefited from the strategy of FSNCs in Europe of focusing their resources on connections through their hubs to long-haul services, opening up opportunities for LCCs to fill the voids left behind. For instance, Swiss Airlines reduced services in Geneva from 25 routes to just seven in the eight years leading up to 2006 (Dennis, 2007). Not surprisingly, one of easyJet's first hubs outside of the UK was opened in that Swiss city.

Low-Cost Carrier Characteristics

Specific characteristics have been described as instrumental in the success of LCCs. Dobruszkes (2006) identified three of the most important: (1) route selection, (2) point-to-point service, and (3) airport choice. Using 2004 figures, it was noted that 97-98% of European LCC traffic was within Western Europe. At the time, 18% of the available seat kilometers (ASK) in Western Europe were on LCCs with Ryanair and easyJet ranked sixth and seventh for traffic within Western Europe. Together, the two constituted 60% of the LCC seats offered in Europe at the time.

Furthermore, LCCs in the continent operated with specific geographic characteristics. The median distance of LCC flights was 634 kilometers and 1.4 hours in duration (Dobruszkes, 2006). Approximately 70% of these flights were

less than 1000 km in stage length. Most of the traffic followed a roughly north-to-south orientation, bringing residents in Northern Europe to the holiday regions of Spain, Italy, and southern France. Additionally, the airlines targeted regions where they had a competitive advantage over rail, the traditional method of transportation in Europe. LCC service was a natural fit for countries where transport by train is scarce (Sweden, Norway), slow (UK), or costly (Germany). Conversely, in France with its highly developed and efficient rail network, domestic low-cost service had been limited.

Additionally, the low-cost model does not support a traditional hub-and-spoke network. These airlines are known for point-to-point service which reduces costs by eliminating baggage transfers and shortening turnaround times. Also, many LCCs have exclusive routes without direct competition. Numerous opportunities existed for additional competition and expansion as only 13% of city-pairs in 2004 were operated by more than two European carriers of any type (Dobruszkes, 2006).

At the airport level, the data supported the dominance of facilities in the UK, Ireland, Germany, and the Mediterranean. When listing the top 20 airports according to LCC seats in 2004, London Stansted led the list with 11 million seats, of which 92% were provided by LCCs. Dublin and London Luton rounded out the top three airports. When location, volume and market share were considered, five types of European airports were identified: (1) medium or large international airports (Dublin, London Gatwick), (2) secondary urban airports (Rome Ciampino, London Stansted), (3) regional airports in proximity to a major

city (Hahn/Frankfurt, Gerona/Barcelona), (4) remote airports serving a tourist area (Tours Loire Valley, Pau Pyrenees), and (5) traditional tourist coastal airports (Malaga, Faro).

Overall, the supply of flights leaving European airports rose by 183 million seats between 1995 and 2004, 90 million of which were flown on LCCs. This increase dramatically impacted the role of airports. For instance, London's secondary airports were now in competition with Heathrow and Gatwick. Stansted's 11 million passengers nearly reached the level of London Gatwick's 13 million passengers and ranked the former as the 12th busiest airport in Western Europe. Elsewhere, airport authorities were actively getting involved in attracting LCCs to their facilities, as seen in the example of Brussels South Charleroi Airport. In this case, Ryanair had received financing and incentives totaling 23 million euros between 2001 and 2003 from the airport and regional government on a purely exclusive basis and for a duration of 15 years.

Airport Choice

Graham and Shaw (2008) remarked on the numerous destinations LCCs had to choose from in Europe. The airlines had varying strategies though in entering new markets. Ryanair was known for utilizing secondary locations, sometimes in excess of 100 kilometers from the principle city's main airport. Examples included Frankfurt Hahn (100 km) and Oslo Torp (120 km). easyJet and bmibaby chose rather to operate out of major airports such as Barcelona El Prat and Paris Charles de Gaulle. Ryanair capitalized on the lower costs of operating at secondary airports by being profitable with as low as a 55% load

factor. This contrasted with easyJet which required its planes to be filled at 75% capacity given its costlier ground expenses (Graham & Shaw, 2008). Regardless of the approach, numerous expansion opportunities existed as only 100 out of 280 available European airports had service from a LCC in 2003.

Airport connectivity was the focus of an analysis conducted by Malighetti, Paleari, and Redondi (2008) which measured the minimum number of flights needed to link one airport to any other in the world. They computed an index on the number of connections it would take for all 478 European airports with at least one scheduled passenger flight in the year 2006 to reach each of the 3,556 airports worldwide. Their results found that the top European airports in terms of worldwide connectivity were Frankfurt, Paris Charles de Gaulle, London Heathrow, Amsterdam Schipol, and Munich. Yet when looking at connectivity solely to other European airports, the rankings changed to Amsterdam, Munich, Dublin, Barcelona, and London Stansted. In this measurement, two of the top five airports were predominately served by LCCs. Also determined was the number of nonstop destinations reachable from the airport and in this measurement, Stansted ranked first with Amsterdam coming in second. However, when looking at airports reachable via no more than two flights, Stansted did not even rank among the top 20, reinforcing the point-to-point nature of LCC flights compared to the hub-and-spoke network utilized by FSNCs.

The appeal of secondary airports has been supported by Ryanair's customers (Barrett, 2004). They prefer the convenience of easy access and lower ground transport costs, such as terminal parking. These airports also provide the

opportunity to depart from their local terminals which are typically bypassed by the large legacy carriers. Ryanair and other LCCs also invigorate static markets. An example is that for over 20 years prior to deregulation in 1986, visitors to Ireland remained steady at two million annually. By 2004, that number increased to 7 million, with 4.5 million passengers carried from London to Dublin alone (Barrett, 2004).

Pricing and Capacity

It has been established that LCCs are able to build markets and lower average fares through increased competition. Using UK Civil Aviation Authority (CAA) records, Pitfield (2007) selected five destination cities to study in order to gauge the LCC effect: Genoa, Hamburg, Pisa, Stockholm, and Venice. Through his data analysis, Pitfield was able to support his hypothesis that Ryanair was able to both increase the size of the market and take traffic from incumbents' airlines in the cities it serviced.

In Genoa during its first full year of operation, Ryanair became the number one carrier on the route surpassing competing network airline British Airways with an 85.7% growth rate. By 2003, Ryanair's share of the market was 68.4%, having stolen 25% of British Airways' traffic. Similarly in Pisa after Ryanair began flights in 1998, in only one year it had taken 50% of the market share. The year after, it became the biggest carrier after Alitalia withdrew its service to Heathrow. Not only did Ryanair exhibit dominance at the airport but overall traffic between the two cities increased 210% from 1991 to 2003.

Similar figures were reported elsewhere. In the case of Hamburg, Ryanair flew to the secondary airport, Luebeck, 40 miles northeast of the city center. All other carriers utilized the primary airport just north of Hamburg. Considering flights to London from both airports as competitive, overall traffic to Hamburg increased 5.8% per annum while Ryanair's grew at a rate of 39.0%. By 2003, scheduled traffic had increased 90.7% to 775,000 passengers. In Pisa, Alitalia also terminated its flights to London after Ryanair grew its passenger counts from 166,000 to 319,000 in the four year period ending 2003, representing an increase of 92.2%. Meanwhile, traffic on the route for all carriers combined grew 210% from the year 1991 to 2003

In Stockholm, the region had commercial service to four surrounding airports, the primary international facility being Arlanda (ARN), 24 miles north of downtown. Ryanair began flying to Stockholm using two secondary airports, both about 60 miles away. Flights to Nykoping (NYO) began in 1997 and Stockholm Vasteras (VST) in 2001. British Airways and Scandinavian Airline System (SAS) operated to ARN. Once again, the impact of Ryanair was again significant. Passenger volume grew from 520,000 in 1991 to 1.3 million in 2003, an increase of 146%. By the end of this time period, Ryanair carried approximately one third of the traffic, despite the remote locations of its airports. Pitfield's (2007) research demonstrated that the LCC not only grew its own passenger counts, but expanded the market overall.

Another study conducted by Pitfield (2008) compared the performance of LCCs and FSNCs on other routes. In the Venice, Italy area, British Airways,

Alitalia, British Midland, and Volare all operated from either London Heathrow or Gatwick to Venice's primary airport, Marco Polo International. Ryanair instead operated from London Stansted to the secondary airport in nearby Treviso starting in 1998. easyJet also flew from Stansted but to Venice Marco Polo instead. Upon commencing service, the LCCs' rate of passenger growth exceeded that of its competitors. By 2002, Alitalia had discontinued servicing the route and the LCCs combined had achieved over a 50% market share. Ultimately Ryanair and easyJet grew the demand for the route by 25%, with the former's market share at 63% by the year 2003. This was achieved by both airlines adding to demand for the market and taking customers away from its competitors (Pitfield, 2008b).

The Immigrant Experience

Of all the route permutations that ensued after the EU unification, the most notable has been between Poland and the UK. As discussed previously, this pairing has seen the highest rate of migration into the UK. Though some transit occurs via automobile or coach, the majority has been by air, particularly via LCCs. Immigrants interviewed by Burrell (2011) on the culture of migrant air travel between Poland and the UK indicated that current levels of transportation availability were in stark contrast to travel options in the 1990s and earlier. The elimination of restrictive visa regulations facilitating travel represented a critical factor in the migratory experience for the study participants.

As several years have passed since Poland's admission to the EU occurred in 2004, motivation for travel between Poland and the UK has begun to shift (Burrell, 2011). Rather than supporting growth in net migration, demand now has

a strong “visiting friends and relatives” (VFR) nature. LCC air travel has enabled a population to be “hypermobile.” Immigrants are able to fly back to Poland every month and that travel to the United Kingdom was found by them to be quicker and easier than traveling within Poland itself. The physical mobility afforded by travel was an integral part of the migration experience and prominent in the everyday consciousness of these individuals. In fact, Poles remarked that the feasibility of living abroad was dependent on the back and forth travel made possible by LCC flights. Going back to Poland was an expected service, not a luxury as once considered. Regular visitation of distant family has changed the experience of migration as prior to the advent of LCC service to Poland and other eastern European nations, flights were infrequent, expensive, and burdensome.

A factor facilitating this ease of travel was the sheer scale of the expansion of service between the UK and Poland. Flights were not limited to Warsaw, or even the secondary city of Krakow. Similarly, travelers departing the UK were not limited to leaving from London area airports. LCC service was available from a variety of terminals including Bristol, Doncaster Sheffield, East Midlands, Glasgow, and Liverpool.

As of 1991, there were 118 air links between Western and Eastern Europe (Dobruszkes, 2009). By 2008 the number rose to 500, with LCCs operating on 59% of the new routes created. This figure did include all western European nations, not just the UK. Overall, LCCs were found to operate 57% of the seats on the new city pairs, compared to 35% by FSNCs. Dobruszkes concluded that without a doubt, LCCs were the primary conduit of air travel between the two

regions. Three reasons for this explosion in flights were indicated: new business flows, increased tourism, and visiting friends and family. It was difficult to determine whether the amount of this new traffic was market-driven with the airline responding to passenger needs, or created by the carriers through low fares and increased frequencies. This study aimed to quantify the levels of both market demand and airline activity to present the statistical significance of this phenomenon.

Chapter 3

METHODOLOGY

This study focused on analyzing low-cost carrier (LCC) passenger counts on specific European airline routes. The goal was to identify trends in traffic patterns between the United Kingdom (UK) and the new entrants to the European Union (EU) from Central and Eastern Europe. Two aspects were examined in order to present an overall picture of the aviation industry between these regions during the last two decades. First, statistics on the total number of passengers carried between the UK and ten new EU members were gathered for a 20-year period from 1990 through 2010 inclusive. Of particular interest were figures for the year 2004, the entrance date of the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, and Slovenia into the EU. Another important year was 2007 when Bulgaria and Romania were admitted. Second, dates were compiled as to when point-to-point service on LCC routes began. This was compared to the passenger volume figures to illustrate the relationship between the two occurrences.

The UK was selected as the destination country for this study for three reasons. First, although population flows occurred between Eastern Europe and many other western European nations, as noted earlier, the UK was a particularly popular destination for migrants. Second, data was readily obtainable for passenger statistics to and from the UK's airports. Third, LCCs have a far greater market share in the UK than across continental Europe and were responsible for much of the new service between the two regions.

The primary data source for this research were statistics obtained from the United Kingdom's Civil Aviation Authority (CAA). The organization serves as the country's specialist aviation regulator. It is also recognized as a leader in the fields of air safety, consumer protection, environmental research, as well as economic and airspace regulation. Their mission statement indicates four main functions (Civil Aviation Authority, 2012):

1. Ensure that UK civil aviation standards are set and achieved.
2. Regulate the economic activities of airlines, airports, and National Air Traffic Services as well as encourage a diverse and competitive industry.
3. Manage the UK's principle travel protection scheme, the Air Travel Organizer's Licensing program.
4. Bring civil and military interests together to ensure that the airspace needs of all users are met as equitably as possible.

Furthermore, the CAA advises the government in those areas in addition to collecting statistics on a variety of aviation factors.

The CAA produces an extensive variety of publications across a span of aviation topics. One such area is international air passenger traffic to and from reporting airports. Numeric totals are collected from over 60 UK airports via individual flight records. Statistics are presented over two time periods, annually and monthly. Yearly records extend back to 1990, while monthly data began to be reported in January 1998. In order to maintain consistency, only the annual

reports from 1990 to 2010 were compiled and organized for the ten countries included in this study.

Regression Analysis

A time series regression analysis was performed on the CAA data. As presented by Darlington (2011), this type of analysis achieves three major goals. One is to forecast future growth using previous values. Two, an assessment can be made on the effect of a new variable, which, for this study, would be admittance into the EU. Three, casual patterns can be examined such as the impact of new LCC service to Eastern Europe after unification.

Analysis was performed utilizing the methods presented by Hanke and Wichern (2009). The objective was to establish extrapolated 95% confidence intervals (CIs) based on the benchmark data of gross passenger totals for all ten nations over the 1990-2002 time span. In order to accomplish this objective, passenger volumes from 1990 to 2002, inclusive, were regressed in MS-Excel to form a linear equation. The equation was used to predict future passenger volume values for 2004 through 2010, inclusive. The equations and methodology described by Hanke and Wichern (Chapter 6, pp. 221-280, 2009) were used to develop a series of 95% CIs from 2004 through 2010. The complete results are found in Table 2 located in Chapter 4.

Introduction of Low-Cost Carrier Service

A second component of the study was to identify the time period that the various major European LCCs commenced services between the UK and the ten nations studied. The start and end dates for service between various cities was

obtained directly from the applicable carrier (Ryanair, 2011b; easyJet, 2011). Once the dates were compiled, monthly data from the CAA was cross-referenced to verify the launch dates for these flights. Though the CAA data was not identified by airline in the organization's reports, the specific routings were sufficiently unique in most instances to correlate the airline with the city pair.

For example, according to the CAA reports (2012), flights began between London Stansted Airport and Riga, Latvia in October 2004. Ryanair announced the launch of nonstop service on this route on October 31, 2004. No traffic was reported between those two cities prior to that month nor did easyJet announce any such route then, thereby validating Ryanair's introduction of this service. Launch dates were tabulated in this matter for all city pairs between the UK and the ten nations being studied. Although not all data was an exact match between the airline information and CAA, the majority proved consistent. These service entry dates provided the opportunity to gauge the reaction and impact of LCCs to these emerging markets.

Chapter 4

RESULTS

The components of the study provided a broad, two-decade picture of the aviation industry in Europe. For example, total passenger volumes between Central and Eastern Europe and the United Kingdom (UK) dramatically increased over the 2003-2008 time period, from 2.7 million travelers on these routes in 2003 to10.8 million travelers in 2008, a 400% increase. Yearly totals for all countries are shown in Figure 2. Between the key years of 2003 and 2004, passenger volumes increased from 2.7 million to 4.6 million, a rise of 172% in just 12 months. While there were drops between certain years attributable to world events (e.g. the September 11 attacks, the 2009 global recession, etc.), substantial positive growth has been witnessed, as depicted in Figure 3. The maximum

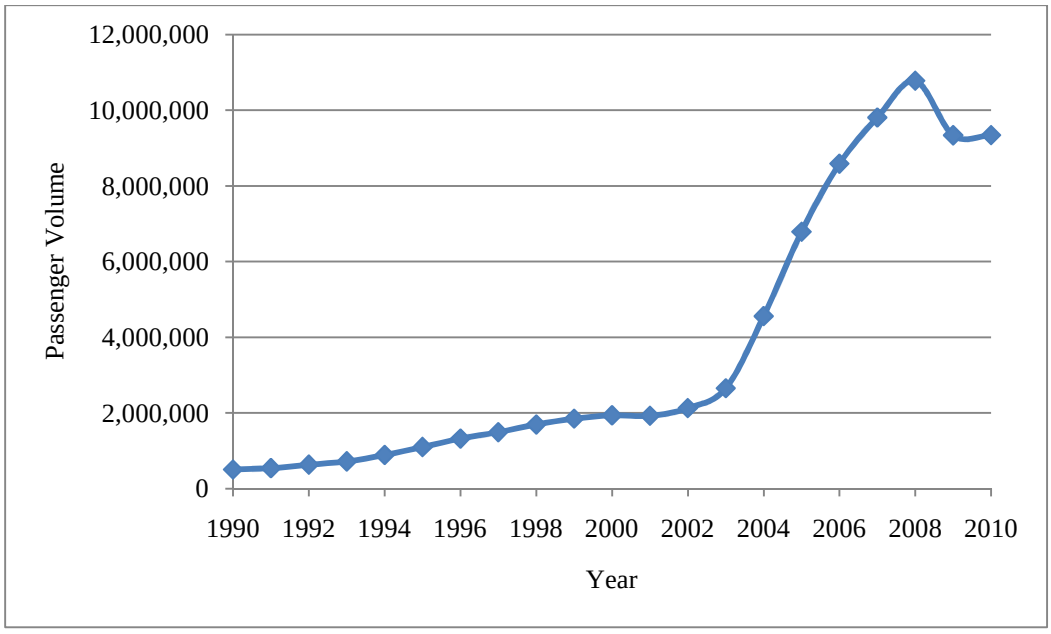

Figure 2

Total Passenger Volumes by Year

annual change occurred in 2005, with an increase of 2.2 million travelers. Aggregate growth data reflected the tremendous increase in market size since 1990; 69.2 million passengers were collectively added over the 20-year time span. Complete data are presented in the Appendix, Table A1.

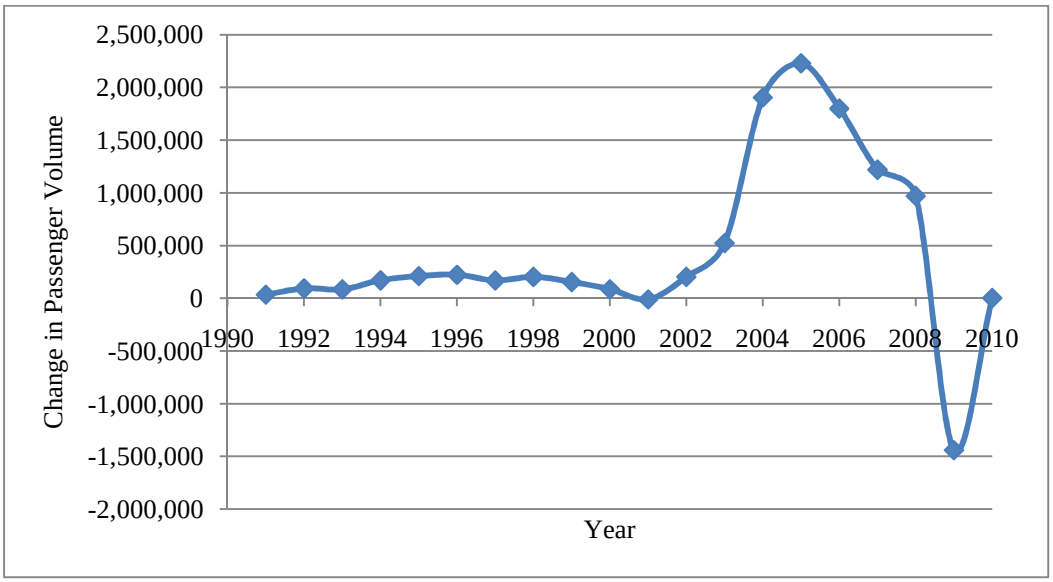

Figure 3

Yearly Change in Passenger Volumes

We regressed the 1990 to 2002 UK Civil Aviation Authority (CAA) data (2012) and produced this equation ($p < 0.05$):

$$\hat{Y} = 149{,}864.6x + 387{,}709.5$$

Such that:

$\hat{Y}$ represents the expected passenger volume for $1990 \leq x \leq 2002$

x represents the year of each passenger volume value

From this, we produced 95% confidence intervals (CIs) for $2003 \leq x \leq 2010$. These CIs are summarized in Table 2. If an actual value fell within its year's CI

(e.g., x = 2003), then that value was found to be within statistical expectations. This is shown in Figure 4 for the year 2003. Conversely, if an actual value fell outside its year's CI, then it is not within statistical expectations. Figure 5 illustrates that the 2004 passenger volume (4.6 million) was significantly greater than the projected upper CI (3.9 million). All years in this study from 2004 and on were found to have actual values outside of their respective CIs, indicative of the impact of these nations joining the EU.

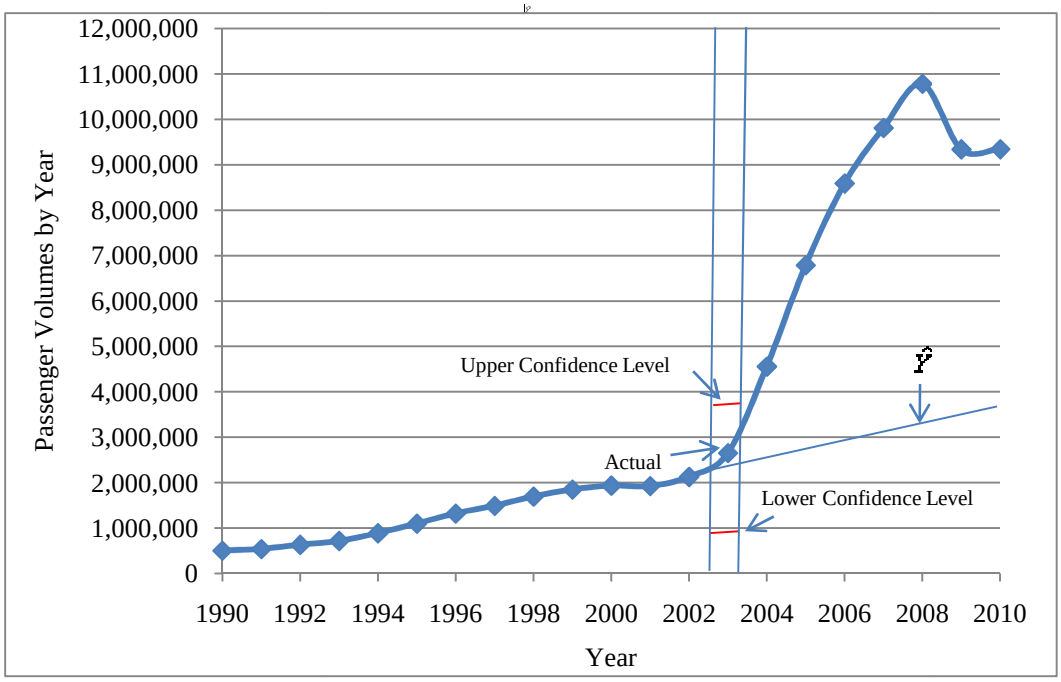

Figure 4

Upper and Lower Confidence Limits for 2003

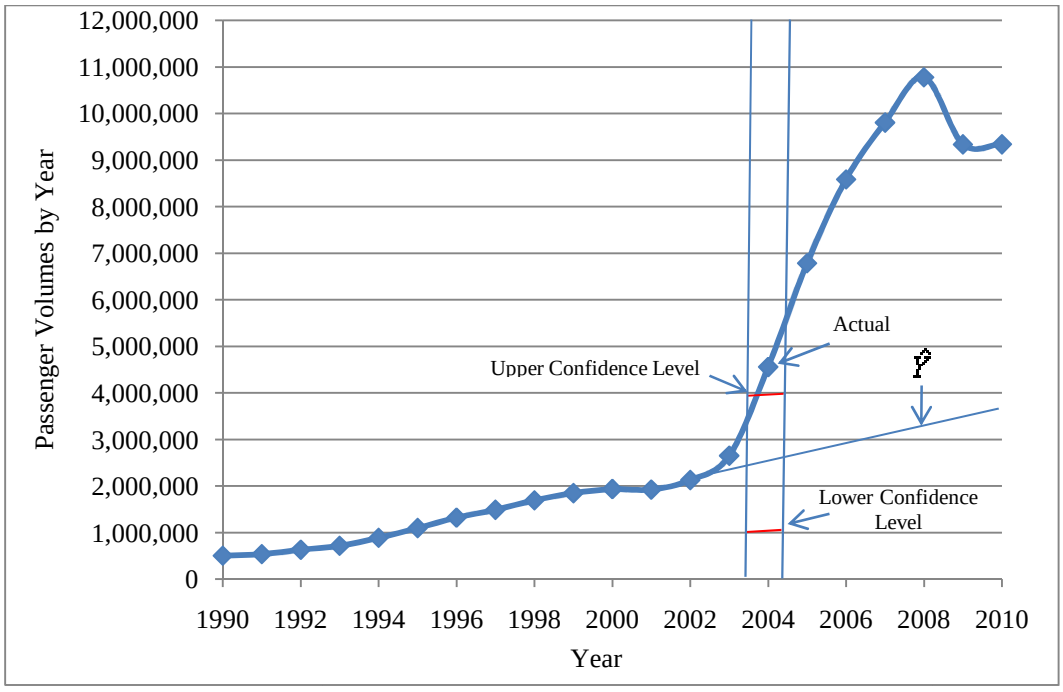

Figure 5

Upper and Lower Confidence Limits for 2004

Table 2

Regression Data 2003-2010

Year	Y-est	Upper Confidence Limit	Lower Confidence Limit	Actual Passenger Volume	% Above UCL
2003	2,335,949.7	3,742,929.4	928,970.0	2,652,286	---
2004	2,485,813.9	3,935,522.9	1,036,104.9	4,557,370	15.0
2005	2,635,678.5	4,132,031.4	1,139,325.6	6,786,967	64.3
2006	2,785,543.1	4,332,363.9	1,238,722.3	8,587,239	98.2
2007	2,935,407.7	4,536,158.7	1,334,656.7	9,807,385	116.2
2008	3,085,272.3	4,743,077.9	1,427,466.7	10,778,486	127.2
2009	3,235136.9	4,952,810.3	1,517,463.5	9,338,219	88.5
2010	3,897,468.2	5,740,385.8	2,054550.6	9,340,942	80.8

When measured as a whole, passenger volume growth exhibited a consistent upward trend through 2009. However, as noted in Figure 6, this rise did not occur equally amongst all ten nations. Poland, by a substantial margin,

produced the most dramatic and enduring increase in passenger volumes throughout the studied timeframe. Several factors supported this result: Poland is by far the largest country of the ten in terms of population; there exists a strong relationship among Polish immigrants to the UK (Burrell, 2011); when examining a list of LCC routes, a significantly larger number of them transit between the UK and Poland compared to the other nine nations.

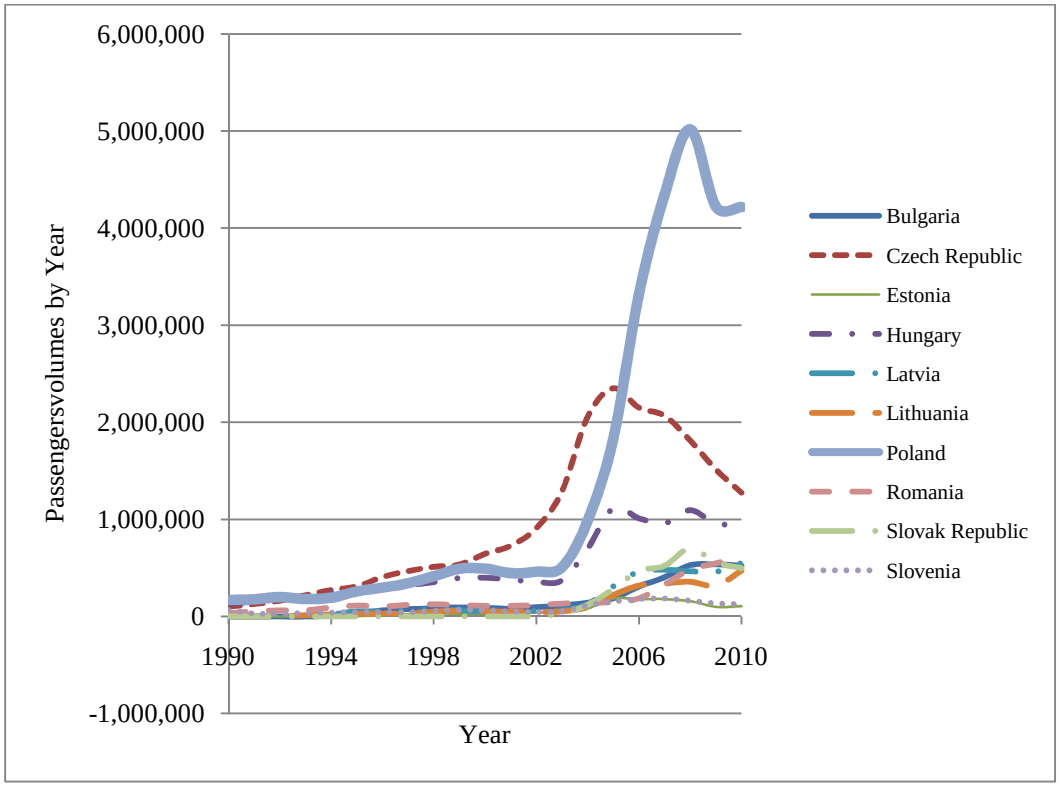

Figure 6

Passenger Volumes by Country

In terms of LCC service, the airlines' swift reaction to changes in market demand enabled increases in passenger volumes of the magnitude found in the above data. Looking strictly at the initial introduction of service, a summarization of new routes by year was generated as shown in Table 3. The number of added

routes nearly tripled between 2003 and 2004. As time progressed, the LCCs continued the addition of service with 2007 being the peak year for the introduction of new routes. Service fluctuated, with some routes between the regions commencing and terminating several times between 2002 to 2010. Complete details for all relevant city pairs are located in the Appendix, Table A2. The airline attributed to the route is also indicated.

Table 3

New Air Routes between the UK and Central and Eastern Europe

Year	**Number of New Routes**	**Net Number of New Routes**
2002	3	3
2003	9	9
2004	25	22
2005	20	17
2006	29	23
2007	46	40
2008	10	-21
2009	9	-20
2010	18	1

Chapter 5

DISCUSSION

The phenomenon that swept the European aviation industry in 2004 resulted in tremendous changes for the continent's low-cost carriers (LCCs). When eight new central and eastern European nations officially joined the European Union (EU) on May 1, 2004, a substantial new aviation market was opened. The populations of these countries had the new found freedom to travel without, or with significantly reduced, restrictions to and from western European nations. The most popular destination for many of these immigrants was the United Kingdom (UK). Two measurements were used to gauge the scale of this growth: total passenger volumes and LCC routes. After analyzing the results, evidence was found to support the hypothesis that significant growth in the number of passengers post-EU expansion occurred. Additionally, LCCs responded with the introduction of hundreds of new routes between the two regions.

Based on the years leading up to 2004, it was already expected that passenger volumes between the two regions would increase. Through 2003, the annual rise in the number of passengers ranged between 5 and 25%. This contrasted sharply with growth rates of 72 and 49%, respectively, for the years 2004 and 2005. A time series regression analysis showed that this rate of increase significantly exceeded the predicted upper confidence interval starting in the year 2004 by a margin of at least 15%. This trend continued in the ensuing years. If passenger volume growth remained at the level of the 1990s there would have

been approximately 4.0 million airline customers on these intra-European routes in 2010. By decade's end actual passenger counts were 9.3 million after peaking at 10.7 million in 2008. The political and economic climate of Europe had experienced dramatic changes since 1990 and the aviation industry followed suit. While the market supported just 505,000 passengers in 1990, the volume grew by almost 2000% (to 9.3 million) in the next 20 years. In contrast, the population of the ten new entrants to the EU actually declined from 106.0 million in 1990 to 102.1 million, a reduction of 3.7% (Eurostat, 2011a). Clearly, something other than mere population growth can be attributed to these passenger volume increases.

Low-Cost Carrier Service

While the accession of Central and Eastern Europe into the EU provided the impetus for air travel, the LCCs furnished the vehicles. Capitalizing on European Open Skies and relaxed immigration restrictions, industry leaders Ryanair, easyJet, and Wizzair expanded their route networks at remarkable rates. They, along with other LCCs like jet2.go and bmibaby added just 12 routes between these markets in all of 2002 and 2003. The rate was nearly double that by the very next year. In all, service began on 169 city pairs by the end of the decade. Though some routes were ultimately cancelled, particularly in 2008 and 2009, the net total of new flights was 74. However in 2010, the market began to rebound through strategic expansions such as Ryanair adding its third eastern European base, Kaunas, Lithuania, joining Budapest and Wroclaw, Poland.

Among the most active LCCs in the region was relative newcomer Wizzair. Their presence closely mirrored the timeline of this study. The airline's inaugural base was Katowice, Poland. Service began there just 19 days after official accession in 2004. The carrier currently has 15 bases, 13 of which are in the EU zone. Though the airline is officially headquartered in Budapest, nine of its 15 bases are located in either Poland or Romania (Wizzair, 2012). Moreover, since the demise of state-owned Hungarian national airline, Malev, in 2011, Wizzair, as the sole remaining operator headquartered in the country, has become the de facto national carrier. This further cemented its prominence in its home market.

In addition to corresponding to the EU timeline, Wizzair operates in correlation to the Southwest model in numerous regards. Its fleet consists of one aircraft type, the Airbus A320 versus Southwest's Boeing 737 fleet. The airline also favors secondary airports. It flies from its eastern European strongholds to such facilities at LCC hubs like London, Frankfurt, Oslo, Stockholm, and Venice. Even within its home region, it has relocated operations from Warsaw's Chopin International Airport to a secondary facility further afield in Modlin. That airport will become operational in June 2012 and is positioned to be tailored to the infrastructure needed by LCCs (Modlin Airport, 2012). Effective July 18, 2012, all of Wizzair's Warsaw operations were to be moved to the new facility. Ryanair will have also commenced operations to Warsaw-Modlin Airport in July 2012 with eight routes on which the airline expects to carry 700,000 passengers per

year (Ryanair, 2012). Ryanair's reaction to market conditions shows that, like Southwest, Ryanair is not fearful of strategically challenging the competition.

Southwest Model in Europe

The events that transpired in the European aviation industry after 2004 were consistent with numerous aspects of the Southwest airlines business model. Introduction of low-cost air service created new opportunities for travel and increased passenger trips. The LCCs operated their routes on a point-to-point basis. Centers of population in the UK were linked to a variety of destinations across Central and Eastern Europe, not just to major cities. For instance, traffic to Warsaw comprised 49% of all passengers from the UK in 2005. By 2008, the number had dropped to 23% (Burrell, 2011). Indicative of such, at its peak, it was possible to fly from five different UK airports to Bydgoszcz, Poland, a city with a population of only 356,200 (Bydgoszcz, 2012). LCCs were eager to fill every possible niche of the market to capitalize on the explosive growth in travel. Though only two routes to Bydgoszcz remain in service as of 2011, reflective of the overall reduction in service since the recession of 2009, they represent the enduring commitment of Ryanair and others carriers to Polish airports of all sizes.

A remarkable characteristic of the aviation market between the two geographical regions was the near total abandonment by the legacy airlines for these new routes. As noted in Chapter 2, British Airways abandoned service to the LCCs from Manchester to Amsterdam and London to Belfast (Dennis, 2007) and Alitalia did the same from Pisa to London (Pitfield, 2007) when faced with LCC competition. Many other routes were cancelled by the full-service network

carriers (FSNCs) so that resources could be focused on long-haul markets, effectively giving the LCCs control on short-haul routes. A similar occurrence happened in regards to Central and Eastern Europe. The national carriers, such as British Airways, LOT Polish and TAROM Romanian, retained their service from each nation's capital to London Heathrow. Yet even those routes were not to remain indefinitely as CSA Czech Airlines, while maintaining a strong flight network in continental Europe, no longer flies to London or any other city in the UK from Prague. The only options are British Airways to London Heathrow, easyJet to Gatwick and Stansted, and Wizzair to Luton. The market is now dominated by LCCs. In the month of December 2011, 26,725 passengers traveled on British Airways from Heathrow to Prague. A total of 44,245 flew on easyJet and Wizzair. All this on a route that only had 102,238 passengers for the entire year of 1990.

Significance of Results

This study produced several useful results. First, the results corroborated other research on the impact of LCCs in Europe. Dobruszkes (2006), Graham & Shaw (2008), and Pitfield (2007), among others, have written on the rapid growth of LCCs in Western Europe and the impact they have on passenger volumes, pricing, and competition. This study illustrated how these characteristics have extended to Central and Eastern Europe as well. As noted by Burrell (2011), the primary traffic flow of LCCs was no longer strictly north to south, with UK to Poland routes collectively comprising the largest east-west LCC market in Europe.

The success of these new routes demonstrated the effectiveness of the LCC operating strategy between Central and Eastern Europe and the UK. These airlines were able to capitalize on the Southwest Airlines business model and open up a market that never existed before. It provided access to transportation that enabled many first time passengers the opportunity to visit family from back home. Similar as to how Southwest replaced the bus for some of its first time travelers, so has Ryanair taken the place of the automobile as a primary mode of transportation between the East and West (Burrell, 2011). An entirely new airline was born out of this demand, Wizzair, which has grown to become one of the continent's largest LCCs in less than eight years. The characteristics of the new flights including point-to-point service, low fares, fleet commonality, and the use of secondary airports, illustrate how the Southwest business model can succeed under a variety of conditions and within differing market locations.

The data results demonstrating the extraordinary growth of the aviation market between the UK and the accession nations can also be used as an indicator of potential opportunities with respect to air travel after future EU enlargements. Croatia is confirmed to be the next member of the EU beginning in the year 2013. Albania, Iceland, Macedonia, Montenegro, Serbia, and Turkey have all applied for membership and each are in varying stages of completing the admission process. Bosnia and Herzegovina and Kosovo have been identified as potential candidate countries by the EU but have yet to submit applications (European Commission, 2012). Though the relative populations of the former Yugoslav republics are small in comparison to countries like Poland, they are underserved.

Aside from flights to resort cities such as Split and Dubrovnik in Croatia and a few routes Wizzair has out of Belgrade, Serbia, the LCC market is untapped.

Admission of the former Balkan states would add another 15.8 million residents to the EU (Eurostat, 2011a). However, Turkey by far would be the largest country to become a new member since Poland with its population of 73.7 million. Currently easyJet is the only LCC to operate to Turkey via service to five cities from the UK. This reflects more the popularity of the country as a holiday destination for Brits rather than a conduit for Turkish migration. Turkey is also a popular charter airline destination for British package tourists. However, it would be the creation of a bidirectional market with unrestricted population flows that may be of more interest to Ryanair and other carriers. If passenger volume trends of the magnitude determined through this study serve as an indicator of what could happen between the Balkans and Turkey to the UK, a tremendous opportunity will exist for the LCCs.

External Factors

World events aside from EU enlargement had an impact on the results of this study that contradicted the overall passenger volume growth trend. First, it was noted that in 2001 passenger volumes decreased 0.5%. This was to be expected given the global impact on air travel demand after the September 11 terrorist attacks. However at the time, performance of the aviation industry in Central and Eastern Europe exceeded air traffic statistics in other regions of the world. For example, in the United States, domestic and foreign air carriers transported 130.6 million passengers in the year ending 2001 which was a

decrease of 9.2% from 2000 (US Department of Transportation, 2002). Similarly, the year 2009 also exhibited a decline in passengers transiting between the US and the rest of the world. A total of 151 million passengers were carried in 2009, a decrease of 5.9% from 2008 (US Department of Transportation, 2010). This time passenger volumes experienced a greater decline in the UK to Central and Eastern Europe routes studied, 13.4%, but were nonetheless consistent with overall industry trends for the year. The drop in passenger numbers could be attributed to other factors as well. As noted in Chapter 2, Gross Domestic Product (GDP), after rising steadily since 2002, tapered off and then started dropping beginning in 2008. As a chief reason for demand of LCC service in the region was to transport migrants back and forth to their country of origin, a reduction in discretionary income would have negatively affected passenger volumes. Thus, airlines were discouraged from launching new routes, and in fact, discontinued some services, as seen in Table 3.

Future Research

Going forward, there are several possibilities to expand on this research. Analysis was made for the 20 year time period from 1990 to 2010. It would be noteworthy to see how the trend for growth continues for the countries surveyed, and to what extent. Also, it would be useful to determine if external factors like recessions, natural disasters, and fuel prices impacted future passenger volumes in a similar fashion as during this study. Future members of the EU can also be included as the study progresses through time. Analysis can be broken down by specific country as well. For instance, the Czech Republic's peak passenger

volume occurred in 2005, well ahead of the other central and eastern European nations. An examination could be made into possible reasons such as a decline in tourism from British visitors or a market exodus from Ryanair due to a dispute over high airport charges in Prague (Delbos, 2010).

In addition to a temporal expansion in respect to this geographical region, the methodology of this study could be utilized as a basis for study of emerging LCC markets across the globe. In the Middle East, FlyDubai and Air Arabia are challenging national carriers Emirates and Etihad. AirAsia has become a strong contender in Southeast Asia and is currently ranked number three among the world's most profitable LCCs, behind Ryanair and Southwest but ahead of easyJet (Ryanair Holdings plc, 2011). India and China are also experiencing expansion in the number of LCCs such as IndiGo and Spring Airlines.

Summary

Growth was seen in this study through several different measurements. First, passenger volumes rose throughout the duration of the time period examined. The increase was steady from 1990 through 2003. In the year 2004, passenger volumes rose to a level far above the expected value. This coincided with the accession of eight central and eastern European countries into the EU. This event caused the volume of passengers to expand due to three motivating factors: migration to the west, tourism, and the flow of capital to the east (Dobruszkes, 2009).

Several possible means of transportation were viable candidates to accommodate this traffic. Eastern Europeans were accustomed to traveling by

automobile or coach (Burrell, 2011). Rail links existed via the English Channel tunnel or ferry crossings. Airplane service was available from the major capitals on national carriers like British Airways and LOT Polish. Little competition existed on these monopolistic routes. Yet of all these options, the dominant vehicle became flights on LCCs. Not only was this service a logistical and financial success, its existence became part of the cultural experience of migrating to the west. New arrivals to the UK took advantage of low fares and frequent flights to visit family and make the transition to a new life easier. Given the high demand, LCC carriers responded by establishing 169 new routes to and from the UK in a six year period of time. This new market extended beyond the boundaries of the UK with dozens of new routes launched between central and eastern European airports to terminals across continental Europe (Dobruszkes, 2009). Just as the LCC industry changed the shape of aviation in Western Europe since Ryanair's spectacular launch in 1990 as Europe's first low fare airline (Ryanair, 2011a), a cluster of carriers, focused on Ryanair, easyJet, and Wizzair, created a similar environment between the eastern and western sides of the continent. The business model of Southwest Airlines developed in the 1970's and subsequently copied many times over could now be seen in yet another corner of the world.

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APPENDIX A

ADDITIONAL DATA

Table A1
Total Passengers by Year

Country	1990	1991	1992	1993	1994	1995
Bulgaria	31	0	0	0	11,138	22,520
Czech Republic	102,238	126,896	162,698	218,902	272,056	309,814
Estonia	0	0	0	0	0	2,160
Hungary	131,973	149,811	175,425	200,932	240,288	270,101
Latvia	0	0	0	3,282	18,658	51,366
Lithuania	0	0	2,579	12,720	18,770	25,033
Poland	170,441	177,869	200,166	180,365	193,041	258,779
Romania	33,729	54,027	64,445	64,062	92,655	112,965
Slovakia	0	0	0	0	0	0
Slovenia	66,854	31,159	27,835	37,675	41,757	46,295
Total	505,266	539,762	633,148	717,938	888,363	1,099,033

Country	1996	1997	1998	1999	2000
Bulgaria	63,552	75,368	84,694	94,435	91,224
Czech Republic	405,085	467,197	510,534	533,445	644,240
Estonia	16,187	23,890	28,517	26,293	27,354
Hungary	308,691	322,621	353,016	395,294	399,427
Latvia	50,814	63,724	68,018	62,789	50,329
Lithuania	29,138	31,572	50,359	58,253	50,978
Poland	297,096	342,541	414,863	492,102	493,266
Romania	103,050	119,229	126,870	115,587	110,208
Slovakia	0	0	0	0	0
Slovenia	48,462	45,162	57,561	70,423	68,525
Total	1,322,075	1,491,304	1,694,432	1,848,621	1,935,551

Country	2001	2002	2003	2004	2005
Bulgaria	80,075	95,585	115,145	141,216	186,357
Czech Republic	728,150	908,351	1,286,456	2,052,864	2,349,078
Estonia	28,834	37,787	44,245	81,975	184,846
Hungary	380,483	356,030	373,118	697,600	1,114,893
Latvia	53,362	57,289	60,732	125,914	308,797
Lithuania	47,785	47,444	51,003	95,136	221,254
Poland	446,469	462,245	507,882	988,886	1,837,223
Romania	108,768	116,578	132,768	140,999	149,084
Slovakia	0	0	28,392	117,239	280,802
Slovenia	51,407	47,530	52,545	115,541	154,633
Total	1,925,333	2,128,839	2,652,286	4,557,370	6,786,967

Country	2006	2007	2008	2009	2010
Bulgaria	308,457	402,752	527,353	535,771	520,841
Czech Republic	2,148,900	2,065,456	1,811,700	1,513,117	1,273,425
Estonia	177,720	178,282	156,827	99,138	104,387
Hungary	1,011,819	959,423	1,094,576	958,313	954,601
Latvia	461,048	478,894	464,232	458,363	549,475
Lithuania	318,517	339,290	357,879	316,735	472,206
Poland	3,324,653	4,346,303	5,016,066	4,219,167	4,215,469
Romania	186,200	329,147	483,342	546,710	626,287
Slovakia	468,565	521,527	703,344	555,303	497,765
Slovenia	181,360	186,311	163,167	135,602	126,486
Total	8,587,239	9,807,385	10,778,486	9,338,219	9,340,942

Table A2

Route Start Date by City and Airline

Departure Airport	Route	Airline	Service Debut	Other Flight Notes
BULGARIA				
London Gatwick	GTW - Sofia	easyJet	nov.07 new	
	GTW - Burgas	Thomsonfly	may.06 new	sep.06 close
London Luton	LTN - Burgas	Wizzair	may.08 new	
	LTN - Sofia	Wizzair	may.06 new	
	LTN - Varna	Wizzair	jun.09 new	
London Stansted	STN - Plovdiv	Ryanair	nov.10 new	
Manchester	MAN - Sofia	easyJet	oct.05 new	
CZECH REPUBLIC				
London Gatwick	GTW - Prague	easyJet	mar.04 new	
London Luton	LTN - Prague	Wizzair	dec.06 new	
	LTN - Brno	Wizzair	dec.10 new	
London Stansted	STN - Brno	Ryanair	apr.05 new	
	STN - Prague	easyJet	pre-1997	
Belfast	BFS - Prague	easyJet	may.04 new	mar.10 close
Birmingham	BHX - Prague	Ryanair	mar.01 new	jul.10 close
	BHX - Prague	BMI	oct.10 new	
Blackpool	BLK - Prague	jet2.com	oct.06 new	jun.07 close
Bournemouth	BOH - Prague	Ryanair	nov.06 new	mar.08 close
Bristol	BRS - Prague	easyJet	mar.02 new	
Cardiff	CWL - Prague	bmibaby	oct.03 new	may.07 close
Doncaster Sheffield	DSA - Prague	easyJet	apr.05 new	oct.07 close
East Midlands	EMA - Prague	easyJet	mar.02 new	jul.10 close
	EMA - Prague	BMI	oct.10 new	
Edinburgh	EDI - Prague	Jet2.com	apr.03 new	
Leeds Bradford	LBA - Prague	Jet2.com	sep.03 new	
Liverpool	LPL - Prague	Wizzair	july.09 new	jun.10 close

Departure Airport	Route	Airline	Service Debut	Other Flight Notes
Manchaster	MAN - Prague	jet2.com	dec.04 new	
Durham Tees Valley	MME - Prague	Ryanair	may.04 new	may.05 close
Kent	MSE - Prague	flybe.com	sep.04 new	may.05 close
Newcastle	NCL - Prague	easyJet	aug.03 new	jan.09 close
	NCL - Prague	Jet2.com	nov.10 new	
Southampton	SOU - Prague	flybe.com	oct.03 new	oct.04 close

ESTONIA

London Luton	LTN - Tallinn	Ryanair	jan.11 new	
London Stansted	STN - Tallinn	easyJet	oct.04 new	
Manchester	MAN - Tallinn	easyJet	may.05 new	july.06 close

HUNGARY

London Gatwick	GTW - Budapest	easyJet	new 6.99	
London Luton	LTN - Budapest	easyJet/Wizzair	may.04 new	
London Stansted	STN - Balaton	Ryanair	may.06 new	oct.08 close
	STN - Budapest	Sky Europe	dec.03 new	jul.06 close
Bristol	BRS - Budapest	Ryanair	nov.07 new	nov.10 close
	BRS - Budapest	easyJet	oct.04 new	oct.06 close
Edinburgh	EDI - Budapest	Jet2.com	apr.11 new	
East Midlands	EMA - Budapest	Ryanair	oct.07 new	nov.10 close
Liverpool	LPL - Budapest	Jet2.com	oct.07 new	mar.09 close
Manchester	MAN - Budapest	Jet2.com	dec.04 new	
Newcastle	NCL - Budapest	easyJet	oct.04 new	oct.06 close
Glasgow Prestwick	PIK - Budapest	Ryanair	nov.07 new	oct.09 close

LATVIA

London Gatwick	GTW - Riga	Air Baltic	mar.06 new	
London Luton	LTN - Riga	Wizzair	mar.10 new	
London Stansted	STN - Riga	Ryanair	oct.04 new	
Bristol	BRS - Riga	Ryanair	mar.11 new	nov.07 new oct.09 close

Departure Airport	Route	Airline	Service Debut	Other Flight Notes
East Midlands	EMA - Riga	Ryanair	nov.07 new	
Leeds Bradford	LBA - Riga	Ryanair	nov.11 new	
Liverpool	LPL - Riga	Ryanair	sept.05 new	
Manchester	MAN - Riga	Ryanair	aug.04 new	may.07 close
Glasgow Prestwick	PIK - Riga	Ryanair	nov.06 new	

LITHUANIA

London Gatwick	GTW - Kaunas	Ryanair	may.10 new	
London Luton	LTN - Kaunas	Ryanair	oct.08 new	
	LTN - Vilnius	Wizzair	mar.11 new	
London Stansted	STN - Kaunas	Ryanair	sept.05 new	
	STN - Vilnius	Ryanair	may.11 new	dec.07 new jan.08 close
Birmingham	BHX - Kaunas	Ryanair	mar.11 new	nov.08 new nov.10 close
Bristol	BRS - Kaunas	Ryanair	may.10 new	
Edinburgh	EDI - Kaunas	Ryanair	may.10 new	
	EDI - Vilnius	Ryanair	mar.10 new	oct.10 close
Leeds Bradford	LBA - Kaunas	Ryanair	dec.11 new	
Liverpool	LPL - Kaunas	Ryanair	mar.09 new	nov.06 new oct.08 close
Glasgow Prestwick	PIK - Kaunas	Wizzair	dec.07 new	mar.08 close

POLAND

London Gatwick	GTW - Gdansk	easyJet	apr.94 new	may.08 close
	GTW - Krakow	easyJet	1.97 yes	
	GTW - Warsaw	multiple carriers	feb.05 new	jan.10 close
	GTW - Wroclaw	Central Wings	nov.06 new	mar.08 close
London Luton	LTN - Gdansk	Wizzair	aug.04 new	
	LTN - Katowice	Wizzair	may.04 new	
	LTN - Krakow	easyJet	oct.04 new	dec.10 close
	LTN - Lodz	Wizzair	sep.11 new	

Departure Airport	Route	Airline	Service Debut	Other Flight Notes
	LTN - Poznan	Wizzair	sept.05 new	
	LTN - Rzeszow	Ryanair	oct.08 new	
	LTN - Szczecin	Ryanair	oct.08 new	mar.09 close
	LTN - Warsaw	easyJet/Wizzair	aug.04 new	
	LTN - Wroclaw	Wizzair	jan.08 new	
London Stansted	STN - Bydgoszcz	Ryanair	oct.05 new	
	STN - Gdansk	Ryanair	oct.05 new	mar.04 new dec.04 close
	STN - Katowice	Ryanair	may.07 new	jan.04 new dec.04 close
	STN - Krakow	Ryanair	sep.04 new	
	STN - Lodz	Ryanair	oct.05 new	
	STN - Poznan	Ryanair	sept.05 new	jan.04 new dec.04 close
	STN - Rzeszow	Ryanair	oct.05 new	
	STN - Szczecin	Ryanair	oct.05 new	
	STN - Warsaw	Ryanair	jan.04 new	mar.08 close
	STN - Wroclaw	Ryanair	mar.05 new	
Belfast	BFS - Gdansk	easyJet	oct.07 new	may.08 close
	BFS - Katowice	easyJet	may.07 new	july.08 close
	BFS - Krakow	easyJet	may.07 new	
	BFS - Warsaw	easyJet	july.07 new	oct.08 close
Birmingham	BHX - Bydgoszcz	Ryanair	mar.10 new	july.08 new oct.09 close
	BHX - Gdansk	Ryanair	july.08 new	
	BHX - Katowice	Ryanair	oct.08 new	
	BHX - Krakow	Ryanair	apr.06 new	apr.11 close
	BHX - Rzeszow	Ryanair	june.08 new	
	BHX - Szczecin	Ryanair	oct.08 new	mar.09 close
	BHX - Warsaw	Ryanair	apr.07 new	sept.08 close
Bournemouth	BOH - Gdansk	Ryanair	mar.08 new	may.08 close
	BOH - Katowice	Ryanair	july.07 new	sept.08 close
	BOH - Krakow	easyJet	oct.07 new	mar.08 close
	BOH - Wroclaw	Ryanair	apr.08 new	mar.09 close
Bristol	BRS - Bydgoszcz	Ryanair	may.10 new	
	BRS - Gdansk	Ryanair	dec.08 new	

Departure Airport	Route	Airline	Service Debut	Other Flight Notes
	BRS - Gdansk	easyJet	oct.07 new	mar.09 close
	BRS - Katowice	Ryanair	nov.07 new	mar.09 close
	BRS - Krakow	easyJet	jul.06 new	
	BRS - Poznan	Ryanair	nov.07 new	
	BRS - Rzeszow	Ryanair	mar.11 new	nov.07 new nov.10 close
	BRS - Szczecin	Ryanair	oct.08 new	mar.09 close
	BRS - Warsaw	easyJet	oct.07 new	nov.08 close
	BRS - Wroclaw	Ryanair	nov.07 new	
Cardiff	CWL - Gdansk	Wizzair	mar.08 new	may.08 close
	CWL - Warsaw	Wizzair	jan.08 new	jan.09 close
Coventry West Midlands	CVT - Gdansk	Wizzair	mar.08 new	may.08 close
	CVT - Katowice	Wizzair	july.07 new	sept.08 close
Doncaster Sheffield	DSA - Gdansk	Wizzair	july.07 new	
	DSA - Katowice	Wizzair	sept.06 new	
	DSA - Poznan	Wizzair	feb.08 new	
	DSA - Warsaw	Wizzair	apr.08 new	
	DSA - Wroclaw	Wizzair	apr.10 new	feb. 08 new oct.08 close
Durham	MME - Warsaw	Wizzair	aug.07 new	sept.08 close
East Midlands	EMA - Bydgoszcz	Ryanair	nov.09 new	apr.10 close
	EMA - Krakow	Ryanair	mar.11 new	feb.07 new nov.10 close
	EMA - Lodz	Ryanair	feb.06 new	apr.09 new oct.09 close
	EMA - Poznan	Ryanair	nov.07 new	mar.09 close
	EMA - Rzeszow	Ryanair	mar.11 new	nov.09 new nov.10 close
	EMA - Warsaw	Ryanair	feb.08 new	jan.09 close
	EMA - Wroclaw	Ryanair	feb.06 new	
Edinburgh	EDI - Gdansk	Ryanair	nov.09 new	
	EDI - Gdansk	Central Wings	mar.06 new	sept.08 close
	EDI - Katowice	Central Wings	mar.06 new	apr.08 close
	EDI - Krakow	Ryanair	sept.08 new	

Departure Airport	Route	Airline	Service Debut	Other Flight Notes
	EDI - Krakow	easyJet	oct.07 new	apr.06 new oct.06 close
	EDI - Lodz	Ryanair	nov.08 new	
	EDI - Poznan	Ryanair	oct.07 new	
	EDI - Szczecin	Ryanair	nov.07 new	mar.08 close
	EDI - Warsaw	Central Wings	nov.05 new	sept.08 close
	EDI - Wroclaw	Ryanair	nov.08 new	nov.09 close
Leeds Bradford	LBA - Gdansk	Ryanair	nov.10 new	
	LBA - Krakow	Ryanair	mar.10 new	oct.06 new oct.08 close
Liverpool	LPL - Bydgoszcz	Ryanair	oct.07 new	aug.10 close
	LPL - Gdansk	Wizzair	mar.06 new	
	LPL - Katowice	Wizzair	dec.04 new	
	LPL - Krakow	Ryanair	oct.06 new	
	LPL - Krakow	easyJet	apr.06 new	
	LPL - Lodz	Ryanair	mar.10 new	oct.07 new mar.09 close
	LPL - Poznan	Ryanair	oct.06 new	
	LPL - Rzeszow	Ryanair	oct.09 new	nov.10 close
	LPL - Szczecin	Ryanair	may.10 new	oct.08 new mar.09 close
	LPL - Warsaw	Wizzair	dec.04 new	
	LPL - Wroclaw	Ryanair	oct.06 new	
Manchester	MAN - Katowice	Ryanair	nov.11 new	
	MAN - Rzeszow	Ryanair	nov.11 new	
	MAN - Krakow	SkyEurope	apr.04 new	mar.08 close
Newcastle	NCL - Krakow	easyJet	mar.11 new	oct.08 new jan.09 close
Glasgow Prestwick	PIK - Gdansk	Wizzair	mar.06 new	
	PIK - Katowice	Wizzair	sept.07 new	may.09 close
	PIK - Krakow	Ryanair	nov.05 new	july.09 close
	PIK - Poznan	Wizzair	feb.08 new	apr.09 close
	PIK - Warsaw	Wizzair	mar.06 new	
	PIK - Wroclaw	Ryanair	aug.06 new	

Departure Airport	Route	Airline	Service Debut	Other Flight Notes
ROMANIA				
London Gatwick	GTW - Bucharest	easyJet	oct.07 new	jul.08 close
London Luton	LTN - Bacau	BlueAir	june.09 new	
	LTN - Bucharest	Wizzair	jan.07 new	
	LTN - Bucharest	BlueAir	may.07 new	jan.08 close
	LTN - Cluj Napoca	Wizzair	mar.09 new	
	LTN - Timisoara	Wizzair	oct.08 new	
	LTN - Tirgu Mures	Wizzair	oct.07 new	mar.09 close
London Stansted	STN - Bucharest	easyJet	oct.07 new	apr.10 close
Liverpool	LPL - Bucharest	easyJet	oct.07 new	mar.08 close
SLOVAKIA				
London Luton	LTN - Bratislava	Ryanair	mar.10 new	nov.07 new aug.09 close
	LTN - Bratislava	easyJet	dec.04 new	oct.06 close
	LTN - Kosice	SkyEurope	oct.07 new	aug.09 close
	LTN - Tatry	Danube Wings	oct.07 new	aug.09 close
London Stansted	STN - Bratislava	Ryanair	dec.03 new	
	STN - Tatry	Ryanair	dec.05 new	oct.07 close
Birmingham	BHX - Bratislava	Ryanair	oct.07 new	aug.03 new may.07 close
Bristol	BRS - Bratislava	Ryanair	nov.07 new	
East Midlands	EMA - Bratislava	Ryanair	feb.07 new	aug.09 close
Edinburgh	EDI - Bratislava	Ryanair	nov.08 new	
Liverpool	LPL - Bratislava	Ryanair	dec.09 new	
Manchester	MAN – Bratislava	SkyEurope	jun.05 new	aug.09 close
	MAN - Kosice	SkyEurope	july.08 new	aug.09 close
SLOVENIA				
London Gatwick	GTW - Ljubljana	Adria	apr.02 new	1.99 yes oct.00 close
London Luton	LTN - Ljubljana	Adria	may.06 new	feb.07 close

Departure Airport	Route	Airline	Service Debut	Other Flight Notes
London Stansted	STN - Ljubljana	easyJet	apr.04 new	
	STN - Maribor	Ryanair	june.07 new	mar.08 close
Birmingham	BHX - Ljubljana	Adria	may.06 new	sep.06 close
Manchester	MAN - Ljubljana	Adria	may.03 new	feb.06 close