



Research Bulletin

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Financing the Aviation Industry in the GCC Region

Gulf One Investment Bank B.S.C. (c) is a Bahrain registered bank whose vision is to be the leading knowledge-based infrastructure investment bank in the MENA (Middle East and North Africa) region. Its mission is to mobilise local and global capital to accelerate the execution of infrastructure projects via innovative custom made financial solutions.

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Overview

The importance of transport infrastructure in the process of economic growth and development process has long been recognized. Good and affordable transport could facilitate movements of people, goods and services, thereby providing easy access to social services and facilitating commercial transactions. Transport infrastructure at the supra-national level also increases the size of the market, improves efficiency in production and distribution, supports the achievement of economies of scale, and raises total factor productivity. In addition, low-cost but efficient means of transport facilitate the creation of export-based manufacturing and service industries, including tourism (World Bank, 2005). These factors are likely to foster private sector development and attract larger private capital flows towards the promotion and financing of transport infrastructure projects.

In the presence of increased globalisation of the world economy, air transport in particular has played a key role in facilitating international business as well as passenger and freight movements across frontiers. And, in recent years, the Gulf Cooperation Council (GCC) region has witnessed a resurgence of air transport activities, driven largely by economic boom and reforms, which have led a flurry of economic activities and have attracted massive influx of people into the region. These, along with the high population growth rate, economic diversification initiatives (development of a vibrant tourism industry) and massive capital flows, are expected to further stimulate intra-regional and international flows of persons and cargo in the medium to long term periods. According to the World Trade and Tourism Council (2007), by the year 2016, the expected number of visitors to the GCC would increase astronomically, reaching 23 million in Saudi Arabia, 18 million in the UAE, 12 million in Bahrain, 6 million in Kuwait, 3 million each in Oman and Qatar.

All these factors provide strong motivation for investment in air transport infrastructure including expansion, upgrading and maintenance of airports, aircraft acquisition, air transport logistics, and other transport related services in the GCC region. In addressing some the challenges facing the aviation industry, countries in the region have recently embarked on financing of mega-projects on air and other related transport infrastructure, and the long term investment outlook points to a massive scaling up of resources to expand and upgrade airports in the region. According to the Centre for Asia Pacific Aviation (2007), by 2012, around US\$34 billion would be invested by ten leading Middle East countries in new airport capacity to cater for an additional 318 million passengers per annum.

The key questions are: could the existing GCC airports and airlines cope with the projected increase in population and the rising numbers and volumes of air passengers and freight tonnage? Could aviation sector reforms provide opportunities for public-private partnerships that would enable GCC operators to compete effectively in the international aviation market? This research bulletin analyses the nature and extent of the aviation sector in the GCC region; key players and competitors; ongoing and planned projects; financing gaps and instruments; and regulatory frameworks.

Global Aviation Situation

Shortly after the 9/11 2001 bombing of the World Trade Center in the United States, the global aviation industry entered into a period of uncertainty affecting not only the volume of air passenger traffic but also operating margins of the aviation industry. That turned out to be a short-lived phenomenon, as since 2004 the global aviation sector picked up growth momentum, and the medium-term to long-term outlook is favourable. In the medium-term, 2007-2011, the volumes of air freight tonnage and passengers are projected to increase at annual average growth rates of around 4.8 percent and 5.1 percent respectively (Table 1). These average global figures, however, mask considerable variation across regions, as the Middle East is envisaged to register the highest growth rate in air passengers (6.8 percent), and the second highest growth rate in cargo movements (5 percent) after Asia Pacific region.

Table 1: Average Annual Growth Rates of Air Passengers and Cargo, 2007-2011

	Passenger Numbers (percentage)	Freight Tonnes (percentage)
TOTAL INTERNATIONAL	5.10	4.80
Africa	5.60	4.60
Asia Pacific	5.90	5.40
Europe	5.00	4.30
Latin America/Caribbean	4.40	4.20
Middle East	6.8	5.00
North America	4.20	3.90

Source: International Air Transport Association, Economic Briefing October 2007

Such a growth trend is expected to continue into the long run as air passenger traffic is forecast to rise from 4,448 billion RPKs¹ in 2007 to over 10,500 billion RPKs by 2026, yielding a compound annual growth rate of 4.5 percent (Figure 1). Most of the expected increase in traffic and growth in demand is likely to come from emerging economies, such as China, India, and the Middle East. For instance, Airbus's global market forecast for 2007-2026 includes the UAE in the top 10 countries by value of passenger aircraft demand, with a total projected value of US\$91.7 billion². Added to the growth in international air traffic is growth in the volume of domestic passenger movements, estimated globally at more than 5 percent per annum over the next two decades³.

This growth in air passenger traffic in the region is mainly attributable to high economic growth rates and hence higher business activities. Moreover, other means of public transportation are either weak or non-existent and, as a consequence, the demand for air transportation is accelerating.

¹ The revenue passenger kilometre is a measure of air passenger traffic; it is calculated by multiplying the number of paying passengers by the mileage (kilometres) flown.

² The UAE was ranked 7th after USA, China, UK, Germany, India, and Japan (in that order). The other countries in the top ten aircraft demand league table are Russia, Australia, and France. See Airbus (2007), Global Market Forecast 2007-2026.

³ IATA, Economic Briefing, October 2007.



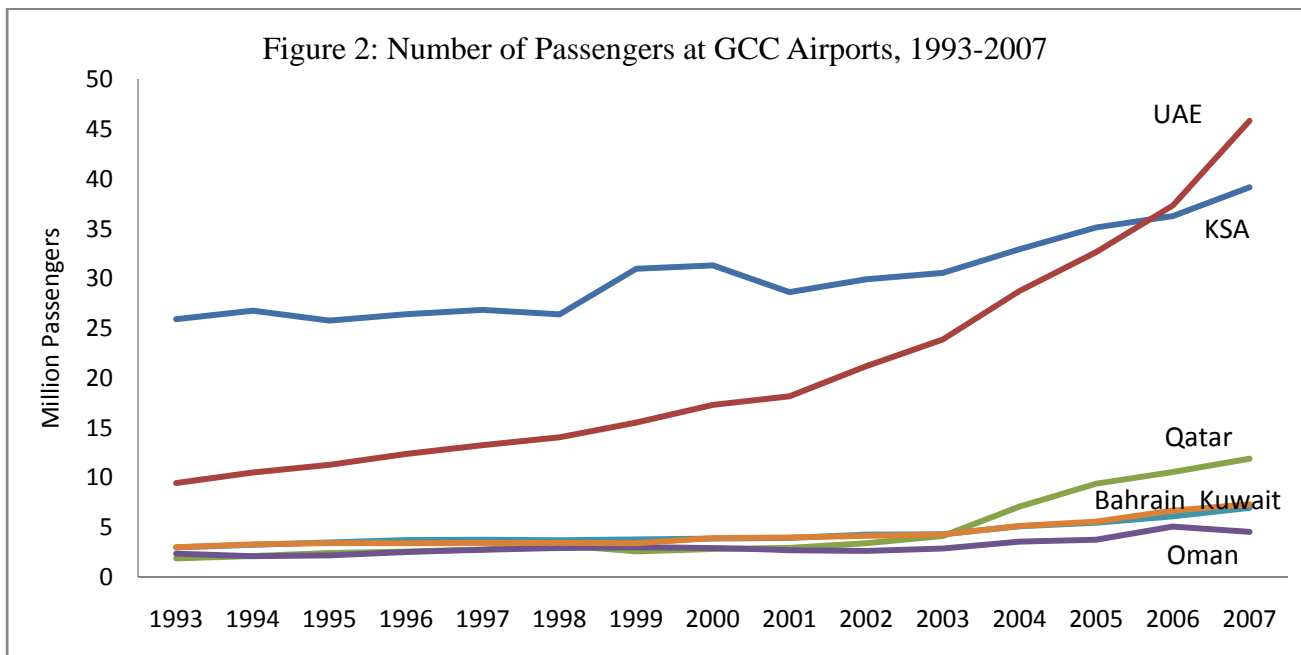
The Aviation Sector in the GCC

The importance of the aviation sector to the economies of the GCC, through both its direct and indirect (spill over) effects, cannot be overemphasised. Although data on the value added of the aviation industry is rarely available, the transport sector of the GCC makes a sizeable contribution to economic growth and development of the region. The share of transport in GDP varies from 5 percent in Kuwait to 6.4 percent in the UAE⁴. The contribution of the sector is likely to increase dramatically in the foreseeable future given the current economic boom and reform efforts including privatization and diversification initiatives in the region.

Needless to say, the recent economic prosperity in the region has led to a phenomenal growth in passenger traffic, air craft expansion, airline operators, and aircraft acquisition. Since 2002, the total number of passengers in the GCC region has nearly doubled from around 65 million passengers to over 115 passengers in 2007, increasing annually at a growth rate of nearly 12 percent. For a long period of time Saudi Arabia has attracted the largest number of air passenger in the region. But since 2006, the UAE has overtaken Saudi Arabia in terms of the volume and magnitude of passengers (Figure 2). Other GCC countries have also experienced phenomenal growth in passenger numbers albeit from a much lower volume bases. Since 2002, with the exception of Saudi Arabia, all GCC countries have witnessed double digit growth in passenger numbers, with Qatar recording the highest annual average passenger growth rate of around 24 percent, followed by the UAE (17 percent); Bahrain (11 percent), Oman (10.2 percent), and Kuwait (10.1 percent). Only Saudi Arabia recorded a single-digit growth rate of 5.4 percent in passenger numbers between 2002 and 2007⁵.

⁴ The shares for the other GCC countries are within this range: Bahrain (6.2%); Oman (6.3%); and the Saudi Arabia (5.7%). These figures are for 2006 (except for Bahrain which is for 2005) and they include data for storage and communication, as provided by the annual reports of the various national monetary authorities. Qatar, which provides statistics on transport sector alone, has reported a share of 1.3% for 2006.

⁵ Calculated by Gulf One from data obtained from Albatross Airport Database.



Source: Albatross Airport Database and Gulf One Estimates.

Such phenomenal growth in passenger volume in the GCC and other Middle East countries has helped to improve other measures of air traffic, such as Revenue Passenger Kilometre (RPK), Available Seat Kilometre (ASK) and Factor Loads in the region. The latest report by IATA shows that, for the past three years, the Middle East has been ahead of all regions in the world in terms of air passenger growth, and that in 2007 alone the RPK in the region increased by over 18 percent, well above the global RPK growth of 7.4 percent. Similarly, available seat kilometre (ASK)⁶, which is a measure of aircraft capacity utilisation, increased by nearly 15 percent in 2007 over the preceding year. This has dwarfed by more than two fold the 6.2 growth in global ASK last year.

According to Airport Council International, such a double-digit passenger traffic growth in the Middle East was largely driven by strong performance in Dubai, Bahrain, and Kuwait, with Dubai at the summit of the passenger traffic league table. Besides the observed year-on-year increases in passenger numbers, historical data using compound annual growth rate appears to lend credence to a positive growth trend in aviation traffic in the region, albeit at a single-digit figures, and the outlook is encouraging. As Table 1 shows, the projected growth in the number of passengers in the Middle East, at nearly 7 percent over the next 5 years, is the highest in the world. This aggregate growth forecast figure for the Middle East, however, shows wide variation across countries, as passenger growth forecast for the UAE is estimated at over 8 percent. In volume terms, this translates into an increase in passenger numbers in the region to 105 million by 2011, compared with 30 million in 2006 (IATA, 2007).

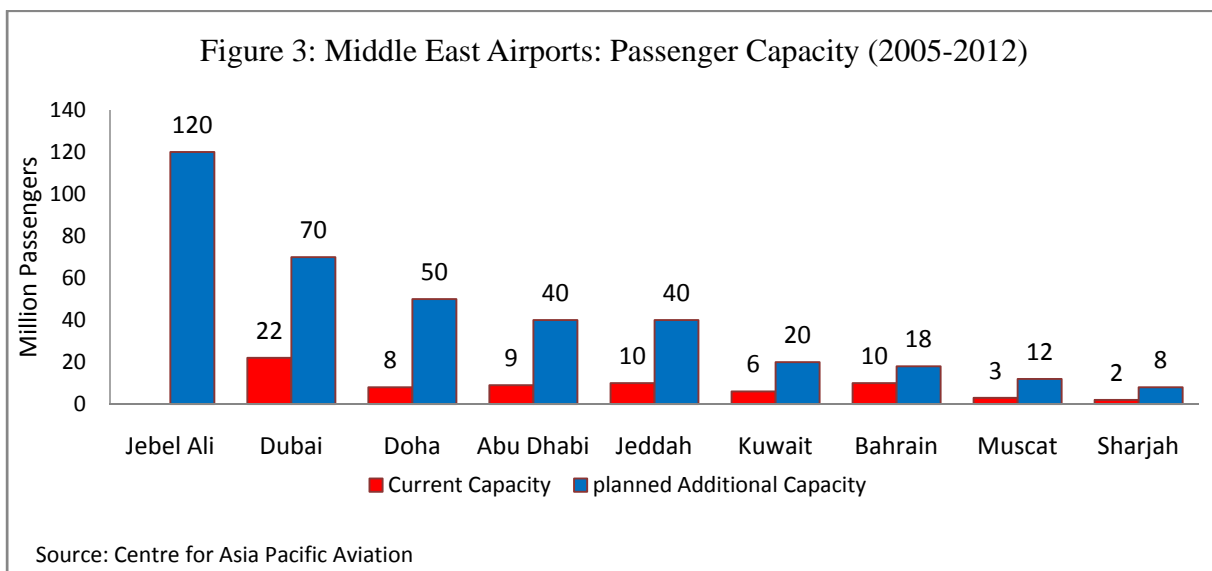
Similarly, in terms of projected growth in air freight, the Middle East region, with a medium term growth rate of demand in air cargo of 5 percent (Table 1), is expected to rank second only to Asia Pacific region with 5.4 percent. Nonetheless, individual countries with above average regional

⁶ Available Seat Kilometre (ASK) is calculated by multiplying the number of seats by the kilometres flown, and it measures aircraft capacity utilisation rate.

growth forecast include Qatar (nearly 7 percent) and Saudi Arabia (6.2 percent) based on IATA projections.

The phenomenal growth in actual and forecast number of passengers and freight tonnage has nudged countries in the Middle East to undertake massive programmes for airport expansion and aircraft acquisition. For instance, in the GCC region, some of the airport projects underway include a new Hajj Terminal at Jeddah Airport and expansion of other airports in Saudi Arabia; new International Airport at Jebel Ali and expansion of Abu Dhabi International Airport in the UAE. Others include new Doha International Airport in Qatar and expansion of airports in Oman, Kuwait and Bahrain. The total cost of these airport projects is around US\$ 37 billion (Emirate Business Online⁷ and Centre for Asia Pacific 2007). Similarly, the GCC and other MENA countries are actively engaged in aircraft acquisition and fleet expansion, with the region having the highest projected growth rate of new aircraft demand, at nearly 40 percent over the next five years compared with global projected figure of 31 percent⁸.

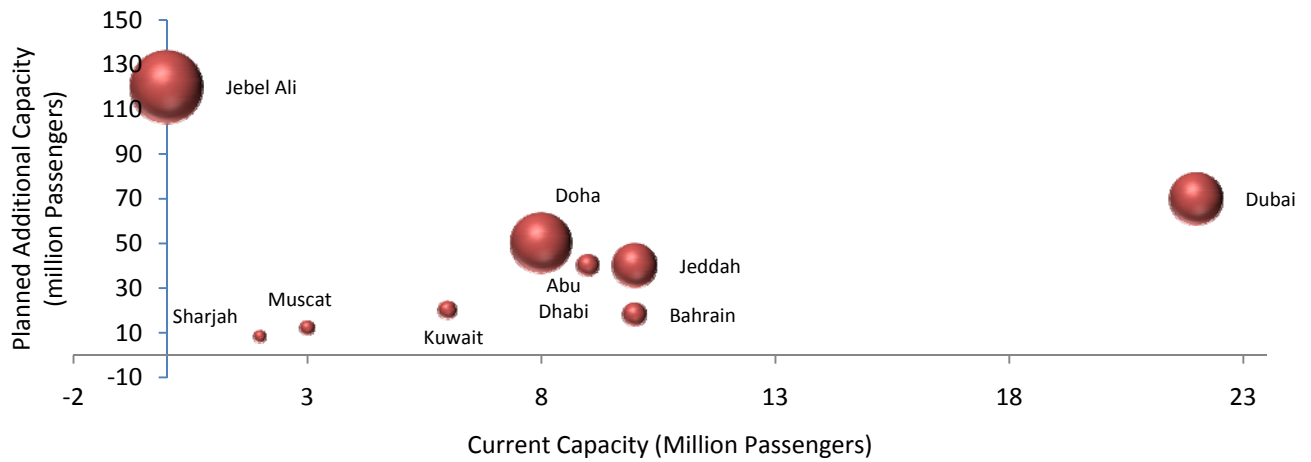
Within the GCC countries, the UAE ranks first in terms of current and potential airport passenger capacities. Dubai airport leads the way with 22 million passengers per annum, followed by Jeddah and Bahrain airports with 10 million passengers each (Figure 4). But by 2017, Jebel Ali airport in the UAE would overtake Dubai, with a planned passenger capacity of around 120 million, followed by Dubai with a total capacity of 70 million, and Doha (50 million). These are closely followed by Jeddah (40 million) and Abu Dhabi (40 million), as Figure 3 illustrates. A scatter diagram of the current versus planned capacity, plotted in Figure 4 clearly shows that whilst Dubai is way ahead of the other airports in the GCC region in terms of current passenger capacity (it is furthest on the horizontal axis), Jebel Ali international airport, once completed, will take the lead (furthest on the vertical axis).



⁷ Emiratebusiness.com.

⁸ Emirate Business Online.

Figure 4: Scatter Diagram of Current versus Planned Airport Passenger Capacity



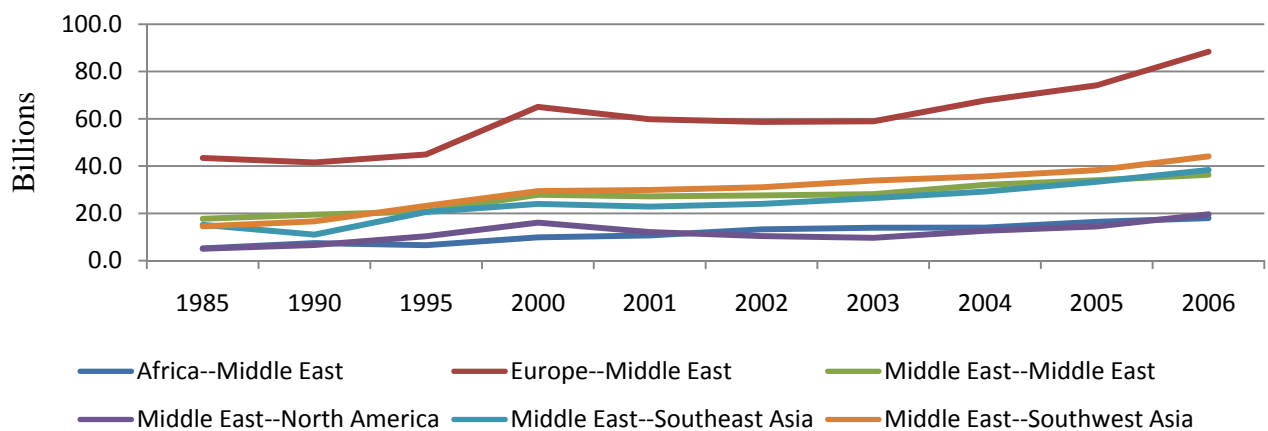
Source : Centre for Asia Pacific Aviation

The medium- to long-term outlook for air passenger and air freight growth is encouraging. The annual growth rate of passenger traffic in Middle East between 2007- 2011 is expected to grow at a rate of 7.8%. Air freight has also shown strong growth as the region carriers take advantage of the strong purchasing power of the region, driven by high oil prices to increase capacity and new routes.

Geographical Dimension of Middle East Air Traffic

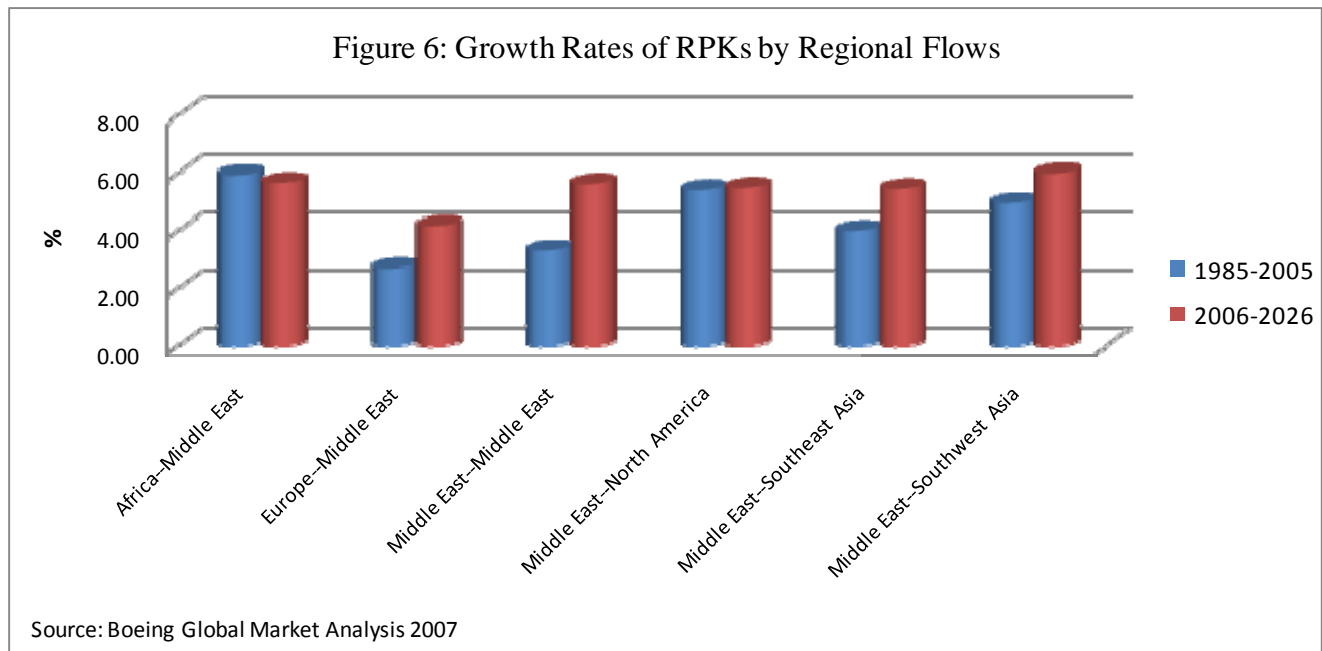
Available data shows that the greatest source of revenue passenger kilometers (RPKs) is on account of Europe-Middle East route, which has registered the highest RPK, rising from over 40 billion in 1985 to nearly 90 billion in 2006 (Figure 5). This was followed by Middle East to Asia and intra-Middle East traffic. In contrast, Middle East to North America and Middle East to Africa routes recorded relatively low RPKs.

Figure 5: Regional Flows of Revenue Passenger Kilometres



Source Boeing Global Market Analysis, 2007

In historical perspective, the highest RPK growth during the period 1985-2005 was on account of Africa-Middle East and Middle East-North America routes. However, projected growth outlook suggests that Intra-Middle East RPK growth would accelerate to 5.6 percent during the period 2006-2026, up from 3.5 percent during 1985-2005. Similarly, the Middle East to Asia and Europe to Middle East routes are likely to experience strong growth in RPKs during the next two decades. In contrast, RPK on Africa to Middle East route is projected to decline while that for Middle East to North America flows is forecast to remain relatively flat (Figure 6).



Key Drivers of Aviation Sector Growth

The growth in the aviation sector is largely driven by a combination of qualitative and quantitative factors, such as the region’s high population growth rate, demand for tourism, trade and business activities, rapid economic growth, and economic reform processes, including aviation reform strategies. Other factors include enhanced status, quest for quality standards and safety measures.

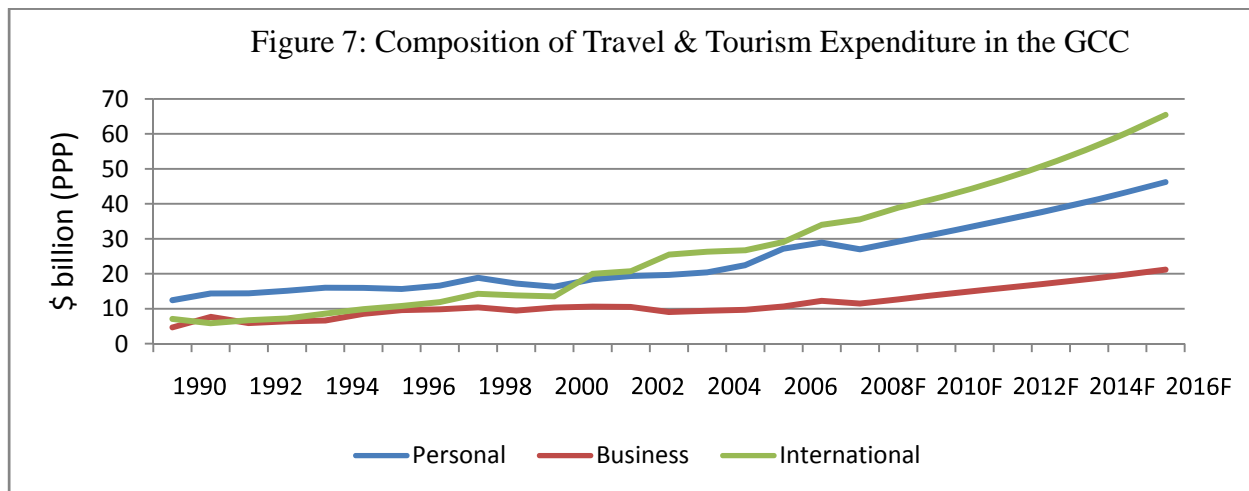
The GCC is one of the regions of the world with a high population growth rate. In 2007, for instance, growth rates of population in Qatar and the UAE were as high as 4.3 percent and 6 percent respectively (IMF, World Economic Outlook 2007). Such high population growth figures could provide additional motivation for proposed changes to the aviation sector in the region.

Added to the population growth dynamics is the astronomical growth in demand for travel and tourism the GCC countries have recorded over the recent past, and the trend is forecast to increase exponentially. It has been estimated that by 2016 the number of tourism to the GCC region would nearly reach 64 million: Saudi Arabia (22.5 million); UAE (18 million); Bahrain (12 million); Kuwait (6 million); Oman (3 million); and Qatar (2.4 million)⁹.

⁹ Global Future and Foresight, May 2007; the future of travel and tourism in the Middle East, a vision to 2020.

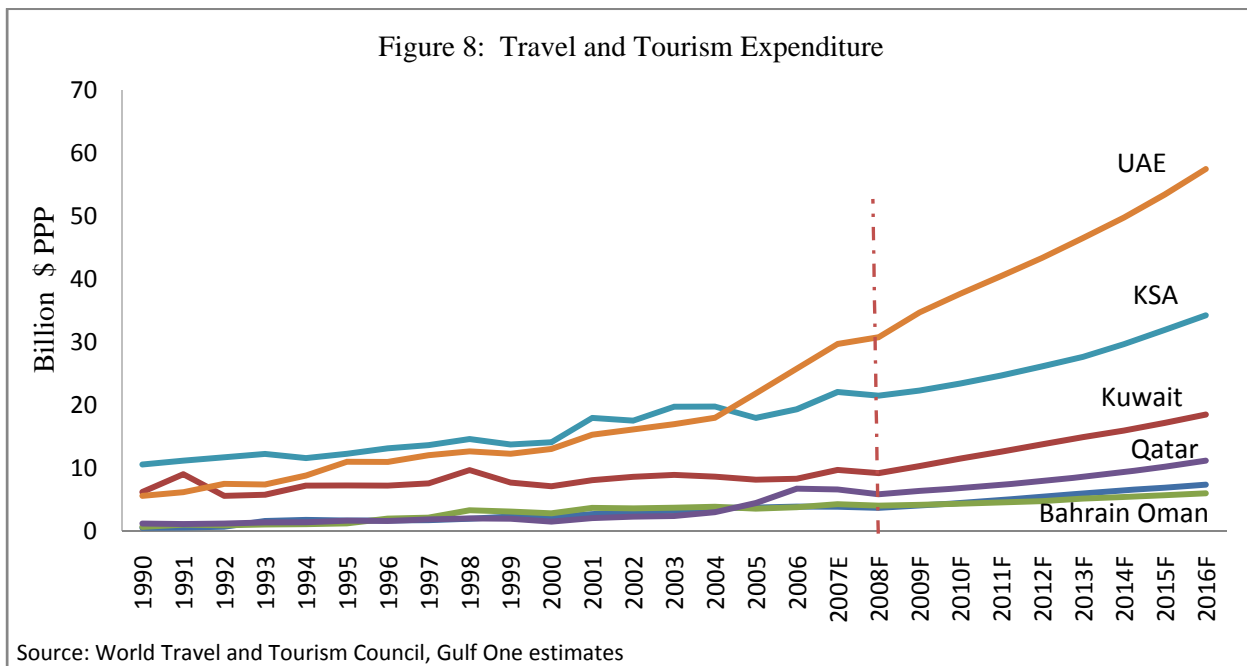
In terms of purchasing power parity, expenditure on travel and tourism in the GCC as a whole increased from a mere \$24 billion in 1990 to over \$75 billion in 2007, and is projected to reach nearly \$180 billion by 2016. In the past, demand for personal travel and tourism by GCC residents accounted for the bulk of consumption expenditure, in recent years however expenditure by international visitors has outstripped that by domestic travelers and tourists (Figure 7).

A breakdown of total expenditure by countries shows that the UAE is the largest recipients of tourism receipts, followed closely by Saudi Arabia. Other countries have experienced a growing trend in travel and tourism revenues but at a much lower scale than those for KSA and UAE (Figure 8).



Source: World Travel and Tourism Council

These continual growths in tourism and passenger numbers would necessitate not only the development and expansion of airports but also of acquisition of new and varied aircrafts. For instance, according to Zawya (5 November 2007), there is a total of 59 ongoing airport projects in the GCC region worth over US\$ 17 billion. Many of the airlines in the region are also striving to expand their networks to cater to the teeming passenger growth figures. For example, in September 2007, Emirates received the 10 ultra long-ranged B777-200s, Etihad currently operates 37 aircrafts and aims to increase the number to 53 by 2011. In its expansion plans, Bahrain's Gulf Air wrapped up a \$6 billion deal early this year for 16 Boeing 787 Dreamliners and had options to order 8 more (MEED, 11 March 2008). Similarly, Kuwait Airways in 2007 approved plans to acquire 7 A320s and 12 B787s from Aviation Lease and Finance Co (ALAFCO). In the same vein, last year, Qatar Airways had ordered 30 Dreamliners (B787s) and Oman Air was to take delivery of 2 leased A330s to cater to its new long haul routes, and 6 more A330s and 4 B737-800s are expected to be delivered during 2009-2011. Saudi Arabia Airline also had plans to acquire 30 new aircrafts in the immediate future, including 3 Dreamliners, as part of major fleet reorganization. The Low Cost Carriers are not also left behind, as Jazeera Airways has announced plans to lease 14 aircraft in 2008, as the airline aims to carry 1.8 million passengers this year, up from 1.1 million in the preceding year (Khaleej Times, 26 January 2008).



Determinants of Air Travel and Tourism in the GCC

The theoretical literature on demand analysis relates real expenditure on a product or service to factors that influence such expenditure, including real disposable income, prices and other relevant explanatory variables. We used both real income and retail prices along with other variables such as population, public expenditure on tourism and country-specific dummies to estimate the demand function for travel and tourism in the GCC countries. The purpose of such an exercise is to provide insight into long run demand elasticities with respect to income, prices, population growth, and public provision of tourism and transport/logistic infrastructure. Estimates of the demand function would also allow for comparative analysis of demand elasticities between different categories of travelers and tourists, for example, business and personal travelers.

Using a panel data (pooled cross-country) of the six GCC countries over the period 1990-2007, we employed a standard regression technique to estimate four types of demand equation for travel and tourism. Equations 1 to 3 of Table 2 represent demand by intra-GCC business travelers, intra-GCC personal travelers, and international visitors (both business and personal leisure) respectively. In all three equations, the dependent variable is real expenditure on travel and tourism by each of the three categories of travelers. Equation 4, however, relates the total number of passengers (arrivals) at GCC airports to total consumption expenditure on travel and tourism, including public subsidies and transfers on travel and tourism¹⁰.

The findings from the econometric analysis suggest that the income elasticity of demand for tourism for both business (Equation 1) and personal (Equation 2) travelers is inelastic (less than unity). This means that a 1% increase in real GDP in the GCC would lead to a 0.57% and 0.49% increase in demand for tourism for business and personal travelers respectively (Table 2). In contrast, the income elasticity of demand for international visitors from the OECD countries to the GCC region,

¹⁰ In the case of demand equation for total number of passengers the time period is from 1993-2006.

at 5.91%, is highly elastic, suggesting that a 1% increase in foreign income would lead to a 5.9% increase in demand for foreign visitors to the GCC region. In the case of the income elasticity of demand for international visitors from the Newly Industrialized Countries (NICs), especially from Asia, it is inelastic, albeit statistically insignificant. This means that changes in the income of the NICs would have little or no effect on their demand for tourism in the GCC region.

The results also suggest that the price elasticity of demand for tourism is highly elastic (-1.86) for business travelers and inelastic (-0.77) for personal tourist. This implies that business travelers appear to be more sensitive to price variation than personal tourists. As the result shows, a 1% increase in inflation is likely to reduce the demand for travel by business travelers by 1.87% and that for personal travel by only 0.77%. In the case of international visitors, an increase of 1% in the GCC inflation, *ceteris paribus*, is likely to reduce demand for GCC tourism of international visitors by 0.86%. In other words, although international visitors to the GCC have a relatively inelastic demand for travel and tourism in the region, they tend to be marginally more responsive to GCC inflationary pressures than resident (personal) travelers within the region (Table 2).

Table 2: Estimated Demand Equations for Travel and Tourism in the GCC

	Dependent Variable			
	Demand by Intra-GCC Business Travelers ¹¹ (Equation 1)	Demand by Intra-GCC Personal Travelers ¹² (Equation 2)	Demand by International Visitors ¹³ (Equation 3)	Number of Air Passengers (Equation 4)
Real GDP	0.567*** (2.58)	0.491*** (2.44)		
Population	0.223** (2.14)	0.11 (0.12)		
Consumer Price Index	-1.876*** (5.6)	-0.77* (1.84)	-0.86* (1.79)	
Gov't Expend. on Travel&Tourism	0.631*** (4.23)	0.557*** (4.8)		
Income of OECD			5.914*** (6.17)	
Income of NICs			0.023 (0.03)	
Total Expend. on Travel&Tourism				0.739*** (5.87)
Dummy_Saudi Arabia	3.705** (2.08)	0.529 (0.32)	2.017*** (15.69)	15.182*** (44.3)

¹¹ Real expenditure by business travellers resident in the GCC, in international dollars (PPP \$ - purchasing power parity dollars) deflated by retail price index in individual GCC countries.

¹² Real expenditure incurred by travellers resident in the GCC for personal air travel and tourism, in PPP \$, deflated by consumer price index.

¹³ Real expenditure by international visitors to the GCC, in PPP \$.

Dummy_UAE	4.138*** (2.44)	1.11 (0.68)	2.496*** (22.7)	14.74*** (44.95)
Dummy_Qatar	4.688 (2.63)	1.311 (0.79)	0.464*** (3.91)	14.564*** (125.66)
Dummy_Kuwait	5.577*** (3.1)	1.412 (0.86)	0.243 (1.33)	13.682*** (51.16)
Dummy_Bahrain	4.794*** (2.79)	1.407 (0.8)	0.656*** (5.18)	14.555*** (131.71)
Dummy_Oman	4.84*** (2.78)	1.266 (0.74)		14.156*** (96.41)
Adjusted R-Squared	0.98	0.97	0.91	0.99

Source: Gulf One Estimates using data obtained from World Travel and Tourism Council, Albatross Airport Database, and IMF World Economic Outlook Database.

Note:

- With the exception of the country dummies, all variables are transformed into natural logarithm.
- Figures in parentheses represent absolute values of calculated t-statistic.
- *, **, *** denote significance at the 10%, 5%, and 1% levels respectively.

GCC population is another important determinant of demand for travel and tourism in the region. In the demand equations for both business and personal travelers, the estimated coefficient for population is positive and highly inelastic. More specifically, a 1% growth in population would increase demand for travel and tourism by 0.22% for business travelers and by 0.11% for personal travelers.

Yet another important determinant of demand for travel and tourism in the GCC is government expenditure, such as subsidies and transfers, on travel and tourism infrastructure. Here again, business travelers are more responsive to government expenditure on tourism infrastructure than personal travelers, as a 1% increase in public expenditure on tourism infrastructure would lead to a 0.63% increase in business travel and 0.56% increase in personal travel.

The results of the statistical exercise show strong positive effects of country-specific characteristics on demand for travel and tourism in individual GCC countries. As Table 2 shows, all country dummy variables in the demand equations for intra-GCC business travelers, the international visitors, and total number of passengers are positive and significant. This suggests that each of the GCC countries is likely to witness an autonomous and non-deterministic increase in demand for travel and tourism both in terms of monetary value and the sheer volume of travelers/tourists.

These findings call for efficient and effective development and expansion of the transport and tourism infrastructure in the GCC to cater to the growing demand for travel and tourism in the region. This would require improvements in transport infrastructure and tourism infrastructure in all the countries in the region. It is to be noted that some of the GCC countries have ranked highly in the global league table of air transport and tourism infrastructure but more needs to be done to further improve their international ranking. For instance, the UAE, Qatar and Bahrain are the top three GCC countries in terms of the quality of air transport infrastructure and tourism infrastructure and have also ranked in the top 40 countries in the world (Table 3). But even so, upgrading the quality of tourism infrastructure would help to attract additional numbers of travelers into the region. The

UAE provides a classic example of the need for improvements in tourism infrastructure, as although it ranked 5th in the global air transport infrastructure in 2007, it ranked 32nd in the global tourism infrastructure. It is hoped that the ongoing development of a \$30 billion tourism island in the UAE is likely to address these problems, and would thereby help to improve the global ranking of the country. Qatar, which is the second in the GCC ranking of air transport infrastructure (after the UAE), ranked 23rd in the global league table and 24th in terms of global tourism infrastructure (Table 3). Other countries in the region ranked in the top 100 countries in terms of both air transport and tourism infrastructure and must do more to improve their international standing.

Table 3: GCC Rankings in Air Transport and Tourism Infrastructure

	Air Transport Infrastructure			Tourism Infrastructure		
	Score	Global Rank	GCC Rank	Score	Global Rank	GCC Rank
UAE	5.50	05	1	4.79	32	2
Qatar	4.56	23	2	5.22	24	1
Bahrain	4.30	28	3	4.45	37	3
Saudi Arabia	3.46	49	4	3.31	68	6
Oman	3.21	57	5	3.53	63	5
Kuwait	3.13	59	6	3.77	57	4

Source: World Economic Forum: Travel and Tourism Competitiveness Report 2008 and Gulf One Estimates

In addition, the GCC countries would have to develop a sound travel and tourism regulatory framework with clear governance structure. None of the GCC countries featured in the top 40 countries in terms travel and tourism regulatory framework in 2007. Within the GCC region, Qatar was adjudged to be the first in terms of regulatory framework, followed by the UAE and Bahrain. Even so, the three countries were ranked 43rd, 44th and 68th in the global ranking (Table 4). In terms of travel and tourism policy rules and regulation, Bahrain was ranked 1st among the GCC countries, followed by Oman and the UAE. In contrast, Kuwait and Saudi Arabia were poorly rated both in terms of overall travel and tourism regulatory framework and policy rules and regulation, as Table 4 demonstrates.

Table 4: GCC Rankings in Travel and Tourism Regulatory Environment

	Travel & Tourism Regulatory Framework			Travel & Tourism Policy Rules/Regulation		
	Score	Global Rank	GCC Rank	Score	Global Rank	GCC Rank
Qatar	4.90	43	1	3.97	86	5
UAE	4.87	44	2	4.05	81	3
Bahrain	4.36	68	3	4.35	62	1
Oman	4.07	88	4	4.12	76	2
Kuwait	3.88	105	5	3.76	97	6
Saudi Arabia	3.83	106	6	4.02	82	4

Source: World Economic Forum: Travel and Tourism Competitiveness Report 2008 and Gulf One Estimates

Micro Assessment of Firm Performance

The efficiency of the aviation sector largely depends on the performance of the individual firms within the sector. Globally, which of these firms are the industry pace setters in terms of productive efficiency? What make them efficient? What lessons could GCC aviation operators learn from their international peers to enable them compete successfully on regional and global arenas?

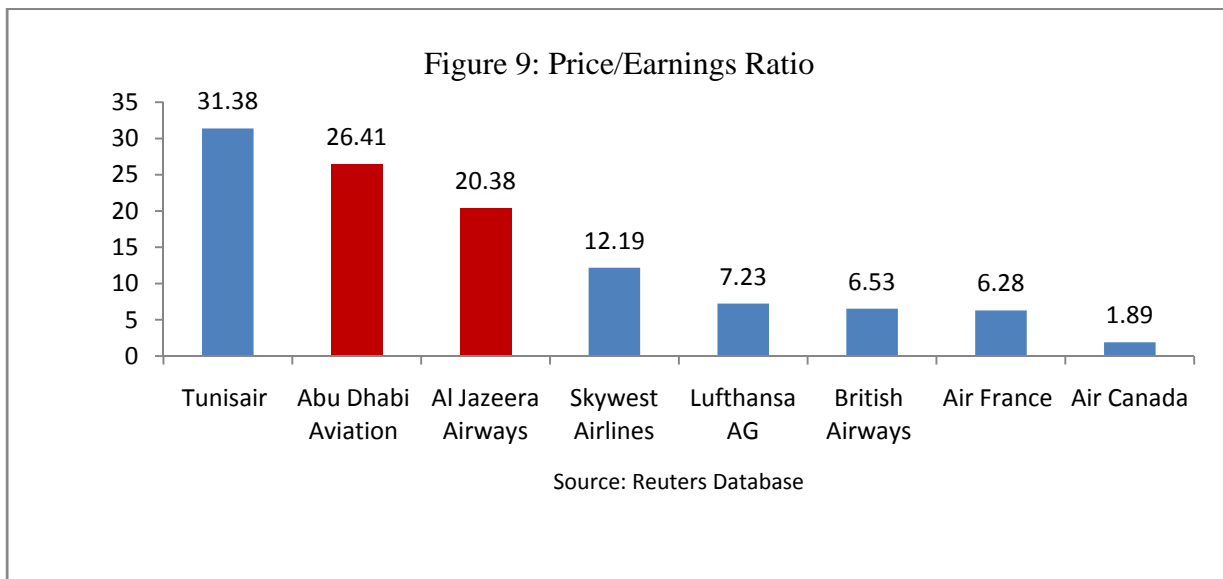
To provide answers to these and other related questions, we employed the technique of Data Envelopment Analysis (DEA) to assess the productive efficiencies of firms in the aviation industry. Combining each firm's inputs and outputs in the production process, the technique computes efficiency scores. A score of 100% suggests that a firm is productively efficient (operating on its productive possibility frontier) and relatively less efficient firms would have varying scores below 100%. The advantage of the DEA methodology is that it provides benchmark or reference scores that can make inefficient firms efficient.

The DEA was applied to 80 publicly listed aviation companies globally, out of which 13 were found to have efficiency score of 100%¹⁴. It is to be noted that very few aviation companies in the GCC are publicly listed on the stock exchange markets, but of those listed none has the maximum efficiency score, implying that there is ample room for improvements in terms of both productive and technical efficiencies of aviation firms in the region. Within the MENA region as a whole, only Tunis Air has recorded an efficiency score of 100%. A number of factors can contribute to raising the productive efficiency of a firm, including managerial ability, good business practices, technical progress, and cost optimisation processes.

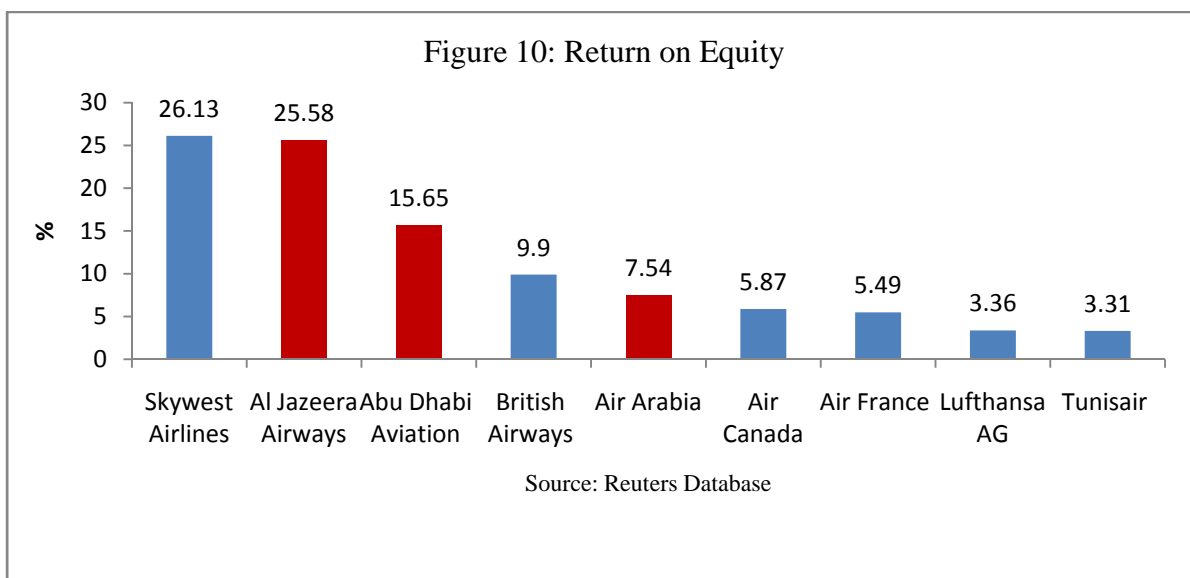
A comparison of key financial ratios of publicly listed companies in the GCC with their international peers, including those that the DEA has categorized as productively efficient (such as Air Canada, SkyWest Airline, and Tunis Air) and those that have a long history of business operations (such as British Airways, Lufthansa, Air France-KLM, and Delta Airlines) suggests that the GCC firms have great potentials in achieving competitiveness in the global aviation business.

In terms of price/earnings ratio, recent data suggests that GCC operators such as Al Jazeera Airways and Abu Dhabi Aviation outperformed some of well established airlines such as Lufthansa, Delta Airlines and Air France, with price-earnings ratio in excess of 20 percent (Figure 9). Tunis Air, one of the airlines adjudged to be productively efficient in terms of DEA score, has the highest price-earnings ratio of nearly 30 percent, as Figure 9 demonstrates.

¹⁴ The aviation companies with 100% efficiency scores are Air Canada, Mesa Air Group Inc., SkyWest Airlines Ltd, Iberia, Helijet International Inc., Gulfstream International Group Inc., Far Eastern Air Transport Corporation, Aviatsionnye Linii Kubani, Great Lakes Aviation Ltd, Copa Holdings S.A., Aerovias de Integracion Regional S.A., MAIR Holdings Inc., and Tunis Air.

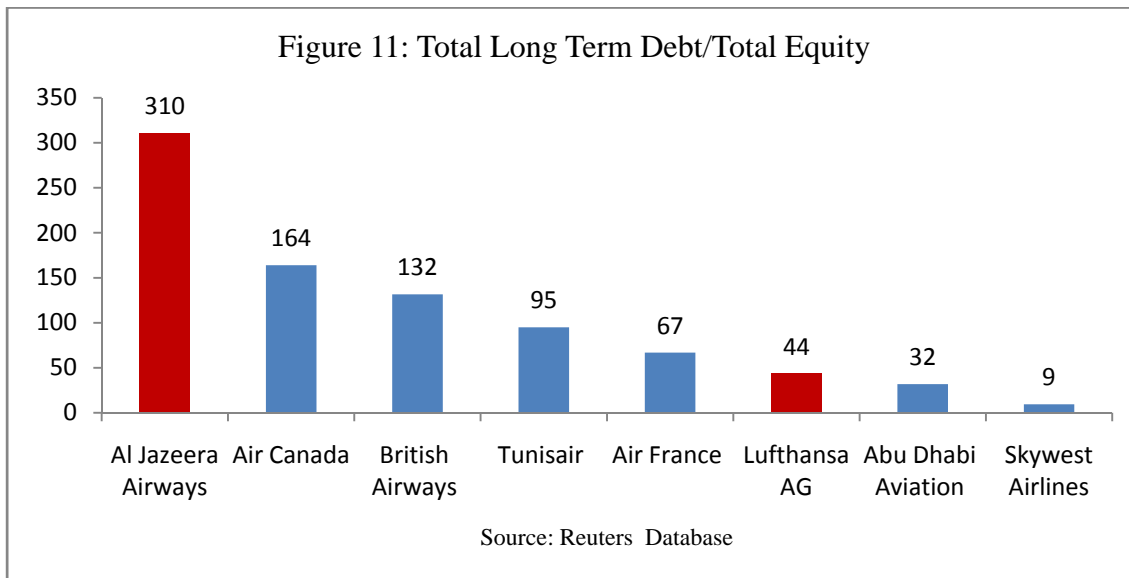


Some of the GCC aviation firms have also featured strongly in terms of return on equity. For example, with the exception of Skywest Airlines, both Al Jazeera Airways and Abu Dhabi Aviation have posted returns on capital higher than those of international comparators. Similarly, Air Arabia's return on equity at around 8 percent has surpassed that for Air Canada, Air France and Lufthansa. SkyWest, which is one of the productively efficient airlines by DEA score, has posted the highest return on equity (Figure 10).

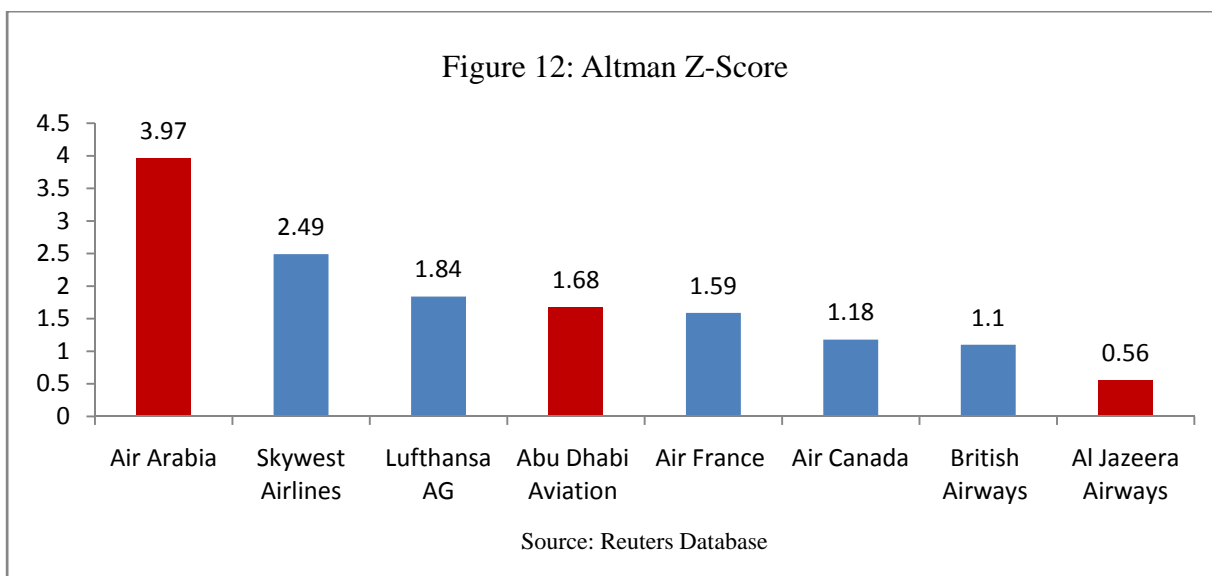


Although some of the publicly listed GCC aviation firms have compared favourably with their international counterparts, they have also registered relatively high gearing ratios. For instance, the ratio of total debt to total equity for Al Jazeera Airways exceeded 300, compared with all other airlines in our sample. On the other hand, however, Abu Dhabi Aviation has a relatively low gearing

ratio, with a debt-to-equity ratio of 32 (Figure 11). This may not be surprising, however, given that while Abu Dhabi Aviation is state-owned, Al Jazeera is a privately owned company that has to leverage external resources, both debt and equity. Here again, Skywest Airlines (one of the efficient firms based on the DEA analysis) has the lowest gearing ratio.



It should be noted also that some of the GCC aviation companies have strong potential for financial sustainability, as indicated by their relatively high Altman Z-score. As Figure 12 illustrates, Air Arabia has the highest Z-score, followed by SkyWest Airlines, Lufthansa, and Abu Dhabi Aviation. The relatively low Altman-Z score for Al Jazeera Airways is not, however, surprising given its high gearing ratio.



Conclusion

The economic boom in the GCC region, along with the associated growth in population and demand for air travel and tourism, would entail rapid expansion and development of the aviation and other transport and logistics infrastructure. But promotion and financing of such infrastructure would require huge capital investment as well as proper planning and management, safety standards, maintenance, and appropriate regulatory framework. Despite the massive oil windfall the region has garnered from the recent record oil prices, the amounts needed to develop and upgrade the region's transport infrastructure is much larger than what the government can provide. There is therefore the need for greater private sector participation in transport financing and management through either privately owned entities or public-private partnership (PPP) schemes.

Increasing private sector participation is a real challenge given that the aviation sector in the GCC region has for long been characterised by public monopolies of airports and airline operations. Many governments in the region have recently started to liberalise the sector to allow increased participation by the private sector, but even so the aviation regulatory environment in many GCC countries still remains difficult particularly for private airline operators. As a recent MEED report suggests, liberalization in the aviation industry must go beyond mere granting of licenses; rather, it must go hand in hand with creating a level playing field for new entrants (MEED, 20 March 2008).

In spite of the difficult terrain, however, a number of low cost carriers (LCCs) have sprung up in the GCC in recent years, including Air Arabia (UAE); Nas Air and Sama Air (Saudi Arabia); Jazeera Airways (Kuwait); and Bahrain Air (Bahrain). The growth of the LCCs would depend on the number and size of existing and potential new routes both within and outside the region. Thus, removing the remaining distortions would undoubtedly attract new airline operators, particularly the LCCs, thereby enhancing the efficiencies and competitiveness of the aviation sector in the GCC and in the international markets.

As the analysis in this bulletin suggests, the GCC aviation firms particularly the private operators have compared favourably with international comparators in terms of key financial ratios and have great potential for enhancing their competitiveness in the global market. What is needed is a level-playing field to enable them to improve their efficiency. Proactive interventions are needed at both macro and micro levels. At the macro level, this would require the elimination of obstacles to competition by, for example, removing barriers to entry, making it easier to register and operate across frontiers. At the micro level, however, the allocative efficiency of GCC aviation firms could be enhanced not only by improving the business environment in the GCC countries but also by improving the managerial ability of firms in the region.

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