

## 2. Air Transportation Features

Nowadays, according to Whitelegg and Cambridge (2004), the air carriers around the world have been transporting more than 1.6 billion passengers and 30 million of tons of freight per year. It is expected that the total length flown over the next 20 years shall increase three times and the number of planes in operation might increase two times in the same period. The Chinese market has been experiencing growing rates between 8 and 10% per year. A similar forecast for the United Kingdom market identifies growing rates in the passenger market by three times, turning from 180 million passengers to 300 million transported per year in the next 30 years.

According to these authors: “two key industry statistics used to measure aviation activity, the Available Seat Kilometers (ASK) and the Revenue Passenger Kilometers (RPK) are projected to increase by 2.5 times over the next 20 years from 3 trillion in 1999 to nearly 8 trillion, with a small increase in the passenger *load factor*<sup>1</sup> (from 67 to 71% per cent). By 2022, the total number of aircrafts will nearly double and it will include a larger number of smaller, single-aisle planes used on short haul routes (Boeing, 2003)”. Table 2.1 illustrates these projections.

**Table 2.1: Key Air Travel Statistics (Airbus, 2003)**

<b>Passenger Aircraft Only</b>	<b>2002</b>	<b>2009</b>	<b>2022</b>	<b>% Change 2002 - 2022</b>
World ASKs (billion)	4,514	7,076	11,407	152.70
World RPKs (billion)	3,166	5,100	8,473	267.62
Average Flight Distance (Km)	1,437	1,414	1,516	5.49
Number of Aircraft	10,789	14,815	20,554	90.50
Number of Departures (000)	15,865	23,464	31,510	98.61
Seats per Departure	163	168	200	22.70

**Source: Whitelegg and Cambridge (2004)**

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<sup>1</sup> *Load Factor*: a measure, used in transportation, to determine the occupancy of transport vehicles (truck, plane, train, etc.).

Both segments of air passenger and freight have been showing increasing growth rates as well as the buying power index of the population. As noticed by Lindsay (2006): “Over the past 30 years, global GDP has risen 154%, and the value of world trade has grown 355%. But the value of air cargo has climbed an astonishing 1,395%. Today, 40% of the total economic value of all goods produced in the world barely comprising 1% of their total weight is shipped by air (and that goes for more than 50% of total U.S. exports, which are valued at \$554 billion)”.

All the expansion in air cargo industry has a strong relation with worldwide trade. Influenced by the import/export flows among countries and regions, air cargo has been showing a growth of about twice the rate of worldwide gross domestic product (GDP) growth. The Boeing Company issues a biennial report which is called the World Air Cargo Forecast (WACF) to provide an overview of the industry. In the 2008-2009 report, the company has stated that a weak traffic growth has characterized the market for the period. In 2005, 2006 and 2007, the world air cargo grew 1.7%, 3.2% and 5.1% respectively, “making these years the weakest growth period for the industry since Gulf War, 1990-1992”. However, the report says, “over the next 20 years world air cargo traffic will triple compared to current levels, and the number of airplanes in the freighter fleet will double”.

Table 2.2 shows historical and forecast air cargo growth rates for the 10 years period (1997-2007) and 20 years period (2008-2027), respectively.

**Table 2.2: Historical and Forecast air Cargo Growth Rates**

<b>Region</b>	<b>Historic 10 Years (1997-2007) – (%)</b>	<b>Forecast 20 Years (2008-2027) – (%)</b>
World	4.1	5.8
Intra-North America	0.5	2.7
Latin America-North America	1.5	5.6
Latin America-Europe	3.5	5.7
Europe-North America	3.1	5.1
Intra-Europe	2.1	3.6
Middle East-Europe	6.5	4.8
Africa-Europe	4.0	6.2
Asia-North America	4.8	6.7
Europe-Asia	9.7	6.5
Intra-Asia	7.0	8.1
Southwest Asia-Europe	5.4	6.0
Domestic China	15.6	9.9

**Source: World Air Cargo Forecast 2008-2009 - Boeing**

Increasing growth rates in air freight are supported by the “emergence of globally integrated, just in time (JIT) production and distribution systems and the emergence of e-commerce and e-business” (Zhang et al., 2004). According to these authors, companies have been trying “to reduce inventories and cut down the time they take to move products to the market, while product life spans are also shortening”. These companies have been focusing on “virtual warehousing, keeping goods in transit as a substitute for holding goods in storage”. The logistics process involved must be in accordance with all the business strategic requirements, to keep high level of services.

The geography of freighter aircraft services is dominated by the Pacific basin, and the regional dominance of freighter aircraft services in particular reflects the higher importance of the Pacific basin within global air freight flows

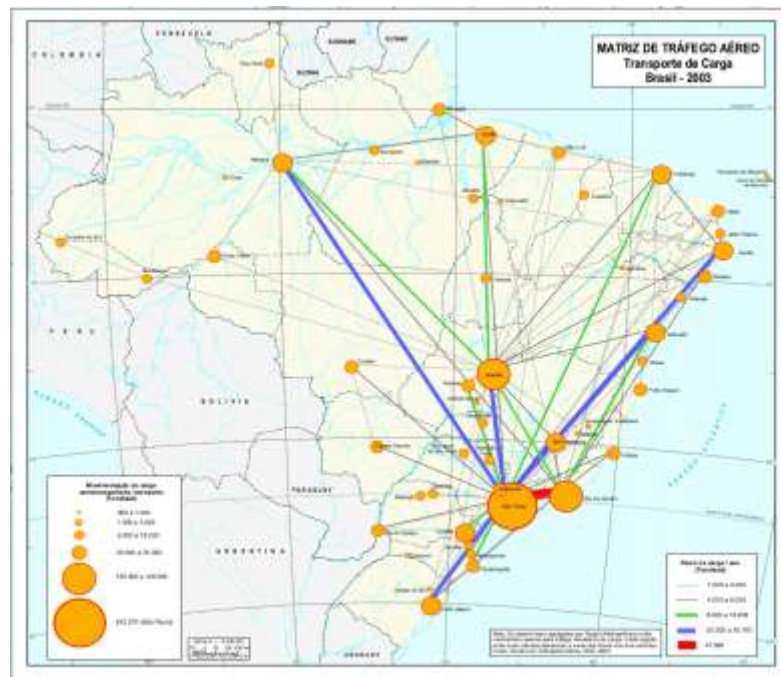
(Bowen, 2004). This author claims that in the past few decades, the air freight traffic has grown faster than passenger traffic, mainly supported by the fact that the production of goods as diverse as tennis shoes and semiconductor chips has become dependent upon air freight services that link globally dispersed supply chains. One important issue supporting the increasing rates for the air cargo flows is its adoption by a growing number of manufacturers in supply chains that place a premium on the speed and reliability of transportation. The same authors assert that, in the past, virtually all freighter aircrafts were converted passenger aircrafts, but a growing number of freighter aircrafts are assembled new, since they are more fuel efficient and more reliable.

The same authors define three principal types of carriers in freight transportation: i) heavy freight airlines, ii) combination carriers and iii) integrators. The first emphasize the transportation from airport to airport, the second focus on transportation including passenger and cargo traffic and the third synthesize the air and ground transportation functions. The largest integrators in the world are: FedEx, UPS, TNT and DHL. There exists a trend that the proportion of cargo carried in the bellyholds will fall “due to the inherent limitations with bellyhold cargo, although about 60% of airfreight is still carried in the bellyholds of passenger planes. In the year 2000, the three most important airports in the world in terms of operation of freight were: Memphis, Hong-Kong and Los Angeles. In 2006, according to the ACI report, the three busiest airports in terms of cargo handled were Memphis (USA) – FedEx’s Headquarter and Hub, Hong Kong (China) and Anchorage (USA).

According to Lee (2003), “the demand for airfreight in the Asia-Pacific region has continued to grow steadily, and the region is forecast to account for more than 50% of world demand by 2010”. Multinational enterprises and many other companies are expanding global sourcing of raw materials equipment and finished goods, in conjunction with global manufacturing and marketing. This rapid trend of globalization has increased the international material exchange, which in turn has enhanced the strategic importance of international logistics”.

Figure 2.1 shows the scenario for air freight in Brazil, in the year 2003. It is possible to notice that some cities act as hubs for some regions, concentrating and distributing the flows throughout these regions – this is the case of Brasilia, in

the middle of the country; Salvador, Recife and Fortaleza, in the Northeast region of the country; and Manaus and Belem, in the North region of the country. It is also interesting to notice a heavy link between the two major Brazilian cities, Rio and Sao Paulo.



**Figure 2.1: Air Freight Transportation Matrix in Brazil – 2003 (source: Transport Infrastructure/IBGE – 2005)**

Table 2.3 shows the five main linkages in Brazil for cargo in the year 2008. The main linkage observed was between Guarulhos-SP and Manaus-AM airports, summing up more than 70,000 ton of cargo transported and with an increasing rate of 10.0 % in relation to the year 2007.

**Table 2.3: The Top 5 Linkages in the Brazilian Domestic Freight Market**

Linkage (Round Trip)	Freight (Kg)		Variation (%) 2007 -
	2007	2008	
Manaus-AM (MAO) – Guarulhos-SP (GRU)	64,931,394	71,399,554	10.0
Guarulhos-SP (GRU) – Salvador-BA (SSA)	29,742,762	33,671,417	13.2
Guarulhos-SP (GRU) – Recife-PE (REC)	26,723,928	31,956,429	19.6
Guarulhos-SP (GRU) – Porto Alegre-RS (POA)	29,212,307	28,453,357	-2.6
Fortaleza-CE (FOR) – Guarulhos-SP (GRU)	24,094,861	25,583,175	6.2

Source: ANAC (2008)

According to McKinsey report (2010), the airports that handle the majority of freight transported in Brazil are located in São Paulo. The airports of Viracopos – SP and Guarulhos – SP represent together approximately 70% of the volume of cargo handled in the country. According to an IATA's estimation, around 37 million tons of cargo was transported by the airlines in 2009, with Brazil responding for only 1% of the total international cargo transported around the world.

At the same report (McKinsey – 2010), it is cited that one of the reasons for the bashful Brazilian cargo handling is the existence of restrictions in infrastructure for processing international cargo. When evaluated, the export terminals at the airports of Guarulhos - SP, Viracopos – SP, Confins - BH and Salvador - BA showed that they already operate with considerable limitations, near or above their estimated capacities. In addition, import terminals in Guarulhos - SP, Viracopos - SP and Vitoria - ES are restricted, while the airport of Campinas – SP already operates above its capacity. According to the Ipea report (2010), the Guarulhos - SP airport accounted for 32.7% of the total cargo transported, followed by Viracopos – SP, with 15.7% and Manaus – AM, with 9.6%. These three airports concentrate around 63% of the air cargo moved in the country in 2008.

The passenger market has also been showing impressive growth rates. In the ACI Report (2007), it is mentioned that in 2007 - in relation to 2006 - the total world passengers grew 6.8%, achieving 4.8 billion passengers transported in the world. The fastest growing region for passenger was the Middle East, with an

increase of 11.3%, followed by Africa and Asia-Pacific, with 11.2% and 9.1% respectively. The region to which Brazil belongs, the Latin America/Caribbean, was the fourth one with 9% of an increasing rate. The total aircraft movements handled by the world`s airports was 76.4 million, an increase of 2.4% from the previous period.

Table 2.4 shows the list of the Top 10 airports in the world in the year 2007 in terms of passengers' movement, according to the ACI Report (2007). Four of these ten airports are in USA.

**Table 2.4: List of 10 Busiest Airports in the World**

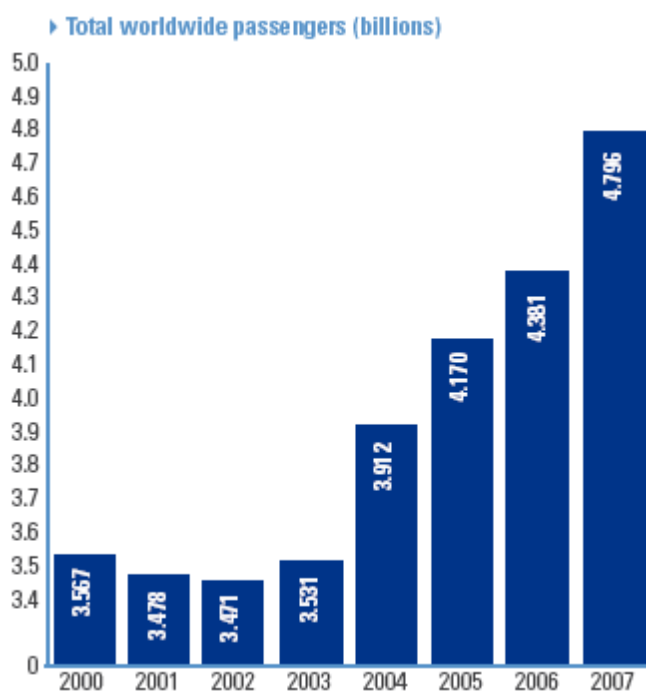
Rank	City	IATA Code	2007 PAX <sup>2</sup>
01	Atlanta - Jackson Hartsfield	ATL	89,379,287
02	Chicago - O'Hare	ORD	76,177,855
03	London – Heathrow	LHR	68,068,304
04	Tokyo – Haneda	HND	66,823,414
05	Los Angeles	LAX	61,896,075
06	Paris – Charles de Gaulle	CDG	59,922,177
07	Dallas Fort Worth	DFW	59,786,476
08	Frankfurt	FRA	54,161,856
09	Beijing	PEK	53,583,664
10	Madrid – Barajas	MAD	52,122,702

**Source: ACI World Airport Traffic Report - 2007**

Figure 2.2 shows the number of passengers transported from the year 2000 through 2007. As mentioned in this ACI study, “this performance keeps the airport industry on track for a predicted 9 billion annual passengers in 2020”.

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<sup>2</sup> PAX: Passengers



**Figure 2.2: Total Worldwide Passengers (billions) – Source: ACI Report (2007)**

According to the ICAO Annual Report (2007), the Gross Domestic Product (GDP) in the world has increased 4.9% in the year 2007. The regions throughout the world have experienced different rates of increase. Table 2.5 below lists these rates for each region.

**Table 2.5: GDP Growth Rates by Region**

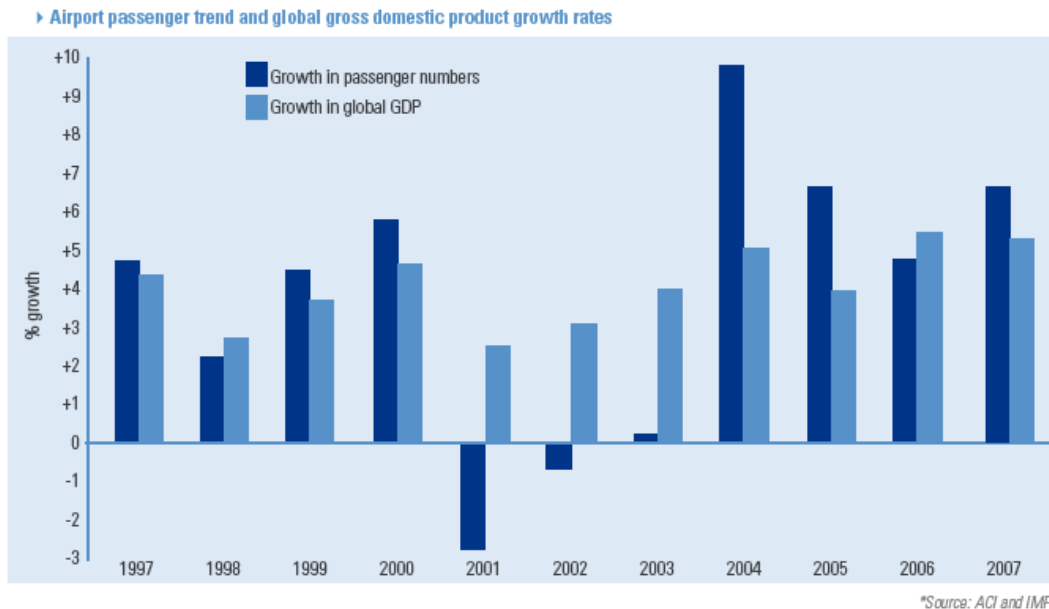
Region	GDP Growth Rate
North America	2.2%
Africa	6.2%
Asia-Pacific	7.2%
Europe	3.3%
Latin America/Caribbean	5.6%
Middle East	5.8%

**Source: ICAO Annual Report – 2007**

According to an ACI Report (2007), the growth in the air transportation sector is strongly dependent of the growth rates of the Gross Domestic Products (GDP). Figure 2.3 shows the relation between global gross domestic product



growth rates and the trend for the air passenger transportation in the period 1997 through 2007. Negative rates for the growth in the number of passengers were noticed in the year 2001 – the year of the terrorist attacks in USA. These rates started to increase again in 2003, almost achieving two digits in 2004.



**Figure 2.3: Airport Passenger Trend and Global GDP Growth Rates – Source: ACI Report (2007)**

The Latin America/Caribbean region accounts for 27 countries and 203 airports, and had a movement of 328 million passengers in 2007. The countries that have shown the highest increasing rates were: Venezuela (23.4%) and Peru (24.3%), Mexico (13.8%), Brazil (7.8%), Colombia (6.9%) and Argentina (6.8%).

Table 2.6 lists the Top 10 airports in the Latin America/Caribbean region, according to its passenger movement in year 2007.

**Table 2.6: The Top 10 Airports in Latin America/Caribbean Region - 2007****▶ Top 10 airports 2007: Latin America-Caribbean**

	City	Passengers	% Chng
1	MEXICO CITY, MEXICO	25 981 662	4.7
2	SÃO PAULO, BRAZIL (GRU)	19 560 963	18.0
3	SÃO PAULO, BRAZIL (CGH)	15 250 058	(17.4)
4	BOGOTA, COLOMBIA	12 763 564	8.4
5	BRASILIA, BRAZIL	11 616 097	11.9
6	CANCUN, MEXICO	11 483 741	16.6
7	RIO DE JANEIRO, BRAZIL	10 782 268	15.2
8	SAN JUAN, PUERTO RICO	10 470 357	(0.3)
9	CARACAS, VENEZUELA	8 357 446	23.4
10	GUADALAJARA, MEXICO	7 784 286	13.9

**Source: ACI Report (2007)**

Table 2.7 shows the Top 20 countries by passengers in 2007. Brazil appears in the 9<sup>th</sup> position with more than 120 million passengers transported in 2007, keeping the same position in the same rank in 2006.

Table 2.7: The Top 20 Countries by Passengers in 2007

▶ Top 20 countries by passengers

	Country	Passengers 2007	% Chng	Pop. rank*	Rank 2006†
1	USA	1 450 454 344	3.3	3	1
2	CHINA	349 833 285	14.3	1	2
3	UNITED KINGDOM	242 994 752	2.3	22	3
4	SPAIN	210 034 018	8.7	28	5
5	JAPAN	203 530 697	0.3	10	4
6	GERMANY	185 738 662	6.0	14	6
7	FRANCE	140 178 881	5.0	19	7
8	ITALY	129 240 610	9.9	23	8
9	BRAZIL	120 403 126	7.8	5	9
10	CANADA	101 192 029	6.0	36	10
11	AUSTRALIA	101 127 149	6.9	53	11
12	INDIA	99 925 857	24.0	2	12
13	MEXICO	85 250 088	13.8	11	13
14	TURKEY	66 848 485	13.2	17	15
15	KOREA (REP OF)	64 940 756	5.9	25	14
16	THAILAND	57 155 149	8.4	20	16
17	INDONESIA	56 204 358	9.7	4	17
18	RUSSIAN FEDERATION	51 567 869	19.3	9	20
19	NETHERLANDS	50 655 217	4.1	61	18
20	MALAYSIA	46 507 476	6.6	44	19

Source: ACI Report (2007)

Figure 2.4 shows the number of passengers in Latin America/Caribbean region in the period 1997 through 2007.

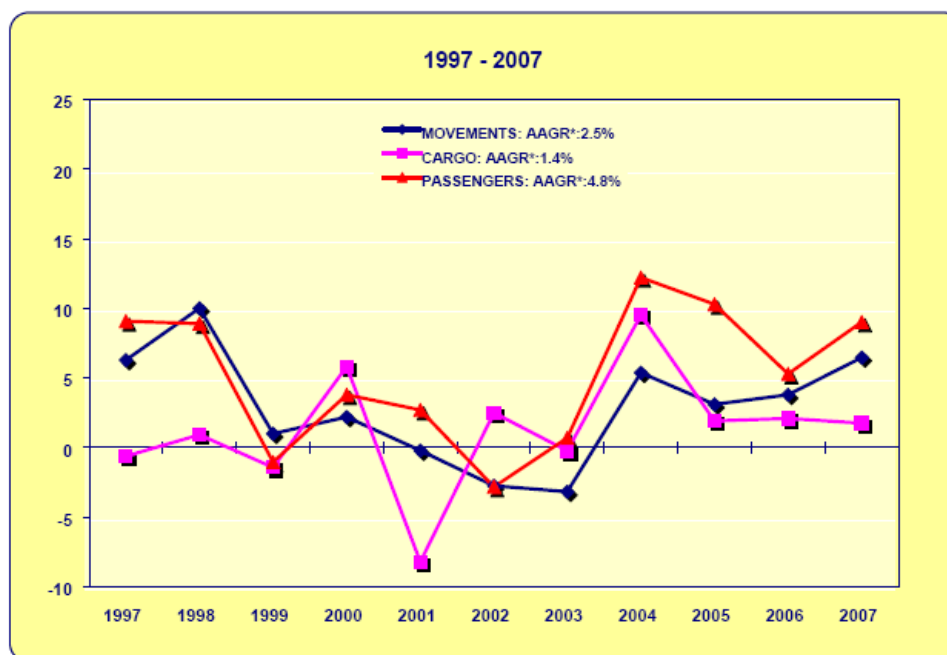


Figure 2.4: Passenger Number for the Period of 1997-2007 – Source: ACI Report (2007)

The Brazilian airline industry has experienced a high growth in the recent years (average 10% per year), but there is still space for growing, mainly because the market is still incipient (about 0.3 trips/inhabitant per year compared to 1.7 trips/inhabitant per year in developed countries). Also, the airport assets are typically underutilized in Brazil with less commercial revenues (typically less than 25% of total airport revenue) as compared to international airports (55% or more of total revenues, in the best cases) – McKinsey, 2010.

According to the ANAC Report (2007-B), the core business of the air companies in Brazil is the passenger market, representing 85% of their revenues. The 50 main airports in the country account for approximately 98% of the passengers transported. The domestic air transportation in Brazil follows the trend noticed in countries with continental dimension, such as USA, Canada, Australia, China and Russia. The domestic market in Brazil represents 89% of the total market, with the international market accounting for 11%.

According to the McKinsey report (2010), the Brazilian passengers are mostly men (62.7%), aged between 25 and 50 years (44.8%). Moreover, the socioeconomic data collected in the survey showed that most travelers are employed, with monthly family income ranging from R\$ 2,000 to R\$ 14,000. About two thirds of the passengers fall into this income range. However, when evaluating the distribution of passengers by frequency, it is observed that this situation is intensified in the group of frequent travelers (six or more trips per year). In practice, the average price of air tickets in Brazil presented a decrease in real terms, by almost 50% over the past five years, rising from a level of almost R\$0.50/km flown to a level below R\$0.30/km flown (McKinsey – 2010).

Another important feature cited by the referred report (McKinsey – 2010) is that the use of the air transportation mode doubled from 1997 to 2008: from 0.3 to 0.6 PAX/inhabitant. This growth, according to the report, was driven by the improvements achieved in the Brazilian economy as a whole and by the significant price reductions (events that have occurred at the same period). The Brazilian economic growth lifted a portion of its population for classes B and C, which brought new consumers to the civil aviation market. In parallel, the liberalization of the sector allowed the intense competition among airlines, which

ultimately reduced the air ticket prices on an average of 48%, between 2003 and 2008.

In the ANAC Report (2008) it is mentioned that the Available Seat-Kilometer (ASK) offer in the domestic market in Brazil has increased 17.6% in the first semester of 2008 in comparison to the same period in 2007. In the international market, it has increased 37.9% in the same period. Takar and Fariello (2009) mention that the value of the American dollar (US\$) has been decreasing in regard to Real, the Brazilian currency, which diminishes the expenses of the Brazilian companies with the leasing costs of aircrafts. Another positive fact is the decreasing in the price of the oil barrel, after reaching US\$150/barrel last year. Nowadays the oil barrel costs around US\$70 with the fuel representing almost one third of the total costs for the air companies.

Table 2.8 shows the market share for the Brazilian domestic market. The duopoly of the Companies TAM and Gol, which represented 93% of the market share in august 2008, has diminished to 85% of the market in the same month of 2009. Although it is still highly concentrated, some Companies already started to show important growing rates, as can be noticed for Azul and Webjet, summing up almost 10% of the domestic market in August 2009, according to Takar and Fariello (2009).

**Table 2.8: Market Share in the Brazilian Domestic Market**

<b>Company</b>	<b>Aug/08</b>	<b>Apr/09</b>	<b>Aug/09</b>
TAM	54%	49%	44%
Gol	39%	39%	41%
Azul (*)	-	3.7%	5%
WebJet	2.97%	3.7%	4.98%
OceanAir	2.21%	2.77%	2.70%
TRIP	1.32%	1.25%	1.79%

(\*) Azul only started to fly on November, 2008.

**Source: Takar and Fariello (2009)**

According to McKinsey report (2010), the passenger domestic market was more regulated in the year 2002 than today, and six major airlines were competing in that market (Varig, TAM, Transbrasil, Rio Sul, Gol and VASP). From 1997 to

2002, there was an annual average growth of 4% for the domestic and international markets. After the economic deregulation of the sector in 2002, the competition amongst companies, mainly in terms of price, was intensified and the market as a whole began to grow three percentage points above the previous period.

Table 2.9 shows the 10 most important linkages for the Brazilian domestic market. With high rates of frequency, the linkage between the airports of Congonhas - SP (CGH) and Santos Dumont – RJ (SDU) is the busiest and showed a variation of 11.8% in the year 2008 in relation to the year 2007. The total number of passengers transported in this linkage was 3,310,405. The second one, between the airports of Congonhas – SP (CGH) and Brasilia – DF (BSB), was more than two times less than the CGH-SDU linkage.

**Table 2.9: The Top 10 Linkages in the Brazilian Domestic Passenger Market**

Linkage (Round Trip)	Passengers Transported		Variation (%) 2007 -
	2007	2008	
Congonhas - SP (CGH) – Santos Dumont – RJ	2,961,125	3,310,405	11.8
Congonhas - SP (CGH) – Brasilia – DF (BSB)	1,306,148	1,449,455	11.0
Guarulhos – SP (GRU) – Salvador – BA (SSA)	1,256,402	1,373,223	9.3
Galeao – RJ (GIG) - Brasilia – DF (BSB)	1,161,864	1,340,988	15.4
Congonhas - SP (CGH) – Confins – MG (CNF)	1,015,497	1,237,349	21.8
Guarulhos – SP (GRU) – Recife – PE (REC)	819,480	1,171,271	42.9
Guarulhos – SP (GRU) – Porto Alegre – RS	830,801	1,065,189	28.2
Curitiba – PR (CWB) – Congonhas – SP (CGH)	1,068,056	1,031,219	-3.4
Congonhas – SP (CGH) – Porto Alegre – RS	1,092,994	995,887	-8.9
Galeao – RJ (GIG) – Salvador – BA (SSA)	883,879	975,164	10.3

Source: ANAC (2008)

The McKinsey report (2010) revealed that 15 airports in Brazil have about 80% of domestic origins and destinations, with the airports of São Paulo having the largest share of the traffic, with the main flows being from/to the airports of Rio de Janeiro (Galeao and Santos Dumont), Brasilia - DF, Belo Horizonte - MG

(Confins) and Salvador - BA. The Southeast region accounts for about 45% of the origins and destinations. Figure 2.5 illustrates it.



**Figure 2.5: The Main Flows in the Domestic Passenger Market – Source (McKinsey – 2010)**

It is possible to notice that the main hubs of the country are the airports of Guarulhos - SP, Congonhas - SP, Brasília - DF and Galeao - RJ. In 2009, the 25 busiest domestic linkages had at least one of these airports as an origin or destination. From the 10 busiest domestic linkages, only one - which connects the two hubs outside Sao Paulo, Rio de Janeiro or Brasília, did not have an origin or destination in the metropolitan region of Sao Paulo. Recently, there has been a significant growth in passenger traffic in these 20 major airports - about 10% annually since 2003, with particular emphasis on Guarulhos - SP, Viracopos - SP, Galeao - RJ, Santos Dumont - RJ and Brasília - RJ. In 2009 for instance, the three major airports of Sao Paulo moved around 38.5 million PAX, being 21.6 million in Guarulhos - SP, 13.6 million in Congonhas - SP and 3.3 million in Viracopos -

SP. Despite the global financial crisis, the Sao Paulo State could end up the year with a demand growth of 8.1% over 2008 (McKinsey – 2010).

The airport of Guarulhos - SP is currently the international Brazilian hub, offering the widest range of connections to destinations outside the country. With a traffic volume accounting for more than 300,000 passengers in 2008, United States, Argentina, France, Chile, Germany, Spain and Italy are, by this order, the main origins / destinations of the linkages with this airport. From the 10 international busiest routes, taking into consideration the origins and destinations within a country in aggregate, only three depart or arrive from/to the airport of Galeao - RJ (McKinsey – 2010).

The top 20 Brazilian airports have a total handling capacity of 126 million PAX/year, which is very close to the current demand. Thus, the airport system already faces bottlenecks - in passenger terminals, runways and patios – in 19 of the 20 major airports, being the most critical case of Sao Paulo, the main hub of the country, with about 25% of the total traffic. If the historical growth pace of demand is kept, the country would have to add up to 200 million passengers per year capacity by the year 2030, requiring building an infrastructure comparable to about nine airports during this period (McKinsey – 2010).

In this context, it is expected that the demand continues to grow at significant rates over the next 20 years. The expected growth in demand (average 5% per annum in the baseline scenario, or up to 7% per year, in the most optimistic scenario) will lead the Brazilian commercial aviation industry demand to achieve impressive levels above 300 million PAX per year, which represents three times the current demand (McKinsey – 2010).

This growth will be driven mainly by the country's less developed regions (North and Northeast), since it is expected that they grow faster than the currently more developed regions (South and Southeast). This is also an important reason that Brasília - DF has been gaining importance in this period, since the airport is an important hub linking the North and Northeast and Mid-South of the country. In this way, the map of participation by major regions metropolitan areas should be changed significantly by 2030 (McKinsey – 2010).



The main challenges faced by the Brazilian airports are certainly on the ground, where the processing of passengers and aircraft occurs. To illustrate that, at least 13 airports may face the saturation on their passenger terminal or on their patio systems by 2014. These are therefore systems that naturally should be prioritized in terms of investments. The main challenge found by the sector is, therefore, to promote an expansion of processing capacity of approximately 190 million passengers a year by 2030 (McKinsey – 2010).

A preliminary estimation points out for an investment need of around R\$ 25-34 billion until the year 2030, in the 20 airports studied. These investments should be concentrated on the expansion of passenger terminals (60-70%), with the airports of Sao Paulo, as expected due to the high degree of saturation, demanding the highest volume of investments in the country (McKinsey – 2010).

It is recommended that such investments are structured on three stages (McKinsey – 2010):

- a) Emergency actions for the year 2010: 13 out of the 20 major Brazilian airports have immediate bottlenecks that need to be resolved in a short term. For these airports, a number of steps were identified and divided into three groups: small works and investments, operational improvements and regulatory measures;
- b) Structuring measures: for the top 20 airports, huge investments are needed in order to meet the projected demand. Investments permeate all parts of airports, including passenger terminals, runway systems and patios. However, the biggest gap is in regard passenger terminal issues, which will require more than 60% of total investments;
- c) Special efforts for special events, such as the World Cup - 2014 and the Olympic Games - 2016, require special attention. Besides the investments already planned to receive the natural demand for the years 2014 and 2016, this will require a specific planning and operational actions to absorb the additional volume of passengers generated by the events.

It is also necessary to eliminate avoidable costs and structural barriers identified in the system, focusing the investments on the air traffic control and infrastructure. From the standpoint of governance, this would have to seek for an

integrated planning, not only on the key activities of the airline industry, but the integration with other modes of transportation (McKinsey – 2010).