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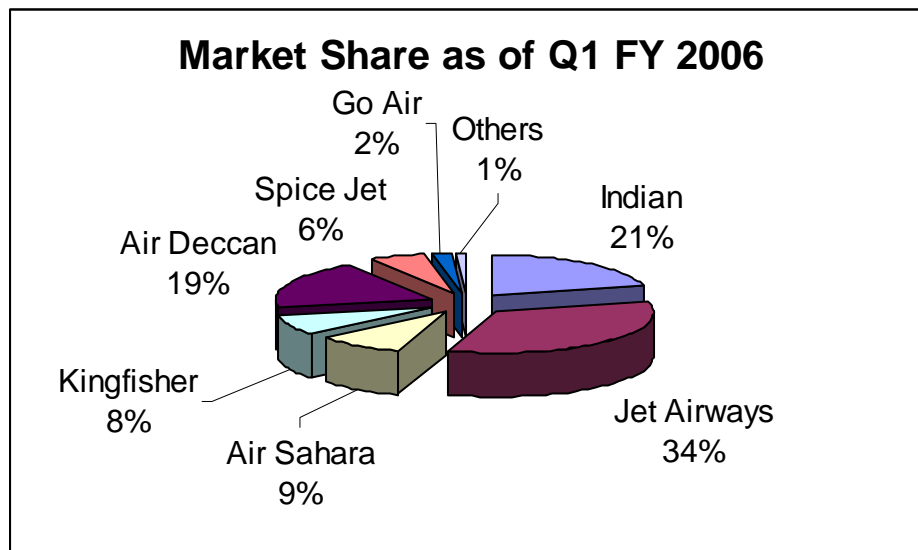
Introduction

Background

The air transport sector in India has undergone massive changes in the last decade. The Air Corporation Act 1953 led to nationalization of the airlines services. Consequently the assets of nine existing companies were transferred to two entities in the aviation sector controlled by the Government of India – Indian Airlines and Air India. For many years, air travel in India was perceived as an elitist activity and there was restricted growth in the industry.

In 1986, private sector players were permitted as air taxi operators. This led to entry of Jet, Air Sahara, NEPC, East-West & Modiluft. With the passing of the Air Corporation Act 1994, this sector was opened up and private carriers were permitted to operate scheduled services. While six operators were granted license only Jet and Air Sahara were able to start their services.

However, the year 2003 marked a watershed in the history of civil aviation in India with the entry of low cost carriers like Air Deccan and Spice Jet. This was followed by entry of other private airlines, large and small on to the market, including Kingfisher Airlines, Paramount and Go Air.



From the year 2003 onwards the perception of air travel changed. Aviation became more affordable. There has been a large increase in passenger traffic. Also there has been intense price competition that has resulted in discounted fares, promotional offers and introduction of flights to newer destinations. The co-existence of full service carriers and low cost carriers has also given the consumer a wide choice of service on the market.

However, this intense price competition led to losses for the airlines. The total industry losses for the year 2006-07 were over USD 500 million. As a result, the market structure in the air transport sector is undergoing rapid changes. There appear to be major corporate restructuring measures underway in this sector mainly in the form of mergers and acquisitions (M&As). The recent mergers of Indian and Air



India, Kingfisher and Air Deccan and Jet and Sahara have led to an industry structure which is sufficiently concentrated to raise a fundamental question about whether the operation of market forces are adequate to prevent the abuse of market power. Thus as a result of the ongoing M&As, from being till recently an industry with around twelve players involved in stiff competition, the industry is now left with nine players of which three are big players and the remaining are small ones. The changing market structure has provided a new competitive dimension to the industry. It is expected that as a result of the M&As taking place and resultant scale economies, efficiency and productivity will increase, thereby leading to enhancement of profits. It is in fact argued that such consolidation is needed in order to ensure efficient and sustained functioning of the airline operators.

However as a result of the M&As, the nature of the market, which was earlier open to many players thereby enhancing competitiveness, is now changing. It is perceived that this may lead to anti competitive practices on the market with some large players dominating the market.

The competition assessment of M&As in the air transport sector is generally more complex than in many other economic sectors because of the nature of the industry. The role of the Competition Commission becomes important in the current scenario in this sector in the sense, that there is need for assessing whether the changing market scenario, and the benefits of the combinations in terms of 'efficiency mergers' outweigh the costs or adverse effects in terms of anti competitiveness. Thus while on the one hand, combinations like M&As currently occurring in the sector may improve efficiency in the sector in the form of higher productivity and lower costs, on the other, they may lead to abuse of market power and anti competitive effects.

This study has been undertaken in the above context.

Given the above context, this study will focus upon analyzing the nature and degree of competition prevailing in the passenger segment of the domestic air transport sector and will provide recommendations for appropriate action that may be taken by the Competition Commission to preserve and foster a competitive environment.

We are pleased to present the Revised Final Report of the Study.

Scope of the Study

The study will look at the issue of competition at two levels – air transport and airports. The two issues will be dealt with separately in the study. Broadly, the study will provide a market overview, discuss any significant anti-competitive practices by various players and their effects, address implications of this study for Competition Policy and Law in India, and outline issues for advocacy for India's Competition Commission.

Terms of Reference

The following are the Terms of Reference of the Study.

1. Provide a literature review, tracing the history of evolution of the aviation industry in India, outlining among other things, the growth of the industry in terms of passengers and number of flight operators on a macro level.
2. Discuss the concept of relevant product and geographic market in the passenger segment of the domestic air transport sector.
3. Provide an assessment of the degree of competition in the relevant market in terms of key features such as time slots, space, etc.



4. Provide an assessment of the significant anti-competitive practices in the air transport sector on the lines of the Competition Act 2002. Three major areas, namely anti-competitive agreements, abuse of dominance and regulation of combinations will be analysed.
5. Examine, in the context of the above three areas, public barriers to entry in terms of policy regulations as well as private barriers to entry.
6. Evaluate the intensity with which most airlines carriers operate between city-pairs. Analyze and discuss from the stand-point of competition among the carriers.
7. Evaluate operations at various airports and the role played by previously allotted slots in creating competitive advantage, recognizing that the previously allotted slots mechanism to various air carriers at airports in and of itself creates a superior position in the competition ladder.
8. Study issues relating to cartels. In this context, cases of cartels in countries like US and the UK will be studied to examine the type of offences, the legal provisions in these countries and the issues emerging in terms of competition policy there from. Draw necessary comparisons wherever relevant in the Indian context.
9. Study the issue of competition in air ports.
10. Analyse the Implications of this study for Competition Policy and Law. In this context, the three major areas of the Competition Act, namely, prohibition of abuse of dominant position, anti-competitive agreements as well as regulation of combinations, should be analysed for the domestic segment of the air transport sector in India. Appropriate recommendations and suggestions should be made for the air transport sector.
11. Examine issues relating to advocacy for the Competition Commission of India, in order to enhance competition. Provide appropriate suggestions and recommendations.

Data sources

Primary data was collected from Directorate General of Civil Aviation (DGCA) on passenger traffic. Route-wise monthly passenger data for each airline was collected for the period April 2006-March 2007. Information on flight-wise passenger load factor was also sought. However, such data was available only for Indian Airlines. Hence any analysis on PLFs is done only for the Indian Airlines.

Data relating to price of ticket as also the taxes & surcharges were collected from the websites of individual airlines.

Relevant reports were also collected from DGCA, Ministry of Civil Aviation and Airport Authority of India. In addition, reports prepared by other organizations were consulted. Secondary sources including articles and books on the subject were consulted as also web based information. Over and above this, individual interviews were conducted with major stakeholders.

Methodology

The methodology for the study consisted of primary data analysis, secondary data analysis, analysis of information collected from stakeholders and interviews with resource persons and experts. To the extent possible, the Competition Assessment Framework has been used as the methodological framework for the study. It may be mentioned here that all times, the ASCI research team has worked closely with the officials of CCI and FIAS in the conduct of the study.

Detailed methodology for each TOR is spelt out in the relevant sections.



I. The history of evolution of the aviation industry in India will be traced from 1953 onwards. Also, this section will look at the growth of the industry in terms of passengers, number of flight operators, etc on a macro level.

With the incorporation of the Air Corporation Act on 28th May 1953, the airline industry in India was nationalized. In accordance with this Act, two air corporations viz, Air India International and Indian Airlines Corporation were established and the assets of all the existing air companies were transferred to these two organizations. The Act prohibited any person, other than the corporations or their associates to operate any scheduled air transport services from, to or across India. This in effect gave monopoly to Indian Airlines and Air India on air transport in India.

In 1986, private airlines were allowed to operate charter and non-scheduled services under the Air Taxi Scheme which meant, inter-alia that they could not publish time schedules, or issue tickets to passengers. The Air Taxi Scheme was introduced in 1986 to boost tourism and augment domestic air services. A host of private players commenced operations as air taxi operators including Air Sahara, Damania Airways, East-West Airlines, Jet airways, Modiluft and NEPC Airlines.

With effect from 1st March 1994, the Air Corporation Act was repealed and the air transport sector in India was opened to private players subject to fulfillment of statutory requirements for operation of scheduled services.

In 1997, several steps were taken to remove the barriers to entry and exit from the sector. There was only a pre-entry scrutiny of applications to verify the financial soundness, maintenance, security and safety aspects of operations and human resources development proposed to be undertaken by the applicant. The choice of the aircraft type and size was also left to the operator. Another major development in this sector in 1997-98 was that the government approved foreign equity up to 40% and NRI/OCB investment up to 100%. By 1997, only 4 operators that started operations following the deregulation continued to operate- Jet airways, Air Sahara, Jagson and Modiluft.

In August 2003, Air Deccan commenced operations. Air Deccan was the first low cost carrier to enter the domestic aviation industry. The entry of low cost carriers changed the competitive landscape of the industry. Since then, many other Low Cost Carriers have entered the market. In 2005, Kingfisher began operation. In the same year, low cost carriers like Go Air, Paramount and Spicejet also entered the market. Indigo Airlines, another low cost airlines also entered the market in 2006. As on January 2008, there are 14 scheduled and 70 non-scheduled operators in India¹.

Categories of Air Transport Services

- a. Scheduled Air Transport Service - means an air transport service undertaken between the same two or more places and operated according to a published time table or with flights so regular or frequent that they constitute a recognizably systematic series, each flight being open to use by members of the public.
- b. Non-Scheduled (air-taxi) Service- Air Taxi Operation means an air transport service other than scheduled air transport service and may be on charter basis and/or non-scheduled basis. The operator is not permitted to publish time schedule and issue tickets to passengers.
- c. Air Cargo Service- An air cargo service means air transportation of cargo and mail. Passengers are not permitted to be on these operations. It may be on scheduled or non-scheduled basis.

¹ Detailed information is available at <http://dgca.nic.in/operator/sch-ind.htm>



These operations are to destinations within India. For operation outside India, the operator has to take specific permission of DGCA demonstrating his capacity for conducting such operation.

The above definitions are as defined by the Ministry of Civil Aviation.

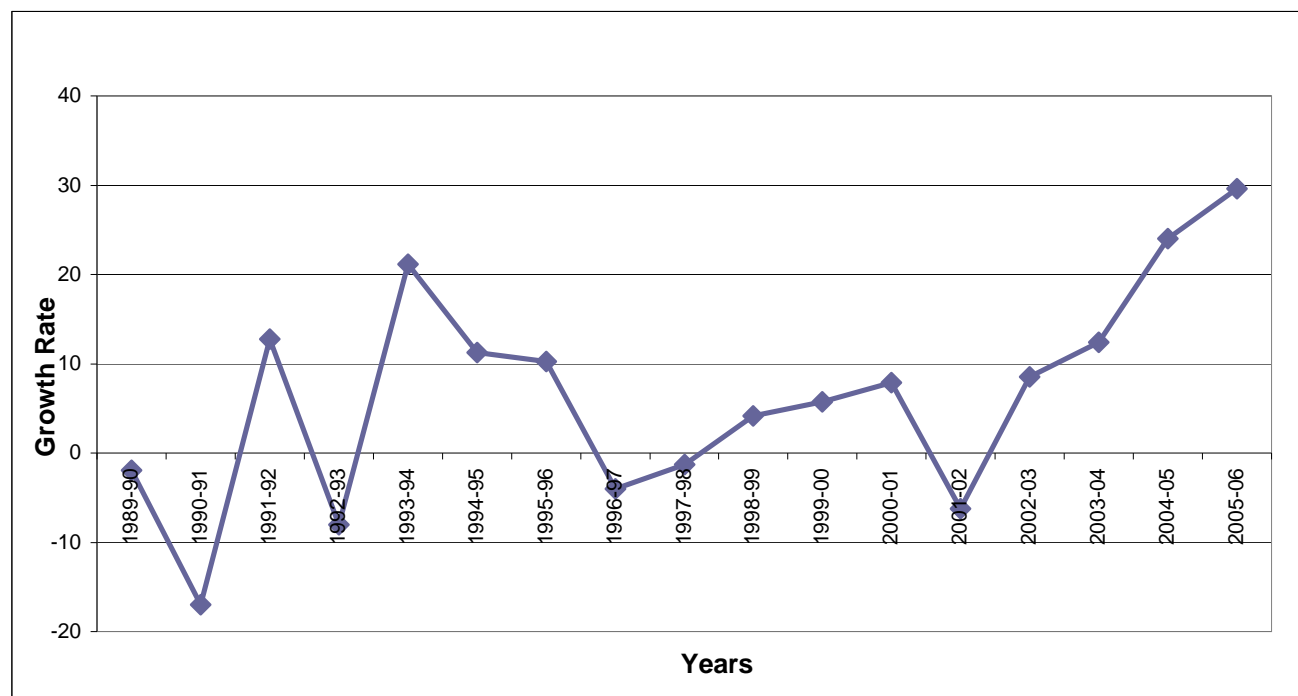
Growth of the Sector

The Indian Aviation sector has shown an impressive growth post privatization and after the start of arrival of Low Cost Carriers from 2003. The passenger traffic maintained a CAGR of 19% from 2002-03 to 2006-07 in the domestic segment. The aircraft traffic in the top tier cities in India has grown by 33% in 2005-06 and 14% in 2004-05. Most of the airports have recorded a growth of over 30% YoY in 2005-06.

According to data released by DGCA, domestic airlines carried 25.20 million passengers during 2007-08, registering a growth of 27.8%. The growth of domestic passengers carried by all scheduled operators is given in the following chart. It can be observed that in the post liberalisation period, except for the year 2001-02, there is a continuous positive growth in the passenger, which signifies that with the introduction of low cost airlines in the Indian aviation industry, a new section of middle-class people are now availing the air transport system.

Figure I.1 : Growth Rate of Domestic Passenger carried by all scheduled operators

(in percentage terms)



Source: Various Air Transport Statistics published by Directorate General of Civil Aviation



Drivers to Growth

The Indian Aviation Industry has witnessed tremendous growth in the past few years. The factors leading to the rise in growth can be divided into demand side and supply side factors.

a. Demand Side Drivers

Increasing disposable income coupled with greater consumerism has led to an increase in the demand for air transport. Disposable income in India has grown five times in the last two decades and the expenditure on transportation as a share of household expenditure increased from 6% to 14%.

The penetration levels of air services however has still been very low at 20 trips/annum/thousand passengers in 2005 as against 2300 trips/ per annum/thousand passengers in United States and 60 trips / per annum/ thousand passengers in China.

b. Supply Side Drivers

Entry of Low Cost Carriers was a trigger point for the sector. The sector for the first time saw multiple slab tariffs such as Apex fares, internet auctions, special discounts and last day fares. Air travel ceased to be an elitist activity and created a whole new segment of air travelers.

One can analyse the Indian Aviation Sector by considering a PEST² analysis.

PEST Analysis

Political	Economic	Social	Technological
<ul style="list-style-type: none"> • Liberalization of the Sector • Excise Duty and Sales Tax on Aviation Turbine Fuel • Modernization of Airports • Interface form Other Agencies • Entry of Low Cost Carriers 	<ul style="list-style-type: none"> • Contribution to Economy • Rising Fuel Costs • Investments in the Sector 	<ul style="list-style-type: none"> • Developments in Airport Cities • Employment Opportunities • Ensuring a Level Playing Field • Safety Regulation • Increase in disposable income • Increase in business travel • Increase in consumer spending 	<ul style="list-style-type: none"> • Growth of Electronic Ticketing • Satellite based Navigation Systems • Technical Cooperation with EU

Source: www.marketresearch.com/map/prod/1482657.html

² PEST is an acronym for political, economic, social and technological analysis.



The Centre for Asia Pacific Aviation (CAPA) predicts that domestic traffic will grow at 25 percent to 30 percent a year until 2010 and international traffic will grow by 15 percent, taking the overall market to more than 100 million passengers by the end of the decade. Indian carriers have 480 aircraft on order for delivery by 2012. It is a phase of rapid growth in the industry due to huge build-up of capacity in the LCC space, with capacity growing at approximately 45% annually. This has induced a phase of intense price competition with the incumbent full service carriers discounting up to 60-70% for certain routes to match the new entrants ticket prices.

Again, the growth in supply in the industry is overshadowed by the extremely strong demand growth, led primarily by the conversion of train and bus passengers to air travel, as well as by the fact that low fares have allowed passengers to fly more frequently. There has, therefore, been an increase in both the width and depth of consumption.

Major Players in Indian Aviation Industry

The rapid growth of Indian economy has resulted in a spillover effect on the airline industry in India. Several new players have entered the industry and many more are expected to enter soon. The chart below shows the entry and exit of airlines in India over the last decade.

The following are major players in the domestic aviation sector:

Indian

Indian (previously known as Indian Airlines) is fully owned by the Government of India and came into being with the enactment of the Air Corporations Act 1953. Indian Airlines began its operation on 1st August 1953 and was entrusted with the responsibility of providing air transportation within the country as well as to the neighboring countries. In April 2007 Indian merged with Air India and a new corporation called NACIL was formed.

Jet Airways

Jet Airways was established on 3 May 1991 with a fleet of 4 Boeing 737-300 aircraft, with 24 daily flights serving 12 destinations. Jet Airways was the first private airline of India to fly to international destinations. It is now a public limited company. Jet Airways bought Air Sahara in April 2007.

Kingfisher Airlines

Kingfisher Airlines started its operations on May 9, 2005 with a fleet of 4 Airbus A320 aircrafts. In a short span of time Kingfisher Airline has carved a niche for itself. The airline offers several unique services to its customers which has become its USP. Kingfisher bought Air Deccan in May 2007.

SpiceJet

SpiceJet, a low cost airline, began its operations in May 2005. It was earlier known as Royal Airways, itself a reincarnation of Modiluft. SpiceJet has chosen a single aircraft type fleet that allows for greater efficiency in maintenance, and supports the low-cost structure.



GoAir Airlines

GoAir Airlines is a low cost airline promoted by Wadia Group. Go Air started its operations in 2005.

Air Deccan

Air Deccan is India's first low cost airline. It is a part of Deccan Aviation Private Limited, India's largest private heli-charter company. Air Deccan was established in 2003 and started operations in August that year. It has revolutionized air travel in India.

IndiGo Airline

IndiGo entered the Domestic Aviation market in August 2006. It presently has a fleet of 18 aircrafts and plans to expand its fleet and network in a phased manner.

Paramount Airways

Paramount Airways is a low cost private airline operating only in South India. It was launched on October 19, 2005 by the Paramount Group, a leading Indian textile manufacturer based in Madurai. The headquarters of Paramount Airways is in Coimbatore



Chart I.1: Entry and Exit of Different Airlines in India

	1995	96	97	98	99	2000	01	02	03	04	05	06
Indian												
Jet Airways												
Air India												
Archana Airways												
Damania Airways												
East West Airlines												
Modiluft												
NEPC												
Alliance Air												
Air Sahara												
Air Deccan												
Kingfisher												
SpiceJet												
Go Air												
Paramount												
Indigo												

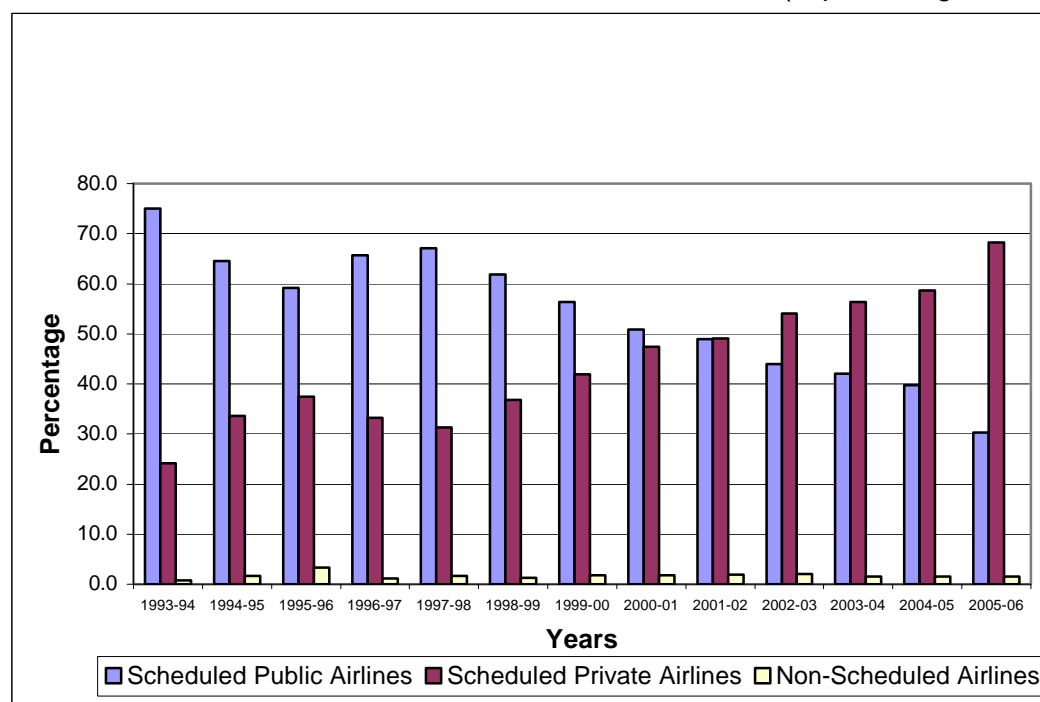
Source: Indian Civil Aviation Industry - Road Map for Growth, 2007 by ASSOCHAM and Ernst & Young



Market Share of Scheduled and Non-Scheduled Players

With the entrance of private airlines as well as low cost airlines in India, the aviation industry is no longer dominated by the government-owned airlines. In fact, one can observe the changing trend now. The private scheduled airlines are dominating the market in terms of passengers carried. The following chart shows how the trend has changed over the last decade and a half. The market share of scheduled private airlines increased from 47.4 percent in 2000-01 and 68.2 percent in 2005-06. Today Indian aviation industry is dominated by private airlines, including low cost carriers.

Figure I.2 : Share of Total Domestic Passenger Traffic Carried by All Scheduled and Non-Scheduled Operators of India (1993 – 94 to 2005 – 06)
(in percentage terms)



Source: Calculated from various Air Transport Statistics published by Directorate General of Civil Aviation

Share of Total Passenger Traffic of Various Airlines

If we look at the market share in the overall passenger traffic of various airlines for the period October-December 2006, we find that Jet held 27% of the market share followed by Air Deccan which held 19%. Interestingly, Indian, the oldest player in the industry also held 19%. Kingfisher Airlines held only 9.7% of the market at that time while Jetlite held 8.8%.

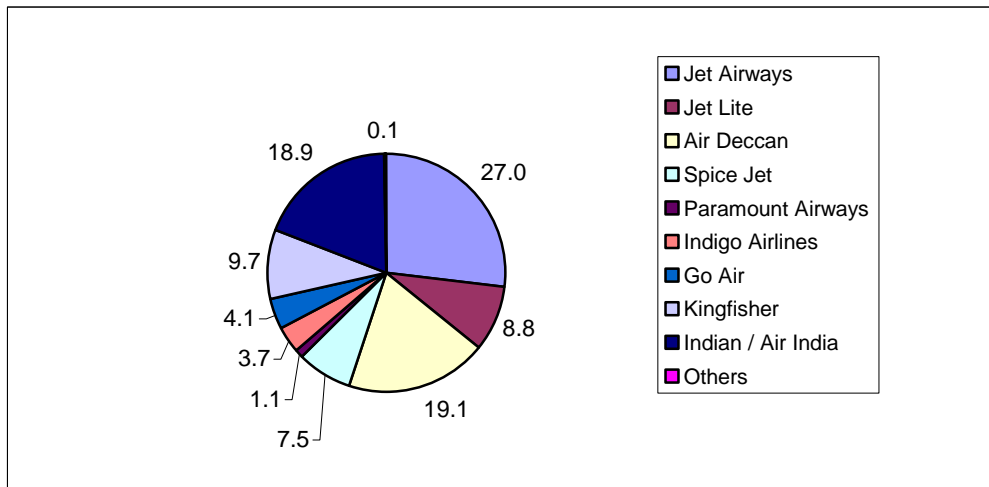
As already stated, in 2007 three mergers happened in the Indian Air Transport Sector. So if we look at the market shares post merger, Jet Airways after the merger with Air Sahara now controls around 31% of the market and Kingfisher and Deccan together hold around 28%.



Thus there has been considerable change in the market structures post merger.

Figure I.3 : Share of Total Passenger Traffic of Various Airlines (Oct – Dec 2006)

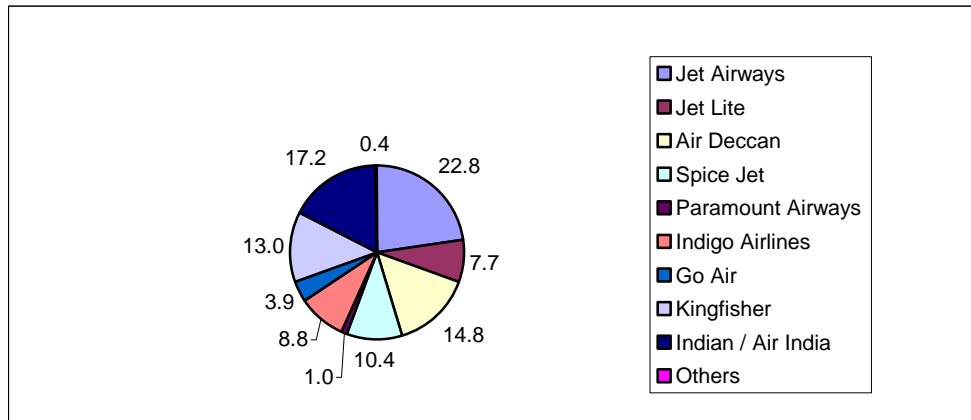
(in percentage terms)



Source: Computed by the authors from DGCA and Quarterly Review of Traffic, Airports Authority of India

Figure I.4: Share of Total Passenger Traffic of Various Airlines (Oct – Dec 2007)

(in percentage terms)



Source: Computed by the authors from DGCA and Quarterly Review of Traffic, Airports Authority of India



Table I.1 : Calculation of HHI

	Market Share 2006	Square of Market Share	Market Share 2007	Square of Market Share	After merger
Kingfisher Airlines	10	100	13	169	784
Deccan	19	361	15	225	
SpiceJet	7	49	10	100	100
Jetlite	9	81	8	64	961
Jet Airways	27	729	23	529	
IndiGo	4	16	9	81	81
Go Air	4	16	4	16	16
Indian	19	361	17	289	289
Paramount	1	1	1	1	1
HHI		1714		1474	2232

Source: Computed by the authors from DGCA data.

The index of concentration has been calculated for the entire passenger segment pre and post merger. The results are presented in the Table above. Since HHI is a prima facie indicator as to whether or not further analysis is warranted to gauge competition, the index as calculated above shows that post-merger further analysis is required.

Fleet Size of All Scheduled Airlines

To cope with the rising number of air passengers, all the airlines have started to increase the fleet size also. The following table shows how the fleet size of all scheduled airlines in India has increased over the last ten years. It increased to 305 in 2006-07 from 247 in 2005-06.

Table I.2 : Fleet Size of All Scheduled Airlines

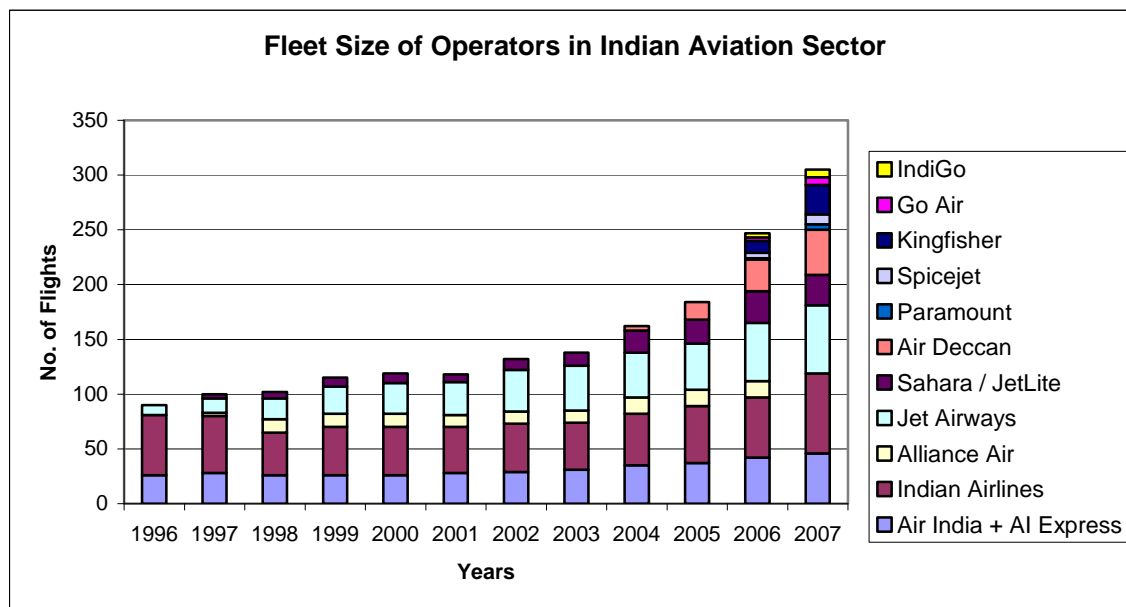
Sl. No.	Name of the Airlines	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1.	Air India + AI Express	26	28	26	26	26	28	29	31	35	37	42	46
2.	Indian Airlines	55	52	39	44	44	42	44	43	47	52	55	73
3.	Alliance Air	-	3	12	12	12	11	11	11	15	15	15	-
4.	Jet Airways	9	13	19	25	28	30	38	41	41	42	53	62
5.	Sahara / JetLite	-	4	6	8	9	7	10	12	20	22	29	28
6.	Air Deccan	-	-	-	-	-	-	-	-	4	16	29	41
7.	Paramount	-	-	-	-	-	-	-	-	-	-	1	5
8.	Spicejet	-	-	-	-	-	-	-	-	-	-	5	9
9.	Kingfisher	-	-	-	-	-	-	-	-	-	-	11	27
10.	Go Air	-	-	-	-	-	-	-	-	-	-	3	7
11.	IndiGo	-	-	-	-	-	-	-	-	-	-	4	7
Total		90	100	102	115	119	118	132	138	162	184	247	305

Source: Report of Aviation Centre of Excellence



There is more than three fold increase in the fleet size of all airplanes in India over the last ten years. The following figure shows the rapid fleet expansion by airlines.

Figure I.5: Fleet Size of Operators in Indian Aviation Sector



Source: Report of Aviation Centre of Excellence

Also, the following table shows the order placed for airplanes by different airliners in 2007.

Table I. 3: Order for Airplanes

Sl. No.	Name of the Airlines	Order for Airplanes
1.	Air India + AI Express	68
2.	Indian	43
3.	Jet Airways	09
4.	Air Deccan	90
5.	Paramount	05
6.	Spicejet	20
7.	Kingfisher	50
8.	Go Air	36
9.	IndiGo	100
Total		452

Source: Report of Aviation Centre of Excellence

Profit / Loss of Domestic Operators

As per the Air Transport Statistics, 2005-06 of DGCA for the period 2005-06, all the private airlines except Jet Airways has incurred a net loss. The following table shows the amount of loss each airline has incurred.



Table 1.4: Net Profit/Loss incurred by Different Airlines
(in rupees)

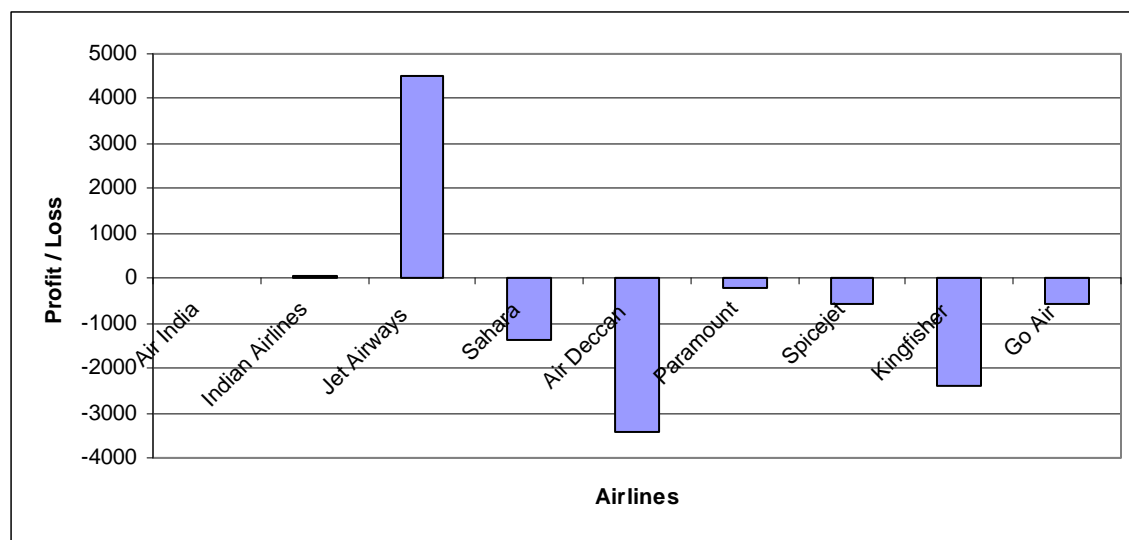
Sl. No.	Airlines	Net Profit / Loss (2005-06) (in million)
1	Air India	26.0
2	Indian Airlines	57.2
4	Jet Airways	4520.4
5	Sahara	-1380.5
6	Air Deccan	-3405.5
7	Paramount	-194.5
8	Spicejet	-575.48
9	Kingfisher	-2395.9
10	Go Air	-583.8

Source: Air Transport Statistics, 2005-06 of DGCA

According to the experts, a combination of factors such as high aviation turbine fuel (ATF) prices, rising labour costs and shortage of skilled labour, rapid fleet expansion, and intense price competition among the airlines is responsible for the losses in this sector³.

Figure I.6: Net Profit / Loss of Different Airlines in 2005-06

(in Rupees million)



Source: Computed by the authors from Air Transport Statistics, 2005-06 of DGCA

³ Turbulent Times for Airlines in India, ICMR Case Studies, available at www.mrindia.org/business%20Updates/micro%20casestudies/Business%20Strategy/MCBS0007.htm



II. & III. The study is expected to concentrate upon the concept of the relevant product and geographic market in the passenger segment of the air transport sector and also provide an assessment of the degree of competition in the relevant market in terms of key features such as time slots, space etc.

To provide an assessment of the degree of competition in the relevant market in terms of key features such as time slots, space, etc.

The concept of the relevant market is fundamental to the issue of competition and its assessment in any sector. As defined in Section 2(t) of the Competition Act 2002, the relevant product market means a market comprising of all those products or services which are regarded as interchangeable or substitutable. The product in the context of the air transport sector is transit from one place to another. Transit from one place to another can occur through direct as well as indirect flights. However for the time sensitive passenger, indirect routes may not be a substitute for direct routes. Also there will be preference for the time and date of travel. Keeping the above in mind, the relevant market is defined as the route between city pairs at a particular time on a particular date.

Since the route or every combination of city pairs at a particular time on a particular day is taken as the relevant market in the sector under study, the assessment is made on the basis of the route between city pairs on particular dates for particular time slots for selected routes. .

The methodology outlined by the Competition Assessment Framework (CAF) has been followed. Key questions for the assessment include the following:

- Has there been much market entry in the past and how successful has it been?
- Does a single airlines or a group of airlines account for a substantial part of the market?
- Does the market structure suggest that the competition may be limited?

The methodology involves the following:

- ❖ An assessment of the percentage of traffic in selected routes on specific dates and specific time slots
- ❖ Share of airlines in the above routes
- ❖ Computation of four firm concentration ratios
- ❖ On the basis of the above, analysis of whether there is evidence of domination in certain routes.
- ❖ Analysis of time slots available to airlines
- ❖ Factors governing allocation of time slots
- ❖ Slot arrangements between merged airlines

Data Description:-

Monthly data for 30 city pairs for the year 2006-07 has been collected from the Directorate General of Civil Aviation. Of these , the city pairs chosen for analysis comprise of the following metros: Delhi, Mumbai, Bangalore, Hyderabad, Chennai & Kolkata.

To assess the degree of competition within a market, a standard measure which can be used is the Herfindahl index. The Herfindahl index is a measure of the size of the firms in relation to the industry and is an indicator of the amount of competition among them. It is defined as the sum of the squares of the market shares of each individual firm. As such, it can range from 0 to 10000 moving from a large no. of amount of very small firms to a single monopolistic producer. Decreases in the Herfindahl index generally indicate a loss of pricing power and an increase in competition, whereas increases imply the opposite. Competition authorities often use a scale such as the following to assess the significance of the HHI, particularly in relation to mergers.



- (a) An HHI of less than 1000 is low, and there are no concerns about market concentration.
- (b) An HHI between 1000 and 1800 is moderate, and competition concerns are not considered likely.
- (c) An HHI above 1800 is high, and might raise competition concerns.

As already stated, metro city pairs were selected, i.e. flights originating to and from a metro. We analysed the monthly passenger data for thirty city pairs for the year 2006-07. Table II.1 below gives the Herfindahl Index of Concentration for these thirty city pairs. The city pairs where the Herfindahl Index was over 1800 have been highlighted. From these thirty pairs we chose Delhi-Mumbai, Delhi-Chennai and Bangalore to Chennai for further analysis. We chose Delhi-Mumbai because of the highest passenger traffic on this sector and the other two were chosen randomly based on data availability.

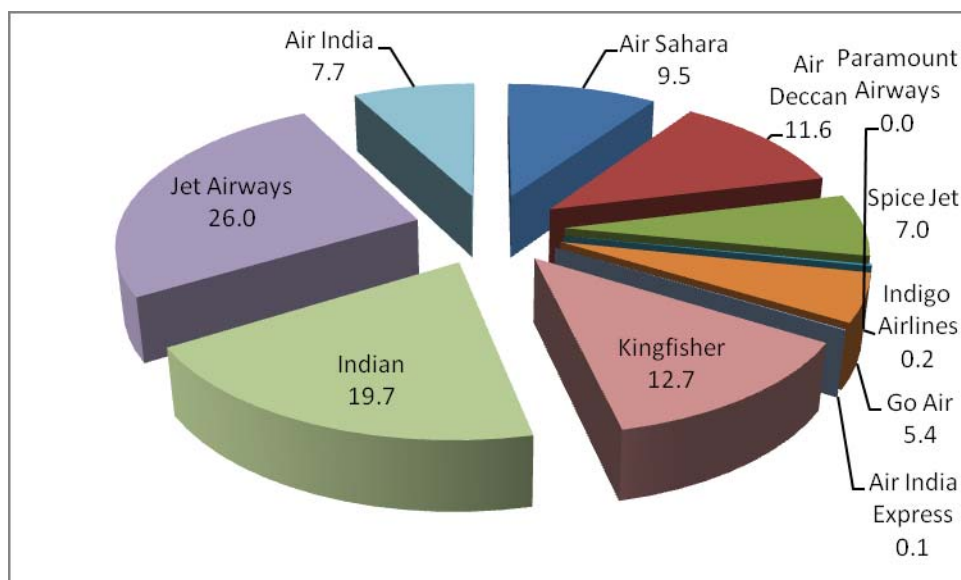


Table II.1: City Pair-wise Herfindahl index of Pax. Carried in 2006-07

Sectors	Concentration
Delhi to Mumbai	1591.5
Mumbai to Delhi	1604.8
Delhi to Chennai	2224.5
Chennai to Delhi	2278.4
Delhi to Kolkata	1662.5
Kolkata to Delhi	1663.5
Delhi to Hyderabad	1506.1
Hyderabad to Delhi	1536.6
Delhi to Bangalore	1595.5
Bangalore to Delhi	1571.0
Mumbai to Hyderabad	1877.0
Hyderabad to Mumbai	1981.1
Mumbai to Bangalore	1814.6
Bangalore to Mumbai	1898.8
Mumbai to Chennai	2662.3
Chennai to Mumbai	2379.8
Mumbai to Kolkata	2224.7
Kolkata to Mumbai	2208.8
Chennai to Bangalore	2371.0
Bangalore to Chennai	2475.7
Chennai to Hyderabad	1672.0
Hyderabad to Chennai	1569.5
Chennai to Kolkata	2662.9
Kolkata to Chennai	2568.4
Kolkata to Bangalore	2646.9
Bangalore to Kolkata	2645.4
Kolkata to Hyderabad	2618.6
Hyderabad to Kolkata	2577.8
Hyderabad to Bangalore	1720.3
Bangalore to Hyderabad	1640.9

Source: Computed by the authors from the DGCA data



Figure II.1: Route 1: Delhi- Mumbai Period: 2006-07

Source: Computed by the authors from the DGCA data

In 2006-07, in the Delhi-Mumbai route, Jet Airways had the largest market share (26%) followed by Indian (20%) and Kingfisher (12.7%)

If we look at the index of concentration, HHI for the Delhi-Mumbai route for the year 2006-07 ranged between 1500 and 1600. According to the Competition Assessment Framework, an HHI between 1000 and 1800 is considered moderate and competition concerns are not likely.

The monthly passenger data indicate a fair stability of market shares of airlines on a monthly basis. However, while the monthly HHI for this sector, ranges between 1500 to 1600, it may be noted that in 2006-07, the mergers between Kingfisher & Deccan & Indian & Air India had not materialized. Also the Jet - Sahara deal, while on table, had not been completed.

Due to unavailability of data, we could not compute the HHI after the mergers. Therefore, just as an exercise we tried to see what would happen if given this scenario the mergers had actually happened. It is seen that now with the mergers of Air India and Indian, Kingfisher and Deccan and Jet and Sahara, the HHI becomes 2681.3. This does raise concern regarding competition in this route.

Slot Policy*

The ICAO defines an airport slot as the time at which an aircraft is expected to arrive at or depart from a capacity constrained airport. For commercial operations which use airport gates, this time is calculated based on when the aircraft arrives at or leaves the gate. To take into account variations in flight times, unavoidable delays etc, airport slots may actually be allotted in terms of a time period such as 1645-1700. The number of slots that can be allotted by an airport would depend upon its capacity. The capacity of an airport is defined as the minimum of parameters such as terminal capacity, runway, baggage belts etc. While terminal capacity is expressed in terms of a maximum hourly throughput of



* Information on slot policy received from DGCA in January 2009.

arriving and departing passengers, runway capacity is defined as the number of air traffic movements (landings or take offs) which can take place during a given period. The minimum of these parameters is used to define the number of slots that can be allotted.

Who allots slots ?

For airports managed by the Airports Authority of India (AAI), the AAI allocates the slots. For JVCs, private and defence airports, the slots are allocated by them as per the details given below:

- ❖ IGI Airport: Delhi International Airport Limited (DIAL), in coordination with AAI.
- ❖ CSI Airport: Mumbai International Airport Limited (MIAL), in coordination with AAI.
- ❖ Bangalore : Bangalore International Airport Limited (BIAL) in coordination with AAI.
- ❖ Hyderabad: Hyderabad International Airport Limited (HIAL) in coordination with AAI.
- ❖ Cochin : Cochin International Airport Limited.
- ❖ Air Force airfields: Indian Air Force.
- ❖ Naval Airports: Indian Navy.

Slot Allocation Policy

Slots are allocated twice in a year.

For AAI airports

All domestic airlines who wish to operate at an airport file the landing or take off slots with DGCA, the respective airport operator namely AAI, Air Force, Navy, HAL, BIAL, MIAL, DIAL, Cochin International Airport Limited for the airports managed by these agencies and the Bureau of Civil Aviation Authority. For the defence airports as the terminals are managed by AAI and the runway is managed by the Ministry of Defence, the request for slots for such airports are filed with both agencies.

For the purpose of scheduled flight operations, slots are filed for the summer season and winter season, where each season is for a period of six months. The slot requests are analysed vis a vis airport capacity parameters namely runway, apron and terminal building. Based on the above analysis all airport operators either approve the slots in respect of the airports or generate a list of alternate offers. These approved and offered slots are discussed in a meeting where all the airlines, DGCA, BCAS and various airport operators are present. After this meeting, the approved slots are conveyed to DGCA for approval of the flight schedule.

Later if an airlines files a request for amendment or an additional slot, the same is also analysed on the basis of principle of airport capacity. *The additional slot can be presumably a new slot that is available because of expansion of existing airports or opening of new airports or unused capacity available at airports.* Each concerned airport operator analyses these requests and either approves or discusses the alternate offered slots with the airline and later communicates the approved slots to the concerned airline and DGCA.

If there is a dispute between an airline and the airport operator, at the first level an attempt is made to resolve the dispute at the level of the airport operator and the slot allocation committee. If the dispute remains unresolved, it is addressed at the level of Member (Operations).

For Airports managed by JVCs

Airlines will submit their requests for slots to JVCs at the beginning of the summer and winter season as per IATA guidelines. The request and schedule will also be submitted to AAI. JVCs will allocate the slots in consultation with AAI since the ATC/CNS services will continue to be provided by AAI. AAI is the nodal agency for slot allocation and will advise the JVC on runway capacity for slot allocation. The JVC will thereafter analyse the requests of the airlines with reference to runway capacity



as advised by AAI and terminal and apron capacity as decided by the concerned JVC. If the request of the airlines is within the capacity parameters, the JVCs will approve the slots. In case the slot is not available due to runway capacity constraint and is available from terminal and apron capacity perspective, JVCs will coordinate with the AAI for approval or offer from runway capacity perspective. The offer/approval will be given by JVCs to the airlines after getting clearance from AAI from the runway capacity perspective. The JVC will convey the slot approval to the AAI who in turn will convey it to DGCA for approval of schedules. The same procedure is also followed for amendment of schedules.

As stated earlier, slots are allocated twice in the year. It may be noted here that allocation of slots is subjected to the following two conditions:

- Grandfather rights, which means that slots allocated to a particular carrier in the previous season and which were used to a significant extent, revert to the same carrier. This policy usually accounts for allocation of a large majority of slots, particularly at peak times.
- In the context of mergers, according to the Domestic Air Transport Policy, when a merger happens, the airlines that is merging with /acquiring another airlines is allowed to take control of the airport infrastructure, including the slots, of the latter. There is an 'use it or lose it' rule according to which, the above right will be available with the airlines that takes over till such time as the infrastructure /rights are under use. If the concerned infrastructure is not used, the airlines will lose the user rights over the infrastructure including the slots.

Allotting slots to new entrants

As per the slot allocation policy, after allocation of slots on the basis of 'grandfathering' of slots, 50% of the left over slots may be allotted to the new airlines.

Charges for peak and non peak time slots

There are no charges for peak and non peak slots in the policy.

From the above, it is clear that for this sector, a key asset that an airline can hold is the 'slot'. The process of grandfathering of slots, which basically means that preexisting ownership of slots by the incumbent airlines continue to be retained is a major barrier to entry for the new airlines, especially in slot constrained airports. This is because the peak slots in existing airports will already be taken.

A question therefore arises as to how the new airlines have been able to collectively gain control of a majority of the slots in a relatively short period of time. The question especially arises because presumably, the national airlines has control of the majority of slots, especially the peak slots through the grandfathering process.

The new entrants can gain control of the slots in each of the following ways, as pointed out by the comments made by FIAS/DFID (italics comments added) namely:

- By being allocated slots at airports which had unused capacity available-*this can be true especially of the non metro airports.*
- By additional slots being made available through the expansion of existing airports. *This is happening for instance in the Delhi and Mumbai airports where expansion is happening and additional capacity is being made available. This had also happened in the Cochin airport, post privatization.*
- By additional slots being made available through the opening of new airports. *This has happened in Hyderabad and Bangalore airports.*
- The process of Mergers and Acquisitions has helped new entrants to gain control of slots. This is discussed in pages 62 - 66 of the Report.



Thus, in accordance with the slot allocation policy, of the slots that are available in the airports, which may be due to the above mentioned factors or due to some airlines losing their right to slots on the 'use it or lose it' basis and after taking care of the grandfathering rights, 50% of the left over slots are allocated to the new entrants.

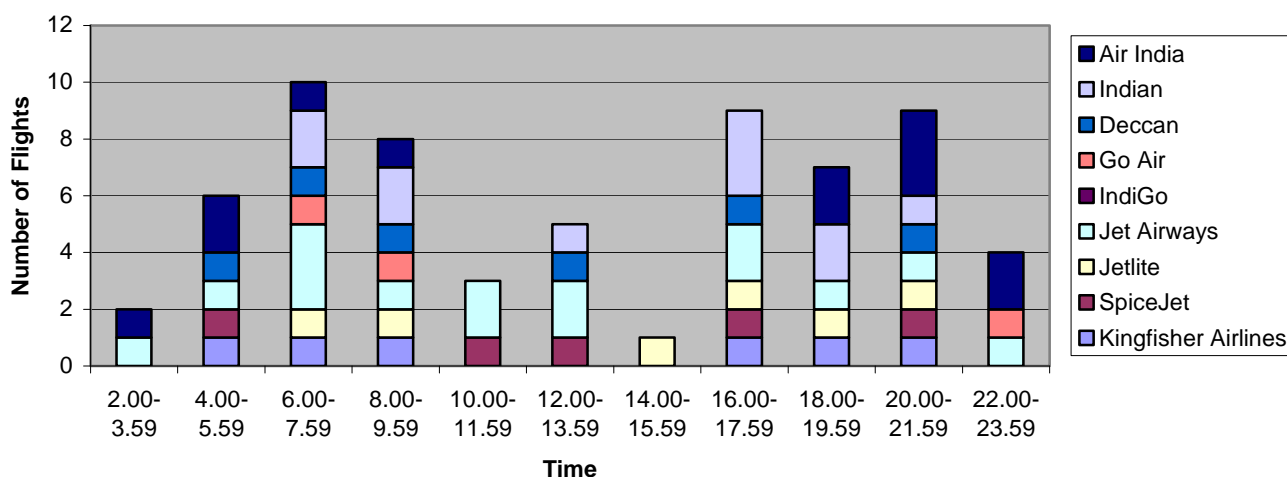
The remaining slots that are available are allotted by the process as described above in accordance with the slot allocation policy, to the existing airlines.

A priori, slots give an airline an advantage and hence helps it to capture the market. In the Delhi-Mumbai route in July 2006 there are 61 flights in a day. Of these, Jet airways holds the maximum slots (15). Indian and Air India hold 11 slots. Kingfisher owns 6 slots. Among the low cost carriers Jet Lite and Deccan have 6 and 5 slots respectively. In 2008, it is interesting to note that Jet and Kingfisher hold the maximum slots (12 each) followed by Indian (11). Among the low cost carriers, Go Air holds the maximum slots and Deccan the least.

From figures II.2 and II.3 it is clear that the peak time for this sector is 0600hrs to 0800 hrs and 1600 to 1800 hrs. Note that in July 2006 there are 10 flights during 0600-0800 hrs and 9 flights in the evening during 1600-1800hrs. In 2006, of the total 19 flights during the peak hours, both Jet and Indian have 5 flights each. In accordance with the slot allocation policy, there is a process of grandfathering of slots which means that the slots allocated to a particular carrier in the previous season and which were used to a significant extent, revert to the same carrier. This poses a major barrier to the new entrants especially in slot constrained airports. The incumbent players are thus able to corner the peak time slots and this gives them an advantage over the new entrants into the industry. Interestingly, in 2008 during the peak times – 0600hrs to 0800 hrs and 1600 to 1800 hrs, there is a total number of 15 flights available. Of these Kingfisher has 5 slots, Jet has 4 slots and Indian has two slots while Jet lite has one slot. Even during this peak time, there are certain low cost carriers that hold slots. Indigo, Spice Jet and Go Air have one slot each. It is clear that Jet and Kingfisher have a major share of slots at the peak hours on this lucrative route. Another thing to note here is that Kingfisher has gained peak time slots while Indian has lost on the peak time slots on this lucrative route.

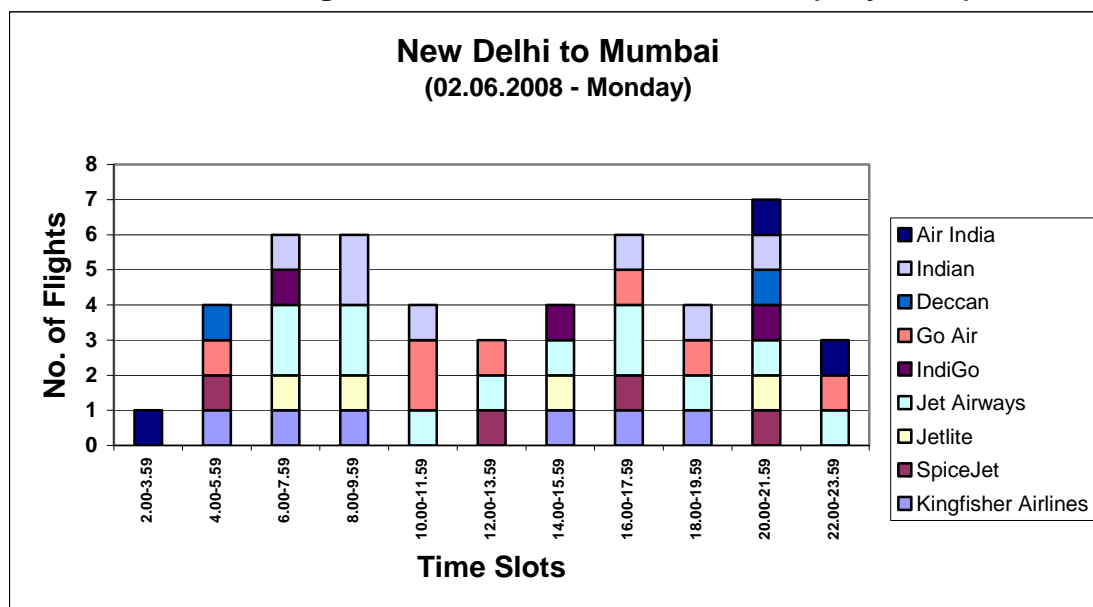
Indian has obviously lost out to the private players with only two slots in the peak period. The national carrier is not competitive as a result of its own problems such as low labour productivity, high costs, privileges offered to consumers etc.

Figure II.2: New Delhi to Mumbai (July 2006)



Source: Computed by the authors from the DGCA data



Figure II.3: New Delhi to Mumbai (July 2008)


Source: Computed by the authors from the DGCA data

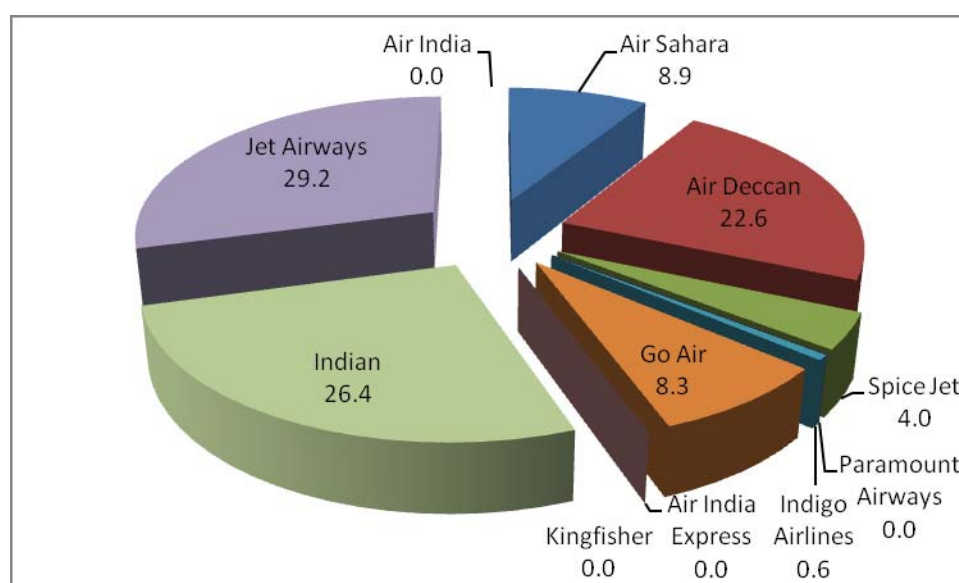
Finally, having looked at the peak time slots, we now analyse the passenger load factors at the peak times. This will further strengthen and prove our hypothesis that peak slots give an advantage to the air carrier. As was mentioned earlier, we collected the data from DGCA on the number of passengers in 2006-07. However, for all other airlines except Indian the data available was aggregative and not flight-wise. Indian however, provides the data flight-wise. We therefore calculated the passenger load factor of Indian. The same has been tabulated below. We could not calculate the passenger load factor for all other airlines due to unavailability of data. Table II.2 below gives the PLFs for Indian for the period July 2006-March 2007. The flights with the lowest and the highest PLFs for the month have been highlighted in red. As can be seen from the table, the peak times of 0600-0800 hrs and 1600-1800hrs have a higher PLF, generally ranging from 70-80 percent, while for the non-peak times, the PLF is lowest for the flight at 1300hrs. The average PLF for the month are given in the last row. The PLF was highest for the month of March 2007 and lowest for January 2007.

Flt. No.	Time	Type of Aircraft	No. of Seats	JULY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
IC165	0800 hrs	A320	145	73.1	78.7	79.6	71.8	81.7	75.8	65.4	80.7	75
IC657	0600 hrs	A319	124	70.9	75.6	82.4	69.3	85.5	75	59.5	76.3	72
IC688	0700 hrs	A320	145	NA	NA	NA	NA	NA	NA	NA	73.5	75
IC167	0900 hrs	A320	145	NA	62.6	75.7	61.3	69.3	69.6	31	70.6	67
IC865	1000 hrs	A320	145	61.1	63.5	66.3	64	71.2	69.7	60.3	72.7	94
IC887	1300 hrs	A319	124	49.7	60.7	61.2	55	60.1	65.3	65.1	63.4	59
IC863	1700 hrs	A320	145	87.6	87.8	90.5	81.2	85.9	89.6	86	90	91
IC810	1800 hrs	A320	145	68.3	77.1	86.2	73.9	73.6	79.7	66.9	83	99
IC805	1900 hrs	A320	145	74.6	81.6	82.9	72.7	76.6	81.4	79.3	NA	NA
IC602	2000 hrs	A320	145	60	65.9	67.3	58.1	75.7	56.5	59.2	78.9	86
Average PLF for month				68.2	72.6	76.9	67.5	75.5	73.6	63.6	77.0	80.2



From an economic point of view, for the definition of the relevant market, demand substitution constitutes the most immediate and effective disciplinary force on the suppliers of a given product, in particular in relation to their pricing decisions. A firm or a group of firms cannot have a significant impact on the prevailing conditions of sale, such as prices, if its customers are in a position to switch easily to available substitute products or to suppliers located elsewhere. Basically, the exercise of market definition consists in identifying the effective alternative sources of supply for the customers of the undertakings involved, both in terms of products/services and geographic location of suppliers. For our analysis we assume that the demand for air travel is not substitutable with other modes of transport like road or rail. We consider only substitutability within airlines given the consumers choice to fly. As we can see above from the slots, while there are a number of airlines flying on this route, Jet and Kingfisher control the slots on the market.

Figure II.4 : Route2: Delhi-Chennai - Period: 2006-07



Source: Computed by the authors from the DGCA data

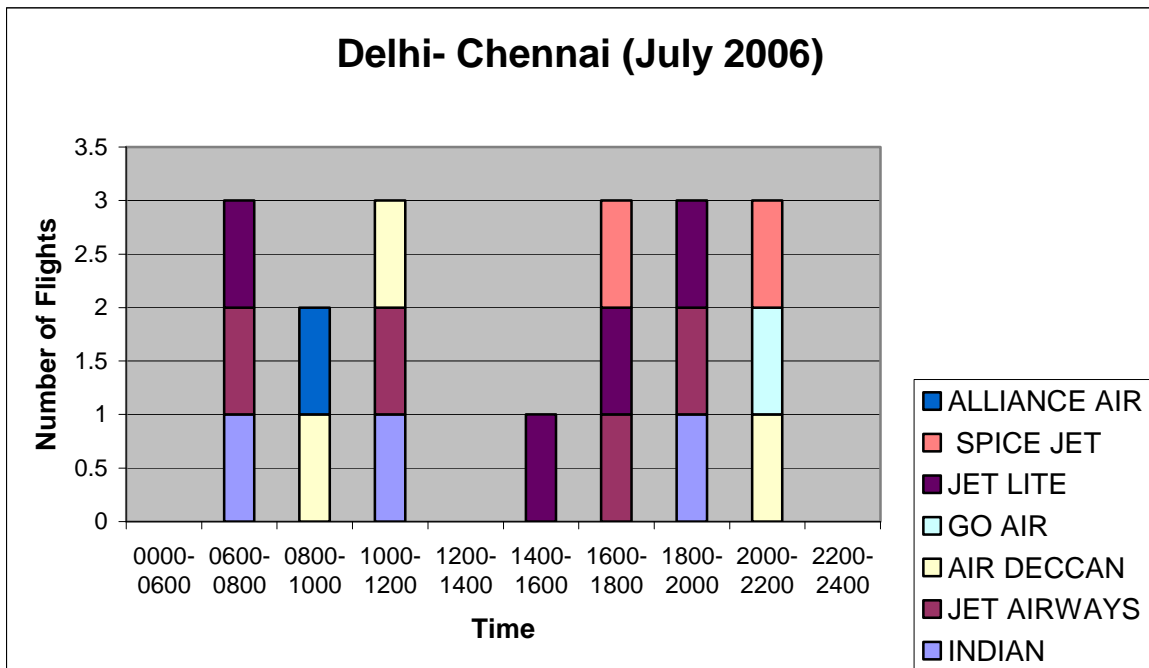
The market shares in this sector are more concentrated as can be seen from the diagram above. Three major players, Jet, Indian and Deccan hold 79% of the total market share and hence the index of concentration in this sector is 2224.5. According to the CAF, this raises competition issues. Again if we try to see what happens if we assume mergers in this scenario. It is seen that after the mergers in fact the index becomes even more concentrated at 2742.4.

Slots analysis

According to the Domestic Air Transport Policy, when a merger happens, the slots are transferred to the airline which takes over the aircraft till such time as the infrastructure/rights are under use. If the rights are not used, the airline loses the slots.

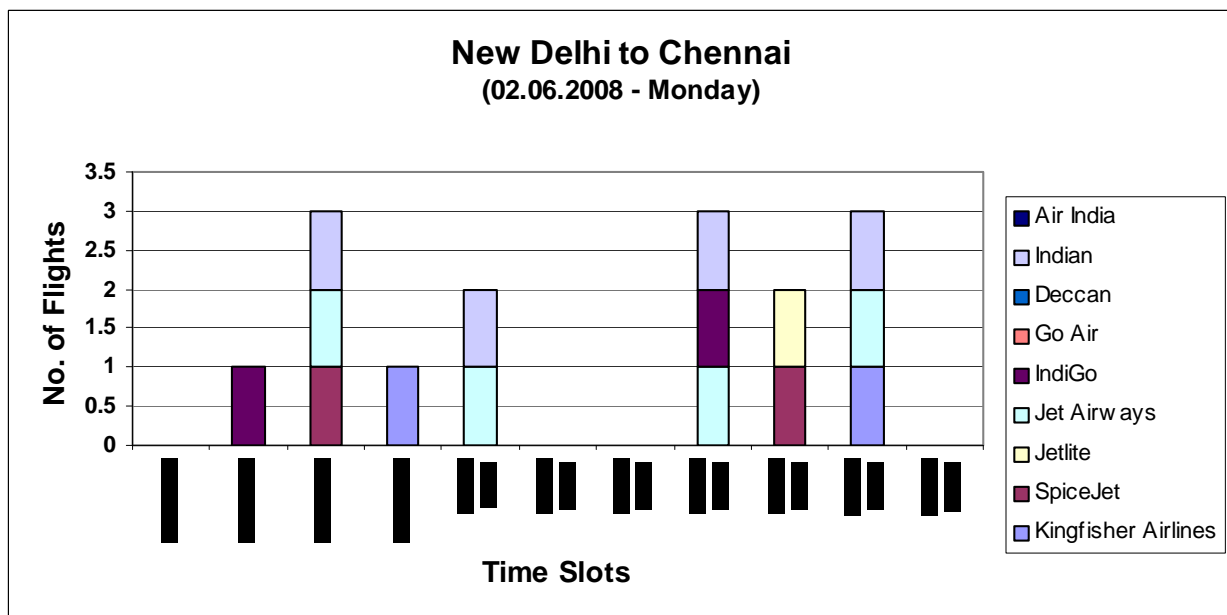


Figure II.5 : New Delhi to Chennai



Source: Computed by the authors from the DGCA data

Figure II.6 : New Delhi to Chennai



Source: Computed by the authors from the DGCA data



In July 2006, there were 18 flights operating on this sector. Of these, Jet and Jet Lite have the maximum (4) slots each. Kingfisher does not have a flight on this sector in 2006. However, if we look at the slots allocation in 2008, what we find is that of the 15 flights currently operating on this sector, Indian and Jet have 4 slots each, Spice Jet, Indigo and Kingfisher 2 each and Jet Lite has 1 slot. In keeping with the domestic Air transport Policy, therefore, post merger, of the 15 flights operating on this route 33% of the slots are controlled by Jet. It may be also noted that while in 2006-07, Deccan had 23% of the market share, in 2008 Deccan has no flight on this sector. It is therefore safe to assume that the merger of Kingfisher & Deccan gave Kingfisher the 2 slots in this sector.

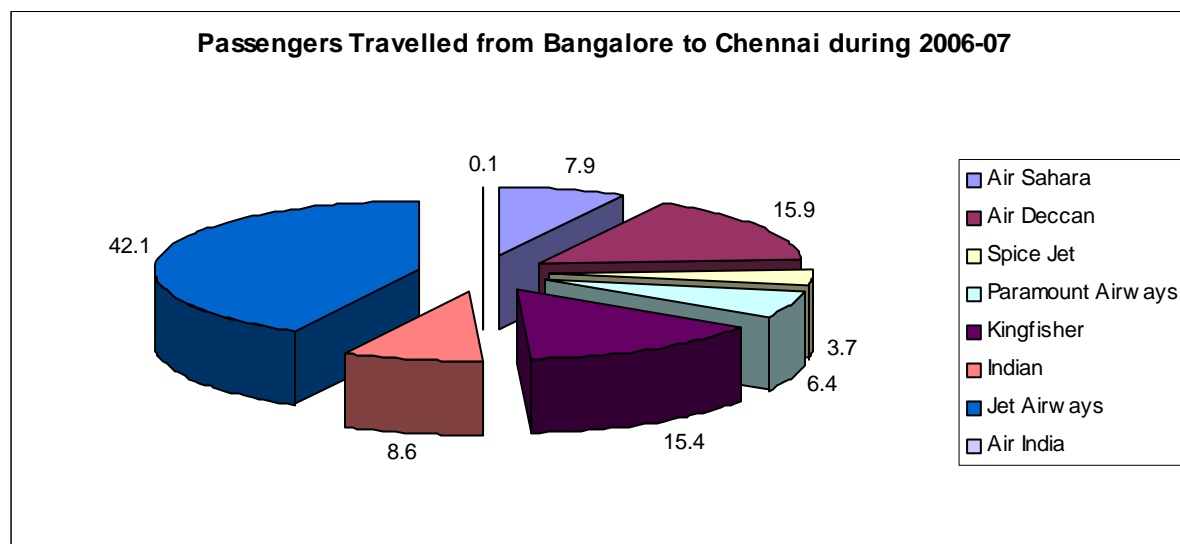
As seen in the above figure, the peak time for this sector seems to be 0600 to 0800 hrs, 1600 to 1800hrs and 2000 to 2200 hrs. In 2006 and 2008 there are nine flights available during peak times, of which Jet has three slots, Kingfisher has one slot and Indian has three slots. So once again, these three large players control the major share of slots. Spice jet and Indigo have one slot each.

Table II.3: Passenger Load Factor for Indian

Flight No.	Time	Type of Aircraft	No. of Seats	JULY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
IC439	0640 hrs	3191c	144	72.7	57.1	82.3	66.7	68.2	71.4	52.4	71.8	73.2
IC429	1015 hrs	A320	145	56.5	63.8	63	56	NA	72.5	56.1	73.1	79.6
IC540	2000 hrs	A320	145	78.3	70.6	70.9	65.5	69.5	73.6	59.9	82.5	80.4
IC801		A320	145	NA	64.7	74.3	60.1	64.4	76.5	64.5	77.6	80.5

Table II.3 above gives the PLFs for Indian for the month of July 2006. As already mentioned, due to data unavailability we could not calculate the passenger load factors of the private airlines. As can be seen above, the peak time flights have the highest PLFs.

Figure II.7 : Route 3 Bangalore to Chennai



Source: Computed by the authors from the DGCA data

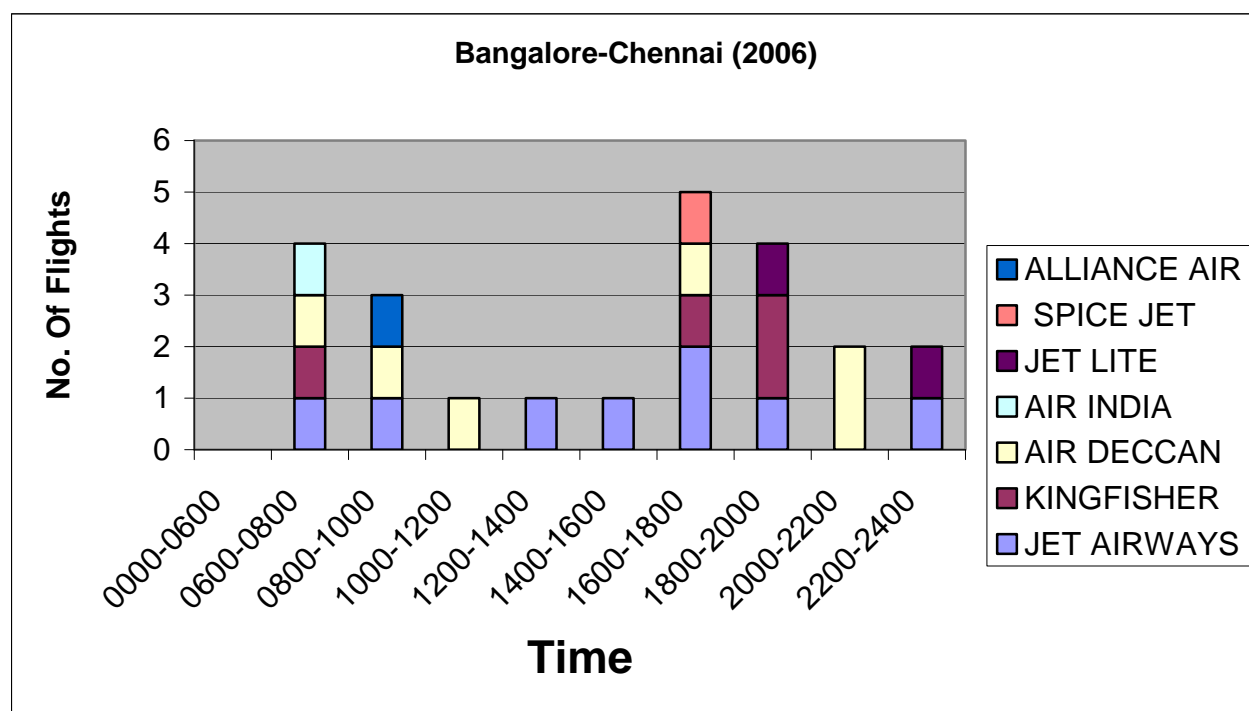


If we examine the market share for the entire year 2006-07 for this sector, it is seen that 42% of the market share was held by Jet. Kingfisher and Deccan each had about 15% of the market while Indian, interestingly, has only around 9% of the market. Paramount held 6.4% of the market, Air Sahara held 7.9% and Spice Jet held 3.7%. When we analysed the monthly trends, some very interesting facts seem to emerge. At the beginning of the year more than 50% of the market was held by Jet, however, as the year progressed, Jet's dominance in this sector seems to decline while newer entrants like Paramount gained the market share. Also, notice that even though Indian is an incumbent player in this market, it has not been able to capitalize on this and the share in the total was very small.

The HHI for this sector for the year 2006-07 is 2475. However, it is interesting to note that the HHI at the beginning of the year (Apr-Jun 2006) was higher and starts falling from July 2006.

During the peak hours of 0600 to 0800 in the morning, there are four flights in 2006 but only three in 2008. Indian does not have a flight on this segment. Air India which had a peak time slot 0600-0800 hrs in 2006 however does not have a slot in 2008. The above two sectors demonstrated that peak times the PLFs were higher. Therefore it is questionable as to why the national carrier would give up its peak time slot. In 2008, of the three flights, Jet has one slot, and Kingfisher has two, indicating the dominance of the two private players on this route as well.

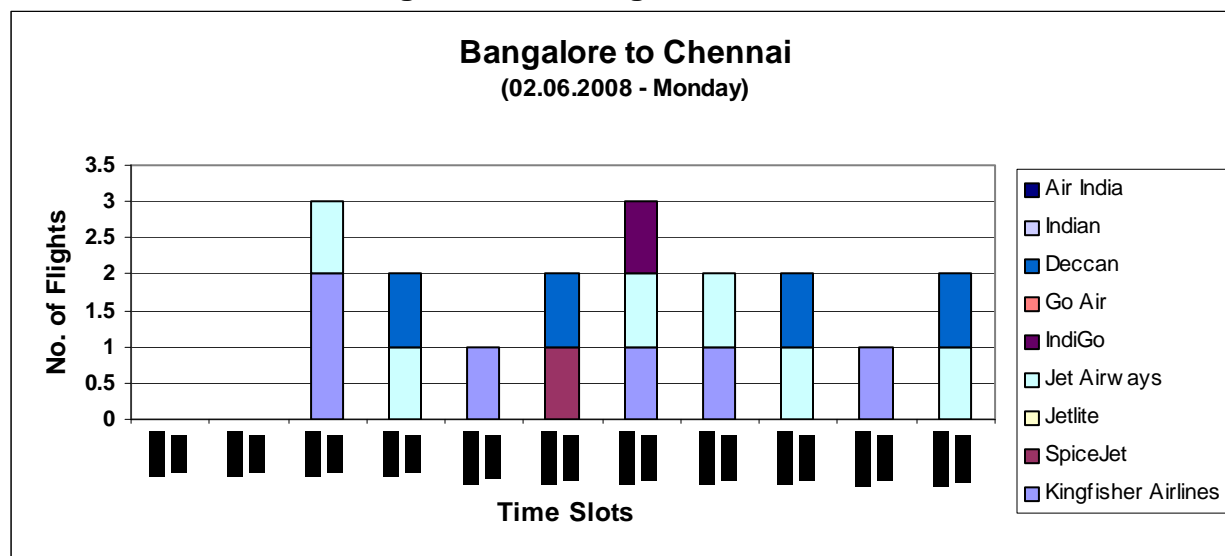
Figure II.8 : Bangalore to Chennai



Source: Computed by the authors from the DGCA data



Figure II.9 : Bangalore to Chennai



Source: Computed by the authors from the DGCA data

Why is Indian losing out?

In this section we try to analyse why Indian Airlines (now Air India) is consistently losing market share. If we look at the Indian airline's market share, it dipped from almost 66 per cent in 1997-98 to close to 38 per cent at the end of 2004, and to around 18 percent in 2008.

As we noted in the report, for this sector one of the key assets that an airline can hold is the 'slot'. Also, in India, there is a grandfathering of slots, which basically means that preexisting ownership of slots by the incumbent airlines continue to be retained. This is a major barrier to entry to the new airlines especially in slot constrained airports since the peak slots will already be taken.

The national carrier was the only airline in the country with scheduled operations from 1953-1994. It was only in 1994 that the Air Corporation Act was repealed and the air transport sector in India was opened to private players subject to fulfillment of statutory requirements for operation of scheduled services. The airline therefore had a lead time of a number of years before any of the private players entered. IA should therefore have all peak slots and should have established a loyal consumer base through frequent flyer programmes etc.

However, what we find is that the entry of private players has led to a huge erosion of the market share for IA. This thus merits explanation.

As was analysed in the report, Indian does have slots at the peak times for all metros. However, what is notable is the fact that the number of slots with Indian at peak times are lesser than those with private carriers like Kingfisher and Jet Airways. For e.g. Table—below gives the total slots available for the Delhi-Mumbai route in 2006 and 2008. We pick Delhi-Mumbai route since it is one of the most lucrative routes and also the most competitive. We try to look at Indian's performance on this route and later generalize about reasons for non-performance.



Table II.4: Slots on Delhi-Mumbai Route

AIRLINES	Total Slots Owned in 2006	Total Slots Owned in 2008	No. of peak time slots owned in 2006	No. of peak time slots owned in 2008
INDIAN	11	10	3	2
JET AIRWAYS	15	12	4	3
KINGFISHER	6	12	2	3
AIR DECCAN	5	2	1	1
AIR INDIA	11	3	3	1
GO AIR	2	7	0	0
JET LITE	6	4	2	1
SPICE JET	4	5	1	2
INDIGO	--	3	--	2
ALLIANCE AIR	1	0	0	0
Total	61	58	16	15

Discussions with experts in the field suggested that a major reason why despite having peak time slots the airline is losing out is the fact that the average age of the aircrafts for Indian is much higher than the industrial average. Also the process of placing orders for newer aircrafts is much slower. The process of acquisition of newer aircrafts was initiated in 2005 after several years. Table II.4 below gives the average age of fleet of the various domestic operators. Notice that the average age of fleet for the national carrier is 22 years for A300s and 13 years for A320s. In sharp contrast, Jet and Kingfisher have a younger fleet with average age of fleet 4.3years and 1.8 years respectively.

Table II.5: Average Age of Fleet

DOMESTIC INDIAN AIRLINES	AVERAGE FLEET AGE
INDIAN	22 years for A300s 13 years for A320s
JET AIRWAYS	4.3 years
KINGFISHER	1.8 years
AIR DECCAN	4.5 years
AIR INDIA	17.7 years
GO AIR	7.1 years
JET LITE (PREVIOUSLY KNOWN AS AIR SAHARA)	10.3 years
INDIGO	1 year
PARAMOUNT	3.4 year

Source: <http://www.airfleets.net/ageflotte/index.php?file=rechoper>

Another important factor that needs to be noted is the fact that the fleet size of Indian has remained more or less constant over the ten year period 1996-2006. It was only in 2007 that Indian acquired new aircrafts. Even then the expansion of fleet of the private airlines is much faster than Indian.



There is also a feeling in some sections that the airline personnel will also have to undergo some re-training to keep pace with the market dynamics. Also, the amenities provided by Indian airlines are lesser than its competitors. For example, both Jet and Kingfisher Airlines, offer each passenger a personalized screen and headphones broadcasting video and audio channels.

Table II.6: Fleet Size of All Scheduled Airlines

Sl. No.	Name of the Airlines	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1.	Air India + AI Express	26	28	26	26	26	28	29	31	35	37	42	46
2.	Indian Airlines	55	52	39	44	44	42	44	43	47	52	55	73
3.	Alliance Air	-	3	12	12	12	11	11	11	15	15	15	-
4.	Jet Airways	9	13	19	25	28	30	38	41	41	42	53	62
5.	Sahara / JetLite	-	4	6	8	9	7	10	12	20	22	29	28
6.	Air Deccan	-	-	-	-	-	-	-	-	4	16	29	41
7.	Paramount	-	-	-	-	-	-	-	-	-	-	1	5
8.	Spicejet	-	-	-	-	-	-	-	-	-	-	5	9
9.	Kingfisher	-	-	-	-	-	-	-	-	-	-	11	27
10.	Go Air	-	-	-	-	-	-	-	-	-	-	3	7
11.	IndiGo	-	-	-	-	-	-	-	-	-	-	4	7
Total		90	100	102	115	119	118	132	138	162	184	247	305

Source: Report of Aviation Centre of Excellence

Overall experts seemed to agree that the very characteristic of Indian airlines being a public sector has led to its decline. While the private players were able to assess and take advantage of the market demand, Indian was dependent on various authorities like Government/ Planning Commission etc for its expansion. The fleet acquisition plans of Air India and Indian Airlines take longer due to geopolitical and other considerations not connected with the airline business. This slowed and delayed the process and gradually led to decline of market shares. Another reason that various experts identified as a major cause for loss of market share was the fact that some of the policies followed by the Government were actually detrimental to the growth of Indian Airlines. For example, one of the worst policies was the grounding in 1990 of Indian Airlines' entire Airbus A-320 fleet for 9 months. That combined with the advent of private airlines in Indian airspace in 1992 created serious problems for Indian Airlines (IA). The airline saw 166 pilots leave -- 104 of them commanders -- in less than two years. The exodus virtually grounded the IA fleet with average utilization of its aircraft plummeting from 2,700 hours per aircraft in a year to about 2,000 hours. The fleet of 12 Boeing 737s was the worst hit. It may thus be noted that the public carriers have also faced major barriers to expansion due to a range of different government policies. These barriers to expansion have affected their ability to expand their capacity and have thus affected their performance. Since barriers to expansion can also be treated as barriers to entry, it can be said that the public sector carriers have also faced 'barriers to entry'.



IV. The study is expected to provide an assessment of the significant anti competitive practices in the air transport sector on the lines of India's Competition Act 2002

Factors that limit competition on markets may be horizontal or vertical. Horizontal issues have effects on competitors, i.e. between airlines, while vertical issues have effects between firms at different points in the same value chain. Vertical issues can also have an impact on horizontal competition. Thus for example, the ability of competitors to offer similar services may be precluded if there is vertical fore closure. Access to slots provides an instance of such vertical fore closure by creating a barrier to entry. Thus, by virtue of 'grandfathering' of slots, a few airlines have been able to corner the 'peak' slots, thereby preventing competitors to enter the market.

All three types of agreements discussed in the Competition Act 2002 can involve horizontal as well as vertical effects.

We discuss the horizontal and vertical issues with respect to the Competition Act 2002 as below:

Price Discrimination

A dominant firm may indulge in price discrimination by charging different prices to different consumers, do overpricing in certain routes by taking advantage of the dominant position etc. A cartel may make an agreement to fix prices while a combination like a merger with a large market share may indulge in collusion to control price along busy routes by virtue of control over time slots. A merger may also result in removal of a vigorous competitor from the market.

Table IV.1: Descriptive Statistics for Price Data: Delhi - Mumbai

	Flights	Timings	Mean	Median	Mode	Range	Minimum	Maximum
1	Kingfisher	6:20	6285.2	6475	6550	578	5972	6550
2	Jet Airways	6:50	6452.9	6550	6550	578	5972	6550
3	Kingfisher	7:15	5795.6	6047	6047	905	5142	6047
4	Jet Airways	7:30	6017	6047	6047	75	5972	6047
5	Jet Airways	8:00	5574.3	5217	5217	830	5217	6047
6	Kingfisher	8:30	6050.5	6047	6047	578	5972	6550
7	Jet Airways	9:40	4969	5217	5217	729	4488	5217
8	Kingfisher	10:05	4533	4563	4563	75	4488	4563
9	Jet Airways	11:20	4533	4563	4563	75	4488	4563
10	Kingfisher	11:55	4533	4563	4563	75	4488	4563
11	Jet Airways	12:55	4533	4563	4563	75	4488	4563
12	Kingfisher	14:00	4533	4563	4563	75	4488	4563



13	Jet Airways	14:00	4533	4563	4563	75	4488	4563
14	Kingfisher	16:00	4796.2	4563	4563	1987	4488	6475
15	Jet Airways	16:50	5819.1	5972	6047	1484	4563	6047
16	Kingfisher	16:55	5752	6047	6047	1559	4488	6047
17	Jet Airways	17:25	6017	6047	6047	75	5972	6047
18	Kingfisher	17:45	6084	6047	6047	503	5972	6475
19	Kingfisher	19:15	6858.9	6550	6550	1409	6550	7959
20	Jet Airways	19:40	6959.7	7079	7079	3421	5972	9393
21	Jet Airways	20:30	6767.6	6047	6047	6279	5972	12251
22	Kingfisher	21:00	5919.8	6047	6047	1862	5142	7004
23	Jet Airways	22:30	4533	4563	4563	75	4488	4563
24	Kingfisher	22:30	4663.8	4563	4563	654	4488	5142

Source: Computed by the authors from the internet data

In order to examine whether there is evidence of price discrimination in the sector, we assess specific routes. For the Delhi-Mumbai route, it is already established that Jet has a major share of the market (26%) and Kingfisher has a substantial share (13%). As regards the extent of concentration, the HHI ranges between 1500 and 1600 in 2006/07 (pre merger), however an exercise on the post merger scenario shows that HHI would be around 2681.3 which may raise competition concerns.

In terms of number of slots, there are 55 flights a day on this route. Of these Jet and Kingfisher hold the maximum number of slots (11 each). Also of the 8 flights during the peak hours, Jet and Kingfisher hold two each. Thus Jet and Kingfisher are certainly dominant players in this sector in terms of market share as well number of slots.

An analysis of prices along this route indicates the following (see Table IV.1 above):

Data for the price of an air ticket in the Delhi –Mumbai route was collected 15 days prior to date of departure. A random day of the week was selected for this exercise. It is noticed that there is a high degree of price parallelism in the Jet and Kingfisher flights that operate in the morning and evening peak hours. In fact as table IV.1 shows, the closer the time of departure of the Jet and Kingfisher flights the greater is the price parallelism. For example notice that both Kingfisher and Jet have a flight from Delhi to Mumbai at 1400 hours and for this price, the maximum price, minimum price, range as well as mean and mode are exactly the same. Similarly for the 2230 flight, the descriptive statistics are very similar. It may also be noticed that for most of the Kingfisher and Jet flights, the minimum and maximum price of flights, with time slots that are close to each other, are the same.

It may be mentioned here that data indicates that a similar degree of price parallelism is seen between Deccan and Jetlite also, on this route.

Data was also collected on the taxes & surcharges charged by various airlines on the Delhi Mumbai route. The break up is shown below:



As per the data collected all airlines charge a fuel surcharge of Rs.2700. In the Delhi-Mumbai sector, a passenger service fee of Rs. 225 is charged by all airlines. In addition, Jet and Kingfisher charge an Air Traffic Congestion Fees of Rs. 150.

In the Mumbai Delhi sector the passenger service fee is Rs 233 while the Fuel Surcharge and Air Traffic Congestion Fees remain the same. Notice also that apart from the above taxes and surcharges, Jet and Kingfisher charge Rs. 150 as Air Traffic Congestion Fees and Go Air an extra Rs. 50 for services.

The data is shown in detail in the table below. Through ransom analysis of the data on price fares for other sectors we were also able to conclude that while Fuel Surcharge is common across routes and constant at Rs 2700, the passenger service fees differs across routes. It is also interesting to note that Air Traffic Congestion Fee is charged by Jet and Kingfisher on the entire network and not only at peak times. This they argue is because the airlines suffer losses due to extra fuel consumed when the flight has to circle in the sky before it gets permission to land.

Table IV.2: Taxes and Surcharges on Route : Delhi – Mumbai

(December 2008)

Name of Airline	Fuel Surcharge (in Rupees)	Passenger Service Fees (in Rupees)	Air Traffic Congestion Fees (in Rupees)
Indian Airlines	2,700	225	-
Jet Airways	2,700	225	150
Jet Lite	2,700	225	-
Indigo	2,700	225	-
Kingfisher Red	2,700	225	-
Kingfisher Class	2,700	225	150
Spice Jet	2,700	225	-
Go Air	2,700	225	50

Source: Compiled by authors from the websites of various airlines

Table IV.3: Taxes and Surcharges on Route : Mumbai – Delhi

(December 2008)

Name of Airline	Fuel Surcharge (in Rupees)	Passenger Service Fees (in Rupees)	Air Traffic Congestion Fees (in Rupees)
Indian Airlines	2,700	233	-
Jet Airways	2,700	233	150
Jet Lite	2,700	233	-
Indigo	2,700	233	-
Kingfisher Red	2,700	233	-
Kingfisher Class	2,700	233	150
Spice Jet	2,700	233	-
Go Air	2,700	233	50

Source: Compiled by authors from the websites of various airlines



The dominant market shares of Jet and Kingfisher in terms of market share as well as share of slots alongside with price parallelism may indicate a tendency for price collusion. At a later stage, this may lead to overpricing, given the tendency of enhanced concentration on this market.

To analyse the issue of anti competitiveness in the context of mergers, we refer to data relating to the Delhi –Chennai sector. In 2006/07. Kingfisher was not on the market while Deccan had a 22.6% share of the market (see Figure II.3). In 2008, post merger of Kingfisher and Deccan, Deccan has no flights on this sector while Kingfisher now has two flights (see figure-II.3). Thus as a result of the merger, a vigorous competitor, namely Deccan, was removed from the market and the time slots have been obviously taken over by Kingfisher. This may be safely assumed to have implications for price especially since Deccan is a low cost carrier and Kingfisher is a full cost carrier.

In 2007, three major mergers took place in the domestic air transport sector, namely Kingfisher-Deccan, Indian Airlines-Air India and Jet –Sahara. This trend has major implications for competition issues on the civil aviation market. We examine the salient features of each of the three mergers below:

Jet –Sahara

The Jet-Sahara merger in April 2007 has raised a great deal of concern and issues on the market. With the merger in place, the merged entity with a fleet strength of around 79 aircrafts, has around 30% share of the passenger airline market. Also, as seen in an earlier section, the merged entity will have a major share of the market as well as of slots on a prime route such as Delhi-Mumbai which accounts for nearly 50% of domestic traffic. Jet would also have control over the fleet, landing and parking rights of Air Sahara in some airports. The merger therefore raises issues of predatory pricing and unhealthy competition in the passenger air transport sector.

Kingfisher-Deccan

The Kingfisher-Deccan merger in May 2007 has created major issues in the overall market structure of the passenger air transport sector. A number of synergies are expected as a result of the merger in terms of engineering, maintenance and overhaul. The merger has created an entity with around 80 aircrafts. The move to merge with Deccan also makes it possible for Kingfisher to enter the international arena. Thus Kingfisher can now conform to India's policy which stipulates that an airlines must have five year's experience in the domestic market and a minimum of 20 aircrafts before gaining permission to fly on international routes. With the merger Kingfisher now qualifies to fly on international routes. The merger is expected to save costs on operations, maintenance, ground and baggage handling, feeder services, engineering and security. However as our data analysis in an earlier section shows, it also raises competition issues. For instance in the Delhi-Chennai sector, Kingfisher has taken over the slots of Deccan, post merger. This raises issues in terms of pricing. It also raises the issue of removing a vigorous competitor from the market through a merger.

Air India-Indian Airlines

The two public sector companies merged into a single company called National Aviation Company in April 2007. The merged entity will operate on both domestic and international sectors. The new company will be among the top ten airlines in Asia and among the leading 30 airlines globally in terms of having a fleet of 120+ aircrafts and 34000 employees including 1315 pilots. It is the first airlines in India to have more than 100 aircrafts. The government has approved acquisition of new aircrafts –68 aircrafts by Air India and 43 by Indian airlines. Major gains that can be reaped from the merger include economies of scale in maintenance, ground operations, use of landing slots and parking rights, etc.



The government owned airlines face major challenges in terms of falling market shares under strong competition from private airlines and years of under investment in fleet strength and services. In fact our data indicates lower market shares for Indian Airlines compared to Jet in the three selected routes of study and also compared to Kingfisher in one route. In terms of slots also, in two of the selected routes, Indian Airlines has only one slot on one route and no slots at all in another.

The merger by itself will not ensure efficient functioning. It needs to be followed up by measures like overhaul of operations and a strong professional staff. The Government expects that the merger will save around Rs 5000 crores annually.

Relevance of the Competition Act 2002

In order to draw attention to the competition related issues in the passenger air transport sector, we will examine it in the context of the Competition Act 2002. we will specifically examine Section 20(4) which refers to regulation of combinations given the wave of mergers happening in this sector.

Section 20(4) of the Act notes that for the purpose of determining whether a combination would have the effect of or is likely to have an adverse effect on competition, the Commission shall have due regard to a set of factors. We examine these factors in the context of this sector:

- Actual and potential level of competition through imports in the market

In an earlier section we have assessed the level of competition. The standard index for measuring the degree of competition is the Herfindahl Index of Concentration (HHI). Thus as seen in Table II.1, out of thirty city pairs, comprising of the metro cities, the HHI is over 1800 for 18 city pairs, thereby indicating concentration on the market. Of these, three routes were selected for more detailed analysis, namely, Delhi-Mumbai, Delhi-Chennai and Bangalore-Chennai. Apart from showing a concentrated market in 2006-07, an exercise was also carried out for the post merger scenario, assuming that the three major mergers between Jet-Sahara, Kingfisher-Deccan and Air India-Indian Airlines had happened. It is seen that for two routes out of the three, namely Delhi-Mumbai and Delhi-Chennai, the concentration index **increases** on the assumption of mergers taking place. Therefore, our data shows that there is cause for concern in terms of actual levels of competition in the post merger scenario.

As far as the issue of imports into the market is concerned, in accordance with the Domestic Air Transport Policy, foreign airlines are not allowed to pick up equity directly or indirectly. Thus as per the Policy, while a domestic air transport operator may enter into financial arrangements with a bank and/or other financial institutions, for purposes of lease finance, hire purchase or other loan arrangements, such tie ups are not permitted with a foreign airline. Hence there is no question of competition through imports in this sector.

- Extent of barriers to entry into the market

Public barriers to entry as well as private barriers will be analysed in detail in the next section.

- Level of combination in the market

The three major mergers that have taken place in this sector over the past year have been discussed earlier. The concerns in terms of competition in this regard have also been analysed. The merger scenario certainly raises concerns of a less competitive environment, as our analysis shows.

- Degree of countervailing power in the market



This would depend upon the extent of presence of the players on the relevant market. As seen in our analysis of the three selected routes, while all the airlines are operating flights during the day, Jet and Kingfisher own the major number of slots.

For instance in the Delhi-Mumbai route, while there are fifty five flights available during the day, Jet and Kingfisher hold the maximum number of slots, followed by Indian. Even in the peak hours, of the 15 flights available, Kingfisher and Jet have the major share.

In the Delhi -Chennai sector, while there are 15 flights available. Jet and Indian have the major share, followed by Kingfisher, Spice Jet, Indigo and Jet Lite. However while the total number of flights indicates distribution among full cost and low cost carriers, in the peak hours it is obvious that Jet and Indian are controlling the major share of slots. In fact of the nine flights available in the peak hours, 3 are controlled by Jet, 3 by Indian and 1 by Kingfisher.

The Bangalore Chennai sector showed the same trend. Out of a total of 18 flights operating in this sector, Jet and Kingfisher operate six each. During the peak hours, of the three flights operating, Jet operates one flight while Kingfisher operates two. Thus while there are once again a number of operators operating on this route, the major share of the market is controlled by Jet and Kingfisher.

Thus we express a doubt as to whether there is a substantial degree of countervailing power available on the selected routes. However, route wise analysis of other routes would require to be made to reach assess degree of countervailing power in the peak periods across markets.

- Likelihood that the combination would result in the parties to the combination being able to significantly and sustainably increase prices and profit margins.

Our analysis on pricing specifically in the Delhi-Mumbai route discussed earlier, shows a substantial degree of price parallelism among the full cost carriers (Jet and Kingfisher) as well as among the low cost carriers (Deccan and Jet lite). With the mergers happening, the trend may intensify especially in peak hours on the busy metro routes. In any case mergers are expected to lead to greater scale economies resulting in higher profits through higher efficiency levels. On the Delhi-Chennai route, our analysis also showed replacement of Deccan with Kingfisher flights in 2008, post merger of the two airlines. This obviously has price as well as profit implications as well as a change in the quality of service. Thus with the mergers happening, there is a strong likelihood of prices rising and price collusion especially in peak hours and especially when the flights are timed close to one another.

- Extent of effective competition likely to sustain a market

Post merger, it can be said that there are now seven players on the market. As we have seen for the metro routes, concentration is certainly high and increasing, post merger, thereby raising concern for competition. While there are a substantial number of players in the markets, on important routes, three major players control a major share of the market. The market is definitely oligopolistic and there is no indication of monopolistic trends. There are route wise variations in terms of extent of concentration and number of players, as we have seen from our data analysis.

- Market share, in the relevant market, of the persons or enterprise in a combination, individually and as a combination.

We have analysed data for three metro routes. The analysis of market share(passenger wise)for the pre merger scenario and slot wise for the post merger scenario is presented below. Due to unavailability of passenger wise data for the post merger scenario, the data for the latter scenario is presented slot wise.



Table IV.4: Pre merger (2006/07)-Delhi-Mumbai (passenger wise)

Carrier	Market Share (passenger-wise)	Market Share(slot-wise)
Jet	26.0	24.6
Indian	19.7	18.0
Kingfisher	12.7	9.8
Air Sahara	9.5	9.8
Air Deccan	11.6	9.8
Air India	7.7	16.3
Spice Jet	7.0	8.1
Go Air	5.4	3.2
Indigo	0.2	0
Air India Express	0.1	0
Paramount Airways	0.0	0

Source: Computed by the authors from the DGCA data

Table IV.5: Post Merger(2008) -Delhi Mumbai (slot wise)

Carrier	Market Share (slots)
Jet	21.81
Kingfisher	21.81
Indian	20.0
Jetlite	7.27
Deccan	3.63
Go Air	12.72
Indigo	5.45
Spicejet	9.09
Paramount	0.0

Source: Computed by the authors from the DGCA data



Table IV.6: Pre merger (2006/07)-Delhi-Chennai (passenger wise)

Carrier	Market share (passenger wise)	Market Share (slot-wise)
Jet	29.2	22.2
Indian	26.5	16.6
Kingfisher	0.0	0.0
Air Deccan	22.6	16.6
Air Sahara	8.9	22.2
Go Air	8.3	5.52
Spice Jet	4.0	11.1
Indigo	0.6	NA
Air India Express	0.0	0.0
Air India	0.0	0.0
Paramount Airways	0.0	0.0

Source: Computed by the authors from the DGCA data

Table IV.7: Post Merger(2008) -Delhi Chennai(slot wise)

Carrier	Market Share (slots)
Jet	26.66
Indian	26.66
Kingfisher	13.33
Spicejet	13.33
Indigo	13.33
Jetlite	6.66

Source: Computed by the authors from the DGCA data

Table IV.8: Pre merger (2006/07)-Bangalore-Chennai (passenger wise)

Carrier	Market Share	Market Share (slot-wise)
Jet	42.1	34.8
Kingfisher	15.4	17.4
Deccan	15.9	26.1
Indian	8.6	NA
Paramount	6.4	NA
Spice Jet	3.7	4.3
Air sahara	7.9	8.7
Air India	0.1	4.3



Source: Computed by the authors from the DGCA data

Table IV.9: Post Merger (2008) -Bangalore- Chennai (slot wise)

Carrier	Market Share
Jet	33.33
Kingfisher	33.33
Deccan	22.22
Indigo	5.55
Paramount	0.0
Spice Jet	5.55
Air Sahara	0.0

Source: Computed by the authors from the DGCA data

Analysis as above of information shows the following:

- On the Delhi -Mumbai route relating to slot shares of airlines pre merger, it is seen that Jet had a share of 25%, Indian had a share of 18.% and Kingfisher had a share of 10%. Notice that, as expected, the correlation between share of passengers and the share of slots is very high. Post merger, share of Jet has become 28.27%, share of Kingfisher is 24.63% and for Indian-Air India it is 20%. Thus the three combines now have around 73% of the total slots in this market.
- On the Delhi Chennai route, pre merger, in terms of slot shares, Jet had 22% of the market, Indian had 17% while Kingfisher had no share at all. Post merger, Jet has 32.6% of the slots, Kingfisher which earlier did not have any slots has 13% and Indian -Air India combine has 26%. Thus the three combines together own around 72% of the slots.
- In the Bangalore-Chennai route, pre merger, Jet had 35% of the shares, and Kingfisher had 17%. Post merger, Jet owns 33.3% of the slots, Kingfisher owns 55.5% and Indian-Air India does not own any slot at all. Thus Jet and Kingfisher together hold 70.9% of the slots in the market.

The following are evident from the above analysis:

- Market share of Jet and Kingfisher have been strengthened considerably, post merger.
- The national carrier is steadily losing its share to the above two private airlines.
- Likelihood that the combination would result in the removal of a vigorous and effective competitor or competitors in the market.

Jet and Air Sahara were both full cost carriers and were indeed vigorous competitors. In the Delhi -Mumbai sector, while Jet had 27%, Air Sahara had 9.5% of market share(passenger-wise) pre merger. In terms of slots, Jet had 25% and Air Sahara 10% of the slots. Post merger, Jet now owns 28% of the slots, including those of Jetlite (earlier Air Sahara). Similarly, in the Delhi-Chennai sector, pre merger, Jet had a market share of 29.2% while Air Sahara had a market share of 8.9%. In terms of slots, Jet had 22% and Sahara 22 % of the slots. Post merger, Jet now owns 32.6 of all the slots (including Jetlite).

The above is a clear instance of removal of a vigorous competitor from the market.



Due to vigorous price competition, rising price of fuel and other issues, most of the airlines have been making major losses. Hence the possibility of a failing business looms very large in this sector.

- Relative advantage by way of contribution to the economic development, by any combination having or likely to have appreciable adverse effects on competition

Mergers will lead to scale economies, higher efficiency and improvement of productivity levels in the industry. Passengers will benefit from the fact that flight timings are likely to be rationalized and quality of service may improve with failing companies being acquired by the better performing companies. Overall there is likely to be better utilization of resources in the economy.

- Whether the benefits of the combination outweigh the adverse impact of the combination, if any

Let us consider the Indian Airlines -Air India merger. For many years Indian Airlines has been experiencing falling market shares under competition from the private airlines. There have also been years of under investment in the fleet. As a result the airlines has been experiencing losses and inefficiencies. While the merger by itself will not assure increase in efficiency, the resultant scale economies are expected to lead to better performance and the better utilisation of investment by the government.



V. The study is expected to examine public barriers to entry in terms of policy regulations as well as private barriers to entry in the context of the three areas in the Competition Act

In the context of all the three areas of the Competition Act, one of the aspects to which the Competition Commission is expected to give due regard is the extent to which there exist barriers to entry on the market. An important barrier is in the form of regulatory barriers. For the domestic air transport sector, the Domestic Air Transport Policy lays down the regulatory framework for the sector. Accordingly it needs to be analysed in order to assess if there are barriers to entry in this sector.

The following aspects of the Domestic Air Transport Policy assume importance in this context:

- Route Dispersal Guidelines

The Ministry of Civil Aviation has divided all routes into categories I, II and III. Category I routes are comprised of the metros, Category II routes comprise of the North Eastern region, Jammu and Kashmir, Andaman and Nicobar and Lakshadweep and Category III routes comprise all routes other than I and II.

The Policy lays down that any operator who operates scheduled air transport services on one or more of the routes under Category I shall be required to provide such service on Categories II and III as well in accordance with the following guidelines. Thus, the operator has to deploy at least 10% of the capacity he deploys on Category I routes, on Category II routes. Further, of the latter to be deployed exclusively on Category II routes, at least 10% are to be deployed on services operated exclusively within the North Eastern region, Jammu and Kashmir, Andaman and Nicobar and Lakshadweep.

Further, the operator must deploy at least 50% of the capacity he deploys on Category I routes, on Category III routes.

While the above guidelines are meant to ensure that the uneconomical routes are served by all airlines in order to ensure equity and adequate dispersal of air transport facilities to these routes, these guidelines create entry barriers for new airlines in several ways. First, it may be uneconomical for an airline to operate flights in all the routes due to financial as well as technical reasons. Thus the type of aircraft required to serve a regional route may be different from those required on the metros and may thus require creation of a separate fleet. Also the new carrier may be at a relatively greater disadvantage to spend on non-financially viable routes that the older players who are already operating on the market. In fact the new airlines may require a subsidy to operate on these routes.

These guidelines may thus act as a barrier to entry for new entrants.

- Minimum equity and fleet requirements

Equity and Fleet Requirements

In order to obtain a permit, an applicant is required to have certain minimum paid up capital.

To elaborate, for airlines operating with aircraft with take off mass equal to or exceeding 40000 kg, owning up to 5 aircrafts, a minimum capital of Rs 50 crores is required. In addition, for each addition of up to five aircrafts, additional equity investment of Rs 20 crores are required.



Secondly, for airlines operating with take off mass not exceeding 40000 kg, up to five aircrafts, a minimum capital of Rs 20 crores is required. Additionally, for each addition upto five aircrafts, additional equity investment of Rs 10 crores will be required.

The paid up capital will have to be raised to the above prescribed minimum levels by May 15 2008.

It may be noted here that prescribing minimum equity requirements is not an uncommon practice in several infrastructure sectors. Procurement of contractors normally requires minimum performance guarantees while pre qualifying on the basis of several factors including financial net worth. Seeking to prescribe minimum financial ownership by air carriers, especially those with less net worth, will ensure seriousness of both the owners as well as the venture capitalists. However, a key requirement is to ensure that the equity structure is not prohibitive enough to inhibit competition and entry of new carriers. A high equity ratio can become an entry barrier and thus create an undue advantage to carriers with high net worth. Thus, creating a barrier to entry versus encouraging low net worth carriers can be a balancing act.

In the context of the equity requirements laid down as above, the basis of minimum equity capital requirement laid down in the Policy is unclear. This may therefore be looked into. Further, a minimum fleet size of five aeroplanes or five multi engine helicopters is required. It may be said here that this may not be too stringent a requirement for air carriers to meet. This is because even if a carrier were to begin operations on two or three distinct routes and assuming that they were not to duplicate the same aircraft for operations along these routes, they would need at least three or four aircrafts with a spare of one aircraft. Therefore, a minimum of five aircrafts seems reasonable. However the basis of arriving at the figure of five aircrafts as opposed to three or four is however not clear.

• Foreign Equity Participation

Foreign equity participation up to 49% and investment by NRIs upto 100% is permitted in this sector. However, foreign airlines are not allowed to pick up equity directly or indirectly. Thus foreign financial institutions and other entities can make an investment in this sector. But tie ups with and holding of equity by foreign airlines are not permitted. Therefore the policy prohibits foreign airlines from entering the market.

This type of restrictions on foreign airlines exist in other countries as well. The US for instance, does not permit foreign airlines to operate on domestic routes. This regulation may be required for the airlines sector in India.

- Requirement of Domestic Flying for five years and a minimum fleet for flying internationally

Under the existing policy regime, an airlines must have an experience of flying for five years on domestic routes and have a minimum of 20 aircrafts before applying for permission to fly internationally.

This stipulation is obviously in favour of the existing incumbents such as Indian Airlines and Jet Airways. Now with the merger of Kingfisher with Air Deccan, Kingfisher has also started flying on international routes.

Given the extensive operational and management processes, as well as institutional knowledge required to operate on international routes, a minimum requirement in terms of years of experience is justified for pre qualifying air carriers. The minimum fleet requirement is to ensure uninterrupted and safe operations. It may be said that while the minimum of five years experience seems appropriate, the



minimum fleet requirement of 20 aircrafts is debatable; for example a small carrier that operates two or three flights a day may require no more than 4 or 5 aircrafts including spares to ensure continued operations. Therefore the minimum fleet requirement may be a larger barrier to entry than the 5 years of minimum flight experience. In addition, 5 years of flight experience may be a misnomer since the air carrier may be in service for five years but may have flown far less flight hours than required to ensure safe operations.

- **Usage of Airport Infrastructure consequent to Mergers**

Within the existing policy, in the context of mergers, the airlines that takes over the aircraft pursuant to the merger/take over/sale/transfer is allowed the use of airport infrastructure including parking bays, landing slots etc. However such user rights must be in use by the airlines that takes over, otherwise they will be taken over by the Government /airport operator.

This issue has implications for competition in this sector. The slot allocation policy has already been discussed in an earlier section. The earlier section has clearly shown how in the case of mergers allowing the airlines that is acquiring/merging with another airlines to take control of the slots of the latter is in fact strengthening dominance.

The public sector carriers have also faced barriers to expansion that are “barriers to entry” as explained in the earlier section, due to a range of different government policies. The private barriers to entry are linked to the public barriers to entry or the policy related barriers as described above. Issues such as high capital costs in accordance with the requirements of the policy provide an advantage to the large carriers. There is also the issue of scale economies particularly in the post merger scenario. Thus, currently, the three major players namely Jet, Kingfisher and Indian would obviously enjoy economies of scale due to their large size of fleet, maintenance and related costs. The route distribution guidelines also act as a deterrent to the new players in the sense that it is not often economical for them to abide by these, in comparison to the larger players who can afford to operate on many of these routes. Availability of slots and the existing practice of grandfathering of slots whereby preexisting ownership of slots by the incumbent airlines continue to be retained is also a major barrier to entry to the new airlines.



VI. & VII. To evaluate the intensity with which most airline carriers operate between city-pairs. Analyse and discuss from the stand-point of competition among the carriers.

To evaluate operations at various airports and the role played by previously allotted slots in creating competitive advantage, recognizing that the previously allotted slots mechanism to various air carriers at airports in and of itself creates a superior position in the competition ladder.

The following sections illustrate the evaluation of intensity with which various air carriers operate both from the standpoint of slots allotted to them as well as the passenger load carried. A comprehensive and detailed discussion using the data for the year 2006-07 is embedded in various sections to analyze the slot allocation versus the passenger load share effects experienced by air carriers at the six metropolitan cities of New Delhi, Mumbai, Bangalore, Chennai, Kolkata, and Hyderabad.

i. Slot Allocation Share

One of the key elements addressed in this effort is with regard to the slot allocation within the air transport sector. In general, slot arrangement may be defined as the right to take off or land at particular times of the day at specific origins and specified destinations. Given that all airports have capacity constraints, both in terms of available space and the ability to handle air traffic, the availability of slots to individual carriers bears significance. In addition to other considerations such as baggage handling and ground operations, the allocation of slots is one of the key and dominant factors, which determines the competitive advantage of any air carrier. With more and more new operators interested in opening routes between cities of high demand while the existing operators themselves choose to expand their current operations, the issue of slot availability especially during peak hours becomes a critical factor in achieving competitive advantage.

The availability of slots and the scarcity to allot fresh ones at the airports is a challenge faced by the offices of the Ministry of Civil Aviation, Airports Authority of India and the Director General Civil Aviation. This is especially true in metropolitan cities where the demand is high especially during the morning and evening peak periods. In general, the limited information available in the current literature points to a slot allocation policy wherein the slots allotted to various air carriers continue to be allotted without major changes. Thus 'grand fathering' of slot allocation rights is routinely practiced and thereby, potentially, posing a competition disadvantage to new operators who would like to especially commence operations between the major city pairs. The time slots allotted to various operators at metropolitan cities in India were analyzed in order to understand the slot allocation during various time periods of the day.

Methodology

In order to understand the current slot allocation, the latest available data for the 6 major airports in the country were analyzed. These airports are in the metropolitan cities of New Delhi, Mumbai, Kolkata, Chennai, Bangalore and Hyderabad. In addition to collecting data on the number of flights departing from these airports, also termed as 'time slots', the number of flights between these 30 city-pairs combinations originating from and destined to these metros were studied. Further, the slot allocation data were collected in hourly increments and were segregated by 9 air carriers. These data were analyzed to comprehensively understand the slot allocation share held by various air carriers and the percent share during peak hours of the day when most of the customer demand exists.



Slot Allocation Analysis

A review of the data has indicated that for the month of July 2006, a total of 571 slots were available at the 6 metropolitan cities with Mumbai capturing the most at 148 slots followed by New Delhi, Bangalore, Hyderabad, Chennai and Kolkatta with 125, 97, 76, 73 and 52 slots respectively. Thus Mumbai and New Delhi account for about 47 per cent of all the slots available at the six metropolitan cities.

In order to understand the slots allotted to various air carriers, a segmentation analyses was completed at two levels: (a) For the six airports collectively and (b) By individual airport. Figure S1 shows the slot allocation by individual air carriers at all the 6 metropolitan airports. As seen from the figure, Jet Airways had the maximum share of 154 slots, which equates to 27 per cent of all slots allotted during the day. Given that Jet Airways primarily operates from the Mumbai airport and also noting the fact that Mumbai happens to rank the first with regard to number of departing flights, it is understandable that Jet Airways has the maximum number of slots allotted to it. In terms of the slot allocation share, Jet Airways is followed by Indian with 91 slots (16% share), Jetlite with 79 slots (14%) and Deccan with 74 slots (13%).

A similar analysis was completed for 6 airports in terms of the slot allocation share at these individual airports. Figures S2 to S7 show the slot share at Hyderabad, Mumbai, New Delhi, Chennai, Kolkata and Bangalore respectively. It is worth noting that Jet Airways was allotted the maximum number of slots at 5 out of the 6 airports thereby making it the dominant player in the air transport sector (based on slot allocation share at the 6 metropolitan airports). Jet Airways equaled Indian at Hyderabad. Jetlite, Indian, and Deccan were the closest players in terms of slot availability at the various airports.

These analyses help conclude that the three major air carriers in terms of slot allocation are Jet Airways, Indian and Jetlite. Interestingly, though, Jet Airways did not figure in the peak 4-hour slot analysis as being allotted the maximum number of slots. In fact, only 26% of all the slots which Jet Airways had were during the peak 4 hours of the 24-hour time period. Kingfisher, Indian and Jetlite had 43%, 40% and 39% slots during the peak four hours of the day indicating their desire and preference for peak time slots.

ii. Slot Allocation by Time of the Day

As noted earlier, the flight departure data, which is synonymous with slot allocation, time frame, was analyzed to identify the variation in slot assignment for individual air carriers at individual airports by the hour of the day during a 24 hour period. Figure S8 shows the number of slots allotted for all the 8 air carriers at the 6 metropolitan airports. It may be noted that Jet Airways was allotted the maximum number of slots during both the morning and evening peak hours of 6 to 7 A.M. and 5 to 6 P.M respectively with 16 and 17 slots respectively. In general, most air carriers were allotted between 1 and 5 slots during both the peak and off peak hours of the day. This time series analysis helps to recognize that Jet Airways, Indian and Jetlite continue to hold not only the maximum number of slots during a day but also the most during both morning and evening peak periods.

Since the logistics employed by any air carrier at all airports comprises approximately a 2 hour window during which the process of seat assignment, baggage handling, and security check, gate access and onboard checking. In addition to other ground operations is carried out, for the purpose of this analysis, a two hour peak is chosen both for the morning and evening hours. It may be noted that the data were analyzed by the specific time slots and the competing air carriers during those time slots. Following this, an hourly analysis was also completed. This report presents the two-hourly analyses due to reasons noted above. Figures S9 to S15 show the slot assignment in 2-hour increments except for the midnight hours of 1200 to 400. Figure S9 comprises the data for all the 6 airports while Figures S10 to S15 are for the 6 metropolitan airports evaluated individually. As seen from Figure S9 the morning two



hours peak for all the 6 metros is 600 to 800 hours where 87 of the 571 slots are allotted. This equals 15% of the total daily slots. The evening peak of 1600 to 2000 hours comprised 144 slots in 4 hours or 13% each in two-hour increments. The peak extends further with a small decline to 12% or 69 slots from 2000 to 2200 hours. This Figure shows that the evening peak is more stretched than is the morning peak as illustrated by the fact that the morning 4 hours extending from 600 to 1000 hours comprised a total of 28% slots while the evening 6 hours extending from 1600 to 2200 hours were allotted to a total of 213 slots or 38% of the daily total.

Slot Allocation at Individual Airports

Figure S10 shows the slot allocation in two-hour increments at the airport of the 76 slots available at the Hyderabad airport. The maximum number of slots was allotted between 600 and 800 hours, the 2 hours during which 21%, all the slots were allocated to various air carriers. During the evening period the 1600 to 1800 peak 2 hours accounted for 16% of the total daily slots. As in case of all airports across the country, the evening 6 hours ranging from 1600 to 2000 hours were allotted the most slots. Unlike several other airports, especially Mumbai, New Delhi, Chennai and Bangalore airports, Hyderabad experienced vivid peak and off-peaks with the lowest daily allocation of 4 slots between 1200 and 1400 hours.

At the Mumbai airport as shown in Figure S11, the morning peak of 600 to 800 hours were allocated 14% of the daily slots while the following 2 hours were allotted 13%. The evening peak extended from 1800 to 2000 hours where 22% of daily slots were allotted. The evening peak was again stretched between 1600 and 2200 hours with a total of 32% slot allocation. Of the 6 metros, Mumbai is the only airport that has flight departures occurring during any 2 hour period of the 24 hour day. New Delhi experiences a morning peak with 16% of daily slots. This peak was during the hours of 600 to 800. New Delhi has an evening peak of 2000 to 2200 hours with 15% of slots allotted during this period. The previous 4 hours were allotted a total of 28% of the daily slots.

In case of Chennai, the morning peak hours were from 800 to 1000 hours with 14% of total daily slots while the previous two hours were allotted 12%. The evening peak however, was prominent between the hours of 1600 and 1800 where 14% of the total daily slots were allotted. Chennai appeared to have experienced less off-peak slot variation. As seen from Figure S13, the mid day slot assignment ranged between 5% and 7% of the total daily slots. Kolkatta also had a morning peak of 600 to 800 hours wherein 13% of the total daily slots were allotted with the following 2 hours carrying 10%. The evening peak was between 1800 and 2000 hours where 17% of the slots were allotted.

Bangalore experienced a morning peak between 600 and 800 hours with 15% of daily slots and was followed by 14% between 800 and 1000 hours. The evening peak extended from 1600 to 2200 hours with a total of 39% slots. In summary, it may be noted that the peak hours with regard to slot assignment were approximately the same for all the cities especially in terms of the trends they follow. For example all airports had approximately two consecutive two hour peak periods in the morning while in the afternoon there were three two hour peak periods ranging between 1600 and 2200 hours.

Slot Allocation During Peak Four Hours of the Day

For better understanding the slot allocation to various air carriers during the peak hours of the day, an analysis was completed by selecting the peak two hours in the morning and peak two hours in the evening. As such, the four peak hours are not the same for individual air carriers. For example Kingfisher had morning and evening peak slot assignment during 600 to 800 hours and 1600 to 1800 hours while Deccan experienced morning and evening peaks during 800 to 1000 and 2000 to 2200 hours. Figure S16 shows the percent of slots allotted to various air carriers during their respective 4 peak hours of the 24-hour day. Kingfisher and Indian each had 43% of their respective slots during the morning and evening peak 2-hour periods while Jetlite, GoAir and Deccan had 38%, 36% and 36% slots during peak periods.



Excepting SpiceJet, all other carriers approximately one-third or more of their slots during the 4 peak hours.

Aircarrier Slots by the Hour

In order to understand the timeslots during which various air carriers operated their flights, hourly data was collected and analyzed for the 30 city-pair combinations resulting from the 6 metropolitan airports. These data are plotted in Figures S17 to S46. It may be noted from these figures that there was a great degree of variation with which these air carriers operated not only between city pairs but also from individual airports.

iii. Passenger Share

Data Collection and Analysis Methodology

A comprehensive data collection effort was completed for the April 2006 to March 2007 time period for 11 air carriers. Similar to the slot allocation share analysis, the passenger share analysis was completed. Given that the slot share data comprised 8 air carriers, the passenger share data for the same air carriers was evaluated for the year 2006-07. Though Indigo passenger data were available, since the slot data was not available for the air carrier due to it commencing operations after July 2006, the data is not a part of the analysis. Slot data is from the month of July 2006. Only 8 air carriers comprise the framework of this effort. It may be noted that during 2006-07 time period, Air Sahara was in operation which later underwent an acquisition and as a result the change over to Jetlite. Therefore, the analysis reflects the name Jetlite as opposed to Air Sahara for the sake of comparison with the slot allocation share analysis. Given that 6 metropolitan airports are considered for the analysis, a total of 30 city-pair combinations are possible.

The Director General Civil Aviation Office provided the data for the year 2006 - 07 for 11 air carriers out of which 9 are used for the passenger share analysis. From the data that was collected for the 30 city-pair combinations, a two level-segregated analysis was completed. First, the data were segregated by individual airports so as to assess the passenger share of each air carrier individually. Since passenger traffic data is available in monthly increments from April 2007 to March 2007, a quick evaluation was performed to understand the monthly variations in passenger demand. Figure P1 shows the variation of the travel demand during the months of April 2006 to March 2007. It may be noted that the passenger volume ranged between 1,295,498 in the month of July 2006 and 1,620,766 in the month of December. The monthly average passenger traffic was 1,426,631. This Figure illustrates that there had been very little variation in the passenger demand, which also shows that the uniform rates of travel was performed during the year.

Figure P2 shows the passenger traffic at the 6 metropolitan airports considered for this analysis. With regard to the traffic generating from Hyderabad, a total of 2,003,281 passengers have flown to the other 5 metropolitan cities. Hyderabad had the lowest passenger traffic amongst these 6 metropolitan airports in relation to passengers flown to the other 5 metropolitan airports. As seen Figure P2 Mumbai carried the most passengers at 4,407,028 and was closely followed by New Delhi with a passenger load of 4,220,041, on an average these 5 airports carried approximately 2,930,746 passengers.

The data collected from the DGCA office was analyzed to understand the dominance of individual air carriers and their operations at the 6 metropolitan airports. A total of 17,119,574 passengers were flown from the 6 airports by the 9 air carriers during the year 2006-07. Figure P3 shows the passenger share for all the 9 air carriers operating from the 6 metropolitan airports. It may be noted that for the year March 2006 to April 2007, a total of 4,695,891 passengers were carried by Jet Airways, which amounts to 27.4% of the total passenger load for the 9 air carriers. Jet Airways was followed by Indian, Deccan and Kingfisher with passengers load share of 18.8%, 15.9% and 11.9% respectively. The remaining air



carriers had percentage of load share of less than 10% each. Figure P3 illustrates the passenger loads and the share of the 9 air carriers. Go Air and Indigo carried the lowest passenger load share of 3.6% and 2.1% respectively.

Given that the possibility exists for individual air carriers to dominate at some airports in relation to others, the passenger load and share analysis was separately performed for the 6 airports. Figure P4 shows the passenger share for the 9 air carriers, at Hyderabad. Indian carried the most passengers with 20.5% of the total passenger load destined the other 5 metropolitan cities. Jet Airways closely followed with a 20% passenger share while Deccan, Kingfisher and Spice jet accounted for 16.5%, 13.4% and 10.5% passenger load respectively. Off the air carriers that operate domestically, Indigo and Go Air accounted for the lowest passenger load at 4.6% and 4.3% respectively.

Figure P5 shows the passenger share and load for New Delhi. Jet Airways and Indian carried peak passenger volumes of 23.4% and 20% respectively while Deccan, Jetlite and Kingfisher carried passenger load shares of 15.1%, 12.5% and 10.5% respectively. Indigo carried the lowest passenger share of 2.8%. Figure P6 shows the passenger load share for Mumbai. Jet Airways with a share of 31.5% of all traffic to the other 5 airports rank the highest with double digit lead over Indian with a passenger share of 18.8%. Kingfisher and Deccan carried 12.8% and 12.5% traffic respectively. Indigo carried almost no traffic with barely 18,180 passengers and a share of 0.4%.

Figure P7 shows the passenger load share for Chennai where, again, Jet Airways carried the most passengers with a load share of 32.8% followed by Indian and Deccan at 21.4% and 20% passenger load share respectively. Indigo, again carried the lowest passenger load share of 2.6% amongst the domestic carriers.

Figure P8 shows the passenger load share for Kolkatta. Jet Airways carried the maximum passenger load share of 29.4% thus accounting for more than 160% of its closest rival, Deccan which had a share of 18.3%. Indian, Jetlite and Kingfisher followed at 16.9%, 10.8 and 10.2% respectively. Go air carried the lowest passenger volume of 18,044 or 0.9% passenger share.

Figure P9 shows the passenger load share for the city of Bangalore. Jet Airways carried 28.4% of all passenger air traffic to the other 5 airports and is followed by Kingfisher and Deccan at 17% and 15.7% respectively. Indian and Jetlite carried 15.1% and 11% respectively while Indigo had the lowest passenger of 1.1%.

iv. Slot Share and Passenger Share Comparison

Slot Allocation Vs Passengers Carried

In order to understand the quantitative distribution of slots allotted to various air carriers and the passenger volumes carried by them during the year 2006-07, a comparative analysis of 'slots allotted' and 'passenger load' was completed. The comparative analysis was performed by using the percentage data for both the parameters. Figure P10 shows the slot allocation share and the passenger volume share for the 6 metropolitan airports collectively and the 8 air carriers individually. It may be noted from this Figure that Jetlite, Deccan, Indian, Jet Airways and Air India carried more passengers as a percentage of the total volume in relation to the percent of slots allotted to them. Spice Jet, Go Air and Kingfisher had more slots allotted as a percentage in relation to the passenger volumes carried.

Figures P11 to P16 show the percentages of slots allotted and passengers carried at Hyderabad, New Delhi, Mumbai, Chennai, Kolkatta and Bangalore respectively. At Hyderabad except for Go Air and Kingfisher, the remaining air operators carried more passengers in relation to the slots allotted to them. At the New Delhi and Mumbai airports, except for Spice Jet, Go Air and Kingfisher other air carriers had more passenger share than the slot allocation share. As seen from Figure P14, at the Chennai airport, Jetlite, Spice Jet and Kingfisher were the air carriers that had more slot allocation share in relation to the



passenger share. At the Kolkatta and Bangalore airports Spice Jet and Kingfisher were the air carriers which had more slots allotted to them than the passenger share as a percentage of the total volume.

Slot Share Advantage Over Passengers Carried

The data analysis discussed above were further segregated and evaluated by individual air carriers so as to identify those operators who had slot share advantages over passengers carried. Figure P17 to P25 show the advantage, which individual carriers have in relation to the slots allotted. For example from Figure P17 it may be noted that Jetlite had a slot share advantage at Mumbai and Chennai airports. The marginal 0.1% and 0.8% advantage reflects that Jetlite has more slots compared with the passenger share it had carried. The data shown in these figures are calculated using the formula 'Slot Share - minus Passenger Share'; thus Jetlite which had 7.6% slots share at all the 6 airports combined and 9.7% passenger share implies that it has a 2.1% (9.7% - 7.6%) disadvantage by using slot share as a reference point. Thus except for Mumbai and Chennai, Jetlite has a slot share disadvantage at all the airports including the 6 combined metros.

Deccan, as seen from Figure 18 illustrates that it has a considerable disadvantage in terms of the slots allotted as compared with the passenger load. At New Delhi, Deccan carried 15.5% of all passenger traffic destined to the other 5 metros while only 4.4% slots were allotted to the air carriers. Spice Jet as seen from Figure P19 generally had an advantage in that except for Hyderabad, it has more slots allotted than the passengers carried. Kingfisher, by far had the greatest advantage with regard to slot allocation as seen in Figures P20 to P22. The advantage for Kingfisher ranged between 6.3% and 16.3% as measured by the 'slots share minus passenger share concept'. Kingfisher had a 10.1% slot share advantage when viewed from the standpoint of the 6 metropolitan airports combined. Figure P20 shows that Chennai, Kolkatta and Bangalore were the only airports where Go Air was at a disadvantage. Indian, Jet Airways and Air India as seen from Figures P22 to P24 are at a disadvantage with regard to the slot allocation.

v. Unit Slot and Passenger Analysis

Slot Allocation per Million Passengers

A detailed data analysis, as described above, illustrates that a certain degree of disparity exists with regard to the allotted slots compared with the passenger load. Therefore, further analysis was conducted to arrive at unit level measures of slots vis-à-vis passenger loads. Figure U1 shows the analysis chart for the 6 metropolitan airports. Air India ranked the highest with 115 slots per million passengers carried during the year 2006-07. Jetlite, Spice Jet, and Jet Airways followed with 49, 34 and 33 slots per million passengers respectively. The remaining air carriers operated at rates below 30 slots per million passengers. It is important to note that the smaller the value, the better the utilization and / or the allocation of the slots. Conversely, higher the number, the more the advantage a particular air carrier has over others. Thus, Go Air had the maximum utilization over other air carriers during 2006-07, given that it had the best utilization of slots in relation to the passengers carried, while Air India was a great advantage since it had the maximum unit rate.

Figures U2 to U7 show the unit rates (slots per million passengers) for the 6 metropolitan cities individually. As seen from these figures Go Air consistently had the lowest unit slot rates indicating high utilization rate while carriers such as Air India (highest unit rate at all six airports), Jet Lite (2nd highest unit rate at 5 of 6 airports), Jet Airways (3rd and 4th highest at 3 airports each) et cetera had the greatest advantage over other carriers.



vi. Correlating Passenger Traffic Slot Allocation

Given that the larger the number of flights available from a particular air carrier, the options available to the passengers increase and thereby contribute to the utilization of passenger demand, a correlation analysis was conducted. The 2006-07 passenger traffic for individual air carriers between the 30 city-pair combinations was examined for the possibility of a co-relation with allotted slots. This data analysis has shown a co-relation value of 0.88, thus indicating that the more the slots allotted for a particular air carrier, the greater the likelihood of passenger using that specific air carriers. Therefore, it may be noted that slot allocation policy will have a significant b on the potential for capturing the demand.



Figure S1: Slot Allocation at Six Metropolitan Airports

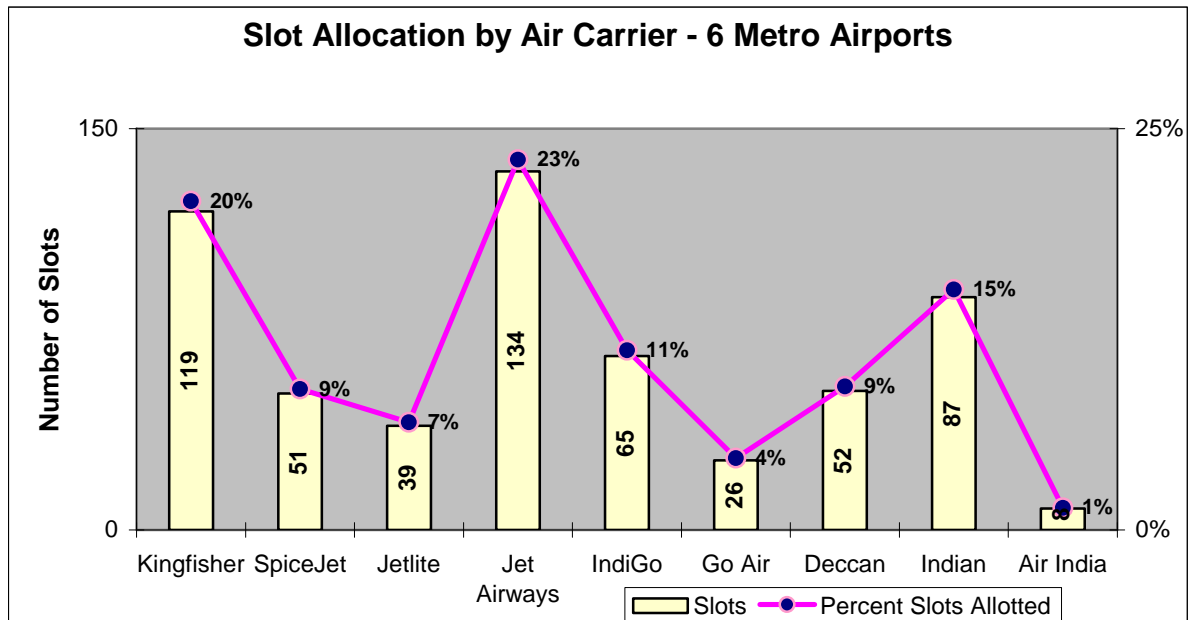


Figure S2: Slot Allocation at Hyderabad

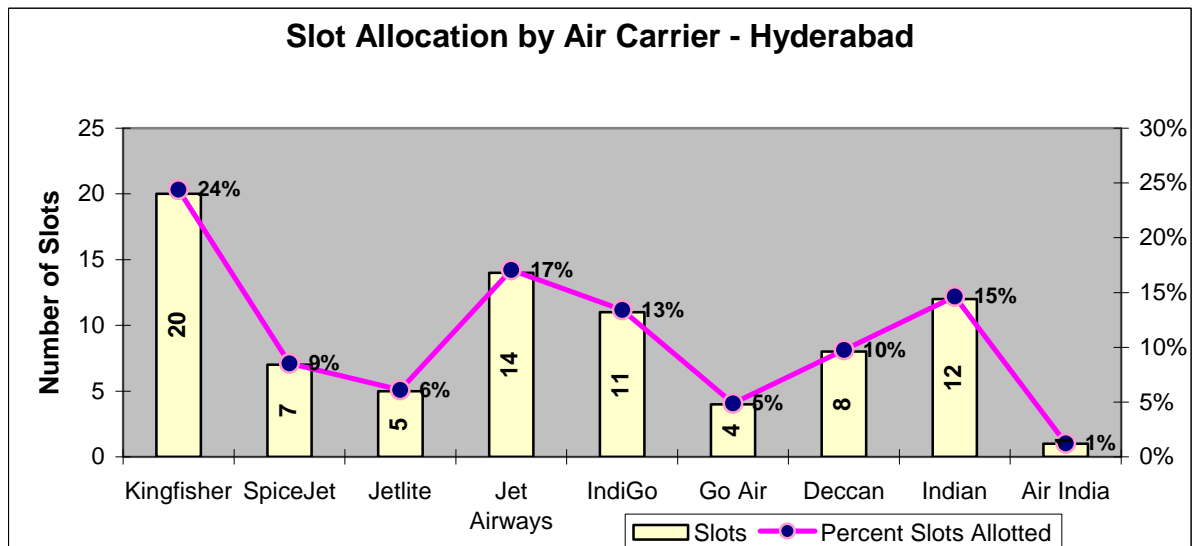


Figure S3: Slot Allocation at Mumbai

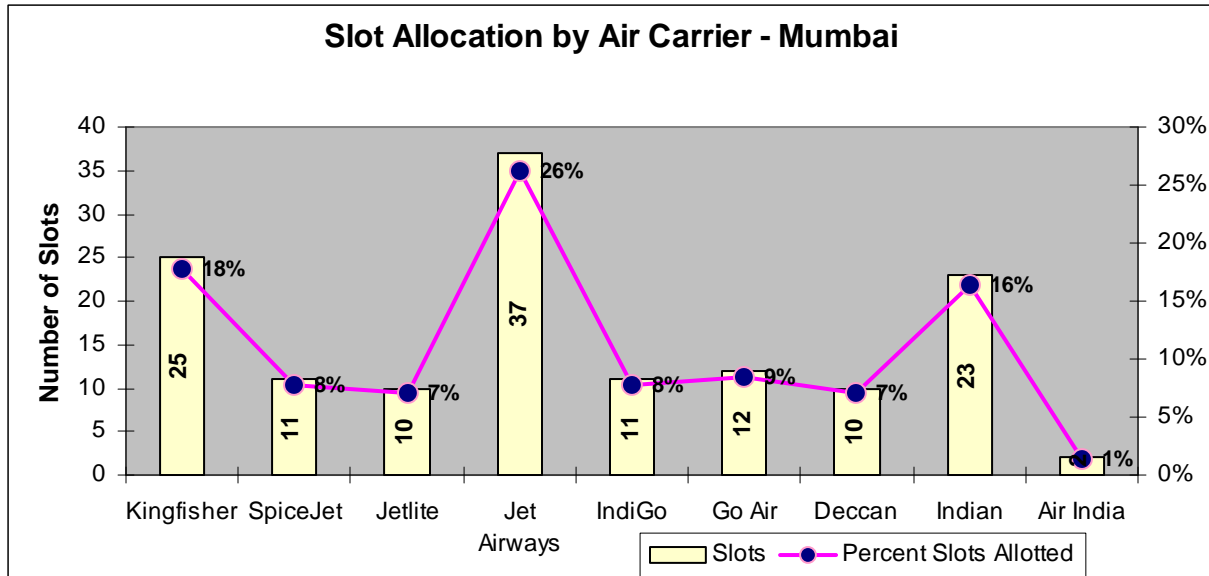


Figure S4: Slot Allocation at New Delhi

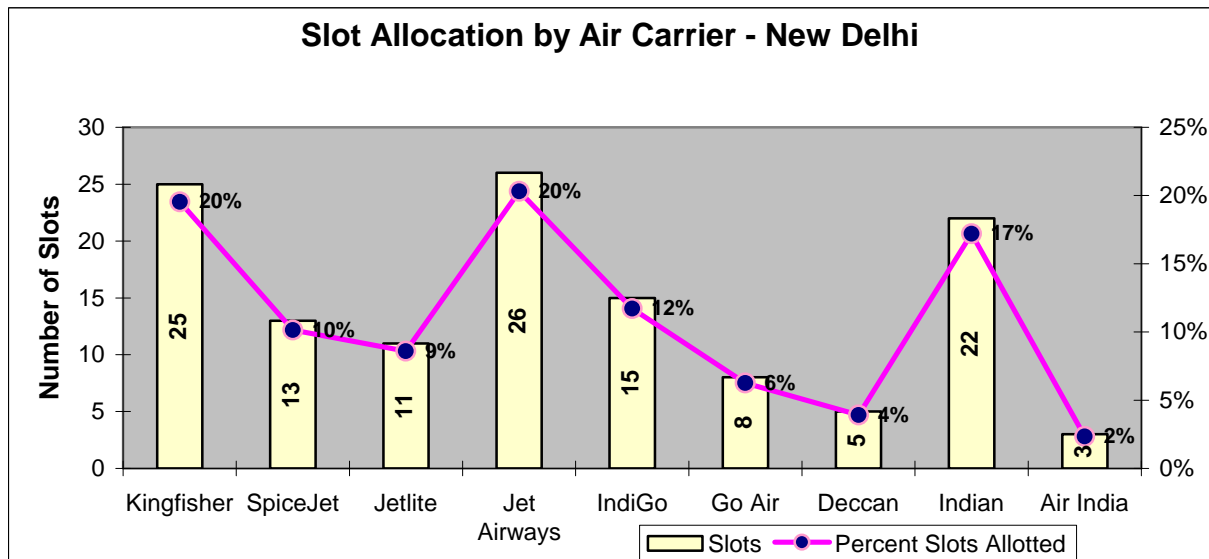


Figure S5: Slot Allocation at Chennai

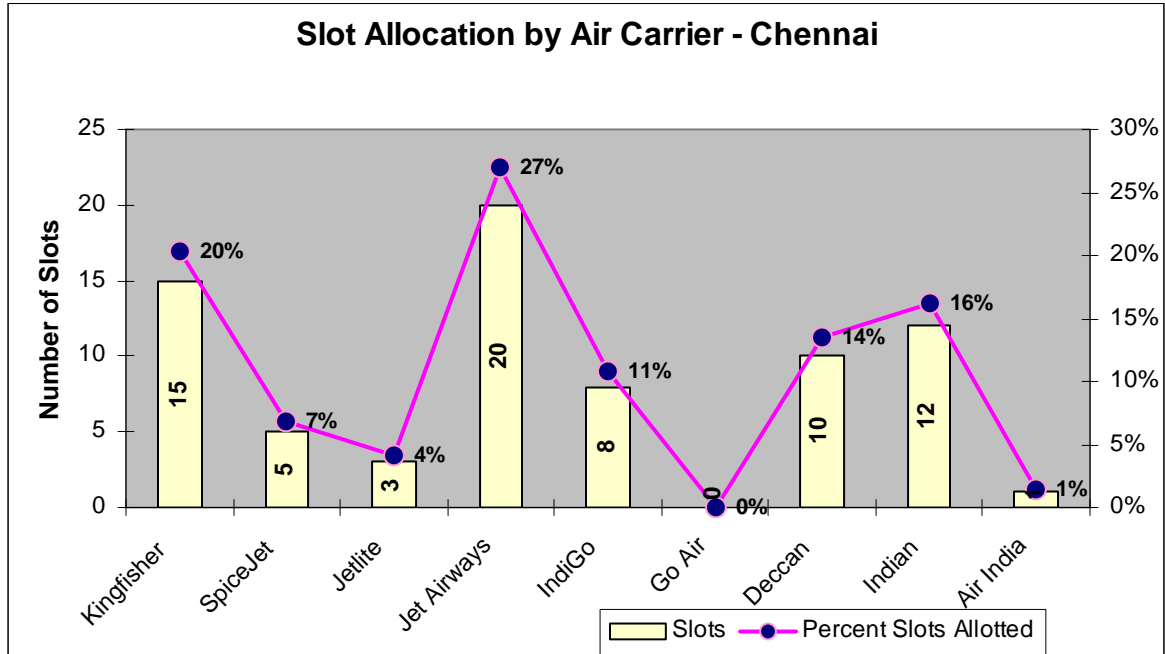


Figure S6: Slot Allocation at Kolkata



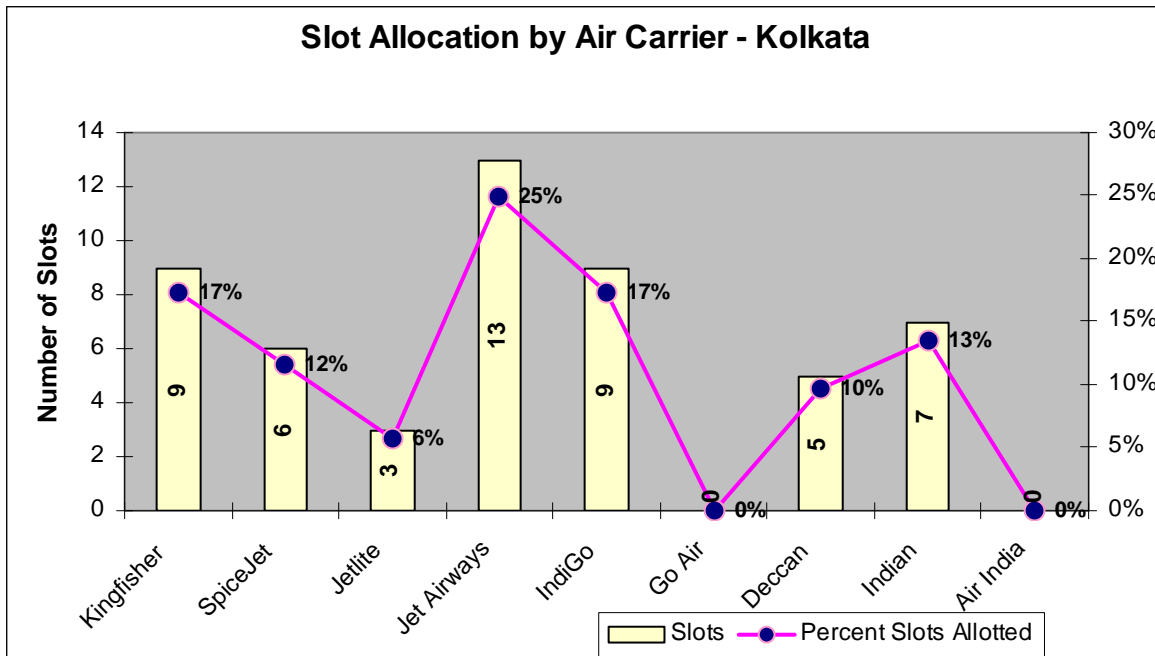


Figure S7: Slot Allocation at Bangalore

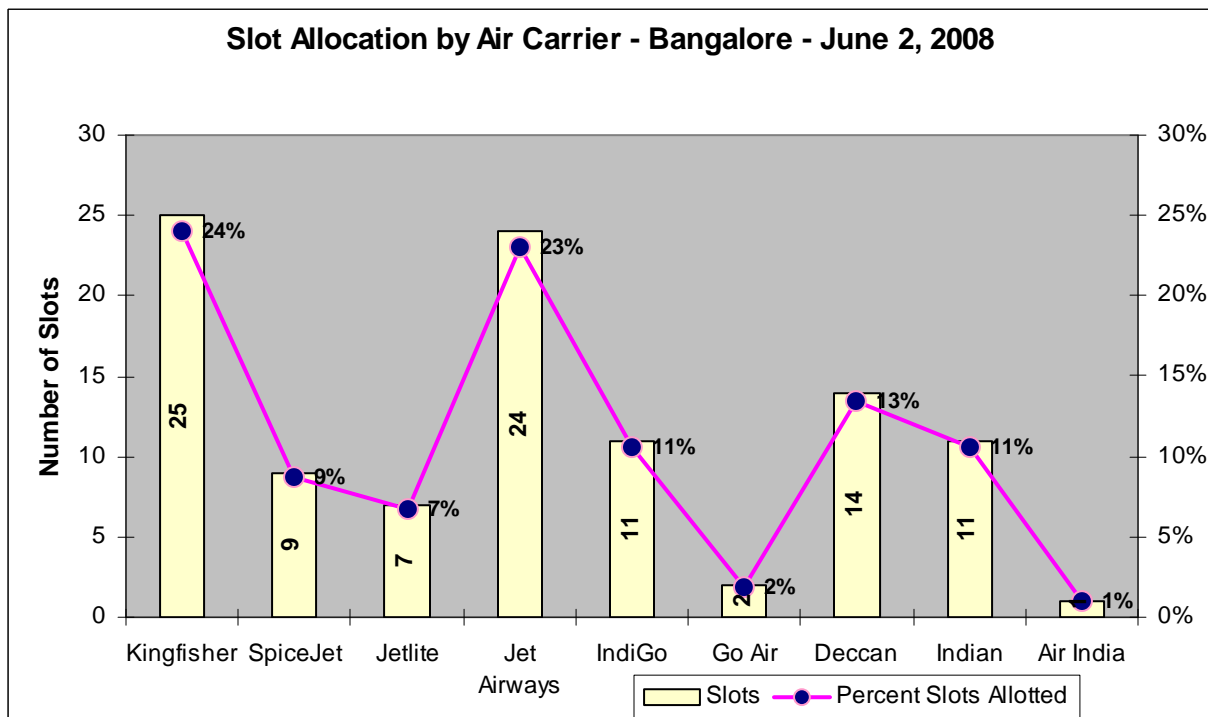


Figure S8: Time Slots of Individual Aircarriers

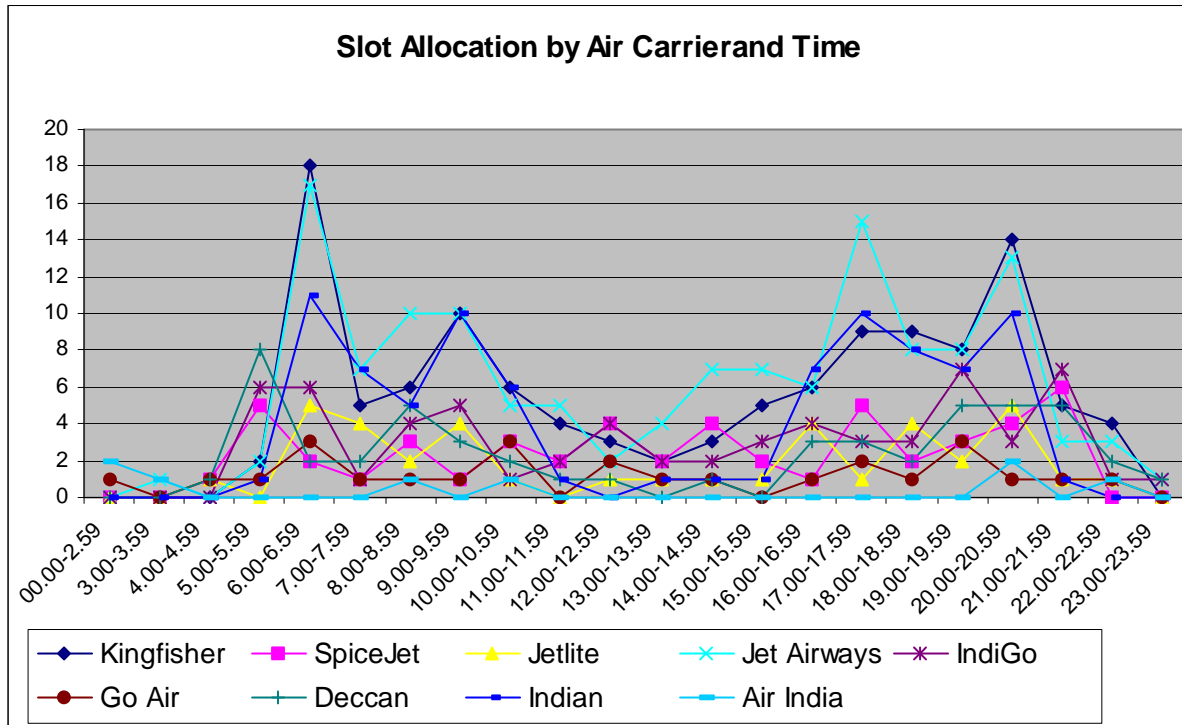


Figure S9: 2-Hour Slots – 6 Metropolitan Airports

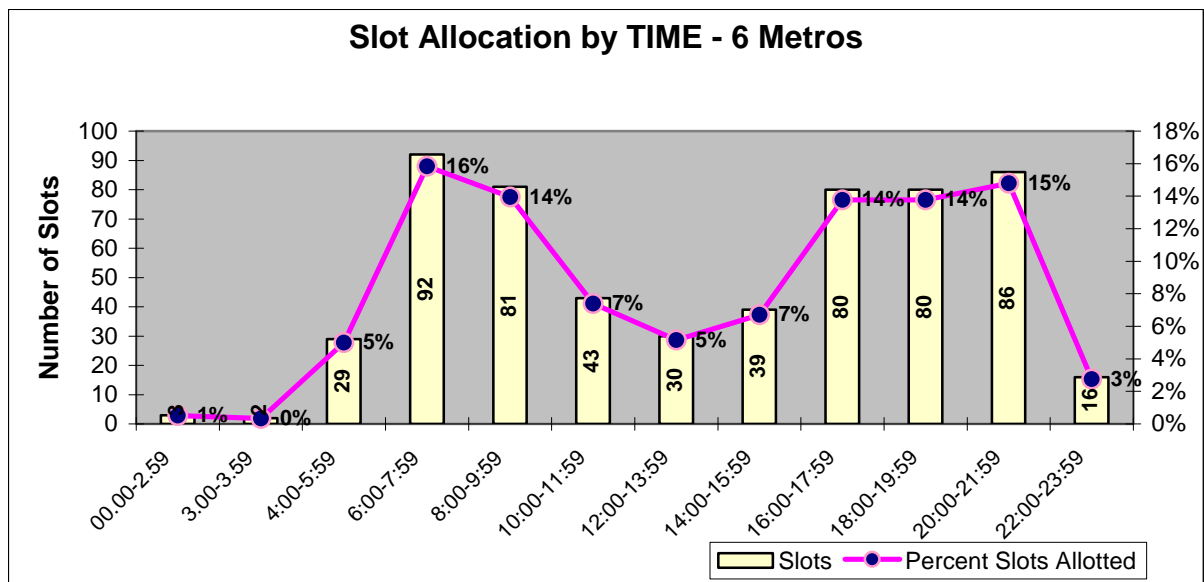


Figure S10: 2-Hour Slots – Hyderabad

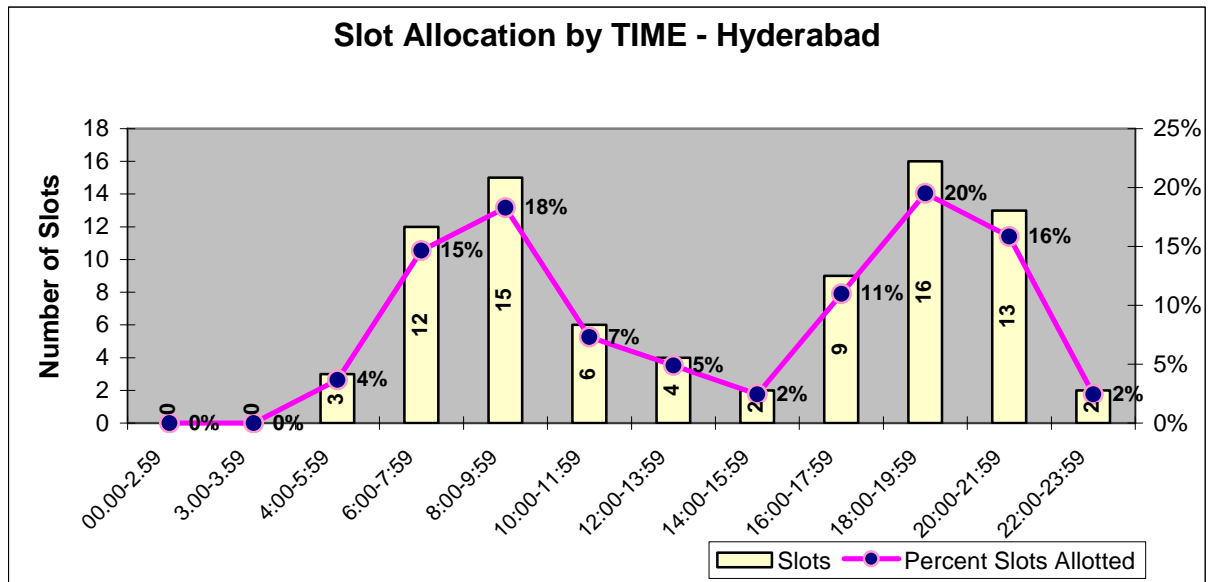


Figure S11: 2-Hour Slots – Mumbai

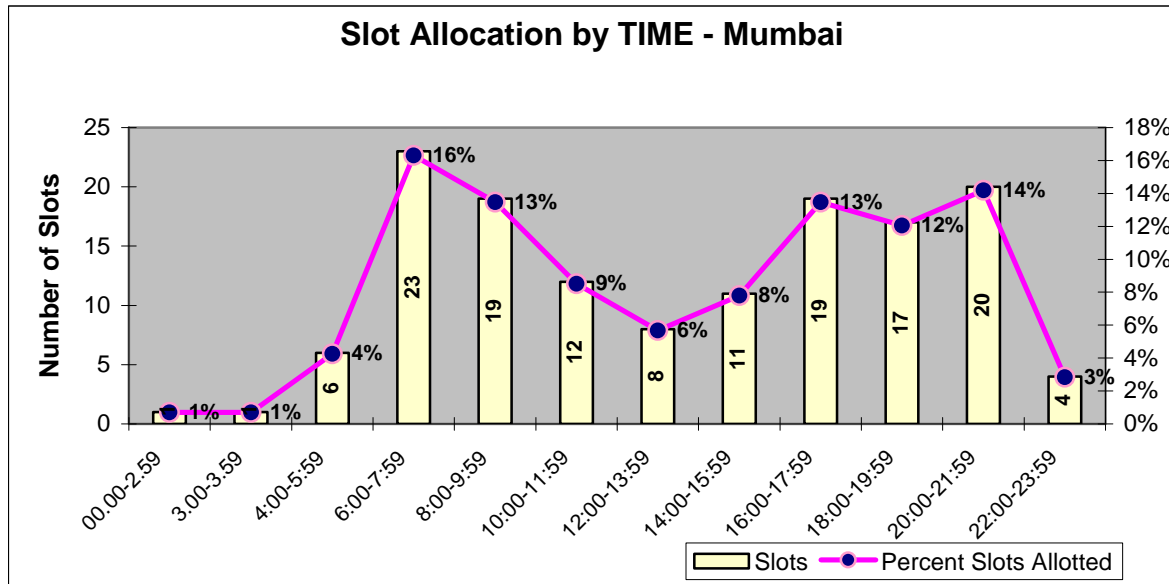


Figure S12: 2-Hour Slots – New Delhi

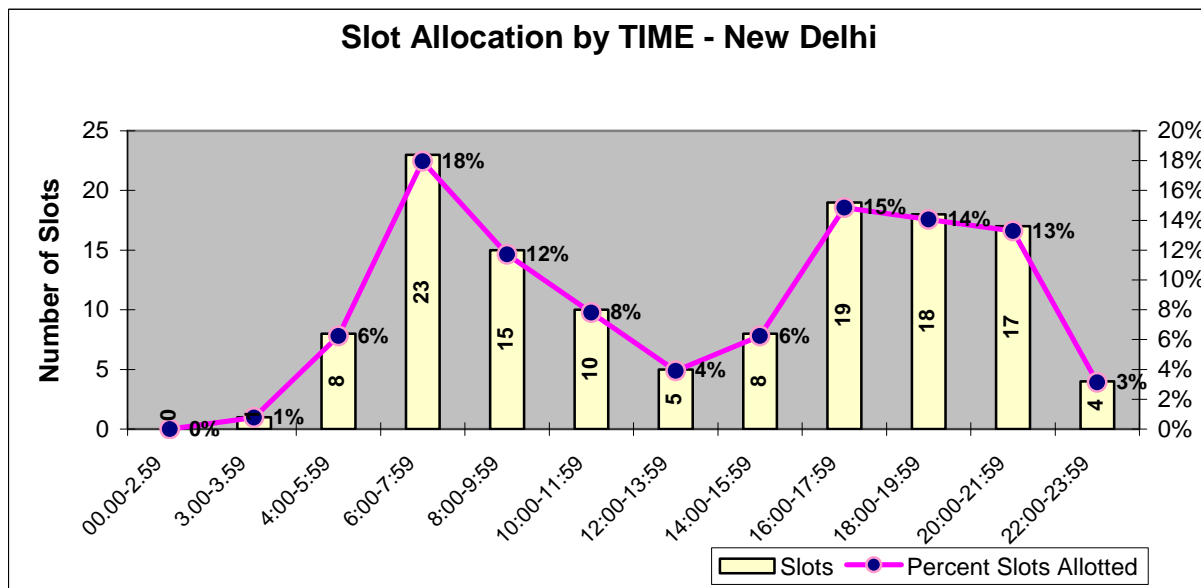


Figure S13: 2-Hour Slots – Chennai

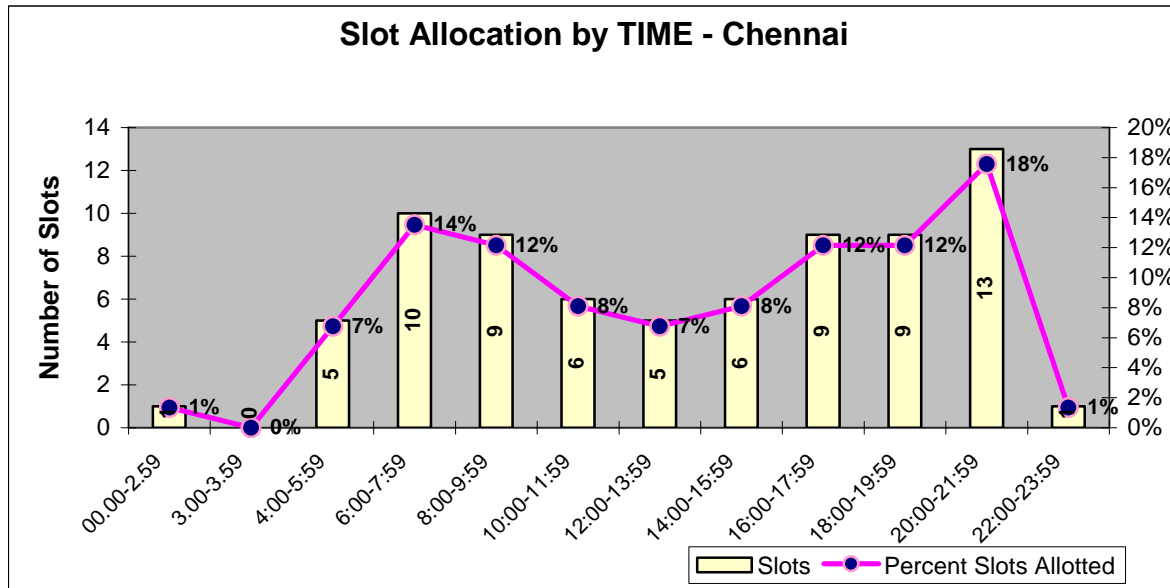


Figure S14: 2-Hour Slots – Kolkata

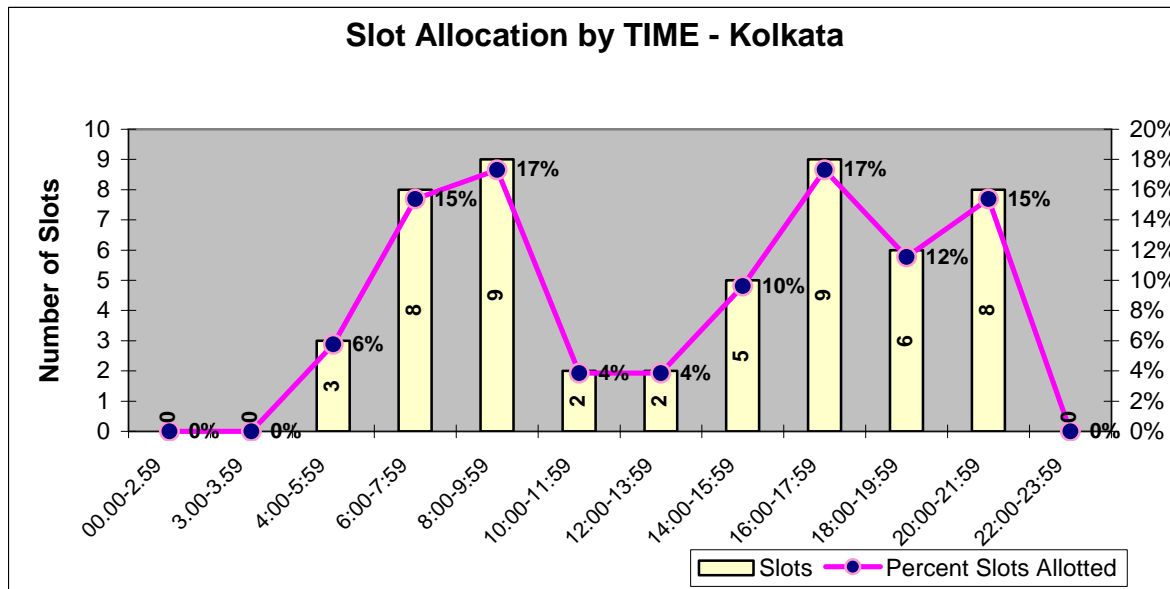


Figure S15: 2-Hour Slots – Bangalore

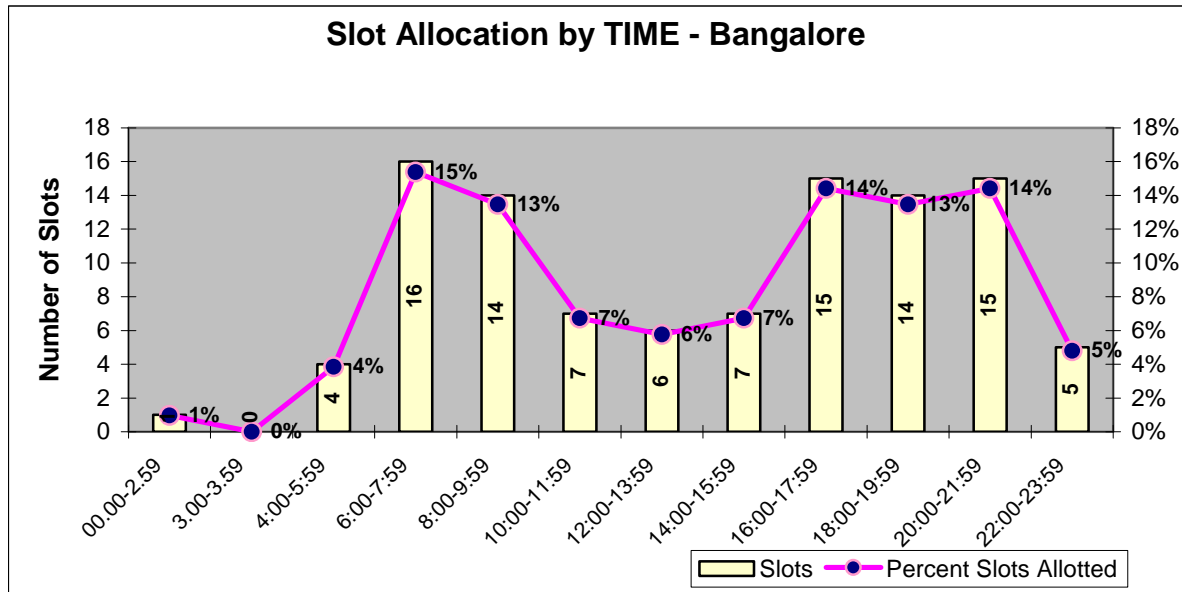


Figure S16: Slots during Peak 4-Hours

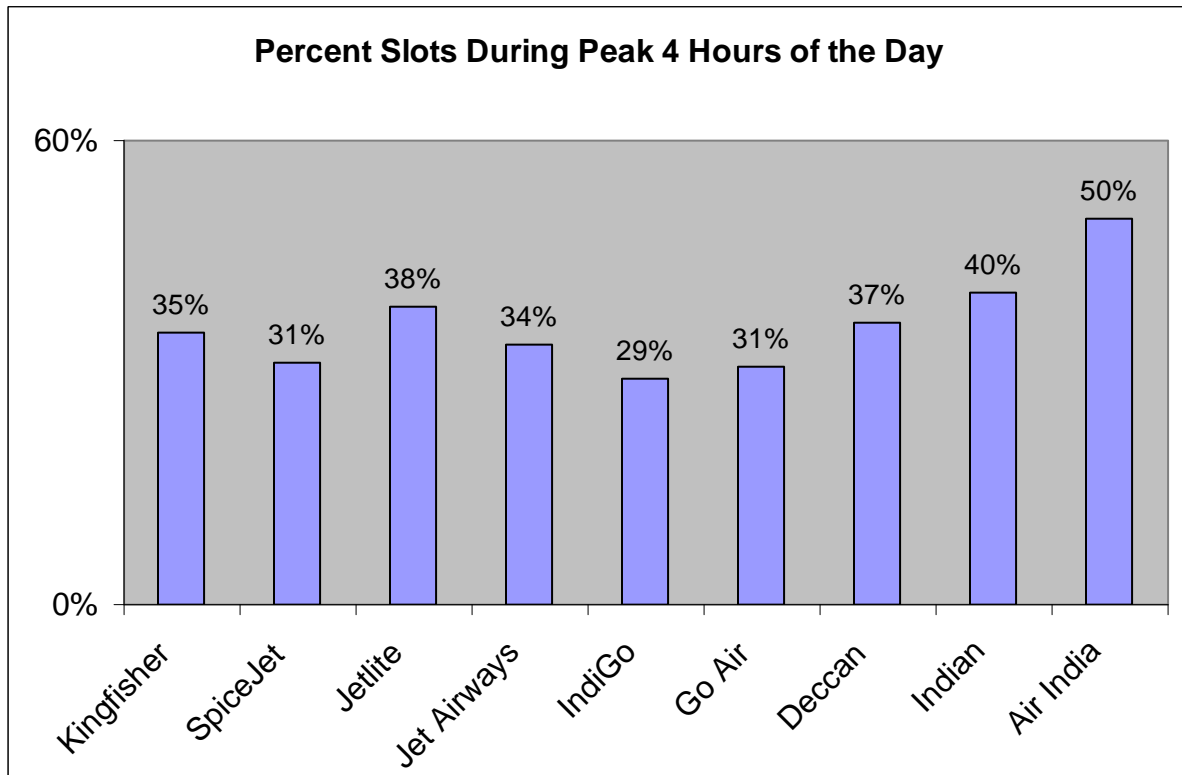


Figure S17: Slot Distribution – Hyderabad to Mumbai

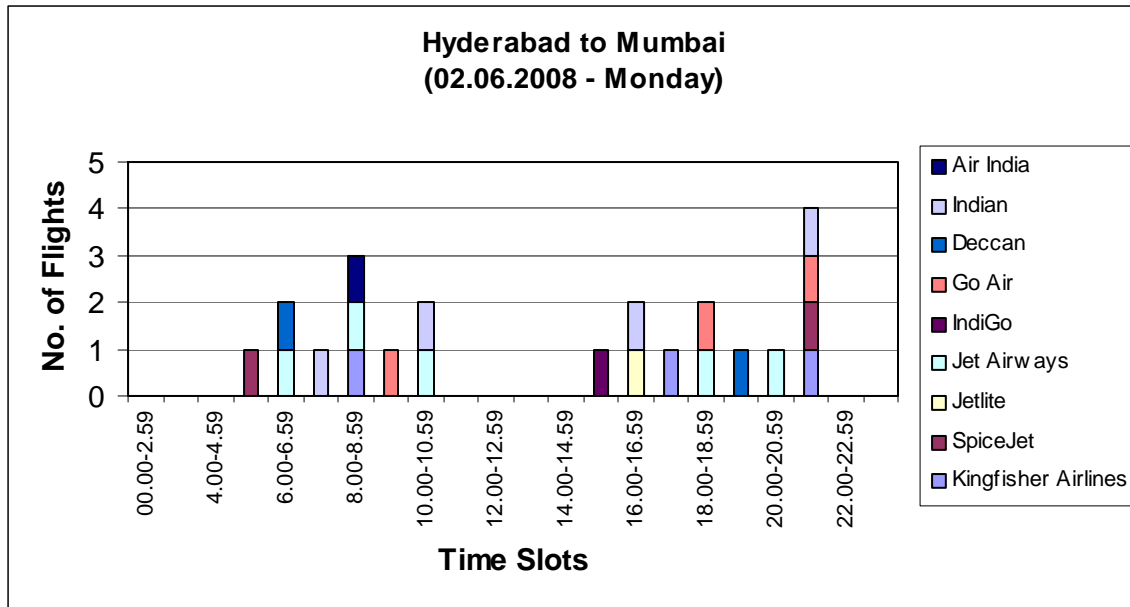


Figure S18: Slot Distribution – Hyderabad to New Delhi

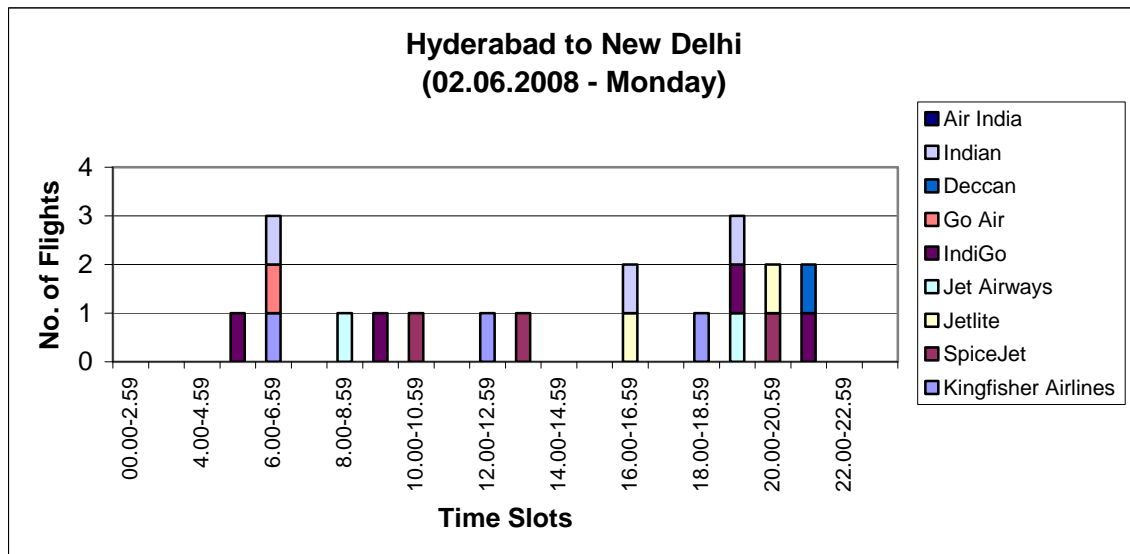


Figure S19: Slot Distribution – Hyderabad to Chennai

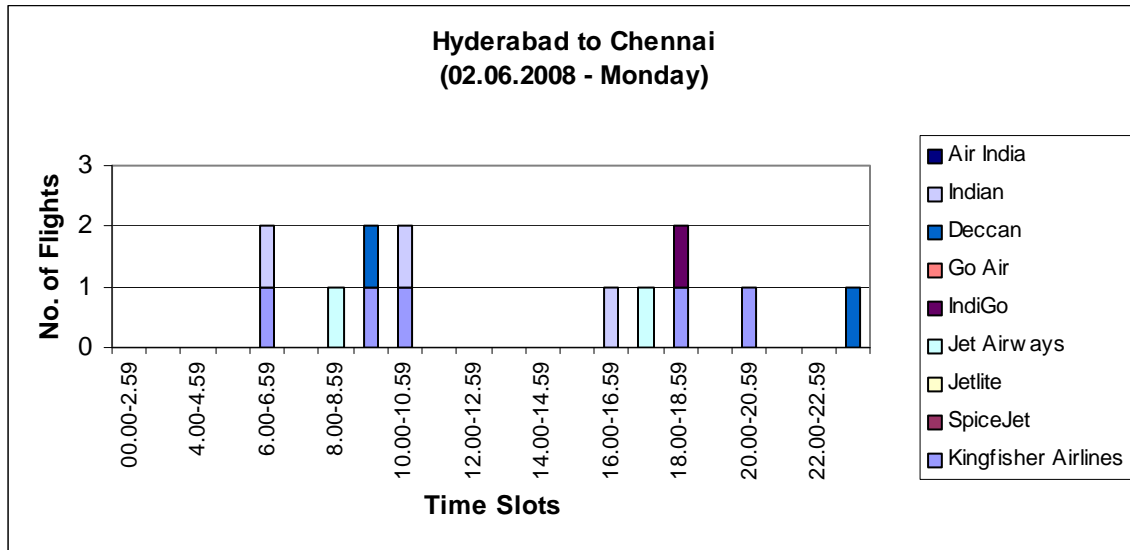


Figure S20: Slot Distribution – Hyderabad to Kolkata

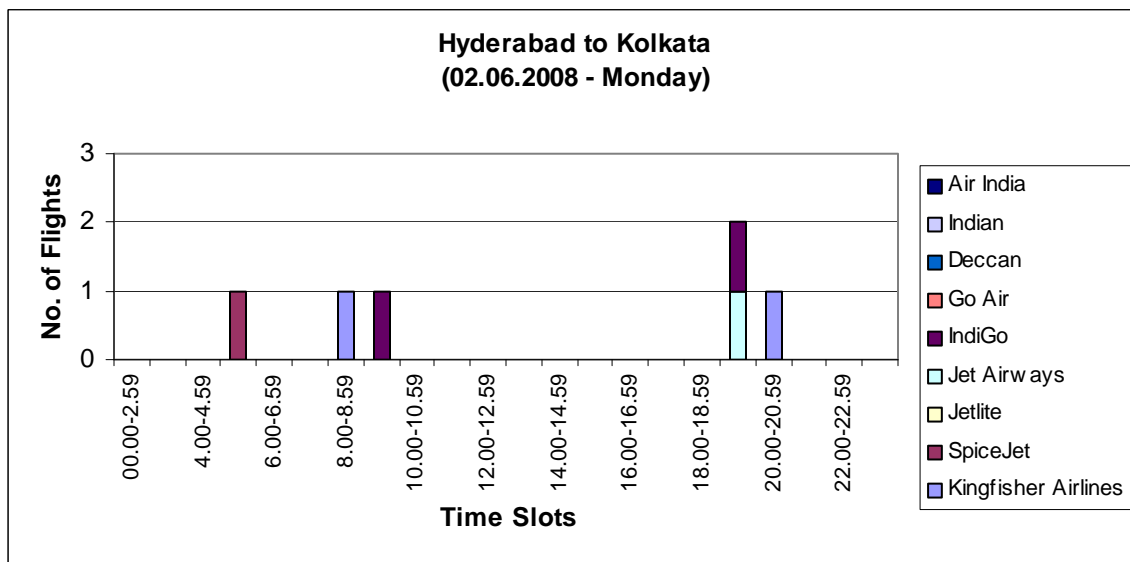


Figure S21: Slot Distribution – Hyderabad to Bangalore

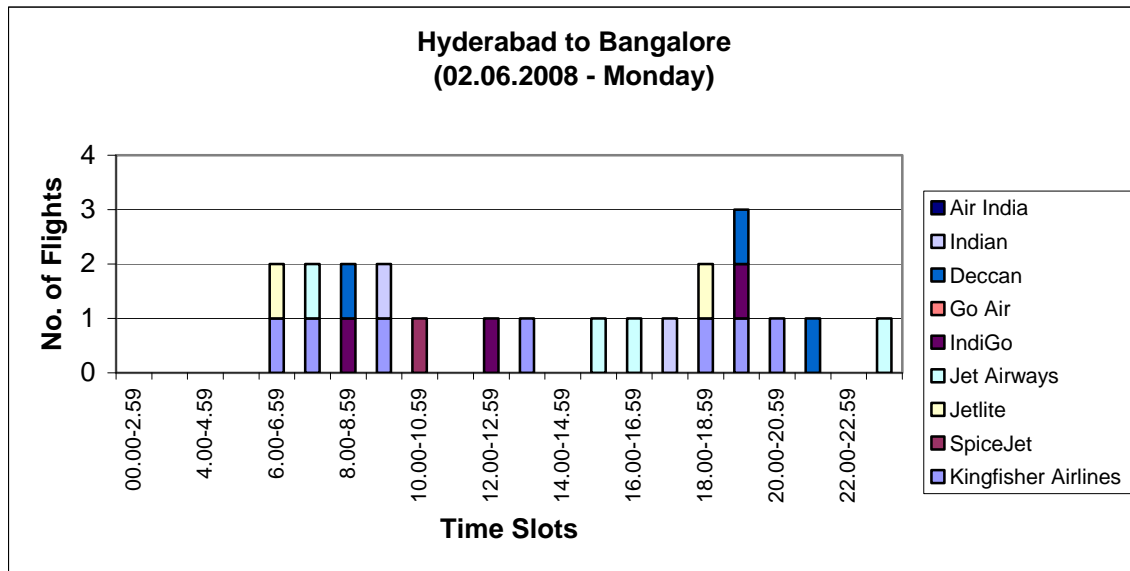


Figure S22: Slot Distribution – Mumbai to New Delhi

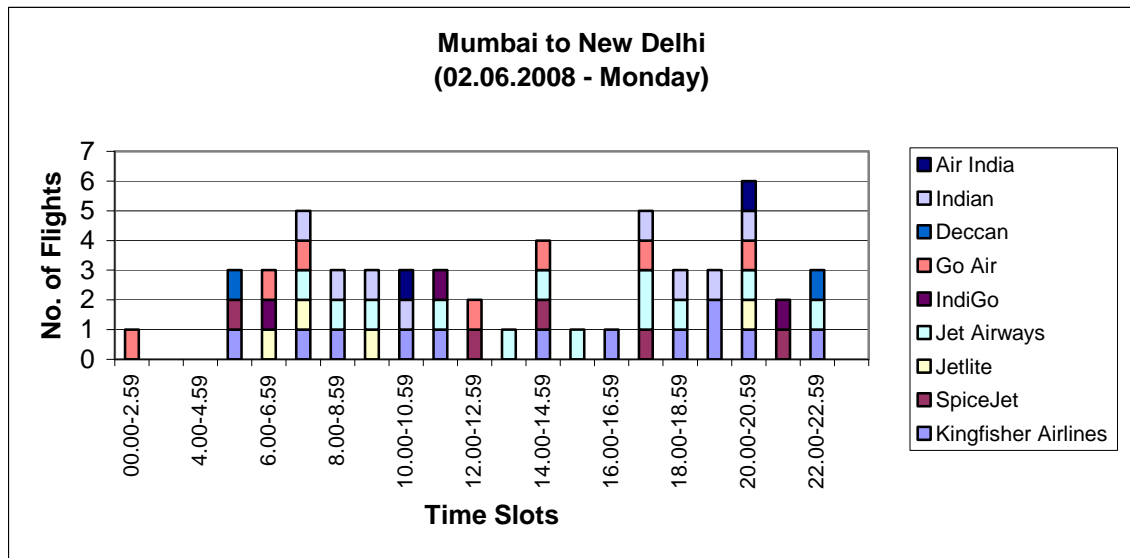


Figure S23: Slot Distribution – Mumbai to Chennai

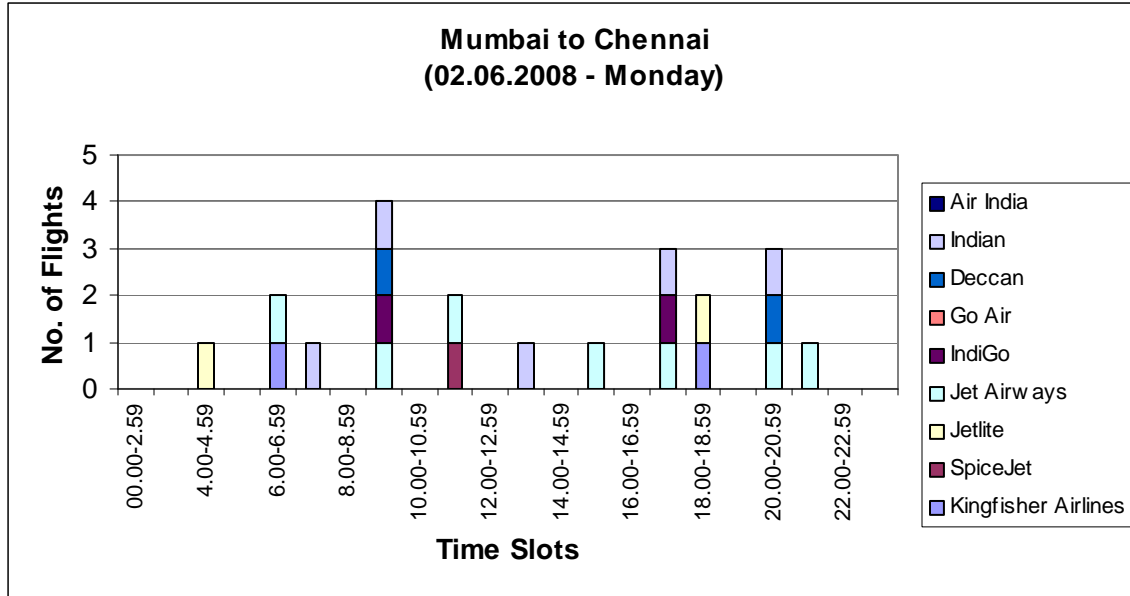


Figure S24: Slot Distribution – Mumbai to Kolkata

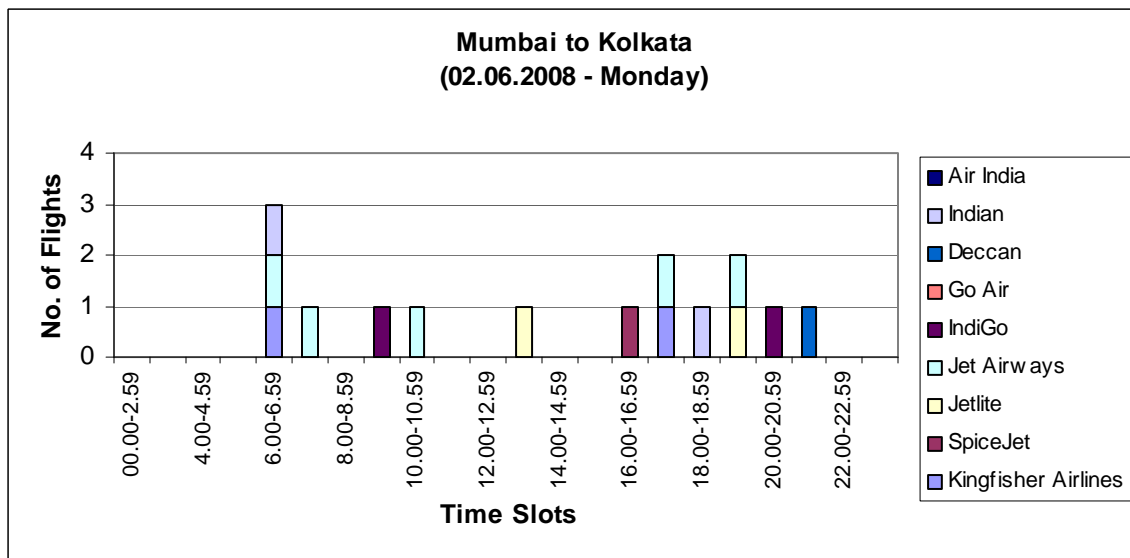


Figure S25: Slot Distribution – Mumbai to Bangalore

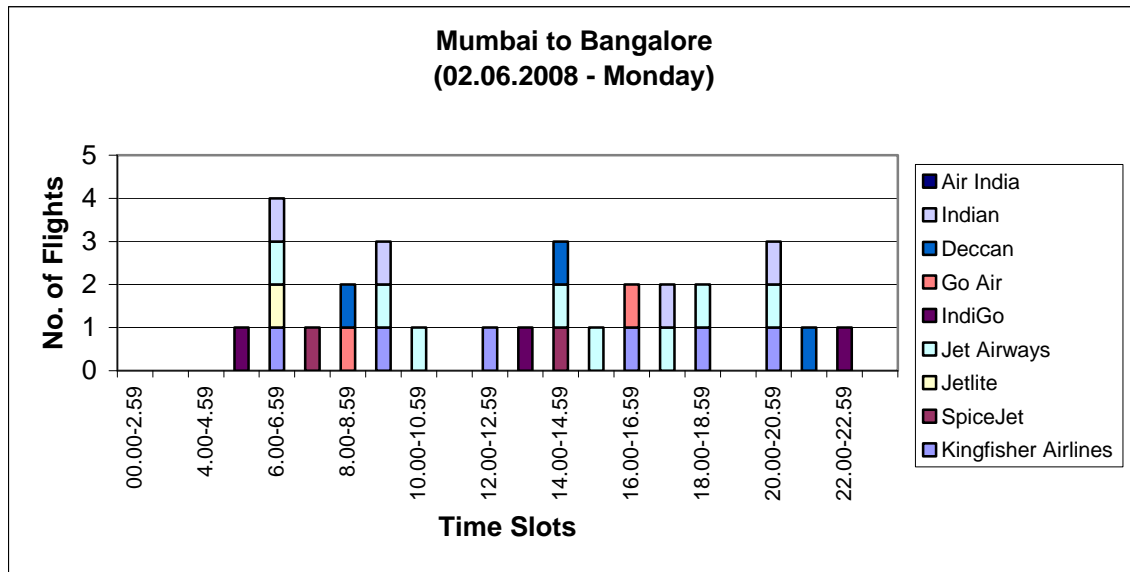


Figure S26: Slot Distribution – Mumbai to Hyderabad

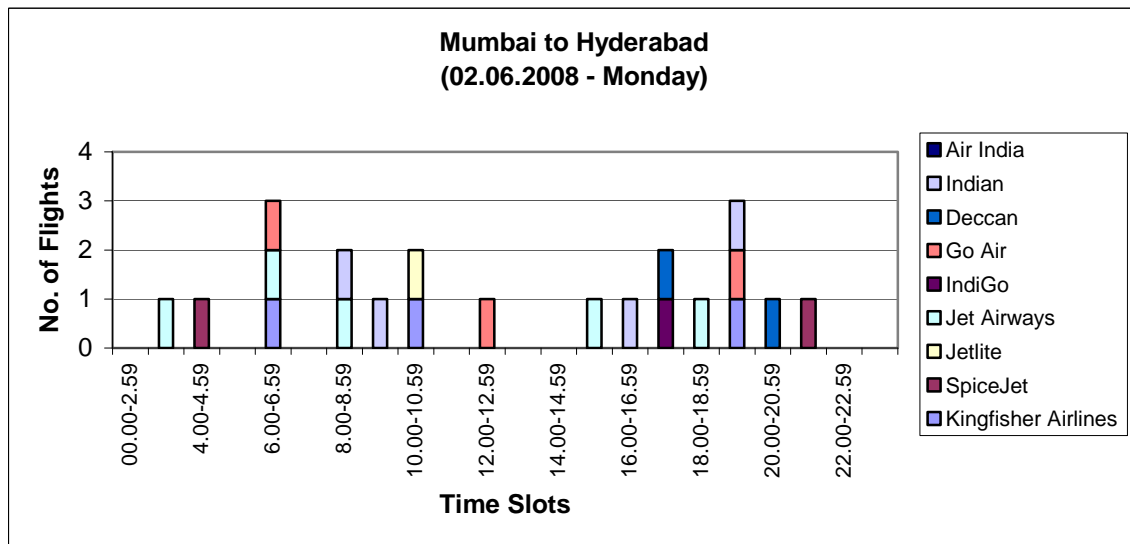


Figure S27: Slot Distribution – New Delhi to Chennai

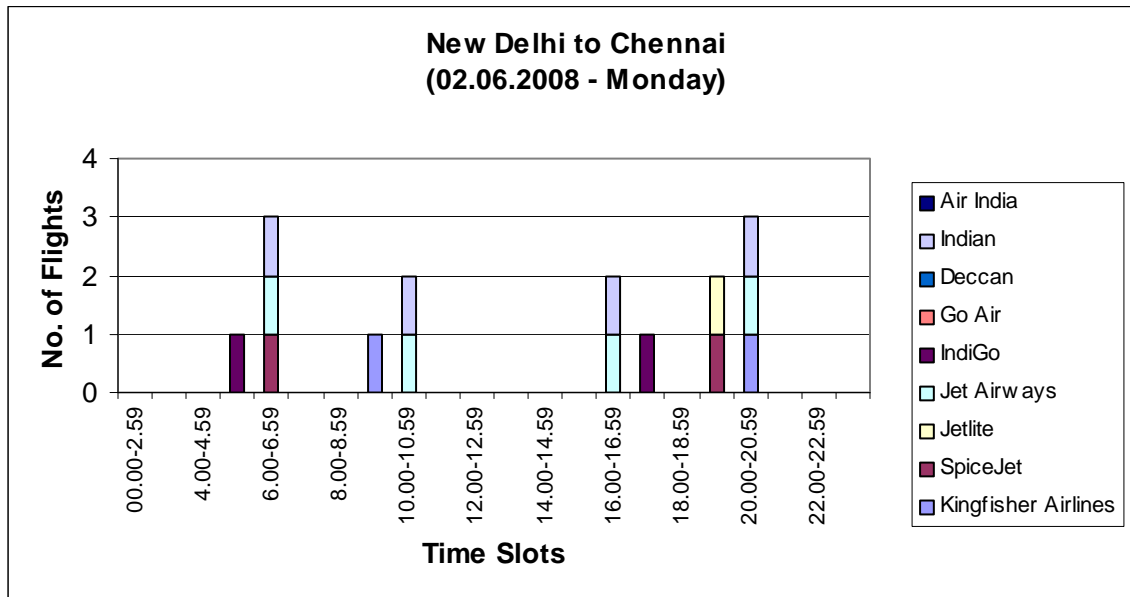


Figure S28: Slot Distribution – New Delhi to Kolkata

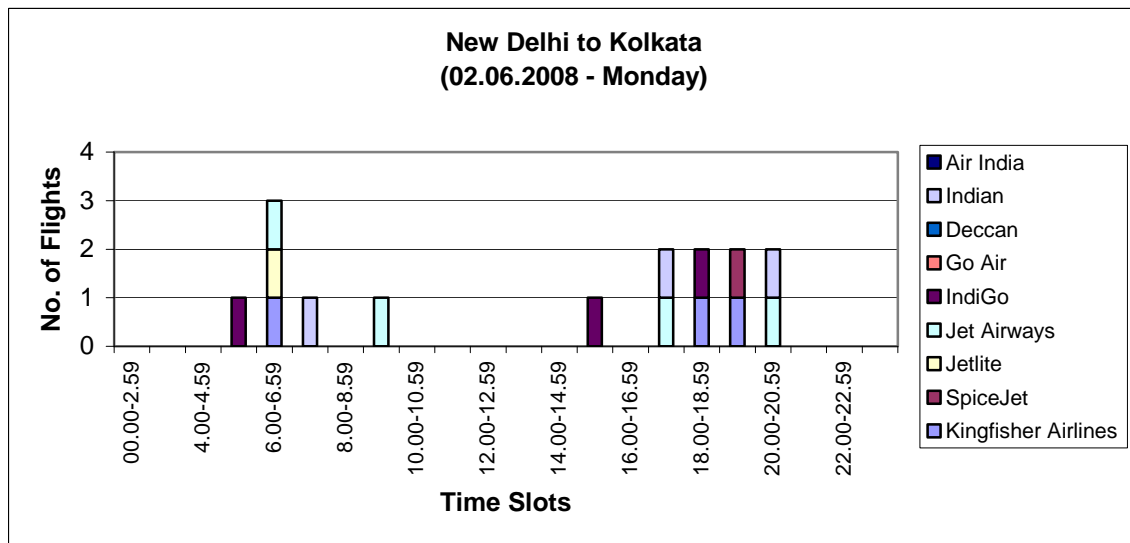


Figure S29: Slot Distribution – New Delhi to Bangalore

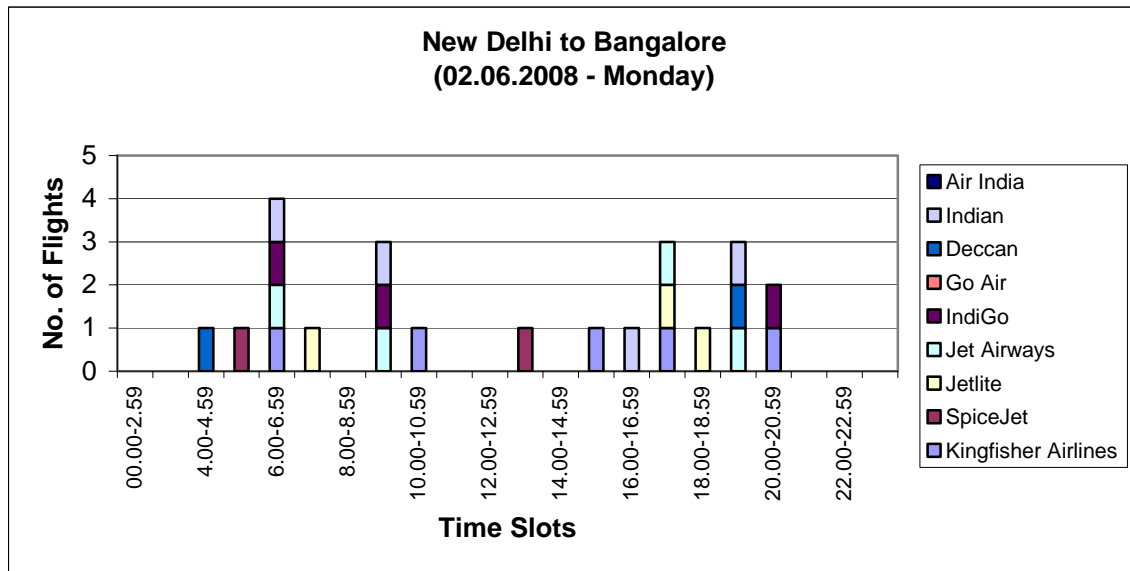


Figure S30: Slot Distribution – New Delhi to Hyderabad

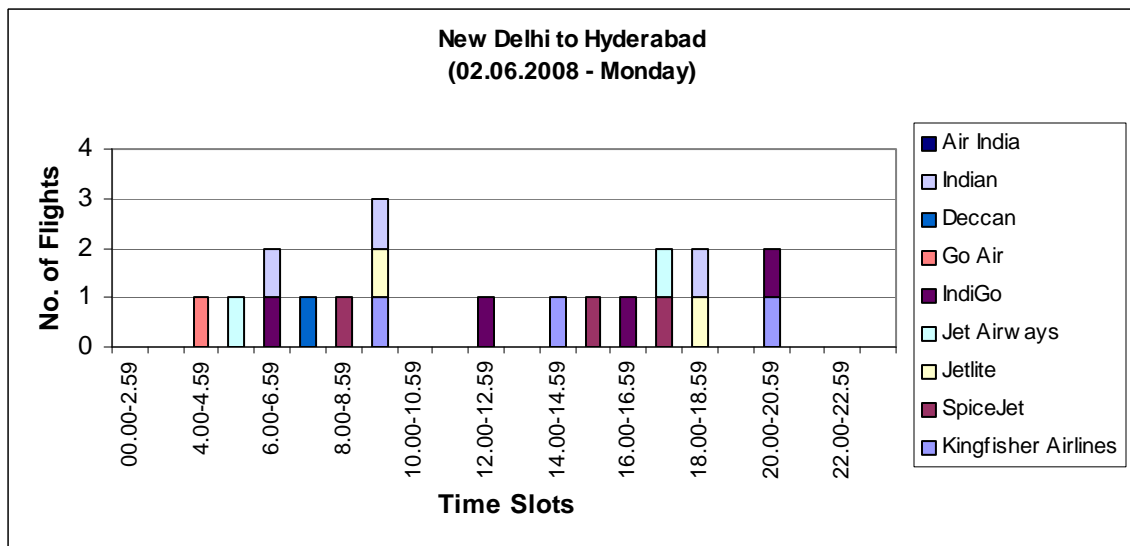


Figure S31: Slot Distribution – New Delhi to Mumbai

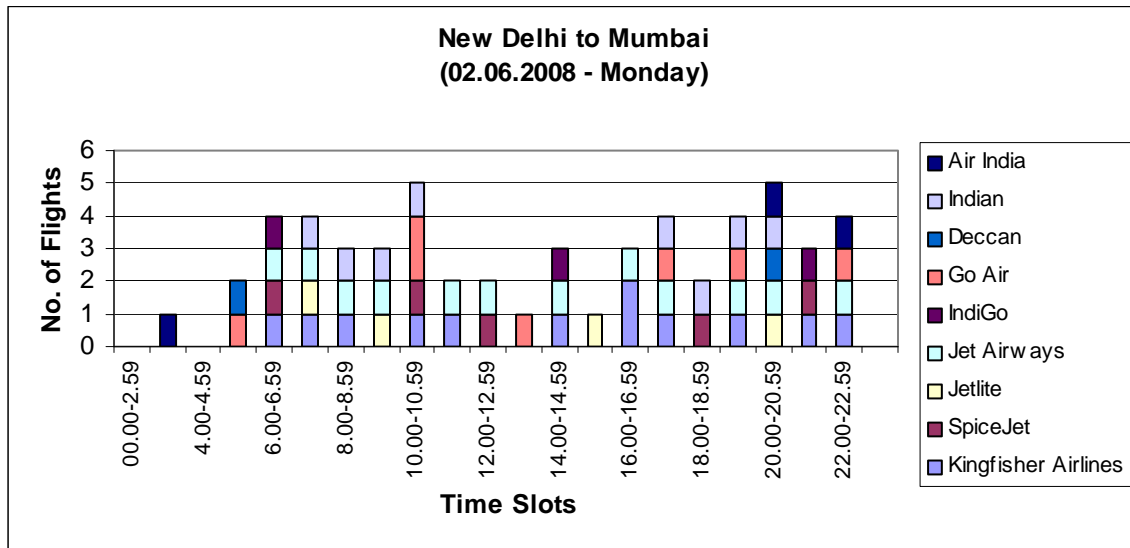


Figure S32: Slot Distribution – Chennai to New Delhi

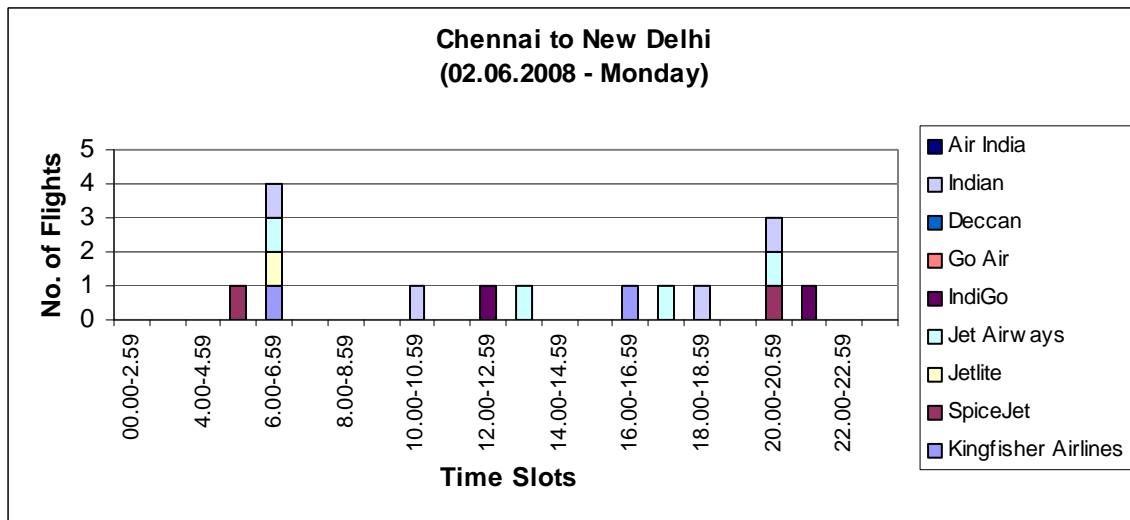


Figure S33: Slot Distribution – Chennai to Mumbai

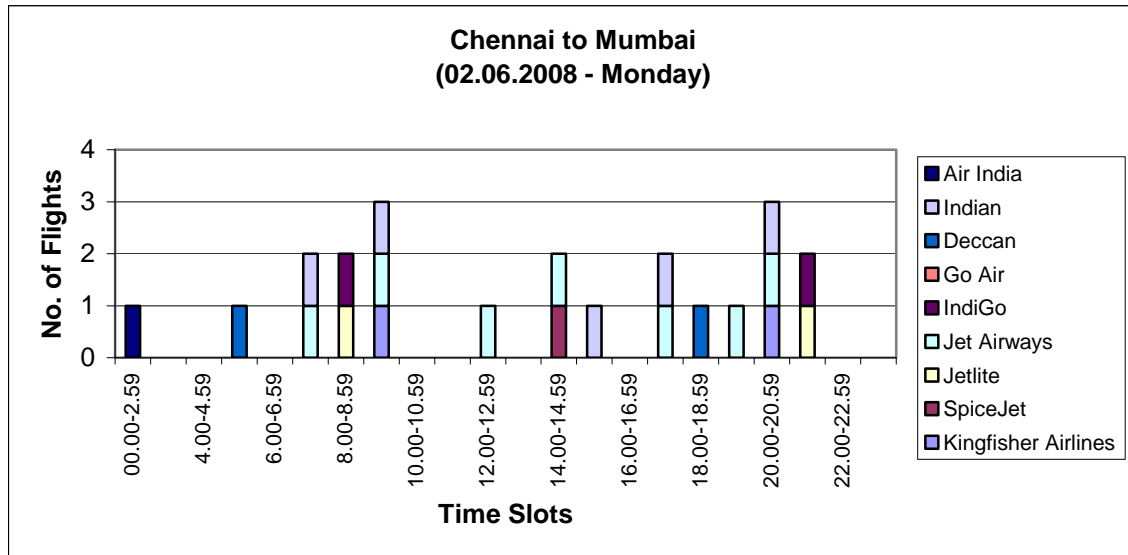


Figure S34: Slot Distribution – Chennai to Kolkata

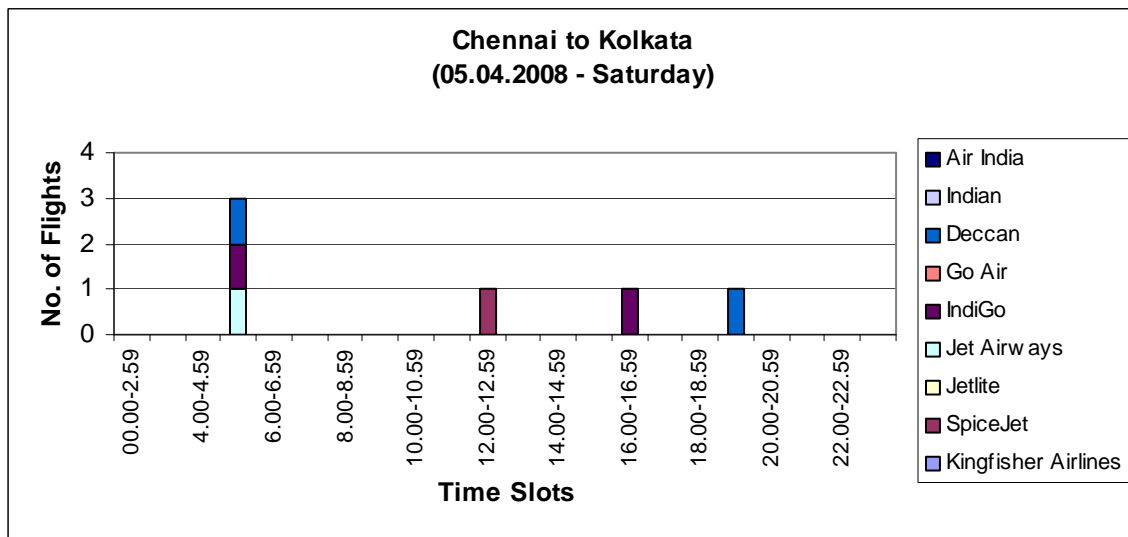


Figure S35: Slot Distribution – Chennai to Hyderabad

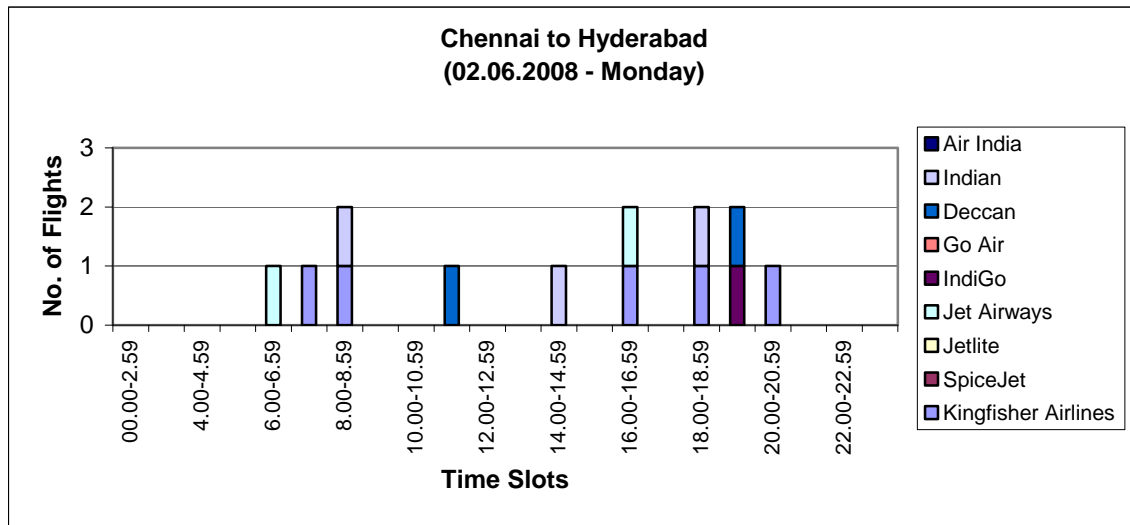


Figure S36: Slot Distribution – Chennai to Bangalore

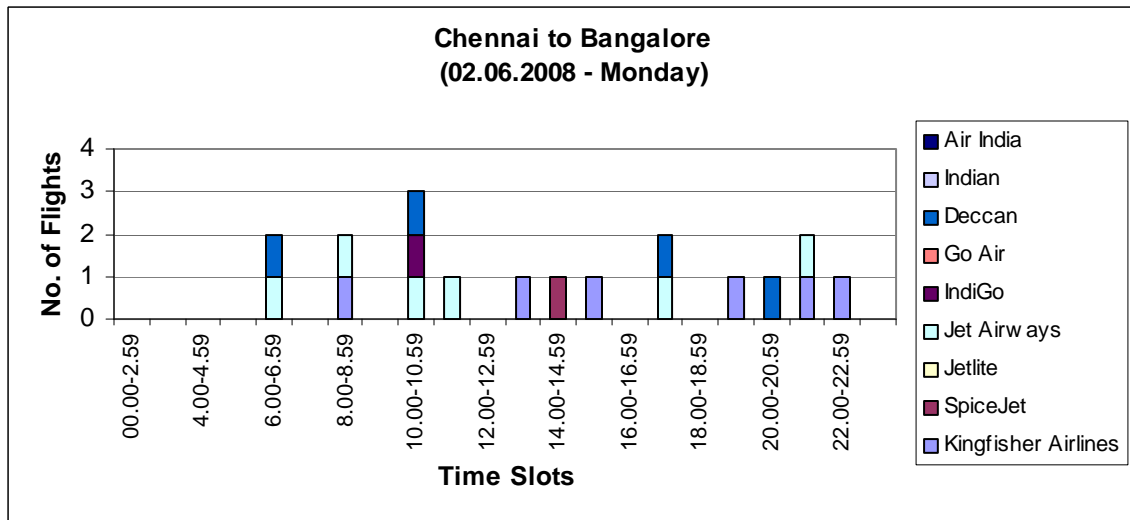


Figure S37: Slot Distribution – Kolkata to New Delhi

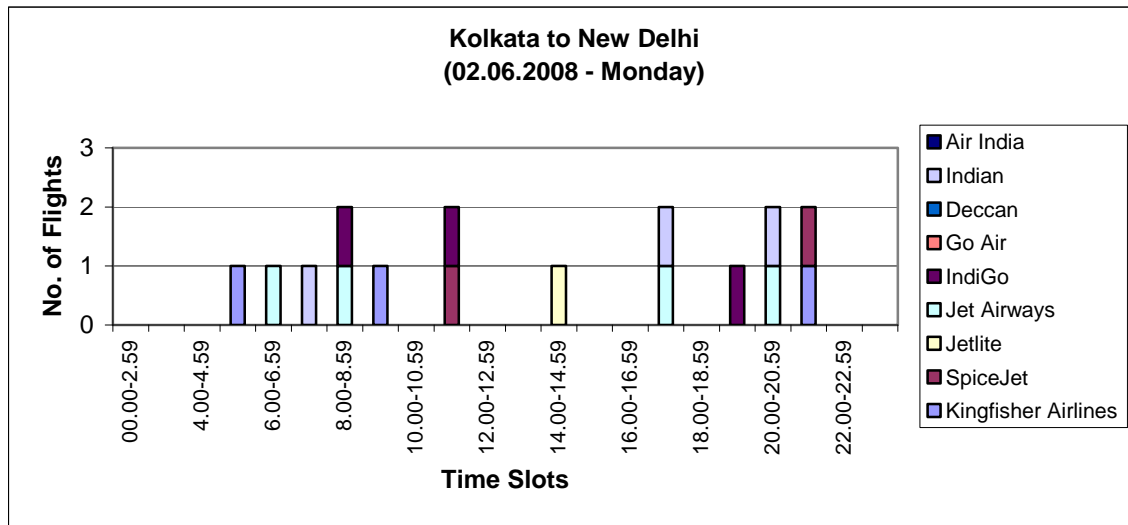


Figure S38: Slot Distribution – Kolkata to Mumbai

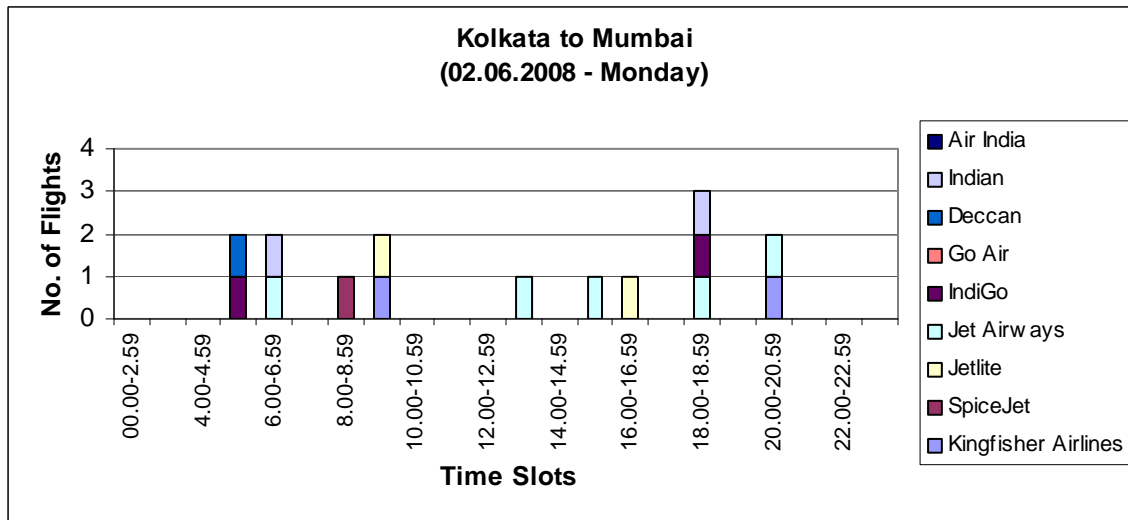


Figure S39: Slot Distribution – Kolkata to Hyderabad

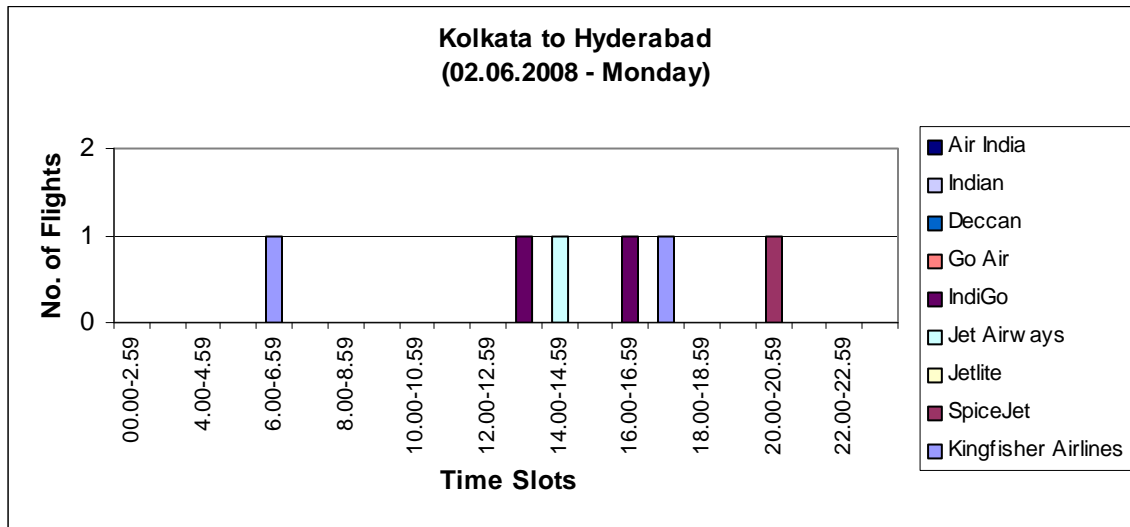


Figure S40: Slot Distribution – Kolkata to Chennai

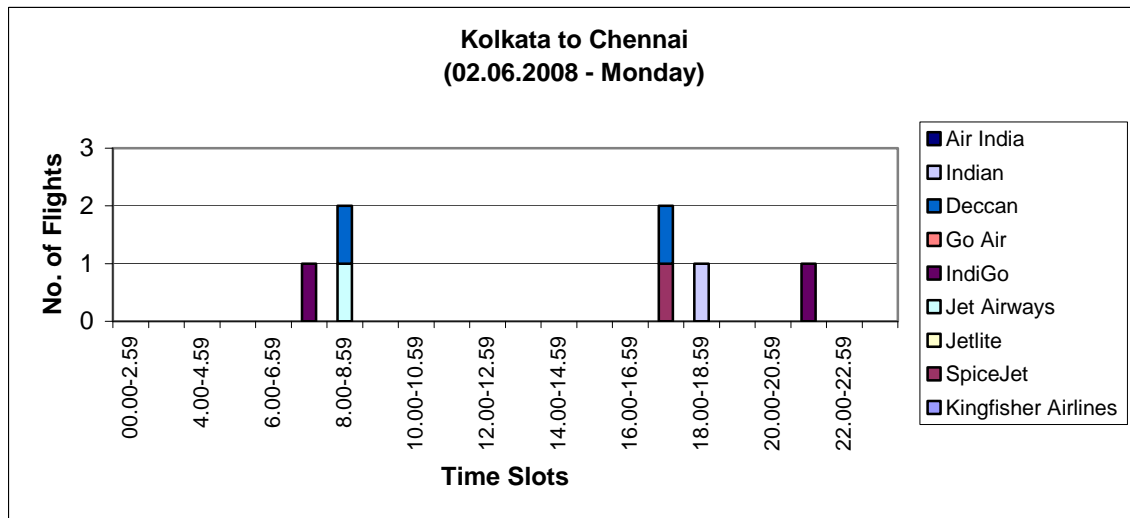


Figure S41: Slot Distribution – Kolkata to Bangalore

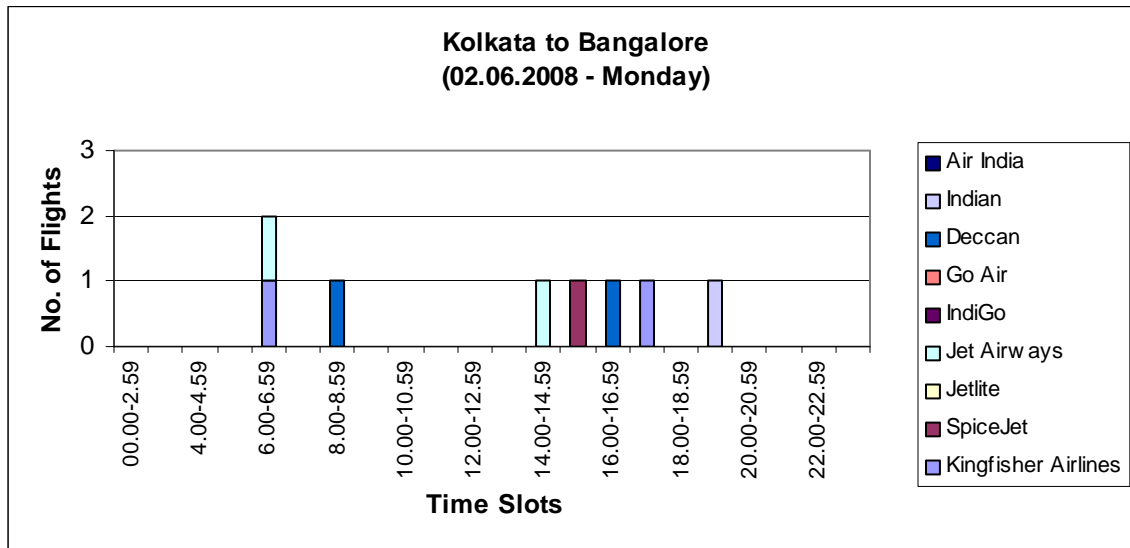


Figure S42: Slot Distribution – Bangalore to New Delhi

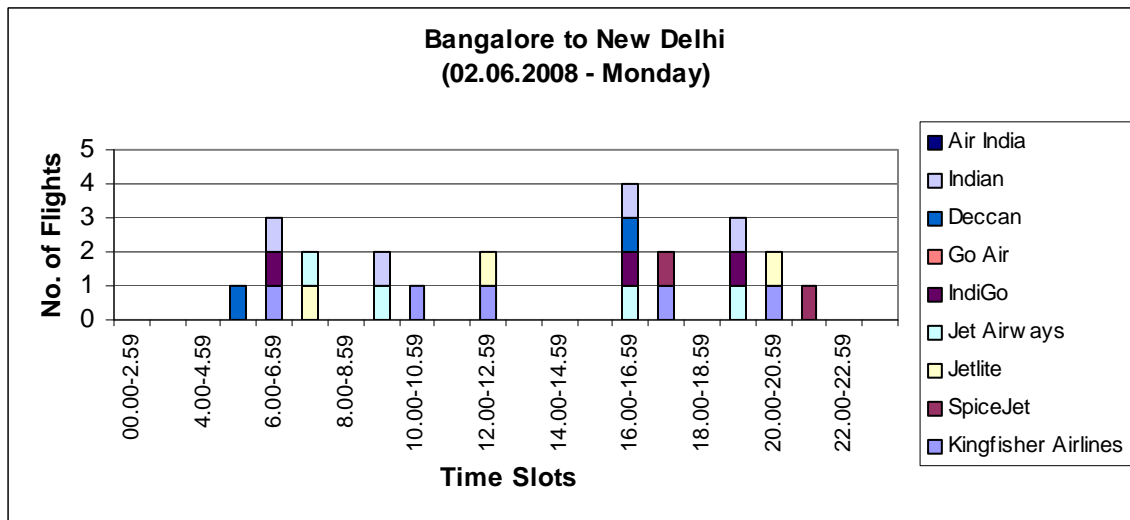


Figure S43: Slot Distribution – Bangalore to Chennai

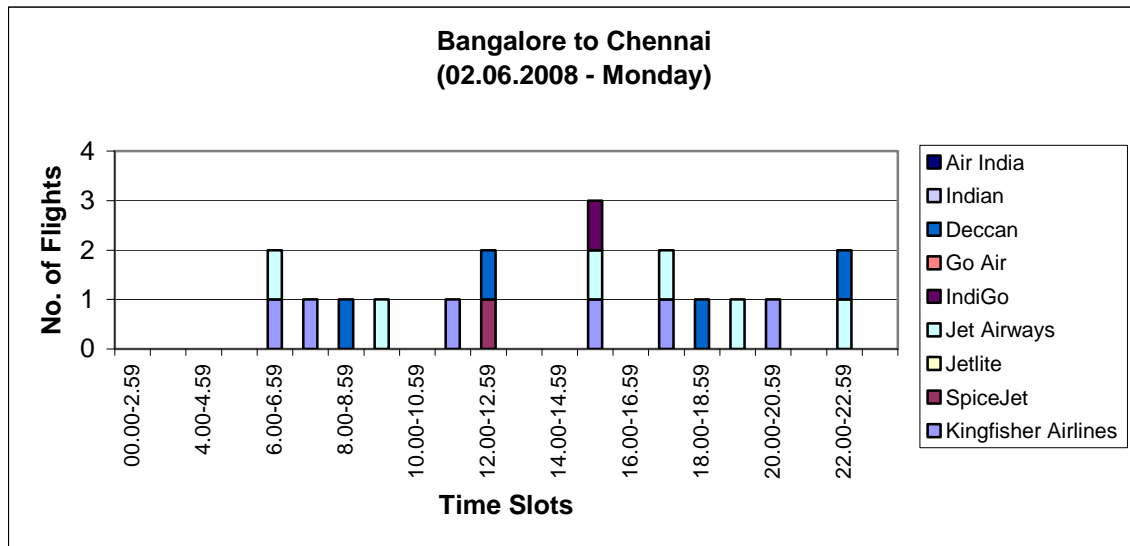


Figure S44: Slot Distribution – Bangalore to Hyderabad

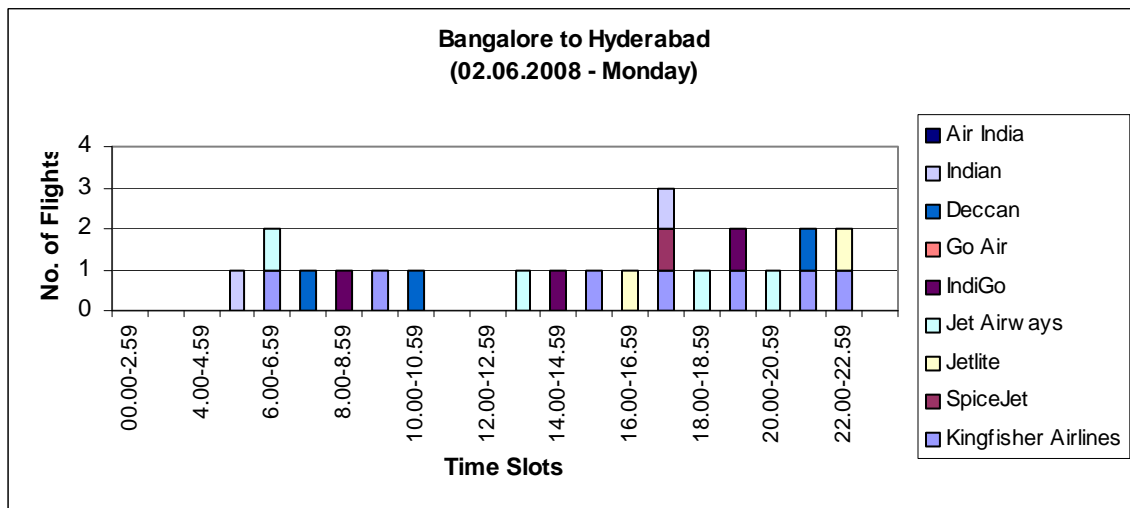


Figure S45: Slot Distribution – Bangalore to Kolkata

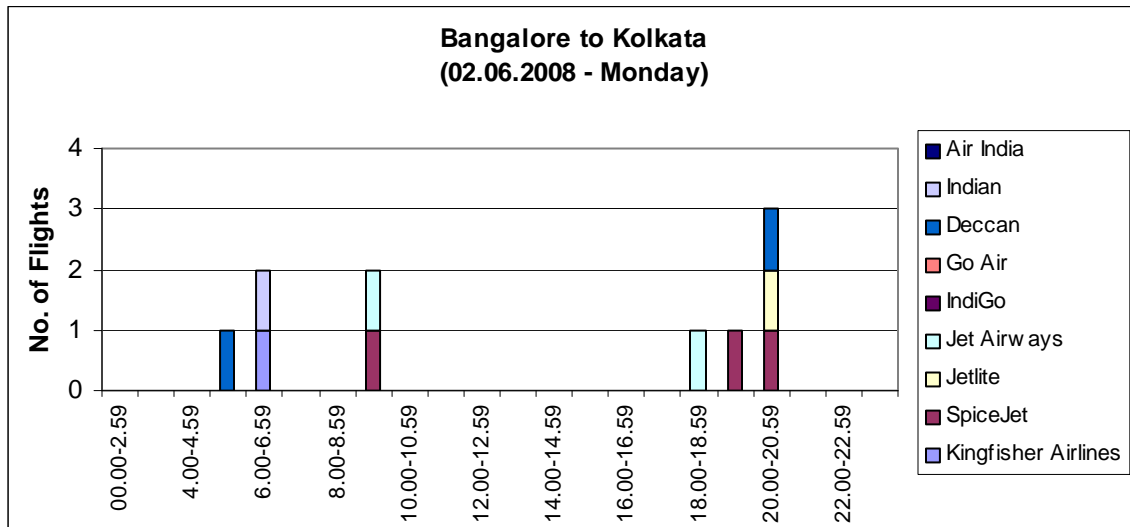


Figure S46: Slot Distribution – Bangalore to Mumbai

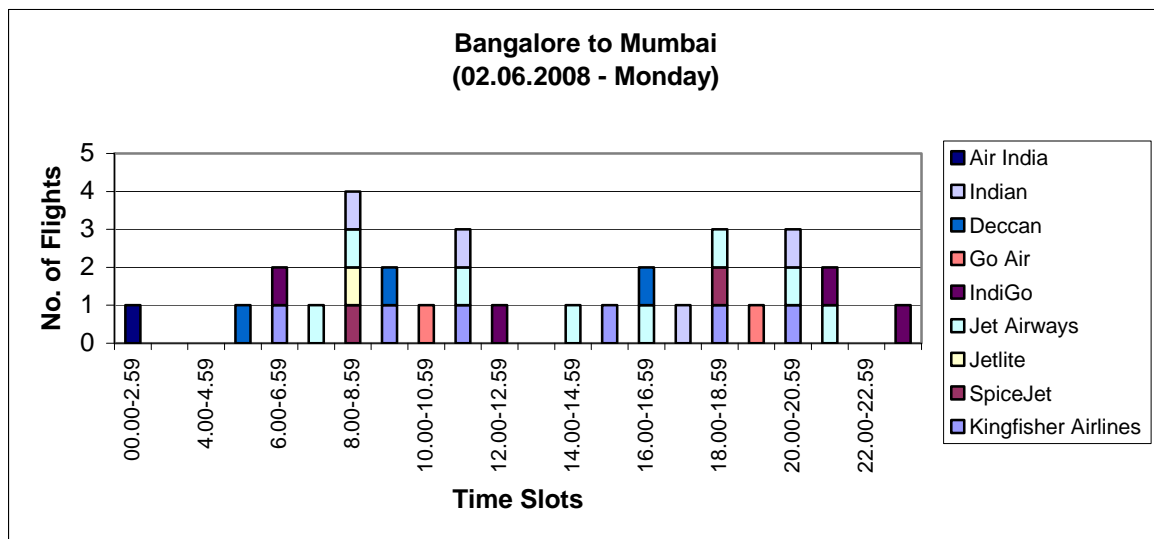


Figure P1: Passenger Traffic during 2006-07

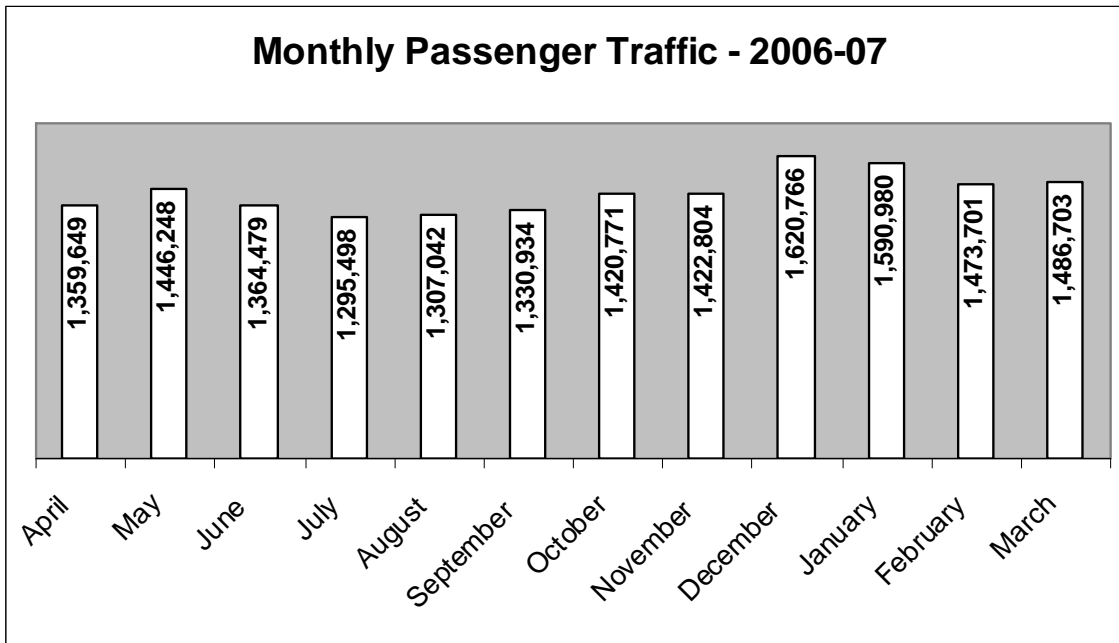


Figure P2: Passenger Traffic at 6 Metros during 2006-07

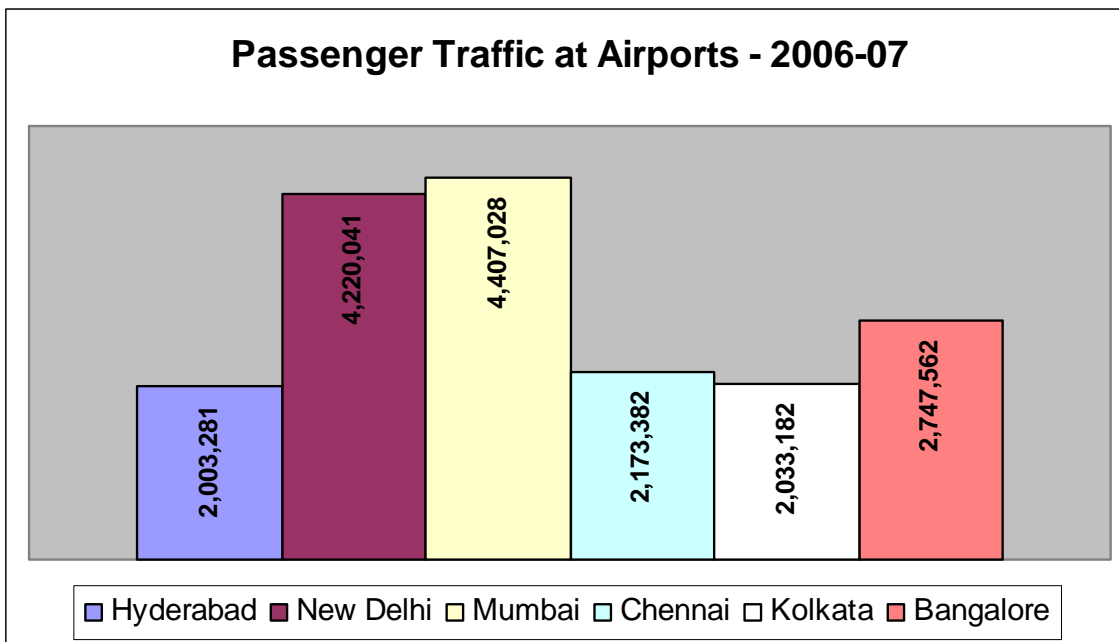


Figure P3: Passenger Share at 6 Metro Airports

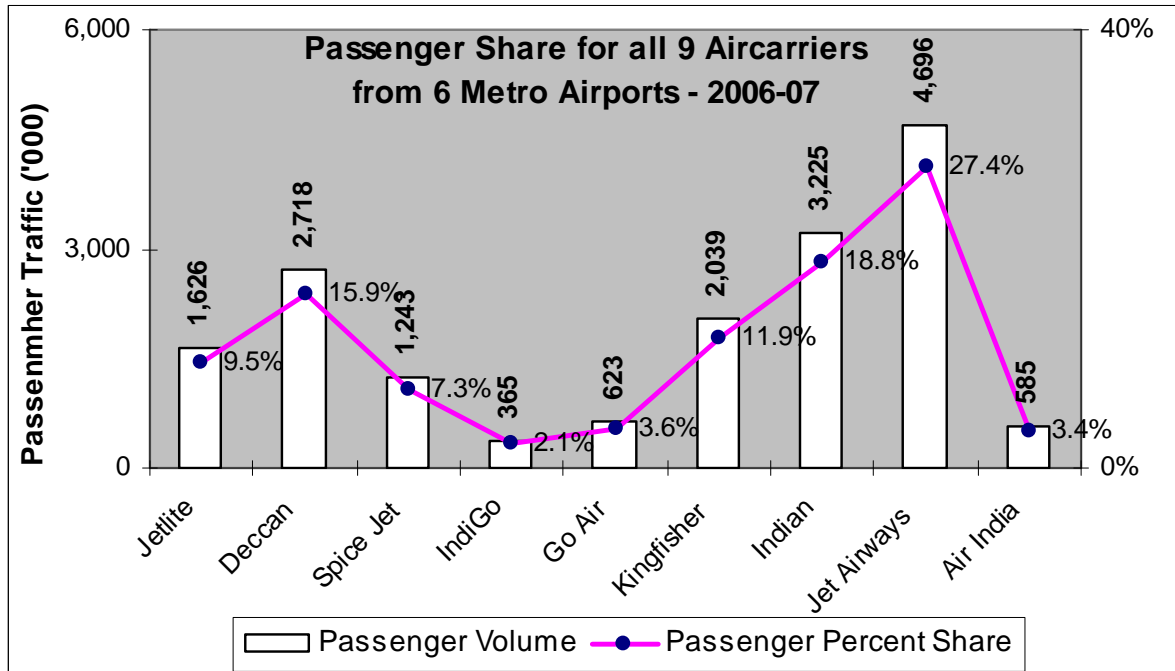


Figure P4: Passenger Share at Hyderabad

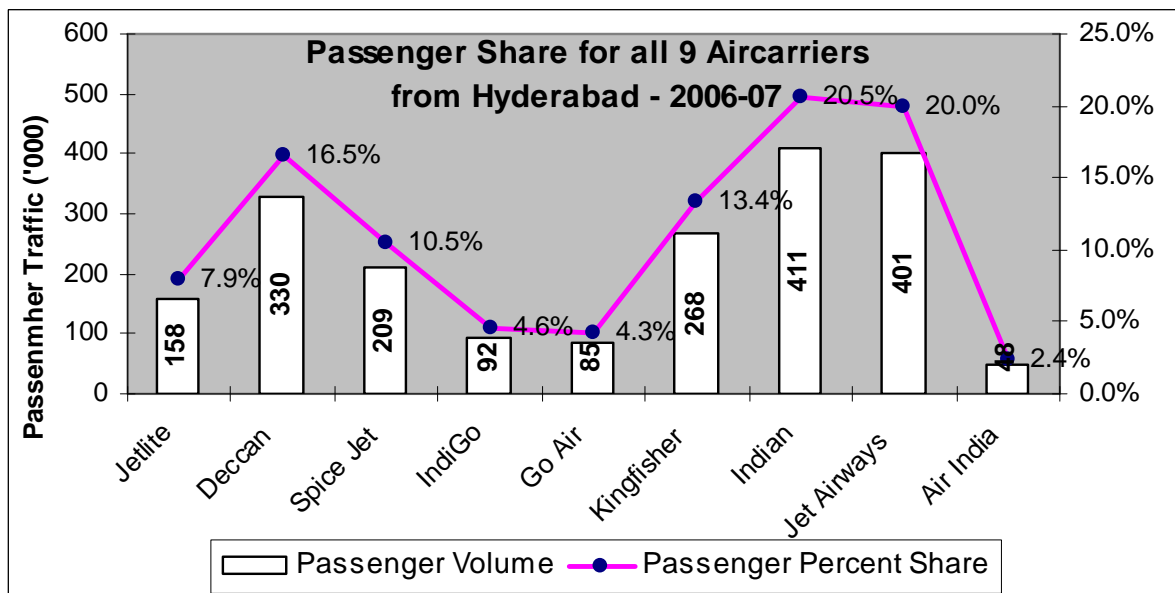


Figure P5: Passenger Share at New Delhi

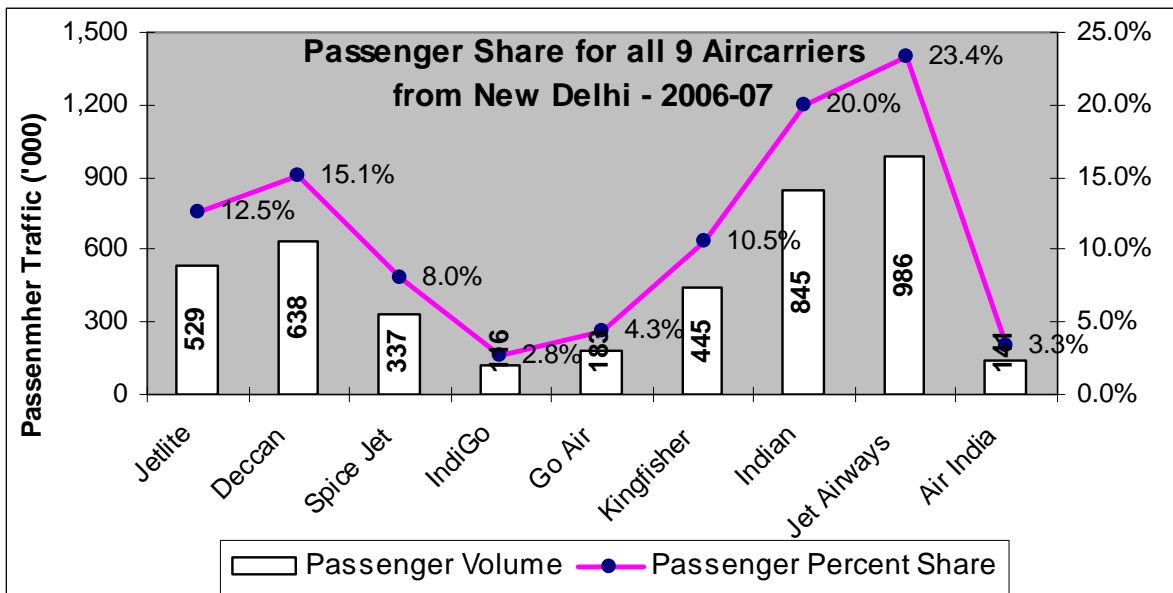


Figure P6: Passenger Share at Mumbai

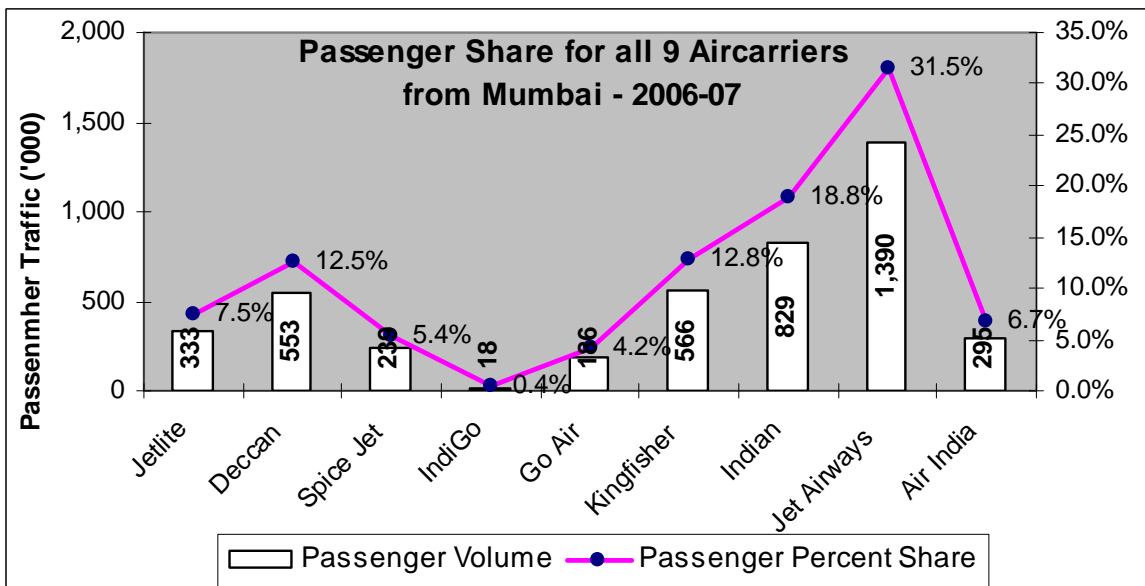


Figure P7: Passenger Share at Chennai

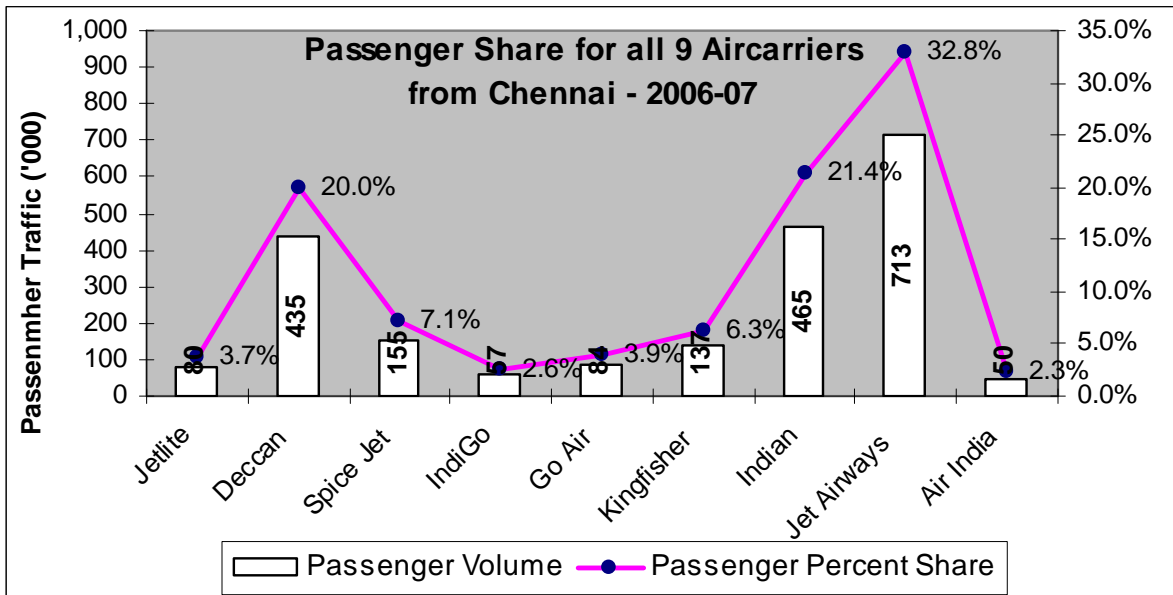


Figure P8: Passenger Share at Kolkata

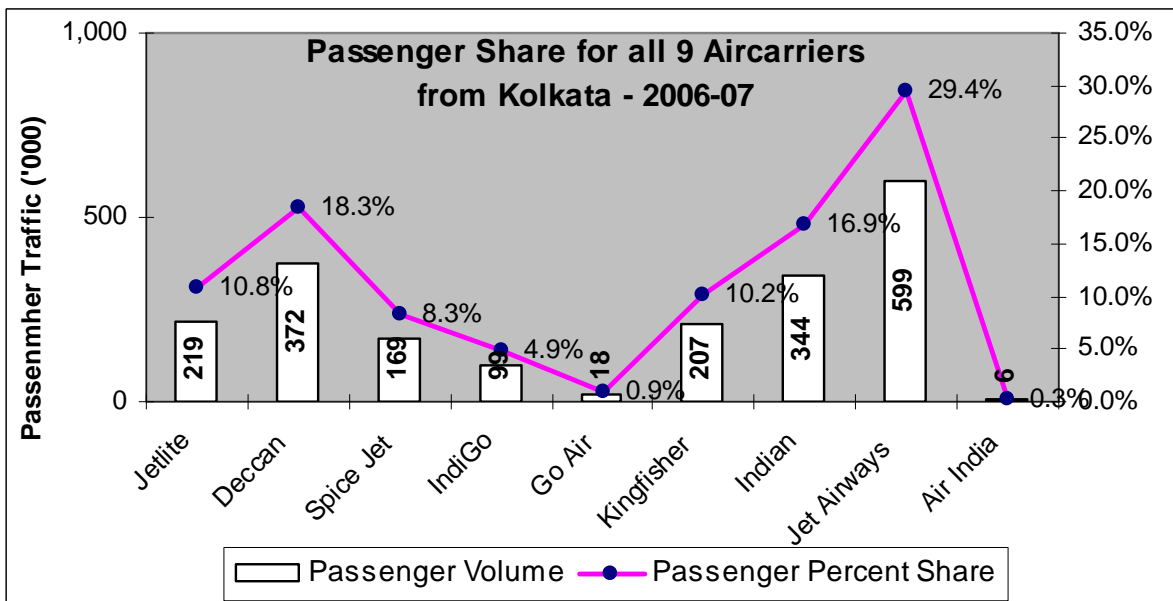


Figure P9: Passenger Share at Bangalore

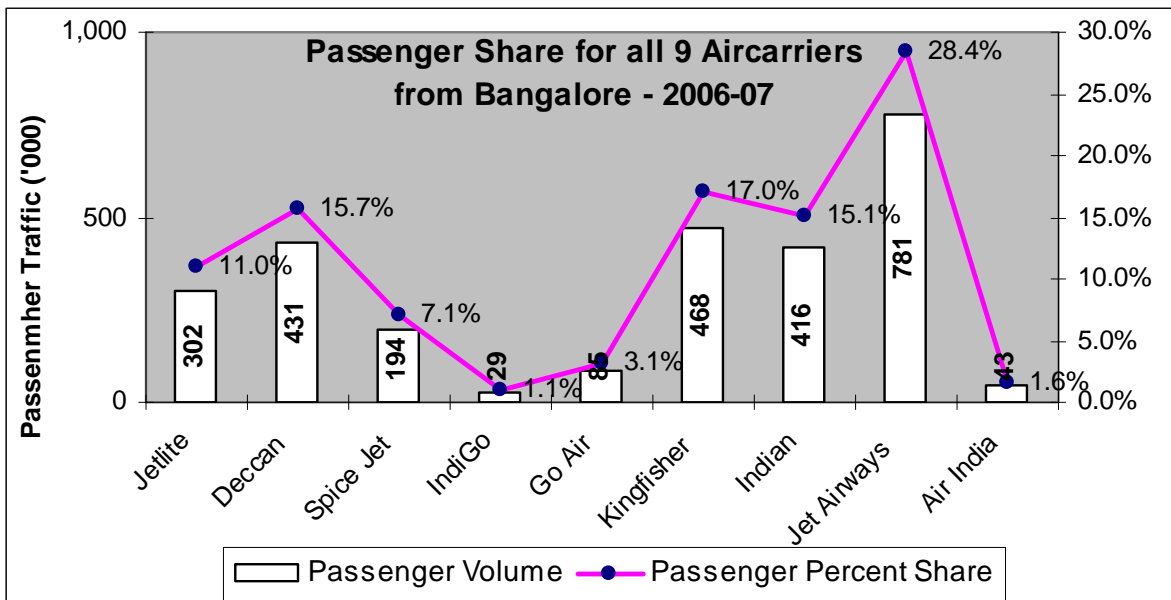


Figure P10: Slot Allocation and Passenger Share at 6 Metros

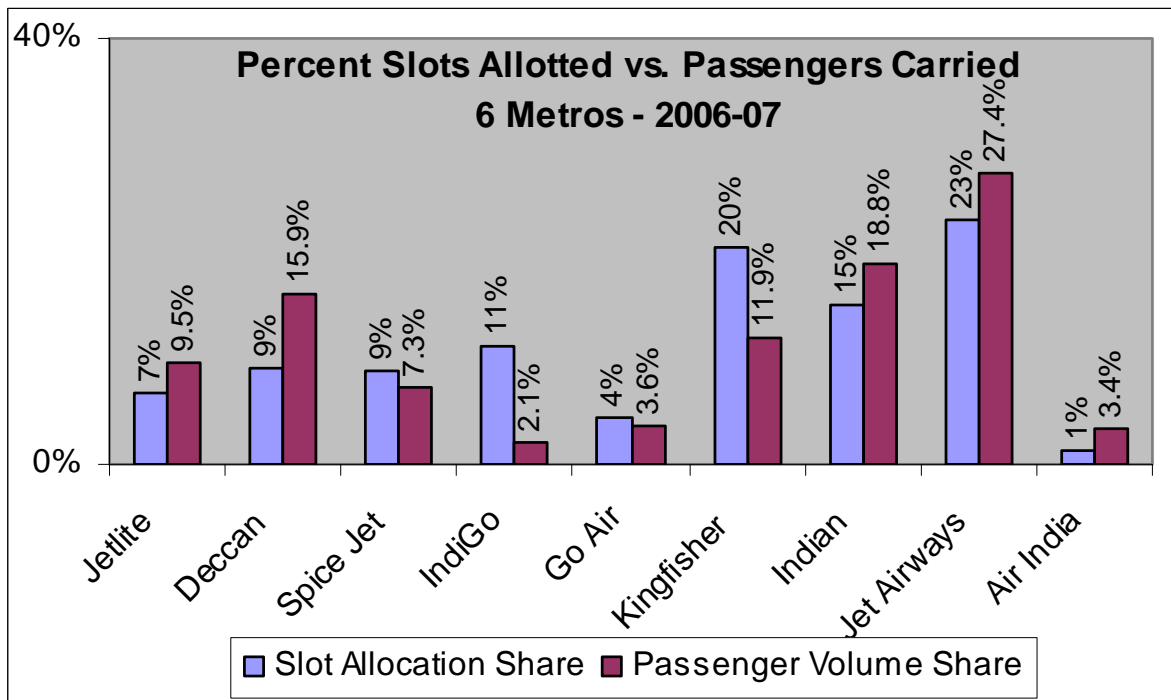


Figure P11: Slot Allocation and Passenger Share at Hyderabad

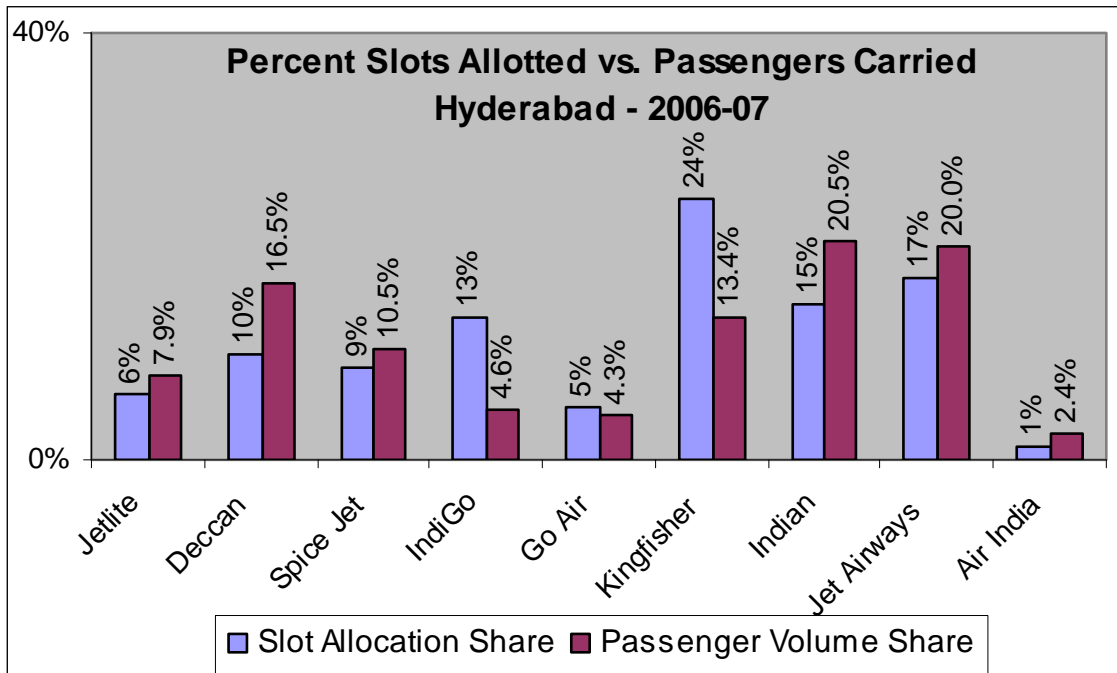


Figure P12: Slot Allocation and Passenger Share at New Delhi

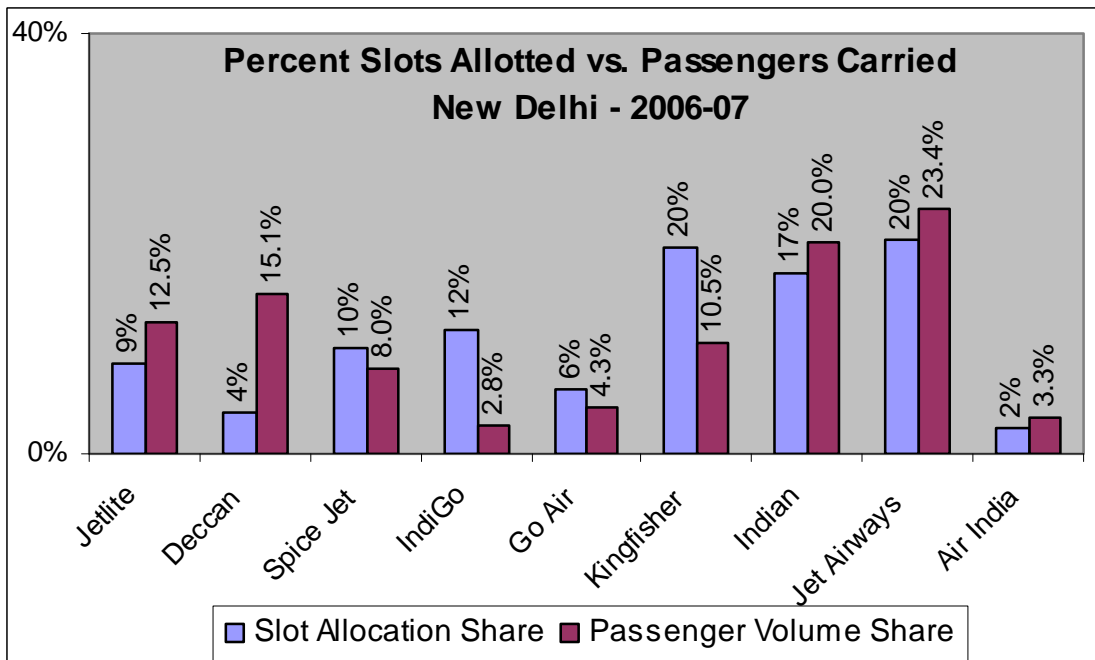


Figure P13: Slot Allocation and Passenger Share at Mumbai

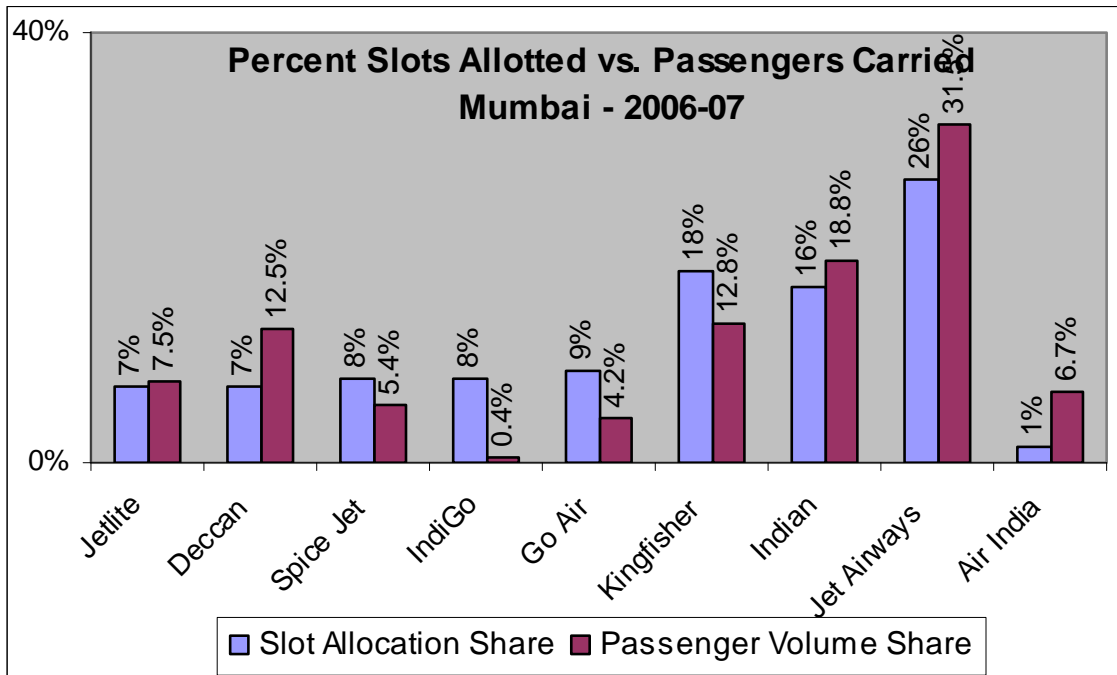


Figure P14: Slot Allocation and Passenger Share at Chennai

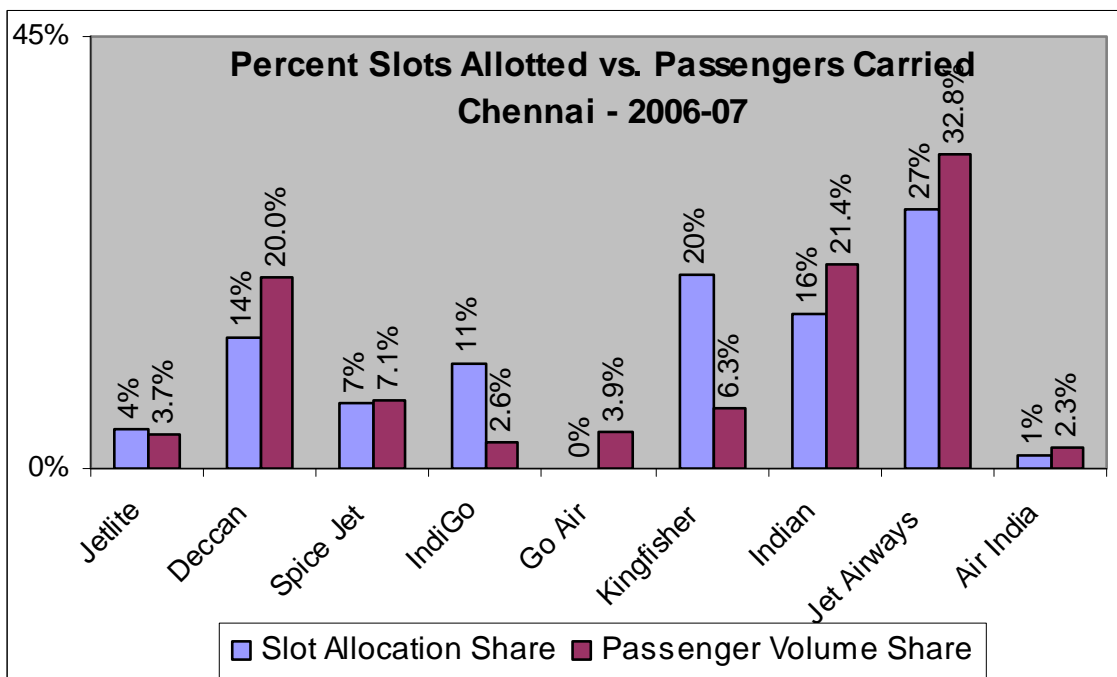


Figure P15: Slot Allocation and Passenger Share at Kolkata

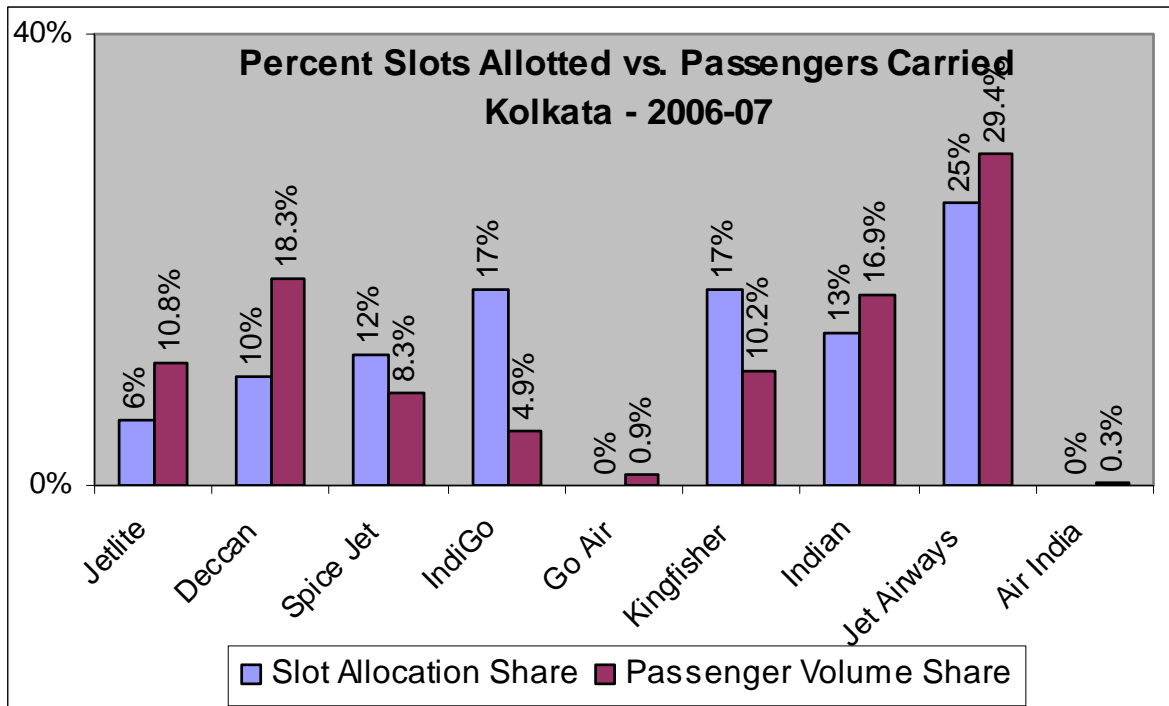


Figure P16: Slot Allocation and Passenger Share at Bangalore

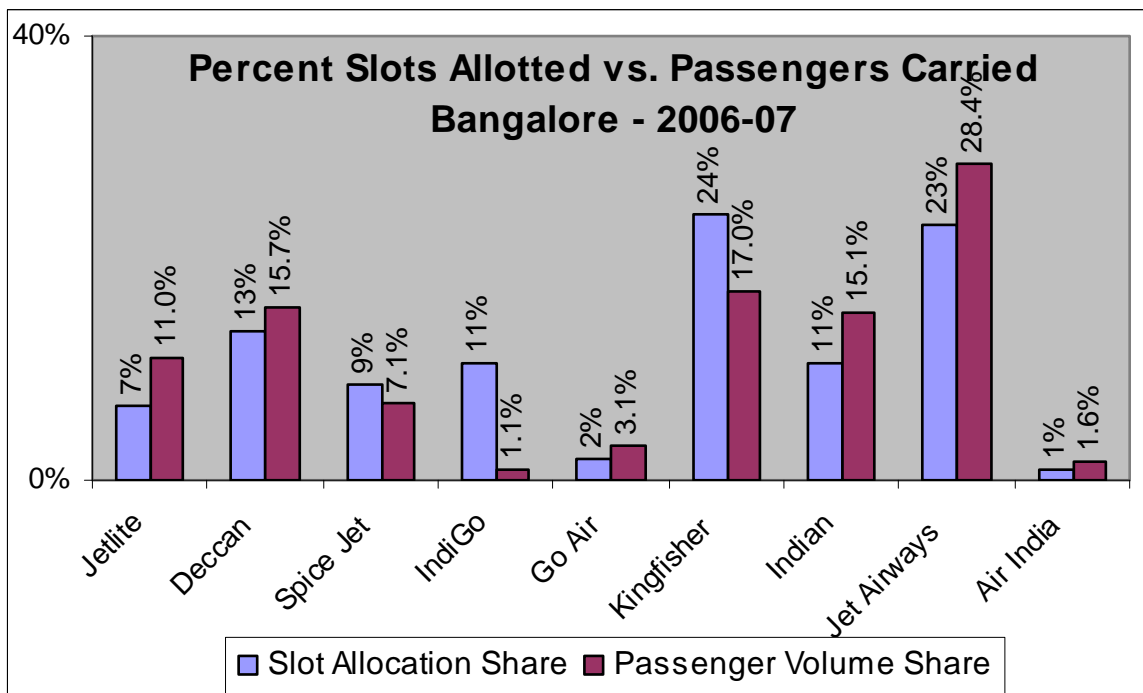


Figure P17: Slot Share Advantage – Jetlite

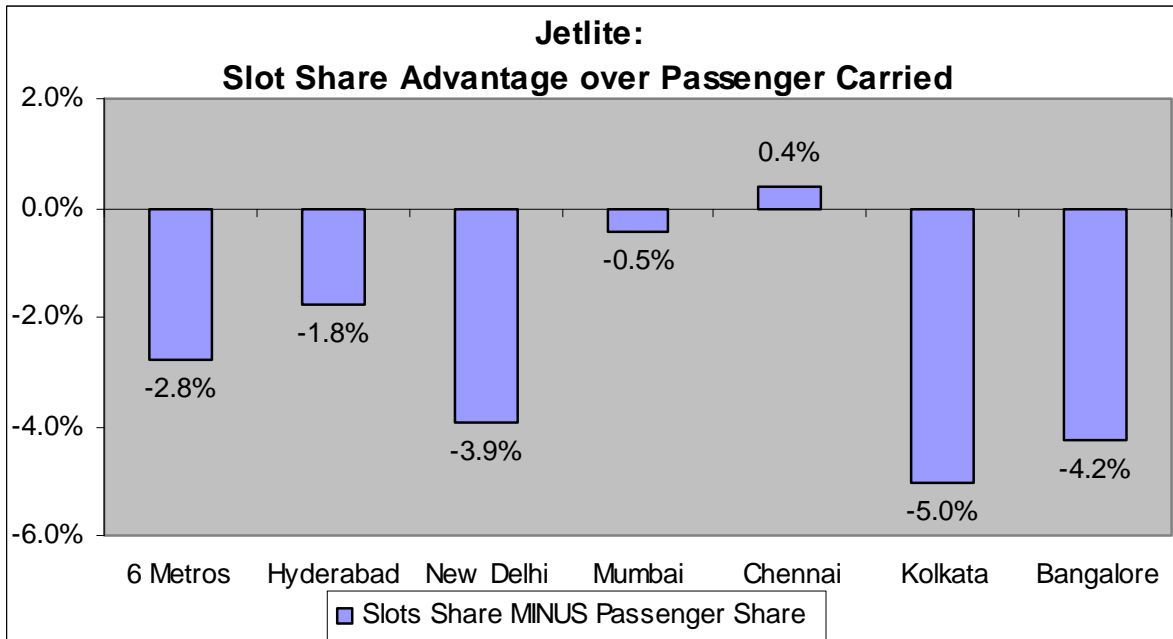


Figure P18: Slot Share Advantage – Deccan

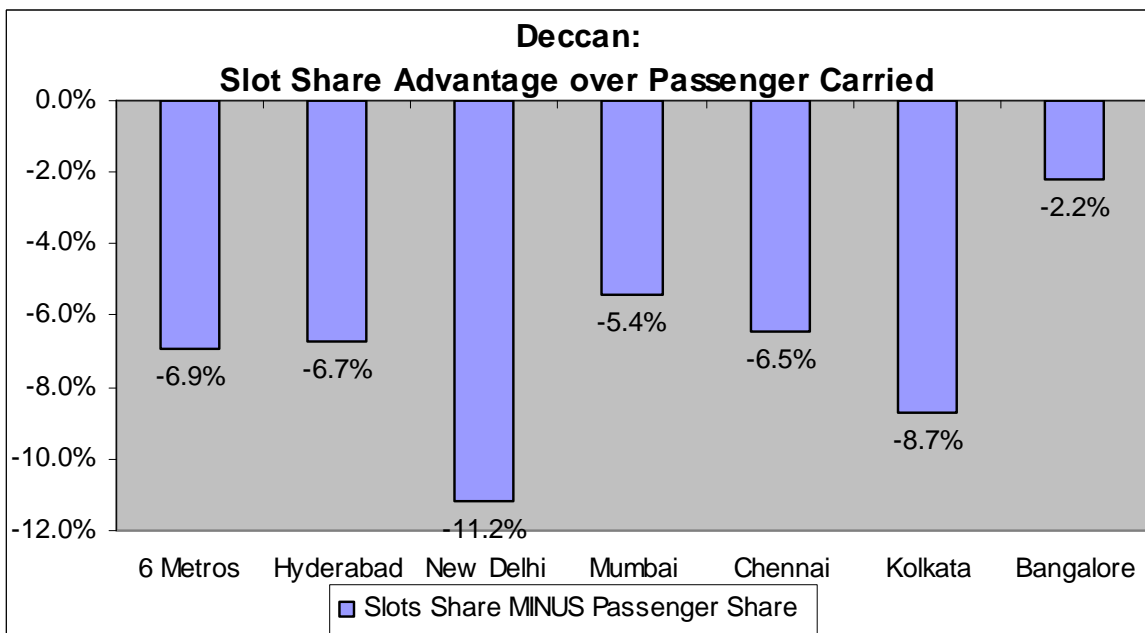


Figure P19: Slot Share Advantage – Spicejet

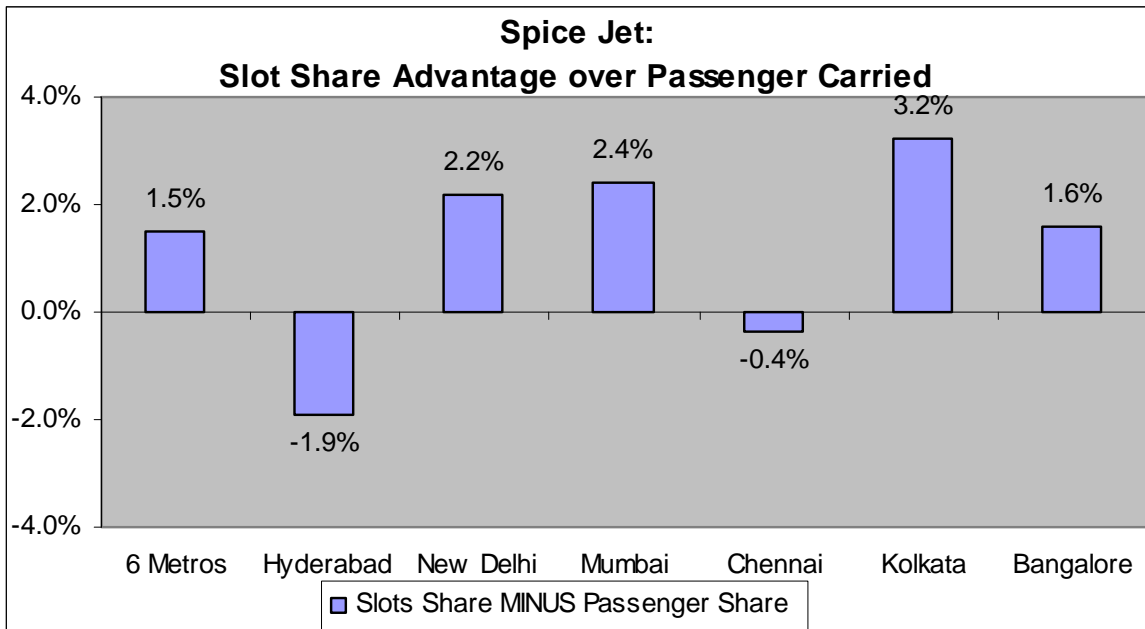


Figure P20: Slot Share Advantage – IndiGo

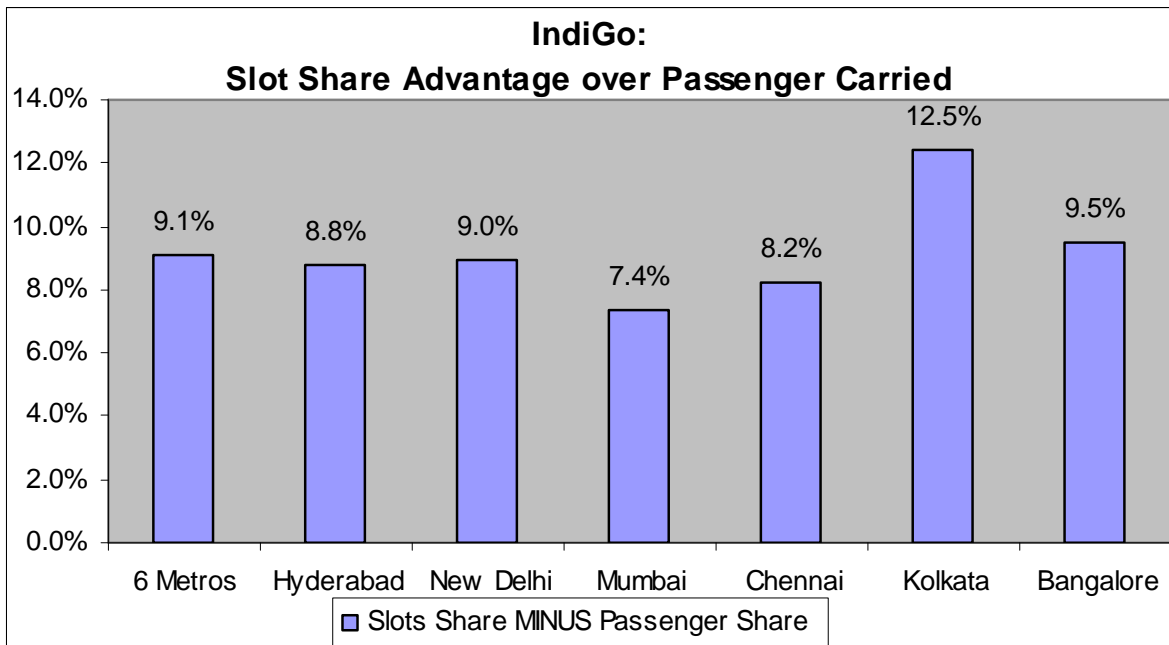


Figure P21: Slot Share Advantage – Go Air

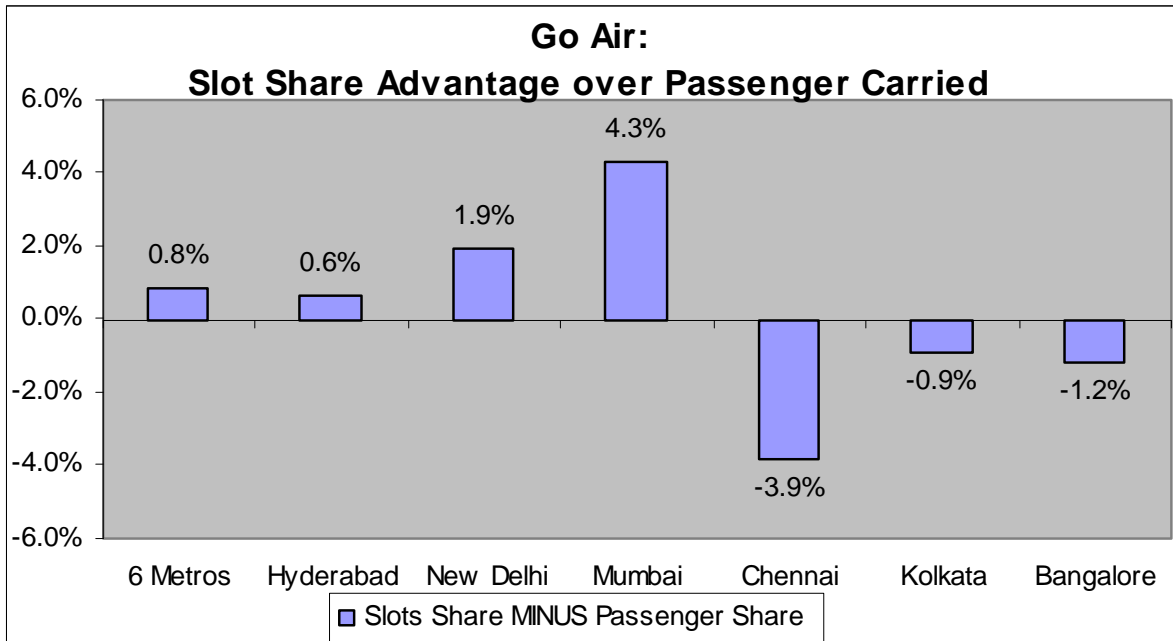


Figure P22: Slot Share Advantage – Kingfisher

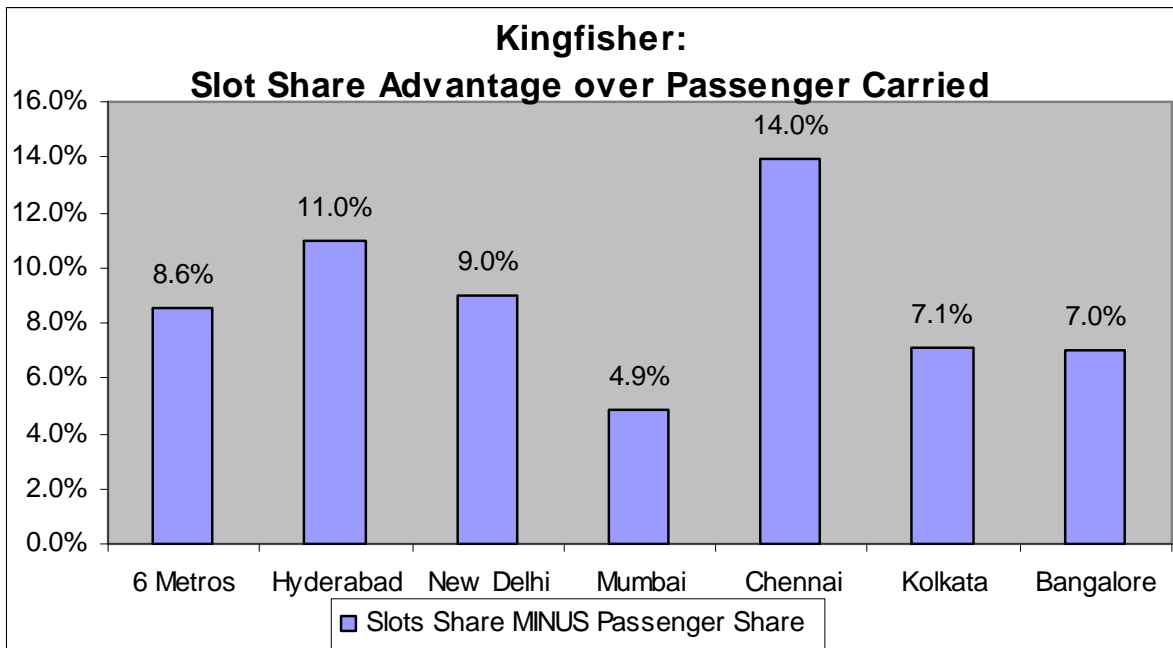


Figure P23: Slot Share Advantage – Indian

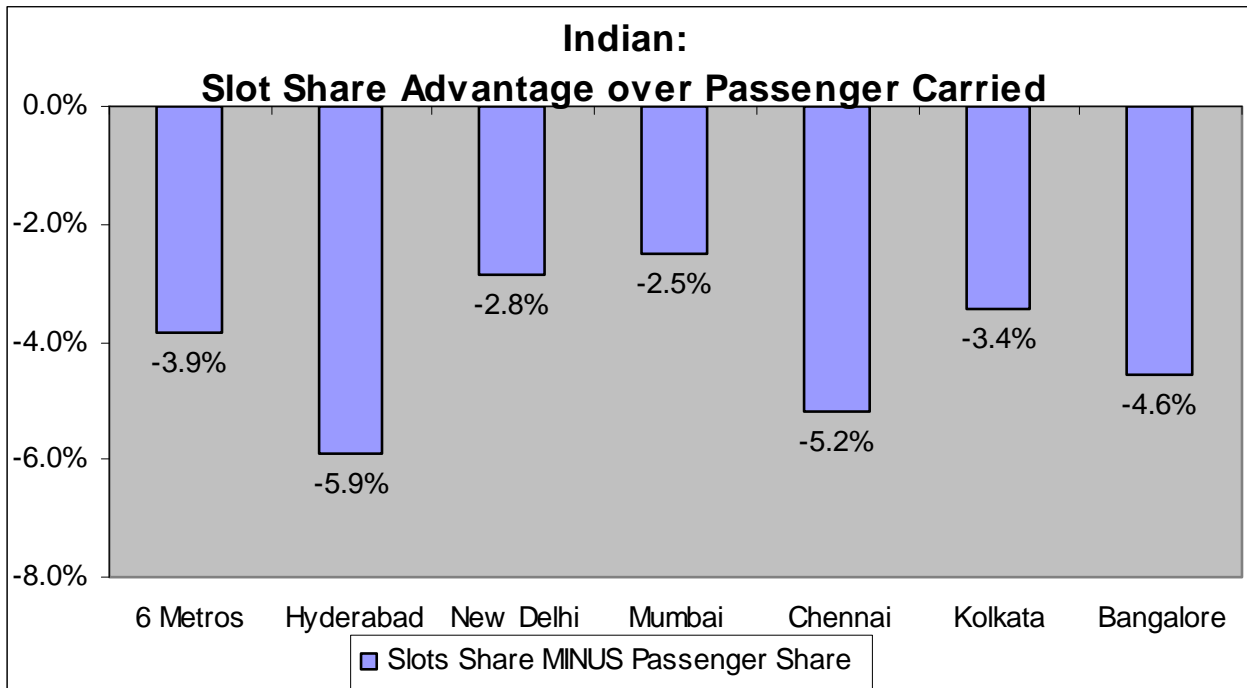


Figure P24: Slot Share Advantage – Jet Airways

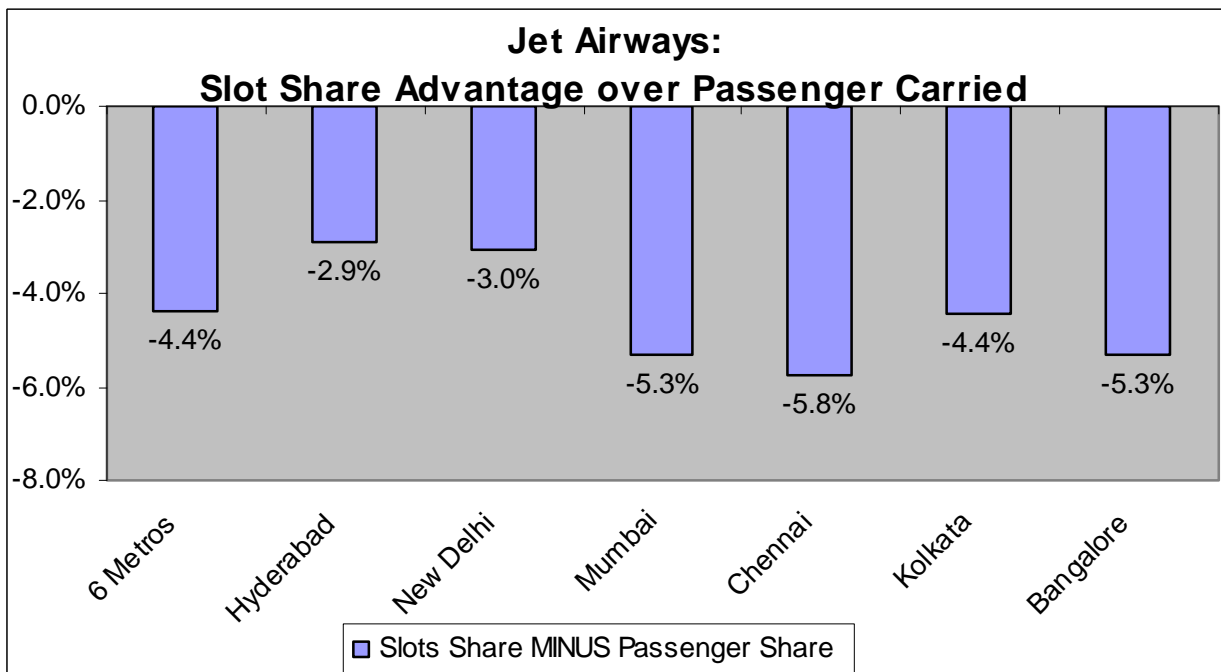


Figure P25: Slot Share Advantage – Air India

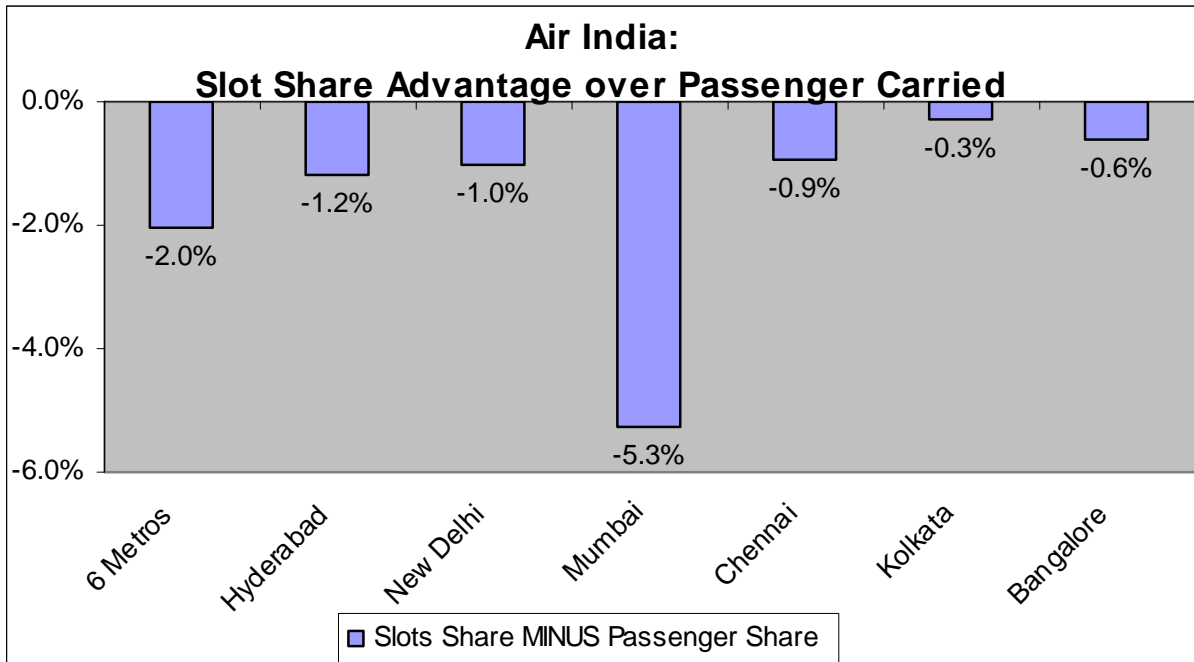


Figure U1: Slots per Million Passengers – 6 Metros

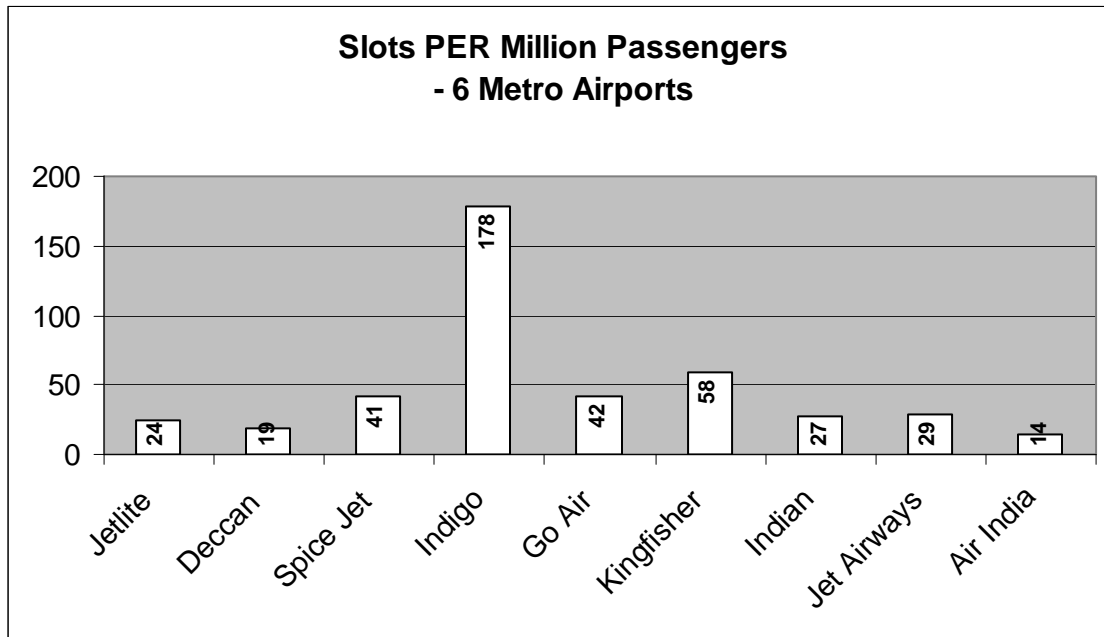


Figure U2: Slots per Million Passengers – Hyderabad

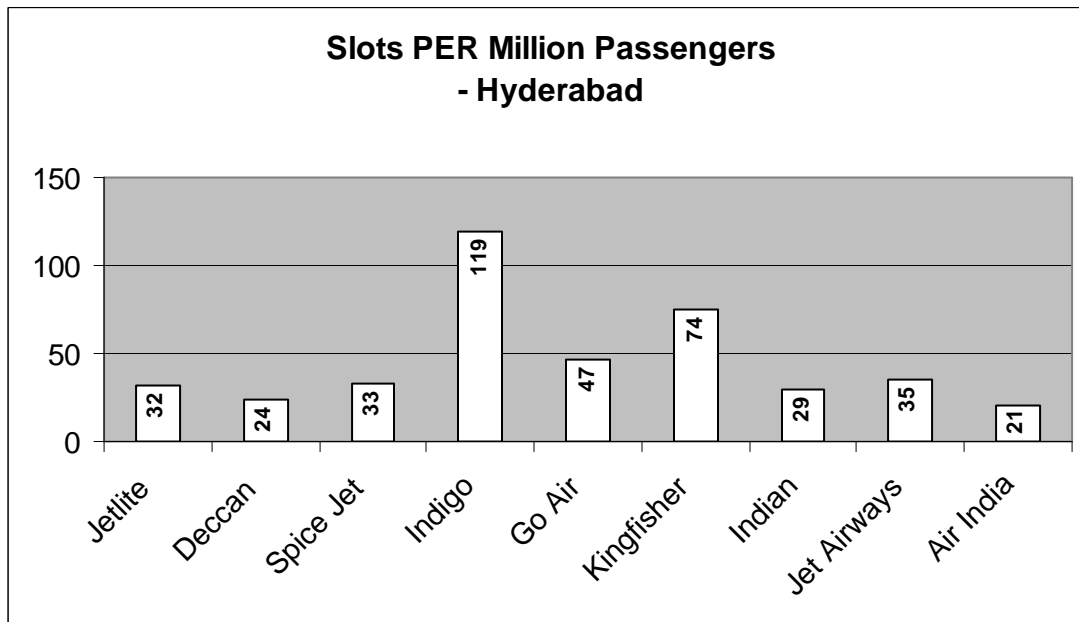


Figure U3: Slots per Million Passengers – New Delhi

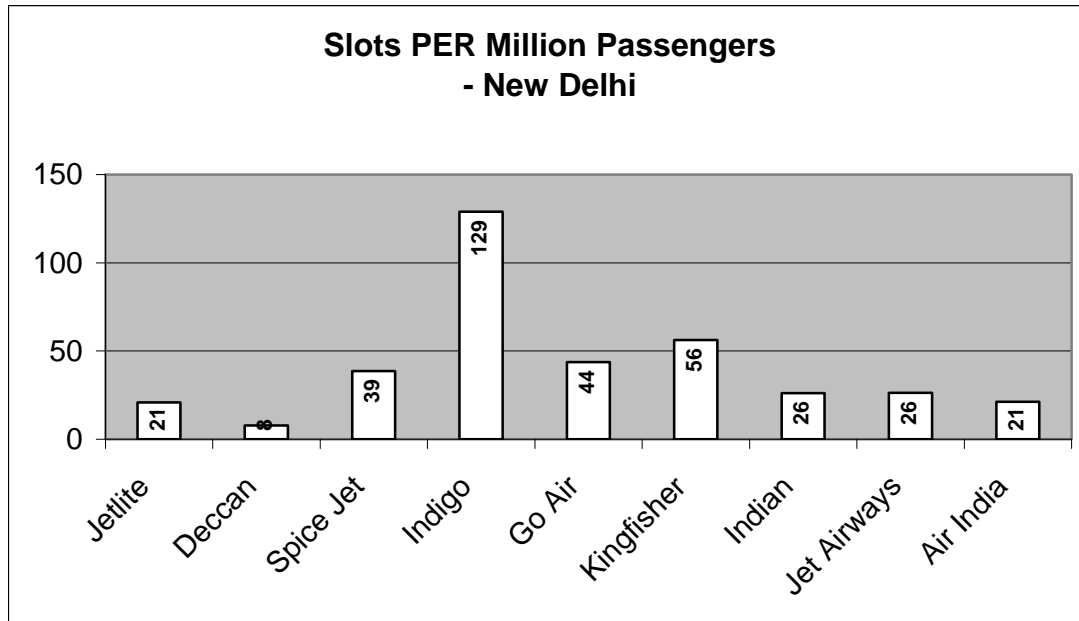


Figure U4: Slots per Million Passengers – Mumbai

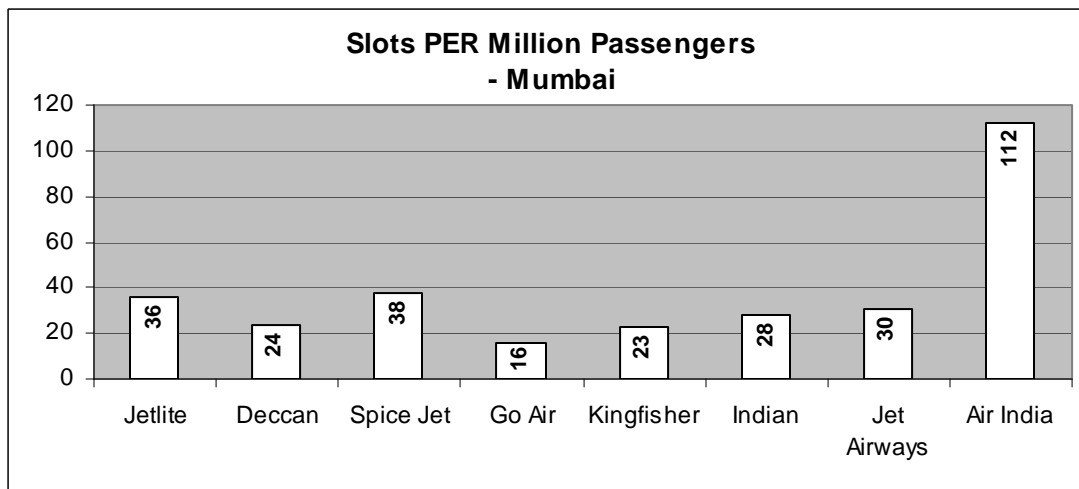


Figure U5: Slots per Million Passengers – Chennai

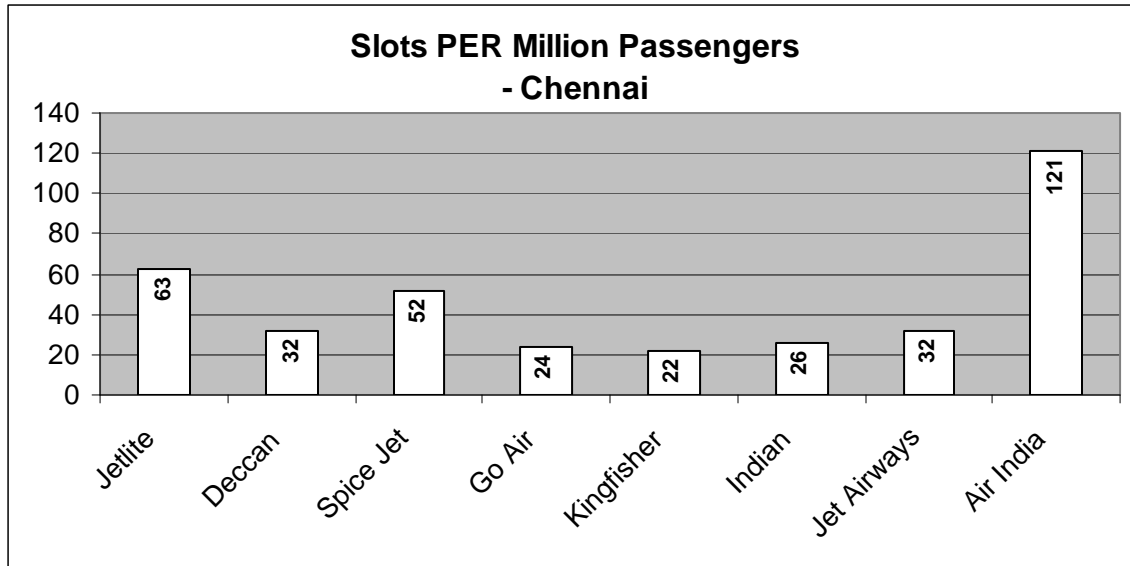


Figure U6: Slots per Million Passengers – Kolkata

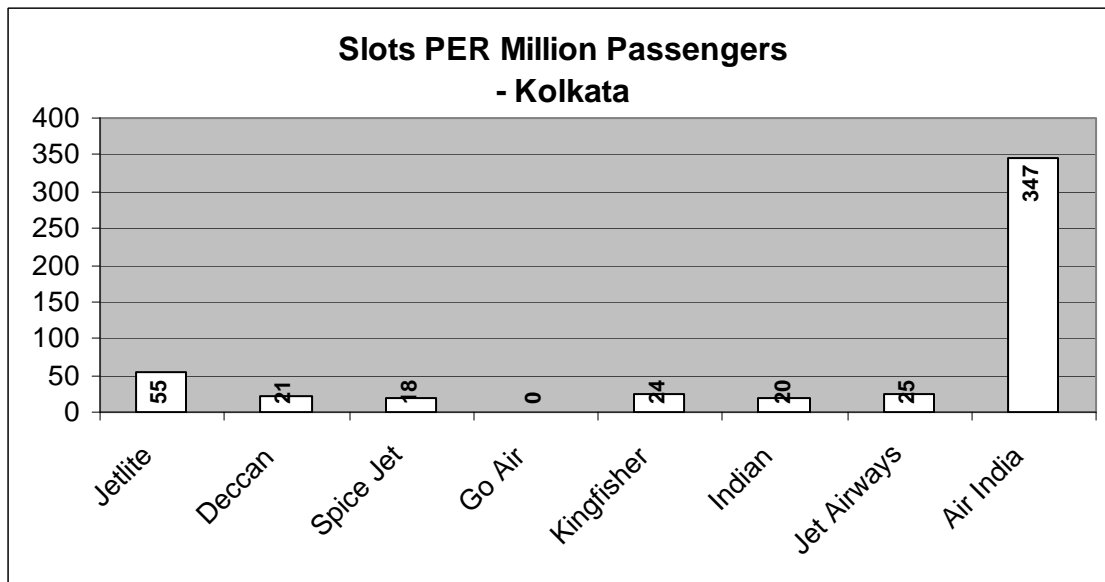
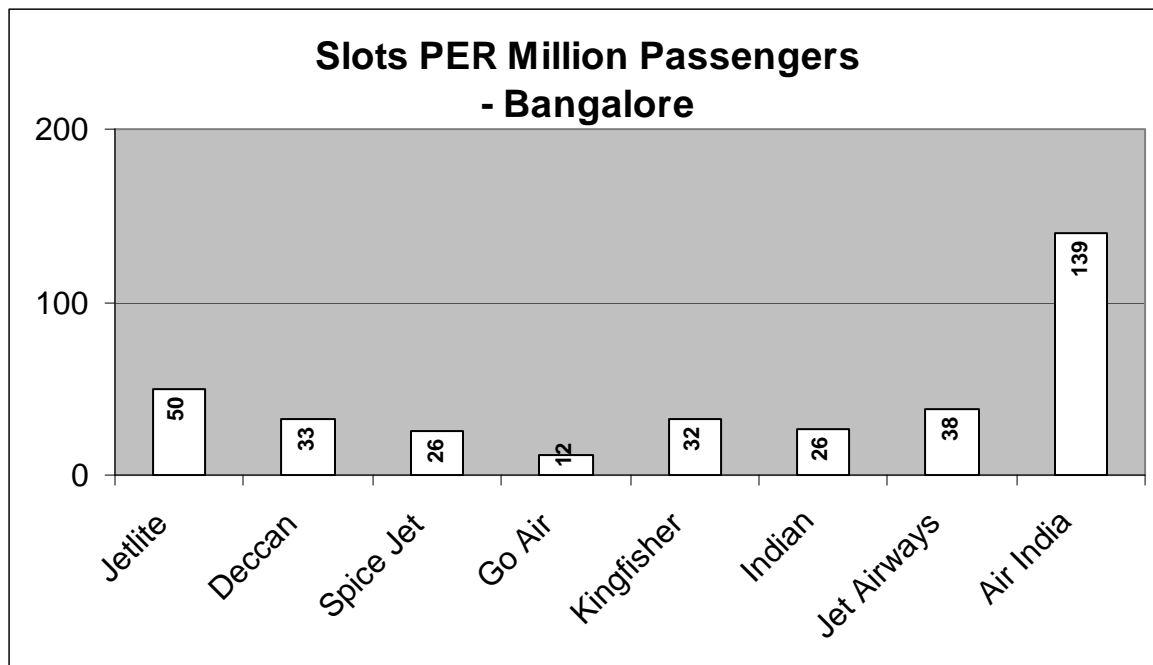


Figure U7: Slots per Million Passengers – Bangalore



VIII. Issues relating to cartels. In this context, cases of cartels in countries like the US and the UK will be studied to examine the type of offences, the legal provisions in these countries and the issues emerging in terms of competition policy there from. Draw necessary comparisons wherever relevant in the Indian context.

Cartels operate in secrecy. It is always difficult to detect a cartel. Hence, in this section we first examine theoretically the conditions that favor cartelization and compare with the current scenario in the air transport industry in India.

Theoretically, markets with the following characteristics are more likely to support the successful operation of a cartel.

a) Fewer Firms and Higher Market Concentration

The fewer the number of operators on the market, or controlling the market, the simpler it is to coordinate actions, the cheaper the costs of collusion, the easier it is to detect cheating and the easier is to keep the arrangement secret. Further, larger the market share that each undertaking has the greater the potential profits to be earned from successful collusion (the bigger the share that each will receive of the collusive pie!). The greater the anticipated rewards the more likely they are to outweigh the risks of detection. Oligopolistic markets are therefore particularly prone to cartelization.

The airline industry in India, which had 12 scheduled operators, after the mergers has only 9 operators. Moreover, if we look at the market shares of airlines notice that after the merger of Jet and Sahara, Kingfisher and Deccan and Air India and Indian, the market is dominated by Jet and Jet Lite (30%), Kingfisher and Deccan (29.1%).

b) Barriers to Entry

Barriers to entry are important to the successful operation of a cartel. In the absence of barriers, an increase in price will attract new competitors into the market.

The barriers to entry in this sector have been discussed elsewhere, however, the major barriers to entry are:

- a) *High capital requirements:* According to the domestic air transport policy, the minimum fleet size for a scheduled operator is five (5) aircrafts and the minimum amount of the shareholders funds is Rs.10 crores for aircraft of all-up-weight below 40,000 kgs and Rs.30 crores for aircraft of all up weight exceeding 40,000 kgs.
- b) *Slots:* Grandfathering of slot rights poses a barrier to entry for a new player. There is currently no policy for allocation of slots to new players in the industry. However, we were given to understand that when a new slot is available the new player is given preference as far as possible.

c) Homogeneous Goods

It is easier for firms to collude where products are similar and where the main dimension of competition is price competition (competition is not multidimensional). Where goods are homogeneous the costs of collusion are reduced and the likelihood of successful collusion increased. The possibility for non-price competition through product differentiation is, of course, reduced.

The service in the airline industry is of two types



Full Cost Carriers providing meals etc. on board – Therefore have a higher price

asci research and consultancy

b) Low Cost carriers which do not provide the meals- cheaper flight tickets

For a business traveler, the time of flight and quality of service – timeliness is more important. Hence for him the service offered by the two categories are not homogenous and he is willing to pay a higher price for a better service.

Therefore the possibility of collusion is between segments providing the same type of services. Interestingly, notice that the two dominant players in the market – Jet and Kingfisher – both have a stake in low cost airline also. Therefore, the homogeneity of ownership may make collusion easier.

d) Firms with Similar Cost Structures or Operating Efficiencies and Market Shares

The more similar cost structures, the easier it is for the firms to cooperate on prices to be charged, for example, where costs are not similar, lower cost firms are likely to want lower prices than other cartel members.

We do not have any data on cost structures and operating efficiencies, of the airlines and hence it is difficult to comment.

e) Market Transparency

The more transparent the market, the easier it will be for firms to monitor what their competitors are doing and to detect cheating on, or deviation from, any cartel arrangement.

All players in the market can monitor the price of the ticket on offer, hence any under-cutting is easy to detect. This reinforces the fact that collusion or cartelization is easy in this market.

f) Depressed Conditions or Low Innovation Rate

Firms operating in industries in recession or suffering from declining demand may be tempted to adopt price-fixing or other collusive agreements to maintain profits.

With the increasing prices of ATF, all players in the industry have been forced to increase price of tickets. Also, the increase in surcharges and taxes has meant the demand for air travel has slowed. According to data released by CAPA, while the growth of this sector in 2007 was around 30 percent, the growth for the first few months of 2008 has been lower than 20 percent. Also, if we look at the losses of this industry, the cumulative losses are expected to be around Rs. 700 billion. Therefore this slowing demand may be a catalyst for collusive agreements.

Cartels can be of different types namely for price fixing, market sharing or limiting supply.

In August 2008, Jet & Kingfisher announced a strategic alliance. We discuss the scope of the alliance below & its potential impact on competition.

Alliance between Jet and Kingfisher

Jet and Kingfisher suffered losses in the last financial year. Kingfisher Airlines made a loss of over Rs 1,000 crore and Jet Airways Rs 806 crore in 2007-8. In view of the large losses Jet Airways and Kingfisher Airlines announced a strategic alliance in October 2008. The stated objective of the alliance was to help them reduce cost and enhance efficiency.



The Scope of the alliance included the following areas:

- Code-shares on both domestic and international flights subject to DGCA approval.
- Interline/Special Prorate agreements to leverage the joint network deploying 189 aircraft offering 927 domestic and 82 international flights daily.
- Joint fuel management to reduce fuel expenses.
- Common ground handling of the highest quality.
- Cross selling of flight inventories using the common Global Distribution system platform.
- Joint Network rationalization and synergies.
- Cross utilization of crew on similar aircraft types and commonality of training as also of the technical resources, subject to DGCA approval.
- Reciprocity in Jet Privilege and King Club frequent flier programmes

The alliance did not become operational due to various reasons. However, since there was an attempt at an alliance we discuss below how it can impede competition.

As already stated, in 2007 three mergers happened in the Indian Air Transport Sector. So if we look at the share of total passengers post merger, Jet Airways after the merger with Air Sahara now controls around 31% of the total and Kingfisher and Deccan together hold around 28%. If the alliance came through, essentially 60 percent of the total passengers would have been affected. The alliance would have covered at least 800 flights operated every day by the two airlines.

Moreover, the alliance may result in cartelization / monopoly. The provisions of Competition Act which define an anticompetitive agreement as an agreement having appreciable adverse effect on competition and includes:-

- agreement to limit production and supply
- agreement to allocate markets
- agreement to fix price
- bid rigging or collusive bidding
- conditional purchase/sale (tie-in arrangement)
- exclusive supply/distribution arrangement
- resale price maintenance
- refusal to deal

If we look at the scope of the alliance, joint network rationalization amounts to agreement to limit production and supply and agreement to allocate markets. Similarly, cross selling of flight inventories using the common Global Distribution system platform and Code-shares on both domestic and international flights subject to DGCA approval is an exclusive supply/distribution arrangement that may have an appreciable adverse impact on competition.

As regards the reciprocity of the frequent flier programmes, one aim of such schemes and programmes is to influence the behaviour of travellers in such a way that they become more inclined to seek a specific airline's products and services. Therefore they can be potentially serious obstacles to effective competition. Any alliance between players in an oligopolistic market should come under the purview of the Competition Authority.

Internationally, in August 2008 British Airways & American Airways attempted to obtain immunity from US Antitrust laws for a proposed alliance for services between London & USA.

British Airways, American Airlines and Spain's Iberia announced an alliance that would allow the three carriers to agree on fares and schedules. Under the joint business agreement, the three airlines would cooperate commercially on flights between the United States, Mexico and Canada, and the



European Union, Switzerland and Norway while continuing to operate as separate legal entities. They would expand their codeshare arrangements on flights within and beyond the EU and US.

The two airlines had tried twice before (in 1997 and 2001) to gain permission from the OFT and EC to bring together their operations and, on both occasions, every regulator that examined the alliance raised serious concerns about the anti-competitive nature of the proposal.

In deciding whether or not the alliance should be approved, the Department of Justice (DOJ) identified the relevant markets in which the firms compete, identified the firms that compete in those markets, and measured concentration. DOJ considered factors such as entry barriers to evaluate the likelihood that high concentration will lead to increased market power in the particular circumstances of the markets at issue.

DOJ stated in its report that American and British Airways currently compete head-to-head, offering nonstop service to London from Boston, New York, Miami, Chicago, Dallas and Los Angeles. Their combination would give them well over 50 percent of the flights in most of these markets, and even higher shares of the business travelers.

According to the DOJ, the scarcity of slots at Heathrow makes entry by other airlines into most of these markets unlikely. To remedy the harm in two of the markets, New York-Heathrow and Boston-Heathrow, the Department recommended that Department of Transportation require the divestiture of slots and related facilities sufficient to ensure that new entrants operate seven daily round trips from New York and two from Boston. That service would replace the service American currently offers in those two markets. The Department also concluded that making slots available would not remedy the loss of competition in two city pairs where American and British Airways would have hubs at both ends, Dallas-London and Chicago-London, because even with slots, other airlines would be unlikely to enter. As a result the Department recommended that DOT withhold immunity for joint pricing and related activities in those markets.

The Department also said that the combination would eliminate the two airlines' current competition for contracts with corporations. Under these contracts, an airline offers discounts in return for a corporation's commitment on travel. The loss of this competition would be in some of the largest and most lucrative business travel markets in the world.

Thus the Department of Justice stated that "the alliance threatens a substantial loss of competition which would likely result in higher air fares and reduced service. Unless Department of Transportation requires divestiture of enough slots for new entrants to offer nine daily round trips to London from New York and Boston, as well as substantial new air service from other U.S. cities, the DOJ would oppose the transaction."

In August 2008 when the BA, AA and Iberia again applied for anti-trust immunity, many researchers noted that nothing had changed since the last application for anti-trust immunity and therefore opposed the alliance on the following grounds.

Slot dominance

- Heathrow is full.
- BA and AA have over 200,000 slots a year at London Heathrow.
- Virgin Atlantic has 17,000. No other carrier can replicate BA/AA's network.
- BA holds 42% of slots at Heathrow, with AA holding 3% and Iberia holding 2%. Collectively they would hold 46% compared to Virgin Atlantic's 3% holding.
- BA and AA hold 49% of peak time arrival slots at Heathrow, giving them a further advantage with time-sensitive and corporate travellers.



Market share dominance

- In 2007 62% of passengers travelling between Heathrow and the US travelled on BA or AA, according to the US Department of Transport.
- On Heathrow-US routes, BA has 40% of capacity and AA has 17% - together they represent 57% of Heathrow-US capacity.
- A BA/AA alliance would have a dominant market share on a number of Heathrow – US routes.
- BA/AA alliance will create a monopoly on the Heathrow – Dallas Fort Worth route.

Since the cartel cases are difficult to detect, we studied international cases on cartelization in this industry. They are summarized below:

1. Brazil: The Rio de Janeiro – São Paulo Airline Case

This case was initiated after some of the major newspapers in the country reported that the presidents of Brazil's four major airlines had met at a hotel and five days later, the prices of the plane ticket for the Rio de Janeiro- São Paulo route had simultaneously increased by 10%. *“Investigation concluded that the price move was not merely a case of conscious parallelism. In addition to the meeting of the companies’ executives, evidence revealed that price data were exchanged among the companies through postings on ATPCO, the computerised airline price data system maintained by the Airline Tariff Publishing Company. A company could configure a price change notice so that, for an initial three-day period, the change could be viewed only by other airline companies and not by consumers or travel agents. The posting company was thus able to abort the change if competitors failed to follow suit. This feature of the ATPCO system had earlier been attacked by the U.S. Department of Justice, but system modifications arising from that case had been implemented only in North America. In September 2004, (Administrative Council for Economic Defense (CADE) determined that the four airlines had colluded to raise prices. Each carrier was fined 1% of the revenue earned on the affected route during 1999 and was enjoined from fixing prices and from posting price adjustments in advance”.* Apart from the chairmen's meeting, the investigation showed that the companies had a very efficient tool for coordinating their prices, which was the ATPCO system.

Based on the association of three factors (the price parallelism, the chairmen's meeting and the tool for coordinating prices), CADE decided that there was a strong indication that the firms were colluding to fix prices. It should also be noted that CADE, in its decision to punish the firms, made a point of justifying why the “price leadership” theory could not be applied in the case.

2. British Airways and Virgin Atlantic

British Airways, formed in 1974, is the national airline and flag carrier of the United Kingdom and one of the largest in Europe. Its main hubs are London Heathrow and London Gatwick. The operations of BA runs to 147 destinations in 75 countries.

Virgin Atlantic Airways Ltd. (operating as Virgin Atlantic) was founded in 1984. Virgin Atlantic Airways has become Britain's second largest carrier serving the world's major cities. Now based at London's Gatwick and Heathrow airports and Manchester airport, it operates long haul services to thirty destinations world-wide. It is owned by Richard Branson's Virgin Group (51%) and Singapore Airlines (49%). It operates long-haul routes between the United Kingdom and North America, the Caribbean, Africa, the Middle East, Asia, and Australia from its main bases at London Heathrow and London Gatwick. Virgin has a smaller base at Manchester Airport.

Notice that the main hubs of both British Airways and Virgin Atlantic are London Heathrow Airport and London Gatwick Airport, which are located in London, England. The former is the principle and



biggest airport serving the United Kingdom and handles more international passenger traffic than any other airport in the world. Gatwick Airport is the second busiest airport in the United Kingdom after Heathrow. These two destinations are common to both the airlines and it helped in uniting and clubbing their activities illegally. Likewise, the most of the activities and operations are common.

The deal-cartel

The deal between British airways and Virgin atlantic was a cartel-an illegal operation of raising prices on fuel surcharges on long haul fights over the phone.

How was the cartel detected?

The OFT started its probe after Virgin Atlantic employees came forward with information about the price-fixing, and the airline escaped a fine in return for “whistle-blowing”.

European Commission officials raided British Airways over alleged price fixing on 10th October 2007. The EC carried out “unannounced inspections” at various premises as it had “reason to believe the companies concerned may have violated Article 81 EC-Treaty, which prohibits practices such as price fixing”.

On detection it was found out that a British Airways official called a counterpart at Virgin Atlantic for the discussion over the fuel surcharges. This was found out by the joint investigation of Office Of Fair Trade And America’s Department of Justice into “alleged cartel activity” on long-haul passenger flights.

The main finding in the above regard was that since May 2004, BA had introduced eleven price rises, and just one reduction, on long- haul flights which it maintains has been to counter the rising price of oil. Senior officials BA were identified, to be involved in the cartel formation with VA. The table VIII.1 below shows the price fluctuations on fuel surcharges.



TableVIII.1: Price Fluctuation On Fuel Surcharges

BRITISH AIRWAYS	VIRGIN ATLANTIC
2004	2004
May 13: £2.50 surcharge introduced	May 19: Virgin announces £2.50 surcharge
Aug 11: long –haul surcharge increased to £6 per flight	Aug 9: announces surcharges increase to £6
Oct 14: long- haul surcharge increased to £10	Oct 8: surcharge rises to £10
2005	2005
March 28: long-haul surcharge increased to £16	March 24: surcharge raised to £16
June 27: long-haul surcharge increased to £24	June 27: surcharge raised to £24
	Sep 7: surcharge raised to £30
	Nov 21: surcharge cut to £25
2006	2006
April 21: long-haul surcharge increased to £35	Jan 9: surcharge raised to £30
	March 22: Virgin announces increase to £35

Source: www.telegraph.co.uk

PENALTY

BA was fined £121.5 million by the OFT and \$300 million by the US Department of Justice for colluding with Virgin on the level of fuel surcharges. Various ex-officials and current officials of BA were charged with offenses. The case is still in the process and the hearing on the top officials of British Airways is yet to happen. If, found guilty of operating a cartel; the men may face as many as five years in prison. In February, after Virgin and BA reached agreement on a class action suit in the US, it was announced that people who flew long haul with British Airways or Virgin Atlantic between August 11, 2004 and March 23, 2006 would be eligible for a refund.

3. British Airways and Korean airways

Korean Air was founded by the South Korean Government in 1962 as Korean Air Lines to replace Korean National Airlines (founded in 1948). Its international passenger division and related subsidiary cargo division together serve 130 cities in 45 countries, while its domestic division serves 20 destinations. It is among the top 20 airlines in the world airlines in terms of passengers carried. Korean Air's main global headquarters campus and its Global Operations Center are located in Gangseo-gu in Seoul. Korean Air also maintains a domestic office campus at Gimpo International Airport in Seoul.

Cartel

The agreement was on fixing air cargo prices. British Airways and Korean Airways were charged with fixing the rates charged to customers for international air shipments of cargo, including shipments to and from the United States.

Cartel detection

The EC carried out “unannounced inspections” at various premises as it had “reason to believe the companies concerned may have violated Article 81 EC-Treaty, which prohibits practices such as price fixing. The charges against the two airlines companies were filed on August 01, 2007 in the U.S. District Court for the District of Columbia. The department also charged that between August 2004 and February 2006, British Airways and Korean Air lines were involved in air cargo industry ship billions of dollars of consumer goods including produce, clothing, electronics and medicines. It was found out that Korean Air



and its competitors- British Airways agreed to increase the fuel surcharge over time from 10 cents per kilogram to as high as 60 cents per kilogram of cargo shipped from the respective destinations.

Both British and Korean Airways were charged with carrying out the two price-fixing conspiracies with coconspirators by, among other methods:

- Participating in meetings, conversations, and communications to discuss the cargo rates on shipments to and from the United States and passenger fuel surcharges to be charged for flights between the United States and the United Kingdom;
- Agreeing, during those meetings, conversations, and communications, on certain components of the cargo rates on shipments to and from the United States and passenger fuel surcharges to levy for flights between the United States and the United Kingdom;
- Levying cargo rates and passenger fuel surcharges in accordance with the agreements reached; and
- Engaging in meetings, conversations, and communications to monitor and enforce the agreed-upon rates.

Price fluctuation

The Department noted that during the air cargo conspiracy, British Airways' fuel surcharge on shipments to and from the United States changed more than 20 times and increased from four cents per kilogram of cargo shipped to as high as 72 cents per kilogram.

Penalty

Both airlines agreed to plead guilty and pay separate \$300 million criminal fines for their roles in conspiracies to fix the prices of passenger and cargo flights.



IX. To Study the issue of Competition in Airports

As discussed in the earlier sections, Indian civil aviation sector has grown rapidly in the post liberalization scenario leading to a sharp increase in the volume of air traffic. Side by side with this trend in the growth of air traffic, there has been a great deal of pressure on the available airport infrastructure. In particular, the need for upgrading airport infrastructure to keep pace with increasing air traffic has assumed a great deal of importance.

The OECD report on “Competition Policy and International Airport Services 1997” points out that the provision of air services between any two given cities requires two complementary inputs: aircrafts services and airports services. Therefore there must be effective competition in both these markets if we want effective competition in the air transport sector. This is because if there is limited competition between airports enhancing competition among airlines alone will not ensure a competitive price for the consumers. Similarly, if there is limited competition among the airlines, enhancing competition between airports alone will not ensure full competition since the market power and capacity constraints can lead to a higher price of service.

The two markets, namely the airport market and the airlines market are essentials interlinked. In fact the demand for airports is a derived demand, i.e., it arises out of the demand for air travel. An important aspect of the interlinkage between airports and airlines is the issue of slot allocation. The ICAO defines an airport slot as the time that an aircraft is expected to arrive at or depart from a capacity constrained airport.

For commercial operations which use airport gates, this time is calculated based on when the aircraft arrives at or leaves the gate. To take into account variations in flight times, unavoidable delays, etc., airport slots may actually be allotted in terms of a time period, such as 16:45 to 17:00. The number of slots that can be allotted by an airport would depend upon its capacity. In general capacity of an airport is defined as the minimum of the parameters such as terminal capacity, runway, baggage belts, etc. While terminal capacity is expressed in terms of a maximum hourly throughput of arriving and departing passengers, runway capacity is defined as the number of air traffic movements (ATMs, ie landings or take-offs of aircraft) which can take place during a given period. This minimum decides the number of slots that will be allotted. Slot constraints can constrain competition. As discussed earlier, there is a system of ‘grandfather rights’ which often governs slot allocation policy in a major way. This policy usually accounts for a great majority of slots, particularly at peak times.

The main economic argument in favour of grandfathering rights is that airlines wishing to make longer term investment decisions in aircrafts, crew, infrastructure and marketing require some permanency in the property rights allocated. Slots do have an element of property right attached in the sense it gives exclusive right to use to the holder. The principle of grandfathering by giving permanency to the property right therefore provides a close substitute.

Whether grandfathering of slots has an impact on competition depends on how congested the airport is. At an airport where the demand for slots is less than the available supply there should be no impact of grandfathering of slots. However, if the demand is more than supply – making the airport slot constrained- grandfathering of slots can provide a distinct advantage to the incumbent players in the market. Also, large slot holdings have an impact on competition. It gives the airline flexibility in scheduling and frequency. Thus slots can act as a barrier to entry for new airlines and can be used by incumbent airlines to exclude new airlines from access to the airport. A second aspect of interlinkage between airports and airlines is in terms of airport charges. Thus the charges imposed by airports on aeronautical services such as for ground facilities, ground safety services, ground handling services, cargo facilities, fuel supply, etc affect airlines in a major way.



Given the linkages between airlines and airports it is clear that inter airport competition is important. It is important to increase airport capacity given the pressure of demand for slots at existing airports. Therefore at congested airports, where demand is greater than supply, the government has the following options:

- a) Expand the existing airport/ Build a new green field airport through concession or lease agreements
- b) Build a second airport for the same city

Airport privatization has become an important policy option in this scenario, keeping in mind the requirement of resources for this purpose.

In India, an important route through which the government is trying to attract the private sector in order to build/upgrade airports is that of public private partnerships (PPPs) wherein the Government of India has provided different types of incentives, including provision of subsidized land along with the airport land to attract private sector participation. Instances of airports that have been built and improved through such PPPs are the Bangalore International Airport, the Hyderabad International Airport and the Delhi and Mumbai Airports.

A lucid account of the different models of providing airport infrastructure has been provided in Ohri(). In India, the preferred route to upgradation of airport infrastructure has been through PPPs. The nature and extent of participation of the private sector in terms of ownership, control management, operations, maintenance and other aspects in connection with developing the airport are governed through concession agreements between the Government of India and the private parties.

From the perspective of this study, we examine the competition issues involved in the grant of concessions to the private sector for upgradation of airport infrastructure. In particular we examine issues such as the following:

- In the process of grant of concession how is competition ensured?
- After grant of concession, if there is abuse of dominant position by concessionaire, how is it handled?
- If there are anticompetitive agreements based on concessions granted, how is it handled?
- Are there litigations after award of concession?
- Has the government been monitoring implementation of concessions awarded?
- Once a private entity has got a concession, and attains a dominant position, is it leveraging that to merge with another entity? Are there any anti competitive concerns of this sort, post grant of concession? Are private entities using the concession to attain dominant position?

For assessing the competition issues involved in the airport sector, we have therefore analysed in some detail the concession agreements in the context of the BIAL, HIAL, Delhi and Mumbai airports and also the Draft Model Concession Agreement for PPP in non metro airports.

The Concession Agreements are detailed documents covering issues from the scope of the project, development and operations, financial provisions, force majeure and termination and other miscellaneous provisions. For the purpose of our analysis we have looked at specific features of the Agreements that have a bearing on the Competition Issues involved, as below:

A. Bangalore International Airport Limited

A Concession Agreement was signed between the Government of India (GoI) and Bangalore International Airport Limited (BIAL) , in July 2004 for the development, design, financing, construction, completion, maintenance, operation and management of a greenfield airport at Devanahalli, near Bangalore in the State of Karnataka. The BIAL was established with the participation of Karnataka State



Industrial Investment and Development Corporation Limited, the Airports Authority of India, Siemens Project Ventures GmbH, Flughafen Zuerich AG and Larsen & Toubro Limited, each of whom agreed to participate as a shareholder in BIAL. The Concession Agreement sets out clearly the terms and conditions under which the project will be implemented through a public-private partnership.

A.1 Scope of the Project

The Project encompasses:

- The development and construction of the Airport on the Site in accordance with the provisions of this Agreement;
- The operation and maintenance of the Airport and performance of the Airport Activities and Non-Airport Activities in accordance with the provisions of this Agreement; and
- The performance and fulfillment of all other obligations of BIAL in accordance with the provisions of this Agreement.

As far as the details of the Concession Agreement are concerned, Gol granted BIAL the exclusive right and privilege to carry out the development, design, financing, construction, commissioning, maintenance, operation and management of the Airport (excluding the right to carry out the Reserved Activities and to provide communication and navigation surveillance/air traffic management services which are required to be provided by AAI). BIAL has accepted the concession granted to it by Gol pursuant to Article 3.1.1 of the Agreement

Thus Gol recognises that BIAL may carry out:

- (i) any activity or business related or ancillary to the activities referred to in Article 3.1 as above or which BIAL considers desirable or appropriate to be carried on or engaged in connection therewith (including any infrastructure service considered by BIAL to be reasonably necessary for the activities referred to above in Article 3.1); and
- (ii) any activity or business in connection with or related to the arrival, departure and/or handling of aircraft, passengers, baggage, cargo and/or mail at the Airport; and
- (iii) any activity or business in connection with or related to the development of the Site or operation of the Airport to generate revenues including the development of commercial ventures such as hotels, restaurants, conference venues, meeting facilities, business centres, trade fairs, real estate, theme parks, amusement arcades, golf courses and other sports and/or entertainment facilities, banks and exchanges and shopping malls. (Article 3.2.1)

For the purpose of exercising the above rights under Article 3.2.1, BIAL may, subject to and in accordance with the terms of this Agreement, at any time, grant Service Provider Rights (including the right of the Service Provider Right Holders to grant sub-rights) to any Person for the purpose of carrying out the activities and businesses as described above on such terms and conditions as BIAL may determine are reasonably appropriate and are within the framework of the Agreement. However the overall responsibility continues to remain with BIAL.

A.2 Concession Fee

BIAL shall pay to Gol a fee amounting to four per cent (4%) of Gross Revenue annually on the terms specified in this Article 3.3 (the Concession Fee.).

A.3 The obligations of Gol

Gol shall, at its own cost and expense, undertake, comply with and perform all its obligations as set out in this Agreement and shall not instruct any statutory body under the direct control and direction of



the Ministry of Civil Aviation to take any action that would constitute a breach of this Agreement if such body were party to this Agreement in place of Gol.

Further, upon application made therefore by BIAL or its shareholders or their respective contractors, servants or agents and subject to full compliance and sustenance by such parties with Applicable Law, the Ministry of Civil Aviation shall endeavour that all Clearances to be granted by it or that are within its direct control and as are required for or in connection with the Project, are granted by it within a period ending on the later of (i) the end of the relevant statutory period (if any), and (ii) forty-five (45) days after the relevant application duly completed having been submitted.

An important aspect of the Agreement is **Exclusivity**. The conditions of the Agreement in this respect are as follows:

International

No new or existing airport shall be permitted by Gol to be developed as, or improved or upgraded into, an International Airport within an aerial distance of 150 kilometres of the Airport before the twenty-fifth anniversary of the Airport Opening Date.

Domestic

No new or existing airport (except for Mysore and Hassan airports) shall be permitted by Gol to be developed as, or improved or upgraded into, a Domestic Airport within an aerial distance of 150 kilometres of the Airport before the twenty-fifth anniversary of the Airport Opening Date.

A.4 Equivalent Treatment

According to the Agreement, post commencement of operations of the Airport Gol shall not act or omit to act in a manner which discriminates against the Airport or BIAL in a way that provides other Major Airports with an unfair competitive advantage when compared to the Airport or BIAL, as the case may be. However, it is clarified that such discrimination does not include passage of laws in relation to fiscal or tax matters. It is also clarified that if GOI enters into another concession agreement for establishing another airport, the same also shall not constitute discrimination.

In addition BIAL represents and warrants to Gol that as at the date of this Agreement:

- (i) it is a public limited company limited by shares incorporated under the laws of India and has been properly constituted and is in continuous existence since incorporation;
- (ii) it is not engaged in any business other than the business of operating and managing airports and other ancillary activities; and that
- (iii) the shareholding pattern of BIAL is as follows:

Parties	Percentage of issued and paid up share capital of BIAL
Private Promoters and Other Investors (as those terms are defined in the Shareholders Agreement) (collectively)	74% (Siemens Project Ventures 40%, Unique Zurich 17% and L&T 17%)
State Promoters (as the term is defined in the Shareholders Agreement) (collectively)	26%
Total	100%



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- (iv) there are no actions, suits, proceedings, or investigations pending or, to its knowledge, threatened against it at law or in equity before any court or before any other judicial, quasi-judicial or other authority, the outcome of which may result in a breach of this Agreement or which individually or in the aggregate may result in any material impairment of its ability to perform its obligations under this Agreement; and
 - (v) no sums, in cash or kind, have been paid to, or accepted by, any person or will be paid to, or accepted by, any person or on its behalf by way of fees, commission or otherwise to induce Gol to enter into this Agreement.

The Agreement includes clauses relating to the construction of the Airport (Article 7) and a section on airport operation and maintenance(Article 8) Articles 8.9 and 8.10 relate to management of the airport business and general obligations of BIAL.

An important aspect of the Agreement is that of **Slots**.

According to the Agreement, BIAL shall have the final right to allocate slots at the Airport, subject to the same being allocated fairly and not arbitrarily and shall use reasonable endeavours to accommodate the relevant airline operators the slots allocated at the Existing Airport at the time of its closure.

A.5 Charges

Parties having right to impose charges

Subject to Applicable Law, no Person (other than BIAL, any Service Provider Right Holder granted a relevant Service Provider Right or the AAI) may impose any charge or fee (a) in respect of the provision at the Airport of any facilities and/or services which are included within Airport Activities or (b) in respect of the movement of passenger, or vehicular traffic on the Airport or the Site.

Airport Charges

The Airport Charges specified in Schedule 6 (.Regulated Charges.) shall be consistent with ICAO Policies.

The Regulated Charges set out in Schedule 6 shall be the indicative charges at the Airport. Prior to Airport Opening BIAL shall seek approval from the Ministry of Civil Aviation for the Regulated Charges, which shall be based on the final audited project cost. The Ministry of Civil Aviation shall, subject to the proposed Regulated Charges being in compliance with the principles set out in Article 10.2.1, grant its approval thereto within a period of sixty (60) days of the date of the application being submitted by BIAL..

If at any time prior to the date the IRA has the power to approve the Regulated Charges BIAL wishes to amend such charges, it shall seek consent from the Ministry of Civil Aviation for such amendments. The Ministry of Civil Aviation shall, subject to the proposed charges being in compliance with the principles set out in Article 10.2.1, grant its approval of such amendments within a period of sixty (60) days of the date of the application being submitted by BIAL.

From the date the IRA has the power to approve the Regulated Charges, BIAL shall be required to obtain approval thereof from the IRA. In this regard BIAL shall submit to the IRA, in accordance with any regulations framed by the IRA, details of the Regulated Charges proposed to be imposed for the next succeeding relevant period together with such information as the IRA may require for review. Unless otherwise agreed in writing between the Parties such approved Regulated Charges shall comply with the



principles referred to in Article 10.2.1 until the earlier of (i) the date that outstanding Debt in respect of the Initial Phase has been repaid and (ii) fifteen (15) years from Financial Close.

Charges

Parties having right to impose charges

According to the Agreement, subject to Applicable Law, no Person (other than BIAL, any Service Provider Right Holder granted a relevant Service Provider Right or the AAI) may impose any charge or fee (a) in respect of the provision at the Airport of any facilities and/or services which are included within Airport Activities or (b) in respect of the movement of passenger, or vehicular traffic on the Airport or the Site.

Other Charges

However, BIAL and/or Service Provider Right Holders shall be free without any restriction to determine the charges to be imposed in respect of the facilities and services provided at the Airport or on the Site, other than the facilities and services in respect of which Regulated Charges are levied.

Regulated Charges

Pursuant to the principles set out in Article 10.2 of this Agreement, BIAL shall be entitled to levy and recover from airline operators, passengers and other users and in respect of both domestic and international aircraft and passenger movements, at rates consistent with ICAO Policies, the following Regulated Charges:

(i) Landing, Housing and Parking charges (Domestic and International):

The charges to be adopted by BIAL at the time of airport opening will be the higher of:

- (a) The AAI tariff effective 2001 duly increased with inflation index, as set out hereunder, up to the airport opening date Or
- (b) The then prevailing tariff at the other AAI airports

(ii) Passenger Service Fee (Domestic and International):

The charges to be adopted by BIAL at the time of airport opening will be the higher of:

- a) The AAI tariff effective 2001 duly increased with inflation index, as set out hereunder, upto the airport opening date Or
- b) The then prevailing Passenger Service Fee at the other AAI airports.

The Passenger Service Fee chargeable by BIAL, as given above, is inclusive of the cost of Security Expenditure on Central Industrial Security Force (CISF). This component of cost towards Security Expenditure on CISF shall be revised upwards by BIAL as and when directed by GOI.

(iii) User Development Fee (UDF) (Domestic and International):

BIAL will be allowed to levy UDF, w.e.f Airport Opening Date, duly increased subsequent years with inflation index as set out hereunder, from embarking domestic and international passengers, for the provision of passenger amenities, services and facilities and the UDF will be used for the development, management, maintenance, operation and expansion of the facilities at the Airport.

The Regulated Charges set out in Schedule 6 shall be the indicative charges at the Airport. Prior to Airport Opening BIAL shall seek approval from the Ministry of Civil Aviation for the Regulated Charges, which shall be based on the final audited project cost.

Note:

- (a) Charges will be calculated on the basis of nearest MT (i.e. 1000 kgs)
- (b) The minimum fee for per single landing will be INR 1000.0
- (c) Peak hour surcharge on International landing between 2301 hrs (IST) to 2400 hrs (IST) will be 5%



- (d) *If US \$ rates are to be charged the following rule for conversion, US\$ into INR the rates on the 1st day of the month for 1st fortnight billing period and rates as on 16th of the month for the 2nd fortnightly billing period, will be applicable.*
- (e) *All Tariffs are net for BIAL. Any taxes such as Service tax, if applicable, will be over and above the tariff proposed.*

B. Hyderabad International Airport Limited

The concession agreement for the development, construction, operation and maintenance of the Hyderabad International Airport was signed between the Ministry of Civil aviation, Government of India and the Hyderabad International Airport Limited in December 2004. The structure of the Agreement is identical to the agreement with Bangalore International Airport.

C. State Support Agreements for the Mumbai and Delhi Airports.

State Support Agreements in relation to the modernization and restructuring of the Mumbai Airport and the Delhi Airport were signed between the Government of India and the Mumbai International Airport Private Limited as well as the Government of India and the Delhi International Airport Private Limited in April 2006. Both Agreements have the same structure. Below we discuss the Agreement for the Mumbai Airport. The issues raised are exactly the same for the Delhi Airport.



The Mumbai International Airport Pvt. Ltd. is a company incorporated in India under the Indian Companies Act, 1956, having its registered office at CSI Airport, Mumbai (hereinafter referred to as the “**JVC**”), Government of India, as part of its policy of liberalization entrusted the functions of management of airports in India to the Airports Authority of India (hereinafter AAI) established under the Airports Authority of India Act, 1994. In furtherance of the liberalization policy, the AAI searched for private participants competent and desirous to operate, maintain, develop, design, construct, upgrade, modernize, finance and manage **Chattarpati Shivaji International Airport, Mumbai** (hereinafter the Airport). A special purpose vehicle company (hereinafter the JVC) has been incorporated for the aforesaid purpose with AAI and the private participants as shareholders. Further, AAI and JVC have entered into an Operation, Management and Development Agreement (hereinafter the OMDA) whereby they have agreed upon the terms and conditions upon which the JVC shall operate, finance and manage etc. the Airport. In consideration of the JVC having entered into OMDA and to enhance the smooth functioning and viability of the JVC, in addition to the obligations of the AAI under the OMDA, the GOI is agreeable to provide some support to the JVC.

GOI SUPPORT

In consideration for the JVC entering into the OMDA and the covenants and obligations set out therein, GOI hereby undertakes to provide to the JVC the following support (“**GOI Support**”):

GOI Services

GOI shall, throughout the Term, provide, or cause to be provided, at the Airport the Reserved Activities (other than air traffic control and air navigation services) (hereinafter referred to as the “**GOI Services**”). Currently, the GOI Services are:

- i. Customs Control;
- ii. Immigration Services;
- iii. Plant Quarantine Services;
- iv. Animal Quarantine Services
- v. Health Services
- vi. Meteorological Services; and
- vii. Security Services.

Provided however, GOI shall at all times have the right, at its option, to require the JVC to undertake and provide any or all of the GOI Services, in whole or in part, on such terms and conditions (including consideration for rendering of such services) as may be reasonably acceptable to both Parties.

In order to allow GOI to provide, or procure the provision of, the GOI Services, the JVC shall, at no cost to GOI, or its designated nominees/representatives, provide to GOI, or its designated nominees/representatives, with such access as reasonable so as to enable GOI, or its designated nominees/representatives to provide the GOI Services at the Airport. The JVC shall further provide to GOI, or its designated nominees/representatives, with such space requirements as reasonable so as to enable GOI, or its designated nominees/representatives to provide the GOI Services at the Airport; provided however, that operational space for provision of GOI Services at the Airport shall be provided at



no cost to GOI, or its designated nominees/representatives and back office space shall be provided at 50% of the applicable commercial rent for other back office rentals/office rentals at the Airport.

In the event of any further expansion, modernization or redevelopment of or at the Airport which involves the movement or reconfiguration of any space or facilities used by GOI or its designated nominees/ representatives, the JVC shall duly inform GOI, and the JVC and GOI shall, within a reasonable period of time, discuss and agree to any amendments to the space requirements of GOI or its designated nominees/representatives that may be required as a result of such expansion, modernization or redevelopment of or at the Airport. It is expressly acknowledged by the Parties that in such event back office space for GOI Services may be provided outside the terminal buildings.

Right of First Refusal

The "Right of First Refusal (ROFR)" with regard to a second airport within a 150 km (One Hundred and Fifty Kilometer) radius of the Airport will be given to the JVC by following a competitive bidding process, in which the JVC can also participate if it wishes to exercise its ROFR as set forth below. In the event, the JVC is not the successful bidder but its bid is within the range of 10% of the most competitive bid received, the JVC will have the ROFR by matching the first ranked bid in terms of the selection criteria for the second airport, provided the JVC has satisfactory performance without any material default (being a default entitling the counter party to suspend obligations and/ or terminate the agreement) under any Project Agreement at the time of exercising the ROFR. Provided however, nothing in this Clause 3.4.1 shall apply to any proposal by GOI to develop a second airport at Chakan, Pune or at any other place in its vicinity.

Major Development Plan Review

The JVC must prepare and submit to GOI a Major Development Plan for each major development or any development, which is expected to have a capital cost in excess of Rupees 100,00,00,000/- (Rupees One Hundred Crore Only). Each Major Development Plan must be in accordance with the OMDA and the parameters set out here in below:

- It should be in accordance with the current Master Plan
- It should meet the Development Standards and Requirements
- It should have been subject to consultation with all relevant stakeholders and, in the case of aeronautical developments, must be the subject of full consultation with airport users and adequately take into account their requirements.

CO-ORDINATION COMMITTEES

Joint Co-ordination Committee

In order to ensure smooth and efficient rendering of the GOI Services, the Parties hereby undertake and agree to set up a joint co-ordination committee (the "**Joint Co-ordination Committee**") consisting of (i) the JVC Representative; (ii) the - 16 - Customs Control Representative; (iii) the Immigration Services Representative; (iv) the Meteorological Services Representative; (v) the Security Services Representative; (vi) the Plant Quarantine Services Representative; (vii) Animal Quarantine Services Representative (viii) Health Services Representative and (viii) the AAI Representative. The Joint Co-ordination Committee shall meet at least once every quarter at the Airport, starting in the first instance within thirty (30) day(s) of the Effective Date.



In order to ensure the smooth and efficient operation of the Airport and to facilitate interaction and co-ordination between the JVC and GOI in relation to all policy related matters and decisions undertaken/ proposed to be undertaken by GOI in relation to the Airport, a co-ordination committee (the “**Airport Co-ordination Committee**”) consisting of (i) the JVC Representative; (ii) State Government Representatives; (iii) the GOI Representative; and (iv) the AAI Representative has to be set up which shall, hold meetings as required or at the instance of either Party.

FORCE MAJEURE

Either Party shall be entitled to suspend or excuse performance of its respective obligations under this Agreement to the extent that it is/they are unable to render such performance due to an event of Force Majeure..

There are other clauses in the Agreement relating to Change in Law and Dispute Resolution .

Reliance case

The formation of joint ventures for the Delhi and Mumbai airports as a part of the privatization policy of the Government of India (GOI) was challenged by Reliance Airports Developers Private Limited(RAL) which was one of the losing bidders.

Background of the case

As a part of Gol's avowed policy of privatisation of strategic national assets, a first step was the privatization of two airports i.e. Mumbai and Delhi on a joint venture basis. In March 2003, Airports Authority of India (AAI) initiated the process to consider modernization of Delhi and Mumbai airports. In September 2003, GOI approved the restructuring of Mumbai and Delhi airports through the joint venture (JV) route. An Empowered Group of Ministers (EGOM) was constituted to decide upon the detailed modalities including design parameters, bid evaluation criteria etc, based on which the JV partners were to be selected. An Inter Ministerial group (IMG) was set up to assist the EGOM for restructuring of the two airports. On the basis of recommendations received from the IMG, the EGOM approved the appointment of the Global Technical Adviser, (GTA), the Legal Consultant(LC) and the Financial Consultant(FC). An Invitation to Register an Expression of Interest(ITREOI) was issued for the two airports. The tendering process involved two tiers: an expression cum request for qualification (ECRQ) and a request for proposal (RFP). The RFP was issued in April 2005.

There were six bidders for Delhi and five bidders for Mumbai. The IMG set up a review committee to review the evaluation carried out by GTA, LC and FC. The Review committee was called as the evaluation committee (EC).

The process of selection of the JV partners was as follows:

- Technical bids were opened in September 2005.
- In October 2005, the Government Review Committee(GRC) was constituted to undertake an independent review of the evaluation report prepared by EC.
- The GRC held meetings in November 2005 to review the EC report.
- GRC endorsed the views of EC.
- In December 2005, GRC submitted its report to IMG.
- The matter was placed before the EGOM in December 2005.
- Further clarifications were sought by EGOM from IMG.
- RAL wrote to EGOM alleging that the consultants have acted in an improper manner and said that the assessment is biased.
- EGOM met to set up a Committee of Experts(COS) to advise CGOM on all matters relating to the construction of the two airports.



- COS set up a two member committee-Group of Eminent Technical Experts(GETE). GETE was to review the consultants' report.
- GETE Report was submitted to the COS and then to EGOM in January 2006.
- In February 2006, GOI informed GMR and GVK that they have been selected as successful bidders for undertaking restructuring and modernization of the Delhi and Mumbai airports.
- In March 2006, a Special Purpose Vehicle (SPV) for both airports was formed.
- A Shareholders Agreement was signed with GMR and GVK.
- Thus, 26% shares in SPV were allotted to AAI and 74% shares were allotted to GMR. Similarly, 26% shares in SPV were allotted to AAI and 74% share allotted to GVK.
- RAL's writ petition before High Court was dismissed in April 2006.
- The stand of RAL was that EGOM/GOI should have accepted the recommendations of the EC and should not have asked GETE to make further examination.
- RAL opined that the appointment of GETE was itself unauthorized. It said that the reduction of technical norms from 80% to 50% was impermissible.
- RAL argued that in the initial assessment, only GMR and RAL had crossed the benchmark. If in respect of one airport, GMR was given the option of matching the financial bid of the appellant, then in respect of the second airport, similar option should have been given to RAL to match the financial bid of GVK.
- RAL further argued that there was no justification for reduction of technical standard from 80% to 50% because this compromises with quality.
- RAL had scored over 80% on the development side and fell short of just 6% less than 80% on the management side. Thus the award of contract to the third ranked bidder i.e. GVK who had scored merely 59% on the development side and whose bid had been commented upon adversely by all committees, is against public interest according to RAL. The benchmark of 80% should not have been lowered.
- RAL went on to argue that EC was the expert body. Other committees did not have adequate technical knowledge.
- RAL argued that GMR had qualified in both the bids. GMR should have been allotted the Mumbai airport because of the superior quality of the bid for this airport. By giving GMR the option of choosing one of the airports, RAL was left out because its bid in the case of the other airport had fallen below the benchmark. Thus, although in one case RAL's bid was above the benchmark and also its bid was among the best among those who had fallen below the benchmark for the other airport, RAL has not been able to get any of the airports. Adoption of technical criteria for one airport and financial criteria for the other is not in accordance with law.
- In response, counsel for GVK, GMR, GOI and AAI submitted that EC's report had flaws. The process involves multi tier decision making. EGOM has reasons for appointment of GETE. The report from EC is not binding on the IMG or the EGOM. Creation of the GETE is a part of the 'in house mechanism'. Various committees have been constituted even though their constitution is not specifically mentioned in the RFP.
- The decision making process is strengthened by formation of all these committees.
- The counsel also remarked that the appellant appeared to have access to information which was confidential. The counsel questioned the source of information for the appellant.
- The appellant lost the case in the Supreme Court. The Court ruled that pivotal challenge by the appellant is to the constitution of the GETE and the scope for its constitution. The Court said that it is within the powers of the EGOM to decide what input it can take and what is the source of these inputs. There is no question of taking the view of one committee in preference to another. It is not bound to accept the views of any one committee.

The above case is an example of a litigation against the award of concession agreement for privatization of Delhi and Mumbai airports. The above brief description of the case indicates clearly that the Supreme Court ruled against the RAL. There was obviously a detailed multi tier decision making process in place in the process of award of the Concession Agreements for the Delhi and Mumbai airports.



Model Concession Agreement for Non Metro Airports

The structure of the Model Agreement is similar to the Concession Agreements for BIAL and HIAL. It consists of six parts followed by schedules. The parts are as follows:

- Part 1: Definitions and Interpretation
- Part II: The Concession
- Part III: Development and Operations
- Part IV: Financial Covenants
- Part V: Force Majeure and Termination
- Part VI : Other provisions

The Model Agreement is between the AAI and the Concessionaire or the company where the latter is proposed as a company incorporated under the Companies Act 1956.

The Project encompasses:

- Development of the Terminal and City side on the Site as specified in Schedule A (type the contents of Schedule A and put in annexe), together with provision of Project Facilities as specified in Schedule B (type Schedule B) and in conformity with specifications and standards set forth in Schedule C (type Schedule C)
- Operation and maintenance of the Terminal and City Side in accordance with the provisions of this Agreement.
- Performance and fulfillment of all other obligations of the Concessionaire in accordance with the provisions of this Agreement.

Grant of Concession

The Authority grants to the Concessionaire the exclusive right, license and authority during the subsistence of the Agreement to develop, operate and maintain :

- The Terminal for a period of 30 years commencing from Commercial Operation Date (COD)
- The City side for a period of 60 years commencing from COD.

The Concessionaire agrees to the conditions.

The Concession thus entitles the Concessionaire to the following:

- right of way, access and license to the site for undertaking obligations under the Agreement,
- develop, operate and maintain the Terminal and regulate the use thereof by Third Parties as laid down in the Agreement,
- demand and collect appropriate fee from vehicles and persons liable for payment of fee and refuse entry to those who do not pay,
- develop and maintain the City side in accordance with the Agreement,
- bear and pay all costs and charges and
- not assign, transfer or sublet or create any lien or encumbrance on this agreement or the project, except as permitted by the Agreement.
- Apart from these, the Concessionaire is permitted to manage the Terminal Building and make commercial use of it in accordance with the relevant provisions of the Agreement.
- The concessionaire is also allowed to develop and make commercial use of the car park, make commercial use of the real estate and to construct/install buildings for handling of cargo.
- The concessionaire is also permitted to develop the real estate earmarked as city side.



Obligations of the concessionaire related to changes in ownership

In principle the concessionaire shall not undertake or permit any change of ownership except without the prior approval of the Authority.

The concessionaire acknowledges that all types of acquisitions of equity by an acquirer either by himself or with any person directly or indirectly including by transfer of the direct or indirect legal or beneficial ownership or control of any equity, in aggregate of not less than 15% of the total equity of the concessionaire or, acquisition of any control directly or indirectly of the Board of Directors of the concessionaire either by a person or together with other persons, will constitute a change in ownership requiring prior approval of the Authority. The decision of the Authority is final, conclusive and binding on the concessionaire.

The concessionaire further undertakes that it shall not give effect to any such acquisition of equity or control of the Board of Directors of the concessionaire without prior approval of the Authority.

Obligations of the Authority

The agreement says that the authority agrees to provide all assistance to the concessionaire in the implementation and operation of the project. The authority also agrees to provide the concessionaire with the Right of First Refusal in case the Authority invites any bids for award of concessions or contracts for development and/or operation of any part of the Terminal. This implies that it shall invite the concessionaire to participate in the bid process and select the concessionaire for award of the contract if the latter's bid is the best offer. In case it is not the best offer, it will be given an opportunity to make an offer that is 10% better than the best offer. In case the concessionaire makes such an offer, the authority shall award the contract to the concessionaire.

Management of the Terminal Building

In the context of commercial use of specified areas, the Agreement lays down that spaces that are earmarked and specified for purposes such as travel facilities, passenger amenities, restaurants and retail shall be used by the concessionaire for such purposes. The concessionaire also has access to additional space, as specified for counters, vending machines and kiosks for sale of items like eatables, beverages, travel accessories, books and periodicals etc. the concessionaire may also undertake commercial advertising subject to applicable laws.

Financial Covenants

Concession fee

The concessionaire shall pay to the authority sums which will be modified to reflect the variation in WPI.

User Fee

- The concessionaire acknowledges and agrees that all fees and charges collected by the authority from airlines, aircrafts, crews and passengers for use of the airport shall be retained and appropriated by the authority for meeting the cost of its services including its capital investment.
- The concessionaire shall be entitled to levy and collect appropriate fee for entry of vehicles, visitors to the Terminal Building and handling of cargo subject to the maximum specified by the Fee Notification.



Force Majeure

A Force Majeure event is the occurrence of a political or a non political event which affects the obligations of the party under the Agreement. Non political and political events are defined under the Agreement. The Agreement lays down the effects of the Force Majeure event on the Concession including the conditions under which Termination notice may be given by either party on account of a force majeure event.

Suspension of Concessionaire's Rights

If there is a default on the part of the concessionaire, the Authority can suspend all rights of the Concessionaire under the Agreement including the Concessionaire's right to collect fee and other revenues from the Terminal. The Authority may exercise such rights itself or authorize any other person to exercise such rights.

Termination

There are specific terms and conditions laid down, under which the Concession Agreement may be terminated. The default leading to the Termination may be on account of the concessionaire or the Authority. Upon Termination, the terms and conditions for payment are also laid down in the Agreement.

Other Provisions

The Agreement sets out terms and conditions for assignment and charges, change in law, liability and indemnity, rights over the site, dispute settlement and miscellaneous items.

Airport Economic Regulatory Authority Act

Background

Most of the civil airports, including civil enclaves at Defence Airports, were under the control of the Airport Authority of India (Airports Authority) in the Ministry of Civil Aviation. Thus the Airports Authority, with the approval of the Central Government, fixed the aeronautical charges for the airports under its control as well as prescribed and monitored the performance standards of all airports. Post privatization of airports in accordance with the Airport Infrastructure Policy formulated in 1997, the need for setting up an independent regulatory authority became evident in order to ensure competition. In fact, the Naresh Chandra Committee, set up by the Central Government to prepare the road map for civil aviation sector recommended the setting up of an independent regulatory authority.

This is the background, for the creation of an independent economic regulator, namely, the Airports Economic Regulatory Authority (the Regulatory Authority). The aim of the AERA was thus to create a level playing field and foster healthy competition amongst all major airports. This would also encourage investment in airport facilities. It was therefore, considered necessary to enact a law for the establishment of the Regulatory Authority.

The Airport Economic Regulatory Authority of India Act 2008 received the assent of the President on December 5, 2008.

It is an Act to provide for establishment of an Airport Economic Regulatory Authority to:

- Regulate tariff and other charges for the aeronautical services rendered at airports.



- To monitor performance standards at airports
- To establish an Appellate Tribunal to adjudicate disputes and dispose of appeals

The Act applies to:

- All airports where air transport services are operated or are intended to be operated, other than airports and airfields that belong to or are controlled by the armed forces.
- All private airports and leased airports.
- All civil enclaves
- All major airports, where major airports are defined as any airport which has or is designated to have annual passenger throughput in excess of one and half million.

Aeronautical services are defined as service provided:

- For navigation, surveillance and related supportive communication for air traffic management.
- For landing, housing or parking of an aircraft or any other ground facility offered in connection with aircraft operations at an airport.
- For ground safety services at an airport.
- For ground handling services relating to aircraft, passengers and cargo at an airport.
- For cargo facilities at an airport.
- For supplying fuel at an airport.
- For a stakeholder at an airport for which, in the opinion of the Central Government, charges may be determined by the AERA.

Establishing of the AERA

The Act states that within three months from the date of commencement of the Act, the Central Government will establish the AERA with the requisite powers and functions as laid down in the Act. The AERA will be a corporate body and will consist of a chairperson and two other members to be appointed by the Central Government.

As far as the power and functions of the AERA are concerned, under Section 13 of the Act, the AERA will perform the following functions:

- ❖ Determine the tariff for aeronautical services taking into consideration factors including capital investment incurred and timely investment in provision/ improvement of airport facilities, quality of service provided, costs for efficiency improvement, economic and viable operation of airports, revenue received from services other than aeronautical services.

It is to be noted that different tariff structures may be determined for different airports taking note of the above factors.

- ❖ Determine the development fee in respect of major airports.
- ❖ Determine the amount of passenger service fee.
- ❖ Monitor the set performance standards relating to quality, continuity and reliability of service.
- ❖ AERA can call for the information necessary for determining tariff.
- ❖ AERA will determine the tariff once every five years and, if required in the public interest, amend it from time to time within the period of five years.
- ❖ AERA should ensure transparency in its functioning through due consultation with stakeholders, with the airport, and should allow all stakeholders to make their submissions to the Authority.

In discharging its functions, AERA has the power to call for information from service providers, conduct enquiries into the affairs of any service provider and inspect books of account of any service provider. Further, AERA has the power to issue directions to service providers from time to time and seizure of documents if required.



Establishment of Appellate Tribunal known as AERA Appellate Tribunal (Section 17)

The Central Govt will establish an Appellate Tribunal known as AERA Appellate Tribunal to adjudicate any disputes between service providers or between a service provider and a group of customers, provided that this clause will not apply to:

- ❖ Matters relating to monopolistic trade practices, restrictive trade practices or unfair trade practices subject to the jurisdiction of the MRTP Commission established under the Monopolies and Restrictive Trade Practices Act 1969.
- ❖ Complaint of a consumer that can be addressed by a Consumer Disputes Redressal Forum or Consumer Dispute Redressal Commission or National Consumer Redressal Commission established under the Consumer Protection Act 1986.
- ❖ Matters which are within the purview of the Competition Act 2002.

Section 18 of the Act deals with settlement of appeals, disputes made to the Tribunal as below:

- The Central Government, State Government a local authority or any person, may apply to the Appellate Tribunal for adjudication of any dispute as stated above in Section 17.
- The bodies as above, aggrieved by any direction, decision or order made by AERA may prefer an appeal to the Appellate Tribunal.
- The appeal should be made preferably within 30 days of receipt of the order from AERA by the Central Government, State Government or the local authority.
- The application for appeal should be dealt with within 90 days from the receipt of the application/appeal.
- In case the application/appeal cannot be dealt with in 90 days, the Appellate tribunal will need to record its reasons in writing for not disposing of the application/appeal within that period.
- The order passed by the Appellate Tribunal is to be executable as a decree of the civil court.

Competition Issues in Airports

In this section, competition issues in airports are discussed. Also issues relating to regulation vs competition are analysed in detail.

Right of First Refusal (ROFR)

Theoretically, ROFR is expected to function as a price setting mechanism that helps solves problems such as risk sharing and alleviation of market failures.

Conceptually, ROFR is a right that is awarded by the seller of an asset to a special buyer whereby the special buyer can purchase the asset at the highest price offered to the seller by any other buyer⁴. Thus, through the ROFR, the seller is giving a special advantage to the special buyer, wherein the special buyer is more likely to buy the asset from the seller. Also because of the ROFR, depending upon the price quoted by the other bidders, the special buyer may also pay a lower price than he would in the absence of possessing this right. We discuss these issues in detail below:

Granting a ROFR may have certain advantages. It may make economic sense in a situation where a special buyer needs to protect his investment, for instance, in the case of real estate. Thus, in the case of a commercial tenant/lessee who is considering whether or not to upgrade the property that he

⁴ On the Right of First Refusal, S.Bhikchandani, Lippman S.A., Ryan R. Rethinking Right of First Refusal, David I.Walker



is renting/leasing, particularly if there is a sufficient period left on the lease/rental to recoup the investment, grant of a ROFR either as a lease or a lease extension, can protect the tenant's investment. A second instance can be for instance, if a landlord wishes to sell his property, the current tenant may like the opportunity to become his own landlord. Thirdly, in a partnership, the original partners may wish to avoid taking in a new partner and may wish to buy the existing partner's interest at a price to be paid by a potential new partner. Finally, a firm seeking to take on a new project may wish to avail the benefits of the new venture.

However there are negative aspects to granting ROFR. Firstly, it may not always be in the interests of the seller to offer a ROFR. In a situation where the special buyer's valuation of an asset is not the highest among all potential buyers, a ROFR may in fact increase the special buyer's profits. In this case therefore, the outcome of the ROFR is inefficient. In fact, because of the ROFR, regular buyers, who are not being granted the ROFR may be discouraged from entering the market and may bid less aggressively, thus reducing their own surpluses and increasing the inefficiency of the sale. Thus the seller is at a disadvantageous position and the special buyer would get an undue advantage. The extreme case would be a monopsonistic situation where there is a single buyer who uses his position to extract a ROFR on future sales of the buyer.

In the case of airports, as a part of the concession agreements, ROFR is being granted to the JVC, with regard to a second airport within a 150 km radius of the existing airport. The ROFR will be given following a competitive bidding process in which the JVC can also participate if it wishes to exercise its ROFR. Thus in the event that the JVC is not the successful bidder, but its bid is within the range of 10% of the most competitive bid received, the JVC will have the ROFR by matching the first ranked bid in terms of the selection criteria for the second airport.

Granting a ROFR in the above case to the JVC is a competition issue because as explained above, through the ROFR, the JVC is being granted a special advantage for developing a second airport on the market vis a vis the other bidders. This may discourage the other bidders from bidding aggressively and also enable the JVC to pay a lower price. The grant of ROFR thus restricts inter airport competition by providing the JVC with an unfair advantage vis a vis the other bidders for developing the second airport on the market.

Why is inter airport competition important? Put differently, why should restrictions on inter airport competition be eliminated?

As explained earlier, provision of air services requires two complementary inputs in fixed proportions, namely aircraft services or flights and airport services including take offs, landings, ground handling etc. Thus if there is to be effective competition on the market for air transport services, there must be adequate competition in **both** these markets. If there is limited competition among airlines, then ensuring competition among airports is not sufficient to reduce prices among customers because the market power previously exercised by airports will be transferred to the airlines. On the other hand if there is limited competition amongst airports then market power will be exercised by the airports thereby reducing benefits to consumers. Inter airport competition is therefore important in order to ensure competition in the airport sector. Hence, apart from encouraging establishment of new and/or privately owned airports by eliminating restrictions, encouraging PPPs etc, when there are two or more airports serving the same city, there should also not be common ownership i.e. they should not be under the same private ownership or control. ROFR by encouraging the existing company to acquire the right of developing the second airport is encouraging common ownership. To this extent this is a competition issue since it would affect competition on the airport market. Similarly, exclusivity in terms of not allowing a second airport to be developed within a certain distance from the existing airport also affects competition in the airports market because it restricts the choice of the passenger and discourages inter airport competition by not allowing a second airport to be developed.



In general, inter airport competition is limited all over the world, because of various reasons, partly because relatively few cities are served by two or more airports and also because there are economies of scale in the provision of airports. Partly as a result of this, airports around the world are subject to significant regulation and also to State ownership.

It is pertinent in this context to cite the case of the BAA limited* that was referred to the Competition Commission UK by the Office of Fair Trade, (OFT) UK. The major issue in the case was, whether provision of airport services by BAA limited which owns seven airports in the UK and accounts for more than 60% of all passengers using UK airports, prevents, distorts or restricts competition in the airport market. While the case examined in detail various factors that may affect competition amongst airports, major views that emerged were that common ownership of airports by a single entity appeared to have affected the pace of development of infrastructure at the BAA owned airports thereby adversely affecting the quality of services provided to the customers. Thus common ownership appeared to have contributed to the shortage of capacity in these airports which may not have happened if the airports were separately owned. This is a feature that affects or distorts competition in the airports sector because passengers do exercise choice between airports based upon various factors like flight schedules, lower fares and nature of service provided at the airport. And the choice may not necessarily be for the nearest airport. Thus BAA owning several airports may give to BAA undue market power over and above an individual airport.

The point therefore is that common ownership of airports has an adverse effect on competition between airports on the airport market. On the other hand, effective inter airport competition encourages airports to set appropriate charges for slots, manage the institutional and infrastructural arrangements efficiently and provides incentives to invest in new capacity like new runways, new buildings and improved air traffic control services. Further, in the absence of effective inter airport competition, issues like regulation of slots, regulation and control on vertical relation between airports and airlines assume greater importance and effective regulations require to be emphasized and put in place.

In general, barriers to entry are strong in the airline industry and dominant positions of a few airlines are prevalent. Regulation of slots is not sufficient to tackle barriers to entry of the small entrants. Creation of new airports, expansion of airports and ensuring inter airport competition are important in preserving and promoting a competitive environment in the air transport sector.

Regulation vs Competition

The relationship between sector regulators and the competition authority continues to be a controversial issue*. There are several issues involved such as the rationale for whether there is need for a sector regulator and the competition authority to coexist on the market, and also the interrelationship/overlap in terms of jurisdiction, between the two institutions. Some of these issues still remain unresolved and controversial. There does exist complementarity between the two institutions because a basic premise is that both the sectoral regulator and the competition authority aim at increase in economic growth. Further, both institutions seek to protect the consumer interest and prevent inefficient use of resources. However although there is similarity in the objectives of the two, there is traditionally a tension because of the difference in approach of the regulator and the competition authority. A major challenge that exists in this context is whether competition is stifled by sectoral regulation.

A major difference is in the approach adopted by the two institutions. A regulator would address the issue of market power directly by setting tariffs, regulating quantity, quality, entry, exit and other such parameters and thereby reducing monopoly profits in a particular sector. The intervention is thus ex ante

* BAA market investigation: Emerging thinking (22nd April, 2008), Competition Commission, UK.

* We have drawn upon a presentation entitled "Interface between Competition Authority and Sector Regulators" by Mr Augustine Peter liberally in this sub-section.



in nature, namely that it addresses behavioural issues **before** a problem arises. The competition authority would however prevent a monopoly by laying down principles across all the sectors for regulating mergers and acquisitions, preventing abuse of dominance and anti competitive agreements which may lead to abuse of competition principles and emergence of monopolies. The approach of the competition authority is thus ex post, namely it addresses behaviour issues **after** a problem arises, except for merger review which is ex ante in nature. Each institution thus has a unique role which cannot be acquired by the other.

The following table effectively summarises the difference in approach between the two institutions

Table IX.1: Difference in Approach between Sector Specific Regulator And Competition Authority

Sector Specific Regulator	Competition Authority
Tells businesses “what to do” and “how to price products”	Tells businesses “what not to do”
Focuses upon specific sectors of the economy	Focuses upon the entire economy and functioning of the market
Ex ante – addresses behavioral issues before problem arises	Ex post (except merger review)
Focus upon orderly development of a sector that would presumably trickle down in a sector ensuring consumer welfare	Focus upon consumer welfare and unfair transfer of wealth from consumers to firms with market power
Sectoral regulators are usually more appropriate for access and price issues such as changing the structure of the market, reducing barriers to entry and opening up the market to effective competition	Competition legislation is usually more appropriate for affecting conduct and maintaining competition

Source: Singh R, “Teeter-Totter of Regulation and Competition: Why Indian Competition Authority must Trump Sectoral Regulators”, www.cci.org.in

An important issue is relationship management between the competition authority and the sector regulator. This is because there can be a conflict in relationship between the two institutions due to various reasons including legal omissions/overlap and conflicting approaches. Such conflicts can lead to adverse effects on competition in the market resulting in decrease in consumer welfare and adverse effects on economic growth. The relationship between the two institutions can be formal, for instance, through right to participate in proceedings before the other, formal referrals that can be either optional or mandatory, appeal to a common authority, ban on interference in the other's territory and laying down of jurisdiction of each institution. It can also be informal namely through contacts, meetings, joint working groups, exchange of officials and exchange of information.

It is useful in this context to note that international experience in the context of the relation between the two varies across countries. While in many countries like Australia, Canada, Germany, EU, South Korea and Zambia a clear cut formal relationship exists in terms of jurisdiction between the two institutions, in others like Sri Lanka, Boswana, Kenya and Pakistan the jurisdictions between the competition authorities and the sector regulators are blurred and conflicts are left to be resolved by



Courts. In general it can be said that there is wide variation in terms of international experience based on the differing social, legal and economic scene across various countries.

Relation between AERA and CCI

As noted earlier, the AERA Act 2008 was passed on December 5, 2008.

It is an Act to provide for establishment of an Airport Economic Regulatory Authority (AERA) to regulate tariff and other charges for the aeronautical services rendered at airports, to monitor performance standards at airports and to establish an Appellate Tribunal to adjudicate disputes and dispose of appeals. The aeronautical services tariff will be determined by AERA based on factors including capital investment incurred, timely investment in provision/ improvement of airport facilities, quality of service provided, costs for efficiency improvement, economic and viable operation of airports and revenue received from services other than aeronautical services. Further, different tariff structures may be determined for different airports taking note of factors like the development fee and passenger service fee in respect of major airports and monitoring of performance standards relating to quality, continuity and reliability of service. On its part, AERA has the power to call for information from the service providers, can conduct enquiries into the affairs of any service provider and can issue directions to service providers from time to time.

Further, to adjudicate disputes, an Appellate Tribunal known as AERA Appellate Tribunal will be established by the Central Government to adjudicate any disputes. Disputes may arise between service providers or between a service provider and a group of customers. However it is specified that this clause will not apply to :

- ❖ Matters relating to monopolistic trade practices, restrictive trade practices or unfair trade practices subject to the jurisdiction of the MRTP Commission.
- ❖ Complaint of a consumer that can be addressed by a Consumer Disputes Redressal Forum or Consumer Dispute Redressal Commission or National Consumer Redressal Commission.
- ❖ Which are within the purview of the Competition Act 2002.

Appeals for adjudication of disputes can be made by the Central Government, State Government, a local authority or any person who is aggrieved by any direction/decision or order made by AERA. Specific time frames are laid down in the context of such appeal, notable among which are that appeals should be made within 30 days of the receipt of the order from AERA by the relevant authority, the appeal should be dealt with within 90 days from the receipt of the application/appeal and in case the same cannot be done within 90 days, the Appellate Tribunal has to record its reasons in writing for not disposing of the application/appeal within that period.

Thus AERA as a sector regulator will basically be involved in tariff setting for aeronautical services provided by airports. AERA also incorporates the setting up of an Appellate Tribunal for adjudication of disputes. However it clearly states under Section 17 that it will not adjudicate any dispute which falls within the purview of the Competition Act 2002. This is therefore a case of abstention on the part of AERA as the sector regulator.

The Competition Act 2002 in Sections 21 and 21A, however states that any statutory authority may make a reference to CCI and CCI has to give its opinion within 60 days, but the opinion of the CCI is not binding on the statutory authority. Similarly, the CCI may also refer to the statutory authority, the reference is not mandatory and the statutory authority should give its response within sixty days of receipt of such a reference but once again the opinion of the statutory body is not binding on the CCI.



Thus Appellate Tribunal set up by AERA will not adjudicate in any cases relating to cartels, mergers, acquisitions or a case concerning abuse of dominance including predatory pricing. As far as CCI is concerned, there is no binding on CCI to consult or refer to the AERA.

It is difficult to discuss the relationship between the AERA and the CCI because each has its own relevance and importance. There is a certain formal relationship laid down in the context of requirement of abstention of AERA from cases within the purview of CCI as described above. However in our view, it should be mandatory on any sectoral regulator, including the AERA, to involve the CCI in identifying the relevant market and defining market power and concentration of ownership using the framework of competition policy before imposing any ex ante regulation like tariff setting.



X. Analyse the implications of this study for Competition Policy and Law. In this context, the three major areas of the Competition Act, namely, prohibition of abuse of dominant position, anti-competitive agreements as well as regulation of combinations, should be analysed for the domestic segment of the air transport sector in India. Appropriate recommendations and suggestions should be made for the air transport sector.

As has been discussed in detail in an earlier section, under ToR V, the Domestic Air Transport Policy lays down a number of regulations some of which may lead to creation of entry barriers for new entrants into this sector. Thus the regulations relating to route dispersal guidelines, minimum fleet requirements, requirements of domestic flying for a minimum period and a minimum fleet for flying internationally and the stipulation that allows one airlines that is merging with another to take over the latter's slots, often create situation that create barriers to entry and also may strengthen dominance.

As stated above, these issues have been discussed in detail under ToR V and also ToRs II and III and we are therefore not repeating them here.

In this context it may be pertinent to refer to Sections 19(3) , 19(4) and 20(4) of the Competition Act. The factors which the Competition Commission is expected to have due regard to in the context of determining whether an agreement has an appreciable adverse effect on competition include among other the following:

- Creation of barriers to entrants in new markets
- Driving existing competitors out of the market
- Foreclosure of competition by hindering entry into the market
- Market share of the enterprise
- Economic power of the enterprise including commercial advantages over competitors.
- Monopoly or dominant position whether acquired as a result of any statute by virtue of being a government company or a public sector undertaking.
- Entry barriers including regulatory barriers, financial risk, marketing entry barriers, technical entry barriers, economies of scale etc
- Likelihood that the combination would result in the parties to the combination being able to significantly and sustainably increase prices or profit margins.
- Likelihood that the combination would result in the removal of a vigorous and effective competitor or competitors in the market.

It appears that a majority of factors referred to as above that may have an adverse effect on competition are present on the market for air transport services and have a direct relationship to the Domestic Air Transport Policy. In order that competition concerns are addressed in this sector, it appears quite clearly that the Domestic Air Transport Policy may required to be modified/revised particularly to take note of the emerging trends in the post merger scenario.

Appropriate recommendations and suggestions with regard to the relevant aspects of the Domestic Air Transport policy referred to above, have been made in the forthcoming ToR XI.



XI. Examine issues relating to advocacy for the Competition Commission of India in order to enhance competition. Provide appropriate suggestions and recommendations.

In accordance with Article 49(1) of the Competition Act pertaining to Competition Advocacy, the Competition Commission is expected to give an opinion to the Central or State Government when the latter makes a reference to the Commission on possible effect of a policy on competition.

In the above context, with reference to the passenger air transport sector, the following factors relating to the status of competitiveness are pertinent to summarise here:

In accordance with Section 20(4) of the Act, factors that may be noted are:

- Post mergers, there is a definite trend towards increased market concentration. This is indicated by the Concentration index in the selected sectors and also by the analysis of share of total passenger traffic as well as share of slot of the airlines.
- The market is oligopolistic. While there are a large number of players on the market, three players, namely Jet, Kingfisher and Indian control a major share of the market. Post merger, in terms of ownership of slots, market shares particularly in terms of share of slots of the two private players have increased substantially.
- There is some evidence of price parallelism between Jet and Kingfisher especially when the flights are scheduled closer together. We cannot however call it price collusion at this stage.
- Share of Indian in terms of ownership of slots and share of total passenger traffic is coming down compared to Jet and Kingfisher. It is thus losing market share in terms of the above indicators to the private players.
- Mergers show indication of removal of a vigorous competitor from the market e.g. in the case of Jet and Sahara on Delhi-Mumbai and Delhi-Chennai routes.
- Possibility of a failing business looms large in this sector due to rising fuel prices and intense price competition.
- However mergers have benefits in terms of increased efficiency, economies of scale etc.

Given the above scenario the Competition Commission of India should focus on maintaining and promoting competition in the sector through competition advocacy. The following are the major areas of focus for competition advocacy.

Data Deficiency

The Competition Commission of India may ensure that the required data at the industry level is available so that any cases or queries can be investigated effectively..

It is suggested that airlines may be asked to submit, on a regular basis, data such as:

- Flight-wise passengers carried
- Type of Aircraft used for each flight
- Flight-wise Passenger Load Factor
- Route-wise Revenue
- Cost of Operation
- Operating Margins
- Fuel Costs as a percentage of total cost
- Taxes and Surcharges collected per flight
- Number of aircrafts owned and leased



For Airports the following data may be made available:

- Number of flights taking off and landing
- Number of Slots available at each airport
- Procedure of calculation of the capacity of the airport.

The above data are not available currently in a systematic framework.

It is suggested that the reports and data which are to be mandatorily submitted to the office of the DGCA should be in a standard format. Thus for example, for some airlines like Indian, flight-wise information is available, while for others like Kingfisher only route-wise passenger information is available. It is important to have comparable time series data relating to the sector.

We also suggest that there should be a single nodal agency for collecting and collating the data. Currently there are three agencies which have the requisite data, namely, DGCA, Ministry of Civil Aviation and the Airports Authority of India. We also find that for an effective strategy on competition, detailed route wise analysis requires to be done. While data analysis at an aggregate level is being done by some of the agencies, route wise analysis is not being conducted/made available.

We suggest that the CCI takes the required steps to ensure adequate and appropriate data availability.

Legal Aspects

In this subsection we analyse the role of the CCI with respect to the issues concerning existing regulations in the airlines as well as in the airport sector and provide recommendations regarding the same.

Airlines Sector

In the Domestic Air Transport Policy the following are the issues pertaining to the airlines sector which requires the attention of the CCI:

Route Dispersal Guidelines

In accordance with the Domestic Air Transport Policy, route dispersal guidelines have been laid down. These guidelines are meant to ensure that the uneconomical routes are served by all airlines in order to ensure equity and adequate dispersal of air transport facilities to the less trafficked regions. Under the universal service obligations, the government may require to provide service to these regions. However, as our Report has shown this is a highly competitive sector. Thus, forcing air carriers to operate on less trafficked routes may in fact inhibit the operability and hence financial viability of all the airlines and especially the new entrants. This would pose an entry barrier for the new entrants and affect the profitability of those already in existence. Further, the new carriers may be at a relatively greater disadvantage to spend on non financially viable routes than the older players who are already operating on the market.

However, keeping in mind the social development and corporate social responsibility issues related to the less trafficked routes, the CCI may suggest that the Government of India provides a subsidy to the existing airlines (public and private) to provide services in these regions. For the new entrants, an option can be that they may be asked to provide services on these routes after a time lag of around five years from entry.



Equity and Fleet Requirements:

As per the Domestic Air Transport policy, minimum equity restrictions have been laid down as an entry requirement for airline operators. Thus, for a five fleet carrier with take off weight more than 40000 kg, the minimum equity capital requirement is Rs 50 crore, and with each addition of up to five aircrafts, an additional equity investment of Rs 20 crore is required. For carriers with take off weight less than 40000 kg, operating with five aircrafts, the minimum equity capital requirement is Rs 20 crore, and with each addition up to five aircrafts, an additional equity investment of Rs 10 crores is required.

It may be noted here that prescribing minimum equity requirements is not an uncommon practice in several infrastructure sectors. Procurement of contractors normally requires minimum performance guarantees while pre qualifying on the basis of several factors including financial net worth. Seeking to prescribe minimum financial ownership by air carriers, especially those with less net worth, will ensure seriousness of both the owners as well as the venture capitalists. However, a key requirement is to ensure that the equity structure is not prohibitive enough to inhibit competition and entry of new carriers. A high equity ratio can become an entry barrier and thus create an undue advantage to carriers with high net worth. Thus, creating a barrier to entry versus encouraging low net worth carriers can be a balancing act.

In the context of the equity requirements laid down as above, the basis of minimum equity capital requirement laid down in the Policy is unclear. This may therefore be looked into by CCI.

Further, a minimum fleet size of five aeroplanes or five multi engine helicopters is required. It may be said here that this may not be too stringent a requirement for air carriers to meet. This is because even if a carrier were to begin operations on two or three distinct routes and assuming that they were not to duplicate the same aircraft for operations along these routes, they would need at least three or four aircrafts with a spare of one aircraft. Therefore, a minimum of five aircrafts seems reasonable. However the basis of arriving at the figure of five aircrafts as opposed to three or four is not clear. The CCI may like to examine this aspect.

Prohibition of equity requirements by foreign airlines

While foreign equity participation up to 49% and investment by NRIs up to 100% is permitted, foreign airlines are not allowed to pick up equity directly or indirectly. Thus while foreign financial institutions and other entities can make an investment in this sector, tie ups with and holding of equity by foreign airlines are not permitted.

This type of restrictions on foreign airlines exist in other countries as well. The US for instance, does not permit foreign airlines to operate on domestic routes. This regulation may be required for the airlines sector in India.

Requirement of domestic flying for five years and a minimum fleet of 20 aircrafts for flying internationally

The intent of this regulation was to ensure proven credential of the airlines in the domestic sector. Given the extensive operational and management processes, as well as institutional knowledge required to operate on international routes, a minimum requirement in terms of years of experience is justified for pre qualifying air carriers. The minimum fleet requirement is to ensure uninterrupted and safe operations. It may be said that while the minimum of five years experience seems appropriate, the minimum fleet requirement of 20 aircrafts is debatable; for example a small carrier that operates two or three flights a day may require no more than 4 or 5 aircrafts including spares to ensure continued operations. Therefore



the minimum fleet requirement may be a larger barrier to entry than the 5 years of minimum flight experience. In addition, 5 years of flight experience may be a misnomer since the air carrier may be in service for five years but may have flown far less flight hours than required to ensure safe operations. The CCI may like to examine this issue particularly the minimum fleet requirement of 20 aircrafts.

Ability of an airline to retain the slots and ground services of a competitor that it has taken over.

Within the existing policy, in the context of mergers, the airlines that takes over the aircraft pursuant to the mergers/take over/sale/transfer is allowed the use of airport infrastructure including parking bays, landing slots, etc. However such user rights must be in use by the airlines that takes over otherwise they will be taken over by the Government/airport operator.

Since slots have acquired quasi property status, it is difficult to remove this right unless a proposed merger is sufficiently large to require approval from the CCI.

This report has clearly shown that in the case of mergers, allowing the airlines that is acquiring/merging with another airlines to take control of the slots of the latter is in fact strengthening dominance. We suggest that the CCI should recommend that in a situation where there is strengthening of dominance post merger in terms of market share, slots of the airlines being taken over should be redistributed. Since slots are allotted twice a year in accordance with the slot allocation policy, this aspect can be incorporated into the slot allocation policy.

Airport Sector

Relationship between CCI and AERA

In an earlier section we have discussed in detail the relation between the AERA and CCI. To recapitulate, AERA as a sector regulator will basically be involved in tariff setting for aeronautical services provided by airports. AERA also incorporates the setting up of an Appellate Tribunal for adjudication of disputes. However it will not adjudicate any dispute which falls within the purview of the Competition Act 2002. This is therefore a case of abstention on the part of AERA as the sector regulator.

The Competition Act 2002 in Sections 21 and 21A, however states that any statutory authority may make a reference to CCI and CCI has to give its opinion within 60 days, but the opinion of the CCI is not binding on the statutory authority. Similarly, the CCI may also refer to the statutory authority, the reference is not mandatory and the statutory authority should give its response within sixty days of receipt of such a reference but once again the opinion of the statutory body is not binding on the CCI.

Thus AERA will not adjudicate in any cases relating to cartels, mergers, acquisitions or a case concerning abuse of dominance including predatory pricing. As far as CCI is concerned, there is no binding on CCI to consult or refer to the AERA.

Thus while the AERA and the CCI each has its own relevance and importance, there is a certain formal relationship laid down in the context of requirement of abstention of AERA from cases within the purview of CCI as described above. However in our view, it should also be mandatory on any sectoral regulator, including the AERA, to involve the CCI in identifying the relevant market and defining market power and concentration of ownership using the framework of competition policy before imposing any ex ante regulation like tariff setting. The CCI can consider initiating this process.



Industry Associations:

The Federation of Indian Airlines (FIA) is an apex industry body which has been formed by the scheduled carriers in India to discuss a collaborative growth-agenda for the industry and focus on inter-airline cooperation across different issues. All major airlines are members of FIA.

FIA, states that it works to identify and take up issues on behalf of the industry, with various regulatory authorities, government departments and other key stake-holders and provides a platform for consensus building amongst the member carriers. The focus for FIA and its activities is safety, passenger amenities, ground services, aviation protocols among others with an overall objective of safety & growth in the Indian aviation sector.

An organization like FIA is providing a forum for the members to come together. Therefore the activities of the federation should be monitored by the Competition Commission to see that the forum is not misused to discuss price fixing (fixing price, minimum price, maximum price), market sharing, ATF prices, limiting supply, etc. The Commission can consider making it mandatory for the association to inform CCI about its activities.



Conclusions and Recommendations

The study provides a detailed analysis of the nature and degree of competition prevailing in the passenger segment of the domestic air transport sector in India. The study covered competition issues relating to airlines as well as airports.

Starting from an over view of the industry and patterns of growth, the study analysed the concept of the relevant market and assessed the degree of competition in the relevant markets. The latter was done through detailed analysis of concentration ratios across selected routes and slots owned by the airlines. The slot policy in airlines sector has been discussed in detail in the study. Implications of the state of competition and anti-competitive practices adopted in the sector were studied in the context of the existing Competition Policy and the Competition Law- primarily the Competition Act- in order to arrive at implications for Competition Policy and Law. In particular, barriers to entry, both regulatory as well as private barriers to entry were analysed and implications derived there from. The issue of competition was also studied at the level of airports, both from a policy point of view-in terms of the different types of arrangements being adopted in India for creation and operation of airports- as well as from an operational point of view-in terms of a detailed study of slot arrangements and allocation of slots to individual carriers at six metropolitan airports in the country.

The study made every attempt to link the competition scenario in the sector to the Competition Policy and Law by linking the market-related issues of concentration, slots, barriers to entry etc to the Domestic Air Transport Policy and the Competition Act. Thus, specific features and sections of the Competition Policy were studied in the context of the existing market scenario in the sector, and suggestions were made for Policy. Further, the implications of the findings of the study for Competition Law have also been discussed at length. In particular an attempt has been made in this study, to link aspects of Competition Policy and Law and derive implications for both in the context of this sector. On the basis of the conclusions arrived at in the study, selected suggestions for advocacy have been provided.

The issue of competition in airports has also been studied in considerable detail. While discussing the competition issues in airports, the ROFR, and parallel airports are issues that are discussed in detail. Also the issue of regulation vs competition in the airport sector and the relationship between the CCI and AERA is discussed in some detail. The issue of cartels has also been studied in terms of the domestic scenario as well as selected international cases.

While it is not possible to go into the details of the conclusions arrived at in the specific sections of the study given its vast scope, a few key conclusions are being summarized here:

1. Assessment of degree of competition on the relevant market, primarily three selected routes, in terms of key features such as time slots, space etc reveals the following:
 - Computation of the HHI shows a trend towards enhanced concentration on the relevant market, post merger. It was already high in Delhi-Chennai and Bangalore-Chennai routes. On the Delhi-Mumbai route, it is high enough to cause concern especially in the post merger period.

An analysis of market shares in terms of share of slots airline wise in the pre- and post-merger scenario shows that Jet and Kingfisher are controlling a major share of slots. Indian appears to be losing out in the current scenario. It is interesting to note in this context that Indian being the incumbent player in the industry had advantages in terms of slots and access to infrastructure. However, it has not been able to successfully leverage these into a profitable position due to a variety of reasons. There are a large number of airlines flying on these routes. However, there is an obvious control of major slots, especially in the peak period, by Jet and Kingfisher followed by Indian in some sectors. In the peak period therefore, the consumer has limited choice.



Similar conclusions are reached on the basis of a comprehensive analysis with regard to the slots allotted to 9 air carriers at the 6 metropolitan airports of New Delhi, Mumbai, Chennai, Kolkata, Bangalore and Hyderabad . Thus it is noted that:

- The slot allocation at the 6 metropolitan airports combined showed that the three of eight air carriers analyzed - Jet Airways, Indian and Jetlite - were allotted 57% of all the slots allocated to all the air carriers including these 3 operators.
- Jet Airways and Indian were also the predominant carriers that operated from Hyderabad, Mumbai, and New Delhi. These 3 operators were generally followed by Jetlite and Deccan.
- Slot allocation analysis by the time of the day suggested that Jet Airways was allotted the maximum number of slots during both the morning and evening peak hours of 6 to 7 A.M. and 5 to 6 P.M respectively with 16 and 17 slots respectively. In general, most air carriers were allotted between 1 and 5 slots during both the peak and off peak hours of the day. This time series analysis helps to recognize that Jet Airways, Indian and Jetlite continue to hold not only the maximum number of slots during a day but also the most during both morning and evening peak periods.
- The morning and evening peak period analysis indicated that, when the 6 metropolitan airports are considered, the morning peak period ranged between 600 and 1000 hrs where about 28% (160 slots) of total daily slots were allotted. The evening peak period stretched between 1600 and 2200 hrs with about 38% (213 slots) of total daily slots allocated during this time frame.
- The slot allocation by the time of the day varied from one airport to the other. However, the morning and evening peaks generally ranged between 600 to 1000 hrs and 1600 to 2200 hrs. Hyderabad and Kolkata relatively more 'peaking' during the morning and evening hours when compared with the remaining airports.
- A review of the percent slots allotted showed that approximately one-third of all the slots allotted to each carrier individually was during the 4 peak hours of the day (morning and evening). Among the 8 air carriers, Spice Jet (26%) had the lowest number of slots during its 4 peak hours of operation.
- The slot distribution of air carriers for the 30 city-pair combinations illustrates a varying trend in terms of slots allotted at airports such as Hyderabad, Chennai and Kolkata and to some extent at Bangalore, slots allocation is predominately during the morning and evening peak periods. At Mumbai and New Delhi, especially between these two city-pair combinations, the slot allocation occurred through out the course of the day.
- The monthly traffic analysis showed that passenger volumes were more or less uniform through out the April 2006 to March 2007 time period. The minimum traffic carried for the 6 airports was during the month of July 2006 with a volume of 1,295,498 while December 2006 featured the maximum passenger volume of 1,602,766.
- Amongst the 6 airports, Mumbai carried the most passenger traffic at 4,407,028 followed by New Delhi with 4,220,041. Chennai, Kolkata and Hyderabad carried the lowest volumes of 2.173 million, 2.033 million and 2.003 million.
- Passenger share analysis for the 6 airports combined showed that Jet Airways, Indian, Deccan and Kingfisher carried 27.4%, 18.8%, 15.9%, and 11.9% of passenger traffic at these 6 airports.
- The Passenger share for individual airports, as computed for individual carriers, varied to a certain extent. Indian and Jet Airways dominated at all the airports except for Kolkata and Bangalore where Deccan and Kingfisher respectively followed Jet Airways. In essence Jet Airways carried the highest load as a percentage of the passenger traffic at the 6 metros.
- Percent slots allotted and percent passenger load were computed to draw comparisons with regard to the slot advantage, which some air carriers may have obtained. A comparative analysis for the 6 metropolitan airports showed that Kingfisher, Spice Jet and Go Air had an advantage with regard to percent slots allotted as compared with the passengers carried during 2006-07. The remaining air carriers, especially Deccan carried many more passengers as a percent of all volume in relation to the percent slots allotted.



- The slot share versus passenger share analysis for the 6 airports taken individually showed a similar trend wherein at most airports Kingfisher, Go Air, and to some extent Spice Jet, had more percent slots than the passenger loads.
- Further analysis for individual air carriers was performed to identify the specific airports at which the carriers had a slot share advantage over passengers carried. Except for Mumbai and Chennai, Jetlite had fewer allotted slots compared with passengers carried. Deccan had out performed by consistently carrying many more passengers than the percent slots allotted to it. Indian, Jet Airways, and Air India exhibited a similar phenomenon wherein they carried more passengers than their slot allocation share. Spice jet, except for Hyderabad, had more slots allotted than the passenger load. Kingfisher had a distinct advantage of consistently being in possession of more slots in relation to the passengers carried. Go Air had a mixed position wherein it had more slots at Hyderabad, Mumbai and New Delhi but had carried more passengers at Chennai, Kolkata and Bangalore.
- The number of slots allotted to individual air carriers for one million passengers carried was computed. It may be noted that the higher the number of slots per million passengers carried, the greater the advantage over other air carriers. Alternatively, the lower the rate, the better the utilization rate of allotted slots. Air India, with a unit rate of 115 slots per million passengers carried, had a considerable advantage over all other air carriers. Jetlite, Spice Jet, Jet Airways followed with 49, 34, and 33 slots per million passengers respectively speaks to the advantage these air carriers had over others. Alternatively an air carrier such as Go Air which had only 18 slots per million passengers shows the utilization and, implicitly, the efficiency of operations. The unit rate computations for the 6 airports taken individually a common trend wherein Air India had a considerable advantage over other air carriers while Go Air Kingfisher and Indian had better utilization rates.
- Lastly a co-relation analysis was completed to understand the possibility that more slots available to an air carrier may mean a competitive advantage over others. The analysis had shown the co-relation of 0.88 indicating that an extremely strong and positive relationship exists between the number of available slots and passengers carried. Thus it is understandable as to why air carriers choose to make use of any and all available slots while trying to obtain more.

In addition to the slot utilization, the utilization of available aircraft capacity should be considered. It is worth noting that the dominant market shares of Jet and Kingfisher in terms of market share as well as share of slots as indicated above, alongside with price parallelism may indicate a tendency for price collusion.

At a later stage, this may lead to overpricing, given the tendency of enhanced concentration on this market. For example, along the Delhi-Chennai sector, pre merger, Kingfisher was not on the market while Deccan had a 22.6% market share. In 2008, post merger of Kingfisher and Deccan, it is noticed that while Deccan has no flights on this sector Kingfisher now has two flights. Thus as a result of the merger, Deccan was removed from the market and the time slots have been obviously taken over by Kingfisher. This may be safely assumed to have implications for price especially since Deccan is a low cost carrier and Kingfisher is a full cost carrier.

Airports

The study assesses in detail the issue of competition in airports. It analyses in details the linkages between the airlines and airports in the context of competition. The features of the concession agreements in the airport sector are discussed in detail. The AERA Act is discussed and analysed. In terms of competition issues in the context of airports two issues that are especially emphasized are the need for inter-airport competition and the issue of regulation vs competition in airports. In the context of inter-airport competition, the ROFR and the issue of parallel airports are discussed in detail in the report. In the context of regulation vs competition the role of CCI and AERA and their relationship is discussed.



Recommendations

From this comprehensive study, the following issues emerge and may be taken note of by the CCI:-

- Post merger, there is a definite trend towards enhanced market concentration on all three selected routes.
- The market is oligopolistic. While there are a large number of players on the market, three players control a major share of the market in terms of share of slots as well as share of total passenger traffic. The issue of increasing concentration in the post merger scenario may be taken note of by the CCI.
- There is some evidence of price parallelism. This may not be termed as price collusion. However, CCI may monitor the pricing of the dominant airlines in particular.
- Shares of Jet and Kingfisher in the total number of slots are increasing post merger. The share of Indian is coming down. It is obviously losing market share to the private players. This is an important issue.
- Mergers show indication of removal of a vigorous competitor from the market e.g. in the case of Jet and Sahara on Delhi-Mumbai and Delhi-Chennai routes. In the context of the spate of mergers taking place on the market, this is a critical factor in terms of limiting competition.
- Possibility of a failing business looms large in this sector due to rising fuel prices and intense price competition. This limits competition and CCI may like to monitor this issue.
- However mergers have benefits in terms of increased efficiency, economies of scale etc. Particularly in the case of the public sector owned airlines, this factor bears significance.

In keeping with the above observations, the following issues may be outlined for advocacy:

As far as the Competition Policy is concerned, in accordance with Article 49(1) of the Act, the CCI may give an opinion to the Government on the following issues:

Data Deficiency.

CCI may take an initiative to ensure data availability in the following areas:

It is suggested that airlines may be asked to submit, on a regular basis, data such as:

- Flight-wise passengers carried
- Type of Aircraft used for each flight
- Flight-wise Passenger Load Factor
- Route-wise Revenue
- Cost of Operation
- Operating Margins
- Fuel Costs as a percentage of total cost
- Taxes and Surcharges collected per flight
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For Airports the following data may be made available:

- Number of flights taking off and landing
- Number of Slots available at each airport
- Procedure of calculation of the capacity of the airport.

The above data are not available currently in a systematic framework.

It is suggested that the reports and data which are to be mandatorily submitted to the office of the DGCA should be in a standard format. Thus for example, for some airlines like Indian, flight-wise



information is available, while for others like Kingfisher only route-wise passenger information is available. It is important to have comparable time series data relating to the sector.

We also suggest that there should be a single nodal agency for collecting and collating the data. Currently there are three agencies which have the requisite data, namely, DGCA, Ministry of Civil Aviation and the Airports Authority of India. We also find that for an effective strategy on competition, detailed route wise analysis requires to be done. While data analysis at an aggregate level is being done by some of the agencies, route wise analysis is not being conducted/made available.

Legal Aspects:

These issues have been discussed in detail in an earlier section. In regard to the airlines sector specific suggestions for advocacy have been made for the route dispersal guidelines, equity and fleet requirements, requirements for flying internationally and mergers. CCI may take note of these.

For airports specific recommendations for advocacy regarding the role of AERA have been discussed in the earlier section. Further it has been discussed that ROFR and the issue of parallel airports involve competition issues. This study would therefore recommend that ROFR and not allowing a second airport to be developed within 150 kms of the existing airport may be examined by the CCI. This is because these affect inter-airport competition and may have an adverse impact on competition among airports and thus on the airlines sector.

Industry Associations

It has been discussed that the activities of the FIA should be monitored by the CCI in order to see that the FIA is not misused to discuss issues of an anti-competitive nature. We recommend that the CCI can make it mandatory for FIA to inform the CCI about its activities.



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