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“Open Skies” in India -
Is it succeeding

by

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ABSTRACT: With a “middle class” of 200 million people in a large country where travel between the major population centres by surface transport can be arduous, India has a potentially large domestic airline market. In the post-World War II period, India nationalised its airline industry into one international carrier, Air India, and one domestic carrier, Indian Airlines, but it began to relax these controls in 1986. Since then, a series of policy initiatives introduced what is proclaimed to be an “open skies” policy.

There has been no shortage of new entrants willing to add capacity into a system where supply-side constraints are regarded as the main impediment to a boom in airline travel. However, many of these new ventures have failed within a few years and the remaining carriers, including Indian Airlines, have had to increase fares in an attempt to improve their financial performance. Far from being an “open skies” environment, airline managers continue to be subject to formal and informal government regulations and government has introduced new taxes and increased charges for aviation services.

The result is an industry characterised by financial instability and low traffic growth. This paper documents the changes in the regulatory system and analyses the strategies adopted by the airlines. The paper concludes that inappropriate policies are constraining development of the industry, particularly the requirement imposed by the Government for the airlines to allocate their capacity on a mix of profitable and unprofitable routes.

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Introduction

More than 100 airlines entered the Indian airline industry after World War II (Brimson 1985) and the intense competition precipitated what might reasonably be described as “destructive competition”. Tata, a diversified industrial group, owned the largest of the carriers, Air India, and this became Air India International as the Government nationalised the industry. Eleven of the remaining private sector airlines then were merged to form Indian Airlines and the scope for competition was removed. Air India’s role was to serve international routes and Indian Airlines operated domestic services under the control of the Director General of Civil Aviation and the regulations set out in the *Air Corporation Act (1953)*. This framework remained unchanged until the late 1970’s when there was mounting criticism that Indian Airlines was not promoting tourism and industrial development at the regional level. The Government’s response in 1981 was to start a third-level, feeder airline, Vayudoot, but aviation policy was coming under increasing pressure.

With its 12 million passengers a year, the domestic Indian airline market is relatively small. However, there is potential for the industry to become one of the largest in the world behind the USA, Europe (in a single market), China and Japan. Key factors to consider are the sheer size of India, its prospects for economic growth, its strengthening business and tourism sectors, a more liberal approach to airline competition, and poor surface transport links. India has the world’s second largest population in the seventh largest country, it is the fifth biggest economy and it has a pool of highly trained scientists, engineers and other technicians. In the longer term, the Indian airline network could have a strong mix of dense traffic routes with relatively long sectors.

The current population of India is approximately 880 million and the growth rate is 2.1 percent per annum. Bombay, Delhi and Calcutta each has more than 10 million residents while Madras, Bangalore and Hyderabad have close to 5 million people each. Another ten cities have more than one million residents. It has been estimated there is a “middle class” of between 20 and 58 million households able to afford consumer durables and potentially a target group for the airline industry. What is more, the trend has been for the proportion of households in the two highest income levels to increase (Ministry of External Affairs 1996).

When India gained independence in 1948 its economic strategy was based on the concepts of self-reliance and social equity. The Government assumed control over a wide range of industries through a process of nationalisation and licencing regulation while tariffs and import controls were used to erect barriers to external competition. However, the arguments for adopting the successful growth strategies of the East Asian economies had become compelling by the 1980’s (Krueger 1995). The Government of India began to adopt a more outward-looking policy relying on international markets to provide technology and capital. Foreign exchange controls have been eased and market forces determine the exchange rate. Liberal and progressive policies have been adopted to promote competition and exports and the Government has invited the private sector to participate in the provision of necessary infrastructure, particularly in the energy, telecommunications and transport sectors. As a result of these reforms, India has moved away from its dependence on agriculture

and mining and now trade and services contribute 70 percent to the nation's gross domestic product. Throughout the 1980's, the economy grew by more than 5 percent per annum (Asian Development Bank).

Though the average per capita income for India is low, the increasing economic strength of a sizeable group of households with high incomes has raised expectations of strong growth in airline travel. It has been argued that the demand for airline travel is strongly elastic with respect to income because travel by air is at an early stage in its product life cycle. Assuming an elasticity of between 1.56 and 1.75 (Gallagher & Jenkins 1996), the medium-term growth from this source alone would lie in the range 7.5 to 9 percent per annum. In addition, the Government's Tourist Action Plan aims to increase the number of international visitors from 1.6 million to 5 million a year. This Plan called for an 80 percent increase in capacity in the domestic market.

In other situations where airlines have been deregulated, air fares have tended to fall and there have been similar expectations in India. Gallagher & Jenkins (1996) argue that the price elasticity of demand would lie in the range of -2.0 to -2.3, again because the market is only just beginning to emerge and because there is a latent demand that has not been catered for in the past. These authors conclude that the effect of deregulation in reducing fares “Ö may prove to be the most important short-run determinant in generating new traffic”. The reductions in air fares were assumed to follow from improvements in aircraft utilisation and from declining costs in a deregulated environment. The combined impact of higher incomes and lower fares was predicted to yield traffic growth of 9.7 percent per annum at least until 2001. At that stage, capacity constraints and a maturing market are expected to reduce the rate of growth. The Airport Authority of India is planning for growth of 10 percent per annum in domestic passenger movements through its terminals until 2005 (Bhatara 1996).

Despite these prospects Indian Airlines' traffic increased at only 0.9 percent per annum in the period between 1982 and 1996, although the average rate masks widely varying performance. Up until 1987/88, the carrier's passenger numbers had been growing at between 7 and 17 percent per annum, but thereafter traffic began to fall. A major problem resulted when an Indian Airlines' A320 crashed in 1990 and the Government grounded the remainder of the airline's A320 fleet during a ten-month investigation. The number of international visitors to India was growing relatively slowly and some of the blame for this was levelled at Indian Airlines. It had a reputation for lateness, for cancelling flights and poor customer service and the Government was under pressure to inject capital into the airline. Vayudoot had not solved the problems of providing access to tourist destinations.

Even before the problems with the A320 fleet, Indian Airlines was operating with a high and increasing load factor, reaching a peak of 82 percent in 1988/89. The argument that Indian Airlines lacked the capacity to cater for the growth in demand was gaining increasing credibility. Independent assessments estimated that the market would increase to around 25 million by 1995 if capacity restrictions were overcome and if services improved in a more competitive market (Louden 1993). This could have been achieved had growth rates of 10 percent per annum been maintained from the mid-1980's. Instead, traffic fell by one-quarter between 1987/88 and 1990/91 and to maintain the target of 25 million passengers in 1995/96, it would have required an average annual growth rate of 26 percent from 1990/91.

At the same time the International Monetary Fund and the World Bank were urging India to allow the private sector greater scope to compete in areas of the economy previously reserved for state enterprises. The Government responded in 1989 by announcing an “open skies” policy under which it would allow air taxi operators to begin scheduled services in competition with the national carriers. In addition, the Government stated its intention to privatise Air India and Indian Airlines by placing them under the Companies Act with subsequent sale in part or in whole. The Government has continued its reforms and now allows private sector airlines to operate scheduled services on the main trunk routes. Indian Airlines has been able to achieve marginal increases in passengers, but the growth has been taken up mostly by the new airlines. Collectively, the private airlines carried more than 40 percent of the total passengers in 1995/96 and the growth is beginning to exceed forecast rates for the first time since the early 1980’s.

However, the changes in policy have not proceeded smoothly. The Government’s approval for selected operators to begin scheduled jet services in 1992 resulted in raids on Indian Airlines’ staff. It has been reported that 115 of Indian Airlines’ 450 pilots resigned in the 15 months to June 1993 (Louden 1993) and the incumbent was forced to ground its B737-200 fleet for want of crews. The Government responded by trying to protect its carrier, but the momentum of competition continued amidst growing criticism of the nation’s aviation policy. The World Tourism Organisation (1994) has rejected the claim that the Government has introduced an “open skies” policy. Others have described the industry as “chaotic” (Ballantyne 1996). Despite the promise of a new emerging market within a liberal competitive regime, the number of passengers is at least 50 percent below the level it would have been had the growth expectations been fulfilled. Many of the new entrants have failed and the remaining carriers are reported to be barely profitable, fares have increased and the Government has reversed its policy on equity alliances with foreign airlines. There is still a long way to go before India’s airline industry is able to grow at the rates seen in other Asian economies such as China, Indonesia and Taiwan.

This paper documents the changes that have occurred in the regulation of the Indian airline industry in the past decade and assesses outcomes in terms of market growth, fares and changes in services. Claims that government-imposed costs and low fares forced on the airlines by the regulator are major contributors to the financial difficulties in the industry are examined. There is some support for these arguments, but the paper argues the key shortcoming of the current regulatory approach is the way in which the airlines are required to meet “community service obligations”. This matter will need to be addressed for India to derive maximum advantage from aviation reform.

Regulatory Changes - 1986 to 1997

The approach to liberalising competition in the airline industry in India has been gradual and it is fair to say that policy has lagged behind the market, although this is hardly a phenomenon confined to India. The same claim has been levelled at the USA and Australia (Trent 1995, Hooper 1997) and it is a familiar pattern in the developing country context (Hooper et. al. 1996). Nevertheless, in India the Government

commenced with minor changes that were immediately under pressure and it so far has not been able to establish a sustainable regulatory and competitive environment.

In 1986 the tourism sector argued that there was insufficient capacity on some key routes and the Minister of Tourism and Civil Aviation responded by allowing private sector airlines to operate as “air taxis”. A condition attached to the licences was that aircraft had to have at least 15 seats and no more than 50 seats. Furthermore, there was a requirement to use “expatriate funds” to acquire aircraft and air taxis were not permitted to plan any departures within 2 hours of an Indian Airlines or a Vayudoot flight. Though fifteen licences were issued (Mhatre 1994), there was continuing criticism of the lack of capacity on tourism routes. This led to the Government’s announcement in 1989 that it was implementing an “open skies” policy according to which there would be a progressive relaxation of restrictions on the air taxi operators with eventual approval to provide scheduled services.

Eleven new applications for air taxi licences were submitted to the Director General of Civil Aviation and, in 1990, five airlines were given approval to commence. Fares continued to be regulated and the Government retained its controls over foreign investment in the airline industry. Also, air taxi operators were required to operate an equal number of flights on routes of less than and greater than 700 kilometres. Air Asiatic, based in Madras, imported a Boeing 737 to fly between Madras and Bombay, but it discontinued operations after only five months during which time it made 363 flights and carried 23,437 passengers. The other new entrants mostly operated smaller turbo-prop aircraft. By 1991 the policy was regarded as a failure (Malik & Malik 1996).

The fatal crash of an Indian Airlines’ A320 aircraft in 1990 was a major setback for the carrier and for the Government, especially since the carrier’s A320 fleet was grounded until a lengthy investigation was completed. The loss of a substantial share of the incumbent’s capacity resulted in an urgent need for the private sector airlines to expand and there were clear signals that the Government would allow the private sector airlines to expand and to advertise scheduled services.

The commencement of East West Airlines in February 1992 marked the start of a new era. This airline was owned by one of India’s largest travel groups and it had a major impact on the market with its seven B737-200’s and three F27’s. Its entry was assisted by a pilots’ strike at Indian Airlines and East West carried more than one million passengers in 1992-93. One of the significant policy developments was that the air taxis were permitted to obtain up to 40 percent of their equity finance from foreigners. Jet Airways, also backed by a travel group, took up this option in 1993 with 20 percent funding from Kuwait Airways and 20 percent from Gulf Air. In the same period, the other significant airlines to introduce jet aircraft were Damania Airways and ModiLuft. By the end of 1993, 17 operators had been granted air taxi licences and another 20 had obtained preliminary approval and new entrants were serving 54 routes (Malik & Malik 1996).

The rapid expansion of the new entrants took traffic away from Indian Airlines and Vayudoot. Also, Indian Airlines was weakened through the defections of pilots and engineers to the new carriers while it faced continuing industrial strife. At one point, Indian Airlines had six of its 10 A310’s unserviceable, and 12 of its 19 B737-200 and one-third of its A320 aircraft could not be used (Ballantyne 1996). Vayudoot was

reported to have made a loss of \$5 million US in the first five months of 1994 and the scope of its operations was reduced to the hilly regions of the north-east. This was a short-term measure and Vayudoot was folded into Indian Airlines in 1994.

The Government responded with a crack-down on the new entrants. Recruitment of pilots and engineers from Indian Airlines was prohibited, the air taxis were prevented from publishing their timetables, the requirement that the private sector airlines fly an equal number of routes above and below 700 kilometres was enforced, and the new entrants were denied permission to import any aircraft with 120 seats or more (Mhatre 1994). Indian Airlines ceased contracting out surplus engineering capacity to the private sector airlines and the new entrants have had difficulty getting adequate access to terminal facilities. The official position was that Mumbai (formerly Bombay) and Delhi airports were congested and were unable to cope with rapid growth in aircraft movements (Mhatre 1995).

The status of the new entrants was made clearer in 1994 when the Government repealed the *Air Corporation Act (1953)* and issued new guidelines for granting scheduled airline status. The Government maintained that it needed to examine applications for licences on a case by case basis, but operators had to demonstrate a sound financial position, to have a minimum fleet of 3 aircraft and to show evidence of an appropriate maintenance organisation and training facilities. The former requirement to operate an equal mix of short and long routes was changed to a more explicit statement about which “social” and other low density routes were important to the Government.

The new regulations defined three types of routes. The first category was comprised of all of the main trunk routes. The “social” routes included the remote areas in the northeast, Jammu and Kashmir and the Andaman Islands, while the third category covered all of the other non-trunk routes. Each scheduled carrier flying Category I routes is required to deploy an additional minimum of 10 percent of that capacity (in terms of available seat kilometres) on Category II routes and 10 percent of the capacity on these routes is to be operated within those regions that have some of the least economic fares. In addition, the carriers have to provide a further 50 percent of their capacity on Category III routes.

The other major policy development in 1994 was the enactment of the *Air Corporations (Transfer of Undertakings and Repeal) Act* under which Air India and Indian Airlines became limited liability companies incorporated under the *Companies Act (1953)*. In the words of the Director General of Civil Aviation, the industry has been “demonopolised” (Vakil 1996). Air India’s lack of aircraft capacity and its declining share of international traffic to and from India prompted the Government to give Indian Airlines greater access to regional, international routes where its aircraft were suitable. Though the possibility of merging the two government carriers has been raised on several occasions, so far this option has been rejected. Also, there has been no clear commitment to privatisation, a step that would be difficult to take while both carriers are performing poorly. In the period between 1990/91 and 1993/94, Indian Airlines incurred a series of losses amounting to more than US\$220 million (Director-General of Civil Aviation).

The status of liberalisation in India remains uncertain. The Government controls entry on a case by case basis and its refusal to allow the commencement of a new carrier jointly owned by Tata Industries and Singapore Airlines has been criticised widely (Ballantyne 1996). The new liberal policy is based mainly on guidelines that can be interpreted and changed easily without any forewarning (Malik & Malik 1996). During 1997, for example, the position on foreign equity injections by foreign airlines has been reversed and Kuwait Airways and Gulf Air have been instructed to divest themselves of their interests in Jet Airways, now the largest private sector airline. The Government levies heavy taxes on the airlines, it forces the airlines to cross-subsidise unprofitable routes, and it keeps the general level of fares down while protecting its own carrier. Under these difficult and uncertain conditions there has been a remarkably robust interest by the private sector.

New Entrant and Incumbent Strategies

The amount of aircraft capacity on offer has increased substantially as a result of the liberalisation policy, although one analyst has commented that there has been *Uncontrolled expansion, transforming a monopoly market into a chaotic free-for-all almost overnight. There are now seven scheduled private airlines, 18 non-scheduled operators and 27 others waiting in the wings proposing to enter the fray* (Ballantyne 1996). Consumers have a wider choice of airlines offering greater reliability and frequency, increased capacity, improved in-flight service and better passenger reservation and handling. However, the parlous financial state of the industry casts doubt on whether the momentum can be sustained.

In developed airline markets, the most successful entry strategy has been to capture market share with low fares and this requires a low-cost approach. In some respects the new Indian airlines did minimise their costs, they started with older versions of the Boeing 737 and they eliminated some training costs by poaching pilots, engineers and managers from Indian Airlines. There have been limits, though, to how far the low-cost strategy could be pursued. For example, the new airlines paid as much as five times the competing salaries in Indian Airlines in order to attract staff (Ballantyne 1996) and, in any case, the Government's embargo on further recruitment from Indian Airlines has put an end to that source of personnel.

The Government regulates fares and the scope to compete with discounts is very limited. Under these circumstances rivalry among the airlines is confined to service. The new entrants have been forced to commence with relatively small fleets and then have been expected to spread their capacity across different classes of routes. East West Airlines operated two different types of aircraft in order to get a satisfactory match of aircraft to routes of varying traffic densities, but this proved to be uneconomic in a small fleet. When NEPC took over Damania Airlines and renamed it NEPC Skyline, it retained the original NEPC as a feeder airline. Also, NEPC has taken over the management of UP Air, a regional carrier in the state of Uttar Pradesh. Jet Airways announced its interest in developing a relationship with a feeder airline, but the common approach has been to have a single type of aircraft in the fleet.

The option of building up frequency on a route before opening competition on other fronts has not been available to the new Indian carriers. The alternative has been to operate with low frequency and a large network. Better service is achieved by motivating staff with higher pay and better conditions and by using modern aircraft. The most successful new entrant, Jet Airways, has a fleet of B737-400 aircraft. Punctuality and reliability are supported by these staffing and fleet strategies, but it appears that aircraft utilisation is lower in order to establish a good reputation. For example, Jet Airways describes in its in-flight magazine how it maintains its reliability and safety during the monsoon period by holding capacity in reserve.

Initially the new Indian carriers leased older versions of the Boeing 737, but many have been introducing the B737-300, -400 and now the -500 series. When these ownership costs are coupled with relatively poor utilisation resulting from operating constraints, the new entrants have not derived any significant advantage from this quarter. Given the uncertain state of the reform process, all of the new entrants have operated with

leased aircraft. This has added to the financial costs of entering the industry, particularly since currency costs have increased as the Indian Rupee has been decreasing in value.

Access to sufficient capital resources is one of the key requirements for a new airline, particularly while establishing a place in the market. ModiLuft, Sahara India, and NEPC all have been backed by large industrial groups. Jet Airways is owned by a sizeable travel group, as was East West. Gulf Air and Kuwait Airlines each owns 20 percent of Jet Airways. Another potential entrant, Tata-SIA, would be owned by the powerful Tata Industries and Singapore Airlines. The proposal is to introduce 19 aircraft over a five-year period, but the Ministry of Civil Aviation has refused to grant a licence despite the Ministry of Finance's urging to approve the joint venture. The Ministry of Civil Aviation has taken the view that the domestic airline industry has too much capacity already and that there is no need for the new airline. Also, the Ministry's recent embargo on investment by foreign airlines has become a further obstacle to the Tata SIA venture.

The new entrants lacked adequate terminal facilities and each has invested in its own security systems and ground handling. Apron congestion at Bombay, New Delhi, Calcutta and Madras has posed a major problem. The Government now requires the airlines to park their aircraft overnight at the nearest designated airport rather than at their operational base and this is claimed to be a constraint on the adoption of hub-and-spoke network strategies (Vakil 1996). In 1996 the Government has taken steps to address these problems by adopting a "Tourist Action Plan" according to which it will upgrade existing airport facilities and build new airports (Mayes 1996). However, it is surprising the new entrants have not entered into some form of alliance to share some resources let alone to cooperate in a broader form of marketing alliance to achieve a more effective coverage of the Indian network with small fleets.

An additional factor affecting airline costs is a 117 percent surcharge on the price of fuel introduced by the Government during the Gulf War, the proceeds being used to subsidise energy costs elsewhere in the economy. This increased the price from 60-70 cents US per litre to around \$1.60 per litre (Prasad 1996). Although the airlines have been granted a dispensation to import their own supplies, customs duty and handling charges bring the costs up to a similar level. Added to this, airport charges are high and the airlines are required to collect a 15 percent tax levied on the passenger fare, the Inland Air Travel Tax. Several airlines have had difficulty in paying the tax revenue to the customs authorities and at least two, ModiLuft and East West, have had their operations suspended at various times while they were in default.

The difficulties in reducing costs and the inability to compete on the basis of markedly lower fares prescribe the opportunities for the new airlines. The new entrants in India have based their strategies more on service and reliability and they have been able to capture market share, as the incumbent has not been able to supply sufficient capacity to cope with a growing market. It is not clear that these are sustainable advantages as Indian Airlines has improved its service. Moreover, Indian Airlines has a much larger fleet and a more extensive network and its introduction of a frequent flyer plan in 1993 gives it a marketing strength. There are several extenuating circumstances that must be taken into account in assessing its past performance including having the main burden of providing services on the social routes. The grounding of its A320 fleet for ten

months and shortages of pilots and engineers have been major constraints. At the same time, it has to deal with a large number of entrenched unions seeking to improve their positions in a changing environment. Salary increases have been approved and the airline has a strategy to deal with its shortages of pilots.

A major component of Indian Airlines' strategy is the commencement in March of 1996 of its own low-cost operation, Alliance Air. The aim is to keep overheads to the minimum and to use the older B737 aircraft from the Indian Airlines fleet. This has made it possible to recruit former pilots without having to deal with seniority issues when they re-entered Indian Airlines. Indian Airlines is disposing of any B737's not required by Alliance as it reduces the diversity of aircraft in its fleet. At the same time, the option of merging and privatising Air India and Indian Airlines has been re-evaluated. The current position of the Government is that both airlines will be kept separate, but the roles of the two airlines have been changed. Air India is to focus on long-haul routes while Indian Airlines was granted wider access to regional routes. Previously, it had operated to other nearby countries in South Asia, but it was granted access to another 17 international routes stretching from the Middle East to Malaysia. Furthermore, there is a commitment to carry out joint marketing initiatives including code-sharing, joint frequent flier programmes and integrated reservations systems. As was the case with the incumbent carriers in the USA after deregulation, Indian Airlines is learning how to take advantage of its size.

Have The Changes Been Successful?

Choice of airline

There have been numerous attempts to establish new airlines, but the first to make a major impact was East West Airlines. It entered the market at a time when Indian Airlines had part of its fleet grounded and also suffered from industrial disputes. East West was able to expand rapidly and was the largest of the new entrants in 1993-94. Table 1 shows that Jet Airways, with its strategy of targeting the business sector with a high-quality service, has taken over the position as the largest private sector airline. M.G. Express entered into marketing and technical agreement with Lufthansa and renamed itself ModiLuft. It too expanded rapidly on tourist routes and shorter routes and was the third largest carrier in 1995/96. NEPC was operating as a regional airline with F27 aircraft and now has taken over Damania, renaming it NEPC Skyline.

Table 1: New entrants

Operator	1993-94	1994-95	1995/96	Share 1995-96
Jet Airways	665,749	1,239,819	1,606,819	30.9%
East West Airlines	1,055,177	1,041,587	941,157	18.1%
ModiLuft	296,933	575,348	858,429	16.5%
Damania Airways	395,514	672,160	690,840	13.3%
NEPC Airlines	78	220,561	456,215	8.8%
Sahara India Airlines	59,574	170,700	380,422	7.3%
Archana Airways			38,596	0.7%
U.P.Airways	13,890	35,609	32,802	0.6%
Others	22,074	23,291	199,420	3.8%
Total	2,508,989	3,979,075	5,204,700	100.0%

Source: Director-General of Civil Aviation, *Annual Reports*.

The impact the new airlines on service levels has attracted numerous accolades (Vakil 1996, Ballantyne 1996), but a measurable dimension of the approach to service is the frequency offered on key routes. One of the features of the Indian airline market is the concentration of traffic on a small number of key routes. Almost two-thirds of the total domestic passengers handled at India’s airports is confined to Mumbai, Delhi, Calcutta, Madras and Bangalore and the next five largest airports bring the cumulative total to 80 percent. In view of this, the weekly frequencies are very low. Indian Airlines has five scheduled flights each day in each direction on its busiest route, Mumbai to Delhi. Jet Airways has targeted the densest routes and it has a higher frequency on this route than Indian Airlines. Table 2 shows Jet Airways has the highest frequency between Mumbai and Madras and it matches Indian Airlines on two other routes. On all of the other trunk routes, Indian Airlines dominates.

Table 2: Weekly flights for top ten competitive routes (total both directions) - 1996

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From	To	Indian Airlines	Jet Airways	Sahara Indian Airlines	NEPC Skyline
Delhi	Mumbai	70	82	12	
Bangalore	Madras	42			15
Bangalore	Mumbai	42	28	12	28
Calcutta	Delhi	38	28		
Madras	Mumbai	34	42		12
Bangalore	Delhi	28	14	12	
Calcutta	Madras	28			14
Calcutta	Mumbai	28	28		28
Delhi	Madras	28		12	7
Bangalore	Calcutta	14	14		

Sources: Airline timetables - Indian Airlines, Jet Airways, NEPC Skyline and Sahara India Airlines.

Jet Airways’ strategy of targeting the business travel segment has been a key consideration in its route planning. It has built up its frequency and confined its network to the densest trunk routes. The other new airlines have spread themselves more thinly. Table 2 indicates that Sahara Indian Airlines and NEPC Skyline do not even have return daily flights in many of the densest markets. Table 3 illustrates how each airline has configured its network to include the busiest airports. Out of the 20 possible direct connections between the five busiest airports, Indian Airlines offered 10 (7.4 percent) out of the total of 136 routes listed in its 1996 schedule. Jet Airways concentrated on just 7 of these routes, but this was a proportionately higher share of the 27 routes it served.

Table 3 shows that Jet Airways, more than any of the other carriers, has a network focusing on connections between the busiest airports. It is the only airline to have more than half of its routes with both of the connected airports in the top ten in terms of passenger movements and 93 percent of Jet’s routes have at least one airport in the top 5. This evidence supports the complaint by Indian Airlines that it has the heaviest burden of serving the lower density routes despite the regulations on network coverage.

Table 3: Percent of airlines’ routes connecting top 20 airports by airline in 1996

Airline	Both Airports In			At Least One Airport In			Neither in Top 20
	Top 5	Top 10	Top 20	Top 5	Top 10	Top 20	
Indian Airlines	7.4 [10]	22.8 [31]	31.6 [43]	74.3 [101]	77.9 [106]	85.3 [116]	14.7 [20]
Jet Airways	25.9 [7]	55.6 [15]	63.0 [17]	92.6 [25]	92.6 [25]	92.6 [25]	7.4 [2]
NEPC Skyline	12.2 [6]	26.5 [13]	36.7 [18]	83.7 [35]	83.7 [41]	85.7 [42]	14.3 [7]
Sahara	16.0 [4]	36.0 [9]	44.0 [11]	92.0 [20]	92.0 [23]	96.0 [24]	4.0 [1]

Sources: Director-General of Civil Aviation. Airline timetables - Indian Airlines, Jet Airways, NEPC Skyline and Sahara India Airlines. Notes: Number of sectors in brackets. Airports are ranked in terms of passenger movements.

Fares

In the USA, it has been estimated that deregulation resulted in a 22 percent reduction in real average air fares between 1978 and 1993 (Morrison & Winston 1995). In Australia, average air fares declined by almost 20 percent in real terms in the five years following deregulation (Australian Competition & Consumer Commission 1995). Moreover, discretionary travellers have been offered a wide range of discounts as the airlines have learned how to manage a larger portfolio of fares using yield management systems. In the USA, approximately 37 percent of passengers paid less than the average fare prior to deregulation and this has increased subsequently to 60 percent (Morrison & Winston 1995). In Australia, the average fare lies between 30 and 40 percent below the published economy fare on most routes (Australian Competition & Consumer Commission 1996). It has been the use of these promotional fares that has been largely responsible for the increase in traffic in competitive markets.

In contrast, liberalisation of competition in India has been accompanied by rises in the level of fares. Indian Airlines has increased its charges several times in the period between 1993 and 1995 and the private sector airlines followed suit. In less than three years, air fares had increased by 40 percent in nominal terms (approximately 20 percent in real terms). There has been a fundamental difference between the situation in India as it entered a more competitive era and the situation in developed airline markets. The evidence in the USA was that regulation resulted in higher costs and when the airlines were able to compete on whatever terms they chose, the emphasis turned from service competition to price competition. In India, regulated air fares remain low. It has been claimed that fares are half the level of comparable air services in Europe even after allowing for differences in operating costs (Dasgupta 1995). If this is true, there is little scope for reductions in fares on the scale seen elsewhere.

Table 4 provides comparisons of published economy air fares in India with the USA, Europe and Australia over comparable distances. Though account needs to be taken of the widespread discounting in developed, competitive markets, the claim that fares are very low in India does appear to have some basis. Since costs per passenger kilometre decline with distance travelled, it is not surprising to see that the fares per kilometre are higher on the shorter routes. However, the differential between the fares in India and in other countries is highest on short routes, India's air fares are relatively lowest in short-haul operation. Note that the average length of the 136 sectors listed in Indian Airlines' published schedule is 670 kilometres. The average fare across these sectors (unweighted by traffic volumes) was 12.5 cents (US) per kilometre in August 1996 with a standard deviation of 2.5 cents per kilometre.

**Table 4: Comparisons of published economy air fares -
India, USA, Europe and Australia (\$US 1996 values)**

Region	Port (1)	Port (2)	Distance in kms (point to point)	Fares \$ US	Fares c/km (US)
India	Varanasi	Lucknow	236	37.86	16.02
	Bangalore	Madras	259	40.29	15.53
USA	Cleveland	Dayton	261	331.44	126.99
Europe	Birmingham	Edinburgh	251	178.84	71.25
Australia	Sydney	Canberra	236	115.22	48.81
India	Goa	Madras	713	85.04	11.92
	Ahmedabad	Delhi	727	80.38	11.05
USA	Detroit	St Louis	706	436.38	61.81
Europe	Rome	Munich	707	388.35	54.93
Australia	Sydney	Melbourne	707	201.23	28.46
India	Madras	Mumbai	996	100.75	10.12
	Delhi	Mumbai	1,084	106.64	9.84
USA	Houston	Kansas City	1,037	526.98	50.69
Europe	Glasgow	Frankfurt	1,082	422.03	39.00
Australia	Sydney	Hobart	1,040	254.10	24.43
India	Cochin	Delhi	2,001	209.95	10.49
	Delhi	Trivandrum	2,159	225.18	10.43
USA	Detroit	San Antonio	1,944	757.26	38.95
Europe	Athens	Paris	2,102	674.19	32.07
Australia	Sydney	Cairns	1,970	415.08	21.07

Source: Australian Competition and Consumer Commission (1995) and Indian Airlines' schedule (August 1996).

Notes: Fares published by the ACCC have been updated using movements in consumer price indexes and exchange rates published by the International Monetary Fund.

In the United States, deregulation had its biggest impact on the longer routes as fares adjusted to bear a closer relationship to costs. Table 5 presents an analysis of actual air fares in 1988 (expressed in 1996 values), ten years after deregulation, and the fares that would have been set were the regulated formula to apply (Pickrell 1995). As a point of comparison, the average of the fares for the Indian sectors in each distance category is presented. It is well-known that the formula applied by the Civil Aeronautics Board kept the fares low on the shorter routes. A similar situation occurred in Australia where it was accepted that fares on short routes needed to be reduced for the airlines to be competitive with surface transport (Gannon 1982). It is not surprising to find evidence that air fares on shorter routes in India are low relative to the costs involved.

Table 5: Regulated and deregulated fares: USA and India
(Values expressed in cents per available seat kilometre in 1996 US values)

Distance (kilometres)	Actual US Fare	Estimate of US Regulated Fare	Indian Regulated Fare
Under 463	26	20	13
463 to 925	19	16	13
925 to 1850	15	13	11
1,850 to 2,800	11	12	10

Source: Pickrell (1995) and OECD *Main Economic Indicators*.

Note: Pickrell reported actual fares and estimated the regulated fare in 1988 in cents per mile. These values have been expressed in the table in 1996 cents using movements in consumer price indexes and exchange rates published by the International Monetary Fund and converted to kilometres.

A simple formula that has been used to calculate regulated air fares in the USA and Australia includes a flag-fall and a distance component. Though there is no similar formula published by the authorities in India, a least squares regression analysis of published economy fares reveals a model conforming to this basic relationship. The estimated model takes account of reductions on fares for remote routes. Also, distance is measured on a point-to-point basis whereas there are many airports served via other airports. A dummy variable accounts for higher charges on indirect routes. The following result was obtained:

$$\text{FARE} = 511 - 150 * (\text{REMOTE}) + 3.08 * (\text{DISTANCE}) + 149 * (\text{DIRECT})$$

(10.2)
(-2.4)
(51.0)
(2.2)

$$\text{Adjusted } R^2 = 0.96$$

Where

- FARE = published economy fare in Rupees
- DISTANCE = point-to-point distance in kilometres
- DIRECT = 1 if indirect service or 0 if direct service
- REMOTE = 1 if route is nominated as a “Type III route”, otherwise zero

The formula indicates that fares increase by 3.08 Rupees (9.3 cents US) for every kilometre travelled. A similar approach applied to 1,000 heavily-trafficked routes in the USA resulted in a model with fares increasing at a constant rate with distance. A one percent increase in distance resulted in a 0.38 percent increase in the fare, but a one percent increase in traffic on the route resulted in a reduction of 0.48 percent (Morrison & Winston 1995). This indicates the importance of traffic density in the economics of airline operations, but competition was found to be an additional moderating factor in the USA. Using the model for Indian air fares, and evaluating this at the mean distance, it appears that a one percent increase in distance in India results in a 0.8 percent increase in fares. Given the predominance of short routes in the Indian Airlines’ network and the higher costs per seat kilometre associated with short-haul operations, it is not surprising to generate this result. No data were available to test the importance of traffic volumes on Indian air fares, though the results reported above suggest it is unlikely this has had a significant influence on the regulated fares.

It appears that the average flag-fall is 510 Rupees (\$15.48 US). However, the fare is increased by 149 Rupees (\$4.51 US) when it is necessary to fly via another point and it is reduced by 150 Rupees (\$4.55 US) when the flight is to a destination in the north-east, Jammu, Kashmir or the Andaman Islands. At the mean distance, these effects amount to a 5.8 percent increase and a 5.9 percent reduction in fares, respectively.

Jet Airways' published economy fares range from being the same as Indian Airlines' prices to 29 percent more on the 26 routes where it competed in 1996 and its average increase was 4 percent. In comparison, NEPC advertised economy fares that were 10 percent more than Indian Airlines' prices, ranging between 30 percent less to 80 percent more on the 30 routes where the two airlines were competing head to head. Jet Airways increased its business class fares by 15 percent early in 1994, but the differential with Indian Airlines' business class fares in 1996 was 8 percent. NEPC charged 10 percent more on average for business class than Indian Airlines. It has been claimed that the new entrants have greater scope for influencing the level of fares on routes that were not served previously by Indian Airlines. NEPC advertised 18 routes in 1996 that were not in the published tariffs for Indian Airlines. The average economy air fare charged by NEPC on these routes was 15 percent more than the level obtained from the regression model and the range was from 36 percent below to 77 percent above. This indicates there is some substance to the claim.

The scope for discounting so far has been limited, but in 1994 Indian Airlines introduced discounts of up to 10 percent for point-to-point fares and some airlines were offering a free return trip on selected flights in 1996. Jet Airways says it is not prepared to discount its fares (Vakil 1996). It is difficult to say whether the lack of discounting activity is a result of regulatory controls or the lack of rivalry among the airlines. One commentator, however, has accused the airlines of working together in “an apparent price-setting cartel” (Ballantyne 1996). The main support for this claim was the ready acceptance on the part of the new entrants to match Indian Airlines' substantial price increases. To be fair, though, this might be a reflection of the difficult economic conditions in the industry and the need to cross-subsidise unprofitable routes.

Growth in the market

Despite the regulatory changes and the dynamic conditions in the industry, traffic has grown slowly. Indian Airlines carried 3 million fewer domestic passengers in 1995-96 than it did in 1987-88. The private sector airlines, including scheduled and air taxi operators, carried 5.2 million passengers in 1995-96, a 43 percent market share. Table 6 shows that traffic levels fell until the air taxi operators were permitted to operate scheduled services and then the market increased by 40 percent in five years. In comparison, when Australia deregulated its airline industry in October 1990, the total number of domestic passengers was around 11 million a year but has since more than doubled in size. The Indian air travel market has fallen well short of expectations held for it when the Government first began to respond to criticisms of the policy a decade ago.

Table 6: Passenger traffic task 1980 to 1995-96

Year end March 31	Passengers (millions)				IA Market Share %	Change in Traffic %
	Indian Airlines	Vayudoot	New Entrants	Total Market		
1981	4.85			4.85	100.0	
1982	5.56	0.02		5.58	99.6	15.1
1983	6.15	0.08		6.23	98.7	11.7
1984	6.82	0.10		6.92	98.6	11.1
1985	7.91	0.20		8.11	97.5	17.1
1986	8.62	0.20		8.82	97.7	8.7
1987	9.18	0.30		9.48	96.8	7.5
1988	9.93	0.40		10.33	96.1	9.1
1989	9.54	0.45		9.99	95.5	-3.3
1990	9.39	0.14		9.53	98.5	-4.6
1991	7.47	0.44		7.91	94.4	-17.0
1992	8.31	0.30	0.03	8.64	96.2	9.3
1993	7.27	0.21	0.38	7.86	92.5	-9.1
1994	7.23		2.51	9.74	74.2	23.9
1995	6.90		3.98	10.88	63.4	11.7
1996	6.93		5.20	12.13	57.1	11.5

Source: Director-General of Civil Aviation, India, and various annual reports.

Note: Data to 1986 in calendar years, thereafter in financial years with year end on 31 March.

The Industry's Financial Difficulties

Since the Indian Government allowed private sector airlines to re-enter the industry as air taxis in 1986, numerous applications have been submitted for approval and a number of these resulted in the formation of airlines with ambitions to become national carriers or even major regional, feeder airlines. Of airlines falling into this category, there have been some notable failures. East West Airlines, Damania and ModiLuft all managed to capture a significant market share and then have encountered severe financial problems. There have been reports that the net profits of these carriers was less than 3 percent of turnover in 1994/95 (Mayes1996) and the new entrants have been struggling to survive.

East-West became the largest of the new entrants when the Government allowed the private carriers to operate on a scheduled basis. Its rapid expansion was a contributing factor in its problems, but having a mixed fleet of aircraft proved to be costly. East West suffered further problems when one of its aircraft crashed on a training flight and then it received adverse publicity when one its senior executives was murdered. However, “mediocre product and loose management” have been cited as the main reasons for the failure of the airline (Malik & Malik 1996). ModiLuft's problems resulted in a bitter public dispute with Lufthansa about the termination of a technical and management agreement. Again the airline's difficulties appear to have arisen from rapid expansion that stretched its capacity and on faulty strategy (Malik & Malik 1996). After moves to attract foreign investment into the ailing carrier came to nothing and NEPC's attempt at a take-over failed, ModiLuft ceased business in 1996.

Damania Airlines began in 1993 as a “businessman's airline” with 3 B737-200 aircraft and in its three years of operation it carried close to 2 million passengers while incurring \$20 million US in debt. It pushed the barriers of in-flight service and had aircraft grounded at one stage for flouting a government ban on serving alcohol to passengers during flights. As its debts mounted, its aircraft spent more time on the ground, but the main difficulties it faced were in meeting the Government's requirements to serve uneconomic routes. In 1995, Damania was taken over by NEPC and renamed as NEPC Skyline while the original NEPC with its 7 F27 aircraft was retained as a feeder airline operating on regional routes.

The new entrant presence in the market now is dominated by Jet Airways with NEPC/NEPC Skyline, Sahara India Airlines, a handful of regional airlines, and a larger number of air taxi operators making up the remainder. The incumbents also have had financial problems. Vayudoot's failure and mounting losses for Indian Airlines have been discussed above. The picture that emerges across the industry is one of poor financial health despite favourable conditions in the Indian economy. Analysts have assessed that the load factor required for an airline to break even in India ranges between 67 to 74 percent and a small change in load factor results in wide swings in profitability (Dasgupta 1995, Vakil 1996).

The airlines have complained that the Government's surcharge on fuel and its inland passenger tax raise costs unreasonably for a fledgling industry. Further criticism is levelled at the fares the airlines are constrained to charge (Dasgupta 1995). In 1994, the cost of fuel was 0.57 cents per available seat kilometre for the US airlines

(Gallagher 1995). It is not clear what other costs are included in the category of “flight operations” for Indian Airlines, but these were 38 percent of the airlines’ total operating costs and amounted to 1.99 cents per seat kilometre in 1994. The least squares regression model of fares reported above indicates that the price of air travel increases by 9.3 cents US for every kilometre travelled. In comparison, the costs of operating a new B737-400 on a route of 700 kilometres in Australia has been estimated to be approximately 6.8 cents US per available seat kilometre when expressed in 1996 values (Bureau of Transport & Communications Economics 1994). Low-cost operators in the USA such as ValuJet and Southwest Airlines are reported to have costs closer to 4.5 cents per available seat kilometre, but ValuJet had an average revenue per seat kilometre close to 9.3 cents (1996 values) while Southwest was earning about three-quarters this rate (Gallagher 1995).

Southwest Airlines, the most consistently profitable airline in the USA, is able to survive on average prices below those charged in India. What is different is that the Indian carriers have little scope to practice price discrimination using yield management systems. This prevents them stimulating growth in the price-sensitive segments of the market while charging higher fares to business travellers. The market could become larger and the airlines could use their aircraft capacity better if they were given greater scope to increase published fares and to use promotional discounts. Southwest Airlines has developed a strategic position in its markets with its high frequency and direct flights coupled with a low-cost strategy that maximises the utilisation of its fleet. The Indian carriers have tended to compete on the basis of service and they have not taken advantage of operational approaches used by low-cost carriers in other countries or of the hub-and-spoke systems that favour larger operators.

The Government has a strategy to upgrade its airports and this will overcome the physical, infrastructure constraints on the airlines (Bhatnagar 1996). These problems will take time to resolve, but constraints imposed by the regulatory system can be addressed in the short-term. As a measure of the cost to the airlines of the requirements on them to support community service obligation Indian Airlines claims to have only 20 routes that are profitable while the losses it incurred on social routes in 1985 was at least \$48 million US (Mayes 1996). A key difficulty for all of the airlines is the requirement to spread capacity across the three different classes of routes. Damania Airlines’ problems were exacerbated when it was forced to conform to the Government’s guidelines. East West Airlines operated turboprop aircraft along with its small fleet of jets and found it had a major problem in managing costs while trading frequency, load factor and consumer preferences for the jets operated by Indian Airlines on its social routes. It eventually grounded its F27’s after incurring heavy engineering, maintenance and training costs. Jet Airways has succeeded by minimising its exposure to the routes with low traffic densities.

The new entrants face a difficult choice. They can risk punitive measures by not conforming to the regulations, they can operate a mixed fleet of aircraft with consequent inefficiencies and reduced flexibility in scheduling and marketing, or they can associate themselves with feeder airlines. There are signs that the feeder airlines are developing a capacity to respond and Indian Airlines has formed its own feeder airline. However, the new airlines have started with larger networks and with lower frequencies than would be likely under completely free conditions.

This means that the airlines are not able to exploit economies of traffic density that, in the USA, continue to be achieved up to 40 million route ton kilometres (Gillen et. al. 1990). Research into economies of traffic density in India would be useful, but it is likely that these would be fully exploited by the main carriers only on the routes connecting Delhi, Mumbai, Calcutta, Bangalore and Madras, if at all. Left to themselves, the airlines have a strong economic incentive to develop their networks in such a way that they would spread the fixed costs of entering new routes across a sufficient volume of traffic. The regulations on allocating capacity place severe constraints on this option.

All of these factors are resulting in lower aircraft and labour productivity than is achievable in other airline markets. Indian Airlines had a large workforce in 1993, 22,000 employees for its 7.2 million passengers. This represents a labour productivity result of 350 passengers per employee or 32,500 revenue passenger kilometres per employee, approximately 40 percent and 20 percent, respectively, of the rates achieved in the US domestic industry in the same year. The cost per seat kilometre for Indian Airlines was 5.83 cents and this compares with an average for the US industry in the same year of 5.03 cents (Gallagher 1995). It has been noted above that fuel costs are high in India, but maintenance costs also were one-third higher than the average for the USA on a unit cost basis in 1994 while sales and distribution costs were slightly lower in India. The higher costs of fuel and maintenance are compensated for by lower wages in India even accounting for the lower labour productivity.

It seems there is scope for the Indian carriers to exploit their low labour costs and to be competitive with low fares. However, the Government can improve the prospects of reducing costs by setting a more stable regulatory environment and by allowing the airlines greater commercial freedom to develop appropriate strategies for the nation's developing market. A fundamental problem is the Government's position with respect to the two categories of "social" routes. The low density routes tend to be relatively short and, as the surface transport system improves, there should be less need to subsidise them. There is no good reason why such services would need to be subsidised for tourists. In the USA, there were similar concerns that small communities would suffer after deregulation but the experience was more frequent, propeller-driven aircraft replaced the larger jets (Pickrell 1995). The regional airlines have used aircraft appropriate for the low density markets and have given the small communities frequent access to hubs where connections can be made to larger carriers.

Undoubtedly there is scope for promoting smaller airlines to deal with the low density routes in India but there are some significant routes that are not of a short haul nature (eg Andaman Islands). The Government has drawn particular attention to the most needy areas as Category II routes. One of the approaches that could be taken is to provide specific subsidies for airlines operating these routes. This was the approach taken in the USA with its Essential Air Service programme according to which communities that could generate fewer than 40 passengers a day in each direction were eligible for financial support. The EAS programme has been modified on a number of occasions but will be withdrawn in 1998, 20 years after deregulation. In 1994, 300 communities were listed by the US Department of Transportation as eligible for EAS assistance but there were only 77 claimants and the cost of the programme was \$26.8 million Abbey (1995).

That the Government of India considers there are some regions that should receive subsidised air services is not in itself a problem, but the method of achieving this result is constraining the development of efficient networks and appropriate matching of aircraft to routes of varying densities. It is difficult for a regulator in low density markets to determine the optimal fares, aircraft choice and networks (Forsyth 1992). A better outcome is likely to be achieved by granting the airlines greater freedom to choose where and how they will operate and the ability to set fares in accordance with conditions in each market. This will mean that a mechanism must be found to provide direct subsidies for the non-economic routes. The Government could adopt the view that the subsidy should continue to come from other airline users and it could achieve this through some tax on passengers. Though there are some objections to cross-subsidies of this kind, there is a need for a thorough evaluation of alternatives to the current regulatory system.

Concluding Comments

India has joined the growing ranks of nations that allow competition in their domestic airline markets. However, its cautious approach has placed a premium on the protection of Indian Airlines and on the continuation of uneconomic services on social routes. Fares have increased and traffic has grown much more slowly than should have been expected given economic conditions. The tourism sector was a vocal critic of protectionist policies but ambitious plans to increase the number of international visitors requires further expansion in capacity and improvement in standards. India is capable of developing a large domestic air travel market but the financial problems faced by the airlines threaten to stall progress.

Though published fares appear to be low in India, airlines in other parts of the world are able to maintain profits with similar average yields. Unit costs do seem to be higher in India than in the USA but improved performance would allow the airline industry to become more profitable. There does seem scope to improve labour productivity in Indian Airlines, though this is not as important as in other countries because of India's low wages and salaries. The serious problems faced by the airlines in matching aircraft to routes and developing strong networks with relationships between feeder airlines and trunk carriers is impeded because of the regulatory approach. It would be possible to devise an alternative system to give the airlines greater commercial freedom while raising sufficient funds to support a direct subsidy system for the social routes. There is scope for the performance of India's airline industry to be improved and there is a need for a thorough evaluation of alternatives to the current system.

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