

An in-depth analysis of the Indian air travel market

Dick Forsberg | July 2018

# INDIA

A 21st Century  
Powerhouse

AVOLON 

# Dick Forsberg

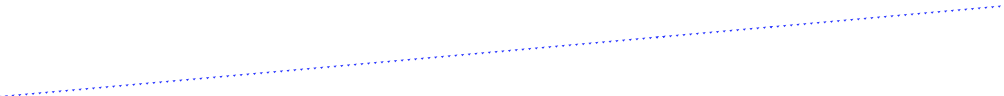
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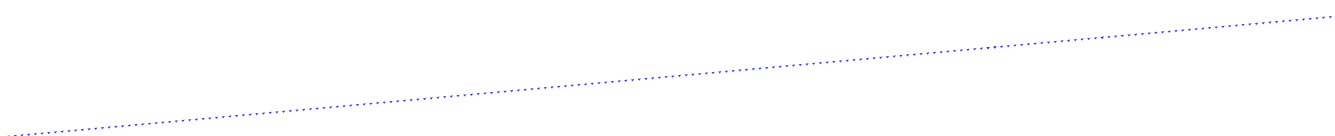
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# 1. Introduction

India, with its 1.32 billion people, will overtake China as the world's most populous nation within a decade, although per capita GDP will continue to lag that of China for the foreseeable future.

Whilst comparisons with China are inevitable, India's place on the world stage stands on its own considerable merits and will be influenced by its ability and determination to overcome long-standing economic and social challenges. The current political environment is supportive of change, with policies and initiatives being implemented that will have far-reaching impact on the economic development of the country and its global status.

Although the gap between India's richest and poorest communities remains considerable, accessibility to air travel has never been greater, with a burgeoning middle class increasingly taking advantage of an extensive network of domestic routes that carried 117 million passengers in 2017, with load factors in excess of 85%. However, middle-class wealth is a relative measure, and air fare affordability remains key to increasing what is still very low market penetration.

Private sector airline fleets have been growing rapidly with substantial orders placed for future expansion. Air India, though, remains constrained by its Government ownership and will not prosper until it is in private hands.

India's international travel and tourism achievements are modest, ranked 40<sup>th</sup> globally for inbound tourism and 12<sup>th</sup> for outbound tourism. International aviation, essential to supporting economic growth, trade and tourism, has been under-invested and needs significant additional focus.

This paper is presented in two parts. The first part examines India's geographic, demographic, economic and political characteristics in the context of their relevance to the development of commercial aviation. The impact of a recent New Civil Aviation Policy is discussed and the background and history of airline liberalisation reviewed.

In the second part, the key drivers of domestic and international air travel demand are identified, leading to a forecast of future growth in air travel over the next decade, broken out by each major market. The potential for additional international growth by Indian carriers is also considered and built into a prediction of future fleet requirements over the coming decade off a current operating base of almost 600 aircraft.

The analysis concludes that India's airlines will require almost 1,100 additional aircraft to meet demand over the next ten years. Taking account of existing orders, there is a shortfall of 300 aircraft, with a current value of \$20 billion, including requirements for 125 narrowbody jets, 125 widebodies and 50 regional aircraft.

## 2. Key findings

- India will overtake China as the world's most populous nation within a decade. However, despite strong economic growth expectations, per capita GDP will lag China for decades to come and middle-class wealth may be over-stated.
- A new aviation policy in 2016 removed some (though not all) of the barriers to Indian airlines' international operations, updated (but did not remove) regional capacity allocation requirements and launched the UDAN regional connectivity initiative.
- Recent court judgements have materially strengthened the effectiveness of the Cape Town Convention in India, although domestic creditors can still delay due process.
- Since airline liberalisation began, passenger traffic growth has ebbed and flowed, along with profitability, which has historically been elusive for most operators. The past two years have seen record traffic growth and improved economic stability for the industry, although the rising fuel price environment is again putting pressure on margins.
- Fuel prices, interest rates and the strength of the US dollar continue to be major areas of concern for airline managements, with each factor having the potential to swiftly and materially impact demand and the bottom line.
- Air India's privatisation is a key objective for the airline and the current government. Sale of the first tranche, which includes Air India and AI Express, was scheduled to close by year-end. However, onerous requirements for the buyer to assume \$5bn of debt and guarantee all full-time jobs which resulted in no offers being received by the 31<sup>st</sup> May deadline, leaving the Government's plans in disarray.

India's current passenger fleet will consequently more than double over the next decade, to almost 1,100 aircraft by 2027, 75% of which will be narrowbody types.

- A visible consequence of years of under-investment at Air India is the steady decline in India's share of the international aviation market, which now stands at less than 40%.
- The Government's moves to liberalise route rights have increased access for India's airlines overseas, but also critically for foreign carriers into India. Over 19 million passengers make international connections outside India on foreign airlines, including 8 million on the Gulf "super-connectors."
- LCCs now carry 65% of domestic traffic, a dominance that will continue to grow in the future.
- Domestic passenger demand is forecast to increase at an average annual rate of 9.6% over the coming decade. An 8.3% growth rate is forecast for international passengers, with a higher rate of 10.4% predicted for Indian carriers, assuming increases in market share are achieved.
- India's current passenger fleet will consequently more than double over the next decade, to almost 1,100 aircraft by 2027, 75% of which will be narrowbody types.
- Substantial numbers of single aisle aircraft have already been ordered, leaving a shortfall of 125 narrowbody orders over the next ten years, in addition to 125 widebody aircraft and 50 large regional aircraft.
- The total value of aircraft delivering in India over the coming ten years is projected to be \$60 billion at 2018 prices, of which over \$20 billion has still to be ordered.

## PART A; DISCUSSION OF FACTORS IMPACTING INDIA'S COMMERCIAL AIRLINE SECTOR

# 3. Demographics, geography and Government

## 3.1. Demographics

India's population of 1.32 billion is ranked #2 globally behind China and has been growing at average of 1.9% per annum since 1960.

Consequently, India has been steadily overhauling China (*Chart 1*), where numbers are set to decline in the medium term, and will overtake China as the world's most

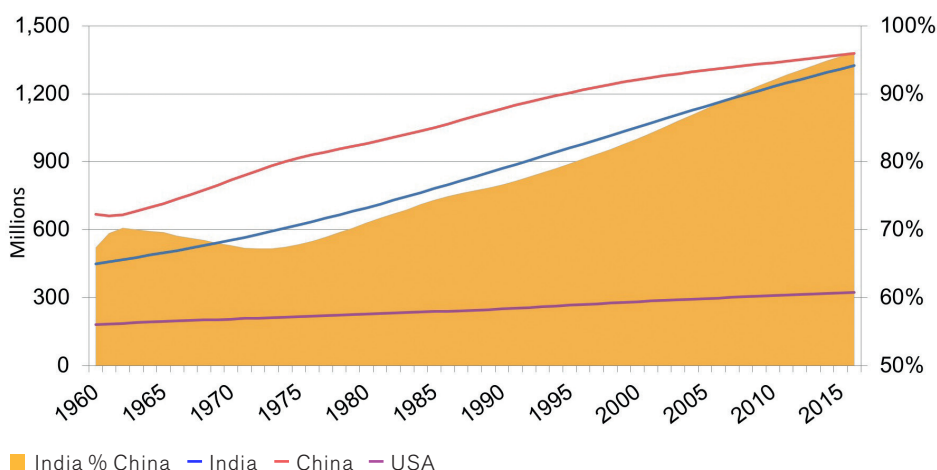


Chart 1: Population trends

populous country within a decade. However, population growth has also been slowing in India (*Chart 2*), as is typically experienced when economic metrics rise, and this trend should be expected to continue, although its impact is unlikely

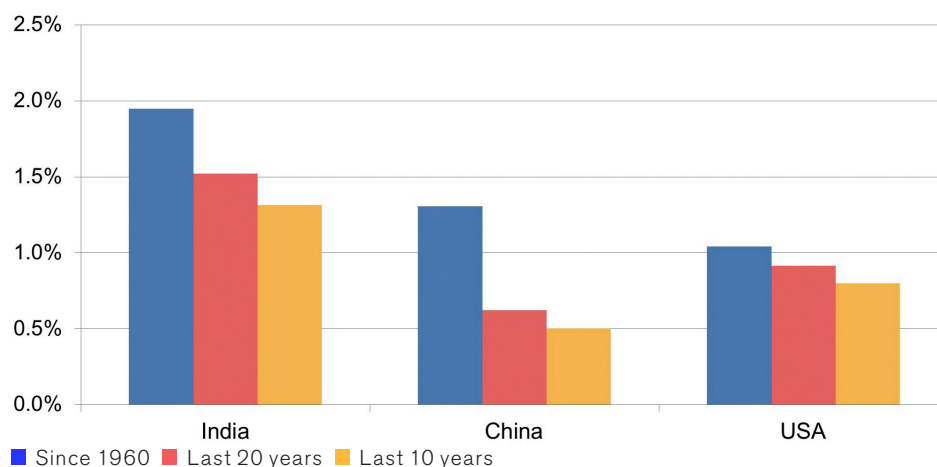


Chart 2: Population growth trends

to be felt economically for a number of decades as other factors will more than compensate.

The major cities have some of the highest concentrations of urban populations in the world, led by Mumbai, ranked #2 globally, with 31,700 residents per km<sup>2</sup>. However, despite having some of the largest cities in the world (see below), India is significantly less urbanised than China, at just 33% (vs 55%) of the total population in 2016, a proportion that has been increasing at a relatively modest rate of 2.5% per annum over the past decade. India still has only 2 cities with more than 10 million people, although there are a further 38 cities with more than a million people.

Mumbai	12.69 million
Delhi	10.92 million
Bengaluru	5.10 million
Kolkata	4.63 million
Chennai	4.32 million

#### 2018 Population

One of the key factors characterising India's demographics is the proportion of millennials in the overall population, with 20-39 year olds accounting for 33% of the total population and absolute numbers up by 65 million from a decade ago to overtake China (*Chart 3*). India is projected to become the world's "youngest" country by 2025, when the average age will have fallen to 29 years. Linked to the age profile and a well-developed education system, India is also closing on its goal to achieve close to 100% literacy within a decade.

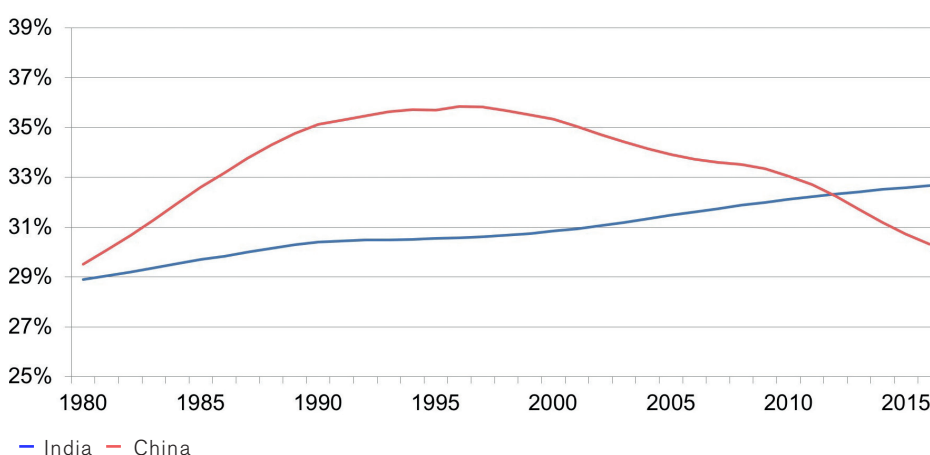


Chart 3: 20-39 year-olds as % of population

With a GINI coefficient<sup>1</sup> of 0.53, a significant degree of inequality in income distribution exists in India and recent studies suggest that the gap has widened to the highest level for almost 100 years, with the top 1% of earners accounting for 22% of total income.<sup>2</sup> This has led to a degree of stagnation in the wealth of the

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1. on a scale where inequality of income distribution increases from a low value of 0 to a maximum of 1 and 0.4 is regarded as a "warning level" by the UN

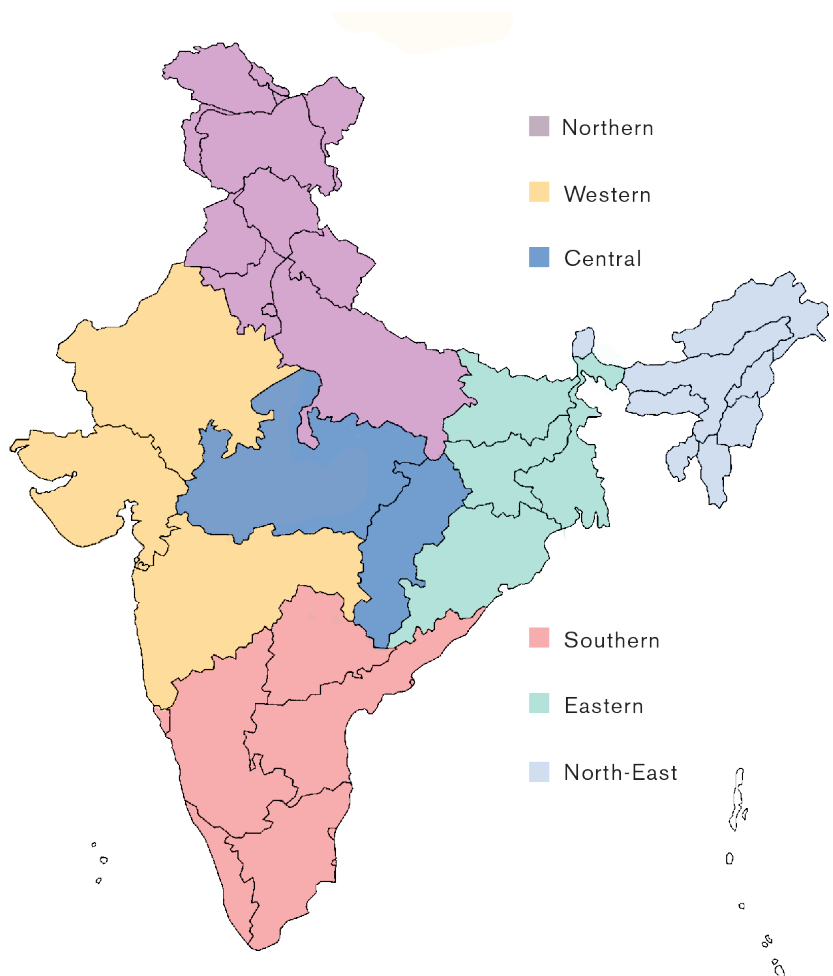
2. India Income Inequality, 1922-2014: From British Raj to Billionaire Raj, (2017), by Lucas Chancel and Thomas Piketty

so-called middle class, which although growing rapidly in numbers has not seen the same expansion in disposable income as the corresponding cohort in China. As *"The Economist"* recently pointed out,<sup>3</sup> there are many rich people in India, however "there are many more who may have risen above the poverty line, but not so far above it that they spend much on anything other than feeding their families." 80% of the population still earn less than the average \$1,700 per capita GDP and fewer than 100 million earn more than \$10 a day.

### 3.2. Geography

India's land mass, the 7th largest in the world, spans a wide range of topography and climate from the foothills of the Himalayas and the Hindu Kush to the shores of the Indian Ocean and the distant Andaman and Nicobar Islands. The climate ranges from equatorial in the south of the country to desert conditions in parts of the north and west, with the northern mountain ranges combining with desert to create the monsoon conditions that impact lives and activities across much of the country.

Administratively, India comprises 29 States and 7 Union Territories. The States are grouped into six zones – Northern, Central, Eastern, Western, Southern and North-Eastern (see map).



3. The elephant in the room - India's missing middle class, *The Economist*, 11<sup>th</sup> January 2018

Each year the rail network transports 8.2 billion passengers, highlighting the scope for further penetration by affordable airline networks is therefore immense.

The major cities of Chennai, Kolkata and Mumbai were first established in the 18th century as trading bases for the East India Company. The coastal location of the three cities and access to extensive trading hinterlands secured their long-term prosperity and they remain important commercial and industrial centres, whilst Delhi became the capital of the British Raj in 1911 and was confirmed as the capital of India following independence in 1947.

The large distances and challenging and varied terrain make for arduous long-distance surface travel, despite a comprehensive rail network ranked as the 4th largest globally, comprising over 120,000 kilometres of track and more than 7,000 stations, but with no high-speed capability.<sup>4</sup> Each year the rail network transports 8.2 billion passengers, split broadly 50/50 between commuters and long-distance travellers, and 1.2 billion tons of freight. The scope for further penetration by affordable airline networks is therefore immense.

### 3.3. Government

The Republic of India is a Federal Union of States with a parliamentary system of government. The constitutional Head of State is the President, however executive power is vested in a Council of Ministers with the Prime Minister as its head. There are two parliamentary Houses - the Council of States (Rajya Sabha) and the House of the People (Lok Sabha), whose MPs represent 543 constituencies.

The Indian legal system, which applies to both Union and individual State Governments, is based on English Common and Statute Law, with a Supreme Court that has ultimate jurisdiction.

The current (16th) Prime Minister, Narendra Modi, took office in May 2014, following a general election in which the National Democratic Alliance (NDA) coalition won a convincing majority over the incumbent Congress Party. Narendra Modi's Bharatiya Janata Party (BJP) is the largest coalition partner in the centre-right NDA, with a broadly pro-business stance. A number of initiatives have been introduced during this Government including 'Make in India', 'Skill India' and 'Start-up India', whilst transformational social and fiscal changes have been set in motion through programs to "de-monetise" high denomination banknotes, replace a wide range of state and federal taxes with a single sales tax (GST), launch the "Jan Dhan" financial inclusion drive and complete the biometric digitisation of over 1.2 billion people.

The present Government has introduced a new National Civil Aviation Policy ("NCAP") and a range of initiatives designed to promote and develop the sector, including significant investment in airport infrastructure, a Regional Connectivity Scheme, firm plans to privatise Air India and an easing of restrictions on airlines' ability to access international markets.

With a five-year election cycle, the next general election is due in 2019, less than 12 months away, and government actions and policies may be expected to reflect more popular and populist themes until then. Lack of progress in job creation puts re-election at risk, in which event several key initiatives, including the sale of Air India, may falter.

4. Japan will finance and build the first phase of a Bullet Train network, initially connecting Mumbai and Ahmedabad

## 4. The Economy

### 4.1. The basics

India is one of fastest growing global economies, with US dollar-denominated GDP growth averaging more than 7% per annum since 1980 and 8% over the past two years. Growth measured by purchasing power parity has been even stronger, averaging 8.5% since 2015 and taking India to the 3rd largest economy in the world, with a 2017 GDP-PPP of US\$9.5 trillion, which is forecast by the IMF to rise to US\$15 trillion in five years.

Two other measures are germane to the performance of the economy – inflation and exchange rate. Throughout the 1980s and 1990s, inflation remained volatile, ranging between 5% and 15% (*Chart 4*).

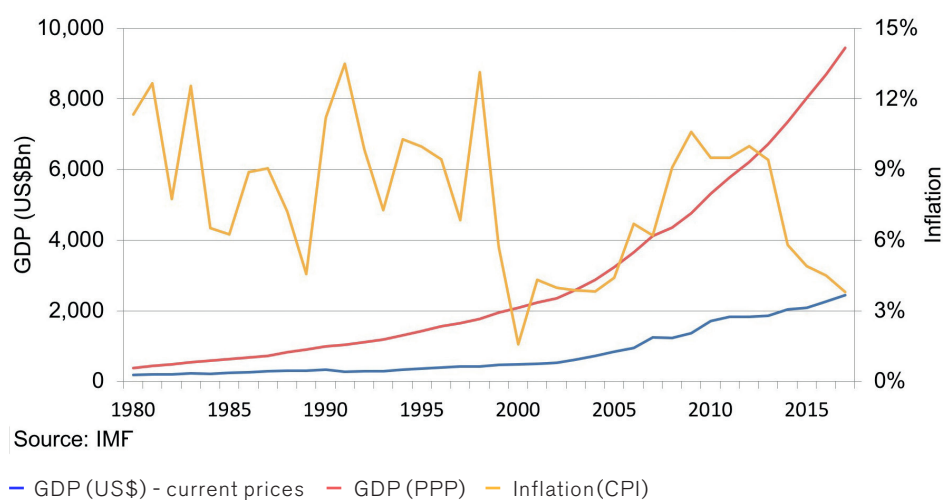


Chart 4: Indian economic trends

A sudden and steep reduction in 1999/2000, to below 2%, can be attributed to strong agricultural growth, increasing openness of the economy to manufactured imports and a fall in international prices. However, this was not sustained, and CPI drifted upwards through the 2000s before falling once again from 2015, since when it has averaged slightly less than 4.5%, just above the Reserve Bank of India (RBI)'s target of 4%.

Although the month on month value of the Rupee ("INR") against the US dollar has strengthened almost as often as it has weakened over the past 18 years (*Chart 5*), the INR has lost a third of its value since 1999 and currently stands at around Rs67 = \$1 following a 5% rally over the course of 2017. This recent recovery is not unique and, in this case, reflects a weaker dollar more than RBI intervention to support the currency.

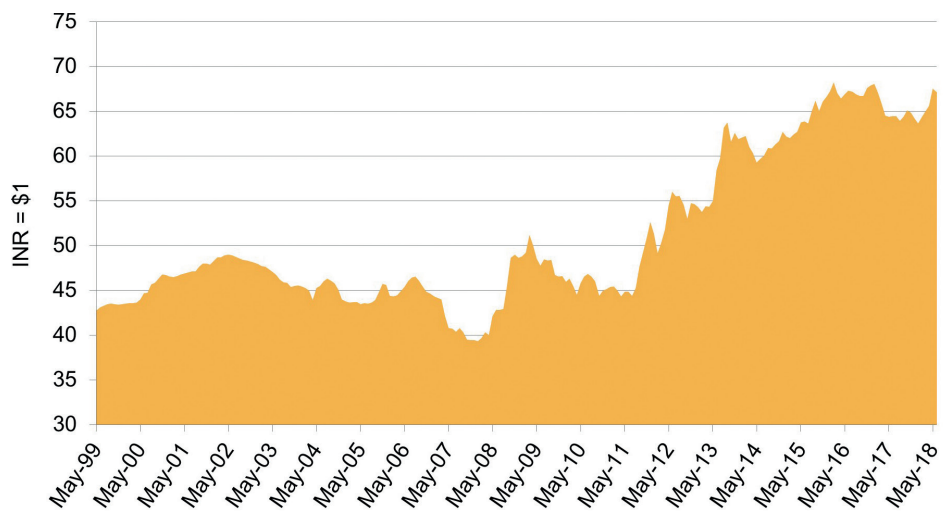


Chart 5: INR vs US\$ exchange rate history

Given the exposure of the economy to dollar denominated imports, not least oil, it is likely that a level of intervention will be maintained to limit the pace of future exchange rate change. At the end of FY 2017/18, FX reserves amounted to \$423 billion, equivalent to 10 months' import cover.

With an extensive global diaspora of non-resident Indians, the country ranks #9 globally for FDI inflow, which has been running at \$44 billion in each of the past three years following a steady rise that tracks increased opportunities for investment. In 2017, the Ministry of External Affairs recorded 13 million NRIs, plus a further 18 million "Persons of Indian Origin" living outside the country, including 4.5 million in the USA and close to 3 million in each of Malaysia, Saudi Arabia and the UAE.

These figures underscore the importance of another significant contributor to India's economy – the migrant workers, who generate the highest level of worker remittances globally, amounting to an estimated \$69 billion in 2017. This is an important, though potentially volatile, contribution to the overall economy, and grew by 10% last year, following a decline of almost 9% in 2016 as a result of construction-related job cuts in the oil producing states in the face of lower oil revenues.

In summary, 2017 presented both good and bad news for the economy. In the April-June quarter, GDP growth slowed to 5.7%, the lowest in three years, affected by two major economic policy decisions. One was the sudden cancellation of over 85% of the cash in circulation, with the removal of all Rs500 and Rs1000 banknotes – although announced in November 2016, the impact lasted well into the following year and resulted in the shut-down of many small businesses. The second was due to problems associated with the introduction of a Goods and Services Tax (GST), with software functionality issues and difficulties in filing claims. However, growth has recovered since then to average 6.7% for the year and reaching 7.7% in the quarter to March 2018.

Positive results also included an upgrade of Moody's sovereign credit rating, from Baa3 "positive" to Baa2 "stable", with S&P and Fitch both maintaining their BBB- "stable" ratings. Additionally, India's stock markets were among the world's best performing, growing by more than 30% year on year, and India's federal Government announced a \$32bn bailout plan for India's public sector banks, which are struggling due to a growing volume of non-performing assets.

With an extensive global diaspora of non-resident Indians, the country ranks #9 globally for FDI inflow and #1 for overseas worker remittances .

## 4.2. Economic policies

For much of India's post-Independence history, economic policy has been formulated and delivered based on socialist principles and has evolved through a series of five-year plans. Self-reliance, alleviation of poverty and social justice were the basis of the first economic plan (1951 – 1956), which included both public and private sectors in a mixed economy dominated by agriculture.

Subsequent plans broke the remaining links with colonial rule and established an industrialisation framework focussed on heavy industry, with a dominant role identified for the public sector to deliver high growth, self-reliance through building domestic production capacity and balanced regional development. State control and intervention was considered essential to achieve these aims, but economic growth failed to keep pace with an expanding population and a change of direction in the 1980s introduced elements of deregulation which removed a swathe of licensing requirements and red tape relating to private investment in industry and manufacturing (the “Licence Raj”) introduced in the 2nd five-year plan.

Whilst a large private sector quickly started to develop, the complex and bureaucratic nature of the public sector remained in place and, coupled with huge financial losses by state enterprises, not only slowed the moves towards liberalisation but also contributed to a rise in public sector borrowing to 6% of GDP at the start of the 1980s and to 9% by the end of the decade.

This forced a further range of reforms, starting in 1991, by then Finance Minister Manmohan Singh under the Congress Government of Narasimha Rao. This was a time when the first Gulf War has caused a surge in oil prices which placed severe pressure on India's balance of payments, to a point where foreign exchange reserves fell to barely two weeks of import cover. The reforms had two broad objectives; to substantially reduce the fiscal deficit and to move the economy from central control to a market-driven one, through a reduction of direct controls and a more open approach to trade, including removal of trade barriers, tariffs and FDI restrictions. This was the beginning of a surge in growth of the services sector, centred around technology and software, and was underpinned by a fast-growing, young and well-educated workforce. This period also saw the repeal of the Air Corporations Act in 1994, removing the monopoly rights of Air India and Indian Airlines and opening the market to competition from new airline entrants.

This broad thrust of liberalisation has remained the theme of subsequent Governments of all persuasions, resulting in steady progress towards a free-market economy, a substantial reduction in state control and greater financial liberalisation.

The current Government has introduced some transformational measures, as noted, including the introduction of GST, which moves a substantial proportion of tax collection from the regions to the centre, and the biometric digitisation programme, which will drive a waterfall of economic benefits. Focus now needs to be concentrated on land reform and labour market reform, with job creation remaining a high priority – 12 million new jobs are needed each year to absorb the young workforce. The momentum on state enterprise privatisations picked up with the announcement of a timeline for the sale of Air India, but the Government, which has a stated intent to dispose of most state enterprises other than the PSU banks and oil companies, missed their target \$20bn of sales in 2017 and will likely do so again in 2018.

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### 4.3. Recent policy initiatives

Two initiatives introduced by the current Government will have particularly far-reaching impact on India's economy as well as its social structure. These are the digitisation programme to record the biometrics of the entire population and the introduction of GST.

#### 4.3.1. JAM today

The first of these initiatives was launched in 2010 with the twin objectives of formalising the documentation of the population and, as a result, "financialising" the economy by opening access to banking, communications and on-line services. The start of India's digital revolution, the "Aadhaar," or foundation, requires the biometric identification of the entire population through fingerprints or retinal scans. The project, which to date has captured data for 1.2 billion Indians, is unmatched in its scale and scope.

The existence of this comprehensive identification database allows rapid and broad access to the digital world for the entire population, irrespective of financial means, caste or geographic location. On-line banking and access to mobile phones is facilitated by an electronic KYC process and acceptance of digital signatures. A parallel project, Jan Dhan, launched in 2014, is designed to ensure that everybody in India can open and hold a bank account and can access that account from anywhere. 285 million new accounts were opened in the first three years of the Jan Dhan initiative.

The third element of this Holy Trinity is to broaden the ownership of mobile phones and to enable the upgrading of old technology handsets to 4G smart-phone technology. Combined with electronic banking, this will open up India to e-commerce – Amazon India doubled its authorised capital last year, to US\$4.74bn, and intends to remain India's largest on-line retailer. Along with domestic competitor Flipkart, their Android App downloads have passed 100 million. This is in the context of total mobile phone ownership of 800 million, more than 300 million of which are currently "smart". Morgan Stanley forecasts that 915 million Indians will be on the internet by 2026, representing 2/3rds of the population.

This will fundamentally change how people transact – currently the vast majority of purchases are paid in cash, with India having one of the lowest non-cash payment penetrations in the world, held back by limited access to alternative payment channels (such as POS terminals) as well as technology.

The negative element of a largely cash economy was highlighted in November 2016 when the Government announced, with less than 24 hours' notice, that it was recalling all high denomination (Rs500 and Rs1000) banknotes, which would no longer be legal tender but could be presented for deposit at banks. The intention was to target a vast grey economy of untaxed transactions and the black market as well as eliminating counterfeit notes. Unfortunately, the sudden and complete removal of a large percentage of available cash from the economy placed hundreds of millions of people into hardship and caused innumerable small businesses to cease trading. Whilst the objectives were laudable, the execution and lack of

consideration of the wider consequences rendered the move highly unpopular and attracted widespread criticism.

The “JAM” initiatives (Jan Dhan, Aadhaar, Mobile) have the potential to transform India's financial and e-commerce sectors as well as ensuring that all Indians can access basic services, social media and connectivity to the wider world.

### 4.3.2. GST

The second revolutionising initiative is the implementation of direct tax reform through the introduction of a Goods and Services Tax to replace a wide range of central and federal taxes. Launched in July 2017, the scheme suffered some initial glitches that have slowed implementation but do not detract from the longer-term benefits. It is intended that GST will simplify a previously complex tax system, improve revenue collection through a digitised real-time payments system and boost economic growth.

Until GST, tax collection was decentralised, with many taxes set, imposed and collected at State level, whilst expenditure was controlled centrally by the Planning Commission. Abolition of the Commission in 2014 began a process of pushing expenditure decisions out to the regions. Now, with the introduction of GST, tax collection has been centralised and the digitisation of the collections process has made compliance easier and avoidance more difficult. This should improve the overall tax take, where India lags much of the world.

Taking the role of tax collector away from State Governments will greatly improve the efficiency of moving goods within the country, by eliminating long waits at state borders to clear local customs formalities, as well as reducing the overall cost of goods moved between states by ensuring that only a single tax is levied. The move will also impose a standardised tax rate for goods, rather than the variety of tax rates applied by individual States for the same products.

Unfortunately for airlines, the application of GST does not yet extend to oil and aviation fuel (ATF), which still attracts varying State taxes that make Indian ATF amongst the most expensive in the world. There has been considerable lobbying of the tax authorities by the aviation community resulting in a request from the Ministry of Civil Aviation (MoCA) to the Finance Ministry and it is hoped that ATF will be moved under the GST umbrella within the next year.

# 5. Aviation Regulation

## 5.1 Regulatory bodies

Air transport is a federal responsibility and legislated by parliament. Aviation matters sit with MoCA and associated organisations, including the Directorate General of Civil Aviation (DGCA), the Airports Authority of India (AAI) and the Airports Economic Regulatory Authority (AERA).

MoCA is responsible for policy formulation and regulation of civil aviation in India. The principal regulatory body for civil aviation is the DGCA, which is headed by a Director General and acts under authority delegated by MoCA.

The DGCA is responsible for air transport regulation, air safety and airworthiness. It issues licences to aerodromes and air carriers; monitors licensing of personnel (crew, flight despatchers, aircraft engineers, etc); and oversees airworthiness, air safety, training, licensing, airfield standards and flight inspection. There are 14 regional airworthiness offices and five regional air safety offices of the DGCA.

The AAI is responsible for creating, upgrading, maintaining and managing civil aviation infrastructure, including passenger and cargo terminals, runway and apron infrastructure, communications, navigation, air traffic control and passenger facilities. Although the recent trend has been to increase the participation of independent airport operators such as GMR, AAI still has responsibility for 125 airports, including 11 with international facilities.

The AERA is an independent economic regulator, set up in 2010. AERA determines tariffs for aeronautical services, the amount of development fees in respect of major airports and passenger service fees, and monitors standards relating to quality, continuity and reliability of services, etc. AERA has also decided tariffs, charges for aeronautical services and issued appropriate directions from time to time.

## 5.2. Market access – getting started

The central piece of legislation governing the conduct of the civil aviation industry in India dates back to 1937, albeit with multiple subsequent revisions.

Rule 134 of the Aircraft Rules, 1937 stipulates that the operation of air transport services from, to, in, or across India requires the permission of the Central Government, which has delegated authority to grant such permissions to the DGCA. Authority is granted through issuance of an Air Operator Certificate (AOC), which is a three-stage process.

- i. Issue of a No-Objection Certificate (NOC) valid for a maximum of three years;
- ii. Import permission for aircraft;
- iii. Issue of AOC by the DGCA

A minimum fleet size of 5 aircraft is required within 12 months of receiving the AOC. Aircraft may be owned or leased and must be registered in India. The operator is required to demonstrate access to sufficient pilots, engineers and other personnel to operate and maintain the aircraft.

There are also tests for nationality of ownership and control and for financial fitness. AOC holders must be:

- i. a citizen of India, or
- ii. a company or a body corporate provided that
  - a. it is registered and has its principal place of business within India;
  - b. the Chairman and at least two-thirds of its Directors are citizens of India; and
  - c. its substantial ownership and effective control is vested in Indian nationals.

Up to 49% foreign equity participation and up to 100% investment from non-resident Indians (NRIs) is permissible. Until March 2013, equity from foreign airlines was not permitted, directly or indirectly. However, ownership requirements were modified in March 2013, extending the 49% foreign equity participation to include investment by a foreign airline.

The capital adequacy requirement is based on the aircraft to be operated and the fleet size:

Minimum paid up capital requirement		
	MTOW	
	<40+ MT	40+ MT
Up to 5 aircraft	Rs200 million (~US\$3M)	Rs500 million (~US\$7.7M)
For every 5 thereafter	Rs100 million (~US\$1.5M)	Rs200 million (~US\$3M)

India operates a restricted import regime for ageing aircraft. At the date of import, pressurised aircraft for scheduled operations shall not be more than 18 years in age<sup>5</sup> or, if older, shall have completed less than 50% percent of their design cycle life, unless the aircraft is Indian registered and maintained in accordance with DGCA requirements.

### 5.3 The 2016 NCAP – what changed?

In June 2016, the Government introduced a new National Civil Aviation Policy (NCAP). The policy covers all the key areas relating to civil aviation - safety, airline operations (including regional connectivity guidelines and the requirements for international operations), international traffic rights, MRO activity and 'Make in India'. Several important changes to existing regulations and guidelines were introduced that have a material impact on airlines and their customers.

5. Increased from 15 years/75% design life in 2016

A minimum fleet size of 5 aircraft is required within 12 months of receiving the AOC. Aircraft may be owned or leased and must be registered in India.

### 5.3.1. Regional Connectivity (The UDAN)

A Regional Connectivity Scheme (RCS) known as UDAN (Ude Desh ka Aam Naagrik<sup>6</sup>) came into effect in April 2017, augmenting the existing Categories 1, 2 & 3 Route Dispersal Guidelines (RDGs), which are also updated.

Under the scheme, airlines are invited to bid for rights to operate selected city pairs connecting regional and remote parts of the country and, inter alia, opening up un- or under-used airport facilities. Airlines can avail of direct and indirect subsidies funded by central and state Governments and route access will be granted with three years' exclusivity.

Airlines must offer 50% of available seats (up to a maximum of 40 per flight) on the RCS routes, with fares set at no more than Rs2,500 per flight hour (indexed to future inflation) and can sell the remaining 50% at "market" prices. A Government subsidy, Value Gap Funding (VGF), is available to bridge the revenue shortfall, paid in part out of a new RCS levy, introduced in June 2017, on flights operating on the main trunk routes – currently Rs5,000 per flight. With over 200,000 flights scheduled in 2017, this will generate around \$15 million annually.

Additional relief on costs will be made available through a 5% GST rate, significantly reduced fuel and ticket service taxes and waivers by AAI and state Government airport owners on airport terminal, landing, parking, security and navigation charges for up to ten years. The Government has stated that it will be prioritising the economic viability of the UDAN routes over that of the regional airports during the development phase.

Airlines have completed bidding in the first 2 rounds of route allocations. The parameters for bidders included stating what proportion of the available VGF subsidy they would be applying for and at least some of the successful bids were based on zero take-up of the VGF. Given the regional and start-up nature of these routes, small to mid-sized turboprops are the aircraft of choice, reducing DOCs and capital costs and allowing a credible business case to be made.

Round 1, in April 2017, concluded with five airlines (Alliance Air, SpiceJet, Air Deccan, Turbo Megha Airways and Air Odisha) approved to operate on 128 routes from 70 airports. The results of Round 2, announced in January 2018, added 325 more routes and 56 new airports, with service awarded to 11 airlines including IndiGo and Jet. The number of additional airports already exceeds the total number opened since independence in 1947.

### 5.3.2. Scheduled Commuter Operators

In support of the UDAN Scheme, the Government has introduced an additional category of air operator, dedicated to scheduled commuter operations with aircraft having an MTOW not exceeding 40 MT. Certain barriers to market entry are reduced, notably in the level of equity capital required and in the minimum fleet size.

As well as potentially swelling the ranks of UDAN operators, this may provide a springboard for sales of Hindustan Aeronautics' (HAL) locally-built 19-seat Dornier 228 turboprop, which received civilian certification late last year and could be a poster child for the Make in India policy.

Airlines can avail of direct and indirect subsidies funded by central and state Governments and route access will be granted with three years' exclusivity.

6. "Let the common citizen of the country fly"

Since 1994 airlines have been required to allocate a proportion of their domestic capacity to second and third tier regional routes.

### 5.3.3. Updated Route Dispersal Guidelines (RDG)

Since 1994 airlines have been required to allocate a proportion of their domestic capacity to second and third tier regional routes, under a system of route categorisation – the RDG. These guidelines, which have been modified several times over the intervening years, designate 12 high density city pairs<sup>7</sup> as Category I, all routes connecting points in North-Eastern region, Jammu and Kashmir, Andaman & Nicobar and Lakshadweep as Category II and all other routes as Category III.

In order to secure a minimum level of regional services, the DGCA required operators to deploy mandatory levels of capacity on Category II and III routes relative to their Category I operations:

- on Category II routes, at least 10% of the capacity deployed on Category I routes
- on Category III routes, at least 50% of the capacity deployed on Category I routes

The 2016 NCAP included the following amendments to the RDG:

- a) Category I routes will be updated every five years, to include routes based on:
  - i. Sector distance of more than 700 km
  - ii. average load factor of more than 70%
  - iii. annual traffic of 500,000 passengers or more
- b) The traffic to be deployed on Category II routes expressed in terms of a percentage of Category I traffic will remain the same (i.e. 10%). However, routes to Uttarakhand and Himachal Pradesh will now be included in Category II. The percentage for Category III routes will be reduced from 50% to 35% of Category I traffic to reflect the implementation of the UDAN scheme.

### 5.3.4. Qualification for International Operations

Since 2004, Indian airlines have not been permitted to operate international services unless they had operated domestic services for at least 5 years and had a fleet of 20 or more aircraft. This has long been considered by the industry to be a protectionist and unjustified requirement and the 2016 NCAP removed these constraints in order to create “a completely level playing field”. The experience period and the minimum fleet size requirement have been amended. Airlines may now commence international operations at any time, provided that they deploy the greater of 20 aircraft or 20% of total capacity on domestic operations.

This requirement, which is actually more stringent in terms of fleet size, is notionally there to protect the integrity of the domestic market but is a disappointing and unnecessary residual constraint that should be removed as a matter of urgency.

### 5.3.5. International traffic rights

Breaking from the traditional international bilateral route rights structure, India will seek Open Sky air service agreements with other SAARC member countries and with countries located more than 5,000 kilometres from India, with no restrictions on flight frequency or number of operators.

For countries located closer than 5,000 kilometres, where the designated Indian carriers have utilised less than 80% of their capacity entitlements but foreign carriers

7. BOM-BLR, BOM-CCU, BOM-DEL, BOM-HYD, BOM-MAA, BOM-TRV, CCU-DEL, CCU-BLR, CCU-MAA, DEL-BLR, DEL-HYD, DEL-MAA

8. South Asian Association for Regional Cooperation (Afghanistan, Bangladesh, Bhutan, Nepal, the Maldives, Pakistan, Sri Lanka)

have utilised theirs and are seeking an increase, a Committee will recommend a method of allocating additional capacity entitlements. This may include auctioning the unused rights to foreign carriers, which is contrary to the objective of raising Indian airlines' profiles.

Although some Air Service Agreements (ASAs) still have seat restrictions, the general trend has been to allow greater access from points in India to points in the other country. India's improved pro-competition and free market access approach has been bolstered by the Competition Act that came into force in 2009 and a Competition Commission that has been increasingly active since then.

Some vestiges of old protectionist provisions survive, including a provision that operational plans submitted by the national carrier will be considered before allocation of traffic rights to other eligible applicants. However, the need for free market access, especially in respect of international routes, was clearly set out in a 2012 report to Government by a committee convened to examine the competitive framework for civil aviation in India, which stated:

"the regulator may consider abandoning preferential international route assignments to the national carrier, which would allow private carriers to compete with Air India. Taking away Air India's right to priority route assignments will also help other Indian international carriers expand service to additional international destinations, leading to expansion in the range of choices for consumers."

Subsequent actions and changes to regulatory requirements have supported this recommendation.

## 5.4. The Cape Town Convention

Although India became a signatory to the Cape Town Convention (CTC) in 2008, no changes to domestic legislation were enacted until 2015, leaving the key provisions of the Convention unenforceable, in particular Articles 8 - 15 of the Convention which specify default remedies to creditors, lessors and other parties to facilitate repossession of aircraft in the event of default.

This raised serious concerns at the time of the Kingfisher Airlines failure in 2012, when initial attempts by lessors to reach consensual agreement for the return of aircraft proved fruitless, with the airline claiming right of ownership of the assets in the Indian courts. At that time, if a lessor applied to the DGCA for deregistration of aircraft, the DGCA would seek the approval of the lessee and, if consent was not given, would not agree to deregister the aircraft until the lessor had obtained a court order, significantly slowing down the repossession process and introducing considerable uncertainty and expense.

Although a court case brought in India against Kingfisher by lessor DVB secured a favourable judgement in the High Court, the outcome was not based on the provisions of the CTC, leaving its effectiveness in the Indian jurisdiction in doubt.

The failure of CTC to provide the necessary remedies, combined with the wider issues relating to the Kingfisher situation resulted a backlash from the lessor community, with a reduction in appetite for exposure to Indian airlines and a significant risk premium, levied through lease rates and security provisions, which lasted several years.

In February 2015, following persistent representations to Government, India amended the Aircraft Rules 1937 regulations to recognise the Irrevocable Deregistration and Export Request Authorisation (IDERA) and provide the protections afforded by Article 8 of the CTC. The amended wording states that

"The registration of an aircraft registered in India, to which the provisions of the Cape Town Convention or Cape Town Protocol apply, shall be cancelled by the Central Government within five working days, if an application is received from IDERA Holder prior to expiry of the lease along with:

- (i) the original or notarised copy of the IDERA; and
- (ii) a certificate that all Registered Interests ranking in priority have been discharged or the holders of such interest have consented to the deregistration and export"

Hence, when the IDERA holder applies to the DGCA for deregistration, it is mandatory for the DGCA to deregister the aircraft without obtaining airline consent.

One key caveat was added: "Provided that the deregistration of an aircraft by the Central Government under sub-rule (6) or sub-rule (7) shall not affect the right of any entity thereof, or any inter-governmental organisation, or other private provider of public services in India to arrest or detain or attach or sell an aircraft object under its laws for payment of amounts owed to the Government of India, any such entity, organisation or provider directly relating to the services provided by it in respect of that object."

However, this provision applies only to the specific aircraft and not to other assets operated by the lessee.

These changes were immediately tested in March 2015, when lessors requested deregistration of six aircraft leased to, and operated by, SpiceJet, which was in default for non-payment of rent and other amounts. Although the DGCA ordered SpiceJet to return the aircraft, SpiceJet did not comply and the DGCA took no further action. Consequently, the lessors, AWAS and Wilmington Trust, filed a case for deregistration in the Delhi High Court, which directed the DGCA to deregister the aircraft. In its ruling, the court stated "the DGCA must de-register an aircraft, without a court order and whether or not a Government lien exists or is asserted, where an Irrevocable De-Registration and Export Request Authorization under the Cape Town Convention has been properly submitted by a creditor. Neither administrative discretion nor reference to a general public interest may be invoked to prevent such mandatory de-registration."

The Court also ruled that "the position with regard to the manner in which the DGCA has to proceed, once a creditor seeks recourse to the remedy under Article IX of the Protocol, has only acquired greater clarity. The court, therefore, cannot interdict the process of deregistration on the nebulous ground of equity as it would be contrary to the provisions of the Convention and Protocol to which India is a party."

Aircraft deregistration and export is now more straightforward and has greater certainty, although the ability of creditors, such as airports, to delay due process until outstanding dues are settled remains a concern, where pursuit of lessors may still be preferred over the errant airline.

## 6. Factors influencing India's airline operations

### 6.1. Protectionism & Government interference

For most of the period since the repeal of the Air Corporations Act, Government has lacked a clear vision and set of consistent policies to develop Indian commercial aviation. Protection towards the national carrier and its affiliates has been persistent and blatant, from preferential treatment in the process of awarding route rights to the proscription of fares and products offered by Indian competitors.

Market distortions arising from over-regulation and from the unchecked actions of Air India have sustained a far from level playing field and contributed to the stop-start development pattern that has characterised the airline sector for over 20 years. Lack of investment has also resulted in a long and steady decline in India's share of international markets and Government has repeatedly failed to deal with the embedded structural and cost-related problems besetting the domestic operators.

Back in 2013, the decision to extend the 49% foreign investment rule to include foreign airlines was a welcome and potentially transformational move, however its initial implementation was not clearly communicated and led to some confusion regarding applicability, although the move has subsequently supported both survival and expansion. More recent events further confirm a change in Government position and a desire to foster a healthier, more competitive and more stable industry, linked to wider benefits to the economy and to the regions.

Many of the provisions introduced in the 2016 NCAP are presented as ways to remove barriers to market entry and promote growth, the aviation sector, regional development and the wider economy. The UDAN regional connectivity scheme is a flagship proposal, already successfully expanding regional connectivity which, inter alia, will bring new commuter airlines into the market for the first time – perhaps even operating a fleet of domestically-produced aircraft. Updating the 5/20 requirements for international operations and the desire for long-haul open skies both augur well for future development of international markets, but further refinement is required.

A concurrent decision to allow unbundling of fares is also to be welcomed, especially as 65% of domestic capacity is now provided by LCCs, whose business models benefit from such flexibility.

Fully embracing the responsibilities that come with the CTC has been a major step towards bringing the leasing and financing markets back up to speed in their capacity to finance Indian airlines.

Back in 2013, the decision to extend the 49% foreign investment rule to include foreign airlines was a welcome and potentially transformational move.

A recent suggestion by the Parliamentary Standing Committee on Transport, Tourism and Culture that there should be a cap on domestic air fares has been rightly rejected by Government which stands by its belief that the global airline practice of dynamic pricing does have a place in the Indian market. The same Committee urges Government to bring ATF under the GST umbrella, a move that cannot come quickly enough for the airlines.

Finally, the sale of Air India will remove a long-standing burden and obligation on the State and relieve the Government of any remaining protectionist urges. It will also, hopefully, provide the starting point for a rebuilding of India's international market share, which has been systematically eroded by lack of investment in the national carrier and a reluctance to let others share in the opportunities.

## 6.2. Sale of Air India

There have been several attempts by Government over the years to relieve the taxpayer of the burden of Air India and its affiliate companies, but to date all attempts have failed, generally due to the severe financial and social costs that would be incurred due to the extremely high level of indebtedness and a workforce of 27,000. The airline, which has lost over US\$10 billion during the past decade, continues to depend on state bailouts, a situation that does not sit well with the current Government's stated aims.

In 2017, the Government again announced its firm intention to sell Air India and appointed Ernst & Young as the sole advisors to the sale process, the firm having also advised on the Jet/Etihad and SpiceJet/Sun transactions.

An aggressive time line was set for completion, driven in no small part by the upcoming general election in 2019. The plan called for a first round of bidding to be completed by the end of Q1-2018 with a buyer mandated by the end of September. This has now slipped to year-end for the sale of the core airline, but, given the complex nature of the transaction, completion can be expected to slip further. Indeed, with a general election due in 2019 the sale may be pulled once again in the event that the Government fails to win re-election.

The business will be split into four tranches, each of which will have at least 51% offered for sale. The first tranche will include the core airlines of Air India and AI Express, with a sale completion target date of year-end. 76% of Air India is being offered, with buyers required to take on over \$5 billion of existing debt and guarantee job security for over 11,000 permanent employees for 12 months. An Expressions of Interest document was published on 28 March, with initial bids due by 31st May.

A second tranche will comprise the regional airline operations of Alliance Air, a third entity will be the ground handling activities and the fourth is the MRO business, with a workforce of 6,000. Timescales for these subsequent tranches have not been confirmed.

Air India's extensive property portfolio will not be included in the sale and the balance of the \$8 billion-plus debt burden will be transferred into an Oldco structure to be retained by the Government. It is unclear how any Government guarantees on the transferring debt will be treated.

In line with current ownership guidelines, up to 49% may be owned by foreign investors, including airlines. In the event, although several Indian airlines initially expressed an interest in acquiring elements of the Air India franchise, centred on route authorities and aircraft, their interest has fallen away as the details of the sale package have emerged. Indeed, as the deadline for first round bids passed, there has been no proposal received, from India or overseas. Seemingly, the terms of the sale are too onerous and the challenges to a successful transition too great to attract interest and there is now a high probability that the sale will, once again, be shelved.

Next steps would appear to be either i) revise the terms to remove the show-stoppers – the high debt burden, the Government's 24% retained share and the commitment to labour (although this would create further issues with the Unions), or ii) shelve the process and embark on a major restructuring of the airline, potentially under administration.

As the Government considers its next steps, it may be helpful to consider the privatisation of another large national carrier back in the 1980s – British Airways. Following the merger of BEA and BOAC, the newly-formed British Airways began a difficult 13-year journey to privatisation that included a series of company-wide programs designed to change the morale and culture of the business, in the wake of which, it was rightly argued, profitability would increase.

These change programs, which included “Putting People First”, “Winning for Customers” and “To Be the Best” had a remarkable and transformational effect on the staff and on the business and laid the foundations of the airline we see today. The titles of those programs speak volumes. Without that change in attitudes and culture, bridging the chasm between a process-driven and a market-led company, successful privatisation would not have been possible. The same may well be true of Air India.

### 6.3. Aviation Turbine Fuel (ATF)

ATF prices in India remain amongst the highest in the world, due to high ex-refinery prices plus additional state-imposed sales taxes that vary across the country, with levels as high as 30% and which, despite decades of lobbying, the state authorities have shown little appetite for reducing, seemingly blinkered to the substantial longer-term economic benefits of foregoing this bountiful tax revenue.

Fuel supply has also been restricted historically to four suppliers, including three state owned oil companies. The combination of high taxation and near-monopoly supply means that fuel typically represents 50% of domestic operating costs, leaving airlines extremely exposed to changes in the market price of oil.

Changes to the regulations for the pricing and supply of ATF were introduced in 2012 in an attempt to remove the more egregious barriers to competition in the sector. Control of jet fuel pricing was taken away from the oil suppliers and included in the remit of PNGRB, the oil regulator. Restrictions on the ability to import oil were also relaxed to allow airlines to purchase and import oil and to deliver it to airports. Although several airlines applied for permission to import their own aviation fuel following the change, all subsequently concluded that the logistical practicalities of

getting the fuel from the port into the plane, not to mention contamination risks and potential liabilities from environmental damage in the event of a spillage, made the scheme unworkable. Only a very small proportion of aviation fuel is now purchased directly by airlines for use at airports located close to the coast, where transportation logistics are least challenging. Independent sourcing and supply of fuel to inland airports is impractical and uneconomic.

A number of State Governments have now moved to reduce ATF taxes, however some of the largest in terms of ATF consumption are holding back, leading to the conclusion that including ATF under the GST umbrella is an urgent and necessary step.

## 6.4. Airports

India's airports handled 295 million passengers in 2017. The five busiest airports are all approaching, or have already exceeded, their terminal capacities (Table 1), with many others operating close to their limits. Runway slots and overnight parking spaces also present constant challenges – Mumbai is now the busiest single-runway airport in the world, having achieved 980 movements in a day.

	2017	2018 (F)	Capacity
DEL	63.5	70.0	68
BOM	47.2	50.1	40
BLR	25.0	28.2	20
MAA	18.4	21.3	23
CCU	15.8	19.4	20

Table 1: Capacity constraints at the Top 5 airports (Passengers (M))

Despite significant state and private investment being committed to this essential infrastructure<sup>9</sup>, the scale and pace of development lags the growth in demand. Consequently, airport capacity will likely remain a constraint on growth well into the future. That being said, some of the recent facility developments are world-class and have transformed passenger experience, although the Public Private Partnership (PPP) model has arguably led to higher operational charges being levied than under the previous "public utility" structure.

Whilst AAI remains the gatekeeper of airport operations, with direct responsibility for 125 airports, PPPs are increasingly being used to develop, fund and upgrade facilities, with joint venture consortia in place at half-a-dozen airports, including the largest in the country.

Since 2006, Delhi International Airport has been managed by a joint venture between India's GMR Group (54%), AAI (26%), Frankfurt Airport, (10%) and Eraman Malaysia (10%). Hyderabad airport, a greenfield development which opened in 2008, operates on the same basis under a JV between GMR (63%), AAI (13%), the local state Government (13%) and Malaysian Airports Holdings (11%).

India's airports  
handled 295 million  
passengers in 2017.

9. AAI has a \$30 billion budget for airport development over the next five years

GMR is also developing a new airport in Goa under a PPP structure, which is scheduled to open in 2020. Phase 1 is designed to handle up to 5 million passengers annually.

Another airport operator, GVK, has been partnered since 2006 with AAI to manage and develop Mumbai's airports. The airport in Bengaluru, opened in 2008, is managed by a consortium led by Fairfax India Holdings, with AAI and the local state Government also invested. Cochin is also run under a PPP partnership with the state Government and Singapore's Changi Airport is expected to be awarded management of Jaipur and Ahmedabad airports. 18 greenfield airport developments are currently under way, at a planned cost of almost \$5 billion. The largest of these, Navi Mumbai, is scheduled to commence Phase 1 operations in 2021 and will have an ultimate capacity of 60 million passengers.

Development of smaller airports, central to the Government's regionalisation plans, is more challenging, since the PPP approach becomes less viable as scale reduces. To date, only 16 out of the 31 new airports targeted by Government for the end of 2017 have opened. The Regional Connectivity Fund will be an important source of additional funding, but financial support from central Government will continue to be required. Low cost facilities are all that is required to service smaller community links. Their affordability will determine how many of the 200+ un- or under-utilised regional airfields owned by local Governments or private operators will be activated.

To date, only 16 out of the 31 new airports targeted by Government for the end of 2017 have opened.

## 7. A brief history of India's airlines

### 7.1. In the beginning

One prominent name has sustained a common thread throughout the history of India's airlines –Tata. In 1932, J.R.D. Tata established India's first scheduled airline, Tata Air Mail. The name was changed to Tata Airlines in 1934 and to Air India in 1946, with international services launching in 1948.

The Air Corporations Act, enacted in May 1953, rationalised the industry by creating two nationalised carriers. Eight disparate domestic airlines, including Air India, were merged to form a single domestic operator, Indian Airlines, whilst a new airline, Air India International, was set up to provide international services. Tata was retained as Chairman of the airline, a post he held until 1978. A scion of the Tata industrial conglomerate, as well as a passionate aviator and India's first pilot's licence holder, his legacy in Indian aviation continues today through the Tata Group's JV investments in Vistara and AirAsia India.

The Air Corporations Act created a monopoly that prevented independent scheduled airlines from operating in full direct competition until the Act was repealed in 1994. However, in 1990 the Government introduced a domestic Open Skies policy which began the process of ending Indian Airlines' monopoly by allowing air taxi operators (ATOs) to provide scheduled and charter services and to set their own fares. This limited form of competition, heavily circumscribed by regulation, saw the establishment of East West Airlines and Sahara India in 1991, Damania in 1992 and Jet Airways, Modiluft (a JV with Lufthansa) and NEPC in 1993.

### 7.2. Phase 1 - Liberalisation

The repeal of the Air Corporation Act in March 1994 formalised the basis on which competing domestic air services could be operated and allowed the pioneering ATOs to restructure as airlines. By 1995, six private airlines carried 10% of domestic passengers. Unfortunately, the regulatory environment remained highly restrictive, with numerous hurdles put in place to protect the national carrier, including restrictions on advertising flight schedules, a ban on recruiting pilots from the state airlines and the Route Dispersal Guidelines introduced in 1994 to create a "level playing field" with Indian Airlines by requiring airlines to deploy a percentage of their capacity on secondary routes. A minimum fleet size of three aircraft was required at start-up and no international services would be countenanced.

In 1990 the Government introduced a domestic Open Skies policy which began the process of ending Indian Airlines' monopoly by allowing air taxi operators (ATOs) to provide scheduled and charter services and to set their own fares.

With weak balance sheets and credit profiles, most of the new private airlines operated older generation 737-200 jets in their fleets, the exception being Jet Airways which launched with 737-300 Classics (*Chart 6*). The lower ownership cost of older equipment was helpful, but this benefit was largely offset by higher fuel consumption in a market where fuel price was already high relative to most other parts of the world.

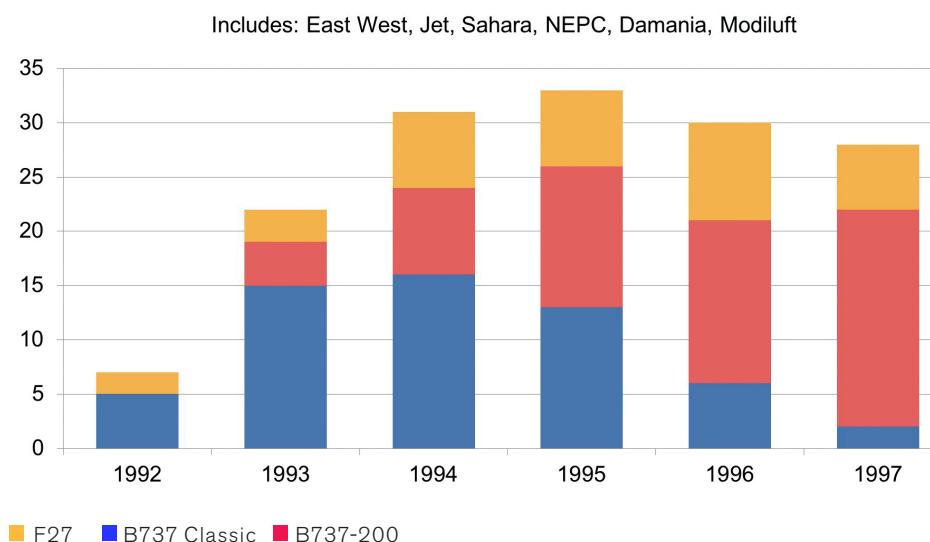


Chart 6: Phase 1 private airline fleets

Consequently, despite strong demand for the high-quality product standards introduced by the new airlines, poor operating economics combined with a lack of critical mass, the restrictive regulatory environment and difficulties in raising capital to drive most of the first wave airlines out of business within a few years. East West and Modiluft closed in 1996, while Damania's promoters had seen the writing on the wall a year earlier and sold the business to regional turboprop operator NEPC, which expired from indigestion in 1997. The private airlines' combined fleets peaked at 33 aircraft in 1995. Of the survivors, only Jet Airways retains its original identity. Sahara India was acquired by Jet in 2007 and later renamed JetLite.

The industry then entered a period of hiatus when, apart from Jet Airways, there was little in the way of competition to challenge the state-owned incumbents. Alliance Air was launched in 1996 as a full service regional subsidiary of Indian Airlines and the Government announced a ban on foreign investment in passenger airlines in 1997, a ruling that remained in place until 2012, establishing the competitive status quo for most of the next decade. An attempt to privatise Air India in 2000/01 was unsuccessful and by 2006/7, when the global airline industry was reporting then-record profitability, the increasingly inefficient and under-funded Indian state carriers announced a combined loss of Rs7,722.7 million (US\$180 million). This surged to a Rs22.3 billion (US\$557 million) loss in 2007/8, the year in which the crisis-stricken airlines were merged under a holding company, National Aviation Company of India Ltd (NACIL), with a view to restructuring and privatisation.



Chart 7: Air India net losses

The depth of NACIL's problems and the continued accumulation of losses (*Chart 7*) required a US\$6.7bn Government bailout as part of a road map to recovery and a partial privatisation was again proposed, although not consummated, in 2012. The losses continue, amounting to more than US\$10 billion over the past decade.

### 7.3. Phase 2 – boom and bust

The second wave of airline start-ups began in 2003, when India's first low cost carrier, Air Deccan, was launched, with a target customer base of blue collar workers, attracted by very low fares (from Rs1) that were supported by a genuine no frills product. Likened to bus travel in terms of service, the airline nevertheless carried almost 1 million passengers in its first full year of operation, growing to close to 7 million in 2007/08, when the airline was sold to Kingfisher, another "new wave" entrant.

Although Kingfisher became synonymous with all that could go wrong with India's airline industry and remains a stand-out case study in poor management and hubris, its launch in 2005 was seen as a breath of fresh air, having a highly visible brand and an equally visible and flamboyant promoter. The full service airline offered all the frills found in the most lavish of international carriers and customer service that was second to none in the Indian market, where customer expectations had been low for many years. As quickly became clear, however, low fare does not necessarily equate to low cost and, as Kingfisher built up its domestic and international operations (including orders for 10 A380s, subsequently cancelled), finances became dangerously stretched, despite the deep resources of its United Breweries parent. At its peak, Kingfisher was the 2nd largest domestic carrier in India and operated a fleet of more than 60 aircraft. Along the way it had acquired Air Deccan, which was rebranded Kingfisher Red before being closed less than four years later. It is widely held that this was the deal that triggered the ultimate demise of the business, although the A380 orders caused the lessor community and others to express early concerns.

Whilst Kingfisher was imitating Icarus, other new entrants were establishing a more lasting presence. 2005 saw the launch of SpiceJet and Go Air, with IndiGo following in 2006, to form the core of the country's future airline industry. Whilst Go Air and IndiGo were all-new start-ups, SpiceJet launched as Royal Airways on the dormant Modiluft AOC, which allowed a slightly faster track to service entry. Uniquely, all three new entrants launched as low cost carriers, establishing the framework for the future business model for Indian domestic aviation. Two small regional operators, Paramount and MDLR, also launched during this expansion period, but quickly closed, ostensibly for operating irregularities, but also underscoring the economic challenges of serving regional markets at that time.

With all of these new airlines launching, domestic capacity was bound to rise, and did so in a dramatic fashion. Between 2003 and 2008, domestic ASKs increased by 140%. However, load factor rose from 57% to 70%, partly due to the stimulation created by the new low cost model, but also by savage fare wars that broke out as the airlines battled for passengers in an over-supplied market. Whilst the LCC concept was sound and is here to stay, the speed of its development was simply too rapid for the market to absorb. This led to widespread pain amongst all of the airlines and a prolonged fight for survival at several of them, where solutions included restructuring, new equity investors and, following changes to foreign ownership rules, strategic partnerships with other airlines.

## 7.4. Recent developments - the new normal?

The cycle of market entry, capacity growth, yield destruction and rationalisation entered another period of hiatus until 2014, when AirAsia India entered the market as a JV with the Tata Group. This was facilitated by the Government's decision to permit up to 49% investment by foreign airlines. AirAsia was followed in 2015 by Vistara, another JV involving the Tata Group, this time in partnership with Singapore Airlines. Whilst AirAsia is a pure LCC, Vistara offers a full service product and is competing directly with Jet Airways on trunk routes such as Delhi-Mumbai.

The traditional regional model is still challenged, though. Air Costa and Air Carnival both launched in 2013 but closed down in 2017. Air Pegasus launched a year earlier and shut down in 2016. Trujet, which launched in 2015, is doing better on its Tier 2 regional network and is well-positioned to benefit from the UDAN scheme, which has spurred additional regional start-ups, with Zoom Air, Air Deccan and Air Odisha all launching in 2017. However, a lack of slots at the main airports is inhibiting the rate that the new regional services can ramp up, as is a lack of funding to open new regional airports.

UDAN has also triggered an expansion of regional turboprop operations amongst the larger carriers, with Alliance Air and SpiceJet adding to their fleets, the former taking 8 ATRs during 2017 and the latter with an order for 25 additional Q400s. IndiGo is also moving into the space, with an order for 50 ATRs which began to deliver in Q4-2017.

Indian banks have not played a meaningful role in financing local airline fleets since the collapse of Kingfisher, which exposed many to significant losses. It was revealed in 2017 that 14 Indian banks share Kingfisher-related net losses estimated at Rs43 billion (around US\$700 million).

Whilst bank exposures to other airlines, including Air India, have also resulted in some non-performing loans, the Kingfisher experience has wrought the greatest damage to confidence. Banks remain uncomfortable with the risk profile of the sector and their lack of specific asset-management expertise in the sector adds to their conservatism. Consequently, they are not expected to re-enter the market in the near term.

The capital markets are not open to Indian airlines although the Government has expressed a desire to develop an Indian EETC market. The on-going hiatus with the export credit agencies is expected to continue, with little new business being signed off for at least the next 12 months. The emerging insurance-based products will take up some of the slack, although they are not sold as replacement products. Air India, as the only major Indian customer of export credits, has been mainly supporting deliveries through sale and leaseback, which will continue to dominate delivery financing for all India's airlines for the foreseeable future.

Several key events over the past five years capture the current strength and opportunities now present in the Indian airline industry:

- IndiGo's IPO in 2015 and the subsequent strong performance of share price
- The mega-orders placed by IndiGo and SpiceJet for large numbers of aircraft, affirming their confidence in the sector and ensuring access to the most efficient fleets
- SpiceJet's turnaround and the Government's support in that process
- Two recent new entrants with prominent and substantial strategic investors committed to the sector

However, despite recent improvements to profitability for the private airline sector as a whole (*Chart 8*), concerns over rising fuel prices, interest rates and the exchange rate remain ever-present and threaten to drive margins down once again.

The mega-orders placed by IndiGo and SpiceJet for large numbers of aircraft, affirming their confidence in the sector and ensuring access to the most efficient fleets.

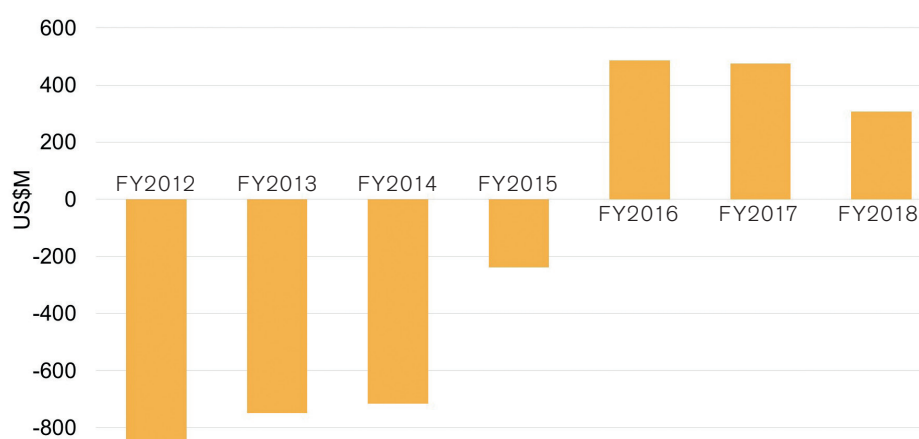


Chart 8: Indian airline profitability (excluding Air India)

## 7.5. International air services

Whilst the foregoing airline activity has been focussed on domestic airline operations, there has also been some expansion of international services beyond those provided by Air India and its low cost AI Express offshoot. However, international market penetration by private airlines has been limited by restrictive and protectionist regulation, whilst Air India has stagnated until recently. Consequently, India's share of international air passengers has declined and is currently below 40%.

Jet Airways has been operating international routes since 2004 and now directly serves 20 overseas destinations, including three in Europe and one in Canada. Jet also codeshares widely, including with its strategic equity partner Etihad, but is not a member of any alliance. Jet is now the largest Indian airline on international routes, with 14% of passengers – ahead of Air India with 10%.

Over 15% of India's total international traffic is carried to and from three Gulf hubs on Emirates, Etihad and Qatar Airways.

Air India operates services to 39 international destinations, with AI Express adding a further 4 to the total. Together they directly serve 33 countries, but this is in the context of India having more than 110 bilateral agreements, including open skies with the USA, Japan, ASEAN and SAARC. It is clear that historical protectionism has not worked, or has been undermined by other factors, such as lack of investment and focus on the critical importance of international aviation.

Jet Airways adds another two countries to the total served and IndiGo and SpiceJet operate a limited number of international services, concentrating on markets in South Asia, Southeast Asia and the Middle East. The grand total of 35 countries served by Indian carriers is really only 31, however, as each UAE state is currently under a separate ASA!<sup>0</sup> This compares to a total of 57 countries which had passenger traffic flows with India in 2017, leaving 45% of international destinations unserved by an Indian airline. The largest of these unserved markets, Malaysia, had 2.5 million passengers in 2017.

Over 15% of India's total international traffic is carried to and from three Gulf hubs on Emirates, Etihad and Qatar Airways, amounting to 10 million passengers in 2017. Almost three-quarters of these passengers are connecting beyond the Gulf region and are currently lost to India's airlines. A similar situation occurs to the east, over hubs such as Singapore and, further into Europe, Istanbul is also attracting strong transit flows.

The majority of India's bilateral agreements, including a number renegotiated within the past several years, retain restrictive capacity limits, designed to protect Air India but now limiting growth, even for foreign carriers, many of which have hit the upper limit of their frequency and/or seat allocation. At the same time, Open Skies penalises Indian carriers relative to their foreign competitors that are not constrained by international market access rules.

## PART B: INDUSTRY ANALYSIS – THE NUMBERS

# 8. Domestic air travel

## 8.1. Domestic passenger growth trends

Domestic passenger numbers have increased ten-fold since 1997, however the average 12% annual compound growth conceals considerable volatility, with a pattern of surging growth followed by slowdown and consolidation clearly visible through several cycles (*Chart 9*). As previously noted, the traffic surges typically accompany substantial increases in capacity, through a combination of new airline entrants and aggressive delivery commitments from incumbents. This was at its most extreme in the period from 2003 to 2007, when capacity increased by 150% over five years and passenger numbers more than tripled.

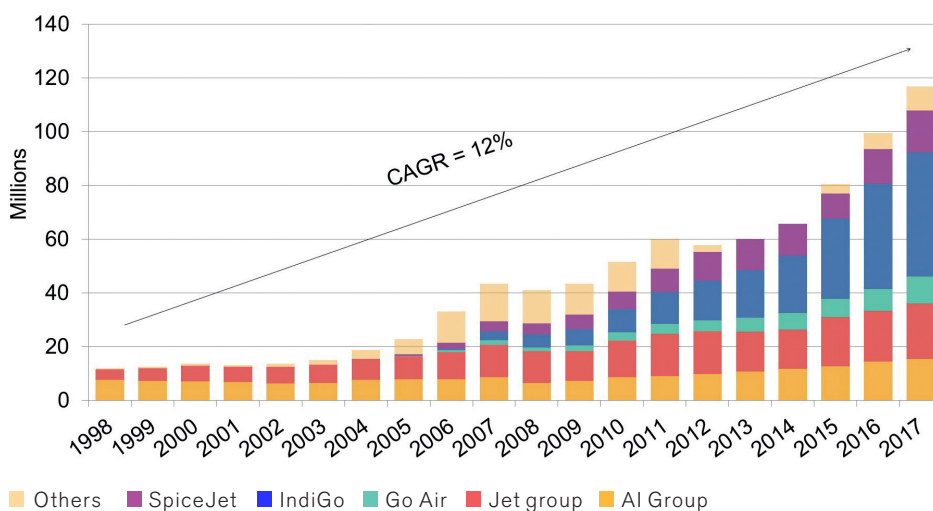


Chart 9: Domestic passenger trends

This led to a sustained rise in load factors, which had been struggling to reach 60% in the first half of the 2000s, but hit 70% in 2007 at the start of the LCC insurgency, with the new business model achieving occupancy premiums of 10% or more compared to the full service carriers (*Chart 10, overleaf*), an advantage that is maintained today.

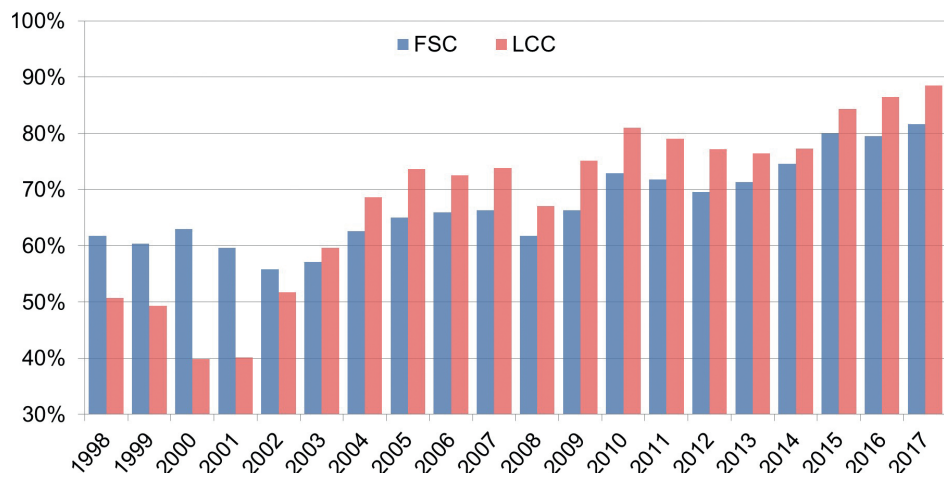


Chart 10: Domestic load factors - FSC vs LCC

Further growth surges occurred in 2010/11 and again from 2015, since when domestic passenger traffic has been growing by 21% per annum. At the same time, despite similarly rapid capacity increases, load factors have moved up well into the mid-80s and are being sustained even during the low season, with 4% points spread between the strongest and weakest quarters – less than half of the spread seen five years ago (*Chart 11*).

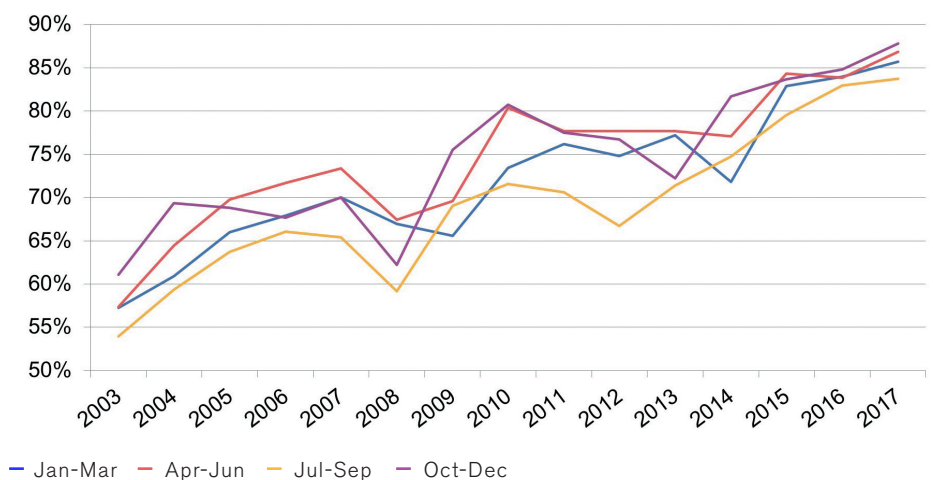


Chart 11: Domestic load factor seasonality

Moreover, although there has continued to be downward pressure on yields, especially in the low seasons, this has not had the destructive impact on profitability that has been experienced in the past, not least because fuel price has been at a more manageable level. Nonetheless, domestic profitability remains susceptible to oil price, which remain the single largest cost item, with price increases having a direct impact on demand when passed on through higher fares.

Within the overall growth patterns, low cost carriers, which now account for 65% of the market, have been growing at 18% annually since 2012, led by IndiGo, compared to 11% growth for the FSCs.

Further growth surges occurred in 2010/11 and again from 2015, with domestic passenger traffic growing by 21% per annum since.

It is notable and relevant to the underlying dynamics of the domestic market that the traffic growth has not been evenly spread across the competitor skyline. IndiGo has contributed the majority of growth since 2012, recording a 26% annual CAGR in passenger numbers, 7%-points ahead of the next fastest growth generator, Go Air (*Chart 12*). The strong growth of “others” is due to new entrants Vistara and AirAsia India.

IndiGo has contributed the majority of growth since 2012, recording a 26% annual CAGR in passenger numbers.

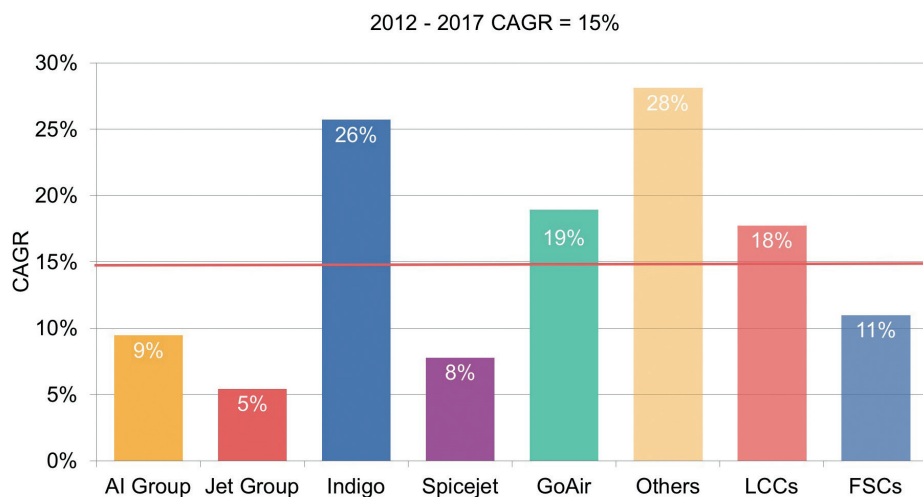


Chart 12: 5 year domestic passenger growth by airline

The growth rate for the domestic market excluding IndiGo has averaged a more modest 10% over the same period. However, since 2015, SpiceJet has out-paced IndiGo, with a 28% annual growth rate as they rebuild their market presence following existential challenges in 2014/15.

These divergent growth patterns can be seen in the market share evolution shown in Chart 13.

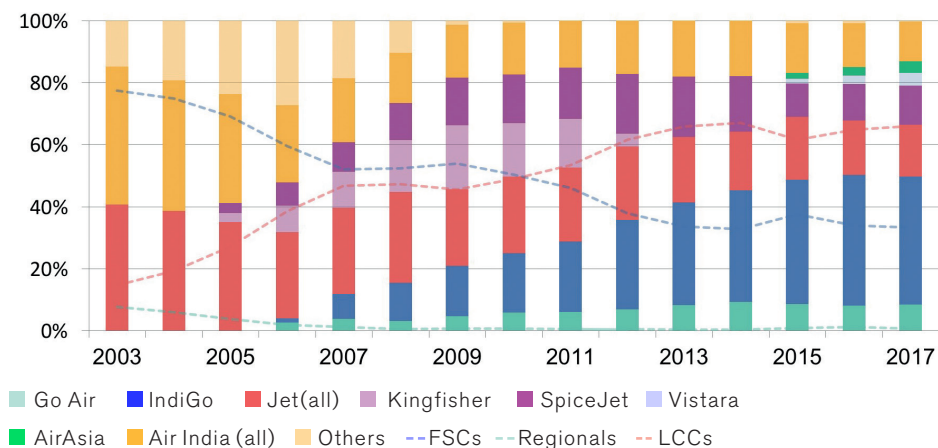


Chart 13: Domestic market shares

## 8.2. Regional domestic traffic patterns

The analysis in the section is based on data extracted from OAG's Schedules and Traffic Analyser tools. The schedules data reflect commercial airline schedules filed and operated during the relevant periods and are an accurate representation of the number of flights and seats available on each sector. The traffic data reflect passenger bookings made on the major GDS systems or with the airlines directly, collected, collated and adjusted by OAG to reflect the actual passenger flows by sector and route. As such, the latter is an estimation of traffic, rather than an exact record, however there is good correlation with the aggregate passenger numbers reported by the Indian DGCA.

In 2017, India's domestic airline network connected 85 airports through a network of 900 city pairs. The number of airports served by commercial airlines has been picking up again in recent years, with a net increase of 11 since 2015. This follows a decline that began in 2012 reflecting the demise of Kingfisher and the broader unprofitable nature of the domestic sector. The number of unique city pairs served has been rising significantly faster of late as airlines "join the dots" between existing bases and spoke cities, with a 35% increase reported since 2015 (*Chart 14*).

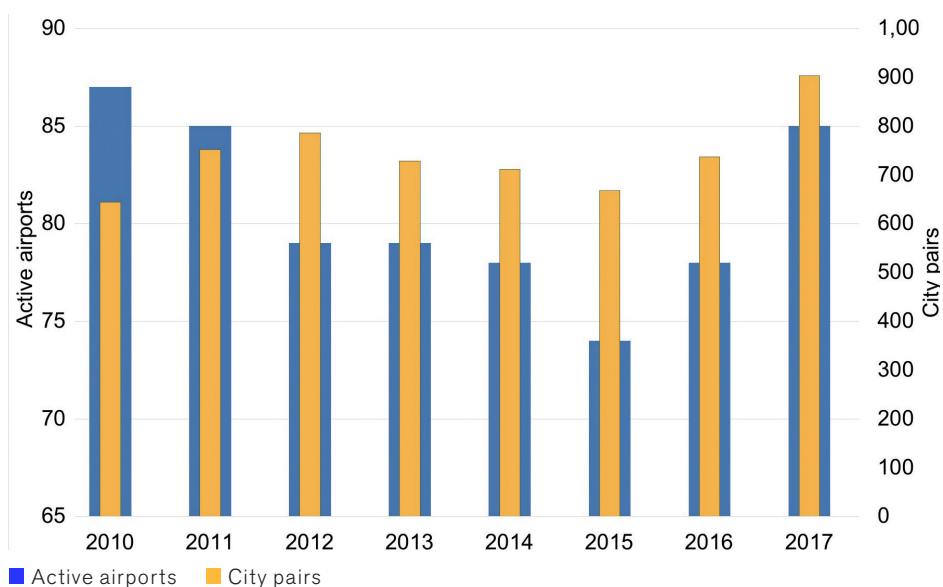


Chart 14: Domestic network development

95% of passengers are travelling on purely domestic itineraries, with only 5% connecting onto international services. 20% of domestic passengers make a transit connection to reach their final domestic destination, leaving 80% of the market able to access direct flights. Well over 90% of domestic passenger journeys are sold in India.

The three largest domestic airports, measured by passenger movements, have remained unchanged in their rankings since at least 2010. Delhi, Mumbai and Bengaluru together account for almost 50% of total domestic passenger volumes. Kolkata, Chennai, Hyderabad, Ahmedabad and Pune all rank consistently in the Top 10 domestic airports, with no change in the Top 10 membership over the past number of years, despite a doubling of total passenger numbers (*Table 2*).

95% of passengers are travelling on purely domestic itineraries, with only 5% connecting onto international services.

Rank		2010		2017	
1	DEL	20,411,597	DEL	45,059,295	Delhi
2	BOM	19,713,973	BOM	31,494,074	Mumbai
3	BLR	9,037,996	BLR	19,616,752	Bengaluru
4	CCU	8,005,633	CCU	15,644,140	Kolkata
5	MAA	7,878,768	HYD	14,234,839	Hyderabad
6	HYD	6,408,236	MAA	13,708,269	Chennai
7	AMD	3,019,074	AMD	7,104,719	Ahmedabad
8	PNQ	2,308,444	PNQ	6,708,298	Pune
9	GOI	2,227,835	GOI	6,041,098	Goa
10	COK	2,185,882	COK	4,639,003	Cochin

Table 2: Top 10 airports ranked by domestic passenger numbers

There has been more movement in the next ten largest airports, with two new entrants (Chandigarh and Vishakhapatnam) and a faster overall increase of almost 150% in the sub-total of passenger volume (*Table 3*).

11	GAU	2,017,583	GAU	4,221,568	Gauahati
12	JAI	1,363,658	JAI	3,714,384	Jaipur
13	LKO	1,171,504	LKO	3,595,010	Lucknow
14	NAG	1,139,249	PAT	2,741,317	Patna
15	CJB	1,134,779	BBI	2,715,251	Bhubaneswar
16	SXR	1,017,079	SXR	2,304,914	Srinagar
17	PAT	893,574	IXC	2,270,639	Chandigarh
18	IDR	888,835	VTZ	2,223,160	Vishakhapatnam
19	BBI	868,990	IDR	2,003,088	Indore
20	TRV	863,957	CJB	2,002,948	Coimbatore

Table 3: Airports ranked 11-20 by domestic passenger numbers

Unsurprisingly, these rankings flow through into the city pair rankings, with DEL-BOM, DEL-BLR and BOM-BLR also consistently showing the largest traffic flows. DEL-BOM now has the 3rd largest volume of passenger flows globally. In total, almost 30% of domestic passengers flew on the 12 Trunk Route city pairs that connect the largest cities in India. BOM-DEL accounts for over 6.5 million one-way passengers, almost twice the size of the next city pair (*Table 4*).

DEL-BOM	6,763,535
DEL-BLR	3,701,092
BOM-BLR	2,985,706
DEL-CCU	2,873,818
DEL-PNE	2,393,656

Table 4: Top 5 domestic city pairs 2017

The challenges of developing and sustaining “lifeline” air services to remote communities is evidenced in the fact that less than 5% of all passengers in 2017 travelled on the regional connectivity Category II routes, amounting to 5 million passenger journeys.

The remaining 2/3rds flew on Category III routes, which connect large and mid-sized cities as well as smaller conurbations that are outside the designated “regional” areas. This segment is where much of the growth is taking place (*Chart 15*), with increases averaging 18% per annum since 2015. Category III routes are now approaching 70% of total traffic, up from 60% in 2010.

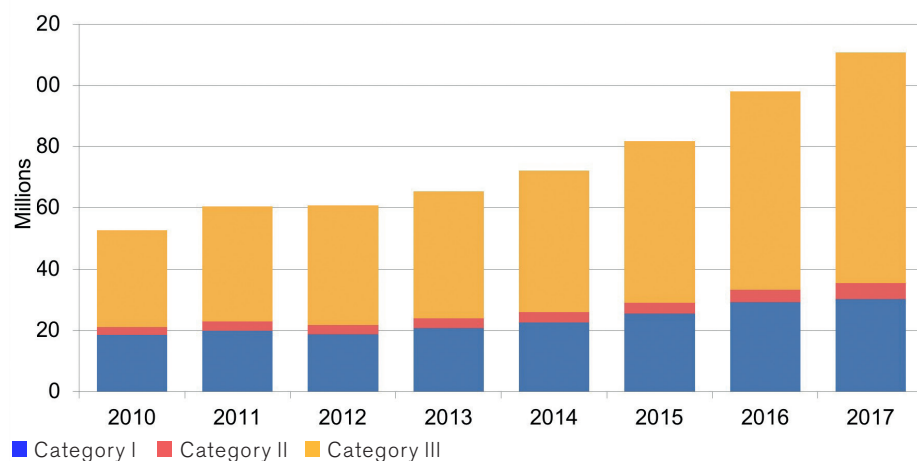


Chart 15: Passenger trends by route category

The traffic share accounted for by the Category II regional connectivity routes has remained relatively constant over the same period, despite the route dispersal guidelines. There are signs that the UDAN initiative is starting to overcome this resistance to providing regional lifeline services, with growth of 28% in 2017 compared to 13% and 4% in the preceding two years.

At the same time, traffic growth on the Trunk routes has been slowing, reflecting a level of saturation exacerbated by airport and airspace congestion. Trunk passenger numbers have averaged 11% annual growth since 2012, 33% slower than the growth of Category III traffic.

Within the broad trends lie some particularly strong growth cities, with 10 recording traffic increases in excess of 12.5% in 2017 and handling over 40% of total traffic (*Table 5*).

		2012-2017	2017
Code	City	CAGR	Passengers
UDR	Udaipur	23.8%	1,117,469
VNS	Varanasi	22.1%	1,667,257
VTZ	Vishakhapatnam	15.6%	2,223,160
GOI	Goa	15.4%	6,041,098
IXB	Bagdogra	15.2%	1,851,434
ATQ	Amritsar	14.9%	1,607,145
BLR	Bengaluru	14.7%	19,616,752
IXR	Ranchi	12.8%	1,624,654
COK	Cochin	12.7%	4,639,003
PNQ	Pune	12.5%	6,708,298

Table 5: Fastest growing cities with >1 million passenger volume in 2017

### 8.3. Domestic airline competitiveness

The size of the domestic market, the number of routes and frequencies and the number of active airlines all support a view that market concentration is not a significant concern. The Herfindahl-Hirschman Index (HHI) is a measure of market concentration based on the sum of the squares of each participant's market share. In markets where there is a single supplier, the resulting value would be  $100\%^2$ , or 1 and, at the other end of the scale, multiple competitors would take the score towards zero, signifying perfect competition.

In the early phase of liberalisation, the HHI scores indicated a highly concentrated market. However, from 2006, the HHI scores started to decline, quite rapidly, as new airlines entered the market, moving the concentration down into “moderate” and, briefly, to “unconcentrated”. Since 2012, the HHI score has steadily risen, mainly reflecting IndiGo's growing market share, but remains within the “moderate” range (*Chart 16*).

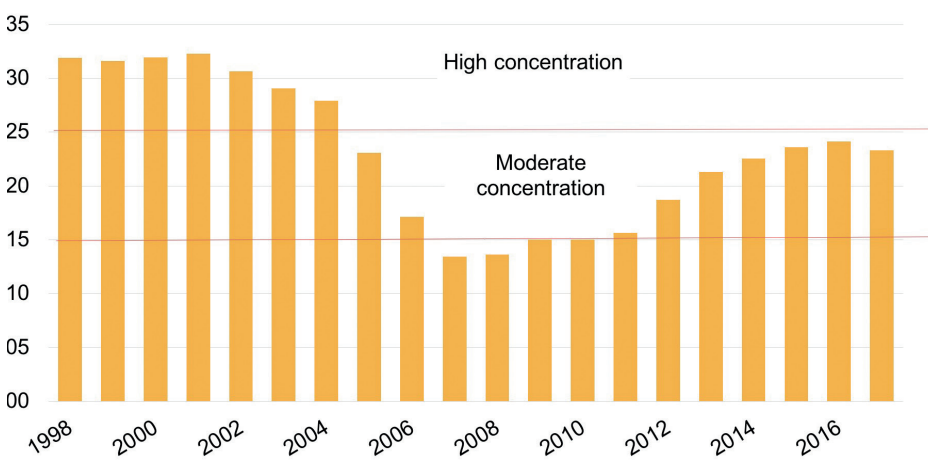


Chart 16: Domestic airline HH Index

Another measure of competitiveness frequently used by airlines to compare their effectiveness in capturing market share is the Competitive Performance Index, or CPI. This is a simple ratio of market share : capacity share. On any route or market, the aggregate CPI will be 1 (100% of the market divided by 100% of the seats). Each airline competing in that market will have a CPI at, above or below 1. A score below 1 indicates a worse than average competitive performance, since the market share achieved relative to the seats offered is less than the average. Conversely, a CPI greater than 1 indicates better than average competitive performance.

Chart 17 shows that, whilst there remain clear competitive differences between airlines and between categories of airline (with LCCs consistently out-performing FSCs seat for seat), the spread of CPI has substantially narrowed over the past decade or so, as more carriers have entered the market, which itself has become more accessible from a regulatory standpoint and as airlines have all, more or less, figured out how to fill seats to 80% load factors and above. What the CPI trend does not describe is how yields may have changed over time in order to achieve the consistently high load factors.

It is notable that the two most recent market entrants, AirAsia and Vistara, have both established strong competitive positions very quickly.

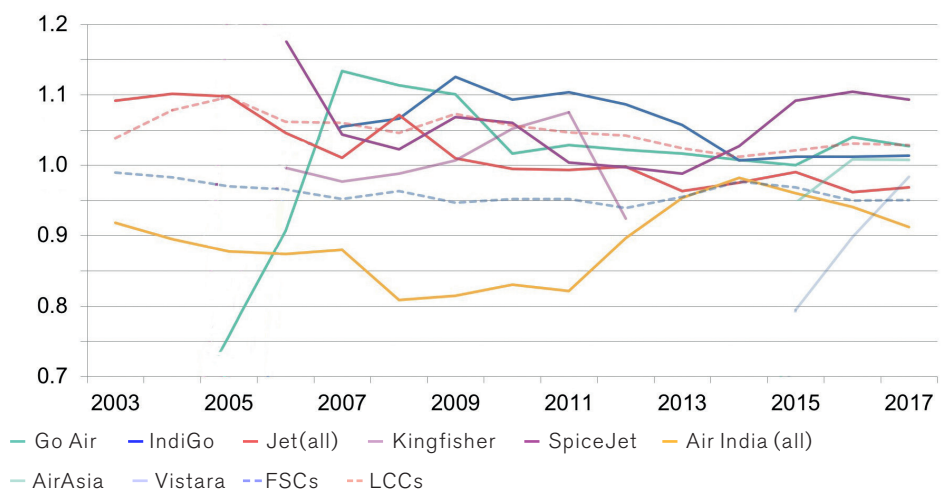


Chart 17: Domestic CPI

It is notable that the two most recent market entrants, AirAsia and Vistara, have both established strong competitive positions very quickly, with Vistara already ahead of the FSC average CPI performance level. Air India, following a period of strengthening performance from 2011 to 2015, has since fallen back, seemingly in a mirror image of SpiceJet, which now has the highest CPI performance, by a substantial margin.

## 8.4. Domestic passenger traffic and fleet forecasts

GDP remains a strongly correlated driver of air travel demand at global and regional levels, however additional forces are at work in the Indian domestic market, linked to both supply and demand factors, which are creating a growing divergence in growth rates (*Chart 18*).

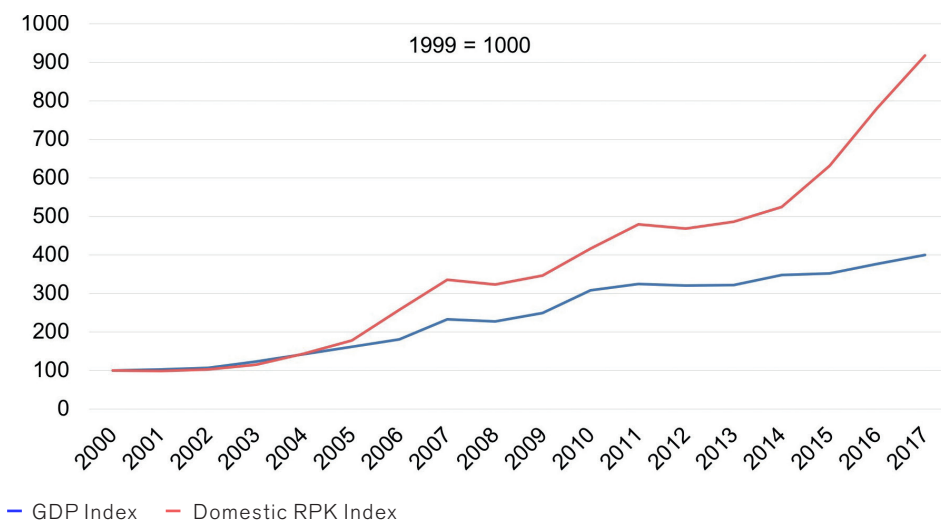


Chart 18: Indian GDP vs Domestic RPK growth

Demand for domestic air travel clearly benefits from the strong underlying economy, as wages and disposable incomes rise and the expanding middle class population, including significant numbers of migrant workers within the domestic market, experiences the benefits and affordability of air travel. A more open regulatory environment also helps to drive demand, with most of the increase in traffic coming in the form of price-sensitive leisure travel, which will benefit the LCC sector, thereby further increasing its share of the market. However, areas of potential friction to underlying demand should be expected.

Factors that could moderate actual growth rates may be economic or resource driven and may include fuel price, airport congestion, pilot shortages (both a resource and a cost factor), exchange rates and over-capacity. The rate of expansion of middle-class wealth may also be over-estimated, with competing demands for their disposable income making air fare affordability a key growth factor.

Regression modelling has been used to identify the significant independent variables that can be used to represent key historical influencers of demand which are expected to remain relevant into the future. In addition to a GDP variable, in this case a per capita purchasing-power-parity metric, the size of the “millennials” population is included, along with the market share of the LCCs.

Demand for domestic air travel clearly benefits from the strong underlying economy, as wages and disposable incomes rise and the expanding middle class population .

The resulting forecasting model achieves a statistical R2 value of 0.98 when applied to domestic RPK growth from 2003 to 2017 (*Chart 19*).

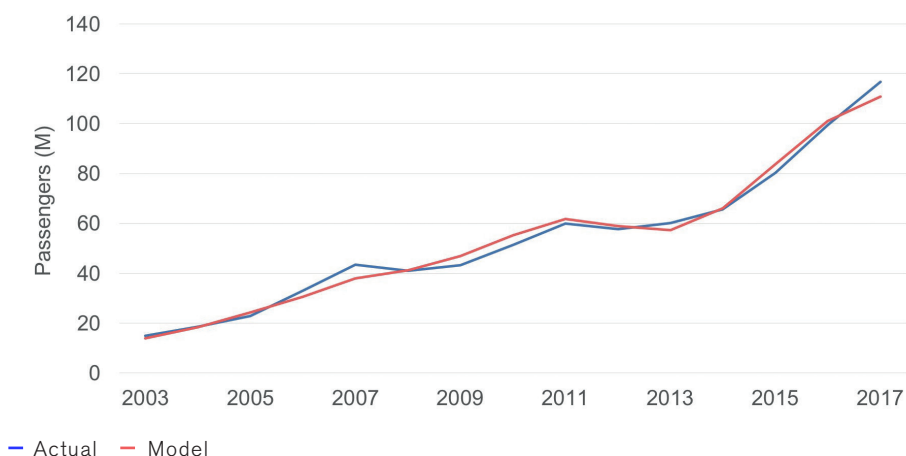


Chart 19: Domestic passengers - actual vs modelled

The future projections of domestic RPK growth out to 2027 that have been made using this model are themselves dependent on forecasts for each of the independent variables. In summary, these are as follows:

Independent Variable	Forecast	Source
Indian GDP per Capita (PPP)	2018-'22: 8.6% CAGR 2018-'22: 8.6% CAGR	IMF Avolon
INR: USD exchange rate	0.5% annually	Longforecast.com
Millennial population (20-39 yrs)	477m by 2027	World Bank
LCC penetration	70% by 2026	Avolon

The model predicts an average growth rate for Indian domestic passengers of 9.6% per annum over the decade out to 2027.

Applying these inputs, the model predicts an average growth rate for Indian domestic passengers of 9.6% per annum over the decade out to 2027, comprising an average of 11% from 2018-2022 and 8.5% from 2023-2027 (*Chart 20*).

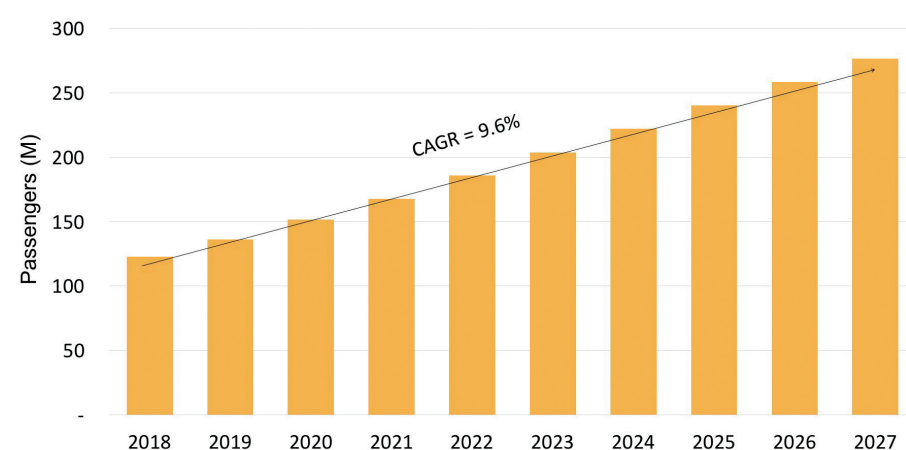


Chart 20: Domestic passenger forecast

As noted, a number of external factors have the potential to slow the growth from forecast levels. However, the underlying demand forecast produces a 150% increase in passenger numbers over ten years, which should focus the minds of all the stakeholders to ensure that the necessary infrastructure and resource investments are made to support these levels.

## 9. Indian tourism

Tourism, as measured by international tourism bodies, has a wide definition that includes all “foreign” travellers arriving or departing the country for any purpose. Business travellers and migrant workers will appear in tourism statistics, along with many other categories other than the commonly understood leisure or vacation traveller. The methods of capturing and categorising tourists can vary widely, may reflect either nationality or residence and be captured at their arrival or departure points or through hotel registrations.

### 9.1. Indian outbound market

Outbound tourism data are not directly collected by Indian authorities, which rely on data collected by immigration and tourism authorities in destination countries and reported through the UN World Tourism Organisation (“UNWTO”). This source of collated data contains detailed, aggregate numbers of Indian arrivals overseas, however the collection methodologies vary considerably by country, as does the definition of the traveller, who may be identified either by nationality or by residence. The numbers are also distorted by the number of multi-destination trips taken in which the traveller is counted separately across each border, or even in some cases on the basis of hotel nights.

However the numbers are tabulated, the scale of the Indian outbound travel market is modest, at between 10 million and 12 million trips per annum. Although ranked #12 globally, this is less than 10% of the Chinese outbound market, which has a similar population, albeit with 1.3x higher per capita GDP. This highlights the potential for future growth, linked to rising disposable income within a fast-expanding middle-class.

Virtually all outbound Indian travellers depart by air, with four of the top five “tourist” destinations located in the Gulf region and 7 of the top 10 having more than 1 million travellers in 2016. The mix of destinations reflects the diverse reasons for travel within the Indian outbound market. The USA tops the non-migrant worker destinations, followed by Singapore, Thailand and China (*Table 6*).

		Thousands
1	Dubai	1,800
2	Saudi Arabia	1,619
3	Bahrain	1,226
4	USA	1,172
5	Kuwait	1,139
6	Singapore	1,097
7	Thailand	1,077
8	China	799
9	Malaysia	639
10	Hong Kong	481

Table 6: Top 10 Indian outbound tourism markets (2016)

## 9.2. Indian inbound market

In 2016, almost 9 million inbound tourists visited India, with more than 10 million estimated in 2017, which ranks India #40 in the Tourism Competitiveness Index and contributes almost 7% to India's GDP. This surprisingly low ranking does not reflect the wealth of natural and cultural attractions that India offers, but India continues to lose out to other Asian destinations, partly due to relatively poor air connectivity.

Inbound growth has been modest, averaging 7% per annum over the past decade, despite strong tourism promotion in the major markets, which are led<sup>11</sup> by the USA and the UK, which generated 1.3 million and 950,000 visitors respectively in 2016 (*Table 7*).

Nationals / residents	Visitor Arrivals	Reason for Travel				
		Business	Leisure	Medical	NRI	Other
USA	1,296,939	12%	50%	0%	34%	4%
UK	941,883	14%	53%	0%	28%	5%
Canada	317,239	5%	61%	0%	31%	4%
Malaysia	301,961	8%	81%	0%	9%	3%
Sri Lanka	297,418	16%	71%	1%	10%	3%
Australia	293,625	10%	51%	0%	37%	2%
Germany	265,928	30%	60%	0%	8%	1%
China	251,313	48%	48%	0%	3%	1%
France	238,707	21%	68%	0%	8%	3%
Russia	227,749	11%	87%	0%	1%	1%

Sources: Indian Ministry of Tourism; UNWTO

Table 7: Top 10 Indian inbound tourism markets (2016) by reason for travel

In a distant 3rd place ranking are Canada, Malaysia, Sri Lanka and Australia, each with around 300,000 visitors. Again, compared to China, the inbound visitor market appears to be significantly under-developed with substantial potential for further growth, which will require investment in core infrastructure such as hotels, as well as in further improvements to air access. With the exception of China, visitors from the largest markets are overwhelmingly leisure travellers.

85% of inbound tourists arrive by air, with most of the balance accounted for by land arrivals from Bangladesh and Pakistan. 60% of inbound arrivals are male, reflecting the influence of the business and, to a lesser extent, migrant worker elements in the overall mix.

An important component of India's visitor arrivals is the Non-Resident Indian ("NRI") market, consisting of the deep and widespread diaspora of Indian nationals that are living outside India. Many of these have business interests in India or return regularly to visit family and friends and the traffic generated by NRIs amounts to almost 6 million arrivals per annum, increasing the total arrivals numbers by 65%.

In 2016, almost 9 million inbound tourists visited India, with more than 10 million estimated in 2017.

11. The largest inbound market in absolute numbers is Bangladesh, with 1.4 million visitors. However, since less than 15% arrive by air, it has been excluded from the rankings.

## 10. The international aviation market

Air India and AI Express accounted for less than 43% of India's market share, and an overall 17% share of the international market.

In 2017, almost 60 million passengers were carried on flights to 115 destinations in 57 countries. However, although 44% of trips were booked in India, only 39% of the passengers were carried by Indian airlines. Air India and AI Express accounted for less than 43% of India's market share, and an overall 17% share of the international market, as reported by India's DGCA (*Chart 21*).

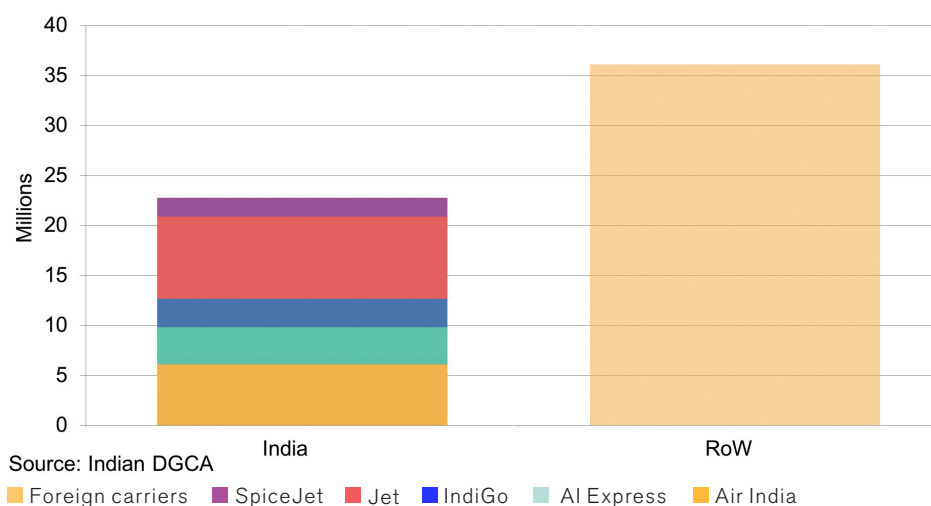


Chart 21: India's 2017 international passenger share

Jet Airways carried over 8 million international passengers in 2017, a 14% market share. IndiGo and SpiceJet, which also operate some regional services outside India, increased their passenger numbers by 37% last year to reach a combined 8% market share.

India's underachievement in international market share is long-standing (*Chart 22*) and arises from Air India's poor financial performance over decades, which

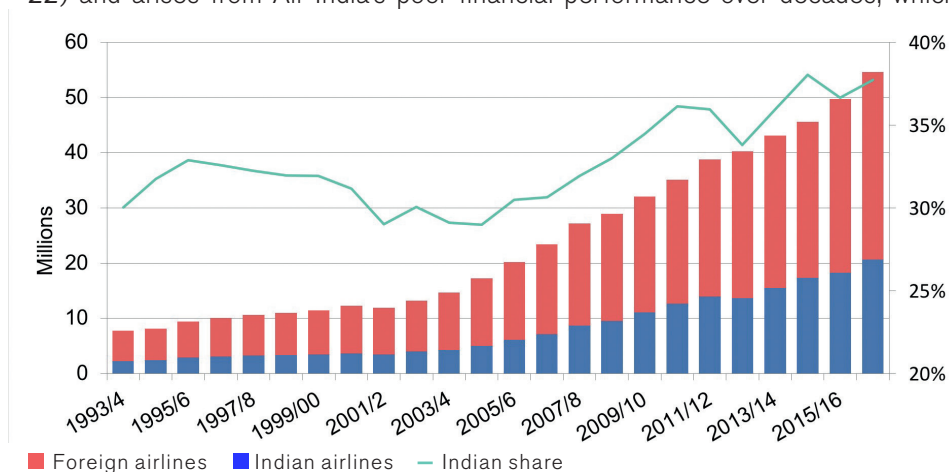


Chart 22: International passenger market trend

Over the past 20 years, Air India's international passenger traffic has averaged growth of 5.2% per annum against an Indian market growth rate of 8.8%.

has resulted in chronic under-investment and a lack of available capacity to grow in line with India's global economic and political presence. Although other Indian airlines have been active in selected overseas markets since 2004, foreign carriers have effectively exploited India's lack of capacity to the fullest extent of bilateral agreements, assisted in the more recent past by the Indian Government's more liberal approach to route rights.

Over the past 20 years, Air India's international passenger traffic has averaged growth of 5.2% per annum against an Indian market growth rate of 8.8%. Recent improvements in Indian market penetration have been achieved as a result of a re-fleeting programme by Air India (which took its international traffic growth up to the market average in 2016/17) and expanded activity by private airlines such as Jet Airways. However, significant opportunities remain for Indian carriers to exploit the share deficit as the level of traffic "leakage" over intermediate points on foreign carriers is substantial (see Section 10.8).

### 10.1. Segmenting the traffic flows

International passenger traffic can be segmented into 5 discrete traffic flow patterns that reflect the routing and ultimate origin and destination of the passengers (Chart 23). The simplest traffic flow is the direct origin-destination (O&D) passenger, who completes their entire journey on a single flight from A to B. Domestic connecting passengers make up the next category, either connecting from a domestic airport onto an international flight or taking a flight onwards on arrival to a final destination in that country, or both. Then comes the international connecting passenger, who is travelling from a behind country to connect or travelling beyond the arrival airport. Finally, "bridge" passengers are making international connections at both ends of the route and have no direct interest in the countries at either end of the direct flight – the classic 5th & 6th Freedom "hub connectors".

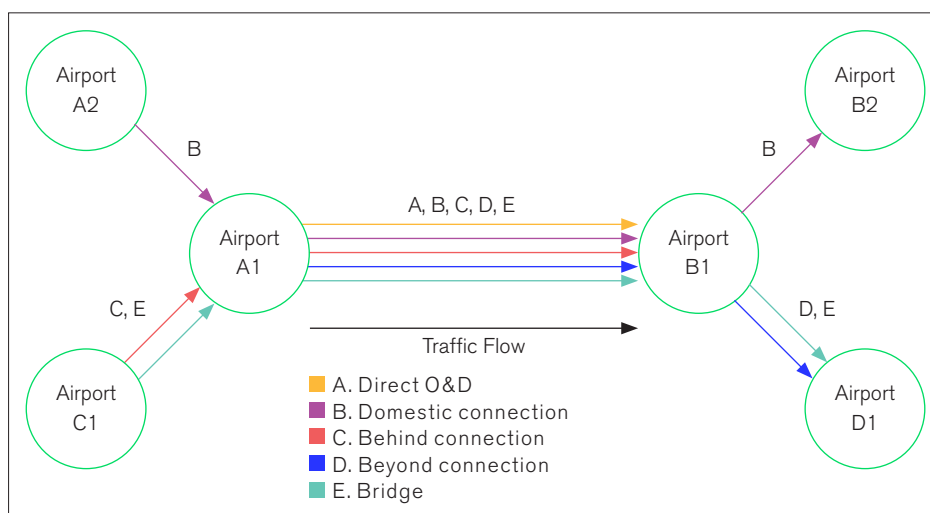


Chart 23: Schematic of international traffic flows

In 2017, 63% of all India's international passengers were direct O&D, travelling between India and the country at the other end of the route flown (*Table 8*). Furthermore, half of all passengers were single flight O&D travellers with no domestic or international connections made at either end of the route. This is below than the global average, which is around 60%, suggesting an under-supply of direct capacity.

Direct	31,587,315	51%
Connect within India	5,461,221	9%
Domestic connect other end	2,008,164	3%
Connect both ends	221,705	0%
Behind	1,487,013	2%
Beyond	20,543,466	33%
Bridge	77,055	0%
Total	61,385,939	

Source: OAG Traffic Analyser

**Table 8: 2017 International passengers by flow**

Only 3% of passengers make domestic connections at their overseas origin or destination airports, a level that is heavily influenced by large overseas markets with no domestic hinterland – Dubai. Abu Dhabi, etc.

The numbers making domestic connections within India are also low, at 9%. This, along with the high proportion of direct O&D traffic, can be explained by the level of airline (Indian and foreign) penetration into large secondary markets in India that generate strong demand for international travel. For example, in 2017 Emirates connected 9 Indian cities with Dubai, Etihad served 11 Indian airports and Qatar offered 13. LCC services also penetrate deep into the Indian hinterland – Air Arabia serves 13 cities, with 9 for FlyDubai. IndiGo and SpiceJet each connect 10 cities to the Gulf region, whilst Jet Airways offers Middle East service from 13 cities and Air India/AI Express serve 19 cities (*Table 9*).

Airline	Indian cities served
Emirates	9
Etihad	11
Qatar Airways	13
Air Arabia	13
FlyDubai	9
Air India/AI Express	19
Jet Airways	13
IndiGo	10
SpiceJet	10

**Table 9: Direct services to the Gulf**

Relevant to the above competitive dynamic is the fact that a third of all passengers are making international connections beyond their overseas gateway airport, with 55% of these connections happening the Middle East.

In contrast, a meagre 2% of passengers made international connections behind their Indian gateway. The level of bridge passengers is also negligible, at only 77,000, both of which facts confirm that India does not promote or support a viable hub transfer capability. This is primarily driven by the airlines' business models, which have remained focussed on local market requirements rather than developing 5th/6th freedom opportunities, where they would be in head to head competition with their Gulf neighbours. The capability and cooperation of the major Indian airports is also a factor.

Table 10 summarises the breakdown of O&D and connecting traffic for each of the regions and the following sections summarise the characteristics and recent traffic performance of each of the six largest regions.

	MEA	SE Asia	Europe	South Asia	North Asia	Americas	CIS	SW Pacific
O&D	19,900,872	7,774,212	3,165,411	4,231,727	2,094,390	1,432,503	537,303	147,500
Behind India	332,530	165,457	281,023	589,509	52,893	20,315	23,969	14,807
Beyond Other End	11,620,946	3,266,343	2,939,947	933,391	1,364,104	68,618	340,214	11,149
<b>Total</b>	<b>31,877,855</b>	<b>11,219,469</b>	<b>6,414,957</b>	<b>5,760,469</b>	<b>3,514,356</b>	<b>1,521,813</b>	<b>902,867</b>	<b>174,153</b>
Beyond %	36%	29%	46%	16%	39%	5%	38%	6%

Source: OAG Traffic Analyser

Table 10: 2017 International passenger summary

## 10.2. Middle East - the largest market

More than 50% of India's international passengers flew on routes to or from the Middle East & Africa (MEA) region amounting to almost 32 million one-way journeys in 2017, of which Indian carriers carried 40%.

Over 95% of MEA traffic flies to six countries – UAE, Saudi Arabia, Oman, Qatar, Kuwait and Bahrain, in descending order of magnitude, with almost 80% of the market accounted for by the top 3 countries (*Table 11*). In total, 143 city pairs were operated in 2017 linking 23 Indian cities with 29 destinations in the Middle East and Africa.

Almost 40% of the region's passengers are connecting to or from other international flights in the Middle East, however this proportion increases to more than 60% for Qatar and Bahrain, reflecting the business models of those country's airlines and the very small local markets.

Whilst the overall level of connecting traffic over the UAE is only 40%, the three main UAE markets of Dubai, Abu Dhabi and Sharjah have very different air travel characteristics. 2/3rds of traffic through Abu Dhabi is making an international connection, similar to the Qatar and Bahrain markets, whilst at Sharjah, although dominated by Air Arabia, there is no connecting traffic to speak of. This suggests that Air Arabia is carrying a significant share of the price-sensitive UAE migrant worker market.

	Total	O&D	Behind	Beyond	Beyond %
UAE	17,513,956	11,046,726	76,533	6,378,263	40%
Saudi Arabia	3,719,451	3,460,445	103,657	155,231	4%
Oman	3,597,803	2,164,268	15,379	1,417,552	36%
Qatar	3,272,085	1,432,206	82,602	1,756,756	61%
Kuwait	1,348,783	841,637	14,896	492,176	30%
Bahrain	1,157,560	399,837	18,427	738,599	66%
Others	1,268,217	555,753	21,036	682,369	52%
Top 6	30,609,638	19,345,119	311,494	10,938,577	38%
<b>All MEA</b>	<b>31,877,855</b>	<b>19,900,872</b>	<b>332,530</b>	<b>11,620,946</b>	<b>39%</b>
Indian airlines	12,950,524	41%			
Within UAE:					
DXB	11,070,978	7,028,989	49,066	3,988,520	39%
AUH	3,831,213	1,415,804	21,960	2,385,419	65%
SHJ	2,550,786	2,544,188	2,275	4,322	0%

**Table 11 : One-way passengers India - MEA**

Surprisingly, less than 40% of traffic through Dubai makes a connection, despite the presence of Emirates, which carries 50% of the total India-Dubai passenger flow. This low level of connecting traffic may be explained by the significantly larger scale of Dubai's non-oil economy and the consequent size of the migrant workforce, 50% of which are from the Sub-Continent.

Also of note in the UAE market is that Emirates/FlyDubai has the smallest market share of the three major UAE carriers, with both Etihad and Air Arabia accounting for more than 2/3rds of the passenger traffic in their respective home markets (*Table 12*).

	India	UAE
Dubai	50%	50%
Abu Dhabi	31%	69%
Sharjah	41%	59%

**Table 12: Airline market shares of India-UAE**

The six largest markets are extensively served from 34 Indian cities, with operations on 160 city pairs (*Table 13*). Sales are divided broadly equally with a third of bookings made in India, a third in the Middle East and a third elsewhere.

	Indian Cities	City Pairs
UAE	23	56
Saudi Arabia	12	33
Oman	24	27
Qatar	14	14
Kuwait	12	12
Bahrain	18	18
<b>Total</b>	<b>34</b>	<b>160</b>

**Table 13: Middle East network coverage**

Traffic on services to and from Africa amounted to 1.4 million one-way passengers in 2017, of which Ethiopia accounted for 35%, over 85% of which connected beyond Addis Ababa.

60% of the inbound tourism market from the MEA region is visiting for leisure purposes, with an additional 15% travelling to India for medical reasons, the highest proportion globally. Only 12% of visitors to India are travelling on business, with NRIs accounting for a further 7%.

As the largest outbound market, the MEA countries reported almost 4 million tourist visitors from India in 2016, including business travellers and migrant workers alongside VFR (visiting friends and relatives) and vacation travellers.

Given the importance of the business and worker elements of this market, it is unsurprising that the economic performance of both markets is highly relevant to historical and future traffic growth.

### 10.3. South East Asia

Southeast Asia is India's second largest international passenger region, with over 11 million one-way trips flown in 2017. However, only three countries feature in any meaningful way - Malaysia, Singapore and Thailand - with 4.4, 3.9 and 2.8 million passengers respectively (*Table 14*)

	Total	O&D	Behind	Beyond	Beyond %
Singapore	4,398,910	2,966,080	31,854	1,396,938	32%
Thailand	3,860,741	2,850,390	124,152	877,537	23%
Malaysia	2,817,707	1,829,291	8,100	979,559	35%
Others	142,111	128,451	1,351	12,309	9%
<b>All SE Asia</b>	<b>11,219,469</b>	<b>7,774,212</b>	<b>165,457</b>	<b>3,266,343</b>	<b>29%</b>
Indian Airlines	3,337,663	30%			

Table 14: 2017 One-way passengers India - SE Asia

Services to the region encompass 74 city pairs connecting 22 cities in India to 11 cities in the region. The wide market coverage in India underscores the importance of the region, yet only 30% of the traffic is carried by Indian airlines, with services operated by SpiceJet (2%), IndiGo (5%) and Jet (12%) as well as Air India and AI Express (11%). Most of this regional deficit is due to having a very limited presence in Malaysia, whereas India's traffic shares in Singapore and Thailand are 42% and 35% respectively.

Over 70% of the inbound tourism market from the region is visiting for leisure purposes, whilst a further 13% are medical tourists. Only 13% of visitors to India are travelling on business and a similar proportion are NRIs. Similarly, outbound travel is predominantly leisure driven.

### 10.4. North Asia

This region, which includes China, saw 3.5 million one-way passengers carried in 2017, of which 900,000 were travelling directly to/from China. Although the

combined population of the two countries totals some 2.5 billion people, the market is extremely under-served, partly due to bilateral limitations, but also reflecting long-standing political tensions between the two countries. There are currently only 35 round trip frequencies a week operated by Air India plus 4 Chinese airlines between 3 cities in India and 4 in China.

Within the region, Hong Kong has the largest passenger flows, with 1.6 million one-way passengers in 2017, of which over 50% connect beyond, with 30% of these (250,000) connecting to or from China. Demand to and from Japan is also growing and reached almost 550,000 in 2017, with Korea also gaining ground (*Table 15*).

	Total	O&D	Behind	Beyond	Beyond %
Hong Kong	1,593,453	720,951	31,344	839,289	49%
China	929,763	590,786	9,662	328,572	32%
Japan	548,057	487,885	7,978	52,149	11%
Korea	367,861	259,825	3,800	103,934	26%
Taiwan	71,524	31,245	109	40,160	40%
Others	3,698	3,698	0	0	40%
<b>All North Asia</b>	<b>3,514,356</b>	<b>2,094,390</b>	<b>52,893</b>	<b>1,364,104</b>	<b>37%</b>
Indian Airlines	869,447	26%			

**Table 15: 2017 One-way passengers India - North Asia**

In total, 32 city pairs connect India to the region, linking 6 Indian cities and 17 markets in Southeast Asia.

Indian carriers are again under-represented, with barely 25% of the overall market, including less than 20% in China, under 10% in Korea and no service to Taiwan.

50% of inbound tourist traffic from North Asia is travelling on business, the largest regional percentage by a significant margin. Most of the balance (44%) are leisure travellers, however the largest generator of outbound tourism in the region, China, has yet to make a significant mark on India, with only 250,000 arrivals recorded in 2016 and ranking 8th overall for visitors to India. The forecast for this market assumes that there is no significant shift in the political and economic relationship between India and China, which could have very a significant impact on traffic flows.

Almost 1.8 million Indians visited destinations in North Asia during 2016, making this the third largest regional destination. China accounts for over 40% of the total, with leisure travel accounting for a high proportion of visitors from India, suggesting that political considerations have less impact on Indian travel plans than on Chinese travellers.

## 10.5. South Asia

This region includes India's near neighbours of Pakistan, Sri Lanka, Bangladesh and Nepal and accounted for 5.8 million passengers in 2017 (*Table 16*), an increase of almost 1 million over 2016.

	Total	O&D	Behind	Beyond	Beyond %
Sri Lanka	2,620,450	1,610,131	128,751	876,145	31%
Nepal	1,289,502	966,054	318,943	4,481	1%
Bangladesh	989,715	855,735	106,955	27,004	3%
Others	860,802	799,807	34,860	25,761	3%
<b>All South Asia</b>	<b>5,760,469</b>	<b>4,231,727</b>	<b>589,509</b>	<b>933,391</b>	<b>15%</b>
Indian Airlines	2,620,948	45%			

Table 16: 2017 One-way passengers India - South Asia

These relatively short-haul regional markets, with a preponderance of direct O&D travellers, have seen more activity from Indian operators, with services provided by Jet Airways, SpiceJet and IndiGo as well as Air India which together have secured a 45% market share for India.

Sri Lanka is the largest market in the region, accounting for almost 50% of total traffic, and also has the only significant level of connecting traffic, at 31%. 50% of this traffic is moving to and from the Gulf region and it is likely that much of its Indian catchment area is in the south of the country, from where it is more convenient to make connections via Sri Lanka than through northern Indian cities.

With over 900,000 visitor arrivals by air recorded in 2016, South Asia is India's 3rd largest inbound market, excluding land border crossings. Sri Lanka generates the largest travel flows, accounting for a third of the total, of which more than 70% are leisure travellers, with 16% business and 10% NRIs.

## 10.6. Europe

Almost 6.5 million one-way passengers travelled on direct services between India and Europe in 2017, accounting for over 10% of the total international market (*Table 17*).

	Total	O&D	Behind	Beyond	Beyond %
United Kingdom	2,566,096	1,723,213	105,362	732,372	29%
Germany	1,354,085	429,806	28,010	892,153	66%
France	685,167	315,033	76,428	290,255	42%
Turkey	467,834	63,787	52	403,619	86%
Others	1,341,775	633,572	71,171	621,548	46%
<b>All Europe</b>	<b>6,414,957</b>	<b>3,165,411</b>	<b>281,023</b>	<b>2,939,947</b>	<b>46%</b>
Indian Airlines	2,451,594	38%			

Table 17: 2017 One-way passengers India - Europe

Unsurprisingly, the UK is the largest market in the region, with 2.6 million passengers, with Indian airlines taking a 53% share in one of their strongest markets. 28% of inbound tourists are NRIs and 53% of travellers are vacationers, with just 14% on business. 30% of passengers on the route make connections beyond the UK and 80% of these connect to North America.

Germany is also a significant market, with 1.4 million passengers in 2017, but India's airlines have only an 11% share. The NRI market is much smaller than the UK, at 8% of inbound tourist traffic, however 30% of visitors are travelling on business, with 60% leisure.

Note also the size of the Turkish market, at more than 460,000 passengers in 2017, all carried by Turkish Airlines and almost all connecting beyond Istanbul. 45% of passengers at other airports are also connecting beyond their European gateways, which include Amsterdam and Zurich which both have significant 5th/6th freedom flows.

## 10.7. The Americas

Although in the plural, this market is limited to North America, linked to the large Indian diaspora living in the USA and Canada. In 2017, over 1 million passengers travelled between India and the USA, with a further 400,000 to and from Canada (*Table 18*). These are the only two markets in the Americas served directly from India, with no direct links to the entire South American continent. In addition to the O&D traffic, over 70% of the beyond connections were for the USA via Canada or for Canada via the USA.

The high Indian national content of the passengers helps to secure a market share of almost 60% for Indian airlines, with Air India's long-term market presence in the US augmented by Jet Airways in Canada. This strong performance can be partly explained by the fact that one third of US-originating travellers are NRIs, making the US the largest generator of NRI passengers globally.

	Total	O&D	Behind	Beyond	Beyond %
USA	1,121,375	1,084,661	8,376	28,246	3%
Canada	400,438	347,842	11,939	40,372	10%
<b>All Americas</b>	<b>1,521,813</b>	<b>1,432,503</b>	<b>20,315</b>	<b>68,618</b>	<b>5%</b>
Indian Airlines	867,800	57%			

Table 18: 2017 One-way passengers India - Americas

## 10.8. Indirect traffic leakage

The extent to which 5th/6th freedom specialist carriers have been encroaching on the Indian market has been steadily increasing. This trend, which reflects the underlying power of the business model adopted by the Gulf aggregator airlines and others such as Turkish Airlines, has been given a strong boost by the strategic position taken in the Indian market by Etihad as well as by the expanded bilateral agreement between India and the UAE in particular and India's gradual move towards more open skies more generally.

Over 20 million passengers made international connections beyond their overseas origin or destination airport in 2017, representing 33% of all passengers tin and out of India. 19 million of these flew on foreign airlines, with over 9 million connecting on six airlines – Emirates, Etihad, Qatar Airways, Gulf Air, Turkish Airlines and Singapore Airlines (*Table 19*).

Airline	All passengers	Connecting passengers
Emirates	5,118,361	3,492,542
Etihad	2,626,640	2,049,647
Qatar	2,236,995	1,737,889
Singapore	1,377,833	827,150
Gulf Air	921,632	736,945
Turkish	467,834	403,619
<b>Sub-total</b>	<b>12,749,295</b>	<b>9,247,792</b>

Table 19: Connecting traffic leakage 2017

The largest final origin/destination market is the USA, with 3.6 million passengers carried indirectly. Saudi Arabia is a surprising 2nd place, with over 2 million passengers travelling on a foreign intermediate connector. The UK, Australia and Kuwait are also in the top five markets for “leakage” (*Table 20*), with Canada, China, Italy, Germany and Indonesia taking the next five ranking places.

	Total	Emirates	Etihad	Qatar	Singapore
1 USA	3,699,901	1,050,227	493,886	555,373	50,674
2 Saudi Arabia	2,080,553	259,541	397,557	95,838	0
3 UK	1,181,924	408,769	254,591	161,796	221
4 Australia	1,153,362	14,021	40,934	674	358,701
5 Kuwait	942,745	230,693	133,873	81,494	0

Table 20: Largest 5th/6th Freedom leakage markets 2017 on foreign airlines

## 10.9. International passenger forecasts

Statistical regression modelling has been used to identify the significant independent variables that can be used to represent key historical influencers of demand which are expected to remain relevant into the future, based on historical tourism flows to and from each of the regions since 2001.

The factors that have influenced most of the regional traffic flows include the performance of the Indian economy and its GDP per capita, the same metrics for the major economies in each region, movements in the Indian Rupee exchange rate and, in some cases, the growth of the LCC airline model. The price of oil is a useful proxy to assist in modelling the Middle East markets.

The resulting regression models for each of the regions, by direction of tourism flow, have been used to predict growth over the next ten years, out to 2027. These forecasts, along with the main independent variables driving them and the R2 values that measure the explanatory power of the models, are summarised in Table 21 right. Charts showing the growth projections for each of the regions, split by outbound and inbound flows, are included in Appendices 3 and 4.

Region	Direction	Independent variables	R <sup>2</sup>	Growth rates			
				2001-2016 Actual	2017-2022 Forecast	2023-2027 Forecast	2017-2027 Forecast
MEA	Inbound	India GDP Oil price	0.99	8.8%	10.8%	10.2%	10.5%
	Outbound	India GDP per capita Oil price	0.98	11.0%	9.3%	7.7%	8.6%
SE Asia	Inbound	India GDP ASEAN-5 GDP ASEAN LCC fleet	0.99	11.8%	13.6%	12.2%	13.3%
	Outbound	India GDP per capita ASEAN-5 GDP	0.98	10.6%	8.7%	7.3%	8.1%
North Asia	Inbound	India GDP per capita Regional GDP per capita Rupee: US\$ FX rate	0.99	10.9%	8.7%	6.1%	7.4%
	Outbound	India GDP per capita Weighted regional GDP	0.98	10.0%	8.3%	6.0%	7.3%
South Asia	Inbound	Sri Lanka GDP per capita Rupee: US\$ FX rate	0.97	9.2%	6.5%	4.7%	5.7%
	Outbound	Sri Lanka GDP per capita Indian GDP	0.95	11.4%	9.0%	8.7%	9.0%
Europe	Inbound	EU GDP per capita EU H-hold debt % income	0.97	7.4%	5.7%	3.4%	4.5%
	Outbound	EU GDP Indian GDP per capita	0.94	9.5%	9.1%	7.0%	8.1%
Americas	Inbound	US GDP <sup>2</sup> H-Hold debt service Rupee: US\$ FX rate	0.99	9.4%	10.0%	5.9%	7.7%
	Outbound	US GDP (1 year lag) Indian GDP per capita	0.98	10.4%	7.5%	5.8%	6.9%
SW Pacific	Inbound	Indian GDP Rupee: US\$ FX rate	0.99	11.6%	13.5%	11.5%	12.5%
	Outbound	Indian GDP per capita Rupee: US\$ FX rate	0.98	11.7%	9.0%	7.6%	8.5%
CIS	Inbound	Indian GDP Rupee: US\$ FX rate Oil price	0.97	17.1%	8.2%	7.9%	8.4%
	Outbound	Indian GDP per capita Oil price	0.94	9.8%	8.8%	7.1%	8.0%

Table 21: Summary of statistical regression analysis and regional growth forecasts

In aggregate, these forecasts combine to produce an average international market growth rate of 8.3% over the next decade (Chart 24). This applies to the total market, rather than to Indian airlines, for which an adjusted growth rate of 10.4% has been developed, as described in section 12 below.

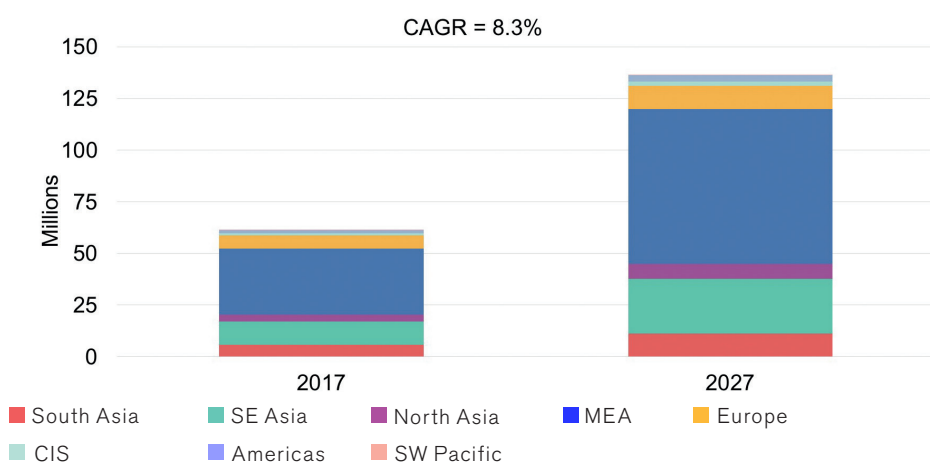


Chart 24: International air passenger growth forecast

# 11. Indian airline fleets

India's airlines operated a fleet of 588 passenger aircraft, comprising 443 single aisles, 67 widebodies, and 78 regional aircraft.

Appendix 1 contains a detailed breakdown of the delivered and committed fleets at the end of May 2018, when India's airlines operated a fleet of 588 passenger aircraft, comprising 443 single aisles, 67 widebodies, and 78 regional aircraft. The airlines also had a firm order backlog of 895 aircraft, with an additional 20 under LOI.

The in-service fleet has an average of 7.1 years, with Jet and SpiceJet having the oldest fleet profiles, at between 8 and 9 years, whilst Air India is at the average age.

A320 family aircraft represent the largest installed fleet with over 300 delivered, including 75 NEOs. 141 737NGs are also in service and, for both of these core fleets, the majority of variants are in the mid-sized sweet spot of A320 and 737-800, with similar but modest proportions of the larger and smaller family members in service (*Chart 25*). Future commitments include over 500 NEOs and 300 737MAX aircraft, with the majority again booked as A320 and MAX8, however the opportunity to up-size as delivery dates approach is expected to shift the balance towards the larger variants, driven by a combination of sustained high load factors and the ever more pressing issue of airport congestion.

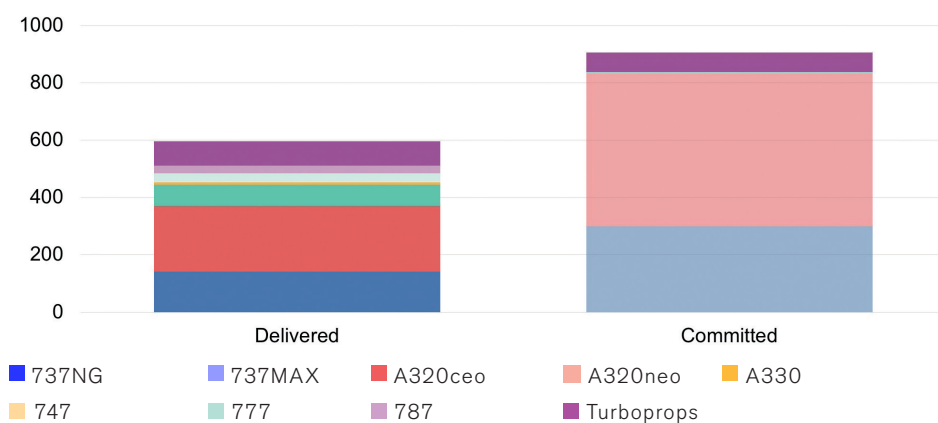


Chart 25: Indian airline fleet mix - May 2018

IndiGo operates the largest single aisle fleet, with 166 A320s and also has the largest backlog with 438 on firm order. Jet Airways has 82 737NGs in service, with 133 MAX on order, whilst SpiceJet operates 36 NGs and has 167 MAX on order or LOI. GoAir has 35 A320s in service and a further 128 on order. Air India operates 73 single aisle aircraft across its three airlines, with a backlog of just 8. Appendix 2 shows the individual airline fleets in detail.

India's airlines are heavily reliant on lessors as a source of aircraft financing, with 76% of the in-service fleet managed by operating lessors.

Widebody fleets have migrated from the historical Air India 747s, of which just 4 remain in operation, to 777s and, more recently, 787s, of which Air India has taken delivery of 27 -8s and Jet Airways has 10 -9s on order. Air India also operates 18 777s, with a further 10 operated by Jet Airways, which also operates eight A330s, with 5 more on order.

The regional fleet is predominantly made up of ATRs (46) and Dash 8s (22), acquired in two distinct waves – the first to meet the Regional Capacity Guidelines requirement to provide a minimum level of regional service and, more recently, following the announcement of the UDAN project, although the core principle to develop new small markets with 19-seat turboprops has yet to play out.

Clearly, the private airlines collectively believe that regional services can generate higher yields and improve profitability, with Jet Airways, SpiceJet and IndiGo all committed to large turboprop operations alongside Air India's regional operation, Alliance Air.

Fleet utilisation is high across virtually all aircraft types, with the core narrowbodies averaging 11 - 12 hours per day and widebodies from 12 to 17 hours, with turboprops running at 6 - 9 hours (*Table 22*).

	Average		
	Total FH	Fleet	Daily utilisation
A320	1,032,048	250.2	11.3
737NG	621,05	131.9	12.9
ATR	72,241	34.3	5.8
DHC8	61,618	19.1	8.8
A330	35,388	8.0	12.1
747	6,240	4.0	4.3
777	155,522	25.0	17.0
787	128,332	24.4	14.4

*Note: Based on average fleets per FG Ascend and OAG published schedules for 2017. Some schedule changes may have occurred due to A320neo issues.*

Table 22: 2017 Fleet utilisation estimates

India's airlines are heavily reliant on lessors as a source of aircraft financing, with 76% of the in-service fleet managed by operating lessors, one of the highest concentrations globally. The level of single aisle leasing is even higher, at close to 80%, with regional aircraft at 67% and widebodies at 30% (*Chart 26*).

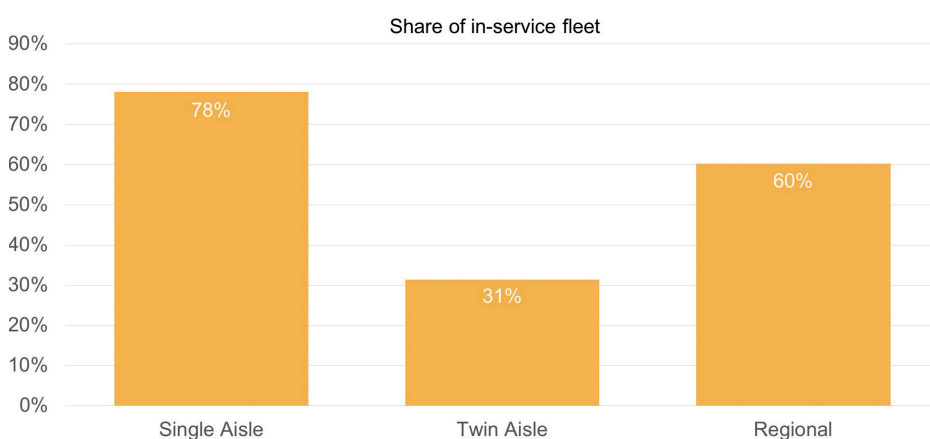


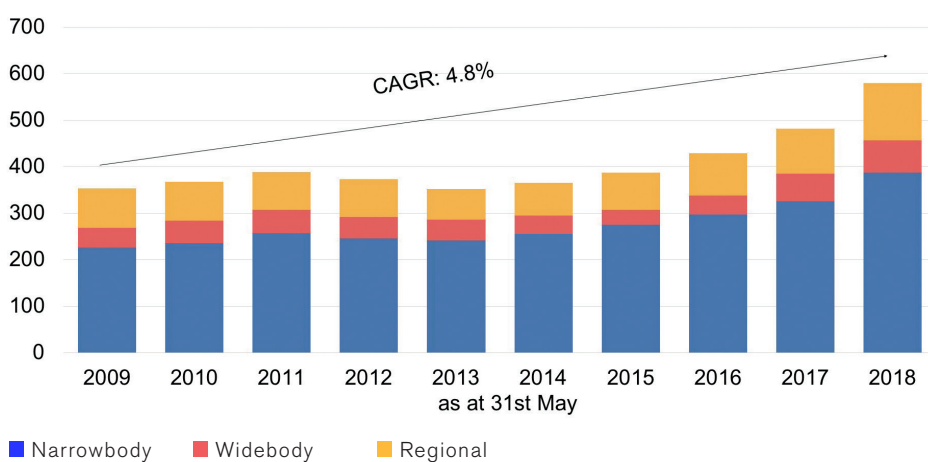
Chart 26: Lessor penetration

In total, more than 400 aircraft are currently on operating lease, spread amongst 43 lessors, which makes India one of the most diversified leasing markets. Avolon is the largest lessor, with 53 aircraft, all single aisle. GECAS is ranked #2, with 39 aircraft, followed by DAE Capital with 33. The 10 largest lessors in the market account for 60% of the leased fleet (*Table 23*).

		In-service fleet
1	Avolon	53
2	GECAS	39
3	DAE Capital	33
4	BOCA	24
5	CDB Aviation	24
6	BBAM	23
7	ALAFCO	20
8	Aircastle	17
9	MCAP	16
10	Goshawk	14

**Table 23: Largest lessor exposures**

The active fleet has been growing at an average rate of 4.8% per annum over the past decade, with widebodies increasing at a faster rate of 7.5% and regional aircraft more slowly, at 3.8%. The cyclical nature of the Indian market can also be seen in its fleet development (*Chart 27*).



**Chart 27: 10-year Indian airline fleet development**

Since 2013, fleet expansion has accelerated, averaging 11% per annum and Indian airline fleets, in all size categories, have been growing substantially faster than those of other airlines globally over the past five years (*Chart 28*).

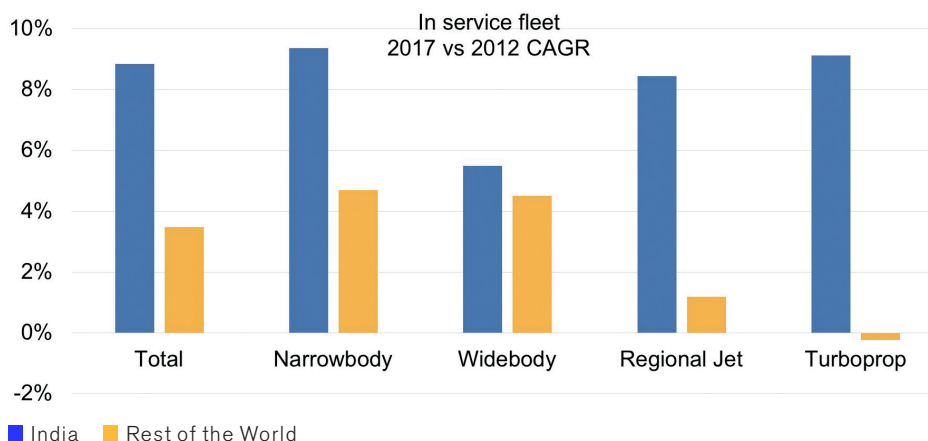


Chart 28: Indian fleet growth vs Rest of the World

The fleet mix by body differs from the Rest of the World fleet average, which has a lower narrowbody content and higher proportions of widebodies and regional aircraft than the Indian market (*Chart 29*). The extensive Neo and MAX orders help to push new technology variants to over 60% of total fleet commitments.

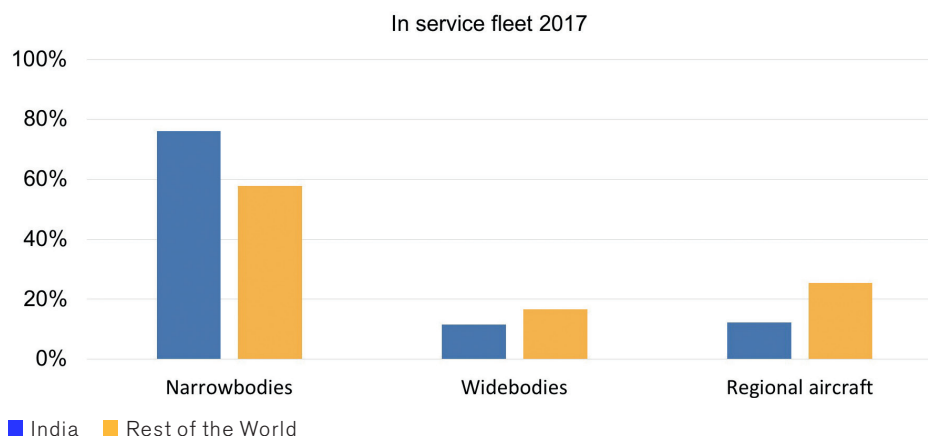


Chart 29: Indian fleet mix vs Rest of the World

## 12. Ten-year outlook

### 12.1. Passenger growth forecast

Blending the regional tourism growth forecasts developed in Sections 8.4 and 10.9 produces an aggregate traffic growth forecast of 9.2% per annum over the next ten years (*Chart 30*), comprising domestic market growth of 9.6% and international market growth of 8.3%.

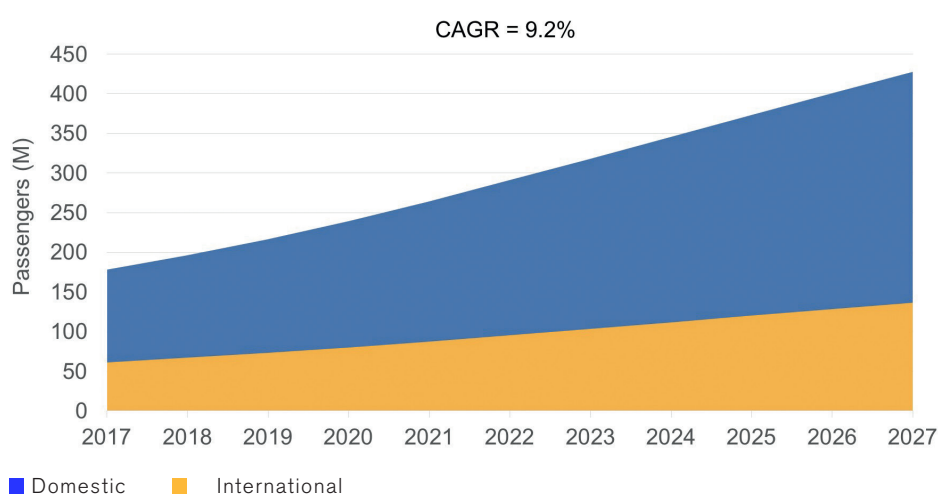


Chart 29: Combined traffic growth

For Indian airlines, the forecast growth rate is higher, averaging 10.4% per annum, driven by assumptions of increased market share in key regional and international markets.

The assumptions address the historical neglect of international route opportunities, through lack of investment on the part of Air India and alternative network prioritisation by most of the independent airlines. A return to more balanced market shares will require significant commitment on the part of the airlines, which should not be underestimated. The competitive dynamic in many markets is now set by the foreign operators, in particular the Gulf “super-connectors”. Their established presence in many of the regional Indian cities will be hard to shift as the India-originating traffic includes a significant migrant worker component. This market segment is price sensitive, especially where recruitment agencies that also arrange transportation have attractive commercial agreements with the airlines. The segment is also a more significant part of regional Indian markets, where local employment prospects are relatively poor compared to the major cities, driving more of the population to seek work abroad. On the other hand, outbound Indian tourists are likely to continue to favour the home airlines for their travel plans.

For Indian airlines, the forecast growth rate is higher, averaging 10.4% per annum, driven by assumptions of increased market share in key regional and international markets.

Access to inbound tourism traffic in new or developing markets, including China, will be harder to access for Indian carriers that have yet to establish a local market presence and awareness and they will need to invest in order to capture market share where competitively-priced direct service is already available. The broader and more pressing requirement to develop tourism through investment in infrastructure is outside the direct control of the airlines

## 12.2. Fleet and capacity forecast

In order to reach a forecast of the capacity and fleet size required to meet the growth, the regional forecasts, including those for domestic routes, have been overlaid with a number of fleet mix, utilisation and market development modifiers to generate future year ASKs which are then mapped to a requisite number of aircraft in each “body category.”

### 12.2.1. Modifier assumptions

Having determined the underlying traffic growth rates for each of the geographic regions, several modifiers have been applied to the resulting ASK requirements.

- The first of these addresses the future traffic share for Indian airlines in each market, where in most cases there are significant share recovery opportunities that can be exploited under the new Aviation Policy guidelines for accessing international operations, as well as through the process of upgrading the Air India fleet.
- The following market share targets have been assumed for 2027, with a linear transition from current levels over the next ten years:

South Asia	50%	↔	Europe	50%	↑
SE Asia	35%	↑	CIS	11%	↔
North Asia	45%	↑	Americas	57%	↔
MEA	50%	↑	W Pacific	75%	↓

- In North Asia, a reduction in average stage length is likely to be experienced as the Chinese route network is developed. An average 1% annual reduction in stage length has been assumed for this region. No other structural changes to regional market groupings have been assumed.
- Annual changes in the mix of aircraft types deployed have been assumed for several markets:

	Narrowbody	Widebody	Regional
Domestic	0.05%	0%	-2%
North Asia	5%	-2%	0.0%

The changes, shown as annual adjustments to ASKs performed by the respective fleet groups, are calibrated to maintain constant ASKs after the other changes.

- Domestic narrowbody operations are assumed to maintain a gradual up gauging to larger family members, averaging 1.5% per annum over the

forecast period. No increase in the level of widebody deployment on domestic routes has been assumed.

- The age at which existing and future aircraft types leave Indian airline fleets has been set:

Retire from India at:	Narrowbody	12 years
	Widebody	15 years
	Regional	15 years

The forecast is sensitive to these assumptions, which are designed to reflect the continued dominance of operating leasing, where typical lease terms range from 6 to 12 years. The assumed cut-off ages result in almost all of the current fleet being replaced by 2027.

- With domestic load factors now averaging more than 85% and several international markets also at extremely high levels – sometimes in excess of 90% – target levels ranging from 80% to 85% have been set to reflect a longer-term sustainable level that, especially for international markets, does not incur significant levels of traffic spill. As with market shares, a linear transition from current levels has been applied over the next ten years, to these load factor targets:

2027 target load factors	
Domestic	85%
South Asia	85%
SE Asia	85%
North Asia	85%
MEA	80%
Europe	80%
CIS	85%
Americas	85%
SW Pacific	85%

### 12.2.2. Future aircraft forecast

All of the foregoing adjustments result in a forecast of aircraft requirements over the next decade (through 2027), which are then netted off against existing announced firm orders (as at 31st May 2018). This produces a fleet requirement of almost 1,100 aircraft and a shortfall of 300 aircraft over and above those that are already on firm order or LOI (*Table 24*).

	Total	Narrowbody	Widebody	Regional
Total 10 year requirement	1,075	800	150	125
Already ordered	775	675	25	75
<b>Shortfall (yet to be ordered)</b>	<b>300</b>	<b>125</b>	<b>125</b>	<b>50</b>
Shortfall %	28%	16%	83%	40%

*Note: Rounded to nearest 25 aircraft*

Table 24: 10-year fleet requirement forecast

By 2027, the combined fleet of India's airlines is forecast to be almost 1,100 aircraft, including 800 narrowbodies, 150 widebodies and 125 regional aircraft.

With over 70% of the total fleet requirement for the next decade already identified, the shortfall is spread across the three size categories. However, the requirement for an additional 125 narrowbody aircraft represents the smallest uplift relative to current fleet size, reflecting the substantial scale of existing narrowbody orders.

In contrast, the 125 additional widebody aircraft gap is more than double the current installed fleet, whilst 50 additional regional aircraft are a 90% uplift on those now in service.

The age assumptions for aircraft leaving Indian airline service are critical to the requirement outcome. Reducing the fleet replacement age by 1 year for each category would increase the additional fleet requirement by more than 20 aircraft.

The value of India's ten-year aircraft delivery requirement is estimated to total \$60 billion at 2018 delivery prices, of which more than \$20 billion has yet to be ordered.

### 12.2.3. Future fleet

By 2027, the combined fleet of India's airlines is forecast to be almost 1,100 aircraft, including 800 narrowbodies, 150 widebodies and 125 regional aircraft. This represents a net doubling of the fleet from its current level (*Chart 31*).

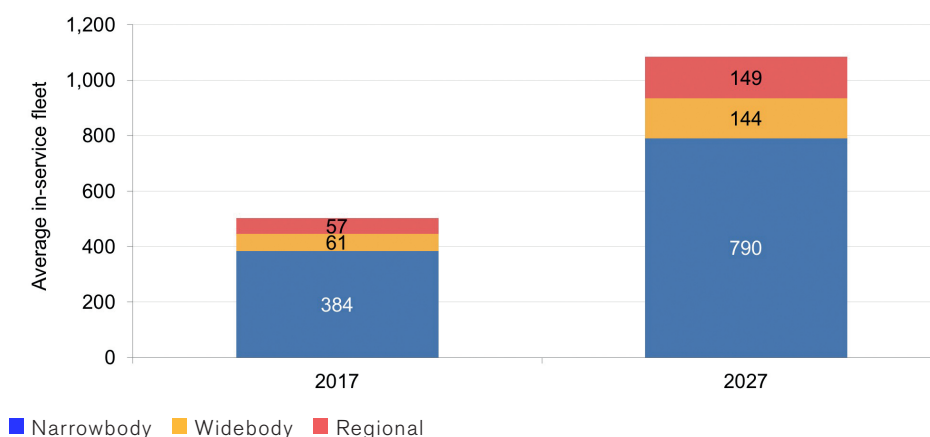


Chart 31: 10-year fleet development forecast

Within the total, the narrowbody fleet is also forecast to double, with 70% of this capacity expected to operate on the domestic network and 30% on international routes.

The 2027 widebody fleet of 150 aircraft represents a significant increase on the current fleet, but will continue to be almost exclusively operating on international routes, while a fleet of 125 regional aircraft, virtually all turboprop types and representing a similarly substantial increase, will remain a predominantly domestic fleet.

## 13. Conclusions

- India will overtake China as the world's most populous nation within a decade. However, despite strong economic growth expectations, per capita GDP will lag China for decades to come and middle-class wealth may be over-stated.
- The present Government of Narendra Modi, which has introduced several significant economic and social initiatives since coming to power in 2014, will face a general election in 2019 and is not certain to be returned to office.
- A project to digitise the population's identity records has over 1.2 million people enrolled in the scheme, which eases access to essential services including education, healthcare and welfare. It has also streamlined applications for bank accounts, with 285 million new accounts opened on the back of the program.
- Access to mobile phones has also substantially increased, with over 800 million subscribers. This level of take-up, coupled with heavy investment in 4G technology and rapid growth in smart-phone ownership and access to on-line banking and payment services, is set to revolutionise retail and consumer spending over the coming years, although the forecast growth rate may be exaggerated and take longer than initially predicted to reach a critical mass.
- A new aviation policy in 2016 removed some (though not all) of the barriers to Indian airlines' international operations, updated (but did not remove) regional capacity allocation requirements and launched the UDAN regional connectivity initiative.
- Recent court judgements have materially strengthened the effectiveness of the Cape Town Convention in India, although domestic creditors can still delay due process.
- The repeal of the Air Corporations Act in 1994 created a short-lived surge of new entrant private airlines in the domestic market. However, the competitive landscape was not conducive to economic success and most of the early new entrants subsequently failed or were merged into other airlines.
- A second revival in the mid-2000s created several new airlines, operating mostly domestic services, including the ill-fated Kingfisher, which inflicted substantial damage to the wider industry during its protracted demise.
- The current third stage of liberalisation is now under way, led by an insurgent LCC sector.
- Since airline liberalisation began, passenger traffic growth has ebbed and flowed, along with profitability, which has historically been elusive for most operators. The past two years have seen record traffic growth and improved economic stability for the industry, although the rising fuel price environment is again putting pressure on margins.

- Air India, which remains chronically loss-making and over-staffed, is benefiting from re-fleeting program that has started to breathe life into their long-haul network. Privatisation, which is a key goal for the airline and the current Government, would potentially transform the carrier, although the proposed sale structure attracted no offers, throwing the Government's plans into disarray.
- A visible consequence of the years of under-investment at Air India is a steady decline in India's share of the international aviation market, which now stands at less than 40%.
- The Government's moves to liberalise route rights have increased access for India's airlines overseas, but also critically for foreign carriers into India. Over 19 million passengers make international connections outside India on foreign airlines, including 8 million on the Gulf "super-connectors".
- Almost 117 million domestic passengers were carried in 2017, a 17.4% increase over 2016 and growth has averaged 15% since 2012. 65% of domestic traffic is carried by LCCs, a dominance that will be maintained into the future.
- 22.8 million international passengers were carried by Indian airlines in 2017, up by 14% over the previous year.
- Whilst a degree of stability appears to have returned to the airline sector, profitability is not universally achieved. Fuel prices, interest rates and the strength of the US dollar continue to be major areas of concern for airline managements, with each having the potential to swiftly and materially impact demand and the bottom line.
- Statistical regression analysis produces a forecast average annual growth rate of 9.6% for domestic passengers over the coming decade. An 8.3% growth rate is forecast for international passengers, with a larger increase of 10.4% for Indian carriers, which are assumed to increase market share in several key markets.
- 588 passenger aircraft are operated by India's airlines, of which 75% are narrowbodies, 11% are widebodies and 14% are regional aircraft. More than 900 aircraft are on backlog or under LOI and over 60% of the in-service and committed fleet comprise future technology types.
- The current fleet is forecast to more than double over the next decade, to almost 1,100 aircraft by 2027, 75% of which will be narrowbody types.
- Substantial numbers of single aisle aircraft have already been ordered, leaving a shortfall of 125 narrowbody orders over the next ten years, in addition to 125 widebody aircraft and 50 large regional aircraft.
- The total value of aircraft delivering in India over the coming ten years is projected to be \$60 billion at 2018 prices, of which over \$20 billion has still to be ordered

**Appendix 1: Indian airline fleet totals at 31<sup>st</sup> May 2018**

Model	Total	In Service	Storage	Orders & LOIs
A320ceo family	227	227		533
A320neo family	608	75		
B737NG	142	141	1	300
B737 MAX	300			5
A330ceo	13	8		
B747	4	4		
B777	28	28		10
B787	37	27		
CRJs	4	4		25
Dash 8	47	22		42
ATR	93	46	5	
Small Turboprop	8	6	2	
<b>Total</b>	<b>1,511</b>	<b>588</b>	<b>8</b>	<b>915</b>
Single aisle	1,277	443	1	833
Twin aisle	82	67		15
Regional aircraft	152	78	7	67
Future technology	945	102		843

*Souce: FlightGlobal Ascend*

## Appendix 2: Mainline Indian airline fleet details at 31<sup>st</sup> 2018

	Total		A319ceo		A320ceo		A321ceo		A320neo	
	In service	On order	In service	On order	In service	On order	In service	On order	In service	On order
Air India	120	8	22		11		20		18	8
AI Express	23									
Alliance Air	16									
AirAsia India	18				18				16	128
GoAir	35	128			19				34	371
IndiGo	166	438			124			25		
Jet Airways	118	148								
SpiceJet	58	192								
Vistara	20	1			13				7	1

	737NG		737MAX		ATR42/72		Dash 8		CRJ200	
	In service	On order	In service	On order	In service	On order	In service	On order	In service	On order
Air India										
AI Express	23									
Alliance Air										
AirAsia India					16					
GoAir										
IndiGo					8	42				
Jet Airways	82			133	18					
SpiceJet	36			167			22	25		
Vistara										

	A330-200/300		B744-400		B777-200ER/300ER		B787-8/-9	
	In service	On order	In service	On order	In service	On order	In service	On order
Air India			4		18		27	
AI Express								
Alliance Air								
AirAsia India								
GoAir								
IndiGo								
Jet Airways	8	5			10			10
SpiceJet								
Vistara								

Source: FG Ascend

## Appendix 3: Outbound Growth Forecasts

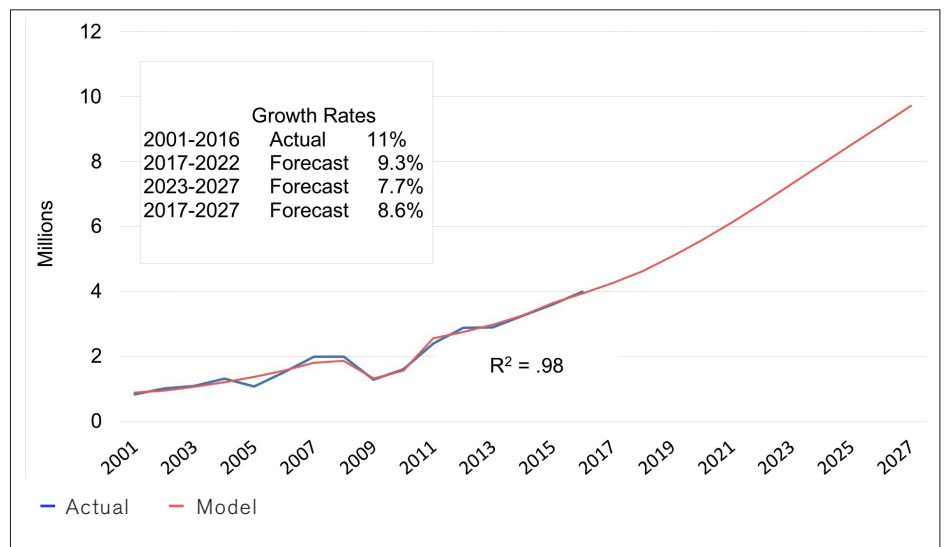


Chart O1: Indian visitors to MEA

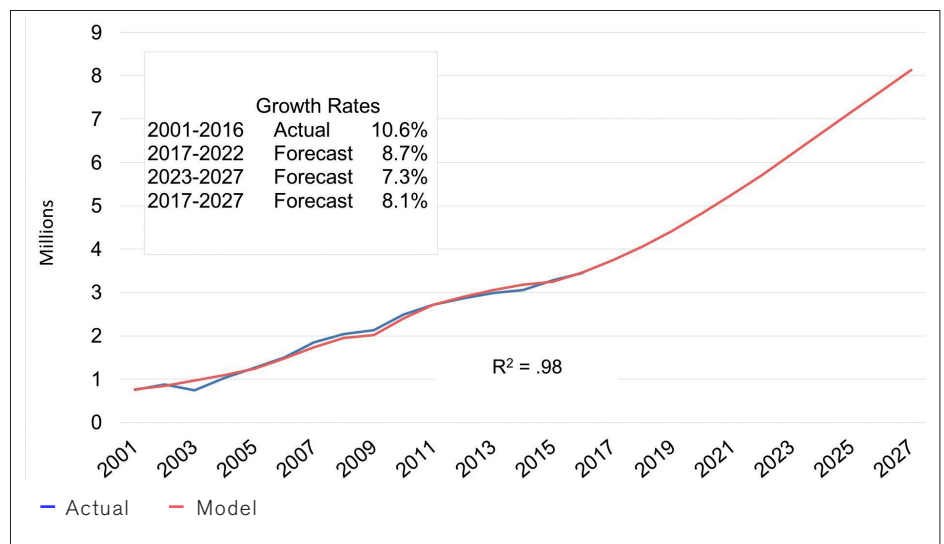


Chart O2: Indian visitors to SE Asia

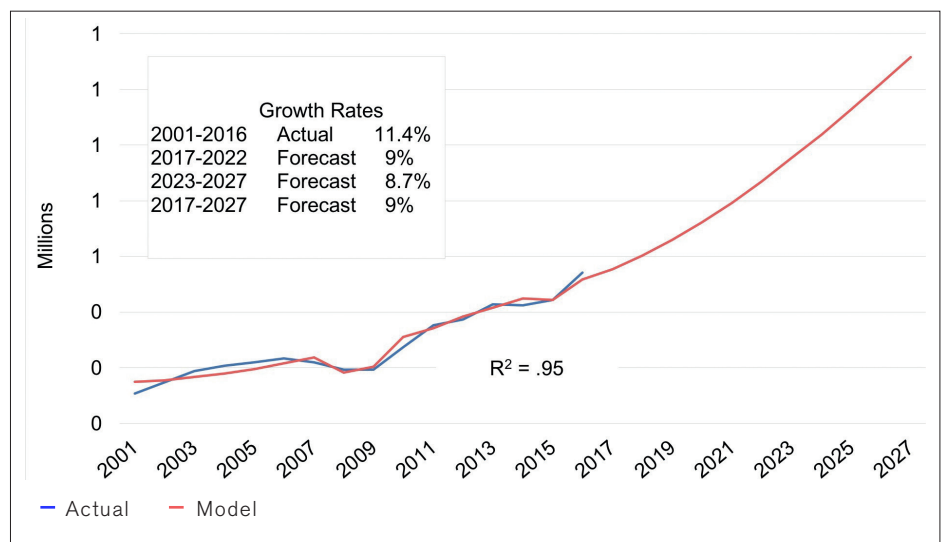


Chart O3: Indian visitors to South Asia

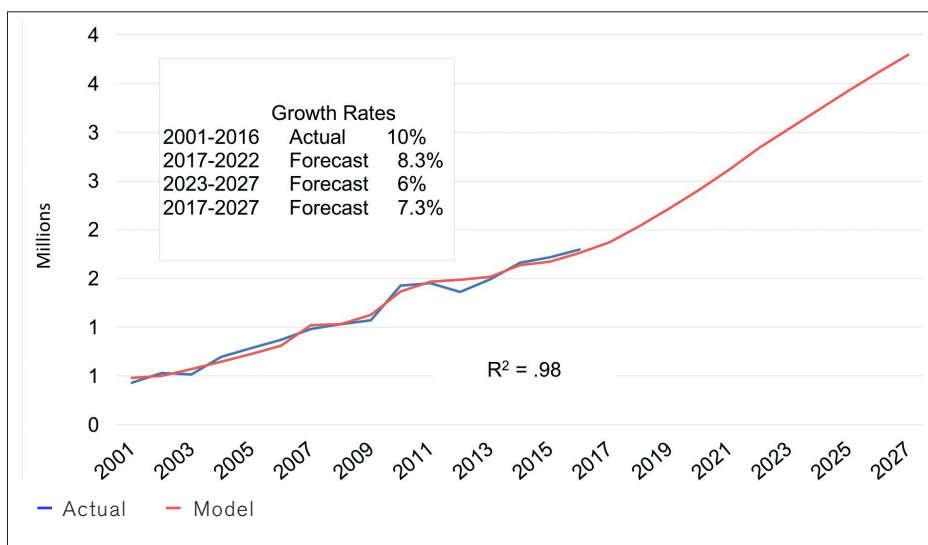


Chart O4: Indian visitors to North Asia

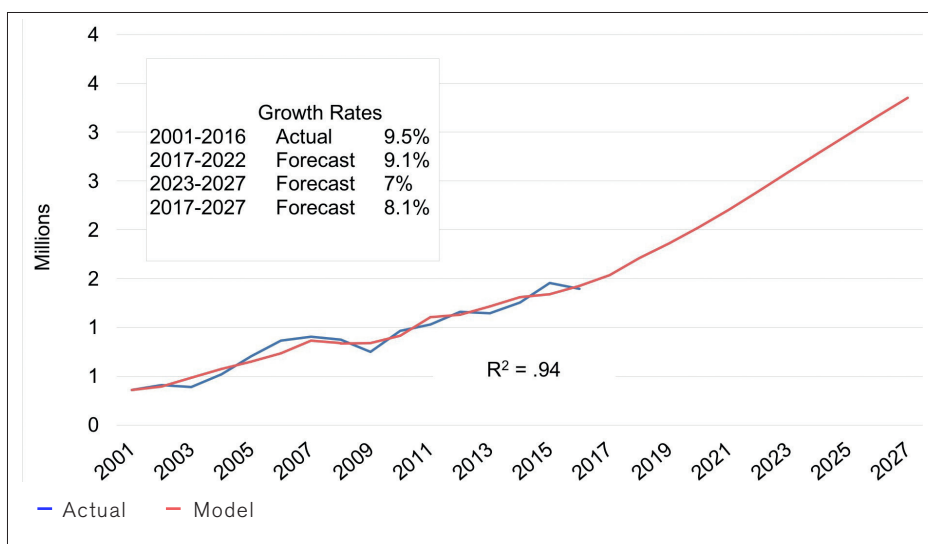


Chart O5: Indian visitors to Europe

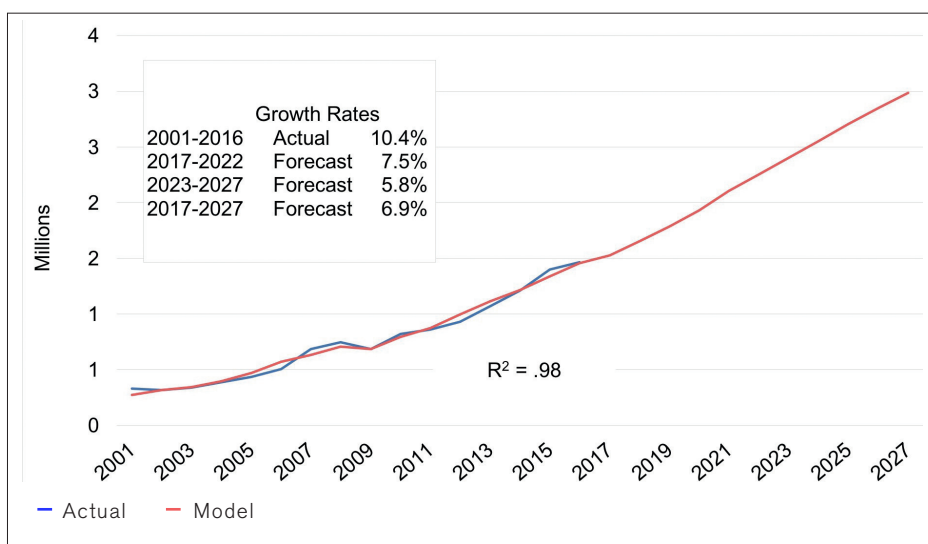


Chart O6: Indian visitors to Americas

## Appendix 4: Inbound Growth Forecasts

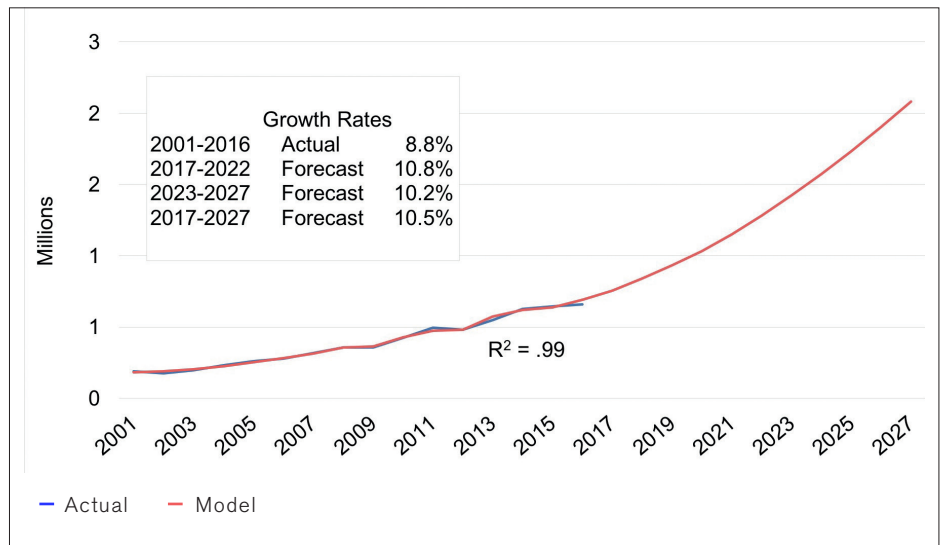


Chart I1: MEA visitors to India

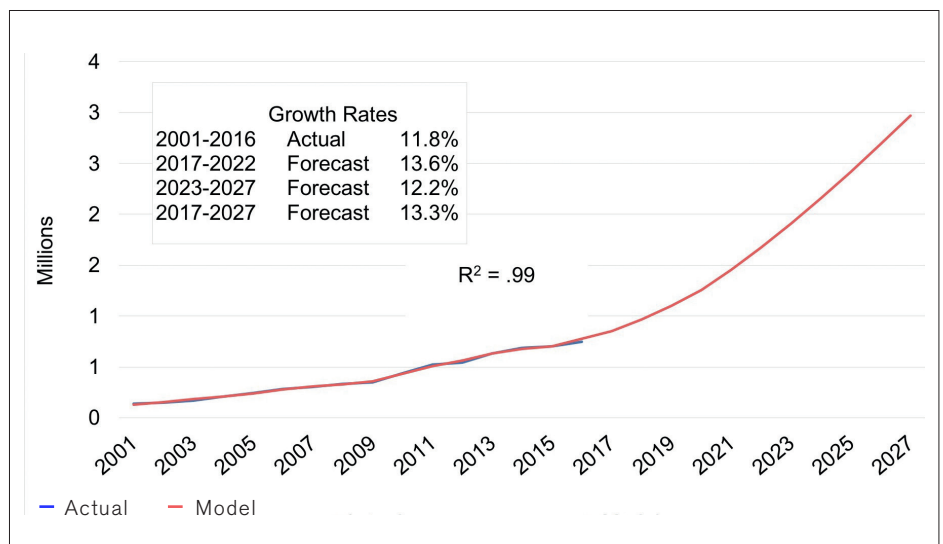


Chart I2: SE Asian visitors to India

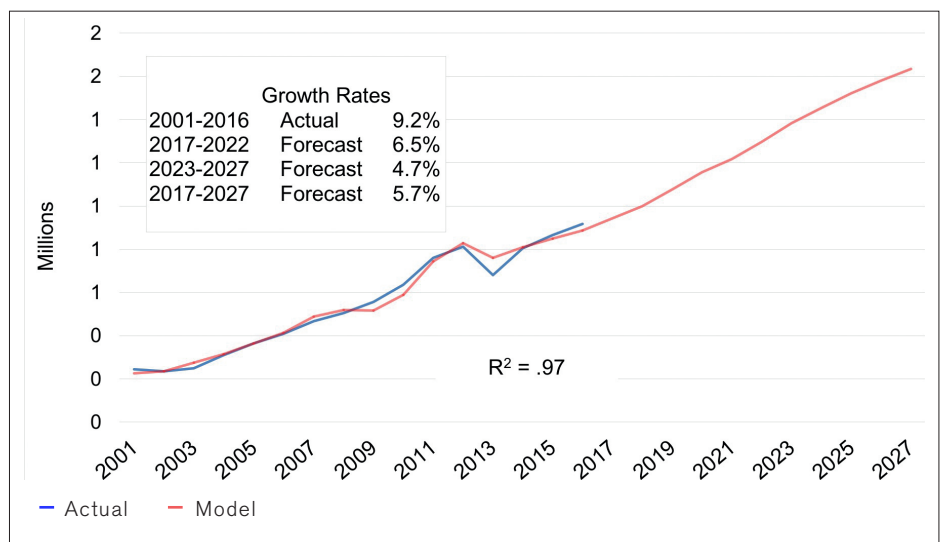


Chart I3: South Asian visitors to India

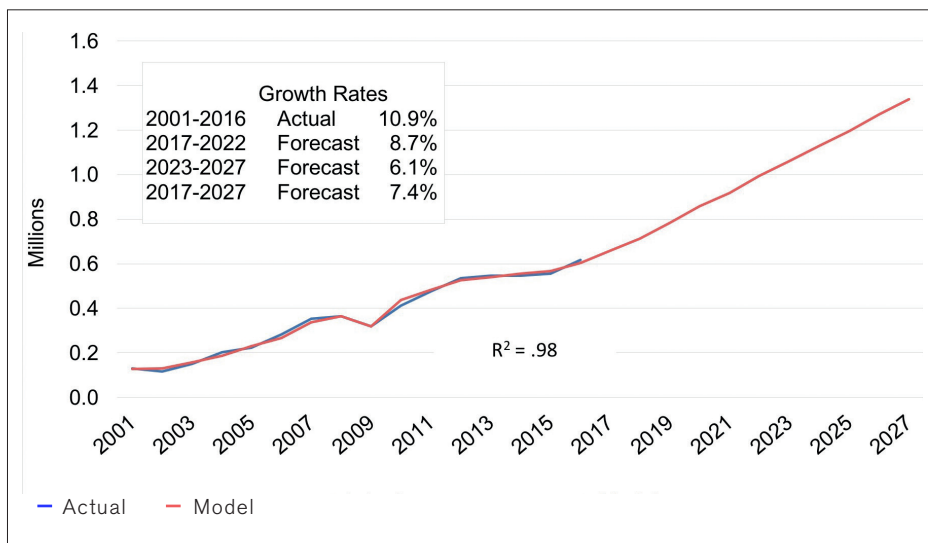


Chart I4: North Asian visitors to India

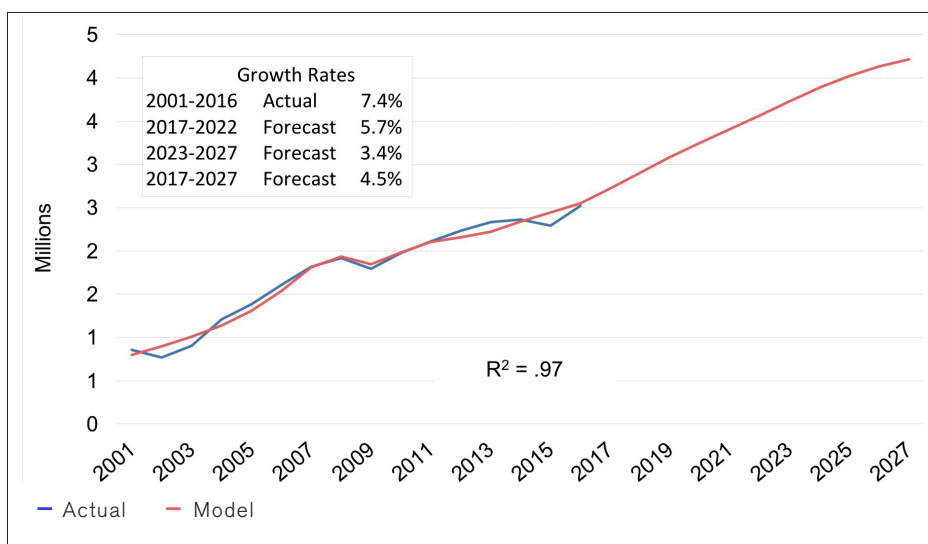


Chart I5: European visitors to India

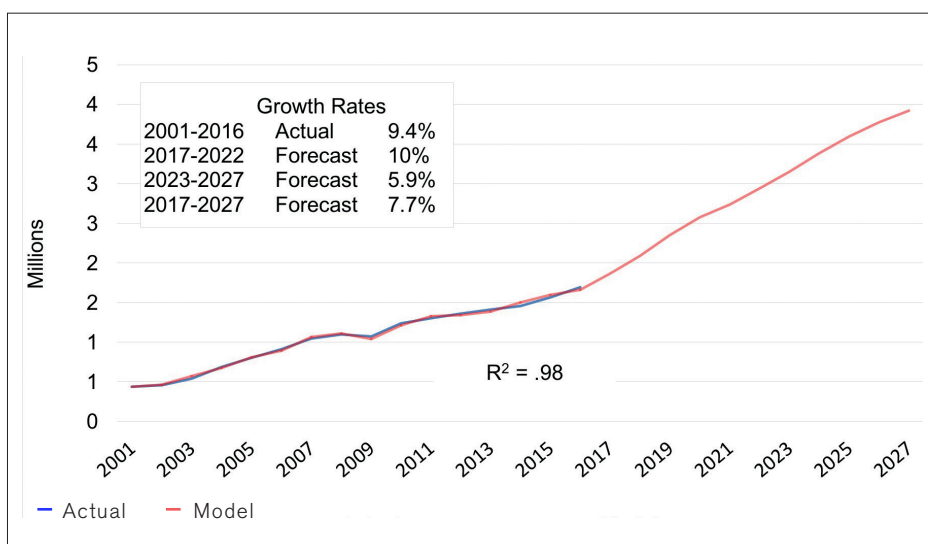


Chart I61: American visitors to India



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