



BRIC Countries: Destiny Fulfilled?

An overview of the "BRIC Countries" in the 15 years since the acronym was coined.

By Dan Galpin, ICF

For private industries looking to invest in the BRIC countries, ICF brings valuable insights into the risks, opportunities and nuances of each.

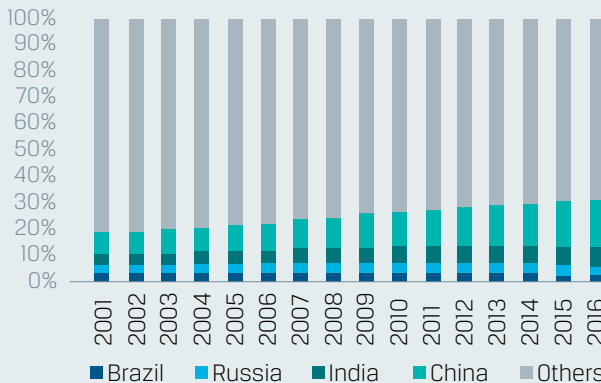
BRIC Countries Fulfilling Their Promise

In 2001, Jim O'Neil of Goldman Sachs coined the term "BRIC" as an acronym for Brazil, Russia, India and China – the four leading emerging economies at the time. The BRIC economies accounted for 19% of 2001's world economy (on a PPP basis) and 44% of the world's population. Fifteen years on, the BRIC economies have, at a high level, fulfilled their promise – they now account for over 30% of the world economy and 42% of the world's population.

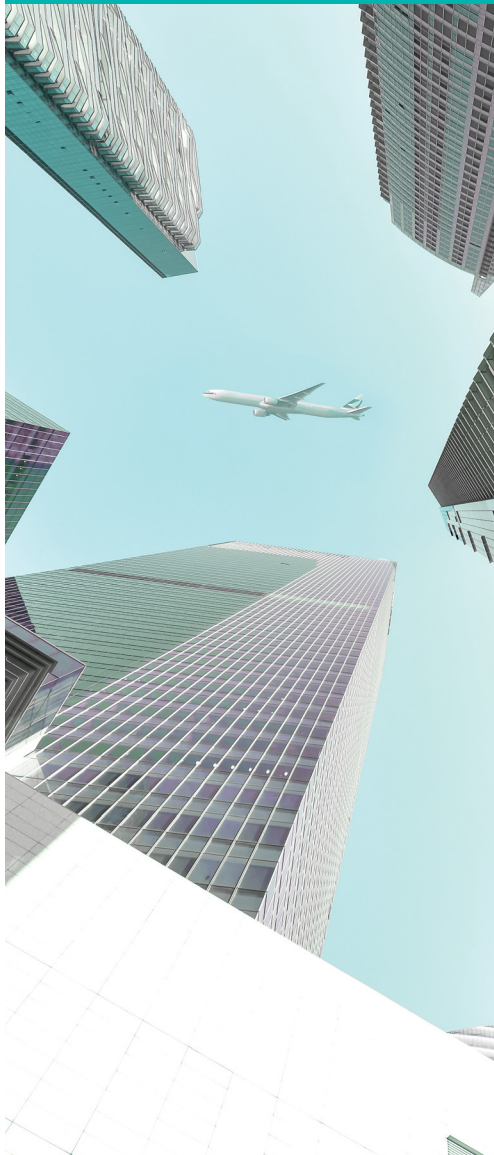
These countries continue to shape and change the world economy, and as their economies evolve and grow, the aviation markets are sure to follow.

ICF has worked extensively in each of these fascinating markets, and in doing so has gained invaluable insight into the risks, opportunities and nuances in each.

GDP PPP WORLD SHARE



Source: IMF WEO April 2017

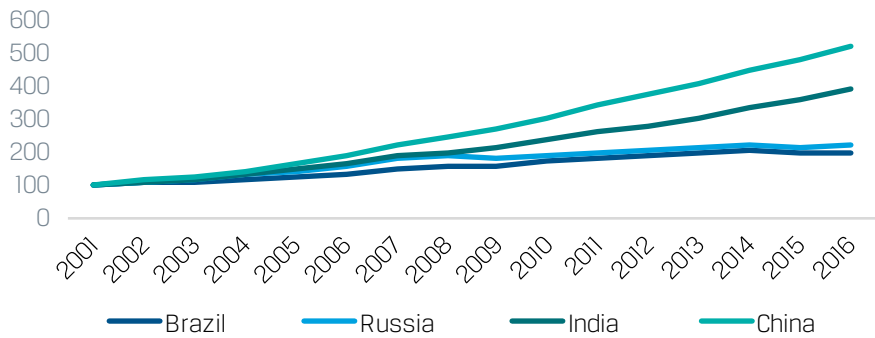




But to Varying Degrees

While the four BRIC countries are still the largest four developing economies in the world, there is little else that binds them together. India and China are – by far – the two largest countries by population, each with over 1.3 billion (bn) people. Russia (143 million) and Brazil (206 million) are large in a global context but a fraction the size of India and China. Moreover, while India and China's populations have grown by roughly 350 million (m), combined, in the last 15 years, Brazil's population has grown by just 30m and Russia's has actually shrunk over the same period.

GDP PPP, INDEXED 2001 = 100



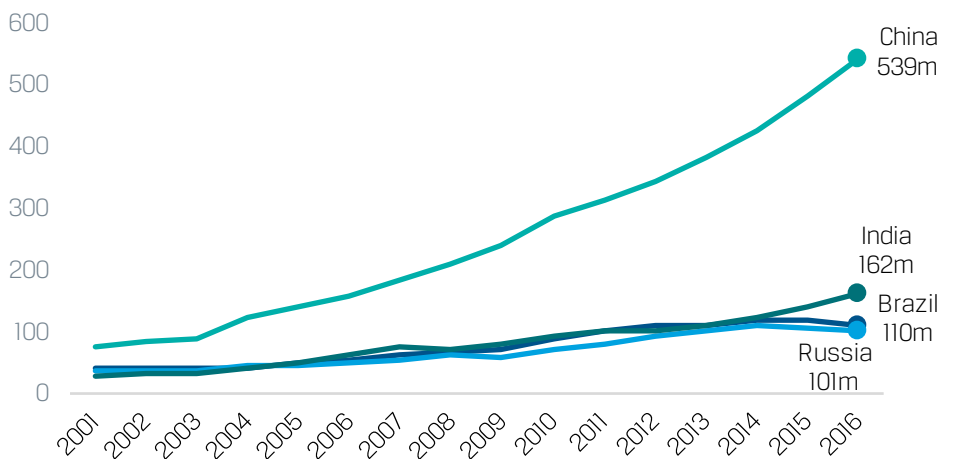
Source: IMF WEO April 2017

China Leading the Way in Aviation

As shown in the graph below, the Chinese aviation market was around 75m¹ passengers in 2001, compared to 25-40m in the other three BRIC countries. Since then, the Chinese market has grown to 539m at a 15-year CAGR of 14.3%. Meanwhile, India, starting at a much smaller base in 2001, has overtaken Brazil and Russia to reach 162m (CAGR 12.8%). However, much of this growth differential can be attributed to the different economic growth rates experienced, as the table opposite illustrates.

So, relative to GDP growth of 11.6% p.a., the growth in Chinese passenger segments is actually the lowest of the BRIC countries at just 1.23x multiplier, while Brazil's 7.2% p.a. (the lowest of the BRIC countries) actually implies the highest ratio to its rather sedate 4.4% GDP growth.

AIR PASSENGER GROWTH (MILLIONS) - BRIC COUNTRIES



Source: China: CAAC, India: AAI, Brazil: ANAC, Russia: THC, World Bank

¹Origin and destination journeys



The relationship between economic growth and air passenger demand (often referred to as the "income elasticity") has been the subject of numerous studies, and these ratios are actually fairly typical of trends seen in more developed countries. One might expect that the economic growth in developing countries - where vast swathes of the country simply can't afford to fly - would have a higher multiplier effect than in developed markets. However, the numbers do not always bear this out. For example, the UK Department for Transport estimated the income elasticity of UK air demand to be 1.3 (some segments were considerably higher). Developments in airline business models and the opening up of markets have contributed to growth being sustained in even the most mature markets.

CAGR², 2001 TO 2016

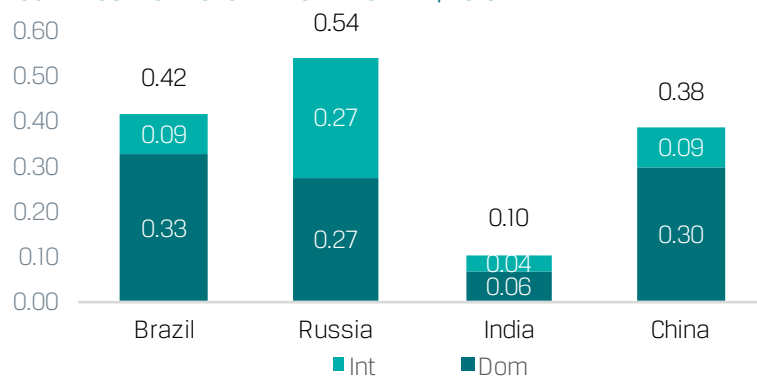
	Pax	GDP	Ratio
Brazil	7.2%	4.4%	1.62x
Russia	7.7%	5.3%	1.47x
India	12.8%	9.5%	1.35x
China	14.3%	11.6%	1.23x

And There's a Long Way to Go

In general, the BRIC aviation markets do not (yet) reflect their economic standing in the world. China recently surpassed Ibn airport passengers, but is still second to the U.S., a country with a population a quarter the size of China's and an aviation market that exceeds 700m passenger segments. India's aviation market is smaller than Germany's, despite a population 16x the size. Brazil and Russia fare no better in world rankings.

Correcting for population size illustrates some interesting differences between the BRIC countries. Brazil, Russia and China - despite their differences (remember the GDP per Capita in Russia is 60% higher than China) - all have a similar domestic propensity to fly (O&D passengers per capita). Russia has by far the higher propensity for international travel - 3x higher than Brazil and China and almost 7x as high as India. This is likely a consequence of (amongst other things) the country's deep cultural and economic ties with the former Soviet Republics that surround the country. India's propensity to fly is far lower than any of the other BRIC countries, belying its relatively low per-capita economic power.

O&D PASSENGER SEGMENTS PER CAPITA, 2016



Source: IATA PaxIS, IMF

²Compound annual growth rate

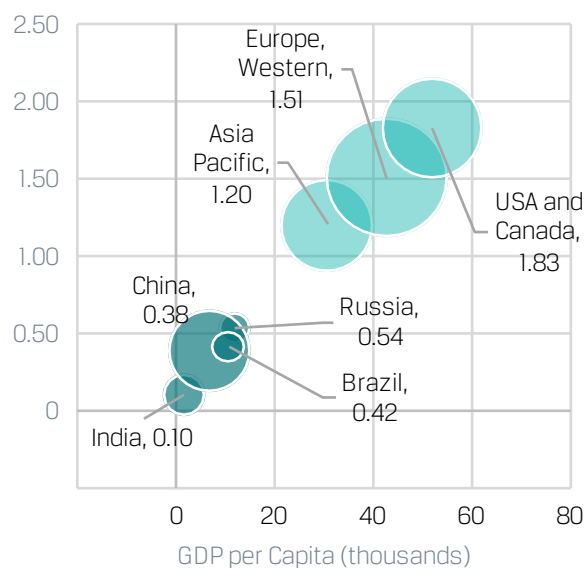
Further correcting for the spending power of individuals within the countries reveals a distinct pattern of increasing propensity to fly compared with GDP per capita. Not only does this help explain India's low propensity to fly, but it provides invaluable insight into how these markets will develop as their economies continue to grow. Still, GDP per capita cannot tell the whole story – income inequality, geographies and multi-modal competition (e.g. high-speed rail) all play key roles in determining the ultimate market size.

Open for Business?

Like much of the world, aviation in BRIC countries in 2001 was largely state-run. Over the past 15 years, the BRIC countries have embraced liberalisation to varying degrees and with varying success. Incentivised by the prospect of a more commercial management process, releasing equity or securing investment, each of the BRIC countries now has some level of private sector involvement in the management or ownership of its airports.

Brazil recently awarded management concessions to 6 of the top 20 airports in the country. The country has commenced the concession process for 4 more airports. In each case, concessions were accompanied by a commitment to invest in the infrastructure.

O&D PASSENGER SEGMENTS PER CAPITA, 2016

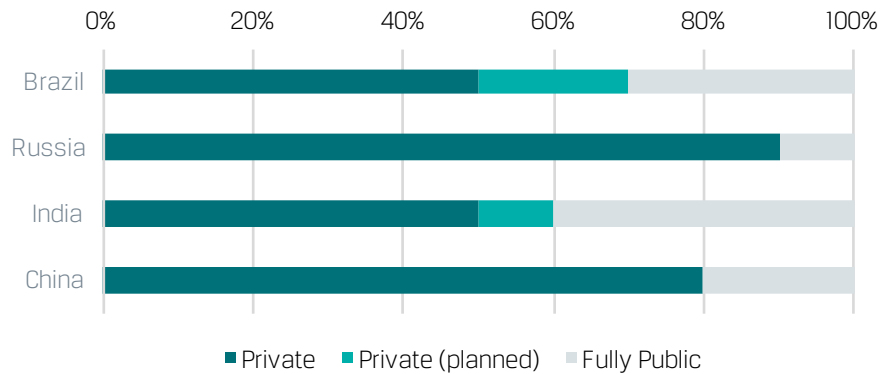


Size of bubble represents passenger market size
Source: IATA PaxIS, IMF

This is similar to the situation in India in which the two largest airports – Delhi and Mumbai – were awarded as concessions with conditions that required considerable investment in facilities. The Indian government has also sought private investment in building greenfield airports (e.g. Goa Mopa and Navi Mumbai). China has taken a different approach – whilst all airports are owned and managed by local or state entities, most also have some level of private investment. The law prevents management or ownership of more than 25% by a foreign entity, but this has not prevented foreign companies from being brought in to advise on management or to invest in minority stakes. Finally, Russia is the only country in which a significant number of airports are privately owned (although

in most cases the government retains ownership of the runways). Moscow-Domodovo and the Novoport Airport Group (which owns 13 regional airports across Russia) are notable examples. All compare favourably with the EU (47% of airports have some private involvement).

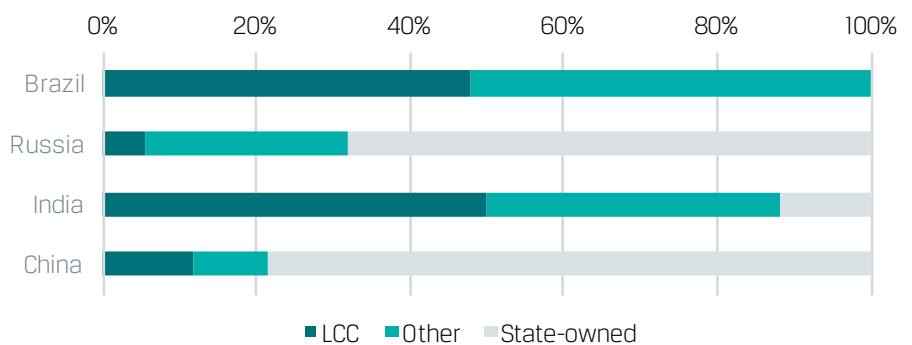
PROPORTION OF TOP 10 AIRPORTS WITH SOME LEVEL OF PRIVATE INVOLVEMENT



Note: "Private" includes minority shares, private ownership and concessions
Source: ICF

Much like the airport sector, the airline industry has also become more open in BRIC countries in recent years. Brazil is operated entirely by private airlines and has recently removed a cap on foreign ownership, which is intended to spur greater foreign investment and competition. Russia, in contrast, is dominated by Aeroflot, the state-backed airline, and its subsidiaries. Private airlines do exist, notably S7, but are niche and focus on charter or regional flying.

SEAT CAPACITY BY CARRIER TYPE



Source: OAG schedules, August 2017

India opened its doors to private investment in airlines in the early 1990s but restricted competition to the domestic market in order to protect state-owned Air India. The market developed further with the introduction of LCCs in the mid-2000s and is now dominated by private operators. Following years of heavy losses and government subsidies, the government is now looking to divest its interest in Air India. Further evidence of a relaxation of policy towards private operators is the recent removal of the "5/20 rule" which required airlines to operate for five years and have 20 aircraft before flying internationally.

ICF BRIC Country Experience

ICF have been using its knowledge and experience from BRIC markets together with a global context to assist investment communities and aviation stakeholders around the world understand the risks and opportunities in emerging markets. Recent examples include:

- Buy-side due diligence on recent Brazilian airport privatisations
- Vendor side market analysis and business plan modelling for a portfolio of regional Russian airports
- Technical advisor on nine Indian transactions, including supporting the winning bidders (GMR) for India's greenfield airport GOA Mopa
- Concession planning at China's Xiamen Airport
- ICF's airline, aerospace and aircraft practices broaden our experience base to every element of the aviation industry from fleet planning for Air China to a strategic review of maintenance processes at Russia's UTair.

China relaxed rules on airline ownership in January 2004, resulting in the creation of several private airlines to compete with the state-owned airlines that dominate the market. Hainan is the largest privately-owned airline, but still only accounts for 6% of seat capacity. Since 2004, each of the three largest state-owned airlines (China Southern, China Eastern and Air China) have joined an alliance, indicating an increasingly global outlook. China Eastern recently went one step further, entering into a partnership with fellow SkyTeam member Delta in which Delta acquired a small stake in the Chinese airline.

Conclusion

Much has changed over the past 15 years – BRIC countries have added over 740m passenger journeys. At current growth rates, China could overtake U.S. as the largest aviation market in 3 to 4 years. It appears private industries will play a significant role in financing the considerable investment required to support continued growth in these markets. China has been the exception so far, but for how long remains to be seen. Governments are understanding the value of a vibrant and competitive aviation market but struggling with how to balance it with the desire to protect homegrown industries. The most mature aviation markets in the world are still struggling to strike this balance.

Understanding the past is critical to projecting the future and its many risk factors including political instability, multi-modal competition, ailing national carriers and capacity constraints, all of which have precedents around the world that can provide further insight.

About ICF

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About the Author

Dan Galpin specialises in traffic forecasting, airline network planning, scheduling, pricing and revenue management. He is experienced in a variety of aspects of the aviation industry, having worked for NATS (the British Air Navigation Service provider), as well as Virgin Atlantic Airways. Dan has extensive first-hand experience in airline revenue management and was also involved in the introduction of Virgin's domestic feeder network which provided valuable insight into network strategy and planning. Dan has a background in complex data analysis and modelling and its application to the aviation industry.

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