CHAPTER 2  AIR TRAFFIC DEMAND FORECAST

2.1 The first step of the master planning process is forecasting air traffic demand over a 20-year period. Airport Authority Hong Kong (AAHK) commissioned IATA Consulting to undertake this process, which involves:

- Evaluating the best model to apply for the forecast;
- Compiling the gross domestic product (GDP) forecast;
- Producing preliminary traffic forecasts based on GDP;
- Adjusting traffic forecasts to accommodate the latest market changes;
- Conducting reality checks with aviation-related industries;
- Making primary projections for passenger and cargo traffic and air traffic movements (ATMs, also known as flight movements); and
- Conducting sensitivity analysis to produce a range of estimates for high, low and base cases.

Figure 2.1 : A Structured Air Traffic Demand Forecast Process

2.2 Several forecasting models such as Simple Linear regression, Multiple Linear regression, Log regression and Linear regression based on growth rate, were evaluated to identify the one most suitable for HKIA. While evaluating the models, IATA Consulting examined key factors such as fit with expected evolution of the market, sufficiency of historical data, link between causal variables and traffic, and the accuracy of data and causal variables. Statistical tests such as the coefficient of determination\(^3\), Student’s T-test\(^4\)

\(^3\) The coefficient of determination, R square, describes the proportion of a dependent variable (passenger and cargo) that is explained by an independent variable (such as GDP). It is a good indicator of correlation. It provides a measure of how well future outcomes are likely to be predicted by the model.

\(^4\) T statistics: Test and measure how strongly a particular independent variable (such as GDP) explains the variations of the dependent variable (passenger and cargo). They are mainly used in linear regression models (e.g. GDP’s correlation to traffic). The higher the T statistics, the greater is the correlation between the independent variable and the dependent variable. A T-value greater than 2.0 can be assumed to be statistically significant.
and F-test\(^5\) were also conducted. Simple and Multiple Linear regression models gave the best results, after examining the drivers for traffic and applying statistical tests. GDP was found to be the best variable to explain historical traffic evolution (other causal variables were tested and discounted).

**GDP Forecast**

**2.3** The GDP forecast is critical as it is the foundation for the entire traffic demand forecast. Historically, air traffic growth has had a strong correlation to global GDP growth. Figure 2.2 below shows the two trends over the past four decades.

**Figure 2.2 : Global Air Traffic versus Economic Growth**

![Graph showing global air traffic and GDP growth]

*Source: Traffic data from International Civil Aviation Organization (ICAO) and International Air Transport Association (IATA), GDP data from International Monetary Fund (IMF) and Economist Intelligence Unit (EIU)*

**2.4** Being an international city with an open market and externally-oriented economy, the correlation between air traffic growth and GDP growth for Hong Kong is even stronger. This is evident from the closeness of historical results predicted by the regression formulae\(^6\) used by IATA Consulting and actual traffic figures (see Figures 2.3 and 2.5).

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\(^5\) F statistics: Similar to T statistics; test and measure how strongly an independent variable is correlated to a dependent variable. They are mainly used in multiple linear regression and consider the whole, instead of just individual variables (e.g. traffic correlation to a set of two different GDP). The higher the F statistics, the greater is the correlation between the two variables. An F-value greater than 4.0 can be assumed to be statistically significant.

\(^6\)Regression is a statistical technique used to explain or predict the behaviour of a dependent variable. Generally, a regression equation takes the form of \(Y = a + bx + c\), where \(Y\) is the dependent variable to be predicted, \(X\) is the independent variable that is being used to predict \(Y\), \(a\) is the \(Y\)-intercept of the line, and \(c\) is a value called the regression residual. The values of \(a\) and \(b\) are selected such that the square of the regression residuals is minimised.
2.5 HKIA total passenger traffic proved to be closely correlated to HKSAR GDP (measured in real value). Figure 2.4 below details the causal factor (determining element) used for the forecast and the elasticity\(^7\) of the causal factor. The model used included a hypothetical variable\(^8\) to factor in the specific effect of the Severe Acute Respiratory Syndrome (SARS) crisis on passenger traffic.

**Figure 2.4 : Outcome of the Regression Analyses on HKIA Passenger Total Market**

<table>
<thead>
<tr>
<th>Market</th>
<th>Causal Factor</th>
<th>Regression period</th>
<th>Elasticity(^7)</th>
<th>T-statistic(^9)</th>
<th>R-squared(^10)</th>
<th>Market CAGR</th>
</tr>
</thead>
<tbody>
<tr>
<td>HKIA passenger</td>
<td>HK real GDP</td>
<td>1993-2008</td>
<td>1.03</td>
<td>34.9</td>
<td>0.99</td>
<td>4.3%</td>
</tr>
</tbody>
</table>

Source: IATA Consulting’s Methodology

2.6 HKSAR GDP was found to be the sole causal factor for Hong Kong only. Although traffic regression models usually involve several GDPs (local and regional ones) as independent variables, the additional GDP variables were found to be statistically

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\(^7\) Elasticity is the ratio of the percent change in one variable to the percent change in another variable. HKIA passenger traffic’s elasticity to Hong Kong GDP is close to 1, which implies that for every 1% increase in Hong Kong GDP there should be an approximate 1% increase in HKIA passenger traffic.

\(^8\) A dummy variable is included for SAR’s impact in 2003. In regression analysis, a dummy variable (also known as an indicator variable) is one that takes the values 0 or 1 to indicate the absence or presence of some categorical effect that may be expected to shift the outcome. The addition of dummy variables always increases model fit (coefficient of determination), but reduces the generality of the model.

\(^9\) Refer to Footnote 4.

\(^10\) Refer to Footnote 3.
insignificant, implying that they could not be used to explain any part of the traffic evolution in Hong Kong.

2.7 HKIA is in this unique situation because:
- The Hong Kong economy is closely tied to international systems;
- About 75% of HKIA traffic is regional (to/from the Mainland and Asia); and
- HKSAR and Asia GDP follow similar patterns of evolution.

Figure 2.5: Comparison between Actual and Derived HKIA Cargo Traffic Based on Hong Kong GDP and Global GDP

![Graph showing comparison between actual and derived HKIA cargo traffic based on Hong Kong GDP and global GDP.]

Source: AAHK traffic data, IATA Consulting estimates

2.8 For HKIA, total cargo traffic proved to be closely correlated to HKSAR and world GDP (measured in real value). Figure 2.6 below details the causal factor used for the HKIA cargo forecast and the corresponding elasticity. A hypothetical variable was introduced in the cargo model to factor in the specific effect of the event of 9/11 on traffic.

Figure 2.6: Outcome of the Regression Analyses on HKIA Cargo Total Market

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<tbody>
<tr>
<td>HKIA cargo</td>
<td>HK real GDP</td>
<td>1.9*</td>
<td>181</td>
<td>0.98</td>
<td>8%</td>
</tr>
<tr>
<td></td>
<td>World real GDP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: *measured against Real HK GDP
Source: IATA Consulting’s Methodology

2.9 The economy is the main driver for passenger and cargo traffic development. The following sections describe how analysts project the global economy and the economies of the various regions of interest to HKIA: HKSAR, Pearl River Delta (PRD), Mainland and

$^{11}$ Refer to Footnote 5.
Yangtze River Delta (YRD). Development of these key economies is forecast along past trends, implying in particular a greater role for PRD within the Greater Pearl River Delta (GPRD) and for YRD within the Mainland.

The Global Economy

2.10 World GDP grew at an annual rate of 3.1% during the decade prior to the economic downturn of 2001. From 2001 to 2008, world GDP recovered and exceeded the previous decade’s growth rate, reaching US$61,221 billion at an average annual growth rate of 3.9%. Fuelled by countries such as China and India, world trade volume steadily increased at an average growth rate of 5.8% per year during the same period\(^\text{12}\).

2.11 In 2008, world GDP slowed to 3.3%, and World Bank projections for 2009 estimated it to have contracted by 2.9%. During this period, weak demand from developed nations for manufactured goods severely weakened world trade volume, which contracted by 11.1% in 2009.

2.12 A global economic recovery is underway, buoyed by the strong performance and stabilisation of Asia’s economies. It has also been driven by a rebound in manufacturing, the stabilisation of retail sales and commodity prices, and a gradual improvement in financial conditions. However, the economies of developed nations are still relatively weak, suggesting that the road to a full recovery may still have bumps ahead. World GDP is expected to reach US$71,497 billion in 2014, growing at an average annual rate of 3.6\(^\text{13}\), and then remaining relatively stable for the rest of the decade. In the long run, world GDP is anticipated to grow at a Compound Annual Growth Rate (CAGR) of 4.0\(^\text{14}\).

The Mainland Economy

2.13 The Mainland has had double digit GDP growth rate in the past decades. In 2004, the Mainland became the third-largest country in the world in terms of GDP. In 2008, Mainland GDP topped US$4.4 trillion, and the period of 2004-2008 showed an average annual growth rate of 10.2%, with GDP per capita reaching US$3,150 in 2008\(^\text{15}\). Following the global trend, the Mainland economy began to slow down in the fourth quarter of 2008. Although the Mainland’s long-term GDP growth rate is expected to be a modest 5.5% in 2030, this is still higher than the anticipated world GDP growth rate of 4.0\(^\text{16}\). Foreign direct investment (FDI) is expected to remain high over the medium term, fuelled by the disparity between production costs in the Mainland and those of western countries. As the Mainland moves up the value chain, its import level is expected to increase and reach a balance with exports by 2020. By 2030, its GDP per capita is forecast to reach approximately US$14,000\(^\text{17}\).

\(^{12}\) IMF World Economic Outlook Database, April 2010
\(^{13}\) IMF World Economic Outlook Database, April 2010
\(^{14}\) EIU (July 2009), Global Insight (July 2009)
\(^{15}\) China Statistical Yearbooks 2009
\(^{16}\) Global Insight (July 2009)
\(^{17}\) World Bank, IATA Consulting estimates based on Global Insight
The Pearl River Delta Economy

2.14 The PRD economic zone is the Mainland’s leading economic zone covering nine cities/municipalities – namely Guangzhou, Shenzhen, Foshan, Zhuhai, Jiangmen, Zhongshan, Dongguan, Huizhou, and Zhaoqing. In 2009, PRD was home to 42,870 enterprises, of which 42,481 were small and medium enterprises (SMEs), with a total footprint of 42,000 square kilometres and a work force of close to 12.9 million. In the same year, the Mainland census recorded a total PRD population of over 47 million. The PRD region is considered one of the most diverse regions in the Mainland, influenced by a large number of foreign firms and a growing capitalistic environment. It covers only 0.4% of the country’s land area, yet the region contributed 9.9% of its GDP and 18.3% of its FDI in 200818.

2.15 Fuelled mainly by Hong Kong investments that relocated their manufacturing operations to the PRD region, attracted by the cheap labour, the region formerly dominated by farmland has seen its economy swell.

2.16 As one of the Mainland’s most diverse manufacturing regions, the PRD region is also a major export base for foreign investors from the HKSAR. With the growing manufacturing sector in the region, PRD infrastructure has developed quickly to support the thriving demand for trade. In 2008, the PRD region handled a total value of US$656 billion in import and export trade representing close to 30% of the Mainland’s total trade.

2.17 Increasing competition between the Mainland’s manufacturing regions has led to PRD seeking new sources of economic growth. Developing better connectivity between the Guangdong cities and Hong Kong will enable both partner regions to leverage their combined vast and dynamic resources to attract more investment. Political and economic agreements such as the Hong Kong-Guangdong Co-operation Agreement of April 2010 will further facilitate this.

Figure 2.7 : PRD Economy as a Percentage of the Mainland Economy – 1990 to 2007

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<tbody>
<tr>
<td>Permanent Population</td>
<td>2.1%</td>
<td>2.7%</td>
<td>3.4%</td>
<td>3.5%</td>
<td>3.6%</td>
</tr>
<tr>
<td>GDP</td>
<td>5%</td>
<td>7%</td>
<td>8%</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>GDP per Capita (number of folds greater relative to Mainland GDP per Capita)</td>
<td>2.61</td>
<td>2.51</td>
<td>2.58</td>
<td>2.86</td>
<td>2.89</td>
</tr>
<tr>
<td>Foreign Direct Investment</td>
<td>35%</td>
<td>21%</td>
<td>26%</td>
<td>19%</td>
<td>20%</td>
</tr>
<tr>
<td>Total Value of Imports</td>
<td>37%</td>
<td>33%</td>
<td>33%</td>
<td>28%</td>
<td>27%</td>
</tr>
<tr>
<td>Total Value of Exports</td>
<td>36%</td>
<td>35%</td>
<td>34%</td>
<td>29%</td>
<td>29%</td>
</tr>
</tbody>
</table>

Note: PRD includes Guangzhou, Shenzhen, Foshan, Zhuhai, Jiangmen, Zhongshan, Dongguan, Huizhou and Zhaoqing.
Source: China Statistical Yearbook

18 Guangdong Statistical Yearbook 2009, China Statistical Yearbook 2009
2.18 The PRD region is restructuring to promote high technology and modernisation, and is aiming to move upstream in the value chain by building research and development capabilities especially in the pharmaceutical industry sector.

2.19 The PRD region is developing its service industries to expand its position as an international centre, with Shenzhen expected to become the region’s financial centre. Its financial industry’s contribution to total GDP is expected to be over 15% by 2020.

2.20 There is also increasing competition amongst the various PRD cities to modernise and attract demand. In addition to the established options of Shenzhen and Guangzhou, Qingyuan and Jieyang, which are just outside the PRD are emerging as competitive alternatives for corporations investing further westward in the Mainland. Industries in Qingyuan include electronic information, equipment manufacturing, and metal processing and those in Jieyang include power production and supply, plastic products, textiles, and metallurgy. Foshan and Dongguan are also emerging centres. The growing domestic demand and better linkage between PRD and the rest of the Mainland should balance the risk of developing overcapacity in the region over the long term.

2.21 As the Mainland economy grows, the PRD’s GDP is forecast to increase at CAGR of 7.1% from 2008-2030. By 2030, its GDP is expected to reach US$1.8 trillion, and foreign direct investment (FDI) will remain high. The growth in PRD import and export value is expected to slow down slightly as the region’s economic focus shifts from manufacturing to services, which occurs naturally as markets become more mature and sophisticated.

Figure 2.8 : Estimated GDP and Population Growth Rates for PRD Region (in CAGR)

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<tbody>
<tr>
<td>GDP</td>
<td>8.5%</td>
<td>8.8%</td>
<td>8.5%</td>
<td>7.4%</td>
<td>6.6%</td>
<td>5.8%</td>
</tr>
<tr>
<td>Population</td>
<td>1.2%</td>
<td>1.7%</td>
<td>2.0%</td>
<td>1.5%</td>
<td>1.2%</td>
<td>1.2%</td>
</tr>
</tbody>
</table>

Source: World Bank, Experian, estimates based on Global Insight

The Yangtze River Delta Economy

2.22 The YRD is the most populous area in the Mainland; and its economic zone includes 16 cities: Shanghai, Hangzhou, Ningbo, Jiaxing, Huzhou, Shaoxing, Zhoushan, Taizhou, Nanjing, Wuxi, Changzhou, Suzhou, Nantong, Yangzhou, Zhenjiang, and Taizhou. The YRD region covers an area of 110,000 square kilometres and had a population of 93.9 million in 2007. The GDP of the region reached US$686 billion, accounting for approximately 18.1% of Mainland GDP. GDP per capita in the YRD region exceeds US$6,900 and is among the highest in the country.

2.23 While the PRD region is the centre for manufacture and assembly of light consumer goods, the YRD region focuses predominantly on heavy industrial equipment such as

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19 Experian, IATA estimates based on Global Insight
machinery, chemicals, and other upstream industries. Shanghai has developed its economy around the financial, logistics, real estate, and automotive sectors. Suzhou is a strong manufacturing base for foreign companies, and Nanjing is a hub for the automotive, electronics, education and natural resource sectors. In 2007, the total industrial output of the YRD was valued at US$1,440 billion, accounting for 24.3% of Mainland output.

2.24 Since the 1990s, FDI in the YRD region has increased very rapidly. Shanghai, for example, received US$7.9 billion in FDI in 2007, 71 times higher than in 1990. Fuelled by its geographic advantage as the hub for water transportation, a number of ports on the coastline, market potential and a strong cluster of higher education institutions, YRD continues to be one of the top FDI destinations in the Mainland.

2.25 The YRD region also serves as a major logistics centre in the Mainland. In addition, its well developed aviation infrastructure – the region handled 16.4% of the nation’s total cargo in 2007 - allows the YRD to be the one of the Mainland’s most important distribution hubs. Export is one of the YRD’s major economic drivers, and the region generated US$451 billion in exports, roughly 36.9% of the Mainland’s total, almost 72 times greater than that achieved in 1990.

2.26 Going forward, YRD industries are likely to continue to focus on their current sectors. While most current development is concentrated in the major cities of the YRD, namely Shanghai, Nanjing, Hangzhou, and Suzhou, significant future FDI inflows can be expected in the rest of the YRD.

2.27 Export and import trade will remain the top YRD economic driver. Current expansion of major YRD ports, especially in Shanghai, will strengthen the YRD shipping industry. However, rapid growth will lead to saturation in port infrastructure in the future.

2.28 Shanghai’s focus on the financial sector is anticipated to grow steadily in the coming years, fuelled by the Mainland’s growing domestic demand. The State Council states that Shanghai will be developed into a global financial and shipping centre by 2020. Despite the slowdown caused by the financial crisis, foreign interest remains strong and Shanghai is expected to achieve the status of “Wall Street of East Asia”.

2.29 While concerns do exist about competition between the YRD and PRD, their divergent industry and market focus areas will in fact limit competition between the two. The YRD specialises mainly in raw materials, heavy industrial goods and other upstream industries, with Shanghai and Jiangsu accounting for more than 70% of the national output for micro-computers, and Jiangsu and Zhejiang accounting for 69% of Mainland’s chemical fibre in 2007. PRD on the other hand specialises in consumer goods; specifically electronics and IT products on the east bank of the PRD and household appliances on the west bank.
Figure 2.9: Estimated GDP and Population Growth Rates for the YRD Region (in CAGR)

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<tbody>
<tr>
<td>GDP</td>
<td>11.3%</td>
<td>9.2%</td>
<td>8.8%</td>
<td>7.2%</td>
<td>6.3%</td>
<td>5.5%</td>
</tr>
<tr>
<td>Population</td>
<td>0.8%</td>
<td>0.8%</td>
<td>0.8%</td>
<td>1.3%</td>
<td>1.2%</td>
<td>1.2%</td>
</tr>
</tbody>
</table>

*Note:* YRD includes Shanghai, Nanjing, Suzhou, Wuxi, Changzhou, Yangzhou, Zhenjiang, Nantong, Taizhou, Hangzhou, Ningbo, Huzhou, Jiaxing, Shaoxing, Zhoushan and Taizhou  
*Source:* World Bank, Experian, estimates based on Global Insight

The Rest of Mainland Economy

2.30 The rest of the Mainland, excluding the PRD and YRD, accounts for roughly 85.8% of its population and 71% of its GDP.

2.31 **Bohai**

The Bohai Bay rim economic zone is made up of Beijing (municipality), Tianjin (municipality), Hebei (province), Shandong (province), and Liaoning (province), with a total area of roughly 170,000 square kilometres and a total population of over 215 million. The Bohai Bay rim is one of the major economic zones of Mainland. Its GDP of US$4,404 billion accounted for close to a quarter of the Mainland’s GDP in 2008. Bohai economic zone is vastly diverse and includes agricultural and marine processing, heavy industries, modern technology including information technology services, and financial services.

2.32 While the secondary sector represents 51% of its GDP, most of Bohai Bay’s GDP comes from heavy industries and large enterprises. Bohai’s tertiary sector represents 41% of its GDP and approximately 9% of the Mainland’s GDP and this proportion is likely to grow as the region develops.

2.33 With a total population of 16.3 million, Beijing is the heart of the Bohai region. Beijing’s service sector accounted for 72.1% of the city’s GDP in 2007. Beijing’s three biggest economic sectors include wholesale and retail trade, information technology services, and financial services. Of the three, the financial services sector showed the fastest growth in 2007 at 22.3%.

2.34 Bohai is expected to continue to focus on high-tech electronics. Beijing hopes to build its reputation as the Mainland’s Silicon Valley. Reinforcing its ambitions to become a high-tech zone, Beijing has the largest number of high level education and scientific research institutions in the Mainland - roughly 430 institutions employing 93,625 scientists and engineers. With a number of major technological multi-national corporations (MNCs) such as NEC and Sun Microsystems setting up large facilities in Beijing, FDI increased by 18.7% per annum between 2003 to 2007 to a little under US$5.07 billion.

2.35 Tianjin is expanding its financial services to become the region’s financial centre to better support Bohai’s expansion, Shandong is emphasising software/application
development, network communications and telecommunications, and Hebei and Liaoning remain focused on the agricultural and natural resource industries.

**Figure 2.10 : Estimated GDP and Population Growth Rates for the Bohai Region (in CAGR)**

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<tbody>
<tr>
<td>GDP</td>
<td>10.3%</td>
<td>9.3%</td>
<td>9.1%</td>
<td>7.5%</td>
<td>6.6%</td>
<td>5.8%</td>
</tr>
<tr>
<td>Population</td>
<td>0.6%</td>
<td>0.6%</td>
<td>0.6%</td>
<td>0.6%</td>
<td>0.4%</td>
<td>0.4%</td>
</tr>
</tbody>
</table>

*Note:* Bohai Rim includes two municipalities: Beijing and Tianjin, and three provinces: Hebei, Shandong and Liaoning

*Source:* World Bank, Experian, estimates based on Global Insight

2.36 **Central and Western Provinces of the Mainland**

The Central and Western provinces of the Mainland have historically received lower levels of investment. In order to bridge the gap between the eastern coastal cities and the western cities, the Go West campaign was launched in 1999, backed up with encouragement and incentives from the Central government.

2.37 While a significant amount of Government funding has been allocated to the rest of the Mainland, this is not expected to rapidly develop it into a region of similar economic strength as the PRD and YRD within the forecast horizon. There will be no noteworthy increase in foreign companies relocating to the rest of the Mainland that may result in a reallocation of FDI from the coastal cities. The gap between the rest of the Mainland and the coastal cities will gradually reduce, but will persist for the next few decades. As the second-tier regions of the Mainland develop, PRD and YRD will play a key role as logistics, services and financial hubs for these regions.

**Figure 2.11 : Estimated GDP and Population Growth Rates for the Rest of the Mainland (in CAGR)**

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<tbody>
<tr>
<td>GDP</td>
<td>8.4%</td>
<td>7.0%</td>
<td>9.4%</td>
<td>7.5%</td>
<td>6.6%</td>
<td>5.8%</td>
</tr>
<tr>
<td>Population</td>
<td>0.5%</td>
<td>0.6%</td>
<td>0.6%</td>
<td>0.1%</td>
<td>-0.1%</td>
<td>-0.4%</td>
</tr>
</tbody>
</table>

*Note:* Rest of the Mainland includes all regions but PRD, YRD, and Bohai

*Source:* World Bank, Experian, estimates based on Global Insight

2.38 **The Hong Kong Economy**

HKSAR, geographically located at the centre of East Asia’s developing countries, is recognised for its open government and well-developed infrastructure. Hong Kong’s
international network and free trade policies have allowed the city to establish itself as a business centre in Asia.

2.39 Although not immune to external shocks, Hong Kong’s economy has demonstrated its resilience. HKSAR faced the Asian financial crisis in 1997 as a result of which 1998 unemployment rates increased over 5% and retail sales declined 17%, and it was further impacted by the 2001 global slowdown. In 2003, the economy was affected by the Severe Acute Respiratory Syndrome (SARS) epidemic. On average, Hong Kong’s economic output growth in 2003 decreased 1.2%, representing an approximate US$1.9 billion loss in spending for goods and services. More recently, the economic recession in 2008 caused Hong Kong’s GDP to shrink. Against the background of this turbulent decade, Hong Kong’s economy is now recovering strongly.

2.40 During the ‘60s and ‘70s, the Hong Kong economy was predominantly driven by manufacturing. In the following decades, Hong Kong moved away from its traditional roots, investing heavily in its service sectors. As the Mainland’s infrastructure and openness to foreign companies developed, many manufacturers relocated their facilities to the Mainland. The share of Hong Kong’s GDP from manufacturing has decreased from 30% in the ‘70s to less than 3% in 2008. By relocating the majority of its labour intensive manufacturing to the Mainland, and diverting investment to its financial and retail sectors, Hong Kong has become one of Asia’s busiest service hubs and financial marketplaces. In 1991, Hong Kong’s tertiary GDP accounted for nearly 72% of the total GDP, and by 2008, it accounted for approximately 91% of its GDP.

2.41 Hong Kong’s foreign trade sector has greatly benefited from its close involvement in the economic development of the Mainland over the past decades. Hong Kong’s liberal trade policies have made it the Mainland’s third largest trading partner, after the United States and Japan. The link with the Mainland’s economy has grown steadily with the Mainland’s share of HKSAR trade increasing from 39.0% in 2000 to 48.0% in 2008. The world’s 13th largest trading economy, Hong Kong handled over US$749 billion in merchandise trade in 2008 compared to US$164 billion in 1990. Hong Kong has been the Mainland’s most important logistics centre since 2005. Furthermore, Hong Kong is the site of the third-largest container sea port and the largest international freight airport in the world.

2.42 Contributing significantly to Hong Kong’s economy, tourism generated over 3% of Hong Kong GDP in 2008. The World Tourism Organisation ranked Hong Kong 12th globally in terms of international traffic. Once dominated by Japanese and Taiwanese visitors, over half of the inbound arrivals in Hong Kong now come from the Mainland. From 1981 to 2008, the number of inbound visitors from the Mainland grew about 12-fold from 2.5 million to 29.5 million. During this period, tourist demand fell only once - due to the SARS outbreak in 2003, travel demand fell by 6.5%.
Figure 2.12: Hong Kong Economic Drivers as a Percentage of GPRD – 1995 to 2007

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</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>15.8%</td>
<td>13.4%</td>
<td>13.2%</td>
<td>13.1%</td>
<td>13.0%</td>
<td>13.0%</td>
<td>13.0%</td>
<td>12.9%</td>
<td>12.7%</td>
</tr>
<tr>
<td>GDP</td>
<td>72%</td>
<td>61%</td>
<td>58%</td>
<td>54%</td>
<td>49%</td>
<td>46%</td>
<td>43%</td>
<td>40%</td>
<td>37%</td>
</tr>
<tr>
<td>GDP per Capita (folds)</td>
<td>15.4</td>
<td>10.4</td>
<td>9.3</td>
<td>8.1</td>
<td>6.7</td>
<td>5.9</td>
<td>5.3</td>
<td>4.7</td>
<td>4.2</td>
</tr>
<tr>
<td>Import and Export Value</td>
<td>78%</td>
<td>69%</td>
<td>67%</td>
<td>63%</td>
<td>59%</td>
<td>57%</td>
<td>56%</td>
<td>55%</td>
<td>55%</td>
</tr>
</tbody>
</table>

Note: Greater Pearl River Delta (GPRD) includes HKSAR, Macao SAR, and nine (9) cities/municipalities of the Guangdong province of the Mainland.
Source: The Mainland, Hong Kong, Macao Statistical Yearbook

2.43 Hong Kong has seen its GDP increase by almost 4.0% per annum from 2004-2009, after recovering from the effect of the global economic slowdown and SARS epidemic in 2001-2003. Hong Kong’s link with the Mainland economy has also strengthened significantly, with the Mainland’s share of HKSAR trade increasing from 39.0% in 2000 to 48.7% in 200820.

2.44 Hong Kong has proven resilient to economic challenges. Over the past decades Hong Kong has always been among the first in the region to recover from a crisis and capture new opportunities for growth. **Between 2008 and 2030, Hong Kong’s GDP is forecast to continue growing at a CAGR of 3.2%**21. The infrastructure projects connecting Hong Kong with the Mainland should strengthen HKIA’s position as a leading international and regional aviation centre as well as keep it as the preferred gateway to the Mainland. Hong Kong’s economic outlook over the coming decades appears promising (see Figure 2.13).

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20 China Statistical Yearbooks 2002 and 2009
21 EIU (July 2009), Global Insight (July 2009)
Figure 2.13: Hong Kong’s GDP Growth, 2008-2030

CAGR (2008-2030) = 3.2%

Source: Census and Statistics Department (real GDP of 2008 and 2009), 5-year forecast from EIU and long term forecast from Global Insight, July 2009 versions

Details on GDP assumptions used are in Appendix 1.

Aviation Market Outlook: Mainland and the Global Scene

2.45 By 2030 IATA Consulting forecasts estimated air traffic to and from the Mainland to reach nearly 2.1 billion trips and cargo traffic to reach 44 million tonnes. This projection is supported by several observations. On the passenger side, the World Tourism Organisation forecasts that the Mainland will become the world’s fourth-largest tourist source market and the largest domestic tourist market by 2015. Mainland’s GDP per capita will reach approximately US$14,000 in 2030, and as the economy grows the desire and ability of the Mainland Chinese to travel both domestically and internationally will grow rapidly. The travel propensity of the Mainland Chinese is currently below the world average and is expected to increase hugely (see Figure 2.14).

22 World Bank, IATA estimates based on Global Insight
2.46 The Mainland is the global manufacturing capital, and its cargo must be delivered to its overseas markets around the world. Rising FDI, improving living standards, more liberal trade policies and a growing cargo and logistics sector support a robust cargo growth projection. Over the past decade, cargo traffic at Mainland airports has increased by a CAGR of over 10% each year, reaching 9.5 million tonnes in 2009. The Mainland’s substantial trade volume and growing economy will be key factors in its cargo growth.
2.47 The Mainland passenger traffic forecast can be referenced to recent passenger traffic levels for highly developed aviation markets. North America and Europe typically operate in the neighbourhood of 1.6 billion and 1.5 billion passengers per year respectively. This is similar to the Mainland’s projections for 2025, but these regions are only about one-third and a half of Mainland’s population respectively (see Figures 2.17 and 2.18).
Figure 2.17: Major Hub Airports in North America Handled 1.6 Billion Passenger Trips in 2008

Note: US population 2008 = 311.7 million (UN),
Canada population 2008 = 33.3 million (World Bank)

Figure 2.18: Major Hub Airports in Europe Handled 1.5 Billion Passenger Trips in 2008

Note: Europe population 2008 = 731.6 million; W Europe = 187.8 million (UN)
2.48 Referencing cargo growth in the Mainland in the same manner as above, North America and Europe, both smaller and more mature markets, had 29 million tonnes and 18 million tonnes of cargo respectively in 2008 (see Figures 2.19 and 2.20).

Figure 2.19: Major Hub Airports in North America Handled 29 Million Tonnes of Cargo in 2008

![Map of major hub airports in North America with cargo tonnage data]


Figure 2.20: Major Hub Airports in Europe Handled 18 Million Tonnes of Cargo in 2008

![Map of major hub airports in Europe with cargo tonnage data]

Aviation Market Outlook: Greater Pearl River Delta

2.49 The PRD\textsuperscript{23}, HKIA’s catchment area (see Figure 2.21), is one of the Mainland’s most diverse and fastest growing regions. Being one of the Mainland’s most affluent areas, it is not just the country’s centre of manufacturing but also a major export base for investors from Hong Kong. PRD infrastructure is therefore growing robustly to support the thriving demand for trade. In 2008, the PRD region alone handled a total value of US$656 billion in import and export trade, representing close to 30\% of the Mainland’s total.

Figure 2.21 : Pearl River Delta Location

2.50 The electronics, IT, automotive, petrochemical technology, energy, medical and household appliance industries are the primary focus for the PRD in the National’s 11th Five-Year Plan. The region has since been rapidly restructuring and upgrading its facilities and infrastructure in keeping with this focus.

2.51 Assuming continuous growth in trade and the overall economy, IATA Consulting estimates that the aviation market in the GPRD\textsuperscript{24} in 2030 will grow to 387 million passenger trips and 18 million tonnes of cargo (see Figure 2.22).

\textsuperscript{23} The PRD comprises Dongguan, Foshan, Guangzhou, Huizhou, Jiangmen, Shenzhen, Zhaoqing, Zhongshan and Zhuhai.

\textsuperscript{24} The GPRD comprises PRD plus Hong Kong and Macao.
2.52 Within the GPRD, there are five airports, namely, HKIA, Guangzhou Baiyun International Airport, Shenzhen International Airport, Macao International Airport and Zhuhai Airport. Having taken into account the anticipated increase in the handling capacity of the five airports in the next twenty years, IATA Consulting forecasts that there will still be a significant unfulfilled demand for air services both in the medium term up to 2020 and in the long term up to 2030 (see Figure 2.23).

Figure 2.23 : GPRD Airports Capacity and Forecast Passenger Demand (2020 and 2030)

*For HKIA, the capacity assumed is 60 million based on completion of the committed Midfield Phase 1 Development

Source: CAAC, IATA Consulting analysis and estimates
2.53 The London and New York areas provide a useful reference for reviewing the growth potential of airports in the GPRD. In 2008, London’s five airports (Heathrow, Gatwick, Stansted, Luton and London City) served a total of nearly 137 million passengers, and New York’s three airports (JFK, Newark and LaGuardia) served approximately 106 million passengers. Each area has a population of around 8 million. In contrast the five airports in the GPRD, whose combined catchment has a population of approximately 48 million, served a combined total of only 110 million passengers in 2008. Extending the same ratio of population to passengers as New York and London to the GPRD suggests that GPRD airports should aim to serve 350 to 450 million passengers.

Potential Factors Impacting HKIA’s Future Growth

2.54 During the forecasting process, IATA Consulting considered various factors that may impact the airport environment (see Figure 2.24).

Figure 2.24 : Market Dynamics Surrounding HKIA

2.55 Factors that change gradually and continuously are catered for in the regression analysis. Other abrupt changes in the airport market, such as cross-strait direct flights and development of cross-boundary infrastructure are separately assessed to evaluate whether there is any incremental impact on the regression based forecast. The following sections will discuss the various factors affecting HKIA’s traffic demand, as well as IATA Consulting’s views on whether certain factors require incremental traffic adjustments to the regression based forecast.
**Regulation: Air Services Agreements**

2.56 Air Services Agreements (ASAs) provide the regulatory umbrella under which the aviation industry operates and develops. Recent years have witnessed a continuous liberalisation of traffic rights, not only between HKSAR and its counterparts but also between the Mainland and other major world economies. Further deregulation is expected to take place in the short, medium and long term enabling existing markets to grow and new markets to emerge. Direct links between the Mainland and other major world economies constitute an unprecedented factor that will need to be assessed separately from the regression traffic model.

2.57 **Hong Kong**

The following paragraphs analyse the recent ASAs’ history in HKSAR. It shows how the Hong Kong government implemented a continuous aviation liberalisation process based on growing the number of ASAs, and progressively liberalising the existing ones. Given that Hong Kong has the authority to sign ASAs with other countries, this trend as well as the introduction of fifth freedom rights\(^{25}\) will further strengthen Hong Kong’s accessibility and competitive positioning as an origin/destination airport and hub within Asia and the region.

2.58 Hong Kong has signed ASAs over the past few years with markets such as Maldives, Laos and Fiji, reaching a total of 61 ASAs. Although ASAs with most of Hong Kong’s key markets have already been concluded several years ago, additional agreements with smaller countries as well as more liberalised agreements with existing air services partners are expected. The recent renegotiation of the ASA with Japan is a good illustration of the deregulatory trend in place. Flights between Japan and Hong Kong have in the past been restricted in capacity from all major gateway cities such as Nagoya, Osaka, Fukuoka, Sapporo, Sendai and Okinawa. With the exception of Tokyo, all restrictions were revoked in 2008 allowing unlimited capacity between these cities and Hong Kong by airlines of both sides.

2.59 Hong Kong has concluded ASAs with unlimited third/fourth freedom capacity with 20 aviation partners. Fifth freedom rights are often exchanged in order to further facilitate airlines’ operations. There is room for further expansion and development with respect to third, fourth and fifth freedoms.

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\(^{25}\) Fifth freedom right refers to the right or privilege, in respect of scheduled international air services, granted by one state to another state to put down and to take on, in the territory of the first state, traffic coming from or destined to a third state.
2.60 **The Mainland and Hong Kong**

Between the Mainland and Hong Kong, third and fourth freedom rights are available as follows:
- Restrictions on passenger capacity and carriers to 3 airports in the Mainland (Beijing, Shanghai (Pudong) and Shanghai (Hongqiao)).
- No restriction on 61 passenger routes.
- No restriction on 63 cargo routes.

2.61 IATA Consulting anticipates the implementation of more liberal rights between the Mainland and Hong Kong. This enhancement is essential to stimulate additional demand between the Mainland and the SAR.

2.62 **The Mainland**

The Mainland has adopted a progressive approach in liberalising its air traffic rights. In 1987, 40 ASAs were in place between the Mainland and its counterparts. Since then, the Mainland has liberalised its aviation framework and, to date, has concluded about 96 ASAs with its aviation partners. This trend is expected to continue, resulting in additional routes and services to and from the Mainland airports and stimulating traffic growth at these airports. One of the most symbolic developments is the implementation of Direct Links between the Mainland and Taiwan. Despite the intensifying airport competition triggered by this liberalisation, HKIA, as a gateway to PRD and a hub to the Mainland, remains uniquely positioned to benefit from the growing Mainland market.

2.63 The U.S.-China ASA is one of the most emblematic developments of recent years. The two nations reached an agreement to allow for a significant expansion of passenger and cargo air services as set out below:
- The agreement allows U.S. carriers to operate to the Mainland gateway cities of Beijing, Shanghai and Guangzhou over 2008-2012, with an increase in air services from 7 daily flights in 2004 to 46 daily flights in 2012.
- The agreement entails an increase in the number of U.S. passenger carriers that may serve the Mainland market; from 6 in 2007 to 9 in 2011.
- Additionally, it allows unlimited U.S. cargo flights to any point in the Mainland and permits an unlimited number of U.S. cargo carriers to serve the market as of 2011. The Central Government has authorised the establishment of foreign cargo hubs in the Mainland (FedEx in Hangzhou and Guangzhou, UPS in Shanghai and Shenzhen and DHL in Shanghai) granting beyond rights to the associated carriers.
- Both countries agreed to launch initial Open Skies Agreement (OSA) negotiations in 2010.

2.64 As part of the aviation deregulation process, further expansion towards some Asian countries is widely expected. A few months after Mainland and the Association of Southeast Asian Nations (ASEAN) member states concluded the China-ASEAN Free

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26 The member states of ASEAN are Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam.
Trade Area (CAFTA) in 2007, a Framework Agreement on China-ASEAN Comprehensive Economic Cooperation was signed. This Agreement encompassed an air transport agreement aimed at creating a fully liberalised air services regime between the ASEAN states and Mainland. The ASEAN member states and Mainland agreed to actively expand the ASAs and connectivity at a bilateral, regional or sub-regional level, to facilitate the circulation of passengers and goods and increase the trade in the region. ASEAN countries aim to implement full deregulation of international and domestic flights by 2015.

2.65 However, at this point, the implementation of passenger OSAs (such as Mainland China-U.S. or Mainland China-European Union) is not expected to be concluded soon. Mainland carriers are not prepared to compete on major long haul routes yet. Nevertheless, the initial aviation liberalisation agreement and its associated measures described above will have a beneficial impact on the Mainland’s air traffic infrastructure and are expected to help support the sustainable development of the Mainland economy.

2.66 Under the 11th Five-Year Plan, domestic routes were to be fully opened up for all Chinese airlines by end-2010, allowing any Chinese airline to fly any domestic route any time and at any frequency, without having to request approval.

2.67 IATA Consulting’s Evaluation

After assessment of the overall impact of ASA development on HKIA traffic, IATA Consulting has concluded that this factor will continue to develop gradually and continuously following historical trends. Therefore its impact is catered for in the regression based forecasting model and no special adjustment is needed.

Regulation: Cross-strait Direct Flights

2.68 Direct links between the Mainland and Taiwan constitute the most radical evolution in ASAs. The following paragraphs outline the current situation of the direct links and their likely evolution.

2.69 Prior to the implementation of cross-strait direct flights in July 2008, HKIA served as the dominant hub providing access to the Mainland for Taiwanese passenger and cargo traffic. From 1997 to 2007, HKIA passenger traffic to and from Taiwan increased at a CAGR of 4.5%, while air cargo increased by an average of 7.7% per year.

2.70 The introduction of direct links in July 2008 began with 36 weekly charter passenger flights, which subsequently increased to 108 weekly passenger flights and 15 weekly cargo flights in December 2008. As of 31 August 2009, this had increased to 270 weekly scheduled passenger flights and 28 weekly cargo flights. In May 2010, it was agreed to add a further 100 non-stop scheduled weekly passenger flights and 20 weekly cargo flights.

2.71 Simultaneously, the Taiwanese visa policy allowing Mainlanders to visit has been considerably relaxed, allowing up to 3,000 daily visitors from the Mainland. IATA Consulting estimated that cross-strait flights carried about 3.5 million passengers and...
54,000 tonnes of cargo in 2009, among which about 2 million were new passengers as a result of the relaxed visa policy.

2.72 In the short and medium term, IATA Consulting assumes a continuous enhancement of the ASAs maintaining the principles of reciprocity and even number of flights on either side. However, growth would be slow as Taiwanese airlines cannot increase capacity as fast as Chinese airlines. Over the long term, it is believed that unlimited capacity arrangements will be granted.

2.73 While cross-strait direct flights have negatively impacted the traffic between Hong Kong and Taiwan in the short to medium term, the relaxation of the immigration policy for Mainlanders to visit Taiwan and increased cross-strait activities are likely to stimulate new demand. Generally speaking, the relaxation of the policy for Mainlanders to visit Taiwan and increased cross-strait activities stimulating overall GDP growth in Taiwan will stimulate growth in cross-strait passengers. Based on publicly available information, IATA Consulting expects the current Mainland visitor quota to increase progressively and reach 10,000 per day in the medium term. In the long term, IATA Consulting believes that the visa policy will be further relaxed so as not to constrain demand and to make Taiwan as attractive as Beijing for Mainland visitors. Beijing currently receives about 12 million Mainland visitors a year.

2.74 On the economic front, it is expected that direct links and closer ties between Taiwan and the Mainland, including the signing of the Economic Cooperation Framework Agreement (ECFA), will stimulate the Taiwanese economy. In particular, tourism, retail and trade, construction and logistics are likely to be the primary beneficiaries under this policy. Considering the elasticity of traffic to GDP, the policy is estimated to increase the number of Taiwanese visitors to Mainland China by up to 10%.

2.75 Hong Kong/Taiwan has for many years been the busiest air route out of HKIA with about 50 flights per day at present. Before cross-strait direct flights commenced in July 2008, passenger traffic segments potentially impacted by direct flights constituted about 16% (i.e. 7.7 million) of our total throughput in 2007, which decreased to 10% (i.e. 4.9 million) in 2010. Cargo traffic was reduced from 17% (i.e. 0.6 million tonnes) of our throughput in 2007 to 13% (i.e. 0.5 million tonnes) in 2010. However, this short-term negative impact has been partly mitigated by the relaxation of the policy for Mainlanders to visit Taiwan and the new demand for air travel stimulated by increased cross-strait economic activities. In 2010, overall passenger and cargo traffic between Hong Kong and Taiwan grew 4% and 14% respectively, over 2009. Looking ahead, increasing tourism and trade activities across the strait is expected to stimulate further growth in the Hong Kong/Taiwan passenger and cargo market.
2.76 **IATA Consulting’s Evaluation**

After assessment of the impact that cross-strait direct flights have on HKIA traffic, IATA Consulting has concluded that this factor will have a negative incremental impact on HKIA’s regression based passenger traffic forecast of around 1.3 million from the regression based forecast in 2030. On the cargo side, this factor will have a negative incremental impact on HKIA’s regression based cargo traffic forecast of around 0.7 million from the regression based forecast in 2030.

**Regulation: Trade Agreements**

2.77 Trade agreements will continue to play a growing role, fuelling both import and export to the Mainland as well as supporting the Mainland economy. Hong Kong will benefit from this stimulus as a result of the Closer Economic Partnership Agreement (CEPA) which allows wide and increasing accessibility to the Mainland market. As a hub to the Mainland and a gateway to PRD, Hong Kong will also take advantage of the growing exports and imports of the Mainland.

2.78 Figure 2.25 below summarises some of the most significant liberalisation measures of Mainland China that directly influence the Hong Kong economy and illustrates the Mainland’s progressive approach towards trade liberalisation.

**Figure 2.25 : Trade Agreements of the Mainland**

2.79 **WTO**

The Mainland became a member of the World Trade Organisation (WTO) in December 2001, and has undergone progressive liberalisation and restructuring to provide open market access.

2.80 The next rounds of negotiation will further reduce tariffs and liberalise trade conditions, resulting in an improved trade environment for Mainland exports and imports. Similarly, the entrance of new WTO members (Russia, Vietnam, and Ukraine) will further boost trade.

2.81 Some logistics activities (handling, freight forwarding, express mail) were liberalised after 2001, allowing foreign players to operate fully-owned logistic companies in the Mainland.

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2.82 **CEPA**

CEPA is the first bilateral Free Trade Agreement (FTA) between the Mainland and Hong Kong, aimed at liberalising the trade of products, services and investment. Since the signing of CEPA in 2004, HKSAR companies have been able to export products into the Mainland free of duty. Since then, several revisions have been implemented to better support the business needs of domestic and foreign enterprises (see Figure 2.26).

2.83 On tourism, CEPA Supplement VI authorised Mainland travel agents organising group tours to Taiwan for Mainland residents to plan a stop in Hong Kong in transit. 

Figure 2.26: CEPA Road Map

![CEPA Road Map](image)

- Increase of free-trade products from 300 to over 1,500
- Increase of free-trade service sectors from 18 to 42
- Continuous expansion of CEPA expected

2.84 In general, CEPA has progressively opened up the Mainland market for an increasing number of Hong Kong firms. It is strongly expected that free trade agreements between HKSAR and the Mainland will be further enhanced allowing the Hong Kong economy to take greater advantage of the Mainland’s growth. CEPA VII was signed in May 2010 and took effect from 1 January 2011.

2.85 **CAFTA**

The establishment of China-ASEAN Free Trade Area (CAFTA) in January 2010 has further driven the Mainland’s economic growth. CAFTA is expected to become the world’s third largest free trade area. Under CAFTA no tariff will be levied on 90% of products traded between the Mainland and ASEAN countries.

2.86 In addition, ASEAN member states and the Mainland have agreed to actively expand the ASAs and OSAs in the region. This is expected to strengthen the sustainable growth of air transport in and out of the Mainland and will in particular provide greater opportunities for air cargo traffic demand.

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28 Mainland and Hong Kong Closer Economic Partnership Arrangement (CEPA) Legal Text from the Trade and Industry Department, the Government of the HKSAR
29 “China to invest more in ASEAN under the CAFTA”, China Business News dated 8 January 2010, Hong Kong Trade Development Council (HKTDC) Market Intelligence
2.87 In conclusion, the trade agreements described above are expected to provide stimulus to sustain economic growth of the Mainland.

2.88 **ECFA**

The Economic Cooperation Framework Agreement (ECFA) is a trade agreement signed in June 2010 between the Mainland and Taiwan that aims to reduce tariffs and commercial barriers between the two markets. The agreement covers 539 Taiwanese products and 267 Mainland Chinese goods. The Mainland will also open its markets to Taiwan in 11 service sectors including banking, securities, insurance, hospitals and accounting, while Taiwan will offer wider access in seven areas, including banking and movies. The agreement also aims to boost investment between the two sides.

2.89 Further discussions will focus on cutting down on and removing restrictive measures gradually, enlarging the service sectors covered, and enhancing cross-strait cooperation.

2.90 **Shenzhen Special Economic Zone (SEZ) expansion**

In the ‘80s, the Mainland government established several Special Economic Zones (Xiamen, Shantou, Zhuhai, Hainan and Shenzhen) that offered a more relaxed economic regime. These SEZs were given special tax incentives to attract foreign investment, as well as greater independence on international trade activities.

2.91 On 1 July 2010, Bao’an and Longgang districts entered the Shenzhen SEZ, increasing its area five-fold from 396 square kilometres to 1,948 square kilometres (see Figure 2.27). One of the aims of the extension is to further develop the two cities of Shenzhen and Hong Kong into global centres for the finance, trade, logistics, innovation and culture industries.\(^{30}\)

\(^{30}\)“Shenzhen SEZ aims to be 5 times bigger”, China Daily dated 22 May 2009
IATA Consulting’s Evaluation

After assessment of the impact on HKIA traffic of trade agreements governing the region, IATA Consulting has concluded that this factor will continue to develop gradually and continuously following historical trends. Therefore its impact is catered for in the regression based forecasting model and no special adjustment is needed.

Regulation: Travel policy

This section identifies the recent and future changes in the travel policy, which may have a sizeable impact on air traffic. Further liberalisation is to happen, extending the past trends.

Hong Kong

The Hong Kong travel policy is already very liberal. Travellers from over 170 countries can visit Hong Kong visa free for periods from 7 days to 180 days. No significant change is expected on this front.31

Mainland

Mainland has progressively liberalised its travel policy to facilitate outbound tourism. It is expected that steps will continue to be taken to reduce travel restrictions for Mainlanders. These measures will boost tourism in HKSAR and increase the number of travellers potentially connecting through HKIA.

31 Immigration Department, the Government of the HKSAR
2.96 **Approved Destination Status**

During recent years, Mainland developed the “Approved Destination Status” (ADS)\(^{32}\) for specific overseas destinations. As of early 2009, 127 countries had been given the ADS compared to just 15 in 2000\(^ {33}\). A further expansion of the list of countries is expected. However, its impact on outbound tourism volumes from Mainland China will be minimal as the approved destinations already cover the majority of potential tourist destinations. In late 2009, the major omission from the ADS list was Taiwan.

2.97 **Individual Visit Scheme**

Introduced in 2003, the “Individual Visit Scheme” (IVS) allows Mainlanders to travel to Hong Kong and Macao on an individual basis. Prior to IVS, Mainlanders were required to travel with business visas or in group tours.

2.98 The IVS currently covers 49 municipalities and 270 million inhabitants\(^ {34}\) in Mainland. Since its introduction, the IVS has resulted in a massive surge in outbound tourism to Hong Kong from 6.8 million in 2002 to 16.9 million in 2008 (see Figure 2.28)\(^ {35}\). In 2008, the number of travellers entering Hong Kong under the IVS was 8.9 million, representing 52.7% of the total\(^ {36}\). It is anticipated that the IVS will continue to drive visitor numbers to Hong Kong.

2.99 Only 6.2% of the population eligible for the IVS has so far travelled to Hong Kong. This share is likely to grow as the Mainland economy further flourishes.

2.100 Despite the large number of inhabitants covered, the IVS scheme currently includes only 20% of the entire Mainland population. The scheme is being expanded progressively to cover new municipalities stimulating travel to Hong Kong. Only 0.7% of non-IVS eligible Mainlanders travelled to Hong Kong – in contrast to 6.2% of the eligible ones.

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\(^{32}\) The Tourism Industry Association of Canada  
\(^{33}\) Hong Kong China Hawaii Chamber of Commerce  
\(^{34}\) Visitor Information – Individual Visit Scheme, Tourism Commission, Commerce and Economic Development Bureau, the Government of the HKSAR  
\(^{35}\) Research Statistics, PartnerNet, Hong Kong Tourism Board (HKTB)  
\(^{36}\) “Annual Economic report: Hong Kong 2008” by Consulate General of Switzerland in Hong Kong, 20 March 2009
2.101 Although a significant proportion of the Mainlanders making use of the IVS are from Guangdong, air traffic also strongly benefited from the IVS with the number of visitors arriving by air growing by almost 9% per annum since its implementation.

2.102 **Multiple-entry Visa for Shenzhen hukou-residents**

In April 2009, a multiple-entry visa policy for 2.2 million Shenzhen permanent residents was introduced in Hong Kong. This was another step in the relaxation of immigration policies for the Mainland, which will further drive the economic growth of Hong Kong and facilitate the use of HKIA by PRD residents\(^{37}\).

2.103 It is expected that the programme is being considered for extension to 6.5 million non-household registered residents of Shenzhen in 2012. IATA Consulting anticipates a further increase in PRD inhabitants visiting Hong Kong in the near and mid-term.

2.104 **IATA Consulting’s Evaluation**

After assessment of the impact of travel policy developments on HKIA traffic, IATA Consulting has concluded that this factor will continue to develop gradually and continuously following historical trends. Therefore its impact is catered for in the regression based forecasting model and no special adjustment is needed.

**Demand Consideration: Tourism development**

2.105 Apart from economic and regulation related aspects, there are other factors affecting potential demand which HKIA can tap into. These factors are examined by IATA Consulting in the following paragraphs.

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\(^{37}\) Annual Report 2008-2009, Immigration Department of HKSAR
2.106 Tourism to and from HKSAR and the Mainland has been a major driver of growth in international air traffic. Hong Kong is strengthening its attractiveness with new projects for the decade 2010-2020. Relaxation of travel policy, economic growth and liberalisation of air services agreements will further drive the buoyant increase of inbound and outbound tourists to and from the Mainland.

2.107 **Tourism to and from HKSAR**

Outgoing tourism has grown 4.3% per annum from 2001 to 2008, almost in line with national GDP and Hong Kong can therefore be considered a mature market (see Figure 2.29).

*Figure 2.29 : Evolution of Outbound Tourism in Hong Kong – 2001 to 2008*[^38]

![CAGR: 4.3%](image)

*Note: The outbound tourists refer to the same-day and overnight tourists
Source: Hong Kong Tourism Board*

2.108 Hong Kong’s incoming tourism market is affected by several highly dynamic factors and made up of two distinct segments: foreign tourists and Mainland tourists. Visitors to Hong Kong increased by 10% annually between 2001 and 2008 (see Figure 2.30).

[^38]: Research Statistics, PartnerNet, Hong Kong Tourism Board (HKTB)
2.109 Tourism to and from the Mainland

Since the beginning of the 21st century, the Mainland has experienced rapid and steady growth in its tourism industry. With regard to outbound tourism from the Mainland, the importance of Hong Kong as a destination has already been highlighted.

2.110 The total number of outbound tourists from the Mainland has increased from 12 million in 2001 to 46 million in 2008, recording an almost 21% annual increase (see Figure 2.31).

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39 Research Statistics, PartnerNet, Hong Kong Tourism Board (HKTB)
40 "CHINA’S OUTBOUND TOURISM: AN OVERVIEW" by Prof. Zhang Guangrui, Director, Tourism Research Centre, Academy of Social Sciences, WTM-ChinaContact Conference 2006
41 Tourism Statistics, National Tourism Administration of People’s Republic of China
42 "Tourism 2020 Vision", Volume 3 East Asia & Pacific, by World Tourism Organization (UNWTO)
2.111 According to the World Tourism Organisation, the Mainland is likely to become the world’s fourth largest source of outbound tourists by 2020 reaching over 100 million travellers per year. This increase is supported by several key factors including:

- Economic growth and increasing disposable income of Mainlanders;
- Relaxation of travel policy (ADS and IVS policy, simplification of the visa application process, alleviation of restrictions on foreign currencies);
- Increase in leisure time (paid holiday policy and change in the statutory holiday system);
- Change in consumption habits; and
- Improved international relationships.

2.112 Holiday System

The implementation of a new holiday system from 2008, elaborated below, will stimulate the outbound tourism from the Mainland in the coming years:

- The Central Government has recently modified the holiday system including a rearrangement of statutory holidays and the introduction of a paid holiday system.
- The previous system was based on two fixed holiday weeks in May and October. In 2007, the May Golden Week holiday was replaced by 5 flexible paid holidays and the number of statutory holidays was increased by 1 day to 11.\textsuperscript{43,44}
- As of January 2008, all employees of government agencies, enterprises and public-service institutions are entitled to take paid holidays after serving the same employer for one year. Employees who have worked less than 10 years are eligible for 5 paid days off a year; those who have worked for 10 to 19 years are eligible for 10 days and those who have worked for 20 years and above have 15 days. National holidays and weekends are not counted as paid holidays.\textsuperscript{45}

2.113 HKSAR ranked as the most preferred tourist destination for the Mainland Chinese in 2005. (see Figure 2.32).

\textsuperscript{43} “China makes its holiday plans”, EMT Worldwide, 21 January 2008
\textsuperscript{44} “New holiday system set for first test”, China Daily, 26 March 2008
\textsuperscript{45} “China makes its holiday plans”, EMT Worldwide, 21 January 2008
2.114 As the Mainland’s economy develops, the propensity to travel will rise and a growing number of Mainland tourists are expected to fly abroad. A large number of them will select Hong Kong, replacing more ‘experienced’ travellers who will go further to South East Asia, Australia or other long-haul destinations. It should be noted that despite the interest of Mainlanders in Taiwan, Hong Kong remains their preferred destination for international travel (see Figure 2.33).

Source: Tianjin University of Finance and Economics

46 Visa and Pacific Asia Travel Association (PATA), Asia Pacific Travel Survey 2009
2.115 The inbound tourism market into the Mainland is also growing rapidly. The total number of inbound tourists grew from 91.7 million in 2003 to 131.9 million in 2007. In 2008, inbound tourism decreased to 130 million due to visa restrictions and the global financial crisis.

2.116 Inbound tourism is expected to keep growing as the Mainland modernises its tourism and hospitality infrastructure.

2.117 **IATA Consulting’s Evaluation**

After assessment of the impact of the development of tourism on HKIA traffic, IATA Consulting has concluded that this factor will continue to develop gradually and continuously following historical trends. Therefore its impact is catered for in the regression based forecasting model and no special adjustment is needed.

**Demand Consideration: Cross-Boundary Infrastructure Development**

2.118 A number of infrastructure improvement projects around the GPRD have been either approved or are under study. Several of these projects will improve the accessibility of GPRD airports, which is expected to strengthen their role. These infrastructure developments represent unprecedented factors whose specific impact on traffic was assessed by IATA Consulting. The most sizeable projects about to be implemented are:

- Tuen Mun-Chek Lap Kok Link (TMCLKL) and Tuen Mun Western Bypass (TMWB)
- Hong Kong-Zhuhai-Macao Bridge (HZMB)
- Guangzhou-Shenzhen-Hong Kong Express Rail Link (XRL)

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47 China Travel Guide, Chinatour.com International Inc.
Figure 2.34 : Current Surface Transport in the GPRD

Source: AAHK, IATA Consulting and MVA

Figure 2.35 : Potential Future Surface Transport in the GPRD

Source: AAHK, IATA Consulting and MVA

2.119 TMCLKL and TMWB

With all major cross boundary roads from the PRD completed by 2016, the Tuen Mun Road, Ting Kau Bridge and Lantau link will be operating beyond capacity. The completion of the TMCLKL and TMWB is slated to synchronise with that of the HZMB, and will allow the growing ground traffic to access the airport. These projects will save 15-20 minutes in travel time between HKIA and the north-western New Territories, western
Shenzhen, and eastern PRD, providing much greater accessibility and increased competitiveness to the logistics industry, one of the four pillar industries of Hong Kong. The new infrastructure, however, will not have much impact on the distribution pattern of GPRD passengers and cargo traffic among the GPRD airports.

2.120 *IATA Consulting’s Evaluation*

After assessment of the impact of the TMCLKL and TMWB development on HKIA traffic, IATA Consulting has concluded that the improved access to the airport is already assumed in the demand forecast (by not constraining demand due to access issues). Therefore no special adjustment to the regression based model is needed.

2.121 *HZMB*

The HZMB, planned to be opened in 2016, will provide another transportation mode in addition to the Macao/Zhuhai ferry to Hong Kong. After evaluation, IATA Consulting has concluded that the bridge is likely to have a positive impact on the HKSAR and western PRD economy and therefore will boost the propensity to travel in the GPRD. However, the accessibility benefits will be limited to a small number of markets.

2.122 *Impact on the economy*

Several economic studies have analysed the role that connectivity played in the development of the western PRD. Some of these studies describe the operational area of HKSAR-based investors as a 3-hour circle around Hong Kong. With the current road transportation time of about 4-5 hours between Hong Kong and Macao, few HKSAR-based investors have moved across the Delta to develop their business.

2.123 Between 1980 and 2000, Dongguan and Shenzhen, benefiting from the massive investment led by HKSAR investors, have developed three times faster than Zhuhai and Zhongshan in the western PRD area.

**Figure 2.36 : Comparison of the Eastern and Western Banks of the PRD in terms of International Travel Propensity and GDP – 2008**

<table>
<thead>
<tr>
<th>International Travel Propensity</th>
<th>GDP in US$ billions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western PRD: Zhuhai, Foshan, Zhongshan, Jiangmen</td>
<td>0.22</td>
</tr>
<tr>
<td>Eastern PRD: Shenzhen, Guangzhou, Dongguan</td>
<td>0.33</td>
</tr>
</tbody>
</table>

*Source: China Bureau Statistics and MVA/IATA Consulting analysis*
2.124 The bridge linking Hong Kong and Zhuhai is likely to stimulate flows of capital and expertise across the Delta. Overall, it will contribute to the further development of the GPRD economy, increasing the economic development and wealth of the western municipalities of Macao, Zhuhai, Zhongshan and Jiangmen.

2.125 On the one hand, the bridge is poised to boost the economy of the western bank of the Delta. On the other hand, given that the GPRD is an interlinked system and increased focus on the western areas will have an impact on other areas of GPRD, and hence the potential additional impact on the economy of the region.

2.126 It is assumed that the GDP forecasts used for PRD and HKSAR have already included the long-term impact of the bridge on the economy. Therefore, the likely industrial development of the western GPRD is already factored in the model.

2.127 Impact on connectivity within the GPRD

The bridge between Zhuhai/Macao and Hong Kong will change transportation use and habits around the GPRD. However, detailed analyses show that only HKIA and Macao airport will experience no change in their accessibility.

2.128 From Hong Kong

HKSAR passengers will see the best access time to Macao International Airport (MFM) cut by about 40 minutes from 150 minutes to 110 minutes. However, HKIA remains much closer with a 40-minute travel time between Hong Kong Island and the airport. Although there are no records of the number of HKSAR passengers flying via Macao airport, it is estimated that the number of passengers who are price sensitive and willing to travel to MFM for lower fares is currently very small. The extent of this potential diversion of traffic is expected to remain limited as low-cost services will be further developed in HKIA.

2.129 If MFM implements a more aggressive orientation towards low-cost carriers, the airport could be preferred in the future by HKSAR-related price sensitive travellers. However, as the time value of these travellers is low, a 40-minute reduction in the access time to Macao airport is unlikely to make a sizeable difference to the number of HKSAR passengers electing to use it.

2.130 From Macao

Macao passengers will see the best access time to HKIA reduced by about 30 minutes from 90 minutes to 60 minutes. Some Macao travellers may choose HKIA instead of MFM as access time is reduced. However, Macao airport remains the closest airport for Macao travellers with a 30-minute access time from downtown Macao. In addition to the decrease in access time, the bridge will probably increase the connection frequency between Macao and HKIA. However, with one sailing every hour, the Hong Kong-Macao ferry already offers a high level of service. Even with increased coach frequencies, the theoretical access time to HKIA airport would remain higher than the access time to Macao airport.
2.131 **From Zhuhai**

Travellers to and from Zhuhai will also benefit from a 30-minute reduction in access time to HKIA. As with Macao, access time to HKIA will go down from 90 to 60 minutes.

2.132 The bridge does not reduce the access time from any other locations of GPRD to any of the GPRD airports. In particular:

- HZMB does not improve the 2-hour ferry access time to Shenzhen from Macao and Zhuhai;
- HZMB does not improve the access time to any PRD airports from Jiangmen, Zhongshan and Foshan municipalities.

2.133 **IATA Consulting’s Evaluation**

IATA Consulting has assumed that the impact of the development of HZMB on HKIA traffic has already been factored into the GDP forecasts for PRD and HKSAR. Since the forecasting model is GDP based, no special adjustment to the regression based model is needed.

2.134 However, the real economic impact of HZMB is still uncertain, as the toll and interfacing with the local areas are not yet confirmed. IATA Consulting believes it is prudent to test the sensitivities on the impact of HZMB assuming that it stimulates flows of capital and expertise across the Delta enabling the western PRD to catch up with the eastern PRD. A potential upside of around 1.5 million passengers in 2030 on top of the regression based model forecast could be added based on the following assumptions:

- HKIA market share in the western cities of the GPRD will follow the same trend as HKIA market share in GPRD international Origin and Destination (OD) traffic;
- International average travel propensity of the western bank cities will catch up with the eastern bank cities in 25 years (from 2016 to 2041);
- International OD demand from the western PRD cities will follow the international traffic forecast established for GPRD airports (excluding HKIA); and
- The additional traffic to HKIA is international and follows the distribution of international passengers at HKIA.

2.135 Similarly, a potential upside of around 0.8 million cargo tonnes in 2030 on top of the regression based model could be added based on the following assumptions:

- Industrial activity in the western PRD area would develop faster, partially closing the gap with eastern PRD and generating additional economic growth;
- The contribution of western PRD to GPRD air cargo traffic would double. (As the computer and communication industry accounts for about half of global air cargo traffic, it is assumed that 12% is a reasonable estimate for the current contribution of the western PRD cities to GPRD air cargo traffic.);
- GPRD international OD cargo traffic will achieve its forecast of 10.5 million tonnes in 2030, of which HKIA represents 61%; and
- Without the bridge and with no change in the distribution of the manufacturing activities around GPRD, western GPRD would account for 1.2 million tonnes in 2030. Factoring in the upside assumptions based on incremental development of
western GPRD due to the bridge would increase the total by another 1.2 million tonnes in 2030.

**Demand Consideration: Passenger travelling preferences**

2.136 Travellers prefer direct flight services. On a given route with competing direct and indirect services, direct services tend to capture 70% to 85% of the market despite the premium on price. However, direct air services are conditioned by traffic volume and unit revenue. The share of direct services usually increases as the economy flourishes.

2.137 In 2008, about 63% of the international market to and from the Mainland flew on direct services. This proportion was very high in comparison with more mature aviation markets such as Europe (56%), North America (53%) and Australasia (51%). The concentration of demand for international travel in the key areas of Beijing, YRD and PRD explains the gap. Over the forecast period, it is estimated that the proportion of direct traffic in the Mainland will remain stable as the result of opposite forces:

- As the Mainland further develops, other provinces will generate a higher share of demand for international travel, resulting in an increase in indirect traffic to these provinces.
- As the Mainland further develops, some indirect markets will become big enough to be serviced with direct flights. Additionally, the implementation of direct air links across the strait will also contribute to an increase in direct flights.

2.138 **IATA Consulting’s Evaluation**

After assessment, IATA Consulting has concluded that the impact of developing passenger travelling preferences on HKIA traffic will continue to develop gradually and continuously following historical trends. Therefore its impact is catered for in the regression based forecasting model and no special adjustment is needed.

**Substitution Factor: Modal competition: Air – Sea competition**

2.139 For the past decade, air freight has been the preferred mode of transport within the shipment industry because of the rapid growth in manufacture of technological products (high value items) and time sensitive shipping.
For the past 15 years, the correlation between air cargo demand and world trade has been declining steadily (see Figure 2.37). There are two primary reasons for this decline:

- Increased competition with containerised shipping due to technology advances, increased speed, improved reliability and lower costs of sea transportation.

- Variations in product life cycle:
  - As products mature and demand is stable or declining, unit values decline as well and inventory carrying cost decreases. This results in a shift from air to sea transportation in order to keep costs down.
  - As a new generation replaces ageing products, product unit value is high resulting in high inventory carrying cost necessitating speedy/reliable transportation. In these scenarios, air shipment is preferred.
  - As new generations of products become lighter and lighter, growth of the air shipping market slows. Video monitors and projectors are examples of commodities with declining unit values.

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Figure 2.38: Air Freight Share Trend of Video Projectors/Monitors Commodity: Asia to United States – 2002 to 2007

Source: MergeGlobal

2.141 As a result of these trends, world air freight as measured in tonnes-km grew on average 2 percentage points below world trade growth between 1997 and 2008.

2.142 **IATA Consulting’s Evaluation**

After assessment of the impact of air-sea competition on HKIA traffic, IATA Consulting has concluded that the shift from air to sea will continue at the same pace in the future. Even if it continues at the same pace, air shipping still provides one major advantage, namely speed of delivery. Based on Airbus’ research, general air cargo is delivered roughly a week faster than containerised sea shipment on the North Pacific, and close to a week and a half quicker than bulk sea shipment. Hence the speed of air cargo is still its core advantage and will remain essential for manufacturers and businesses. Therefore its impact is catered for in the regression based forecasting model and no special adjustment is needed.

**Substitution Factor: High-speed Rail Development**

2.143 By 2016, the Guangzhou-Shenzhen-Hong Kong Express Rail Link (XRL), a 26-kilometre railway, will connect Guangzhou, Shenzhen and Hong Kong and interconnect with the Mainland’s High Speed Train (HST) network.

2.144 The XRL will dramatically improve rail service quality and is expected to raise train transportation to a competitive level to air, although travel times will remain more advantageous for air. Therefore, a possible diversion from air to rail transportation modes has been evaluated.
As part of a trillion-US$ infrastructure investment plan, the Mainland has embarked upon a large railway infrastructure development project connecting its main cities with high-speed trains capable of speeds of up to 300-350km/h. The Mainland’s railway network expansion plan includes the construction of 13,000 km of high speed rail lines by 2012; and 16,000 km by 2020. The main corridors are from Guangzhou to Beijing, Shanghai to Kunming, Beijing to Shanghai, Xuzhou to Lanzhou and Shenzhen to Hangzhou.

West Kowloon Terminus (WKT) in Hong Kong will be connected to the Mainland’s high speed train system through the XRL. Linking its main cities (Beijing to Guangzhou, Shanghai to Kunming, Shanghai to Shenzhen), the high-speed train is expected to cut rail travel time by a factor of two to five. Trips from HKSAR to Shantou will be reduced to 2 hours, Changsha to 3 hours, and to Nanning, Xiamen and Wuhan to 4 hours (see Figure 2.40). In addition, Nanchang, Fuzhou and Nanjing will be reachable within 5 hours. Trips to Zhengzhou, Shanghai and Hangzhou are expected to take within 7 hours from Hong Kong by high-speed train. Trips to Xian, Kunming and Beijing are expected to take around 8 hours. Trips to Chongqing and Chengdu are expected to exceed 8 hours.
2.147 Depending on demand, the Mainland’s Chinese HSTs will be made of 8 cars (600 seats) or 16 cars (1200 seats). This configuration is very similar to the European model where single trains usually offer 350-550 seats and double trains, 700-1100 seats.

Figure 2.40 : Evolution of the Shortest Rail Travel Times from Hong Kong between 2008 and 2020

![Figure 2.40](image)

Source: Transport and Housing Bureau, IATA Consulting estimates

2.148 Since high-speed rail is a relatively new phenomenon in the Mainland, it is helpful to analyse the European and Japanese experiences, two markets with a long history of high-speed train operations, to understand how this development may impact the aviation market. In Europe and Japan, high-speed rail transportation tends to dominate when rail travel time does not exceed 3.5 hours. A 3.5-hour train trip corresponds to 1,000 km. For shorter distances, HST benefits from approximately a 1.5 hour advantage over air travel: rail stations are typically closer to the town than airports; air travel requires longer processing time for departure and arrival. So far, there have been no studies investigating the train capture rates for journeys beyond 4.5 hours (which corresponds to about 1,300 km).
2.149 Recent surveys confirm the empirical observation, revealing that travel time is the most influential element when choosing high-speed trains as the mode of transport\(^{49}\). Money saving does not appear to be a key decision criterion when it comes to choosing between air and rail.

2.150 New demand is generally induced further to the launch of HST services, benefiting both rail and air. Induction rates are quite variable and range from 8\% to over 100\%. Examples taken from European and Japanese environments suggest that +10\% is a conservative assumption for the level of new demand that could be generated:

- **France:**
  - Overall HST network: +10\%
  - Paris-Lyon (2hr HST): +25\%
  - Paris-Marseille (3hr HST): +45\%

- **Japan:**
  - Shinkansen: +8\%-150\%

- **Spain:**
  - Madrid-Seville (2hr30 HST): +15\%

2.151 Additionally, rail and air transportation modes can combine into air-rail intermodal services. Major hubs like Frankfurt airport, Paris-Charles de Gaulle or Amsterdam-Schiphol all benefit from rail intermodality that significantly enlarges their catchment area and diverts long-haul and medium-haul air passengers from competing hubs. The

\(^{49}\) A study of the development and issues concerning high speed rail (HSR), Yong Sang Lee, Korea Railroad Research Institute and Transport Studies Unit, University of Oxford; Working paper N° 1020; January 2007; page 10 table 13
A convenient connection of these airports to the HST network seems to be a key requirement to do this effectively.

2.152 With the development of the XRL connecting Hong Kong to the Mainland’s high-speed rail network, and further expansion of the high speed rail network within the Mainland (see Figure 2.39), high-speed rail could potentially affect the competitiveness of air travel between Hong Kong and short-haul Mainland destinations like Shantou, Changsha, Nanning, Xiamen, Wuhan, Nanjing, Nanchang and Fuzhou (see Figure 2.42). However, all these regional Mainland routes combined contributed only about 3% of HKIA’s passenger throughput in 2010. Therefore, any negative impact from the XRL is unlikely to be significant. On the other hand, trains provide convenient and frequent link-up to second-tier and third-tier locations outside major cities, thus potentially enlarging the catchment area for Hong Kong.

Figure 2.42: Projected High-Speed Rail Travel Time versus Air Travel Time from Hong Kong in 2020

Note: Air travel time includes an additional three-hour dwell and access time on top of the flight duration. 
Source: IATA Consulting estimates, Transport and Housing Bureau

2.153 IATA Consulting’s Evaluation

After assessment of the development of XRL on HKIA traffic, IATA Consulting has concluded that the net impact on HKIA would be negligible. Although flights to short haul markets in the Mainland may be negatively impacted, the experience in Europe and Japan has shown that the introduction of high speed rail can increase people’s willingness to travel and in the medium to long term, increase the overall market size for both rail and air transportation markets, thereby compensating (or in most cases, over-compensating) for any air traffic loss on specific routes. Therefore no special adjustment to the regression based model is needed.
Surrounding Airports

2.154 The provision of air services to a community can be viewed from two very different dimensions. On the one hand, it serves to satisfy the demand for travel and for the transportation of cargo. In addition, the economic activities it generates facilitate the development of the entire economy, bringing substantial economic benefits beyond just the aviation sector. The relationship between HKIA and its surrounding airports must be viewed from both these dimensions.

2.155 Purely from the transportation point of view, the existence of airports with sufficient capacity and good connectivity nearby would offer both travellers and shippers more choices and thus greater convenience. However, if such traffic were processed through neighbouring airports instead of HKIA, all the economic activities associated with such traffic would take place outside Hong Kong as well. Hong Kong, as a whole, would suffer substantial economic loss as reflected in lesser revenue for our airport operation (and thus lower return on our investment); the loss of potential business and jobs in the aviation-related industry (for example, airlines, airport support services, etc.); and the loss of economic value to the community that could otherwise be created through the aviation industry and its employees. Hence, the following analysis from IATA Consulting of the surrounding airports should be viewed from these two dimensions.

Airport Development in the GPRD Region

2.156 In 2008, the five airports in the GPRD region together handled 110 million passenger trips and 5 million tonnes of cargo. HKIA alone handled 44% of these passengers and 72% of the cargo. If only international airport traffic among the five airports is counted, HKIA alone handled around 80% of international passengers (excluding Hong Kong-Mainland) and around 90% of international cargo throughput.

Figure 2.43: GPRD Airports Total Traffic in 2008

<table>
<thead>
<tr>
<th>Airport Traffic in 2008</th>
<th>Passenger (Million trips)</th>
<th>Cargo (Million tonnes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hong Kong International Airport</td>
<td>48.6*</td>
<td>3.63</td>
</tr>
<tr>
<td>Guangzhou Baiyun Airport</td>
<td>33.4</td>
<td>0.69</td>
</tr>
<tr>
<td>Shenzhen Bao’an International Airport</td>
<td>21.4</td>
<td>0.60</td>
</tr>
<tr>
<td>Macao International Airport</td>
<td>5.1</td>
<td>0.10</td>
</tr>
<tr>
<td>Zhuhai Airport</td>
<td>1.1</td>
<td>0.01</td>
</tr>
<tr>
<td>Total</td>
<td>109.6</td>
<td>5.02</td>
</tr>
</tbody>
</table>

Note: *Transit passenger counted twice
Source: CAAC, AAHK, airport websites

2.157 Guangdong’s exposure to Hong Kong’s international market and foreign enterprises over the decades has resulted in a more mature economy than that of the rest of the Mainland. As the Mainland’s economy continues to develop rapidly, the rest of the Mainland is expected to narrow the gap with Guangdong. Nevertheless, the GPRD region’s total traffic (including Hong Kong and Macao) will approach 390 million passenger trips and 18 million tonnes of cargo in 2030. In light of this anticipated
growth in demand, airports in Guangzhou and Shenzhen have embarked upon major facility expansion plans.

### 2.158 Guangzhou Baiyun International Airport

The new Guangzhou Baiyun International Airport at Huadu commenced operations in 2004. Construction of two new concourses for its Terminal 1 has just been completed, raising annual handling capacity to 45 million passengers. Terminal 2 is expected to be operational in 2013, bringing annual capacity to 75 million passengers. Runway capacity is also expected to increase significantly, with a third runway expected by 2013, a fourth by 2020\(^{50}\) and ultimately a fifth. By 2030, Guangzhou Baiyun International Airport is expected to have an annual capacity of approximately 90 million passengers.

On the cargo side, FedEx opened its largest hub outside the United States at Guangzhou Baiyun International Airport in February 2009. The hub, which focuses on intra-Asia traffic, initially has 30 parking positions but will expand to 50. The airport is also expected to pursue a strategy to better serve its catchment area and has begun implementing plans to open a second off-airport cargo station in Zhuhai. By 2015, cargo capacity will exceed 2 million tonnes.

### 2.159 Shenzhen Bao’an International Airport

Shenzhen Bao’an International Airport started operations in 1991. It now operates over 3,800 scheduled passenger flights per week to 77 destinations (including 11 international points)\(^{51}\), more than 3 times the weekly frequency it offered 10 years ago. To meet fast-growing demand, a second runway will open in 2011 and a third terminal in 2015, bringing annual capacity to 45 million passengers. The airport’s current plan is to achieve an annual capacity of 60 million passengers by 2035.

It is also expected that Shenzhen Bao’an International Airport will capitalise on the local government’s emphasis on cargo and logistics to develop into a major air cargo hub. This is consistent with the National’s 11th Five-Year Plan, which sets aggressive goals for Shenzhen to bolster its logistics sector, including port and airport-related activities. UPS recently relocated its intra-Asia air hub operations from the Philippines to Shenzhen, and operations commenced in May 2010.

### 2.160 Macao International Airport

Macao International Airport commenced operations in November 1995. Macao International Airport is a fully functional 24-hour airport. Phase one of the airport is equipped with a full range of passenger and cargo facilities designed to handle 6 million passengers and 165,000 tonnes of freight a year.

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\(^{50}\) Source: 印发广州空港经济发展规划纲要的通知, 广州市人民政府办公厅秘书处 2010年8月2日印发

\(^{51}\) Data based on OAG 6/12/2010 and 11/12/2000 weeks
2.161 Zhuhai Airport

Zhuhai Airport started commercial operations in 1995 and was taken over in 2006 by a management company that is jointly owned by AAHK and Assets Supervision and Administration Commission of Zhuhai Municipal People’s Government under a 20-year agreement. Zhuhai Airport offers domestic flights to major Mainland cities and is used predominantly by the Mainland’s networks and low-cost carriers. Based on the rapid economic development recorded in 2007 and 2008, the airport aims to address the growing demand from the PRD, targeting 2 million passengers and 50,000 tonnes of cargo in 2011.

Airport Development in Asia

2.162 In 2008, Asia had 11 major hubs handling around half a billion passenger trips and close to 20 million tonnes of cargo.

Figure 2.44 : Major Airports in Asia

Note: Asia 2008 traffic used ACI APAC total minus Australasia

2.163 All the major airports in Asia have plans to expand in response to expected growth in demand over the next decade.

2.164 Shanghai Pudong International Airport is the world’s 41st-busiest airport for total passenger throughput and third for total cargo throughput. In 2008, it increased its annual capacity from 20 million to 60 million passengers, and 4.2 million tonnes of cargo. It is now planning to add a new terminal and two more runways (from three runways to five) by 2015, further increasing its capacity to 80 million passengers.
2.165 **Beijing Capital International Airport (BCIA)** is the world’s eighth-busiest airport for total passenger throughput and eighteenth for total cargo throughput. It officially opened in March 1958 under the administrative control of the Civil Aviation Administration of China (CAAC). Passenger Terminal 1, covering an area of 60,000 square metres and its auxiliary facilities, including parking apron and car parks, were officially put into service in January 1980. It was designed to serve 60 flights daily and 1,500 passengers at peak hours.

With the continuous growth in both number of international airlines flying to Beijing and the density of flights, the airport was enlarged again in 1999. Terminal 2, covering an area of 336,000 square metres and equipped with state-of-the-art facilities, officially went into operation in November 1999. Terminal 2 is able to handle 26.5 million passengers every year.

Terminal 3 became fully operational in 2008. Upon its opening, it was the largest airport terminal-building complex built in a single phase, with a total floor area of 986,000 square metres. It features a main passenger terminal and two satellite concourses. It increased BCIA’s total capacity by 50 million passengers per year to approximately 82 million.

In order to accommodate future demand, a second airport is expected to be built in the southern part of Beijing.

2.166 **Incheon International Airport** is the world’s 39th-busiest airport for total passenger throughput and fourth for total cargo throughput. The Korean Ministry of Land, Transport, and Maritime Affairs stated that the government would invest US$3.13 billion by 2015 to develop Seoul into Asia’s transportation hub to attract more business. Upon completion of its expansion plans, Incheon International Airport will be capable of handling 62 million passengers and 5.8 million tonnes of cargo a year, up from the current 44 million passengers and 4.5 million tonnes of cargo. It ultimately plans to increase its handling capacity to as much as 100 million passengers and 7 million tonnes of cargo per annum. The airport’s aspiration is to continue reinforcing its position as a hub for Asia and Mainland China for traffic to/from North America.

2.167 **Narita and Haneda Airports** in Japan are the two primary airports serving the greater Tokyo area. Narita is the world’s 31st-busiest airport for total passenger throughput and eighth for total cargo throughput; and Haneda is the world’s 4th-busiest airport for total passenger throughput. Haneda handles almost all domestic flights to and from Tokyo while Narita handles almost all international flights. In recent years, however, international services from Haneda have expanded significantly with the addition of "scheduled charter" flights to Seoul, Shanghai and Hong Kong. The Japanese government plans to expand Haneda’s international role in the future with more regional flights and off-peak charter services in light of Narita’s congestion and expansion issues.

Haneda’s third terminal for international flights and a Fourth Runway were completed in October 2010. An international air cargo facility will also be constructed nearby. The addition of this new runway is expected to increase Haneda’s operational capacity from
285,000 movements to 407,000 movements per year. Haneda is expected to be able to handle 90 million passengers after its expansion in 2010.

2.168 **Singapore Changi Airport** is the world’s 19th-busiest airport for total passenger throughput and tenth for total cargo throughput. The airport has just increased its capacity to 68.7 million passengers and 3.2 million tonnes of cargo with the opening of Terminal 3. With the planning of Terminal 4 under discussion, airport capacity is projected to increase by an additional 20 million passengers in 2015. It is anticipated that the airport will pursue its aviation hub strategy for both legacy and low-cost carriers. With the expansion, Singapore Changi is expected to improve its capability to serve ASEAN\(^{52}\) transfer/transit traffic.

2.169 **Taipei Taoyuan Airport** is the world’s 58th-busiest airport for total passenger throughput and fifteenth for total cargo throughput. In 2008, Taipei Taoyuan Airport handled 21.9 million passengers. The expected surge in traffic from the Mainland will very likely saturate the capacities of most Taiwanese airports, including Taoyuan, and Taiwan is reportedly working on the revision of its airport plan.

On the cargo front, the airport aims to create an Airport City and become a global logistics hub in East Asia. Approximately 1,250 hectares of land will be allocated to develop logistics and office activities, including an extension of the current Free Trade Zone. Direct cargo links will make it easier for Taipei to develop as a regional hub and even a long-haul hub between Asia and the United States. If required, the construction of a third runway is envisaged in the long term.

2.170 **Bangkok Suvarnabhumi Airport** is the world’s 18th-busiest airport for total passenger throughput and twentieth for total cargo throughput. It was officially opened for most domestic and all international commercial flights in September 2006. The airport has two parallel runways and two parallel taxiways to accommodate simultaneous departures and arrivals. It has a total of 120 parking bays, five of which are capable of accommodating the Airbus A380 aircraft. With a capacity of 76 aircraft movements per hour, both international and domestic flights share the airport terminal but are assigned to different parts of the concourse. In the initial phase of construction, it will be capable of handling 45 million passengers and 3 million tonnes of cargo per year. Ultimately, it aspires to be the primary gateway to Thailand and to serve 100 million passengers and over 6 million tonnes of cargo annually.

2.171 In summary, all the key hubs in Asia have aspirations, plans or projects underway to grow to service their countries and catchment areas, and pose challenges to HKIA. Competition faced by HKIA in this regard is two-fold:

- Threats to HKIA’s share of indirect international traffic flow into/out of the Mainland; and
- Threats to HKIA’s share of long-haul connecting traffic between the U.S./Europe and South Asia/Australasia.

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\(^{52}\) The Association of Southeast Asian Nations (ASEAN) comprises 10 countries located in South East Asia, namely Indonesia, Malaysia, the Philippines, Singapore and Thailand, Brunei, Burma (Myanmar), Cambodia, Laos and Vietnam.
2.172 In 2008, around 40% of passenger traffic into/out of the Mainland was indirect, and HKIA was the dominant hub airport handling this indirect traffic flow. Its geographical location makes HKIA a very attractive gateway between North America and South East Asia, ranking among the top three connecting hubs along with Taipei and Narita. However, Bangkok and Dubai are taking the leading roles as connecting hubs between Europe and South East Asia. Similarly Singapore and Dubai are taking the leading roles as connecting hubs between Europe and Australasia. Figure 2.45 shows the potential Asia airport landscape (excluding HKIA) in the long term.

Figure 2.45: Potential Asia Airport Landscape

- Beijing (PEK): PAX: 16.6M+, Cargo: 1.8M Tonnes +
- Shanghai (PVG): PAX: 80M+, Cargo: 5.7M Tonnes +
- Guangzhou (CAN): PAX: 30M+, Cargo: 1M Tonnes +
- Taipei (TPE): PAX: 70M+, Cargo: 3.6M Tonnes +
- Singapore (SIN): PAX: 123M+, Cargo: 6.4M Tonnes +
- Bangkok (BKK): PAX: 100M, Cargo: 6.4M Tonnes +
- Seoul (ICN): PAX: 100M, Cargo: 7.0M Tonnes +
- Tokyo (NRT + HND): PAX: 123M+, Cargo: 4.0M Tonnes +

Tokyo: Forecast for 2017
Guangzhou: Forecast for 2020
Taipei: Forecast for 2030
Beijing: Cargo forecast for 2015

2.173 IATA Consulting’s Evaluation

After assessment of the impact of airport competition on HKIA traffic, IATA Consulting has concluded that the intensifying competition among airports has already started to develop in the past decade and the trend will continue in the future. Therefore its impact is generally factored into the regression based forecasting model. The one exception, in IATA Consulting’s view, is transhipment cargo where the development of Shanghai

Sources:
53 IATA AirportIS 2007m IATA adjustments
54 IATA PaxIS
Pudong and Taipei in particular will step up in the future and adversely impact HKIA’s competitiveness in this area. The estimated negative impact from intensification of competition on the transhipment market to HKIA’s regression based forecast for 2030 is around 0.3 million tonnes.

**Airline Development Strategies**

2.174 Airline and airport strategies are often interrelated. Relevant developments are also incorporated into other sections of the report. However, due to commercial sensitivities, detailed findings regarding airline development strategies cannot be revealed.

2.175 *IATA Consulting’s Evaluation*

IATA Consulting considered all possible changes in the strategies of the airlines serving HKIA and its competitors and no disruptive change is anticipated apart from areas already discussed in the previous sections. Therefore no special adjustment is needed to the regression based forecast.

**HKIA Unconstrained Air Traffic Demand Forecast up to 2030**

2.176 After developing the GDP regression based forecasting model and fully assessing the various aspects of HKIA’s market environment, IATA Consulting has concluded that the regression based projections (base case) should be amended with the following adjustments (see Figure 2.46).

**Figure 2.46 : Adjustment Factors to Regression Based Passenger and Cargo Traffic Forecast**

<table>
<thead>
<tr>
<th>Passenger (Incremental Impact to Regression Based Forecast in 2030)</th>
<th>Cargo (Incremental Impact to Regression Based Forecast in 2030)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Links (Negative 1.3 Million)</td>
<td>Direct Links (Negative 0.7 Million Tonnes)</td>
</tr>
<tr>
<td>N/A</td>
<td>Intensification of competition on the Transhipment market (Negative 0.3 Million Tonnes)</td>
</tr>
<tr>
<td>N/A</td>
<td>Relocation of UPS and FedEx hubs to PRD from the Philippines (Negative 0.2 Million Tonnes)</td>
</tr>
</tbody>
</table>

*Source: IATA Consulting’s Methodology*

2.177 In addition, although the preliminary conclusion is to not include any incremental impact caused by XRL and HZMB, in the regression based forecast, IATA Consulting is of the view that they will potentially have a positive effect on HKIA. This needs to be further explored as the pricing and economic impact of these projects is further studied/confirmed.
2.178 To derive the high and low range of HKIA traffic demand up to 2030, IATA Consulting has applied the 95% Prediction Interval. Prediction Intervals provide a measure of the accuracy of the model. The 95% Prediction (P95) Interval is the interval within which future traffic is expected to fall with a 95% probability given the historical figures (traffic and GDP). The P95 interval is usually considered the most appropriate indicator of traffic sensitivity by airport investors.

2.179 Based on the GDP regression model, and the consideration of potential incremental adjustments to HKIA air traffic demand as described in previous sections, IATA Consulting estimates that air traffic demand for HKIA will fall within the range of 89-105 million passengers and 8-9.8 million tonnes of cargo by 2030 with 95% prediction interval, with respective CAGRs of 2.8%-3.6% and 3.7%-4.6% between 2008 and 2030 (see Figures 2.47 and 2.48).

Figure 2.47: HKIA Passenger Traffic Projection (Up to 2030)

<table>
<thead>
<tr>
<th>Year</th>
<th>High</th>
<th>Base</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>59</td>
<td>57</td>
<td>54</td>
</tr>
<tr>
<td>2020</td>
<td>72</td>
<td>68</td>
<td>64</td>
</tr>
<tr>
<td>2025</td>
<td>88</td>
<td>82</td>
<td>76</td>
</tr>
<tr>
<td>2030</td>
<td>105</td>
<td>97</td>
<td>89</td>
</tr>
</tbody>
</table>

Source: IATA Consulting estimates; AAHK statistics for actual figures
2.180 Based on historical passenger and cargo payload, future aircraft trends and airline fleet plans, IATA Consulting has estimated that air traffic movements will reach 552,000-652,000 by 2030, with a CAGR of 2.8%-3.6% (see Figure 2.49).

*Reality Checks*

2.181 Reality checks with industry sources were carried out by comparing the IATA Consulting forecast with various other long-term forecasts produced by the relevant entities.
Figure 2.50: Traffic Forecasts from Boeing and Airbus

<table>
<thead>
<tr>
<th>CAGR 2009-2028</th>
<th>Boeing</th>
<th>Airbus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asia Pacific Region</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passenger</td>
<td>6.3%</td>
<td>6.1%</td>
</tr>
<tr>
<td>Cargo</td>
<td>6.0%</td>
<td>6.3%</td>
</tr>
<tr>
<td>China</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passenger</td>
<td>7.6%</td>
<td>7.3%</td>
</tr>
<tr>
<td>Cargo</td>
<td>6.6%</td>
<td>7.8%</td>
</tr>
<tr>
<td>World</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passenger</td>
<td>4.7%</td>
<td>4.5%</td>
</tr>
<tr>
<td>Cargo</td>
<td>5.2%</td>
<td>5.0%</td>
</tr>
</tbody>
</table>

Source: Boeing and Airbus

Passenger Forecast

Figure 2.51: Comparison of Boeing, Airbus and IATA Consulting Passenger Forecasts – 2009 to 2028

Source: Boeing, Airbus and IATA analyses and estimates

2.182 Boeing and Airbus do not forecast traffic for Hong Kong individually. Among the available forecasts, it has been concluded that the forecast for Asia is the most relevant one to use, for the following reasons:

- About 74% of HKIA passenger traffic relates to Asia; and
- Hong Kong’s economy has proven to be very much tied to the Asian economy at large with almost parallel GDPs.
2.183 For the forecast period, Boeing forecasts an annual growth rate of 6.3%, the highest amongst the three forecasts; Airbus forecast a growth rate of 6.1%. Both forecasts include the impact of the global financial crisis and take into account the low 2009 base.

2.184 Both Boeing’s and Airbus’ forecasts are driven by an increase in intra-Asia demand provided by the growing long haul Low Cost Carrier (LCC) market and the opening of the Mainland, India/Middle East and developing Southeast Asia tourism markets. The lifting of restrictions on cross-strait flights between Taiwan and the Mainland further supports Boeing’s and Airbus’ forecast.

2.185 The demand between the North American region and Asia is expected to follow historical growth trends at a slightly slower rate than that projected by Boeing and Airbus due to market maturity. Passenger traffic will benefit from the opening of Chinese markets and increasing travel demand to/from Southeast Asia.

2.186 The European market will follow similar trends to those of North America. Fuelled by the Mainland’s liberalisation and increasing travel interest from Southeast Asia to Europe as described by Boeing and Airbus, growth is expected to be higher than that of the North American region. The development of the aviation market of Southern and Eastern Europe will further amplify travel demand growth into Europe.

2.187 IATA Consulting forecasts that HKIA will follow a lower growth rate than Boeing and Airbus. The main reasons are as follows:

- Similar to Boeing and Airbus’ forecasts, HKIA’s future traffic will be driven by the developing markets of Mainland, Southeast Asia and India. However, Hong Kong’s travel market is relatively mature compared to the rest of Asia, and therefore overall growth will likely be lower than the developing countries of Asia. Recent years have witnessed fast growing travel demand to/from Southeast East Asia and Mainland. This has been factored into HKIA’s traffic model, and will probably continue at a slower pace than that projected by Airbus and Boeing.

- HKIA will benefit from the growth of Mainland either as a gateway to the GPRD region or as a hub. However, given competition from fast growing airports, HKIA will only capitalise on a part of Mainland’s growth.

- Given that the Hong Kong market is relatively mature, induction of new traffic to North America and Europe as forecast by Boeing and Airbus for the Asia rim is unlikely as most Hong Kong travellers have already been introduced to these markets. Growth in traffic to/from the North America and European region is expected to remain relatively stable in the future.

2.188 Taking into consideration all of the above factors, the IATA Consulting’s passenger growth forecast is more conservative than that of Boeing and Airbus.
Cargo forecast

For the forecast period, Boeing forecasts an annual growth rate of 6.0%, very close to Airbus’ forecast of 6.3%. Both Boeing’s and Airbus’ forecasts are driven by an increase in trade demand in India and Mainland. Free trade areas and trade agreements between India, Mainland, and South East Asia are drivers for the increase in cargo demand.

The IATA Consulting forecast is expected to follow a slightly lower growth rate than that predicted by Boeing and Airbus for the following reasons:

- Similar to Boeing and Airbus, HKIA’s future traffic will be driven by the developing markets of the Mainland and India (grouped under “Others”). That said, only a portion of this trade benefit will trickle down to Hong Kong through partnership agreements such as CEPA and Guangdong-Hong Kong Co-operation Agreement, resulting in a slightly slower growth rate; and
- Given that cargo traffic in the North American and European regions is focused on the opening of the markets of the Mainland, developing nations of Asia, and the Middle East, increasing competition from the Mainland’s airports and increasing air service agreements will slow HKIA’s growth.

Relying on Neighbouring Airports is Not an Option

Some advocates have argued that greater co-operation with PRD airports (most notably Shenzhen International Airport) could possibly remove the need for HKIA to expand its capacity. AAHK, however, does not believe that it is a viable proposition, for the following reasons:
a) air services to and from an airport are regulated by individual jurisdiction and governed internationally through a network of bilateral air services agreements. Therefore, flight movements that HKIA cannot accommodate due to capacity constraints cannot be funnelled to other airports purely based on demand or at our wishes;

b) it would not be in the interest of most passengers who would likely find using or transferring through another airport highly inconvenient; and

c) most importantly, relying on other airports to meet HKIA’s demand would inhibit the growth of the airport and thus adversely affect Hong Kong’s overall competitiveness as a world city.

2.192 Indeed Hong Kong airlines will not be able to provide additional services through another airport in the PRD to Mainland cities or foreign destinations. Although Mainland airlines which operate from a PRD airport may provide an alternative for travellers to the rest of the Mainland or a foreign destination, travellers are likely to find it highly inconvenient to transfer at that PRD airport.

2.193 It should be noted that the Hong Kong-Shenzhen Western Express Line (WEL), which is currently under feasibility study by the Government, may provide an efficient mode of transport to allow seamless passenger flight connections between the two airports, and to make it even more convenient for the GPRD’s travelling public to fly via HKIA internationally or Shenzhen airport domestically. The project is subject to further studies, including alignment options, patronage forecasts, the functionality of the railways, its technical standards, operational and service requirements, etc. If and when the WEL is constructed, the benefit it brings would equally apply to both Options.

2.194 This is an example of HKIA’s cooperation with other GPRD airports. HKIA enhances consumer choice by making smooth travel. A recent example is the Hong Kong-Shenzhen Airports Link, which is a service to make it more convenient to travel via HKIA or Shenzhen International Airport. Such efforts are however different from directing to other GPRD airports traffic which would have chosen Hong Kong due to market forces if there had been sufficient capacity at HKIA.