Activity Forecasts for the Period 2010-2011 to 2015-2016

AIRSERVICES AUSTRALIA

Final Report

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International Air Transport Association

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Preface

Airservices Australia (ASA) commissioned the International Air Transport Association (IATA) to undertake this study.

This final report presents the primary assumptions considered by IATA Consulting and provides results for the main activity forecasts.

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1. Executive Summary

Purpose and approach

The purpose of the study is to advise Airservices Australia on Australia's growth in aviation activity from the present to 2015-2016. The study will serve as an input for the pricing of airways services.

The approach undertaken is to analyze the interaction between the prospects for future demand by the customers of domestic and international air transport services on the one hand, and the supply of these services by the airlines on the other. The forecasts of aviation activity result from this analysis.

Markets

There are many air transport markets to consider, including major and regional domestic traffic, international traffic, overflights of Australian airspace by international services, all-cargo traffic and general aviation.

Both en-route and airport traffic of relevance to Airservices Australia were analyzed. The en-route markets are also categorized by aircraft of greater than or equal to 20 tonnes MTOW, and less than 20 tonnes MTOW.

Causal factors and analysis

Demand for air travel depends on such factors as income levels and airfares. At a global level, income is represented by Gross Domestic Produce (GDP) — for Australia and for the world. Trends in these measures have a powerful effect on demand. Regression analysis of the impact of GDP and airfares on traffic demand was undertaken for most of the markets. The estimated relationships, together with assumptions about the future development of the causal factors, were used as a basis for forecasting passenger numbers.

Assumptions about airline pricing and aircraft deployment strategies to meet future customer demand were incorporated into the forecasts. This process took into account the aircraft types in the existing airline fleets, the numbers and types of aircraft on order and the flexibility of the airlines to adjust delivery schedules.

Passenger forecasts were translated into aircraft movement forecasts using assumptions about average load factors and aircraft size. These latter variables were influenced by airline response to developments in passenger demand.

Data

For the past trends and the regression analysis, GDP data were obtained primarily from the Australian Bureau of Statistics (ABS), an Australian Government Statement issued in July 2010 and the International Monetary Fund (IMF). Data for passenger-kilometres, passenger numbers, and airfare indexes were obtained from the Bureau of Infrastructure, Transport and Regional Economics (BITRE).

Aggregated historic data for aircraft-km, airport movements, seats and seat-km for domestic and international passenger services were also obtained from the BITRE. Together with the passenger data, this helped to understand past trends in average load factors and aircraft size.

Detailed data on airline fleets, including aircraft numbers by aircraft type plus seating capacities for aircraft types, together with numbers of aircraft on order and estimates of delivery dates, were available from IATA databases and airline communications. This information was used to predict the airline response to passenger demand forecasts.

Data for aviation activity related to the pricing of air services was available from Airservices Australia. This information was used to observe the historic relationships between aircraft distances traveled and en-route MTOW-Km, and between the numbers of flights and terminal MTOW. These relationships formed the links between the passenger and aircraft movement analyses using BITRE data and the final forecasts of ASA's concepts of en-route MTOW-Km and terminal MTOW. The forecasts for the 2010-11 to 2015-16 period were built from the ASA data base for 2009-10.

Recovery from the Global Financial Crisis and the further economic outlook

The economic outlook has been, and will continue to be, the major factor affecting the volume of air traffic.

As a result of the financial crisis, Australian economic growth declined significantly, from 3.7% in 2007-08 to 1.3% in 2008-09. The total world economy declined slightly in 2009. Chinese growth fell from 13% in 2007 to 8.7% in 2009.

Economic recovery is on track in Australia, with positive growth every quarter since the last quarter of 2008 — most recently a particularly strong quarterly rate of 1.2% was achieved for the 2010 June quarter. Recovery is occurring in most countries, including in the OECD as a whole and in China.

The economic forecasts used as the basis for the traffic forecasts are those published in July 2010 by the Australian Government and the International Monetary Fund.

Fleet evolution

On all segments, it was established that demand would be growing strongly over the forecast period, fueled by economic growth. Airlines are anticipated to increase capacity and match with the demand resulting in the load factor remaining at a high level.

Aircraft size is expected to increase on both domestic and international routes. On domestic routes, more of the largest narrow-body aircraft (A320 and B737-800) will be added and Qantas' B767s will be phased out and replaced by A330s. On regional routes, larger aircraft (ERJ170 and Dash 8-Q400) are planned for delivery. International routes will see an intensified use of the A380 and the roll-out of the B787-9.

Airfare evolution

After a steep decrease in FY2008 and FY2009, domestic airfare is expected to stabilize and pick up slightly in FY2011 and FY2012 as domestic demand bounces back strongly. However, intensified competition, fleet expansion and introduction of larger and more modern aircraft will likely limit the extent of the airfare upswing and trigger a slightly decreasing trend in the later years. Specifically, airfares reached a low point in FY2010. IATA Consulting anticipates a further, moderate decrease for FY2013 and beyond after the intervening growth period.

Forecasts

The tables below summarize the overall aviation activity forecasts produced in this study. The actual or estimated traffic and traffic growth in for 2009-10 are included.

Table 1 - Forecasts of Annual Growth in En-route Aviation Activity (in MTOW-km)

Fiscal Year ending June 30th	*Enroute traffic*			
	Aircraft greater than 20 tonnes		*Aircraft less than 20 tonnes*	
	MTOW-Km	Growth	MTOW-Km	Growth
2010	98,384,039	5.3%	11,582,310	-7.9%
2011	102,007,682	3.7%	11,795,973	1.8%
2012	107,222,175	5.1%	12,123,507	2.8%
2013	111,225,652	3.7%	12,356,043	1.9%
2014	115,597,838	3.9%	12,669,214	2.5%
2015	120,781,559	4.5%	13,103,528	3.4%
2016	125,083,241	3.6%	13,543,286	3.4%

Table 2 - Forecasts of Annual Growth in Terminal Activity (in MTOW landed)

Fiscal Year ending June 30th	*Terminal traffic*			
	Major airports		*Regional airports*	
	MTOW	Growth	MTOW	Growth
2010	43,178,743	2.5%	2,178,869	0.2%
2011	44,980,389	4.2%	2,200,833	1.0%
2012	47,391,972	5.4%	2,256,248	2.5%
2013	48,934,332	3.3%	2,349,440	4.1%
2014	50,913,784	4.0%	2,449,462	4.3%
2015	53,111,613	4.3%	2,553,742	4.3%
2016	55,078,730	3.7%	2,662,462	4.3%

2. Introduction

Scope of the Study

Air Services Australia (ASA) requested that IATA prepare forecasts for en-route and airport activity for the following types of traffic for the period 2010-11 to 2015-16:

- Domestic passenger enroute traffic;
- International passenger enroute traffic for flights to and from Australia;
- International overflights enroute traffic; and,
- Cargo aircraft enroute;
- Non-commercial (general aviation) enroute;
- Aircraft movements and terminal MTOW at Major and Regional airports;

Key Forecast Factors

The relative importance of the various air transport markets depends on their traffic volumes. En-route charges depend on MTOW-Km, which is determined by a formula specified by Air Services Australia. The measure of MTOW-kilometres encapsulates two aspects – the MTOW of the aircraft and total aircraft-kilometres flown. It depends on the chargeable distance flown in Australian airspace (measured as aircraft-Km). Total measures for these variables for the air transport markets in 2010 are shown in Table 3.

Table 3— Relative size of En-route Markets, Fiscal Year Ending June 2010

Traffic type	*MTOW tonne-km*			
	below 20t		*above 20t*	
	(000)	(% of total)	(000)	(% of total)
Domestic passengers	9,213	79.5%	36,966	37.6%
International passengers	497	4.5%	55,144	56%
Domestic and International cargo			1,396	1.5%
Over-flights			4,878	5%
Non-commercial flights	1,872	16%		
Total	**11,582**	**100%**	**98,384**	**100%**

Note: Domestic and International cargo flights have been allocated to above 20t as the majority of the related traffic belongs to this category. Similarly non-commercial flights have been allocated to below 20t.

The domestic passenger traffic of the major airlines closely coincides with domestic passenger traffic on aircraft larger than 20 tonnes MTOW. The domestic passenger traffic of

the regional airlines closely coincides with the domestic traffic on aircraft smaller than 20 tonnes MTOW.

Domestic all-cargo flights are relatively minor in number. Some flights are on aircraft of sub-20 tonnes and some on aircraft of more than 20 tonnes. International all-cargo flights, which are predominantly flown by aircraft, above 20 tonnes are also a small part of the total market.

Terminal charges depend on MTOW. In 2010, Major Airports accounted for 95% of the landed MTOW.

Approach

↗ For Major Aviation Markets the approach has been to forecast passenger demand first, and then aircraft movements to satisfy this demand.

- Passenger demand has been derived from regression analysis of historical traffic (measured in passenger-km) against causal variables. Several models were tested and logarithmic regressions gave the best result.

  On the domestic en-route markets, the Australian GDP and the Real Best Discounted Fares were found to be the best variables to explain the traffic evolution. Alternative causal variables, such as Full Economy Fares, were tested and discounted.

  On the international en-route market, traffic proved to be strongly correlated to an aggregate of the Australian and World GDPs. Although airfare is not an explicit variable in the regression equation for international traffic, its historical contribution to the traffic evolution is implicitly included in the equation.

  On the terminal markets, traffic was found to be strongly correlated to the Australian GDP and the Real Best Discounted Fares.

- The forecast for aircraft movements (measured in aircraft-km) has been developed using data and information on current and future airline fleets and strategies. Detailed analysis and fleet modeling covered the major Australian carriers and the top foreign carriers serving Australia, namely Singapore Airlines, Emirates and Air New Zealand. These airlines account for 70% of the seat supply (measured in seat-km) in 2010 and over 50% of ASA's international en-route year-to-date revenue.

- The final step was to derive the traffic measures of direct interest to Airservices Australia, which are the MTOW-Km and MTOW totals relating to the airspace and terminal demands on the air traffic management system.

↗ For Overflights, All-Cargo and General Aviation, a simplified approach is used to forecast their associated MTOW-Km

Data sources

The following data sources were used to analyze traffic flows, the causal factors affecting traffic, and the outlook for the causal factors:

Bureau of Infrastructure, Transport and Regional Economics (BITRE)

↗ For airline passenger numbers and passenger-km traveled
↗ For airline passenger aircraft movements and aircraft-kilometres traveled
↗ For airport passenger numbers and aircraft movements
↗ For trends in airfares

Airservices Australia

↗ For aircraft flight numbers, distances flown, MTOW and MTOW-Km; for each air transport sector

IATA

↗ For trends in fleet development
↗ For historical data and projections about the Global and Regional Aviation Industry
↗ For actual traffic and schedule data including O&D traffic and future schedules

The Australian Bureau of Statistics

↗ For historic data on Australian Gross Domestic Product (GDP) and Australian consumer price inflation (CPI)

Organisations which produce economic forecasts for the world economy and for Australia

↗ World Bank
↗ International Monetary Fund
↗ Australian Treasury
↗ Economist Intelligence Unit

Some of the data for the base year, 2009-10, from which the forecasts for subsequent years were developed, needed to be estimated because information for the whole of 2009-10 was incomplete. For example, air traffic data was frequently available up to April or May 2010,

and full year estimates were derived by first calculating the growth from the first 11 months of 2008-09 to the first 11 months of 2009-10. In regard to economic data, primarily GDP, reliance was placed on official estimates by the organizations identified above.

Study assumptions

The forecasts of aviation demand and traffic are based on various economic and industry assumptions. These are discussed at appropriate places in the report. The economic assumptions are expressed in terms of GDP growth which incorporates population growth and business cycle conditions, and are based on information published by official specialized agencies.

Incorporated in the forecasts are 'business-as-usual' assumptions. As such, no dramatic changes in taxes and in the oil price over the forecast period were incorporated.

3. Aviation context

Global Context

The impact of the recession on global air-traffic was highly visible as it hit most major economies world-wide. The decrease in international passenger traffic, initiated in the fourth quarter 2008, intensified in 2009 with a 10% decline during the first quarter. Premium markets were hit the hardest with a fall of nearly 20% during the first quarter of 2009, reflecting the sharp intensification of the recession and the contraction of world trade. As a result, capacity was cut on international routes in response to falling seat load factors..

In the first three months of 2010, however, the value of world trade was around 25% higher than in the same period of 2009, as highlighted by the World Trade Organization statistics released in June 2010. These are "year-on-year" quarterly comparisons. Air-traffic has benefited from improving demand and consumer confidence.

Air travel and freight markets have shown strong growth in the last 12 months. Passenger traffic on international markets, measured by RPKs, was 11.6% higher in July than a year earlier. This growth, on the back of economic recovery, has seen international passenger traffic now rise to levels 1-2% higher than their pre-recession peak in Q1 2008.

Premium demand (business class and first class) also saw a rise in the number of passengers on international air travel markets. The numbers of passengers traveling on premium seats were 16.6% higher in June 2010 than the same month in 2009. The strong business travel has driven premium and economy market segments during this upswing. Economy seats were up 9.5% in the same period of time.

However, there are signs that this very strong post-recession rebound in travel may be slowing. The expansion during the first half of 2010 has been slower than the rebound in the second half of 2009 even after adjusting for the European airspace closures. Adjusting for the airspace closures shows premium travel volumes slowing from an annualized pace of 11% during the second half of 2009, and over 20% in the first quarter, to just below 9% in the second quarter. The year-to-date 2010 growth versus 2009 is 8.1%; a slight deceleration, yet still an upward trend. Although slower growth, this is still double the average 4.5% growth rate in premium travel seen in the expansion years before the recession. A similar slowdown is visible in economy travel volumes, from 9% growth in the first quarter, to 6% second quarter growth (adjusted for the airspace closures). Economy travel is now expanding in line with the growth trend seen before the recession.

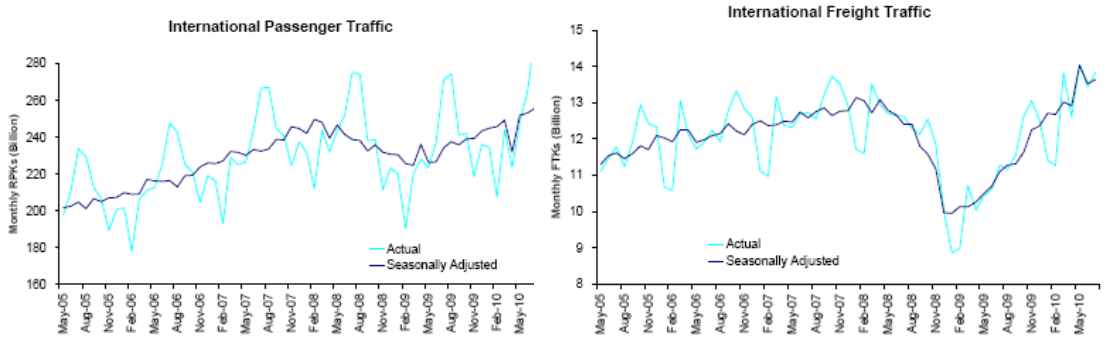
Although air travel has slowed from the pace of the first quarter, the outlook remains positive. Coincident indicators of business travel, such as world trade, are supporting the growth of premium travel. Leisure travel still remains a bit fragile. Unemployment and consumer debt are still major concerns and consumers, in Europe at least, appear to be taking a cautious view on their spending by delaying travel for holidays.

Available capacity on international markets, in terms of ASKs, has grown by 6.1% from July 2009 to July 2010, whereas traffic has grown at nearly twice that rate. This has pushed up passenger global load factors by 2.6 percentage points to 82.9%. Since the beginning of 2010, the capacity increase has more or less matched the increase in traffic.

Freight growth across all regions has followed economic recovery and trade growth patterns. Freight traffic in July 2010, measured by FTKs, was 22.7% higher than during the same month in 2009; well above historical trend rates of growth. The level of international air freight in June was 6% higher than pre-recession levels. On a year-to-date basis, the average FTK growth is up 27.5% versus the same period in 2009.

The following passenger and freight charts illustrate the both the impact of the recession starting in the second half of 2008 and the recovery phase commencing in the second half of 2009 until to date.

Table 4 – Monthly passenger and freight development (in RPK and FTK) – May 2005 to July 2010



Regional Situation – Asia Pacific

In July 2010, airlines in Asia Pacific experienced strong growth which drove additional traffic.

↗ International passenger traffic reached a year-to-date growth of 10.6%, well above the 8.1% average (see Table 5).

↗ Load factors are up 7.2 percentage points to 77.8% as rising demand outpaces capacity additions. Capacity, measured in ASK, increased on a year-to-date basis by 1.6% only (see Table 5).

Table 5 – Passenger, freight and capacity growth by region (in RPK, FTK, ASK and ATK) and passenger load factors by region – June 2009 to June 2010 and January to June 2010

Year on Year Comparison	July 2010 vs. July 2009						YTD 2010 vs. YTD 2009					
	RPK	ASK	PLF	FTK	AFTK	FLF	RPK	ASK	PLF	FTK	AFTK	FLF
Africa	13.0%	10.4%	71.7	35.2%	12.9%	27.2%	13.1%	9.2%	68.3	45.2%	13.4%	28.7%
Asia/Pacific	10.9%	5.1%	80.8	25.3%	20.1%	65.2%	10.6%	1.6%	77.8	33.2%	15.6%	66.3%
Europe	6.2%	4.6%	84.5	12.1%	2.2%	50.1%	3.6%	0.2%	78.5	12.5%	-3.6%	52.5%
Latin America	14.2%	9.0%	79.9	25.3%	11.4%	41.6%	10.9%	4.6%	75.6	44.3%	22.7%	42.4%
Middle East	16.8%	12.8%	81.0	30.1%	17.1%	45.5%	19.4%	13.2%	75.9	33.2%	16.0%	46.5%
North America	7.9%	5.8%	87.2	27.1%	8.9%	41.9%	6.3%	1.0%	82.0	30.6%	2.7%	43.9%
Industry	9.2%	6.1%	82.9	22.7%	11.9%	52.4%	8.1%	2.5%	78.0	27.5%	7.7%	54.1%

RPK: Revenue-Passenger-Kilometers; ASK: Available-Seat-Kilometers; PLF: Passenger-Load-Factor; FTK: Freight-Tonne-Kilometers; AFTK: Available Freight Tonne Kilometers; FLF: Freight Load Factor;
All Figures are expressed in % change Year on Year except PLF and FLF which are the load factors for the specific month.

↗ International premium traffic to/from the South Pacific grew most rapidly at 32.6% year-to-date in average. In the same period of time, the Far East to South Pacific segment increased by 10.9%, the Middle East to South West Pacific by 19.9% respectively.

↗ Air Freight carried within Asia Pacific increased on a year-to-date basis by 33.2% and AFTK increased by 15.6%. Hence, the average Freight Load Factors for the year-to-date within the region increased to 66.3% due to faster rising demand than supply.

As a result of the steady improvement of the business environment in Asia-Pacific, IATA expects a net-profit of over USD2 billion up from a net-loss of over USD2 billion.

Table 6 – IATA airlines' profitability forecasts per region

System-wide global commercial airlines	2007	2008	2009E	2010F	2007	2008	2009E	2010F
	EBIT margin, % revenues				Net profits, $ billion			
Global	**3.9%**	**-1.6%**	**-0.3%**	**2.3%**	**12.9**	**-16.0**	**-9.9**	**2.5**
including exceptional items					*14.7*	*-36.1*	*-9.8*	*2.5*
Regions								
North America	5.5%	-1.8%	1.2%	3.4%	3.7	-9.6	-2.7	1.9
including exceptional items					*5.5*	*-24.4*	*-2.7*	*1.9*
Europe	4.0%	0.1%	-2.2%	-1.1%	6.4	0.0	-4.3	-2.8
including exceptional items					*6.4*	*-1.0*	*-4.3*	*-2.8*
Asia-Pacific	2.9%	-4.7%	0.0%	4.7%	3.0	-4.7	-2.7	2.2
including exceptional items					*3.0*	*-8.7*	*-2.6*	*2.2*
Middle East	0.0%	1.0%	-1.5%	1.6%	-0.1	-0.3	-0.6	0.1
Latin America	2.0%	2.3%	2.7%	4.5%	0.1	-1.4	0.5	0.9
including exceptional items					*0.1*	*-1.7*	*0.5*	*0.9*
Africa	1.0%	-0.9%	-0.9%	0.9%	-0.2	-0.1	-0.1	0.1

Source: ICAO data to 2007-8. IATA estimates for 2009 and forecasts for 2010.
Exceptional items include revaluations of goodwill associated with restructuring and of 'mark to market' fuel hedging.

Additionally, exports of Africa, the Middle East and the Commonwealth of Independent States were more than 50% higher than in the corresponding period of 2009; much of tis fueled by Asia Pacific economic activity.

Regional outlook – Asia Pacific

In late 2009, airlines serving Asian Pacific projected a cautious +4.7% passenger traffic growth for the region in 2010 and a more sizeable traffic bounce back in 2011 and 2012; +6% and +6.1% respectively. For the same period of time, the consensual perception of airlines indicated that passenger traffic growth to and within Australia would be slightly less than the overall Asia Pacific result.

However, actual airline performance has been outpacing expectations. This is in line with the results of the global economic recovery and the associated rebound of passenger traffic. Since late 2009, the impact of the global recovery has been higher than generally anticipated. Traffic within the Asian Pacific region has already returned to pre-recession levels and is anticipated to continue to keep growing strongly for the years to come.

4. Economic Outlook

Average GDP growth rates during recent decades give a perspective on long term economic trends in Australia and the wider world.

- Since 1970, average Australian economic growth over successive 10-year periods has been in the range of 3 to 3.5% per annum, despite periodic recessions (see Table 7).

- Average economic growth rates for the major industrial economies as a group have tended to decline since 1970 (see Table 7).

- The average growth rate of the seven major OECD countries since 2000 was seriously affected by the decline of 3.3% in 2009, the worst for many decades. (Note that annual GDP growth rates are published for calendar years, and not fiscal years.)

- Although the Australian economy fared better than the major OECD countries during the global financial crisis, the rate of growth declined significantly, from 3.7% in 2007-08 to 1.2% in 2008-09. (Australia and New Zealand are the only countries to publish annual growth rates for fiscal years, and not calendar years.)

- The total world economy grew at a higher average rate in the 2000 to 2009 period than in the two prior decades (IMF), despite the global financial crisis; this good performance was due primarily to the stellar performance of China, and to a less extent, India.

- In 2009, the total world economy declined slightly. Chinese growth fell from 13% in 2007 to 8.7% in 2009 (see Table 8).

Economic recovery is on track in Australia, with positive growth every quarter since the December quarter of 2008. The most recent June quarter 2010 was particularly strong with a growth rate of 1.2%. This resulted in an annual rate of 2.3% in 2009-10 over 2008-09 (see Table 8 and Table 9 below).

Economic recovery is occurring in most countries, including in the OECD as a whole and in China. However, there remains some concern about the sustainability of the global economic recovery. The economic support from Government stimulus packages implemented in many countries is having to give way to consumption and investment by the private sector. This requires consumer and business confidence, and the success of reforms to banking and financial systems.

Estimates for the June quarter in China, Japan and the US suggest a cooling in their economies. However, some important EU countries show signs of improvement.

The traffic forecasts in this study are based on the GDP estimates presented in Table 10. The Australian Government Economic Statement and the IMF World Economic Update, both released in July 2010, were the sources for the traffic forecasts in this study.;

Table 7 - Average Real GDP Growth Rates during Previous Decades (% per annum)

	1960s	1970s	1980s	1990s	2000s (until 2009)
Australia	5.1	3.0	3.3	3.4	3.1
7 Major OECD Countries		3.5	3.1	2.5	1.5
Total World			3.2	3.1	3.9

Sources: ABS, IMF and OECD web sites; "Real" refers to GDP measures which have been adjusted to remove the effect of inflation.

Table 8 — Recent and Forecast Annual Real GDP Growth Rates (%)

	Past				Estimate	Forecast					
	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Australia (ABS & Aust. Govt.)	3.1	3.8	3.7	1.2	2.3	3.0	3.8	3.0	3.0		
Australia (EIU - converted from calendar year measures)						2.7	2.8	3.0	3.1		
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Total World (IMF)	5.1	5.2	3.0	-0.6	4.6	4.3	4.5	4.5	4.6	4.6	
Total World (EIU)						2.5	2.8	3.0	3.1		

Sources: ABS web site and IMF web site accessed 3 Aug 2010; Australian Government Economic Statement, July 2010; IMF World Economic Update, July 2010; Economist Intelligence Unit (EIU) forecast, July 2010.

Table 9 - Quarterly Real GDP Growth Rates from Previous Quarter (%)

(Quarterly rates derived from seasonally adjusted quarterly real GDP values)

	2007–08				2008–09				2009–10			
Quarter	Sept	Dec	March	June	Sept	Dec	March	June	Sept	Dec	March	June
Australia (ABS)	0.4	0.7	0.8	0.6	0.4	-0.8	0.6	0.8	0.3	1.1	0.5	1.2

Table 10 — Economic Growth Forecasts Used in Traffic Forecasts (%)

Fiscal year	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Australian GDP	3.0	3.8	3.0	3.0	3.0	3.0
World GDP	4.5	4.4	4.5	4.6	4.6	4.6

Source for forecast of Australian GDP growth was the Australian Government Economic Statement, July 2010;
Source for forecast of World GDP growth was the IMF World Economic Outlook Update, July 2010; Used in 2010 International traffic forecast

5. Major Domestic En-Route Forecast

Analysis of Traffic Demand

A regression analysis of the traffic (RPK) development of the major Domestic airlines was undertaken:

- The period of the analysis was 1992-93 to 2009-10;
- Australian GDP, the 'Best discount fares' (both measured in real terms) and a dummy variable introduced for the demise of Ansett in 2002 were the explanatory variables;
- The statistical significances of the explanatory variables were strong (see equation below);
- The full economy fare was tested but was not statistically significant (unlike the best discount fare); furthermore it did not show a trend over the whole period.

The following regression model was estimated:
Ln Passenger-Km = 9.45 + 1.41*Ln Real GDP - 0.35*Ln Real Best Discount Fare -0.14 Ansett.
R^2 = 0.98 tstat $_{RealGDP}$ = 10.8 tstat $_{Real\ Best\ Discount\ Fare}$ = -3.1 tstat $_{Ansett\ Dummy}$ = -2.3

The Bureau of Infrastructure, Transport and Regional Economics (BITRE), which publishes a range of indices of domestic air fares, has been consulted about their usefulness. BITRE advises caution because of the complexity of fare structures. However, the information is the best available and presumably gives a reasonable idea about the year-on-year movements. The Real Best Discount index is the best reflection of the market place and its effect on passenger demand. Furthermore, its statistical performance in the demand equation is relatively good, and much better than the Real Full Economy.

Table 11 compares actual passenger-kms with that predicted by the equation given above. It highlights the relevance of the above equation to model major domestic traffic. For several years up to fiscal year 2008, actual traffic growth exceeded the predicted growth. In 2009 and 2010, actual growth dropped below predicted growth. This was because of the impact on demand of the financial "bubble and bust" that occurred over that period. Thus, an adjustment was made to moderate the 2009 and 2010 traffic growth forecast by the regression and GDP assumptions.

Fare assumptions

The historical evolution of the Best Discounted Fares was marked by a succession of cycles, each cycle starting by a slump, followed by an upswing and a more moderate decrease.

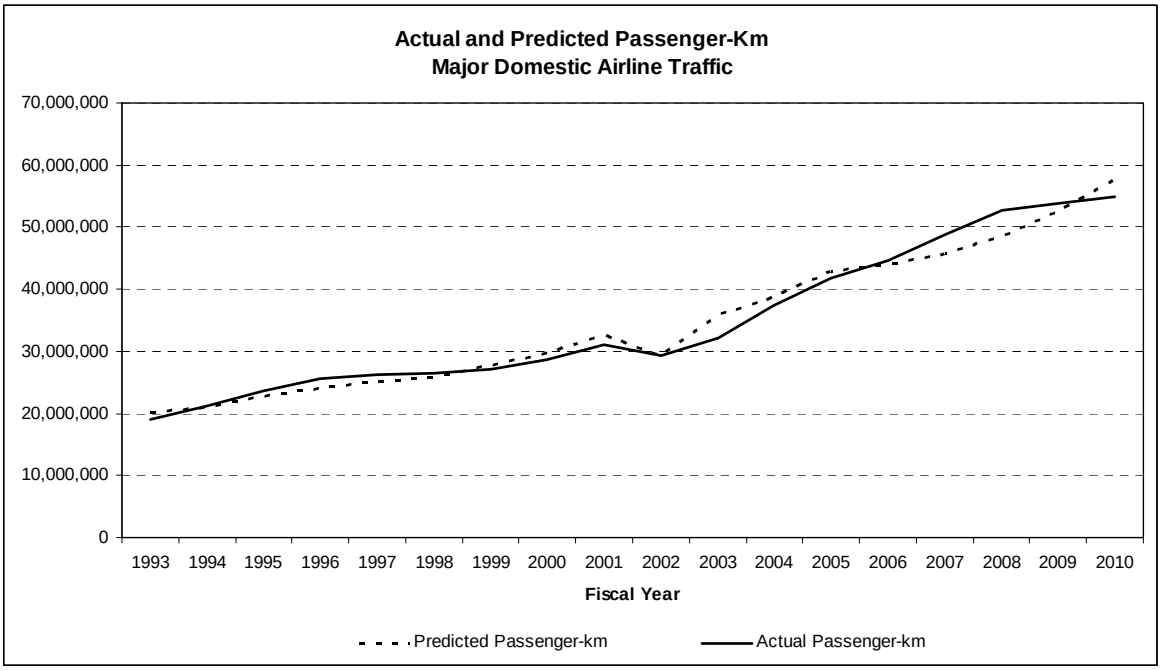
- A first cycle started in 2001. The FY2001 decrease in Real Best Discounted Fares (-16%) was followed by a +5% increase in FY2002 and a -6% annual decrease over FY2003 and FY2004. Overall airfare decreased by -6.1% annually during the first cycle.

- A new cycle started in FY2005 with a -16% decrease, followed by a +8% increase over two years and a -3.4% decrease in FY2008; Overall airfare decreased by -3.3% annually during the second cycle.

- A third cycle started in FY2008 with a cumulated -29% evolution in FY2009 and FY2010. Based on the most recent data, the fare turnaround has already started from a low in May-June 2010. Due to the low level of the Best Discount Fares in FY2010, IATA anticipates a +2.5% rebound in FY2011 pursued by a further +1.1% increase in FY2012. Intensified competition on the domestic market explains why the fare upswing is smaller than observed in the previous cycles. In FY2013 and further years, Real Best Discounted Fares is expected to turn downwards again as competition intensifies and larger aircraft are introduced in the domestic market. The ability to reduce overall fares further is limited and should only concern Real Best Discount Fares. Real Best Discount Fares are assumed to decrease by -1.2% p.a. between FY2010 and FY2016 in comparison with -7% p.a. over the 10 years prior to 2010.

A Summary of the forecast for the Real Best Discounted Fares can be seen in Table 13.

Table 11 – Comparison of the actual and predicted Passenger-km Major Domestic Airline traffic



Major Domestic Traffic Forecast

The base forecast of Australian GDP (see Table 10) and the projection for real discount fares, together with the estimated relationship between these explanatory factors and traffic demand

was used to produce the traffic forecast for the six years from 2010-11 to 2015-16 (see Table 13).

The most important relationship, between GDP and passenger numbers is illustrated in the Table 12, which highlights the sensitivity of traffic to GDP growth.

Table 12 – Annual Growth in GDP and Passenger-km

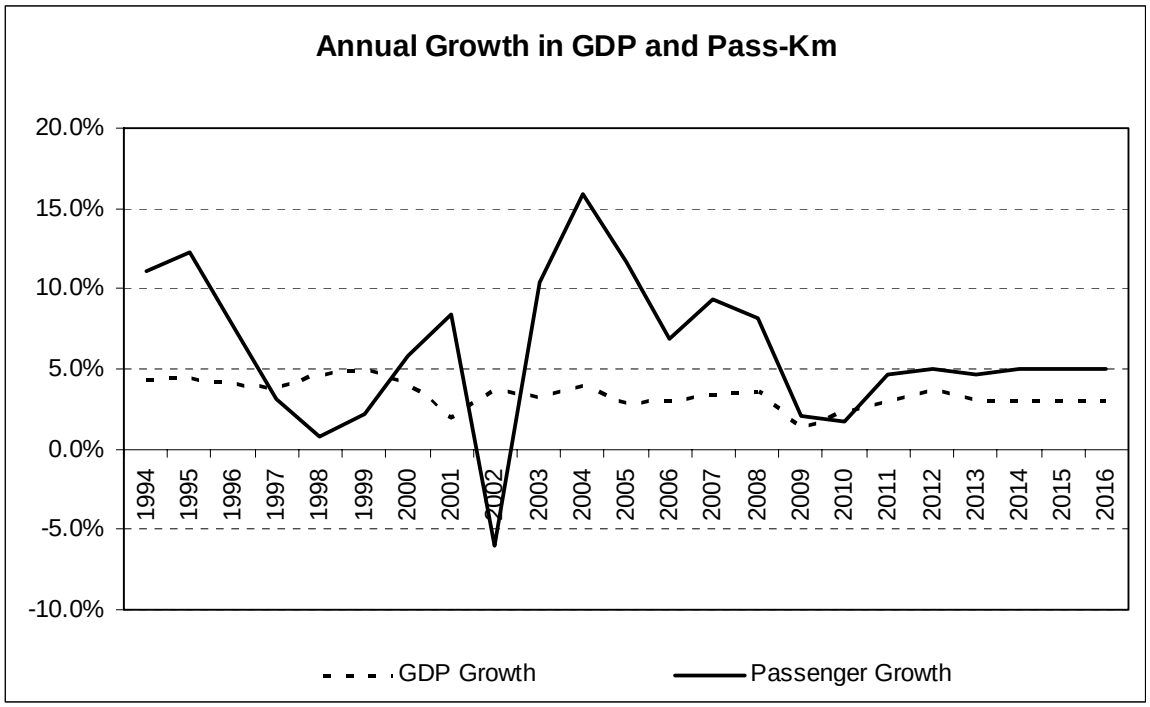


Table 13 — Forecasts of Real GDP, Fares and Major Domestic Passenger-Km

Year ending 30 June	GDP Growth	Growth in the Real Best Discount Fare	Passenger-km	
			Growth	Level
2007	3.3%	2.7%		48,856,628
2008	3.6%	-3.4%	8.1%	52,827,996
2009	1.3%	-15.8%	2.0%	53,896,996
2010	2.3%	-15.3%	1.8%	54,845,775
2011	3.0%	2.5%	3.4%	56,722,735
2012	3.8%	1.1%	5.0%	59,581,761
2013	3.0%	-2.5%	5.3%	62,712,439
2014	3.0%	-2.7%	5.3%	66,053,998
2015	3.0%	-2.7%	5.3%	69,573,608
2016	3.0%	-2.7%	5.3%	73,280,756

The average rate of growth forecast for major domestic airline passenger traffic from the base year of 2009-2010 to 2015-2016 is 4.9% per annum.

Major Domestic Airline Fleet Perspectives

Deriving a forecast of aircraft-km from the forecasts of passenger-km requires assumptions on future load factors and average aircraft size.

Domestic load factors reached a high of almost 81% in FY2010. The strong decrease in airfare together with some improvement in economic conditions allowed airlines to keep the load factor high.

Major carriers have revealed plans to add capacity by introducing new aircraft into their domestic fleets. In the short-term, the additional capacity is likely to exceed the increase in demand as airfare recovery will constrain the demand. This will result in a slight decrease in the domestic passenger load factor in the short term. As the low-fare model spreads to more domestic routes, higher load factors will likely result in the medium-term. Airlines will manage capacity to maintain their load factor above 80%.

Aircraft size is expected to increase slightly as a result of the further deliveries of A320s and B737-800s and the replacement of B767s by A330s.

The assumptions for future average load factor and average aircraft size for the major domestic airline sector are given in Table 14, Table 15 and Table 16)

Table 14 - Assumptions for Future Average Load Factors and Aircraft Size for Major Domestic Air Services

	2010	2011	2012	2013	2014	2015	2016
Average load factor (%)	80.8%	79.4%	78.4%	79.6%	79.8%	80.2%	80.7%
Annual growth in load factor (%)	1.5%	-1.7%	-1.2%	1.5%	0.3%	0.4%	0.7%
Average aircraft size (seats)	169.9	171.7	174.4	175.9	177.5	179.1	180.6
Annual growth in aircraft size (%)	-0.7%	1.1%	1.6%	0.9%	0.9%	0.9%	0.8%

Table 15 – Actual and forecasted load factors – Major Domestic Airlines

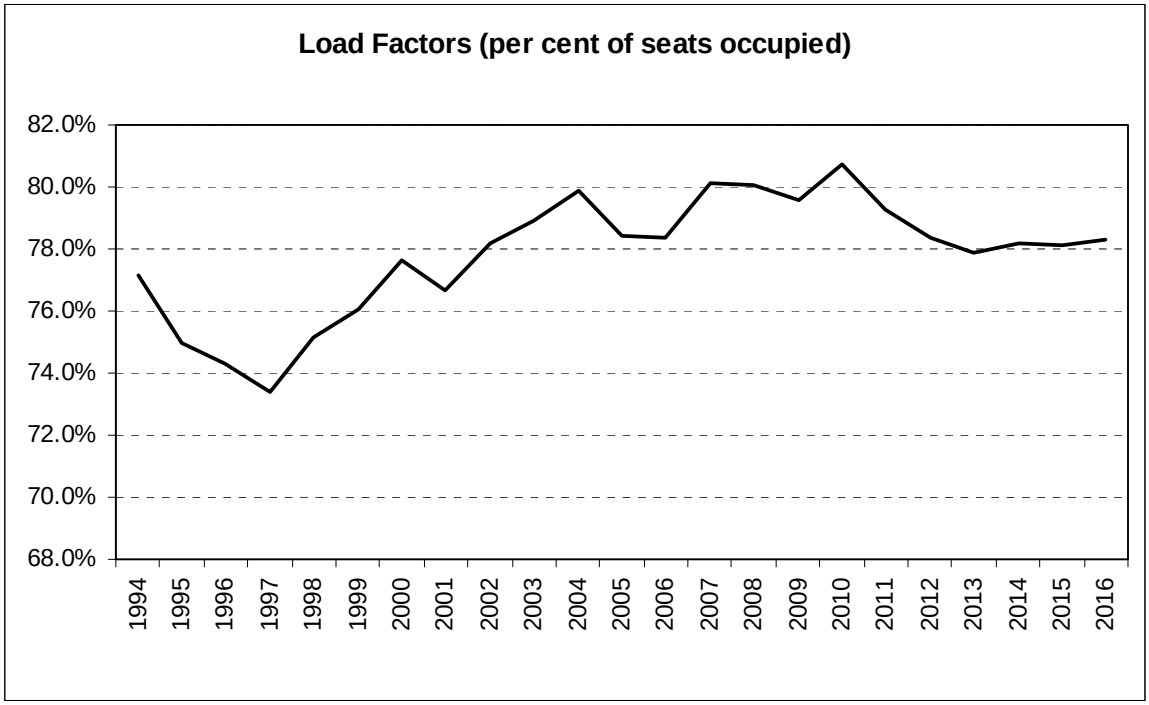
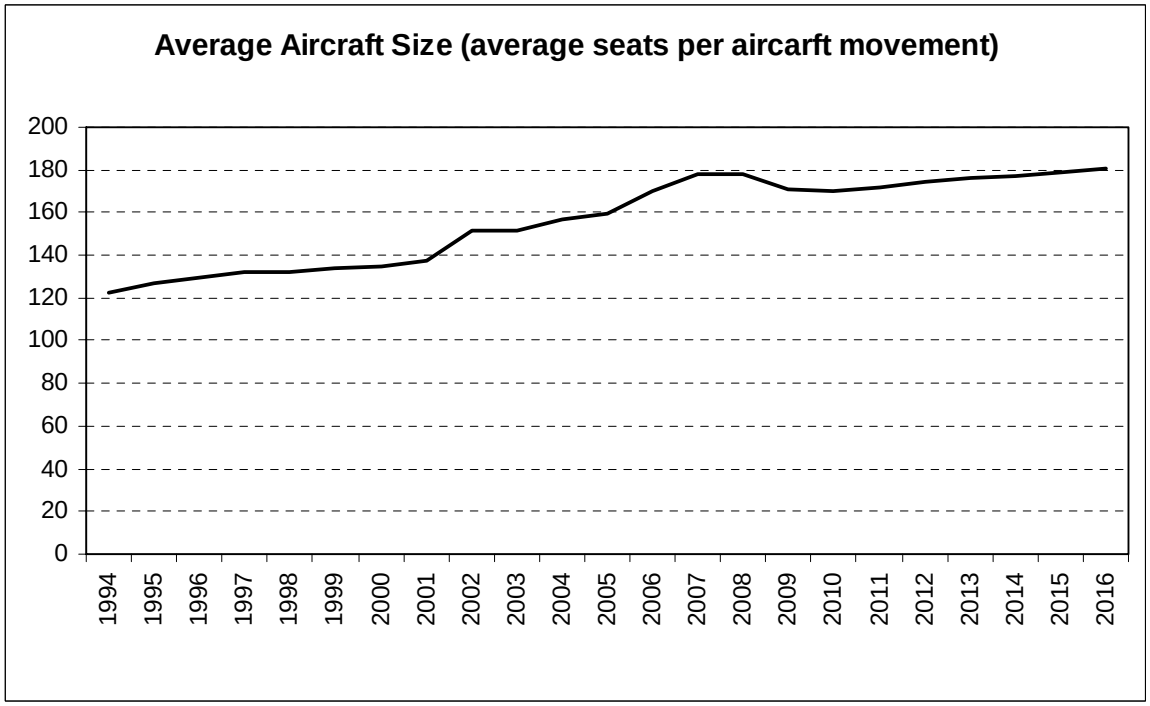


Table 16 – Actual and forecasted average aircraft size – Major Domestic Airlines



Fleet Assumptions for Major Domestic Airlines

Following are the fleet and development strategies that have been considered to prepare the load factor and average aircraft size forecast.

Qantas Group

The Qantas Group will continue pursuing its dual-brand strategy. The mainline will address the premium segment, while Jetstar will serve the lower yield markets utilizing its competitive cost structure. Both airlines are expected to increase domestic fleets by several Next-Gen short- and medium-haul aircraft and at the same time continue to retire older planes.

The Qantas group has ordered a substantial number of new aircraft aimed at both modernizing and expanding Jetstar's and Qantas' domestic fleet. With 50 firm orders and another 50 optional, Qantas is one of Boeing's largest clients for the Dreamliner aircraft. The B787-8 is a core element of Qantas domestic fleet development plan. Fifteen B787-8s were ordered by the Qantas Group to be used on domestic operations. However, according to a recent announcement by the Qantas Group the entry of service of the B787-800 on domestic routes has been postponed. This statement is also supported by Boeing's recent communication to further delay the delivery one quarter of a year:

- ↗ The LCC subsidiary will receive the first eight B787-8s (313 seats), between end-2012 and 2014, to operate on their international network;
- ↗ The larger A330-200s (303 seats) will be shifted from Jetstar to Qantas' domestic fleet as the B787-8s are delivered, allowing the progressive retirement of the B767-300s (229 seats) currently operating on domestic routes.
- ↗ As Jetstar receives the first B787-9s, the B787-8s will be deployed on Qantas' domestic routes.

The group has also ordered 28 additional B737-800 and 6 A320/321 aircraft; partly to facilitate for domestic growth and replace the B737-400s.

The fleet strategy of Qantas group will result in a noticeable increase in average aircraft size on domestic routes from 175 seats in June 2010 to 180 seats in June 2016 (see Table 17).

Table 17 — Fleet size forecast Qantas Group – Domestic operations

		Actual	*Forecasts*					
	Seat number	June 2010	June 2011	June 2012	June 2013	June 2014	June 2015	June 2016
Dash 8 (100/200/300)	43	21	21	21	21	21	21	21
Q400	72	21	23	26	28	28	28	28
B717-200	117	11	11	11	11	11	11	11
B737-400	140	17	16	14	1\2	10	17	5
B737-800	156	38	41	45	49	54	59	63
A320-200	177	29	31	34	36	38	40	42
A321-200	213	3	4	4	4	4	4	4
B767-300ER	229	22	21	19	16	12	10	7
A330-200	303	5	6	7	9	12	12	12
B787-8	313*	0	0	0	0	0	2	5
Average seat number		175	176	176	177	178	179	180

Note: Dash8 (100/200/300 and Q400) are part of the Regional operations; QantasLink B717-200 are accounted under the Major domestic operations.
*Source: IATA assumptions based on Qantas Group's communication,*announced configuration for JQ B787*

Virgin Blue

In May 2010, Virgin Blue (DJ) corrected its profit estimates for the year-end 2010 to AUD20-40 million down from 80 million mainly due to the rapid deterioration and increased volatility of its domestic and international leisure segment. The company will continue to monitor conditions with the option to adjust existing capacity through flexible fleet delivery schedules. Fleet cuts have not been announced.

In order to draw greater attention to the premium domestic travel market, Virgin Blue is believed to be intensifying its focus on the domestic segment; offering a wider spread network and newer, large aircraft. In April 2010, Virgin Blue announced a deal with Boeing to purchase 50 B737-800s on firm order to be delivered from 2011. IATA expects that ultimately about two-thirds of

the 50 aircraft will be dedicated to the domestic network. Furthermore, Virgin recently announced that 2 new A330-200s would join the domestic fleet as of May 2011. The bigger aircraft will allow Virgin to compete on the longest domestic routes with an enhanced business class offering. The forecast has assumed that one more A330-200 would be delivered in 2012 to fuel this strategy. As a result, older B737-700s could be retired. Thus, domestic capacity will grow substantially supporting Virgin's ambition to see its domestic market share grow from 10% to 15% within the next 24 months.

The above will result in an increase in the average aircraft size for domestic operations from 136 seats in June 2010 to 156 seats in June 2016 (see Table 18).

Table 18 — Fleet size forecast Virgin Blue – Domestic operations

		Actual	*Forecasts*					
	Seat number	June 2010	June 2011	June 2012	June 2013	June 2014	June 2015	June 2016
B737-700	141	21	20	15	10	6	2	0
ERJ-170	76	6	6	6	6	6	6	6
ERJ-190	104	15	15	15	15	15	15	15
B737-800	174	20	20	24	28	34	40	44
A330-200	303	0	1	2	3	3	3	3
Average seat number		136	139	146	149	151	154	156

Source: IATA assumptions based on Virgin Blue's communication

Tiger Airways Australia

Tiger Airways Australia (TT) is an all-domestic airline targeting the low price end of the market and is planning to add substantial capacity in the next two years. Recently, the airline announced more flights would be added from its newest base at Melbourne's Avalon Airport as the airline continues with its expansion plans. TT plans to base 2 new A320-200s at Avalon adding routes to Sydney, Rockhampton, Mackay and Alice Springs starting by the end of the year. This expansion will increase Tiger Airways Australia's current fleet from 9 to 11 aircraft in 2010.

Additional fleet expansion is planned for the medium-term. A large order of 48 A320-200s for the entire Tiger Airways group has been made and is expected to be delivered by 2016. Based on

TT corporate communications, the following development perspectives for Tiger Airways Australia are included in the forecast:

- ↗ Rapid expansion on the domestic low-cost segment;
- ↗ 23 of the 48 ordered A320-200s may be dedicated to Tiger Airways Australia segment;
- ↗ Increase of current fleet from 9 to 17 airplanes by 2012 and ultimately to 30 A320-200 by 2016 (see Table 19).

Table 19 — Fleet size forecast Tiger Airways Australia – Domestic operations

		Actual	*Forecasts*					
	Seat number	June 2010	June 2011	June 2012	June 2013	June 2014	June 2015	June 2016
A320-200	140	9	13	17	21	24	27	30
Average seat number		180	180	180	180	180	180	180

Source: IATA assumptions based on Tiger Airways Group's communication

Major Domestic En-route Forecast

The historic trends in aircraft-km from the BITRE data for major domestic airline services and the ASA data for aircraft larger than 20 tonnes MTOW are reasonably well matched, although not perfectly (see Table 20 below).

The measures of en-route distances for airspace pricing purposes may not perfectly coincide with the distance concepts used by BITRE.

In recent years, the regional airline sector introduced aircraft larger than 20 tonnes MTOW, although this would have had a very modest effect on the total volume of traffic for aircraft above 20 tonnes.

The relationship between the trends in total aircraft distance and MTOW-Km for domestic airline traffic equal to, or greater than, 20 tonnes MTOW, measured by both BITRE and Airservices, is also close (see Table 21). This is particularly so for the early part of the period (1998 to 2003) and again for the latter period of 2007 to 20010.

Table 20 — Total Aircraft distance traveled according to BITRE and ASA – Major Domestic En-Route operations

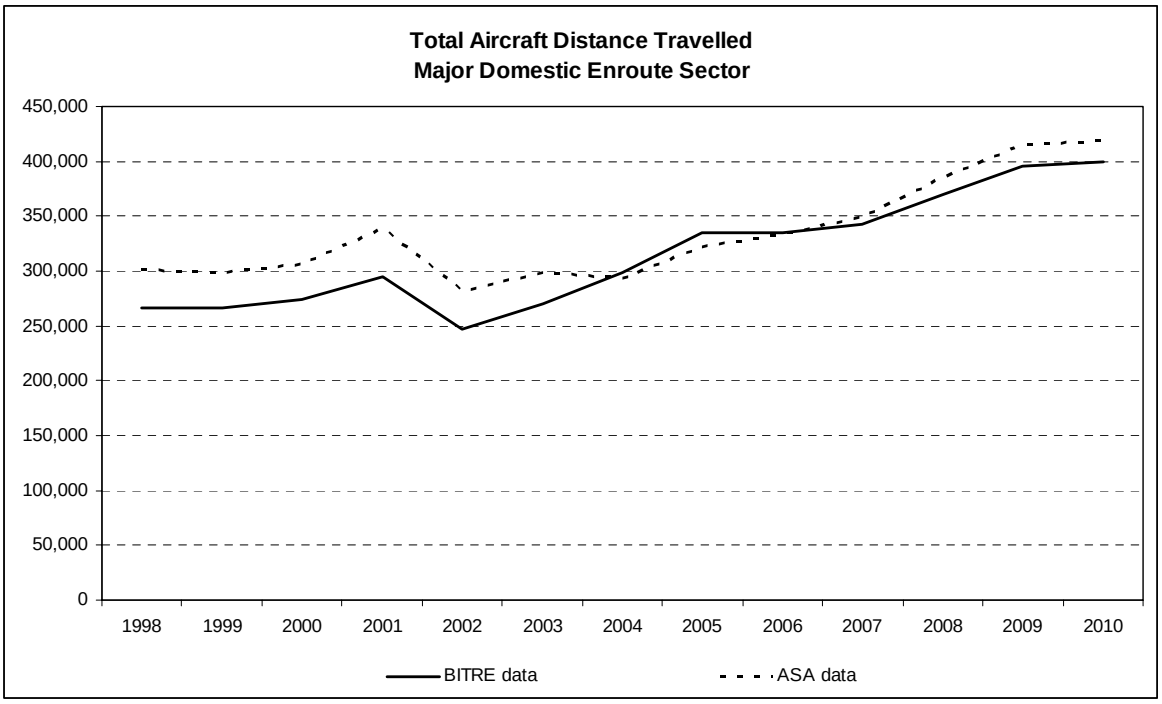
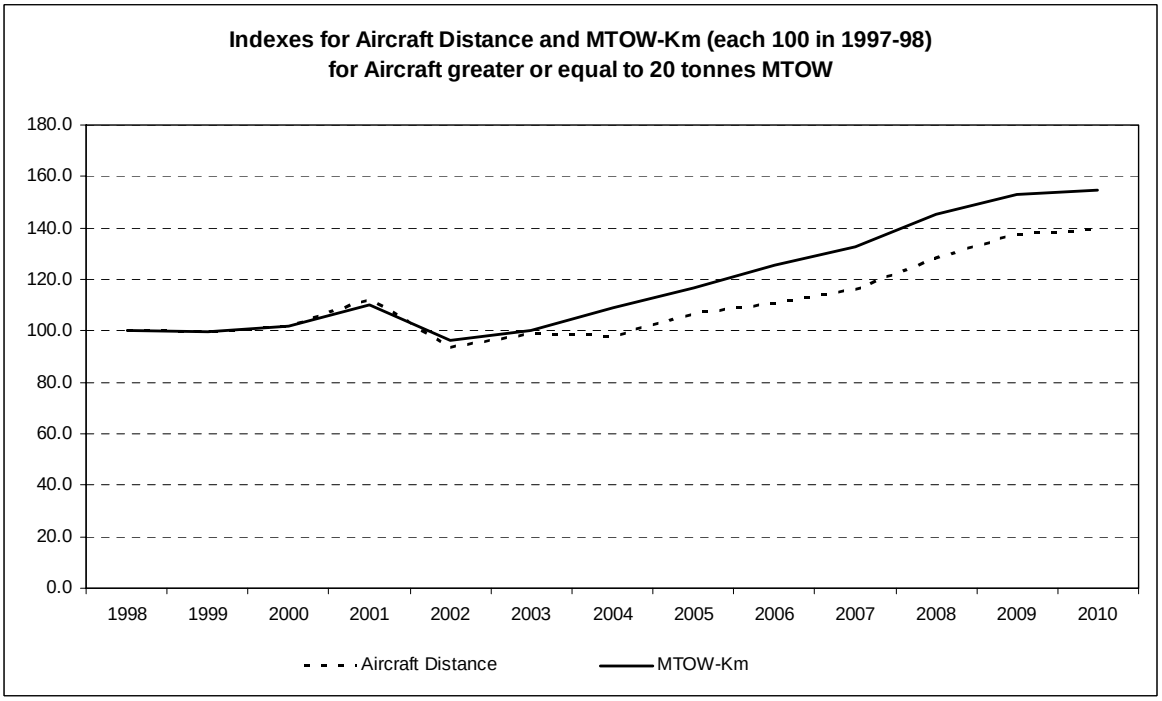


Table 21 — Aircraft distance and MTOW-km for aircraft above 20 tonnes – Major Domestic Airlines



The forecast of aircraft-km flown has been derived from the passenger forecast and the assumptions for the evolution of load factors and average aircraft size over the forecast period. The forecast for MTOW-Km has then been derived directly from the aircraft-Km forecast.

The forecast for Major Domestic Airline En-route traffic is presented in Table 22

Table 22 - Forecast of Major Domestic Airline En-route Traffic

Year ending	Passenger-km		Aircraft-Km		MTOW-Km	
30 June	Level	Growth	Level	Growth	Level	Growth
2007	48,856,628		342,370		31,747,465	
2008	52,827,996	8.1%	370,269	8.1%	34,774,253	9.5%
2009	53,896,996	2.0%	395,748	6.9%	36,541,619	5.1%
2010	54,845,775	1.8%	399,833	1.0%	36,966,105	1.2%
2011	56,722,735	3.4%	416,252	4.1%	38,484,104	4.1%
2012	59,581,761	5.0%	435,960	4.7%	40,306,208	4.7%
2013	62,712,439	5.3%	447,968	2.8%	41,416,404	2.8%
2014	66,053,998	5.3%	466,270	4.1%	43,108,457	4.1%
2015	69,573,608	5.3%	484,535	3.9%	44,797,081	3.9%
2016	73,280,756	5.3%	502,747	3.8%	46,480,875	3.8%

6. Major International En-Route Forecast

Forecast for Major International Demand

In contrast to the *domestic* market, the BITRE does not produce revenue passenger-km data for major *international* traffic. [Australian international services fly a large part of their total distance traveled within the areas and jurisdictions of other countries.] In this study, IATA has measured international demand by the numbers of international passengers, data for which was available from the BITRE.

The first step in the forecasting process was an analysis of the number of inbound plus the number of outbound international passengers. This passenger demand was examined using a regression of total passengers against a weighted average of the growth rate of Australian and the growth rate of World GDP. Higher Australian GDP encourages more Australians to travel overseas, and higher World GDP encourages more visitors to Australia.

The regression model for international passengers to and from Australia was estimated over the 1992-93 to 2009-10 period:

Ln Passengers = 9.45 + 1.48*Ln (weighted average of the growths of Australian & World GDP).

$R^2 = 0.98$ $\text{tstat}_{\text{RealGDP}} = 28.1$

There is no fare information for the international routes.

Exchange rates have an effect on international travel to and from Australia. An increase in the Australian dollar against another currency encourages Australians to visit that country but discourages travel to Australia by visitors from that country, and vice versa if the Australian dollar goes in the other direction. With many countries floating their currencies, there are likely to be different effects in different overseas markets. For the years to come, the EIU expects the Australian dollar to remain more or less stable against the US dollar and the Yen. However when compared to the 2005-2009 period, the value of the Australian dollar has risen against the US dollar and decreased against the Yen.

For business travel, the trade-weighted exchange rate index is a more relevant measure than the value of the Australian dollar against specific currencies. Over the period 2010-2014, the EIU forecasts a slightly decreasing value of the Australian dollar. However the expected net effect on travel to and from Australia is unclear. Moreover airlines adjust their revenue management strategies to reflect the evolutions in monetary parity, limiting the consequences of currency fluctuations on load factor. Therefore the impact of currency fluctuations on the overall demand has been discounted.

In a 2008 study, “Air passenger movements through capital city airports to 2025–26” (BITRE Working Paper 72), the trade-weighted index was included in seven models of international movements of overseas visitors at major airports and ‘other airports’. The statistical significance of the index was very weak in all except one of the equations - the one for Sydney. The index was not included in the models for international outbound Australian resident movements. This casts further doubt on the efficacy of attempting to include the exchange rate in the demand equations.

The forecast of Australian and World GDP, together with the estimated relationship between these explanatory factors and traffic demand was used to produce the international passenger forecast for the six years from 2010-11 to 2015-16 (see Table 23).

The average rate of growth forecast for international airline passengers from the base year of 2009-2010 to 2015-2016 is 5.8% per annum, which is larger than the 4.9%pa for the en-route major domestic airline market over the same period. International travel demand tends to be more responsive to changes in income.

Table 23 - Forecast of Major International Passenger Demand

Year ending 30 June	Australian GDP Growth	World GDP Growth	Inbound plus Outbound Passengers	
			Level	Growth
2007	3.8%	5.1%	22,137,767	
2008	3.7%	4.1%	23,264,573	5.1%
2009	1.3%	1.2%	23,486,506	1.0%
2010	2.3%	2.0%	25,530,382	8.7%
2011	3.0%	4.5%	26,977,127	5.7%
2012	3.8%	4.4%	28,649,738	6.2%
2013	3.0%	4.5%	30,283,554	5.7%
2014	3.0%	4.6%	32,024,281	5.7%
2015	3.0%	4.6%	33,865,067	5.7%
2016	3.0%	4.6%	35,811,663	5.7%

Major International Airline Fleet Perspectives

Pending fleet composition changes for the major carriers operating international services to and from Australia were also evaluated. The fleet strategies of the major Australian and foreign carriers were studied to derive the future trends in load factor and average aircraft size.

The analysis revealed that international demand would be quite high over the forecast period, fueled by economic growth. Airlines are expected to increase capacity and match demand, resulting in the load factor remaining at a relatively high level. International load factors reached 74.6% in FY2010. This represents a very high load factor in comparison with historical performance. Very high break-even load-factors, resulting from the steep decrease in airfare these last two years, explain the need for higher overall load factors.

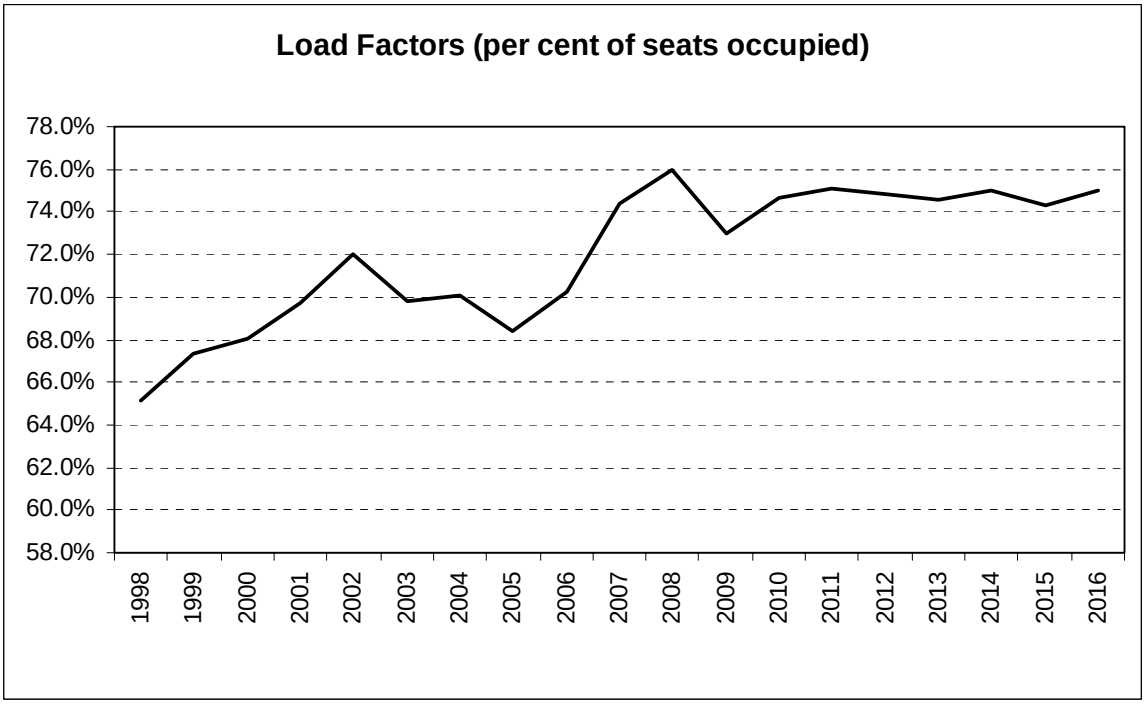
Aircraft size is expected to increase continuously, boosted by the delivery of the A380 and the 787-9.

The assumptions for future average load factor and average aircraft size for the major intgernational airline sector are presented in Table 24 and in Table 25.

Table 24 - Assumptions for Future Average Load Factors and Aircraft Size for Major International Air Services

	2010	2011	2012	2013	2014	2015	2016
Average load factor (%)	74.6%	75.1%	74.8%	74.6%	75.0%	74.3%	75.0%
Annual growth in load factor (%)	2.2%	0.6%	-0.3%	-0.3%	0.6%	-0.9%	0.9%
Average aircraft size (seats)	243.3	247.3	249.8	253.7	257.0	261.5	265.2
Annual growth in aircraft size (%)	-0.5%	1.6%	1.0%	1.6%	1.3%	1.7%	1.4%

Table 25 – Actual and forecasted load factors – Major International Airlines



Following is a summary of the airline fleet and development strategies that have been considered in preparation of the load factor and average aircraft size forecast.

Qantas Group

The Qantas group has ordered a substantial number of long-haul aircraft aimed at both modernizing and expanding Jetstar's and Qantas' international fleet. Qantas' A380 program will continue to be the mainline's core element on its international network expansion and is expected to replace the B747-400 on mature, dense routes such as London and Los Angeles.

In addition, Jetstar will receive the first of the 50 B787s strengthening its international network considerably. Boeing's standard seat configuration for the small Dreamliner is 210-250 seats. Fitted with 313 seats for Jetstar, the B787-8 will offer a remarkable cost advantage over competition. As mentioned in the domestic section above, the first deliveries of the B787s will be aimed at Jetstar's international network.

Table 26 — Fleet size forecast Qantas Group – International operations

		Actual	*Forecasts*					
	Seat number	June 2010	June 2011	June 2012	June 2013	June 2014	June 2015	June 2016
B737-400	140	4	3	2	2	2	2	2
B737-800	156	3	4	6	6	6	6	6
A320-200	177	8	9	10	10	10	10	10
A321-200	213	3	3	4	4	4	4	4
B767-300ER	229	4	4	4	4	4	3	0
A330-200	303	11	12	13	13	13	13	13
A330-300	297	10	10	10	10	10	10	10
B747-400	394	21	20	20	19	19	19	18
B747-400ER	343	6	6	6	6	6	6	6
B787-8	313	0	0	0	3	6	4	1
B787-9	313	0	0	0	0	0	3	7
A380-800	450	6	8	12	13	15	18	20
Average seat number		307	308	308	312	315	320	325

Source: IATA assumptions based on Qantas Group's communication, announced configuration for JQ B787

Jetstar will receive the B787-9s later than expected and will therefore be constrained in terms of the markets it can serve. For example, where the B787-9s could fly non-stop to Europe over the Qantas/Jetstar hub in Singapore, the B787-8s would still require a stopover. Therefore, Jetstar is likely to put its plans to serve Europe on hold. Eventually, non-stop European flights will be available using the B787-9s at the end of 2014.

The group has also ordered five additional A330-200 aircraft to compensate for the delays of the B787 program. Eventually, it is expected that all JQ A330-200s will be transferred from Jetstar's international to the mainline's domestic network and be replaced by B787-9.

Overall the Qantas group fleet dedicated to international operations will see its average aircraft size rise from 307 seats in June 2010 to 325 seats in June 2016.

Virgin Blue

Virgin is expected to slow down its international development and will instead focus on growing domestic market share from 10% to 15% in the next 12 to 24 months, V-Australia has recently deferred orders of two B777-300s and transferred them into options, bringing its international long-haul network expansion to a halt until 2012.

Virgin Blue's order of around 50 B737-800s should have an impact on its medium-haul international network with an estimated nine additional narrowbody aircraft for international.

Thus, the average size of Virgin Blue's aircraft on international routes is expected to slightly decrease from 215 seats in June 2010 to 205 seats in June 2016.

Table 27 — Fleet size forecast Virgin Blue – International operations

		Actual	*Forecasts*					
	Seat number	June 2010	June 2011	June 2012	June 2013	June 2014	June 2015	June 2016
B737-800	174	11	11	13	15	17	18	20
B777-300	328	4	4	4	4	4	5	5
Average seat number		215	215	210	206	209	207	205

Source: IATA assumptions based on Virgin Blue's communication

Emirates

In 2009, Emirates (EK) was the largest foreign carrier serving Australia in terms of seat capacity. Based on current orders, EK is anticipated to increase its overall capacity by around 30% annually between 2010 and 2016. Given its already significant presence in Australia, the forecast assumes a slightly slower than average growth on Australian routes of about 20% annually.

Nonetheless, IATA estimates that a noticeable number of additional aircraft will be dedicated to the Australian market connecting Australia with Europe via the hub in Dubai. Currently, the Emirates backbone of the Australian fleet is the B777 with a seat capacity of 270 to 400 seats. IATA estimates the use of additional A380-800s for Australia by 2016. In addition to the B777-300ER, the 489-seater A380 is likely to become the dominant aircraft used for the Australian market. Moreover, Emirates ordered 50 A350-900 and 20 A350-1000 to be delivered from 2014. Some of them may be used to replace the older A340 serving on Australian routes.

Due to the utilization of larger aircraft, the average aircraft size is forecast to increase from 359 seats to 409 seats (see Table 28).

Table 28 — Capacity and aircraft size forecast for Emirates – International operations to Australia

	Forecast per year						
	June 2010	June 2011	June 2012	June 2013	June 2014	June 2015	June 2016
Seat capacity growth		22.8%	18.6%	24.0%	18.9%	20.9%	17.8%
Average seat number	359	373	382	395	400	404	409

Source: IATA assumptions based on Emirates Group's communication

Singapore Airlines

In 2009, Singapore Airlines (SQ) was the second largest foreign carrier serving Australia in terms of seat capacity. The overall SQ fleet size is projected to grow by about 7.3% annually between 2010 and 2016. Based on the airline's corporate communications, IATA estimates that SQ's Australian network will increase in line with its global fleet expansion. In particular, the airline recently announced large orders for the B787-9 (20) and A350 (20). IATA anticipates that due to Singapore's strategically beneficial location, the airline will be likely to capture substantial connecting traffic between Australia and Asia Pacific.

In total, Singapore Airlines is likely to grow their current capacity to and from Australia by 7.6% annually. Due to the utilization of slightly larger aircraft, the average aircraft size is estimated to increase from 316 to 321 seats (see Table 29).

Table 29 — Capacity and aircraft size forecast for Singapore Airlines – International operations to Australia

	Forecast per year						
	June 2010	June 2011	June 2012	June 2013	June 2014	June 2015	June 2016
Seat capacity growth		7.4%	6.3%	9.0%	8.3%	7.7%	7.1%
Average seat number	316	321	327	325	324	322	321

Source: IATA assumptions based on Singapore Airlines' communication

Air New Zealand

Air New Zealand (NZ) currently serves Australia mainly through A320-200s and to a lesser extent through B767-300 aircraft. In 2009, NZ was the third largest foreign carrier serving Australia in terms of seat capacity.

Contrary to Emirates and Singapore Airlines, NZ is believed to play a smaller role in the growth of Australian international traffic. The most considerable change for Australian traffic is the delivery of the B787-9. Air New Zealand will be the launch customer of the larger Dreamliner and is expected to deploy one aircraft for the Trans-Tasman route as of mid-2015. The B787-9 (270 seats) is a means to retire the aging B767-300ER (223 seats) which currently serves the same route. Therefore, a slight growth in seat capacity and aircraft size is expected in that period.

Other aircraft on order are 14 Airbus A320-200s and 5 B777-300ERs. The A320s will be used to replace the existing B737-300 fleet on domestic routes and the B777s are to replace the B747-400s on dense international long-haul routes. Therefore, both aircraft orders will be unlikely to impact Australian traffic.

In a nutshell, Air New Zealand is likely to grow their current capacity to and from Australia by only less than 1% annually. Due to the utilization of a larger aircraft, the average aircraft size is forecast to increase proportionately (see Table 30).

Table 30 — Capacity and aircraft size forecast for Air New Zealand – International operations to Australia

	Forecast per year					
	June 10-11	June 11-12	June 12-13	June 13-14	June 14-15	June 15-16
Seat capacity	0.0%	-0.3%	0.0%	0.0%	4.2%	0.0%
Average seat number	245	245	245	245	249	249

Source: IATA assumptions based on Air New Zealand's communication

Major International En-route forecast

In addition to providing data on inbound and outbound passenger numbers for the international market, BITRE also produces in and out seats available and in and out flight numbers. This information allows the calculation of average load factors and average aircraft size.

ASA data was the source for distance (aircraft-Km). Most of the distance and MTOW-km flown in Australian airspace are by aircraft greater then 20 tonnes MTOW. The international MTOW-km generated by aircraft below 20 tonnes MTOW is negligible.

The average load factor and aircraft size for recent years are a starting point for forecasting load factors and aircraft size in future years..

Airservices data for total distance traveled in Australian airspace in 2009-10 was the starting point from which forecasts for future years were developed. The forecast growth in total distance traveled was derived from the forecasts of growth in passengers, load factors and average aircraft size. Growth in distance traveled would be higher, the higher is passenger growth, given constant average aircraft size and constant average load factor. However if load factors grow and if aircraft sizes grow, then the growth in aircraft distance traveled will be reduced (for any given passenger volume). The final forecast for each year includes the effects of changes in all three factors (passengers, load factors and aircraft size) in that year.

Table 31 illustrates the close relationship between distance traveled in the Australian airspace and MTOW-Km. The pattern and growth rates of the forecast for distance traveled are used to derive the forecast of MTOW-Km (see Table 32).

Table 31 — Comparison of international En-route distance and MTOW-km

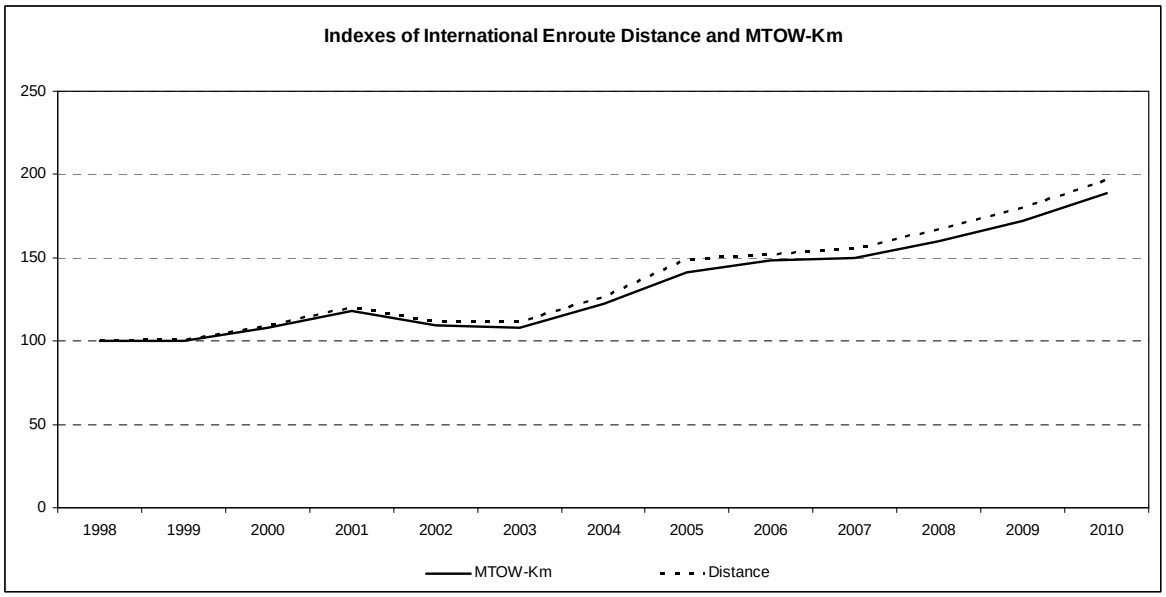


Table 32 - Forecast of Major International Airline En-route Traffic > 20 Tonnes

Year ending	Passenger numbers		Aircraft-Km		MTOW-Km	
30 June	Level	Growth	Level	Growth	Level	Growth
2007	22,137,767		280,360,064		43,912,884	
2008	23,264,573	5.1%	301,367,397	7.5%	46,904,930	6.8%
2009	23,486,506	1.0%	324,718,435	7.7%	50,401,331	7.5%
2010	25,530,382	8.7%	354,953,023	9.3%	55,143,706	9.4%
2011	26,977,127	5.7%	366,882,458	3.4%	56,997,002	3.4%
2012	28,649,738	6.2%	386,986,926	5.5%	60,120,331	5.5%
2013	30,283,554	5.7%	403,832,425	4.4%	62,737,362	4.4%
2014	32,024,281	5.7%	419,210,612	3.8%	65,126,440	3.8%
2015	33,865,067	5.7%	439,755,147	4.9%	68,318,135	4.9%
2016	35,811,663	5.7%	454,570,299	3.4%	70,619,742	3.4%

7. Regional Domestic En-Route Forecast

Regional air traffic (as defined by BITRE) is carried by regional airlines flying between the major cities and regional centers or between different regional centers. Many of these services use much smaller aircraft than the major domestic services, although important regional services are provided with aircraft with a MTOW of more than 20 tonnes (see Table 33).

Table 33 — Aircraft Providing Regional Services Above and Below 20 tonnes MTOW

Aircraft type	*Airline*	*Aircraft numbers*	*Aircraft size (Seats)*	*Capacity (Seats)*	*Capacity Share (%)*	*Ave aircraft size (Seats)*
Aircraft equal to or greater than 20 tonnes MTOW						
Fokker 100	Skywest	8	100	800		
Bombardier Q400	Qantas Link	21	70	1470		
Embraer E170	Air North	3	76	228		
Fokker FK 50	Skywest	9	50	450		
All aircraft > 20 t MTOW		*41*		*2948*	*46.6*	*72*
Aircraft less than 20 tonnes MTOW						
Bombardier Q300	Qantas Link	15	50	750		
Bombardier Q200	Qantas Link	5	36	180		
Bombardier Q100	Skytrans	11	36	396		
ATR 42-500	No-one	0	45	0		
SAAB SF340	Regional Express (Rex)	46	34	1564		
Embraer EMB120 Brasilia	Air North	5	30	150		
Fairchild SA227 Metroliner	Air North, Sharp, Brindabella	10	19	190		
Raytheon Super King Air B200	West Wing, Skytrans	2	10	20		
Beechcraft 1900D	West Wing	2	20	40		
BAe Jetstream J41	Brindabella Airlines	3	30	90		
All aircraft < 20 t MTOW		*99*		*3380*	*53.4*	*34*
Total		*140*		*6328*		*45*

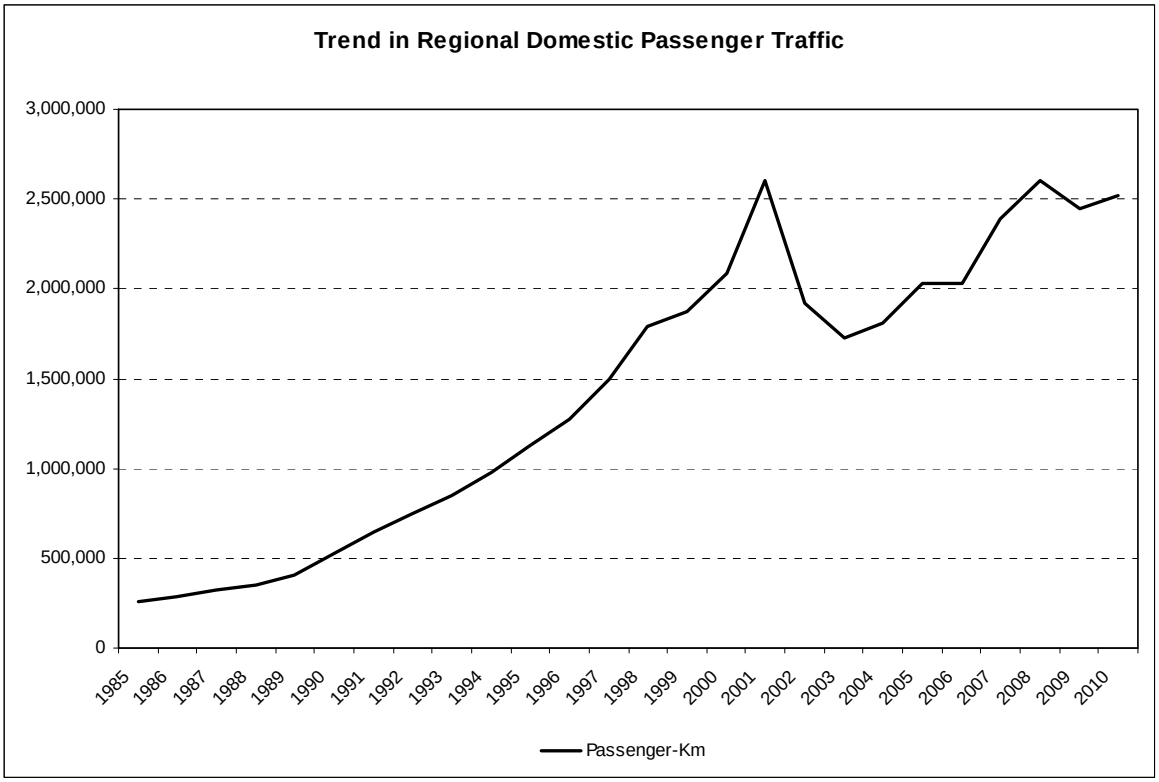
QantasLink provides both regional services with Bombardier Q400, Q300 and Q200 aircraft, and major domestic services with 11 Boeing 717-200 jet aircraft. On the other hand, all the services of other regional airlines, which may provide some of their services with jet aircraft, are designated as regional by BITRE (for example Skywest and Airnorth).

The BITRE regional traffic data includes, but does not distinguish between, operations by both above- and below- 20 tonnes MTOW categories of aircraft. This presents a challenge, since passenger data is available only from BITRE and there is a requirement to disaggregate the forecast into these two categories of traffic.

Analysis of Traffic Demand

The trend in passenger-km for regional services is illustrated in the Table 34 below.

Table 34 — Historical trend in Regional Domestic Passenger Traffic – 1985 to 2010



This sector experienced very high growth throughout the 1990s until 2000-01. In 2001-02, there was a severe collapse in traffic, followed by a recovery in subsequent years.

In some centers, mining and tourism have expanded and contributed to growth in regional air transport. On the other hand, some rural areas have stagnated or declined. However, there have been other very important factors affecting the industry and its organization. In the 1990s, a major carrier, Ansett, was progressively transferring some of its services to regional airline affiliates such as Hazelton Airlines and Kendall Airlines. This was important on certain routes, for example Canberra-Sydney. It had a modest effect on the total major domestic traffic but a substantial effect on the much smaller regional sector. With the collapse of Ansett in 2001, and

the subsequent demise of Hazelton and Kendall, regional traffic declined sharply, although there was government support for some of the services.

In more recent years, QantasLink has expanded its regional operations and purchased some Boeing 717-200 aircraft from Impulse (which also went out of business) and Bombardier Dash 8-Q400 aircraft, both of which are greater than 20 tonnes MTOW. These replaced aircraft such as DHC8-100 which are less than 20 tonnes MTOW. Regional carriers operate on routes such as Sydney–Canberra, Sydney–Coffs Harbour and Brisbane–Canberra, where they may face the competition from Major Domestic carriers such as Virgin Blue whose recent fleet development (ERJ170 and ERJ190) enables it to service routes that used to be dedicated to regional carriers. Therefore, part of the regional market is "transferred" to the major domestic market.

Changes in the airline industry structure discussed above have therefore had a large impact on the historic trend in demand for regional services. This increases the difficulty of determining the effect of economic conditions on the sector.

It is also difficult to identify the roles of specific industries which use regional services, as distinct from the general economy which tends to affect the wider national market. The mining sector has clearly had an important impact on regional air services, as it has on the wider economy and hence the major domestic services. However, it is possible that the developmental stage of the mining sector will moderate somewhat and perhaps have a reduced impact on regional services.

A regression was carried out over the relatively short 8-year period from 2002-03 to 2009-10 for the regional domestic sector. A GDP (Australian) elasticity of 2.1 was estimated with a 't' statistic of 8.7. When a fare variable was included, the statistical performance of the equation deteriorated. This is likely due to too few observations to identify the separate effects of income and price.

It is possible that the regional market could be more sensitive to the economy than the major domestic market. Nevertheless, a smaller GDP elasticity of 1.6 is used for forecasting, which is still larger than the GDP elasticities of the major domestic and international markets.

The forecast for Regional Domestic En-route passenger traffic is presented in Table 35.

Table 35- Forecast of Regional Domestic En-route Passenger Traffic – Above and below 20 tonnes MTOW

Year ending 30 June	Growth in Australian GDP	Passenger-km Level	Growth
2007	3.3%	2,386,970	
2008	3.6%	2,600,734	9.0%
2009	1.3%	2,447,585	-5.9%
2010	2.3%	2,517,950	2.9%
2011	3.0%	2,641,759	4.9%
2012	3.8%	2,805,116	6.2%
2013	3.0%	2,943,046	4.9%
2014	3.0%	3,087,757	4.9%
2015	3.0%	3,239,584	4.9%
2016	3.0%	3,398,877	4.9%

Regional En-route trends in aircraft-km and MTOW-Km

The trend in regional MTOW-Km is influenced by the following factors:

- ↗ Growth in regional airline passengers;
- ↗ Trends in load factors and aircraft size both of which affect the trend in regional aircraft-km;
- ↗ Growth in aircraft size which increases aircraft weight; and,
- ↗ Replacement of 'below 20 tonnes MTOW' aircraft' with 'above 20 tonnes' aircraft, the latter therefore being removed from ASA's 'below 20 tonnes MTOW' category.

The Forecast of regional aircraft traffic for both the above and below 20 tonnes MTOW categories will be driven by the passenger forecast given above.

Above and below 20 tonnes MTOW segmentation

For the 'below 20 tonnes' category of traffic, an estimate of seat-km in 2009-10 was derived from the aircraft distance flown available from Airservices multiplied by the estimate of total seat capacity available from the analysis of the aircraft fleet given in Table 33 above. This produces an estimate of 2,538 million seat-km for FY2010 for regional seat-km on aircraft below 20 tonnes MTOW. The BITRE dataset has an estimate of 4,035 million seat-km for the total regional market. This implies that the 'below 20 tonnes' category of traffic accounts for 63% of the total regional capacity in terms of seat-km. This compares with the estimate of 53%

based solely on the analysis of the capacity shares of the fleet of aircraft supplying regional services as defined by BITRE.

If about 45% of the regional seat-km provided by regional services (as defined by BITRE) were on 'above 20 tonnes' aircraft, the effect of adding this traffic to BITRE's figure for major domestic seat-km would be to increase it by about 2.7%. Differences in the assumptions used for forecasting the 'above 20 tonnes' traffic currently included in regional services would have very little impact on the forecast of major domestic traffic presented earlier in the report.

The aircraft-km for BITRE's regional services and for ASA's domestic passenger operations by aircraft below 20 tonnes are much closer together than the seat-kms discussed above. This is because fewer aircraft-km are required to provide seat-km when larger aircraft are used.

In regard to the forecasts for 'below 20 tonnes' aircraft, there is no additional information to change the assumptions built in to the wider regional passenger forecast.

Regional load factor and aircraft size

Load factors have been quite stable since 2002-2003, varying between 60% and 67% with an average of 64%. In 2010, the regional load factor was 62.4%, slightly behind the average. For future years, considerate is conservatively assumed that regional load factors will return to the historical average over the next three years as demand grows.

The aircraft size of the regional airlines has been increasing continuously since 2002-2003, from 35 seats to almost 50 seats (+5% p.a. derived from BITRE seat-km and aircraft-km and including both below and above 20 tonnes MTOW aircraft). QantasLink fleet strategy to expand their fleet with higher capacity and heavier models (B717 and Dash 8-Q400) contributed to this increase. Therefore it is estimated that the growth trend for aircraft below 20 tonnes MTOW has been slower, only half of the total growth (i.e. +2.5% p.a.). For future years, a continuous 2.5% growth trend is anticipated.

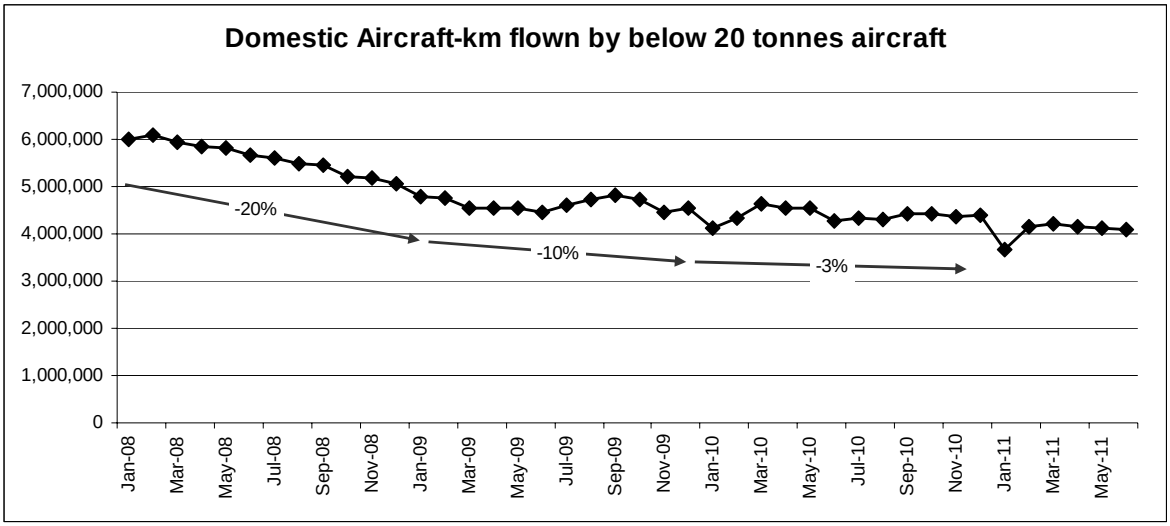
Regional en-route forecast

Growth patterns of passenger demand, average load factors and average aircraft size all affect the pattern of growth in aircraft-km flown on regional services. Their impact is depicted in the forecast of aircraft-km presented in Table 38 below.

In the case of services provided by aircraft below 20 tonnes MTOW, the derivation of the forecast for MTOW-Km depends on average aircraft weight, and hence average size, as well as distance flown. Growth patterns of these factors therefore have an influence on the growth pattern of MTOW-Km. (In the case of services provided by aircraft of greater than,20 tonnes MTOW, the charges for air services depends on distance and the square root of MTOW which greatly lessens the affect of weight.)

In FY2009, the replacement of less than 20 tonnes MTOW aircraft by larger ones accounted for 70% of the 15% decrease in the MTOW-km flown by these smaller aircraft. Based on schedule analysis up to mid 2011, it is estimated that this trend has slowed down in 2010 and will continue at a much reduced rates in the future years (see Table 36). Adjustments are made to the MTOW-Km forecasts to accommodate this development.

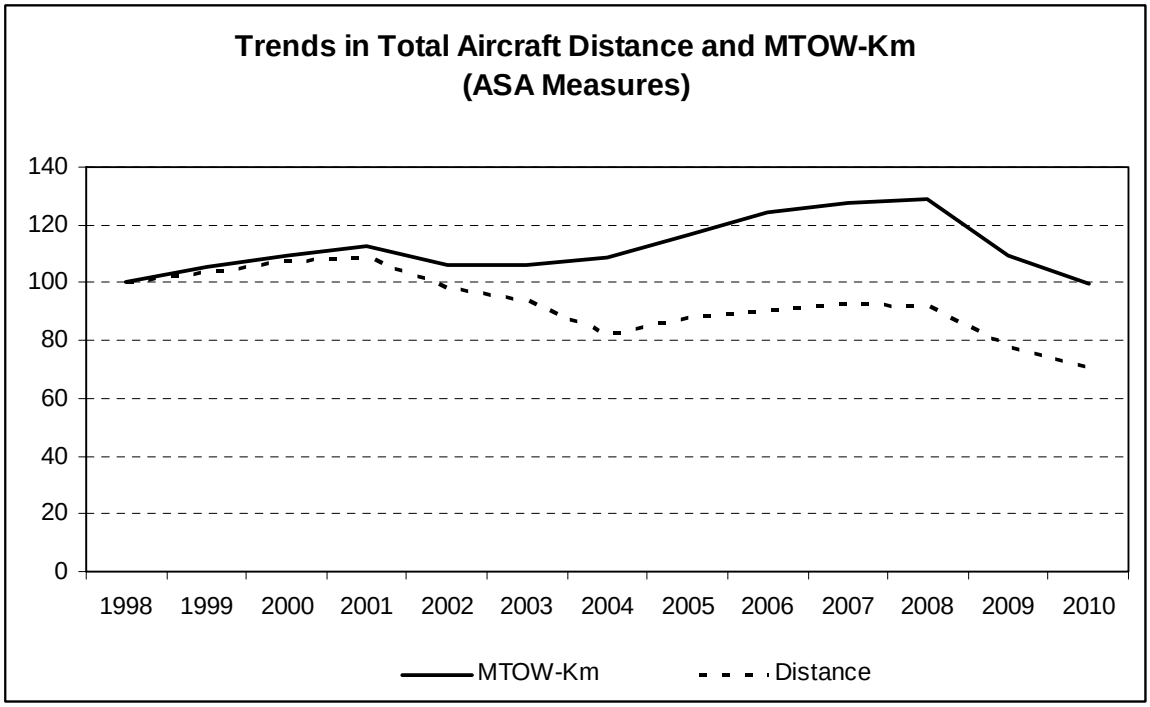
Table 36 – Trends in Domestic Aircraft-km flown by less than 20 tonnes MTOW aircraft (Jan 08 to Jun 11)



Source: SRS Analyzer, 2010

The chart below illustrates the relationship between the trend in distance flown and the trend in MTOW-Km flown, with the latter growing at a higher rate as aircraft get larger and heavier.

Table 37 – Trends in Total Aircraft Distance and MTOW-km – ASA measures



The forecast for Regional Airline En-route traffic for aircraft less than 20 tonnes MTOW is presented in Table 38 below.

Table 38 - Forecast of Regional Airline En-route Traffic for aircraft below 20 tonnes MTOW

Year ending	Passenger-km		Aircraft-Km (ASA)		MTOW-Km	
30 June	Level	Growth	Level	Growth	Level	Growth
2007	2,386,970		96,650,248		11,773,448	
2008	2,600,734	9.0%	95,986,784	-0.7%	11,932,221	1.3%
2009	2,447,585	-5.9%	81,774,717	-14.8%	10,080,417	-15.5%
2010	2,517,950	2.9%	74,350,734	-9.1%	9,213,327	-8.6%
2011	2,641,759	4.9%	75,500,008	1.5%	9,401,808	2.0%
2012	2,805,116	6.2%	77,477,300	2.6%	9,695,044	3.1%
2013	2,943,046	4.9%	78,682,709	1.6%	9,894,357	2.1%
2014	3,087,757	4.9%	80,538,136	2.4%	10,177,149	2.9%
2015	3,239,584	4.9%	82,437,316	2.4%	10,569,795	3.9%
2016	3,398,877	4.9%	84,381,281	2.4%	10,977,589	3.9%

8. Regional International En-route forecast

The international traffic using aircraft less than 20 tonnes MTOW is the smallest category of traffic, representing about 0.5% of total MTOW-Km. It is about 1% of the total MTOW-Km of all international traffic.

The forecast of this traffic assumes the same rate of passenger growth as for major international traffic and also a similar pattern of development of the average load factor. The forecast of regional international MTOW-Km is included in the total MTOW-Km forecast for aircraft less than 20 tonnes MTOW.

9. Other En-route forecasts

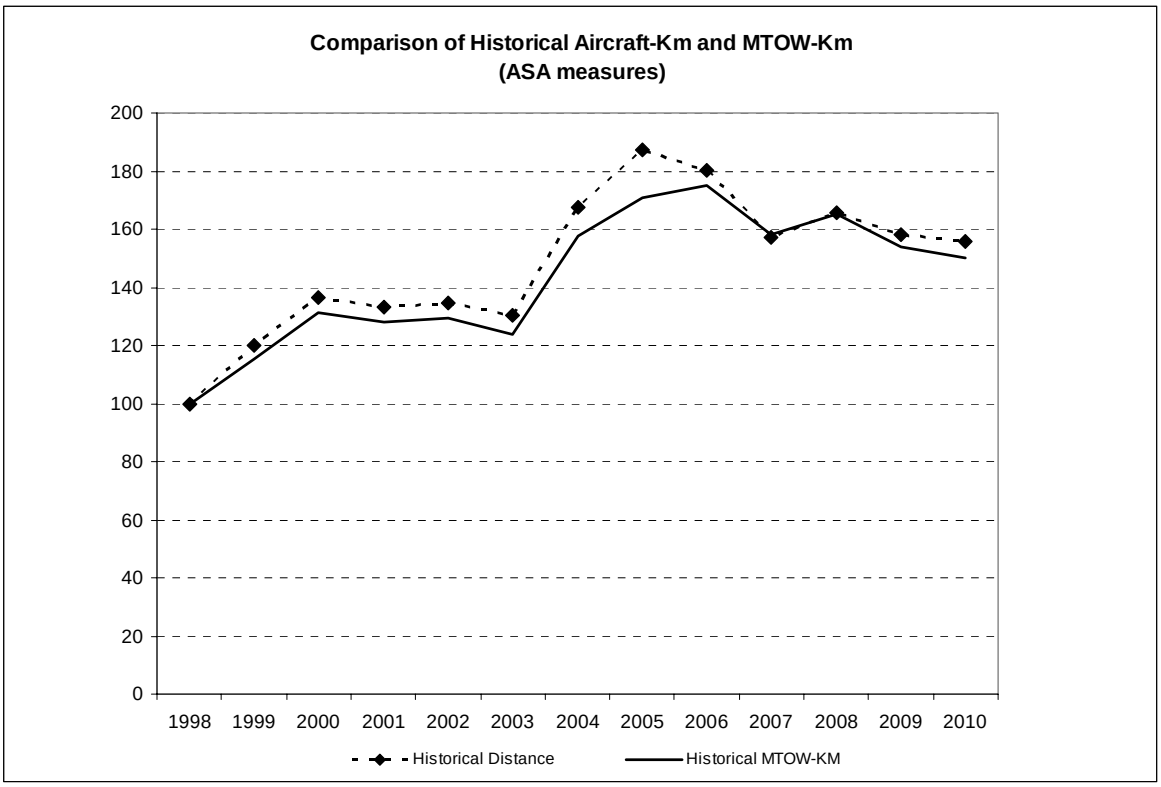
The Overflight, All-cargo and General Aviation forecasts represent a small portion of the en-route activity. Findings for each are summarized below.

Overflights

Overflights, which are international flights overflying but not landing in Australia, are all in the above 20 tonnes MTOW category, and currently represent about 4.4% of the total MTOW-Km for all categories of traffic.

The very strong relationship between the total distance flown by aircraft which overfly the Australia and the MTOW-Km of these flights is shown in the Chart below.

Table 39 – Comparison of Historical Aircraft-km and MTOW-km for Overflight



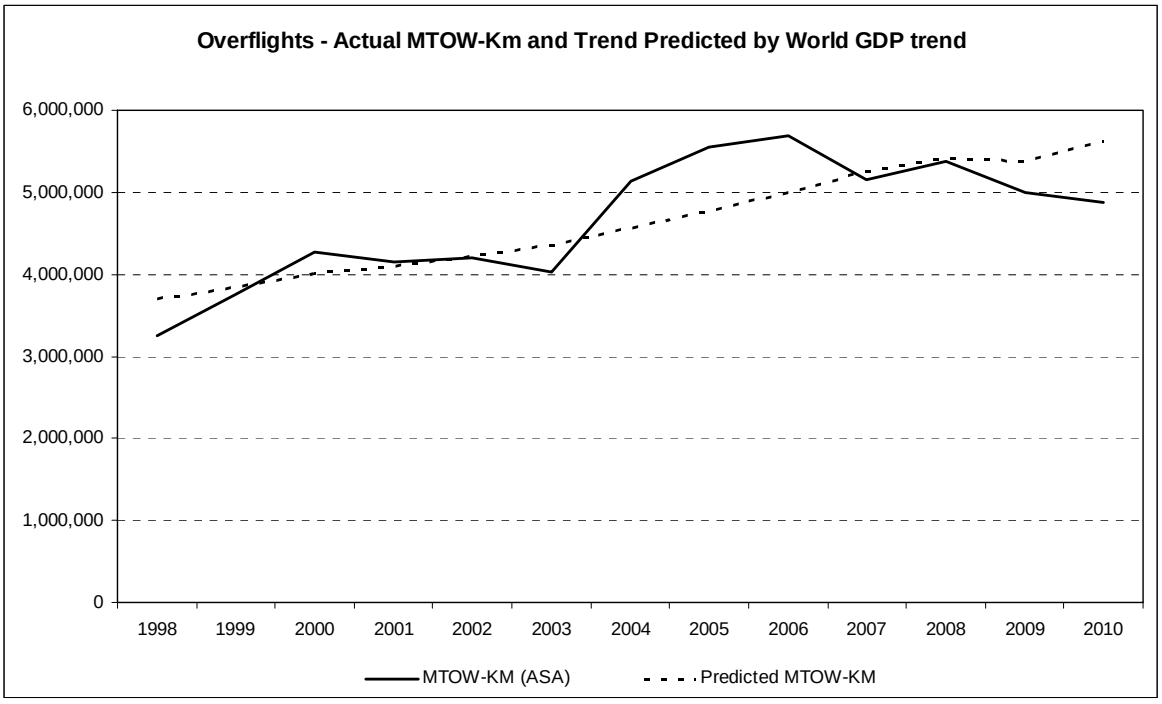
It was not possible to analyze the range of factors causing the changes in the pattern of development of the services over the past 12 years. These factors no doubt include airline routing strategies. There appears to a long term trend effect of GDP growth on overflights, albeit with other factors causing significant ups and downs in the process.

A regression of overflight MTOW-Km on World Real GDP was estimated and a statistically significant GDP elasticity of nearly one was the result:

Ln MTOW-Km = 10.68 + 0.97 *Ln World Real GDP.
$R^2 = 0.61$ tstat $_{RealGDP} = 4.9$

Table 40 compares the actual development of MTOW-Km with the trend that is produced by inserting GDP into the equation above. The chart illustrates the link between them and the 'goodness of fit' in the estimated relationship.

Table 40 – Comparison of Overflights actual MTOW-km and the trend predicted by the equation



The forecast of growth in the MTOW-Km of overflights is developed from the estimated elasticity and the forecast for the growth in World GDP (see Table 41).

Table 41 – Growth in world GDP and projected MTOW-km of Overflights

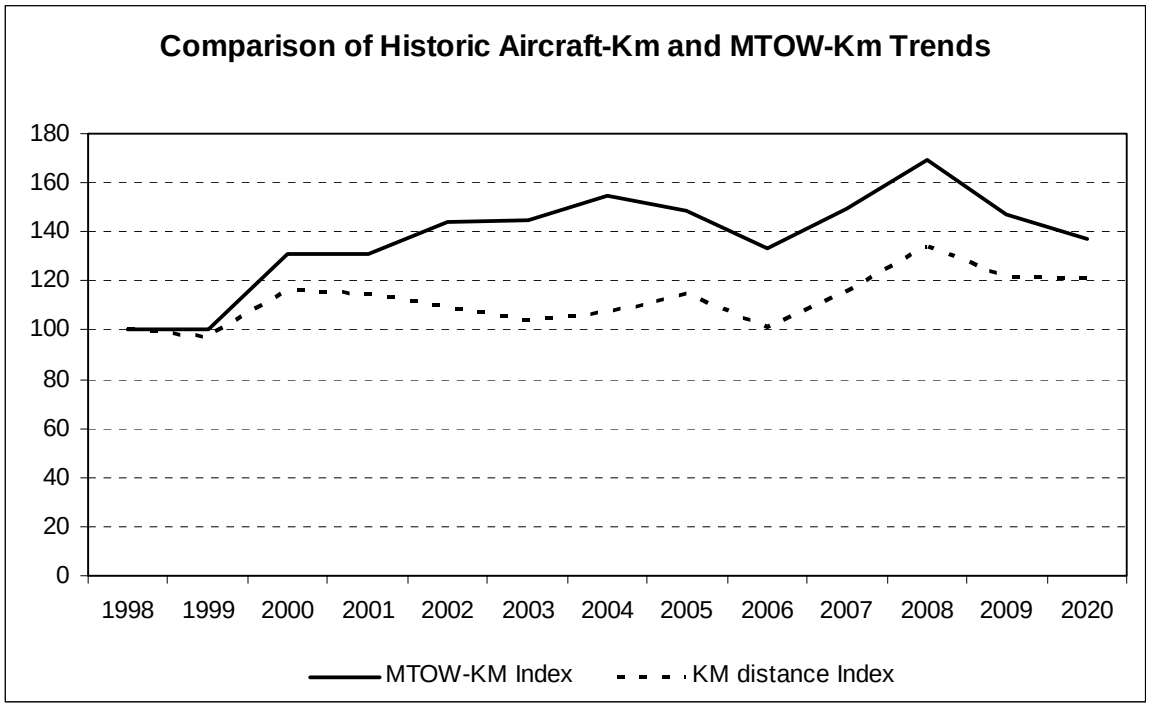
Year ending 30 June	Growth in World GDP	MTOW-Km Level	MTOW-Km Growth
2007	5.1%	5,144,881	-9.6%
2008	4.1%	5,377,579	4.5%
2009	1.2%	5,005,211	-6.9%
2010	2.0%	4,878,094	-2.5%
2011	4.5%	5,092,154	4.4%
2012	4.4%	5,312,043	4.3%
2013	4.5%	5,547,607	4.4%
2014	4.6%	5,796,862	4.5%
2015	4.6%	6,057,315	4.5%
2016	4.6%	6,329,471	4.5%

All-Cargo

The All-Cargo flights are registered as above (or equal to) 20 tonnes MTOW. They include both domestic and international flights and account for about 1.3% of total en-route MTOW-Km.

Table 42 compares the trends in total All-Cargo aircraft distance flown and total MTOW-Km. Between 1998-99 and 2003-04, a gap appeared between the MTOW-Km and distance trends with distance declining relative to MTOW-Km. Such a trend suggests the introduction of larger aircraft, presumably responding to an increase in freight demand.

Table 42 – Comparison of historic aircraft-km and MTOW-km trends for all-cargo flights

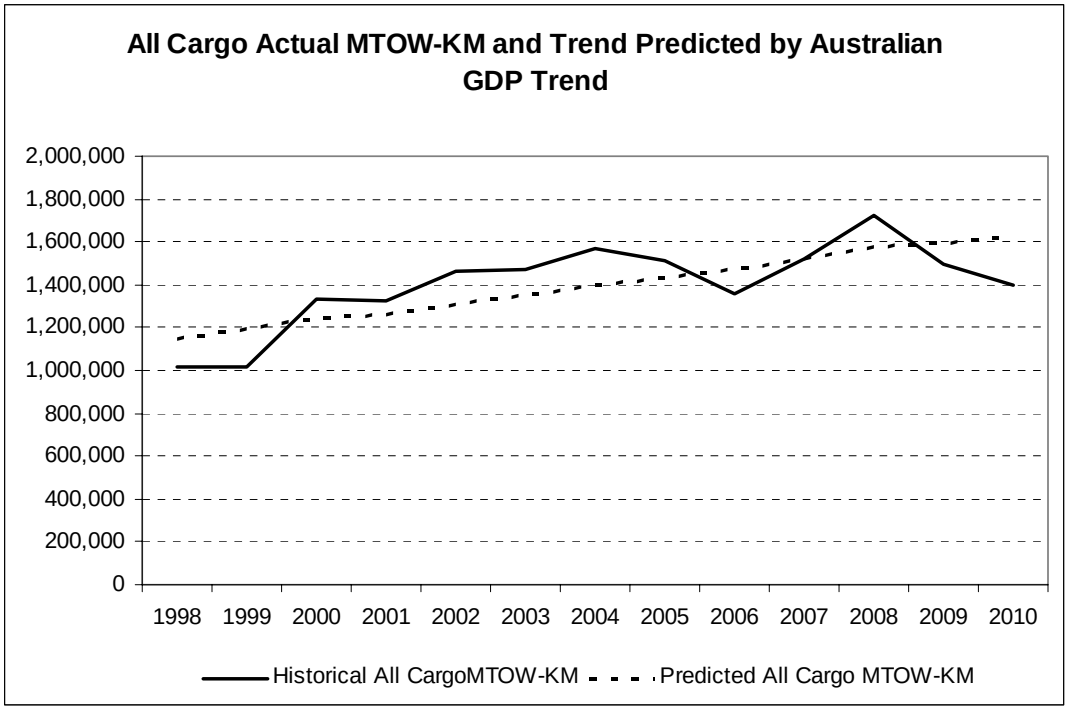


A regression of MTOW-Km against real Australian GDP indicated an elasticity of 0.9, this estimate making logical sense and being statistically significant. As with overflights, there are other factors which have periodic impacts on demand.

Ln MTOW-Km = 10.68 + 0.91 *Ln Australian Real GDP.
$R^2 = 0.55$ tstat $_{RealGDP} = 3.7$

Table 43 compares the actual development of MTOW-Km with the trend that is produced by inserting GDP in the above equation.

Table 43 – Comparison of All-Cargo actual MTOW-km and the trend predicted by the equation



The forecast of growth in the MTOW-Km of all-cargo is developed from the estimated elasticity and the forecast for the growth in Australian GDP (see Table 44).

Table 44 – Growth in world GDP and projected MTOW-km of All-Cargo flights

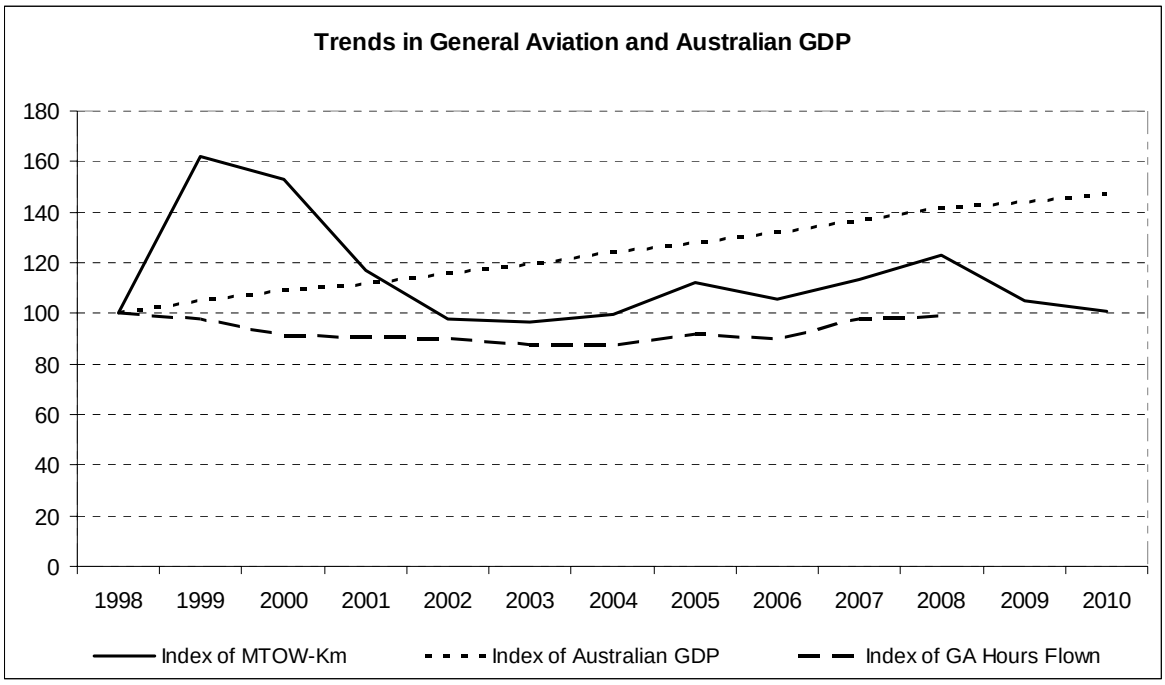
Year ending 30 June	Growth in Australian GDP	MTOW-Km Level	MTOW-Km Growth
2007	3.3%	1,521,688	12.1%
2008	3.6%	1,720,294	13.1%
2009	1.3%	1,492,158	-13.3%
2010	2.3%	1,396,134	-6.4%
2011	3.0%	1,434,422	2.7%
2012	3.8%	1,483,593	3.4%
2013	3.0%	1,524,279	2.7%
2014	3.0%	1,566,080	2.7%
2015	3.0%	1,609,028	2.7%
2016	3.0%	1,653,153	2.7%

General Aviation

The major categories of general aviation are private and business aviation, training aviation, aerial agriculture, charter and aerial work.

The trends in two measures of general aviation activity (1) hours flown provided by BITRE in their Statistical Report, 'General Aviation 2008', and (2) MTOW-Km flown measured by ASA; are presented along with the trend in real Australian GDP (see Table 45).

Table 45 – Trends in General Aviation and Australian GDP



There is no statistical relationship between either measure of General Aviation activity and GDP.

It is not possible to forecast GA activity with any reliability, and therefore it is suggested that no significant change in the existing traffic level be assumed.

10. Major Airports Forecasts

Airport segmentation

Two groups of airports are forecasted under this study - the major and regional airports. Table 46 provides the list of airports included in each group. A specific forecast has been carried out for each.

Table 46 - Airports of Interest to ASA

Major airports	*Regional airports*
Adelaide	Albury
Brisbane	Alice Springs
Cairns	Broome
Canberra	Coffs Harbour
Gold Coast	Darwin
Melbourne,	Essendon
Perth	Hamilton Is
Sydney	Hobart
	Karratha
	Launceston
	Mackay
	Maroochydore
	Rockhampton
	Tamworth
	Townsville

Analysis of Traffic Demand

Regressions of traffic demand as a function of Australian GDP and Best Discount Fares were estimated for each of the major airports (Table 47). These results were used to generate the passenger demand forecast for these airports. The GDP elasticities were mostly strongly significant. The Real Best Discount Fare elasticities were also statistically significant.

The responsiveness of passenger demand to economic growth varied somewhat among the airports with Brisbane and Perth having the highest Australian GDP elasticities. This reflects the

generally faster rate of development and higher population growth in these cities and their hinterlands, at least for much of the period of the analysis.

Table 47 - Results of Regression Equations for Individual Major Airports

Airport	Passenger growth 1993-2010 (% pa)	GDP elasticity	"t" statistic	Real Best Disc, Fare elasticity	"t" statistic
Adelaide	5.0	1.04	8.6	-0.32	-3.0
Brisbane	6.0	1.44	12.2	-0.24	-2.4
Cairns	3.4	0.92	6.1	-0.06	-0.5
Canberra	5.3	0.92	6.8	-0.39	-3.3
Gold Coast	7.7	0.85	3.0	-1.15	-4.6
Melbourne	5.5	1.27	16.0	-0.24	-3.5
Perth	7.3	1.41	7.5	-0.4	-2.4
Sydney	4.8	1.14	10.7	-0.1	-1.1
All majors average		1.12		-0.36	

Gold Coast Airport had the least significant GDP but the largest and the strongest fare elasticity. It also had the highest average rate of traffic growth. Gold Coast's proximity to Brisbane is probably an incentive to use discounting to attract traffic.

The airport passenger demand analysis was quite separate from the en-route demand analysis. However, the relationships among the GDP elasticities were consistent with "a priori" expectations. In particular, the GDP elasticity for major domestic en-route passenger-km of 1.41 was larger than most of the airport GDP elasticities and larger than the average of the airport elasticity of 1.12, and the elasticity estimated for a single regression of the total of the eight major airports (1.21). This reflects the fact that people make longer trips as well as more trips as incomes increase.

Forecast for Traffic Demand at the Major Airports

The forecast for traffic demand was derived based on assumptions and equations mentioned earlier. GDP assumptions are presented in Table 10. The Real Best Discounted Fares assumptions are presented in Table 13.

. Table 48 presents the forecasts for each airport's passenger traffic.

Table 48 – Historic and Forecasted traffic growth rates at the Major Airports – in passengers

Airport	Passenger growth 1993-2010 (% p.a.)	Forecast passenger growth 2010-2016 (% p.a.)
Adelaide	5.0	3.7
Brisbane	6.0	4.9
Cairns	3.4	3.0
Canberra	5.3	3.4
Gold Coast	7.7	4.1
Melbourne	5.5	4.3
Perth	7.3	5.0
Sydney	4.8	3.7

The average rate of growth for the total passengers for all eight major airports (as defined in this study) is forecast to be 4.2% per annum over the 2010-11 to 2015-16 period.

The 4.2% yearly increase is slightly less than the average rate of growth of 5.4% pa forecast by BITRE for the eight capital city airports over the same period (see "Aircraft movements through capital city airports to 2029-30", Report 117, published by the BITRE in April 2010). BITRE and IATA followed a similar approach based on regression analysis.

Most of the explanation for the difference can be attributed to the GDP assumptions used by BITRE based on earlier (2009) Australian Treasury forecasts. These forecasts are more optimistic than the ones used by IATA which are based on the Australian Government Statement issued in July 2010: 4% increase in Australian GDP each year for FY2013 to 2016 used by BITRE, compared with 3% used by IATA. There is little difference in the assumptions in the first two years of the forecast.

Although GDP plays the main role in both the BITRE and IATA models, there are some differences in the model specifications which might generate small differences in the forecasts.

Despite these differences, both studies indicated that Brisbane and Perth had the highest passenger growth rates, and Adelaide and Sydney the lowest growth rates over the forecast period among the common cities studied.

Additionally, the consistency of the forecasts for terminal and en-route demand was checked, as outlined in Table 49.

Table 49 – Projection of terminal passenger demand using the en-route demand forecasts

Period FY2010 – FY2016

	Weight in Airport Terminal traffic	En-route forecast in passenger-km	Increase in sector length	Resulting increase in passenger demand (in pax)
Domestic	71%	4.9%	1.1%	3.8%
Regional	5%	5.1%	1.1%	4.0%
International	24%	N/A	N/A	5.8%
Total (weighted average)				**4.26%**

Forecast for terminal MTOW landed at the Major airports

Assumptions about future load factors and aircraft size, with differentiation for domestic and international operations, were then used to generate trends in aircraft movements at each airport. Forecasts of changes in MTOW at each airport were based on changes in the number of movements and in average aircraft size, both of which affect total MTOW.

The terminal MTOW forecast for the eight major airports is presented in Table 50.

Table 50 – Terminal MTOW forecast for the 8 Major Airports (aggregated)

Year ending 30 June	Inbound Passengers Level	Growth (%)	Terminal MTOW Level	Growth (%)
2007	47,623,254	7.2%	35,374,877	-6.7%
2008	50,889,997	6.9%	41,585,231	17.6%
2009	51,645,519	1.5%	42,140,454	1.3%
2010	53,794,905	4.2%	43,178,743	2.5%
2011	55,429,118	3.0%	44,980,389	4.2%
2012	57,847,392	4.4%	47,391,972	5.4%
2013	60,382,890	4.4%	48,934,332	3.3%
2014	63,064,860	4.4%	50,913,784	4.0%
2015	65,869,004	4.4%	53,111,613	4.3%
2016	68,801,021	4.5%	55,078,730	3.7%

The derivation of forecasts of aircraft movements and MTOW at the major airports from the passenger forecasts involves assumptions for the evolution of load factors and aircraft size which are consistent with those used for the en-route aircraft-km and MTOW-Km forecasting processes.

The forecast of aircraft movements resulted in an average rate of growth of 2.7% per annum between 2009-10 and 2015-16. This compares with a forecast average growth of 3.4% pa for aircraft movements by the BITRE study for the eight capital city airports over the same period.

The individual airport forecasts are presented in the appendices.

11. Regional Airports Forecasts

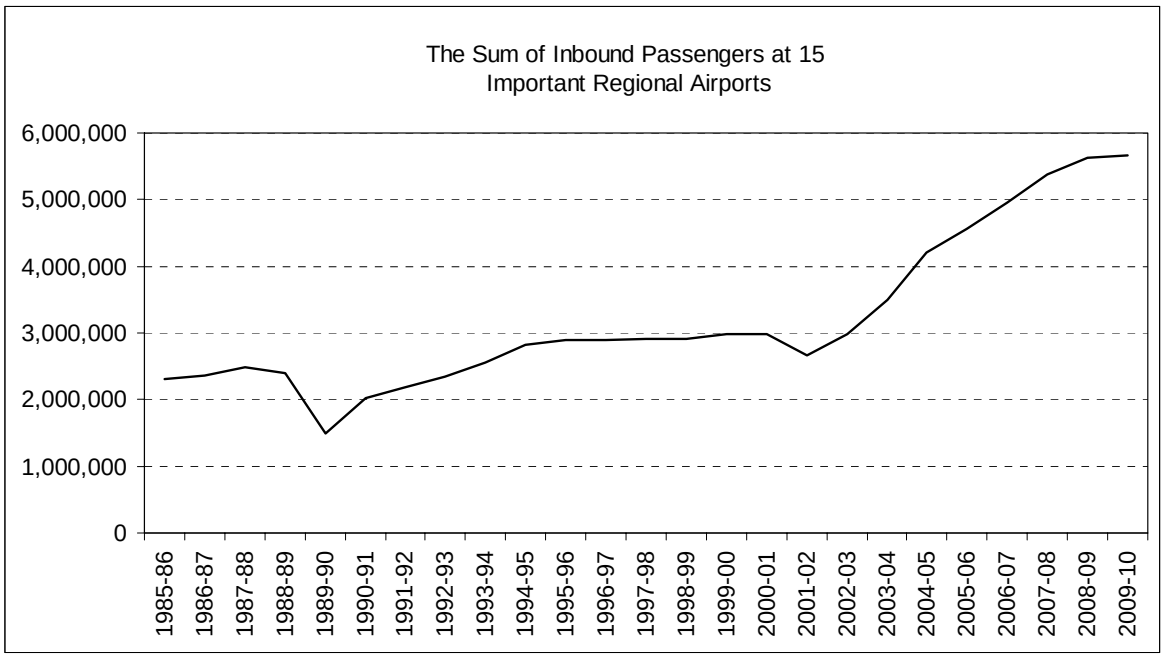
The terminal activity at all regional airports represents about 5% of the total major plus regional terminal MTOW, excluding GA and military.

The 15 regional airports listed previously were analyzed as a group using BITRE data on passengers and aircraft movements. Around 85% of the passengers using these airports are flying on the major domestic airlines; much more than for the regional services as a whole. These 15 airports are generally larger than the many other regional airports.

Comparing 11 months data for 2009-10 for 11 of the 15 Regional Airports with the corresponding 11 month period in 2008-09, there is a small growth in total passenger numbers (1.4%) and substantial growth in aircraft movements of 9.0% implying a fall in passengers per movement. This could be attributed to B737s being replaced by Embraer E170/190s or Bombardier Q400s on some routes.

A Chart of the trend in annual passengers using the 15 regional airports is shown in Table 51. The shape of the time series of this airport traffic is somewhat more 'normal' than for the enroute regional traffic.

Table 51 – Passenger trend at the 15 regional airports



The following regression was estimated for the 14 regional airports based on the data for the period 1992-93 to 2009-10; the last year's traffic being an estimate:

Ln Passenger = 12.25 + 0.84*Ln Real GDP – 0.61*Ln Real Best Disc. Fare – 0.25*Ansett Dummy.

$R^2 = 0.91$ $tstat_{RealGDP} = 3.8$ $tstat_{Real\ Best\ Discount\ Fare} = -3.2$ $tstat_{Ansett\ Dummy} = -2.5$

The equation indicates a GDP elasticity of 0.87 and a fare elasticity of -0.57, both estimates being statistically significant.

The GDP elasticity is expected to be less than that for the en-route Passenger-km demand, just as is the case for major airports vis-à-vis major en-route traffic. The en-route traffic includes the distance element — as income increases, demand for more and longer trips results.

The forecast of total inbound passengers for the 15 regional airports are derived from the forecasts of GDP and fares and the corresponding elasticities given above. The results are shown in Table 52.

Table 52 - Forecast of Inbound Passengers at 15 Regional Airports (aggregated)

Year ending 30 June	Growth in Australian GDP	Inbound Passengers	
		Level	Growth
2007	3.3%	4,959,407	8.7%
2008	3.6%	5,386,734	8.6%
2009	1.3%	5,633,927	4.6%
2010	2.3%	5,712,255	1.4%
2011	3.0%	5,769,837	1.0%
2012	3.8%	5,915,115	2.5%
2013	3.0%	6,159,433	4.1%
2014	3.0%	6,421,657	4.3%
2015	3.0%	6,695,044	4.3%
2016	3.0%	6,980,071	4.3%

Assumptions about load factors and aircraft size are required to translate passenger forecasts into aircraft movement and MTOW forecasts. For airports, there is only data on passengers and aircraft movements, not on seats. Therefore the link between passengers and aircraft movements is passengers per movement; which encapsulates load factors and aircraft size.

The forecast of inbound airport movements at the 15 regional airports draws on the airport passenger forecasts reported above and the evolution of passengers per movement underlying the forecasts of regional en-route traffic (see Table 53).

Table 53 - Forecast of Inbound Aircraft Movements at 15 Regional Airports (aggregated)

Year ending	Inbound Movements (BITRE data)	
30 June	Level	Growth
2007	64,190	-3.2%
2008	65,603	2.2%
2009	70,040	6.8%
2010	76,325	9.0%
2011	74,618	-2.2%
2012	73,928	-0.9%
2013	74,516	0.8%
2014	75,793	1.7%
2015	77,092	1.7%
2016	78,414	1.7%

The forecast of MTOW for regional airports is developed from the evolution of forecast aircraft movements and passengers per movement, the latter being an indicator of the change in aircraft size and hence weight (see Table 54 for the results). The 15 regional airports studied above using BITRE data represent an important sample of the full list of regional airports included in ASA's data set.

Table 54 - Forecast of MTOW for Regional Airports (aggregated)

Year ending	MTOW (ASA data)	
30 June	Level	Growth
2007	1,752,742	-9.7%
2008	2,069,628	18.1%
2009	2,174,367	5.1%
2010	2,178,869	0.2%
2011	2,200,833	1.0%
2012	2,256,248	2.5%
2013	2,349,440	4.1%
2014	2,449,462	4.3%
2015	2,553,742	4.3%
2016	2,662,462	4.3%

Appendices - Major Airports Individual Forecasts

Table 55 — Total Historic and Forecast Passengers and MTOW for Sydney Airport

(Historic data from BITRE and ASA)

Fiscal Year	*Passengers*		*Total MTOW*	
	Level	*Annual Growth*	Level	*Annual Growth*
2007	15,562,561	7.1%	13,051,529	-7.5%
2008	16,421,106	5.5%	15,145,117	16.0%
2009	16,226,240	-1.2%	14,956,496	-1.2%
2010 (est.)	17,115,541	5.5%	15,529,163	3.8%
	Forecast		Forecast	
2011	17,666,476	3.2%	16,164,015	4.1%
2012	18,416,806	4.2%	16,991,283	5.1%
2013	19,103,373	3.7%	17,464,663	2.8%
2014	19,819,434	3.7%	18,052,951	3.4%
2015	20,562,335	3.7%	18,733,239	3.8%
2016	21,333,083	3.7%	19,300,539	3.0%

Table 56 — Total Historic and Forecast Passengers and MTOW for Melbourne Airport

(Historic data from BITRE and ASA)

Fiscal Year	*Passengers*		*Total MTOW*	
	Level	*Annual Growth*	Level	*Annual Growth*
2007	11,122,655	5.5%	8,084,947	-9.3%
2008	12,001,741	7.9%	9,582,747	18.5%
2009	12,263,468	2.2%	9,742,139	1.7%
2010 (est.)	12,852,844	4.8%	10,137,771	4.1%
	Forecast		Forecast	
2011	13,269,170	3.2%	10,590,381	4.5%
2012	13,877,153	4.6%	11,187,476	5.6%
2013	14,502,936	4.5%	11,559,999	3.3%
2014	15,164,354	4.6%	12,045,380	4.2%
2015	15,855,937	4.6%	12,576,190	4.4%
2016	16,579,059	4.6%	13,058,590	3.8%

Table 57 — Total Historic and Forecast Passengers and MTOW for Brisbane Airport

(Historic data from BITRE and ASA)

Fiscal Year	*Passengers*		*Total MTOW*	
	Level	*Annual Growth*	Level	*Annual Growth*
2007	8,715,512	8.4%	5,823,681	-5.9%
2008	9,167,624	5.2%	6,797,392	16.7%
2009	9,381,174	2.3%	7,015,192	3.2%
2010 (est.)	9,374,910	-0.1%	6,881,555	-1.9%
	Forecast		Forecast	
2011	9,728,401	3.8%	7,218,733	4.9%
2012	10,239,727	5.3%	7,668,945	6.2%
2013	10,756,751	5.0%	7,968,099	3.9%
2014	11,305,417	5.1%	8,346,193	4.7%
2015	11,882,068	5.1%	8,761,066	5.0%
2016	12,488,132	5.1%	9,145,950	4.4%

Table 58 — Total Historic and Forecast Passengers and MTOW for Perth Airport

(Historic data from BITRE and ASA)

Fiscal Year	*Passengers*		*Total MTOW*	
	Level	*Annual Growth*	Level	*Annual Growth*
2007	4,003,972	13.8%	3,327,679	4.2%
2008	4,501,902	12.4%	4,027,522	21.0%
2009	4,707,482	4.6%	4,265,675	5.9%
2010 (est.)	4,983,981	5.9%	4,453,234	4.4%
	Forecast		Forecast	
2011	5,147,288	3.3%	4,642,443	4.2%
2012	5,402,903	5.0%	4,916,564	5.9%
2013	5,693,575	5.4%	5,131,162	4.4%
2014	6,004,726	5.5%	5,391,851	5.1%
2015	6,332,880	5.5%	5,685,296	5.4%
2016	6,678,969	5.5%	5,954,021	4.7%

Table 59 — Total Historic and Forecast Passengers and MTOW for Adelaide Airport

(Historic data from BITRE and ASA)

Fiscal Year	*Passengers*		*Total MTOW*	
	Level	*Annual Growth*	Level	*Annual Growth*
2007	3,096,324	7.5%	1,962,829	-3.8%
2008	3,311,782	7.0%	2,289,484	16.6%
2009	3,393,480	2.5%	2,303,352	0.6%
2010 (est.)	3,489,942	2.8%	2,249,991	-2.3%
	Forecast		Forecast	
2011	3,572,060	2.4%	2,334,902	3.8%
2012	3,701,383	3.6%	2,444,376	4.7%
2013	3,849,701	4.0%	2,508,399	2.6%
2014	4,006,530	4.1%	2,602,864	3.8%
2015	4,169,747	4.1%	2,700,456	3.7%
2016	4,339,614	4.1%	2,792,624	3.4%

Table 60 — Total Historic and Forecast Passengers and MTOW for Canberra Airport

(Historic data from BITRE and ASA)

Fiscal Year	*Passengers*		*Total MTOW*	
	Level	*Annual Growth*	Level	*Annual Growth*
2007	1,342,266	5.3%	792,991	-4.5%
2008	1,429,771	6.5%	968,521	22.1%
2009	1,534,540	7.3%	1,105,833	14.2%
2010 (est.)	1,641,075	6.9%	1,095,076	-1.0%
	Forecast		Forecast	
2011	1,670,742	1.8%	1,130,059	3.2%
2012	1,721,979	3.1%	1,175,464	4.0%
2013	1,787,250	3.8%	1,202,818	2.3%
2014	1,856,426	3.9%	1,246,227	3.6%
2015	1,928,280	3.9%	1,289,548	3.5%
2016	2,002,915	3.9%	1,331,869	3.3%

Table 61 — Total Historic and Forecast Passengers and MTOW for Cairns Airport

(Historic data from BITRE and ASA)

Fiscal Year	*Passengers*		*Total MTOW*	
	Level	*Annual Growth*	Level	*Annual Growth*
2007	1,897,319	1.8%	1,406,495	-11.5%
2008	1,892,949	-0.2%	1,595,774	13.5%
2009	1,828,434	-3.4%	1,423,619	-10.8%
2010 (est.)	1,748,089	-4.4%	1,306,059	-8.3%
	Forecast		Forecast	
2011	1,794,246	2.6%	1,357,146	3.9%
2012	1,856,037	3.4%	1,417,181	4.4%
2013	1,911,084	3.0%	1,441,006	1.7%
2014	1,968,012	3.0%	1,479,471	2.7%
2015	2,026,635	3.0%	1,519,777	2.7%
2016	2,087,005	3.0%	1,555,198	2.3%

Table 62 — Total Historic and Forecast Passengers and MTOW for Gold Coast Airport

(Historic data from BITRE and ASA)

Fiscal Year	*Passengers*		*Total MTOW*	
	Level	*Annual Growth*	Level	*Annual Growth*
2007	1,882,645	7.1%	924,725	-10.4%
2008	2,163,122	14.9%	1,178,672	27.5%
2009	2,310,701	6.8%	1,328,149	12.7%
2010 (est.)	2,588,522	12.0%	1,525,894	14.9%
	Forecast		Forecast	
2011	2,580,735	-0.3%	1,542,709	1.1%
2012	2,631,403	2.0%	1,590,682	3.1%
2013	2,778,221	5.6%	1,658,187	4.2%
2014	2,939,963	5.8%	1,748,849	5.5%
2015	3,111,121	5.8%	1,846,043	5.6%
2016	3,292,243	5.8%	1,939,940	5.1%

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