Passenger Movements through Australian Airports: 2005-06 to 2025-26

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1   Introduction

Air travel has become increasingly popular in Australia, largely due to the facts that Australia is a large island nation which lies far from densely populated business centres such as Singapore, Hong Kong, London, Paris, New York and Los Angeles and that road, rail and sea travel on Australia's inter-state routes is time consuming and expensive. With the introduction of low cost carriers in the Australian domestic airlines market in recent years, airfares for domestic travel are increasingly competitive. This has underpinned the growth in Australia's domestic and international air passenger movements.

Long-term forecasts of passenger movements are essential for making travel and tourism related investment decisions and planning and implementing security measures at airports. This paper presents the national level forecasts of air passenger movements through Australian airports over the next twenty years. Econometric models have been used to develop forecasts of air passenger movements. The models are specified in terms of population, real income and exchange rates. Forecasts are developed separately for the international movements of Australian residents and overseas visitors and the domestic movements of domestic airline and regional airline passengers.

The forecasts presented in this study are based solely on the estimated demand parameters and long-run assumptions on population, real income and exchange rates. In the absence of long time-series data on real airfares, the influence of airfares on passenger movements could not be incorporated while developing these forecasts. Moreover, these forecasts are unconstrained in the sense that they do not account for the potential impact that capacity (terminal, runway) constraints may have on air passenger traffic growth or what capacity enhancing investment might occur in the future. Furthermore, more than any other sector, aviation could suffer considerably from policies to control greenhouse gases, from increases in fuel prices, or from any of a host of possible global uncertainties. Hence, these forecasts need to be considered cautiously while using these forecasts for planning and other purposes.

2   Background

The number of Australia's total air passenger movements grew by 5.3 per cent a year over the last fourteen years, from 30 million in 1991-92 to 63 million in 2005-06 (Figure 1). International and domestic movements currently account for one-third and two-thirds respectively of Australia's total air passenger movements (Figure 2). Around 47 per cent of the international passenger movements are by Australian residents and 53 per cent by overseas visitors.

Figure 1 **Air passenger movements through Australian airports, 1991-92 to 2005-06**
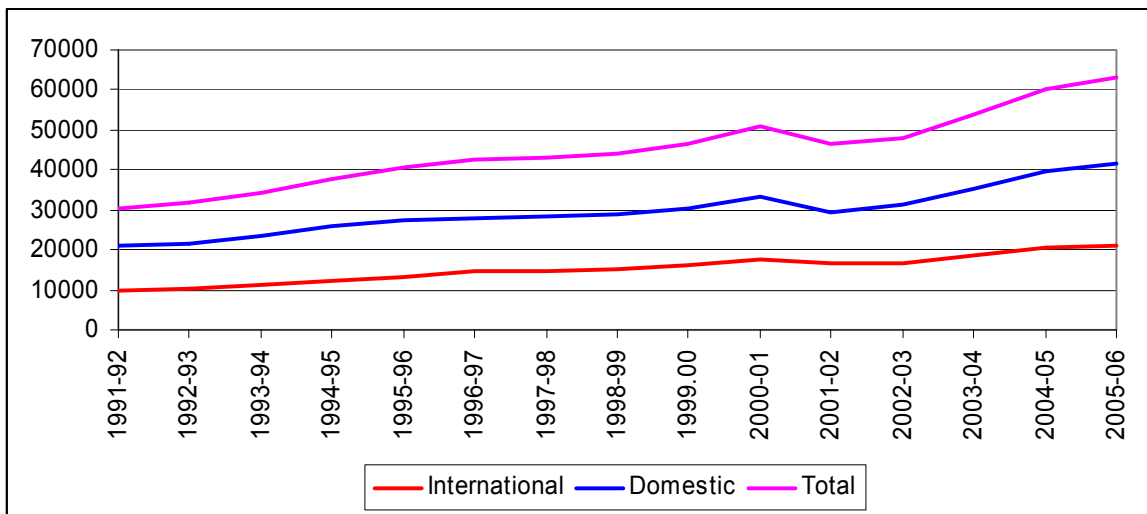
There are two types of airlines that provide passenger services on Australia's domestic routes. These are domestic and regional airlines. Domestic airlines, which currently include Qantas, Jetstar and Virgin Blue, perform services primarily between capital cities and major tourist centres. On the other hand, regional airlines, which presently include around 34 airlines, provide services primarily to regional centres. In this study, passengers carried by domestic airlines are defined as 'domestic airline passengers', and passengers carried by the regional airlines are defined as 'regional airline passengers'. Domestic airlines account for 88.1 per cent of the domestic passenger movements.

Figure 2 **Air passenger movements through Australian airports, 2005-06**
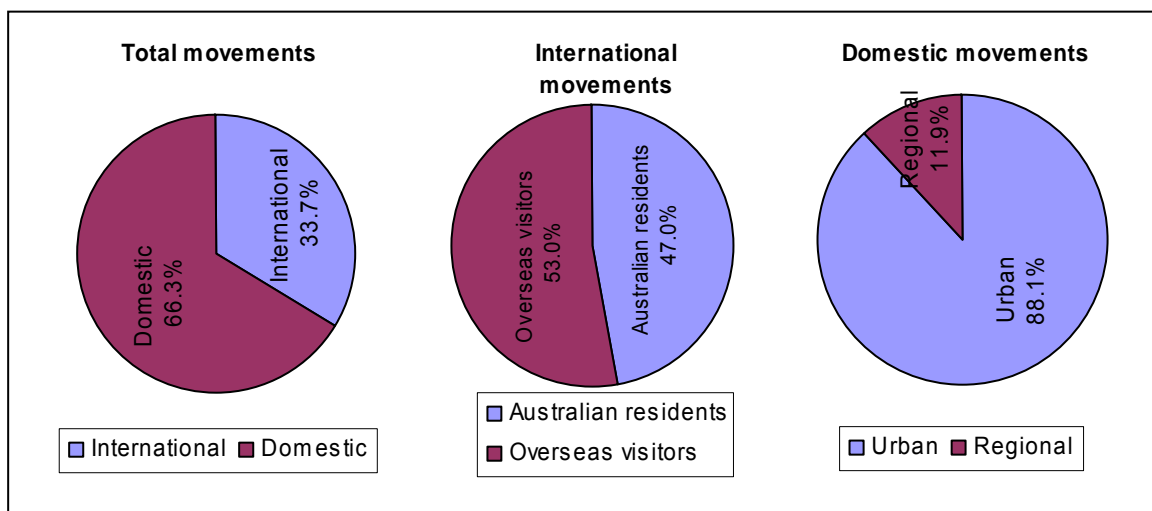
2 Forecasting models

In this study, single equation econometric models have been used to forecast national level passenger movements through Australian airports. The models are chosen in preference to time trend or univariate time-series models because they can accommodate several explanatory variables to analyse their influence on passenger movements, and when specified in a double logarithmic linear functional form are easy to estimate, provide superior fit and the estimated parameters can be directly interpreted as elasticities.

The models have been widely used in many tourism and transport demand forecasting studies, such as Loeb (1982), Hamal (1997a, 1997b and 2004) and BTRE (2002).

Earlier work by the BTRE included equations with income elasticities similar to those derived here (see Cosgrove, Gargett and Viney 1989 and Gargett 1994).

Forecasts of international and domestic passenger movements are separately developed as they are driven by different factors. The international movements of Australian residents are largely influenced by the real income level of Australians, whereas the international movements of overseas visitors to and from Australia are driven mainly by the real income level of overseas visitors.

The domestic passenger movement models are empirically estimated using historical data from 1984-85 to 2005-06, whereas the international passenger movement models are estimated using data from 1991-92 to 2005-06. Data on international passenger movements prior to 1991-92 were not readily available.

Data sources for all of the tables and figures are the BTRE' "Avstats" database and its related "Transport Indicators" database. A detailed discussion on the specification and estimation of the models is presented in the following sections.

2.1 International passenger movements

2.1.1 International movements of overseas visitors

An econometric model of per capita overseas visitor movements is specified in terms of real income, exchange rates and dummy variables in equation (1).

$$\ln PCOVM_t = \alpha_0 + \alpha_1 \ln PCGDOE_t + \alpha_2 \ln TWIAU_t + \alpha_3 DASIAN + \alpha_4 DSEP11_t + u_t \qquad (1)$$

Where PCOVM = per capita overseas visitor movements through Australian airports in thousands; PCGDPOE = per capita real Gross Domestic Product (GDP) in OECD countries in billion US dollars; TWIAU = trade weighted index of Australia; DASIA = dummy variable to capture a large variation in overseas visitor movements following the Asian financial crisis in 1997-98; DSEP11 = dummy variable to capture a large variation in overseas visitor movements following the 9/11 incident, SARS and Bali bombings; u = error term; α's = regression coefficients; and t = time subscript.

Population is included on a per capita basis to avoid the consequences of possible collinearity between population and real income. Real GDP is used as proxy for the real income variable. The Trade Weighted Index (TWI) which is also known as the effective exchange rate is used rather than a single country exchange rate to reflect the average movement in exchange rates between the Australian dollar and the currency of Australia's trading partners.

Since the OECD countries account for around 70 per cent of Australia's total overseas visitor arrivals, the population and real income of the OECD countries are used as proxies for the population and real income of overseas visitors to Australia.

As mentioned above, the model is estimated using historical data from 1991-92 to 2005-06. The estimated regression statistics are presented in Table 1. A high adjusted R-square value of 0.96 suggests that the model has a high predictive power, and hence, it is expected to provide reliable forecasts of international movements of overseas visitors.

Moreover, all of the estimated parameters of the model except for DASIA were found to be statistically significant and have the expected signs. They indicate that the number of international movements of overseas visitors is positively influenced by the per capita real income of visitors and negatively by the exchange rate.

Table 1   Estimated regression statistics of overseas visitor movement model

Variable by port	Estimated coefficient	t-ratio	Significance level	Other statistics
PCGDPOE	2.510	6.920	0.01	Adjusted-R^2 = 0.96
TWIAU	-0.268	-1.474	0.17	N = 15 DW = 1.40
DASIA	-0.016	-0.684	0.51	
DSEP11	-0.056	-1.745	0.11	
Intercept	-28.774	-8.129	0.01	

The estimated parameters suggest that per capita real income is the main factor influencing the international movements of overseas visitors. A one per cent increase (decrease) in the per capita real income of overseas visitors will result in an increase (decrease) in the number of international movements of overseas visitors by 2.5 per cent.

The estimated exchange rate elasticity suggests that a decrease (increase) in the value of the Australian dollar will increase (decrease) the number of international movements of overseas visitors.

The Asian financial crisis, recent terrorism incidents and SARS had an adverse impact on the international movements of overseas visitors.

2.1.2 International movements of Australian residents

A model of per capita international movements of Australian residents is specified in terms of real income, exchange rates and a dummy variable in equation (2).

$$\ln PCARM_t = \beta_0 + \beta_1 \ln PCGDAU_t + \beta_2 \ln TWIAU_t + \beta_3 DSEP11_t + \varepsilon_t \qquad (2)$$

Where PCARM = per capita Australian resident movements through Australian airports in thousands; PCGDPAU = per capita real GDP in Australia in billion dollars; ε = error term; β's = regression coefficients; and TWIAU, DSEP11 and t have the same meaning as mentioned in equation (1).

As in the overseas visitor movement model, population is included on a per capita basis in the Australian resident movement model, mainly to avoid the consequences of possible collinearity between population and real income. The model is estimated using historical data from 1991-92 to 2005-06 and the estimated regression statistics are shown in Table 2.

Table 2   Estimated regression statistics of outbound Australian resident movement model

Variable by port	Estimated coefficient	t-ratio	Significance level	Other statistics
PCGDPAU	1.650	13.543	0.01	Adjusted-R^2 = 0.96
TWIAU	0.206	1.117	0.29	N = 15 DW = 1.63
DSEP11	-0.107	-2.586	0.03	
Intercept	-19.306	-18.280	0.01	

According to the estimated statistics, the model is a good fit with an adjusted-R-square value of 0.96 and the estimated coefficients for all but the TWIAU variable are highly significant.

The estimated coefficients suggest that the number of international movements of Australian residents is positively influenced by the per capita real income of Australian residents and the strength of the Australian dollar against the foreign currencies. A one per cent increase (decrease) in real income will increase (decrease) the number of international movements of Australian residents by 1.7 per cent, and a one per cent appreciation (depreciation) of the Australian dollar against the foreign currencies will lead to a 0.2 per cent increase (decrease) in the number of international movements of Australian residents.

2.2 Domestic passenger movements

2.2.1 Domestic airline passenger movements

A per capita domestic airline passenger movement model is specified in terms of real income and some dummy variables and presented in equation (3).

$$\ln PCNRPM_t = \gamma_0 + \gamma_1 \ln PCGDPAU_t + \gamma_2 DPILOT_t + \gamma_3 DSEP11_t + v_t \tag{3}$$

Where PCNRPM = per capita domestic airline passenger movements through Australian airports in thousands; DPILOT = dummy variable to capture a large variation in domestic passenger movements due to pilot strike in 1989-90; γ's = regression parameters; v = error term; and PCGDPAU, DSEP11 and t have the same meaning as mentioned in earlier equations.

The domestic airline passenger movement model was estimated using historical data from 1984-85 to 2005-06. The estimated regression statistics are shown in Table 3. They show that the estimated model is a good fit with an adjusted R-square value of 0.95 and suggest that domestic airline passenger movements are largely driven by per capita real income of passengers. A one per cent increase (decrease) in per capita real income will make the number of domestic airline passenger movements increase (decrease) by 1.7 per cent.

In the domestic equation below, the value of the September 11 dummy reflects not so much the fear of international travel, as the demise of Ansett Airlines. This resulted in the cessation of air fare discounts with a consequent dampening impact on demand.

Table 3   Estimated regression statistics of domestic airline passenger movement model

Variable by port	Estimated coefficient	t-ratio	Significance level	Other statistics
Domestic passenger movements				
PGDPAU	1.671	8.801	0.01	Adjusted-R^2 = 0.95
DPILOT	-0.416	-7.859	0.01	N = 22 DW = 1.91
DSEP11	-0.110	-2.179	0.04	
Intercept	-17.366	-8.724	0.01	

2.2.2 Regional airline passenger movements

A regional airline passenger movement model is specified in terms of population, real income and some dummy variables and presented in equation (4).

Use of a per capita model was precluded by the difficulty of defining the relevant population.

$$\ln RPM_t = \theta_0 + \theta_1 \ln GDPAU_t + \theta_2 DPILOT_t + \theta_3 DSEP11_t + \omega_t \qquad (4)$$

Where RPM_i = regional airline passenger movements in thousands; GDPAU = real GDP in Australia in billion dollars; θ's = regression parameters; ω = error term; and DPILOT, DSEP11 and t have the same meaning as in earlier equations.

The regional airline passenger movement model was estimated using historical data from 1984-85 to 2005-06. The estimated regression statistics which are presented in Table 4 indicate that the estimated model is a good fit with an adjusted R-square value of 0.96. They suggest that regional airline passenger movements are largely driven by real income of passengers. A one per cent increase (decrease) in real income will make the number of regional airline passenger movements to increase (decrease) by 1.7 per cent.

Recent developments in the mining boom could pose difficulties for forecasting regional air travel using historical data. The mining boom and skill shortages and changing social values have led to the fly-in fly-out approach replacing on-mine-site accommodation. However, it is also the case that several mining air routes have shifted from being serviced by scheduled regional airlines to being run by charter services, which fall outside the definition of "regional aviation".

Table 4   Estimated regression statistics of regional airline passenger movement model

Variable by port	Estimated coefficient	t-ratio	Significance level	Other statistics
Domestic passenger movements				
GDPAU	1.746	3.754	0.01	Adjusted-R^2 = 0.96
DPILOT	-0.046	-0.624	0.54	N = 22 DW = 1.20
DSEP11	-0.172	-2.386	0.03	
Intercept	3.523	1.167	0.26	

3   Historical data and future assumptions

Historical data on international and domestic passenger movements, population, GDP and the trade weighted index that were used to estimate the passenger movement models were obtained from ABS (2004), Access Economics (2006), BTRE (2007) and OECD (2003).

The estimated models of air passenger movements and long-run assumptions on population and macroeconomic variables were used to develop the long-run forecasts of passenger movements through Australian airports. The long-run population and macroeconomic assumptions are obtained from the ABS (2004), Access Economics (2006) and OECD (2003). Since these assumptions are available for the next ten years only, the assumptions for the rest of the forecast period are assumed to remain the same as those in year 2015-16. The assumptions are summarised in Table 5.

Table 5   Macroeconomic and population assumptions

	1984-85 to 2005-06	**2005-06 to 2025-26**
Annual average economic growth rates (%)		
Real GDP		
- Australia	3.3	**2.9**
- OECD	2.6	**2.5**
Annual average Trade Weighted Index (TWI)	57.6	**54.5**
Annual average population growth rates (%)		
Australia	1.3	**1.2**
OECD	0.8	**0.8**

*Numbers in bold are forecasts.

Australia's real GDP grew annually by 3.3 per cent in the last twenty years and it is expected to increase by 2.9 per cent a year over the next twenty years. The slowing of economic growth in Australia will have an adverse influence on Australia's domestic and international air passenger movements.

The average annual TWI for the last twenty years is observed to be 57.6 and it is expected to be 54.5 over the next twenty years. In other words, the strength of the Australian dollar against the currencies of Australia's trading partners is expected to weaken over the forecast period. This will have a positive impact on the movements of overseas visitors to and from Australia and a negative impact on the international movements of Australian residents.

The population of Australia and the OECD countries grew by 1.3 and 0.8 per cent per annum respectively in the last twenty years, and it is expected to increase more or less at the same as rate over the next twenty years. The expected positive population growth in Australia and the OECD countries will have a positive influence on Australia's air passenger movements.

4   Forecasts

As mentioned earlier, the estimated passenger movement models and the long-run assumptions on population and macroeconomic variables are used to forecast passenger movements through Australian airports over the next twenty years. Forecasts are developed by type of passenger movement and are discussed in detail in the following subsections.

4.1 Forecasts of international passenger movements

International passenger movements account for one-third of Australia's total air passenger movements. A positive economic outlook for Australia and the OECD countries suggests the number of international passenger movements will continue to grow strongly over the next twenty years. It is forecast to increase by 4.7 per cent a year in the next twenty years, from 21.3 million in 2005-06 to 53.7 million in 2025-26 (Figure 3 and Table 6). The annual average growth rate forecast for international passenger movements is relatively lower than that observed in the last fourteen years, mainly because of the expected slowing of economic and population growth in Australia and its major trading partners. The annual

average growth rate of international passenger movements over the last fourteen years was observed to be 5.9 per cent.

Figure 3   International passenger movements through Australian airports, 1991-92 to 2025-26
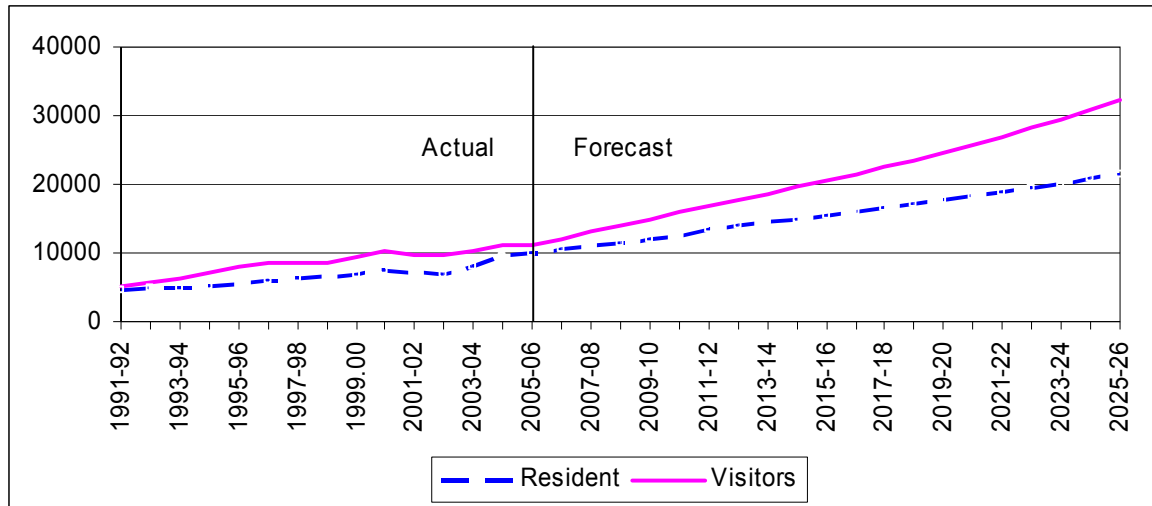
As mentioned in the beginning of this paper, international movements of Australian residents and overseas visitors respectively account for 47 and 53 per cent of the international air passenger movements. The number of international movements of Australian residents is projected to double over the next twenty years, from 10 million in 2005-06 to 21.5 million in 2025-26; whereas the number of international movements of overseas visitors will almost triple over the next twenty years, from 11.3 million in 2005-06 to 32.3 million in 2025-26.

4.2 Forecasts of domestic passenger movements

Domestic passenger movements account for 66.3 per cent of Australia's total air passenger movements. The number of domestic passenger movements grew annually by 5 per cent over the last fourteen years. It is forecast to increase by 4.1 per cent a year over the next twenty years, from 41.8 million in 2005-06 to 93.5 million in 2025-26 (Figure 4 and Table 7). As in the case of international passenger movements, the annual average growth rate forecast for the domestic passenger movements is relatively lower than that observed in the last fourteen years. This is mainly due to the expected slowing of economic and population growth in Australia and its major trading partners.

Table 6 **International passenger movements through Australian airports, 1991-92 to 2025-26**

Year	Resident ('000)	Visitors ('000)	Total ('000)	Annual change in total (%)
1991-92	4504	5083	9587	
1992-93	4748	5598	10346	7.9
1993-94	4779	6377	11156	7.8
1994-95	5064	7114	12178	9.2
1995-96	5459	7986	13445	10.4
1996-97	5885	8603	14488	7.8
1997-98	6318	8557	14875	2.7
1998-99	6624	8683	15307	2.9
1999.00	6902	9441	16343	6.8
2000-01	7415	10258	17673	8.1
2001-02	7019	9810	16829	-4.8
2002-03	6921	9606	16526	-1.8
2003-04	8093	10421	18513	12.0
2004-05	9503	11133	20636	11.5
2005-06	10011	11273	21284	3.1
2006-07	**10602**	**12094**	**22696**	**6.6**
2007-08	**11119**	**13011**	**24130**	**6.3**
2008-09	**11538**	**14024**	**25562**	**5.9**
2009-10	**12059**	**14910**	**26969**	**5.5**
2010-11	**12605**	**15865**	**28471**	**5.6**
2011-12	**13293**	**16784**	**30076**	**5.6**
2012-13	**13922**	**17714**	**31635**	**5.2**
2013-14	**14433**	**18656**	**33089**	**4.6**
2014-15	**14911**	**19594**	**34505**	**4.3**
2015-16	**15487**	**20520**	**36007**	**4.4**
2016-17	**15935**	**21512**	**37447**	**4.0**
2017-18	**16470**	**22503**	**38973**	**4.1**
2018-19	**17023**	**23540**	**40564**	**4.1**
2019-20	**17595**	**24625**	**42220**	**4.1**
2020-21	**18186**	**25759**	**43946**	**4.1**
2021-22	**18797**	**26946**	**45744**	**4.1**
2022-23	**19429**	**28188**	**47617**	**4.1**
2023-24	**20081**	**29487**	**49568**	**4.1**
2024-25	**20756**	**30846**	**51602**	**4.1**
2025-26	**21453**	**32267**	**53720**	**4.1**
Annual average growth rate (%):				
1991-92 to 2005-06	5.9	5.9	5.9	
2005-06 to 2025-26	**3.9**	**5.4**	**4.7**	

*Numbers in bold are forecasts.

Figure 4   Domestic passenger movements through Australian airports, 1991-92 to 2025-26
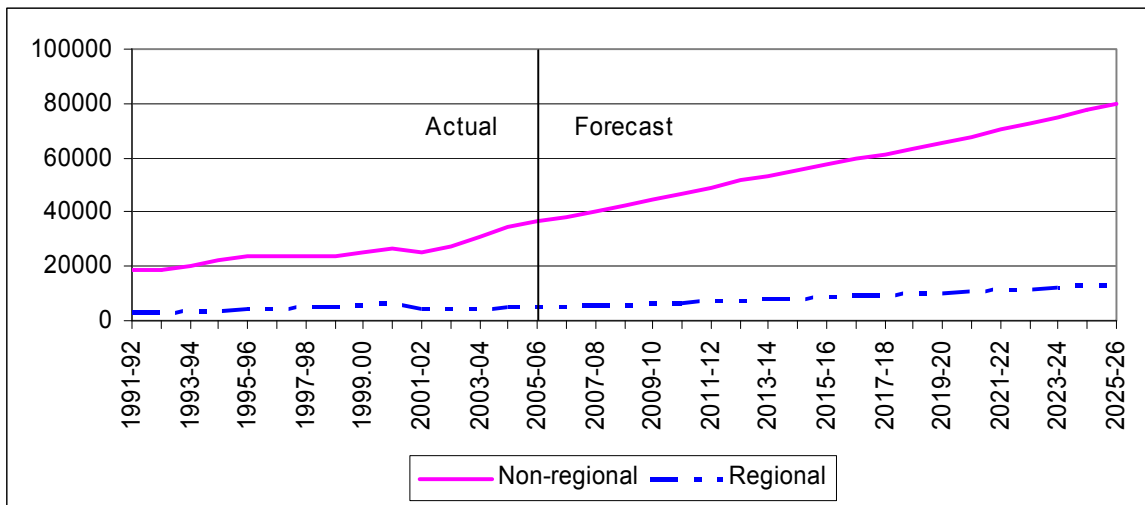
Domestic passenger movements are dominated by domestic airline passenger movements. As mentioned earlier, domestic airlines account for bout 88.1 per cent of domestic passenger movements. The number of domestic airline passenger movements is forecast to increase by 4.7 per cent a year over the forecast period, from 36.9 million in 2005-06 to 80.2 million in 2025-26; whereas the number of regional airline passenger movements will continue to increase by the same rate (5 per cent a year) over the forecast period as that observed in the last fourteen years, from 5 million in 2005-06 to 13.3 million in 2025-26.

4.3 Forecasts of total passenger movements

The number of Australia's total air passenger movements, which is defined as the sum of international and domestic movements, is expected to increase by 4.3 per cent a year over the next twenty years, from 63.1 million in 2005-06 to 147.2 million in 2025-26 (Figure 5 and Table 8). It is projected to increase more strongly in the first half of the forecast period than in the second half, mainly due to the expected slowing of economic and population growth in Australia and its major trading partners.

Figure 5   Domestic passenger movements through Australian airports, 1991-92 to 2025-26
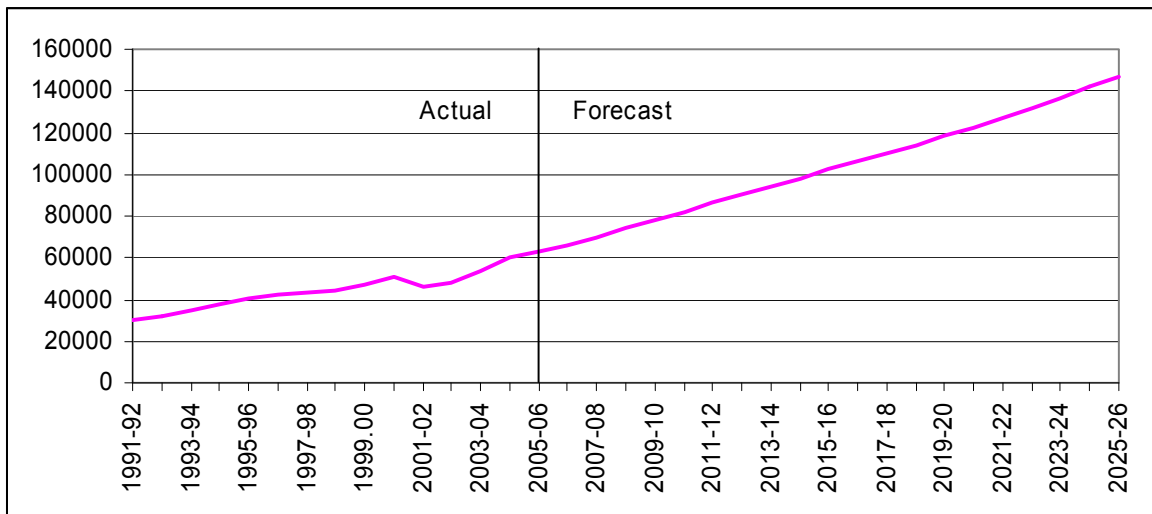
Table 7 Domestic passenger movements through Australian airports by type of airlines, 1991-92 to 2025-26

Year	Domestic airlines ('000)	Regional airlines ('000)	Total ('000)	Annual change in total (%)
1991-92	18476	2521	20997	
1992-93	18578	2898	21476	2.3
1993-94	19997	3330	23327	8.6
1994-95	22114	3609	25723	10.3
1995-96	23406	3966	27372	6.4
1996-97	23463	4440	27903	1.9
1997-98	23486	4814	28300	1.4
1998-99	23810	4924	28734	1.5
1999.00	24922	5404	30327	5.5
2000-01	26841	6225	33066	9.0
2001-02	25044	4561	29605	-10.5
2002-03	27057	4217	31274	5.6
2003-04	31085	4391	35476	13.4
2004-05	34622	4878	39500	11.3
2005-06	36853	4971	41824	5.9
2006-07	**37925**	**5169**	**43095**	**3.0**
2007-08	**40392**	**5571**	**45963**	**6.7**
2008-09	**42633**	**5947**	**48580**	**5.7**
2009-10	**44608**	**6290**	**50898**	**4.8**
2010-11	**46691**	**6655**	**53346**	**4.8**
2011-12	**49204**	**7090**	**56294**	**5.5**
2012-13	**51594**	**7515**	**59108**	**5.0**
2013-14	**53583**	**7884**	**61467**	**4.0**
2014-15	**55439**	**8239**	**63678**	**3.6**
2015-16	**57650**	**8655**	**66305**	**4.1**
2016-17	**59429**	**9008**	**68438**	**3.2**
2017-18	**61442**	**9405**	**70847**	**3.5**
2018-19	**63522**	**9820**	**73342**	**3.5**
2019-20	**65674**	**10253**	**75926**	**3.5**
2020-21	**67898**	**10704**	**78602**	**3.5**
2021-22	**70197**	**11176**	**81373**	**3.5**
2022-23	**72574**	**11669**	**84243**	**3.5**
2023-24	**75032**	**12183**	**87215**	**3.5**
2024-25	**77573**	**12720**	**90292**	**3.5**
2025-26	**80200**	**13280**	**93480**	**3.5**
Annual average growth rate (%):				
1991-92 to 2005-06	5.1	5.0	5.0	
2005-06 to 2025-26	**4.7**	**5.0**	**4.1**	

*Numbers in bold are forecasts.

Table 8   Total passenger movements through Australian airports, 1991-92 to 2025-26

Year	International ('000)	Domestic ('000)	Total ('000)	Annual change in total (%)
1991-92	9587	20997	30584	
1992-93	10346	21476	31822	4.0
1993-94	11156	23327	34484	8.4
1994-95	12178	25723	37901	9.9
1995-96	13445	27372	40817	7.7
1996-97	14488	27903	42391	3.9
1997-98	14875	28300	43175	1.8
1998-99	15307	28734	44040	2.0
1999.00	16343	30327	46670	6.0
2000-01	17673	33066	50740	8.7
2001-02	16829	29605	46433	-8.5
2002-03	16526	31274	47801	2.9
2003-04	18513	35476	53989	12.9
2004-05	20636	39500	60135	11.4
2005-06	21284	41824	63108	4.9
2006-07	**22696**	**43095**	**65791**	**4.3**
2007-08	**24130**	**45963**	**70093**	**6.5**
2008-09	**25562**	**48580**	**74142**	**5.8**
2009-10	**26969**	**50898**	**77867**	**5.0**
2010-11	**28471**	**53346**	**81817**	**5.1**
2011-12	**30076**	**56294**	**86371**	**5.6**
2012-13	**31635**	**59108**	**90743**	**5.1**
2013-14	**33089**	**61467**	**94556**	**4.2**
2014-15	**34505**	**63678**	**98182**	**3.8**
2015-16	**36007**	**66305**	**102312**	**4.2**
2016-17	**37447**	**68438**	**105884**	**3.5**
2017-18	**38973**	**70847**	**109820**	**3.7**
2018-19	**40564**	**73342**	**113906**	**3.7**
2019-20	**42220**	**75926**	**118146**	**3.7**
2020-21	**43946**	**78602**	**122548**	**3.7**
2021-22	**45744**	**81373**	**127117**	**3.7**
2022-23	**47617**	**84243**	**131860**	**3.7**
2023-24	**49568**	**87215**	**136783**	**3.7**
2024-25	**51602**	**90292**	**141894**	**3.7**
2025-26	**53720**	**93480**	**147200**	**3.7**
Annual average growth rate (%):				
1991-92 to 2005-06	5.9	5.0	5.3	
2005-06 to 2025-26	**5.4**	**4.1**	**4.3**	

*Numbers in bold are forecasts.

5. Conclusion

In this study, econometric models of air passenger movements, which are specified in terms of population, real income and exchange rates, are used to derive long-run forecasts of air passenger movements through Australian airports. Forecasts are developed separately for the international movements of Australian residents and overseas visitors and the domestic movements of domestic airline and regional airline passengers. Following a positive economic outlook for Australia and its trading partners, the number of air passenger movements through Australian airports will continue to grow strongly (4.3 per cent a year) over the next twenty years, from 63.1 million in 2005-06 to 147.2 million in 2025-26.

The number of international movements of Australian residents is projected to double over the next twenty years to 21.5 million in 2025-26; whereas the number of international movements of overseas visitors will almost triple over the same period to 32.3 million in 2025-26. The number of regional airline and domestic airline passenger movements is forecast to increase respectively by 5 and 4.7 per cent a year over the forecast period to 13.3 and 80.2 million in 2025-26.

The annual growth rate forecasts are relatively lower than those observed in the last fourteen years, mainly due to the expected slowing of economic and population growth in Australia and its major trading partners.

The forecasts presented in this study are based solely on the estimated demand parameters and long-run assumptions on population, real income and exchange rates. In the absence of long time-series data on real airfares, the influence of airfares on passenger movements could not be incorporated while developing these forecasts. The BTRE is working on developing airfare time series for use in future modelling. However, use of the exchange rate in the international equations introduces a proxy for fare and accommodation price effects on international travel (both outbound and inbound). In addition airfare effect estimates, the forecasts are unconstrained in the sense that they do not account for the potential impact that capacity (terminal, runway) constraints may have on air passenger traffic growth or what capacity enhancing investment might occur in the future. Furthermore, more than any other sector, aviation could suffer considerably from policies to control greenhouse gases, from increases in fuel prices, or from any of a host of possible global uncertainties. Hence, these forecasts need to be considered cautiously while using these forecasts for planning and other purposes.

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