

Economic Forecast

The September 11 Shock to Tourism and the Australian Economy from 2001-02 to 2003-04

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Main Points

- On pre-September 11 assumptions, our forecasts show GDP growth for 2001-02, 2002-03 and 2003-04 of 3.4, 4.3 and 2.9 per cent. The corresponding forecasts for employment growth are 1.0, 2.1 and 2.6 per cent.
- The most obvious impact effect on the Australian economy of the September 11 tragedy is a downturn in international tourism. In the December quarter of 2001, Australia's tourism exports are likely to be reduced by about 15 per cent relative to the level they would have reached in the absence of the terrorist attacks.
- The forecast downturn in international tourism will reduce aggregate employment in Australia in the December quarter of 2001 by about 0.3 per cent or 27,000 jobs.
- Even if international tourism demand gradually recovers after the December quarter of 2001, tourism businesses are likely to continue making downward adjustments to their labour forces until the middle of 2002. Our analysis suggests that in the June quarter of 2002 the tourism downturn will leave aggregate employment 0.4 per cent (37,000 jobs) less than the level it would have reached on pre-September 11 assumptions. After the June quarter of 2002, we predict that aggregate employment will move back towards its pre-September 11 forecast path.
- While in aggregate we expect the loss of jobs in Australia associated with the tourism downturn to peak at 0.4 per cent, the effects in some regions will be much more severe. Employment losses of up to 10 per cent could be experienced by heavily tourism-dependent regions such as: Kakadu and Petermann (NT); Lord Howe Island and Snowy River (NSW); Port Douglas and Whitsunday (Qld); Kangaroo Island (SA); Cairns and

Magnetic Island (Qld); and Tasman Peninsula (Tas); and Christmas Island (Other Territories).

- At the macro level, the effects of the tourism downturn will be barely noticeable. On post-September 11 assumptions, the GDP growth rate for 2001-02 is revised down by 0.3 percentage points to 3.1 per cent and the GDP growth rates for 2002-03 and 2003-04 are revised slightly upwards. Similar small revisions are made to the employment growth rates.
- The world economic slowdown and the events of September 11 could seriously damage Australia's macroeconomic performance only if they led to a sharp loss of investor confidence. Fortunately, there is currently no evidence of a loss of confidence in the Australian economy by either domestic or foreign investors.

The Australian Labour Market

The September 11 Shock to Tourism and the Australian Economy from 2001-02 to 2003-04

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Introduction

We assume that expenditures in Australia by international visitors in the December quarter of 2001 will be 15 per cent less than would have occurred in the absence of the September 11 terrorist attacks in the United States. This estimate is the same as that used by the Tourism Industry Working Group (2001) in their report to the Prime Minister made in October. While there are no firm figures yet available on the extent of the tourism downturn, the Tourism Task Force confirms that 15 per cent is a reasonable estimate, although probably conservative. For the period beyond the December quarter, we have assumed a gradual recovery of international tourism so that after five years international tourist expenditures in Australia have rejoined the path they would have taken without the September 11 shock.

In the next two sections we use MONASH, an annual dynamic computable general equilibrium model, to generate macro and sectoral base case forecasts for Australia made on pre-September 11 assumptions. In the fourth section we work out the effects on the Australian economy of the tourism downturn by comparing the base case with an alternate simulation that includes the downturn. The comparison is made with a new quarterly version of MONASH. In the fifth section we discuss the effects of the tourism downturn on Australian regions. The final section contains concluding remarks.

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Base Case Forecasts for 2001-02 to 2003-04

As described in our previous articles in the *Bulletin* (see for example Adams *et al.*, 2000), MONASH forecasts incorporate information from expert groups specializing in the analysis of different aspects of the economy. In the base case MONASH simulation reported in this paper, we use pre-September 11:

- macro forecasts from 'Five Year Business Outlook' (June Quarter 2001), published by Access Economics;
- price and quantity forecasts for exports of agricultural and mineral products from 'Australian Commodities' (September, 2001), published by the Australian Bureau of Agriculture and Resource Economics (ABARE); and
- forecasts of changes in technology and consumer preferences produced by the Centre of Policy Studies.

On applying the forecasts from these groups in the MONASH model we obtained the results in Tables 1 and 2.

Table 1: Macro Forecasts, Pre-September 11 Assumptions

	Percentage growth rates				
	History	Forecast			
	2000-01	2001-02	2002-03	2003-04	Average
Real GDP	1.8	3.4	4.3	2.9	3.5
Employment	2.1	1.0	2.1	2.6	1.9
Capital stock	2.6	2.9	2.8	3.2	3.0
Real investment	-8.0	1.7	10.5	6.1	6.1
Real private consumption	2.7	3.2	4.5	3.9	3.9
Real public consumption	2.9	2.8	1.9	1.1	1.9
Real wage rate	-0.7	2.7	1.9	0.4	1.7
Real exchange rate ^a	1.1	-7.3	7.9	10.3	3.6
Nominal exchange rate	-10.1	-5.6	8.8	4.9	2.7
Imports, volume	-1.4	3.2	9.9	12.6	8.6
Exports, volume	7.2	7.1	6.9	6.2	6.7
Traditional exports ^b , volume	3.7	3.7	3.8	1.4	3.0
Non-traditional exports ^c , volume	11.8	11.0	9.5	9.5	10.0
Tourism, volume	9.1	5.0	6.0	6.0	5.7
Price deflator, GDP	5.9	1.8	2.2	4.7	2.9
Price deflator, private consumption	6.0	2.2	2.4	3.8	2.8
Terms of trade	3.6	-2.7	-0.3	3.5	0.2

Notes: (a) Movement in the trade-weighted exchange rate adjusted by the rate of inflation in Australia relative to that of Australia's trading partners.

(b) Agricultural and mineral products.

(c) Mainly manufactures.

As can be seen from Table 1, the MONASH macro results generated under pre-September 11 assumptions show average GDP growth over the next three years of 3.5 per cent. This is only a little below the average growth rate achieved over the last ten years, 3.7 per cent.

The MONASH GDP forecasts reflect those made by Access. In common with other macro forecasters, Access was expecting a slowdown in world economic growth over the next three years. However, they were not expecting the slowdown to be pronounced. Their pre-September 11 forecasts for GDP in the US showed real growth rates in the next three years of 3.1, 3.0 and 3.2 per cent, and their forecasts for GDP growth averaged over Australia's major trading partners were 2.6, 3.5 and 3.7 per cent. These growth rates are a little lower than those in recent years, leading to forecast declines in Australia's terms of trade in 2001-02 and 2002-03.

In assessing Australia's growth prospects, Access argued that the mildly unfavourable world outlook would be balanced by favourable domestic factors. These include: a sharp recovery in housing activity from its post-GST slump in 2000-01; low inflation, allowing maintenance of low interest rates; and a low exchange rate, allowing continued rapid growth in exports, particularly non-traditional exports (mainly manufactured goods). All of these factors can be seen in Table 1. Among the MONASH pre-September 11 forecasts for 2001-02 are: investment growth of 1.7 per cent, up from -8.0 per cent in 2000-01; consumer-price inflation of 2.2 per cent, down from the GST-inflated level of 6.0 per cent in 2000-01; and export growth of 7.1 per cent, maintaining the strong growth occurring in 2000-01. The main weakness in the Australian economy foreseen by Access, and reflected in the MONASH forecasts in Table 1, is low employment growth in 2001-02. Employment growth often lags GDP growth, with employers being slow to hire in the upswing and slow to fire in the downswing. The weak employment forecast in Table 1 for 2001-02 is consistent with the GDP slowdown in 2000-01.

With Australia experiencing solid growth and strong investment, Table 1 shows appreciation of the nominal and real exchange rates in 2002-03 and 2003-04. The devaluations shown for 2001-02 reflect the decline in the nominal exchange rate through 2000-01. Even if the nominal exchange rate were held constant through 2001-02, the average level of the exchange rate in 2001-02 would be about 5 per cent less than that in 2000-01.

Forecasts of Employment by Sector

Table 2 shows MONASH forecasts generated on pre-September 11 assumptions for employment in 21 industrial sectors.

Table 2: Employment Annual Growth Rates for Sectors, Pre-September 11 Assumptions

Sector	Percentage growth rates				Change in jobs ('000), 2000-01 to 2003-04	Rank based on average growth rate
	2001-02	2002-03	2003-04	Average		
Agriculture, forestry and fishing	-2.6	-1.1	-1.0	-1.5	-21.1	19
Mining	2.1	4.0	-0.6	1.8	5.9	9
Food, beverages and tobacco	2.0	-1.0	0.7	0.6	3.8	16
Textiles, clothing and footwear	2.9	-3.6	-6.3	-2.4	-7.5	21
Wood, wood products and furniture	4.2	1.7	-2.2	1.2	4.4	13
Paper, paper products, printing and publishing	4.5	0.4	-1.9	1.0	4.4	14
Chemicals, petroleum and coal products	7.2	-0.1	-4.0	0.9	2.3	15
Non-metallic construction materials	3.5	4.7	0.4	2.9	4.8	4
Basic metal products	3.3	2.7	0.3	2.1	14.8	7
Cars and other transport equipment	2.2	-3.0	-5.2	-2.1	-7.1	20
Electronic, and other specialist equipment	4.6	2.5	-0.6	2.1	11.2	6
Leather, rubber, plastic and other products	4.8	-0.6	-3.8	0.1	0.2	17
Electricity, gas and water	0.7	1.7	5.4	2.6	9.4	5
Construction	-2.2	9.0	7.7	4.7	104.2	2
Wholesale and retail trade	-0.4	1.5	3.7	1.6	95.7	11
Transport and storage	0.1	2.5	3.1	1.9	26.7	8
Communications	4.2	5.2	6.0	5.2	38.6	1
Finance, property and business services	3.3	3.5	2.5	3.1	147.6	3
Public administration and defence	-0.9	-1.7	0.7	-0.6	-8.0	18
Health, education and welfare	1.3	0.9	3.0	1.7	88.1	10
Hospitality, leisure, and personal services	-1.5	2.0	3.7	1.4	42.8	12
All sectors	1.0	2.1	2.6	1.9	561.2	-

In terms of average percentage employment growth, the top four sectors are forecast to be: communications (5.2 per cent average annual growth); construction (4.7 per cent); finance, property and business services (3.1 per cent); and non-metallic construction materials (2.9 per cent). These high employment rankings are mainly a reflection of good growth prospects for output. Based on the macro scenario outlined in the previous section, we expect output growth in the construction sector to average 7 per cent per annum, with strong growth in housing construction in the early part of the forecast period and strong growth in non-housing construction over the later part. Our forecast average annual output growth rates for communications and finance, property and business services are 7.6 and 7.7 per cent. These are based on the assumption that the communication- and finance-intensity of industry inputs and household consumption will continue to grow at the same high rates as in the 1990s. Strong growth in non-metallic construction materials is in line with strong growth in the construction sector, its major customer.

Employment is forecast to decline through the forecast period in several sectors. Those with the largest percentage falls are: textiles, clothing and footwear (-2.4 per cent average annual growth); cars and other transport equipment (-2.1 per cent); and agriculture, forestry and fishing (-1.5 per cent). The first two sectors are forecast to experience declines in output mainly due to increased import penetration, reflecting appreciation of the real exchange rate in 2002-03 and 2003-04. We are expecting agricultural employment to fall, not because of output decline (agricultural output is projected to increase at an annual rate of nearly 2.0 per cent), but because of strong growth in productivity. At the beginning of the forecast period, profitability in the sector was quite high, partly reflecting a recovery in world agricultural commodity prices. Thus we expect strong growth in capital relative to output, which generates strong productivity growth and negative employment growth.

An implication of Table 2 is that the dominance of the service sectors as employers is likely to increase through the next few years. This is explained mainly by good growth prospects for service outputs, reflecting technological changes that are increasing service usage per unit of activity throughout the economy. Agriculture, mining and most manufacturing sectors are likely to have declining shares in total employment, reflecting rapid productivity growth combined with subdued production growth.

Post-September 11

Following the September 11 tragedy, Access Economics has issued new macro forecasts involving a moderate downgrading of growth prospects in the US and in Australia's major trading partners. Instead of GDP growth rates for the US over the next three years of 3.1, 3.0 and 3.2 per cent, in Access's latest

forecasts these growth rates are 1.0, 3.0 and 3.2 per cent, and instead of GDP growth rates for Australia's major trading partners of 2.6, 3.5 and 3.7 per cent, the latest Access forecasts are 1.6, 2.2 and 2.4 per cent.

The one sector of the economy for which it is clear that the September 11 tragedy will have a large negative direct effect is tourism. In common with other forecasters, Access Economics has made a sharp downward revision of its forecast for international tourist arrivals in Australia in 2001-02. As mentioned in the introduction, the Tourism Industry Working Group assumed a 15 per cent cut in Australia's tourism exports in the December quarter of 2001-02, followed by a gradual recovery.

To provide some insight into the likely effects on the Australian economy of a sharp reduction in tourism exports, we constructed a quarterly version of the MONASH model. With the quarterly version we are able to obtain a sharper picture of the effects of the tourism downturn than would be possible with an annual model. This is because we are able to place the downturn specifically in the December quarter. With an annual model, timing is necessarily less precise. Shocks must be treated as affecting year-on-year growth rates of exogenous variables. With year-on-year treatment, shocks become muted and there is a danger that their disruptive effects will be underestimated.

Figures 1 to 7 show deviations generated by the quarterly version of MONASH from our base case forecasts. These deviations are caused by an inward movement in the foreign-demand curve for tourism services in Australia of about 20 per cent in the December quarter of 2001. A 20 per cent inward movement means that at a given foreign-currency price for a visit to Australia, there is a 20 per cent reduction in demand. As can be seen from Figure 5, the 20 per cent inward movement in the foreign-demand curve for tourism causes in MONASH a reduction in tourism demand of approximately 16 per cent. The difference between the 20 per cent impact and the 16 per cent outcome is caused by price movements. The model predicts that a sharp downturn in tourism demand will cause considerable discounting of accommodation and travel prices.

We assume that, following the tourism downturn in the December quarter, there will be a gradual recovery and that the foreign-demand curve for tourism will have moved back to its base case forecast position after five years. This is reflected in Figure 5, which shows a gradual return of tourism exports towards its base case forecast path.

As can be seen from Figure 1, MONASH predicts that the tourism downturn will cause a reduction in aggregate employment in the December quarter of 2001 of about 0.3 per cent. This is equivalent to 27,000 jobs.

Figure 1: Real GDP and Factor Inputs, September 2001-June 2004
(per cent deviation from base case forecasts)

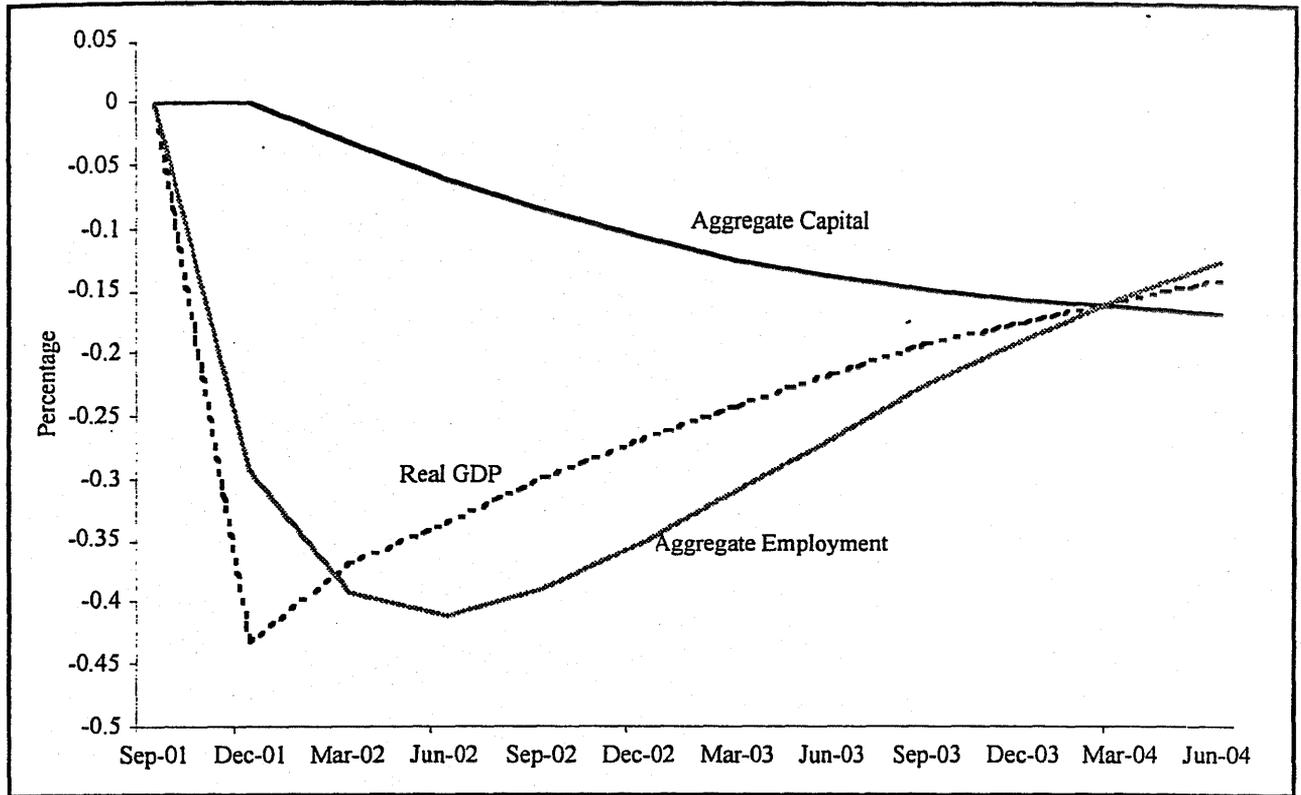
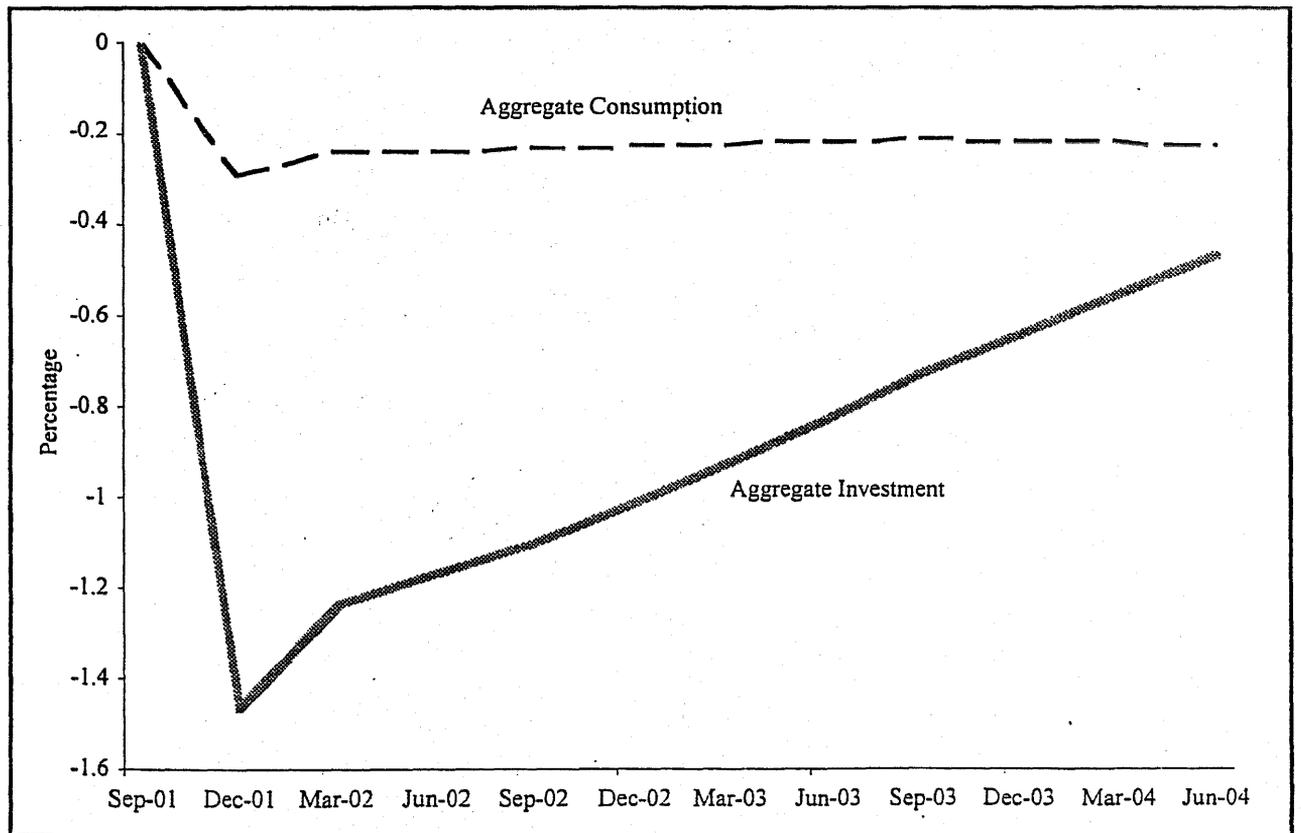


Figure 2: Real Investment and Consumption, September 2001-June 2004
(per cent deviation from base case forecasts)



The starting point for understanding this estimate is to recognize that about 550,000 people in Australia work directly in tourism activities, and of these, about 27 per cent serve foreign tourists. This suggests that a 16 per cent reduction in tourism in Australia by foreigners will cause a loss of about 24,000 jobs ($=550,000 \times 0.27 \times 0.16$) in the tourism industry. However, not all of these tourism jobs will be lost immediately. Businesses take time to adjust their labour forces. We think that the immediate loss of tourism jobs (that is the loss of jobs in the December quarter) will be only about 12,000. With multiplier effects, the loss of 12,000 tourism jobs is translated by MONASH into an economy-wide loss of 27,000 jobs. Because only about half of the adjustment in their labour forces is completed in the December quarter, MONASH predicts that tourism businesses will continue reducing their workforces beyond the December quarter. Thus, in Figure 1 we see that aggregate employment continues to fall relative to its base case forecast level for several quarters. This is despite our assumption that after the December quarter tourism demand will gradually recover. By the June quarter of 2002 the deviation for aggregate employment is -0.4 per cent, implying an economy-wide loss of about 37,000 jobs. Beyond the June quarter of 2002, the recovery in tourism demand is sufficient to start the process of moving aggregate employment back towards its base case forecast level.

Corresponding to the negative impact on employment, MONASH shows that the reduction in international tourism will have negative impacts on real GDP (Figure 1), aggregate consumption (Figure 2) and aggregate imports (Figure 3). It will also reduce Australia's terms of trade, that is the price of exports relative to the price of imports (Figure 4). Initially the reduction in the terms of trade reflects discounting of holiday packages sold by Australian tourist businesses to foreign visitors. Later in the simulation period, the terms of trade continues to fall for two reasons. First, as will be explained shortly and as is apparent in Figure 5, the reduction in international tourism leads to an expansion in Australia's other exports. An increase in Australia's supply of other exports to world markets reduces their prices. Second, the reduction in international tourism biases the mix of Australia's exports away from a product (tourism) for which the world price is increasing towards products (agriculture and mining) for which world prices are in relative decline.

Expansion of commodity exports in response to the tourism shock will be facilitated by real devaluation (Figure 4). This will allow total exports to return to their base case forecast level after about two years even though tourism exports are well below their base case forecast level (Figure 5).

Figure 3: Aggregate Export and Import Volumes, September 2001-June 2004 (per cent deviation from base case forecasts)

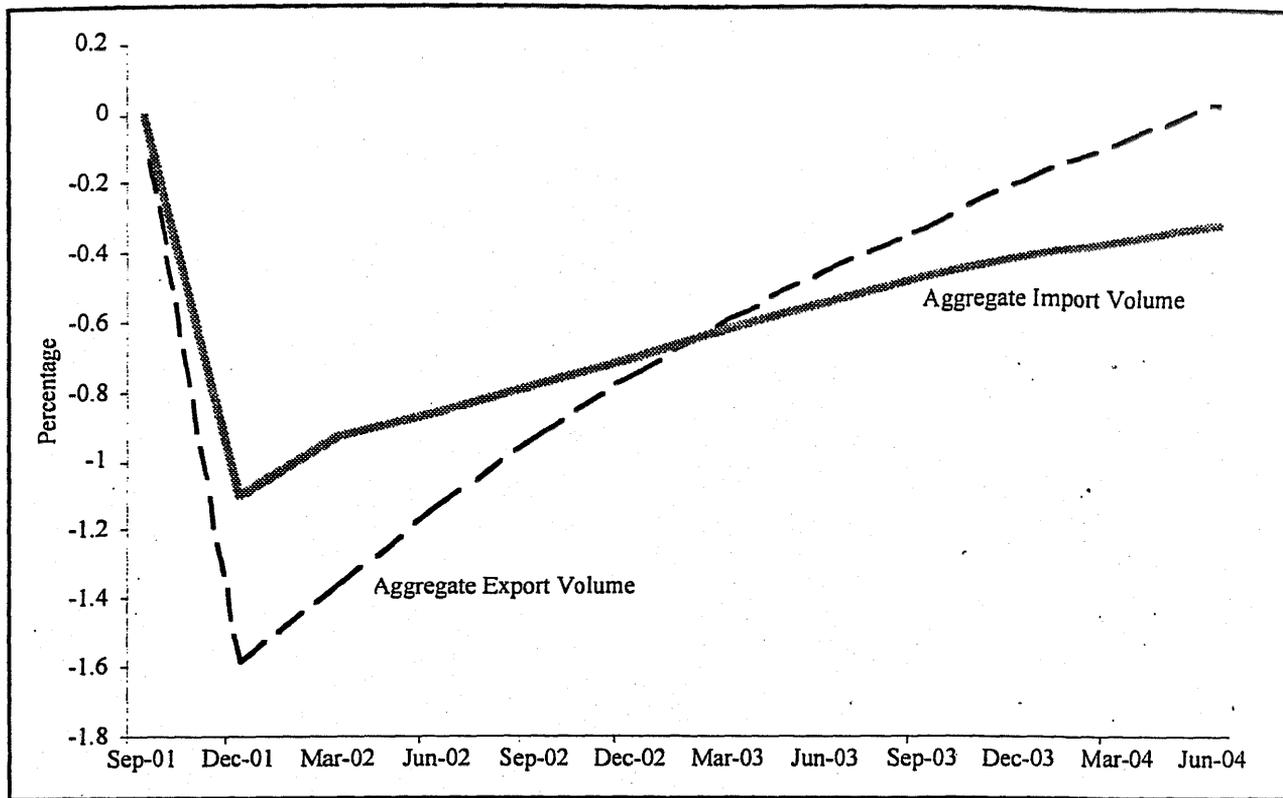


Figure 4: Real Exchange Rate, Terms of Trade and Real Wage Rate, September 2001-June 2004 (per cent deviation from base case forecasts)

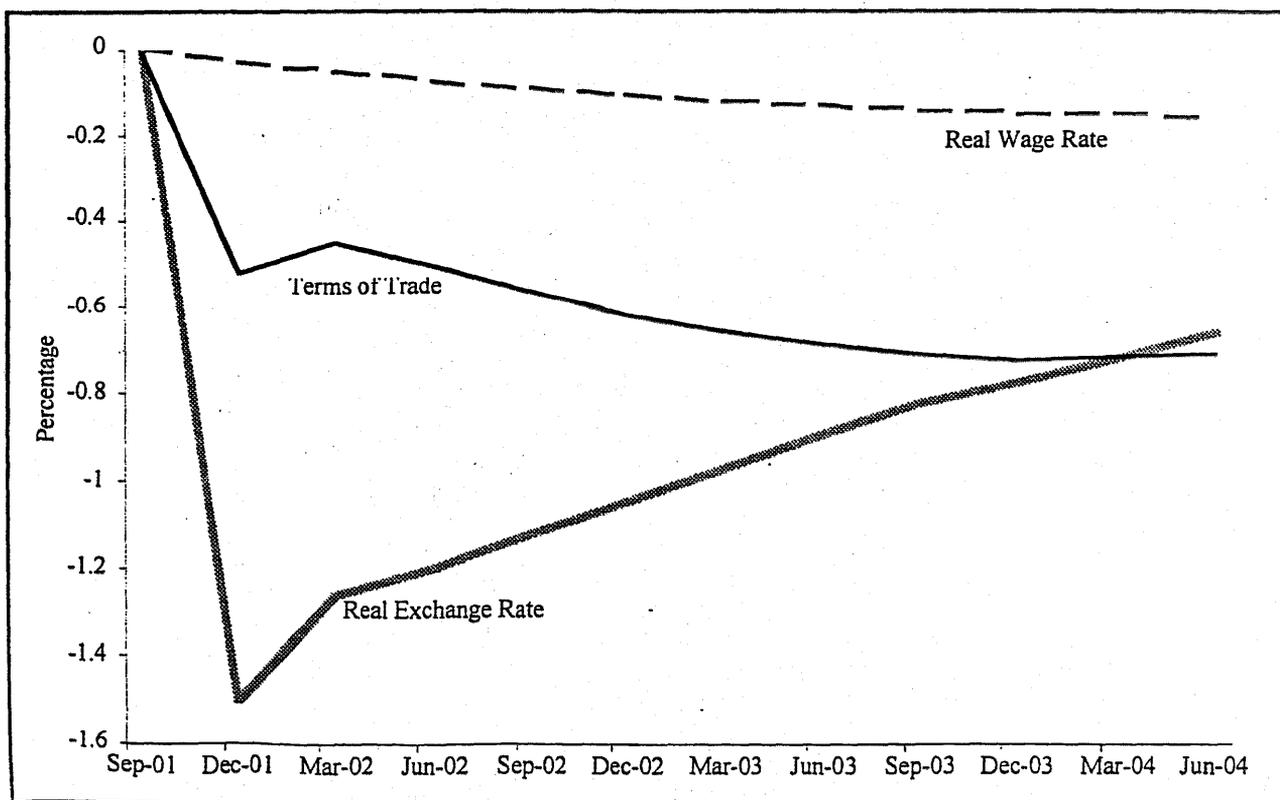
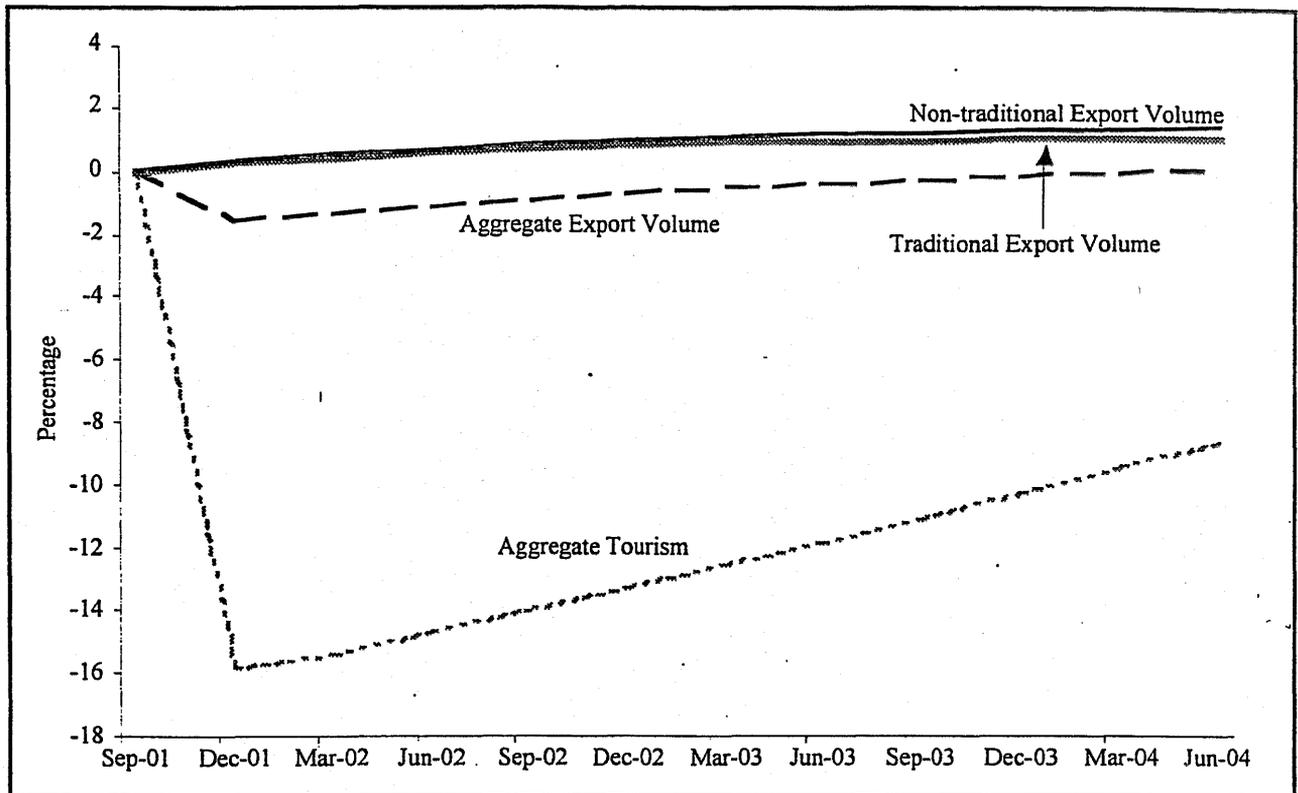


Figure 5: Aggregate, Traditional, Non-traditional and Tourism Exports (per cent deviation from base case forecasts)



Real devaluation will be made possible by reductions in real wage rates (Figure 4), associated with weakening in the demand for labour relative to supply of labour. In MONASH simulations there is a negative relationship between employment and real wage rates. Thus, the return of aggregate employment in Figure 1 towards its base case forecast level is explained not only by the gradual recovery in tourism, but also by lower real wage rates.

Lower real wage rates will take the Australian economy to a lower capital/labour ratio. This explains the decline in the capital stock throughout the simulation period (Figure 1). The sharp initial decline in investment (Figure 2) is explained by excess capacity associated with reduced GDP. Later in the simulation period, investment stays below its forecast path to facilitate the long-run decline in capital.

The results in Figure 6 show significant negative effects for output in tourism-related industries: air transport; hotels; aircraft; transport services; personal services and entertainment. Residential construction is also negatively affected. With a reduction in consumer incomes, there is a downward adjustment in the housing stock, requiring a relatively sharp reduction in housing construction. In Figure 7, four of the industries (pastoral zone, iron

Figure 6: Output of the Main Losers from the Downturn in Tourism, September 2001-June 2004 (per cent deviation from base case forecasts)

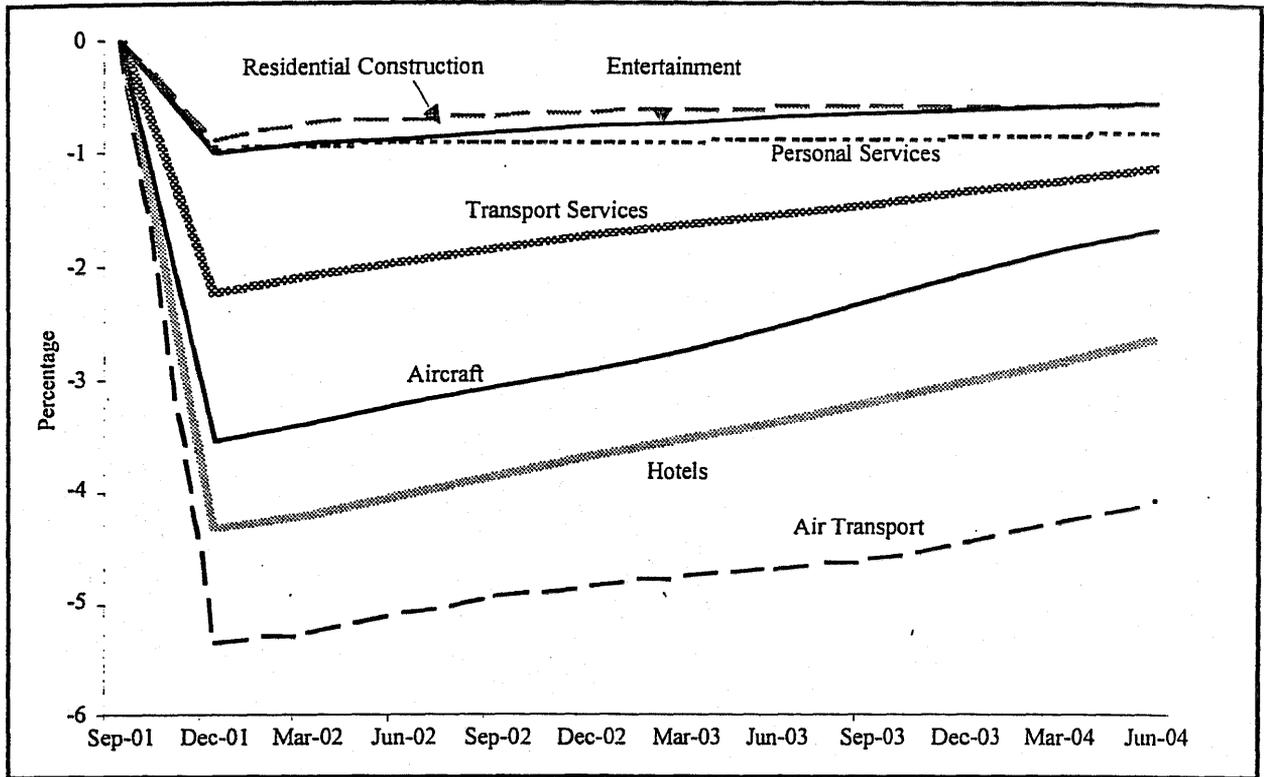
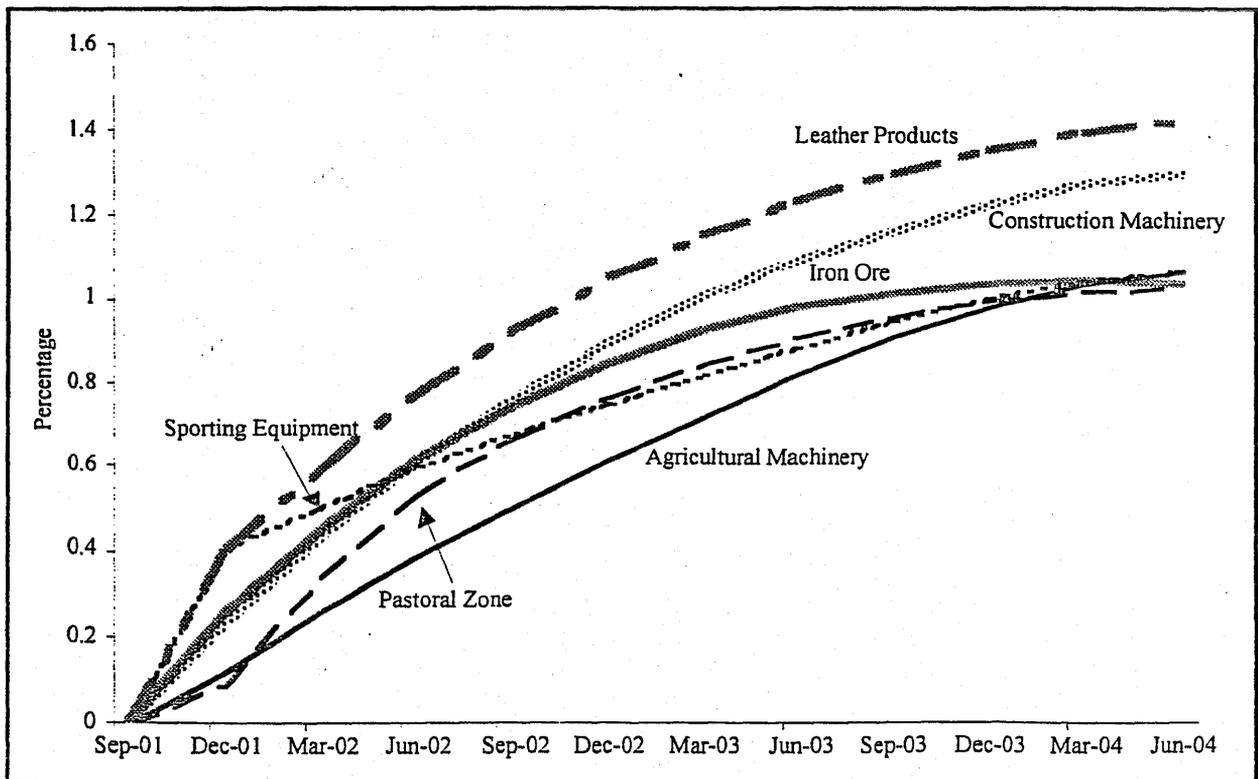


Figure 7: Output of the Main Winners from the Downturn in Tourism, September 2001-June 2004 (per cent deviation from base case forecasts)



ore, construction machinery and leather products) shown as the main winners from the decline in tourism, are highly export-oriented. The remaining industry (sporting equipment) is both export-oriented and import competing. All of these industries are major beneficiaries from real devaluation.

Table 3 contains growth rates for macro-variables incorporating the deviations caused by the tourism downturn. While Figures 1 to 7 show that the downturn will have adverse macroeconomic effects, a comparison of Tables 1 and 3 shows that these effects are not large enough to significantly change Australia's macroeconomic outlook. GDP and employment growth for 2001-02 are each revised down by 0.3 percentage points in Table 3 from their levels in Table 1. For 2002-03, GDP growth is shown as the same number in the two tables and for 2003-04, GDP growth is revised up in the post-September 11 scenario reflecting the return of GDP towards its base case forecast path. Similarly, employment growth in Table 3 for 2003-04 is slightly higher than in Table 1 (2.8 per cent compared with 2.6 per cent). The only variable in the two tables showing a large change in its pre- and post-September 11 growth prospects, is tourism exports. In Table 3, the average annual growth rate in tourism exports over the forecast period is 2.4 per cent, revised down from 5.7 per cent in Table 1.

Table 3: Macro Forecasts, Post-September 11 Assumptions

	<i>Percentage growth rates</i>				
	<i>History</i>	<i>Forecast</i>			
	<i>2000-01</i>	<i>2001-02</i>	<i>2002-03</i>	<i>2003-04</i>	<i>Average</i>
Real GDP	1.8	3.1	4.3	3.0	3.5
Employment	2.1	0.7	2.0	2.8	1.9
Capital stock	2.6	2.9	2.7	3.2	2.9
Real investment	-8.0	0.7	10.5	6.5	5.9
Real private consumption	2.7	3.0	4.5	3.9	3.8
Real public consumption	2.9	2.8	1.9	1.1	1.9
Real wage rate	-0.7	2.7	1.8	0.4	1.6
Real exchange rate	1.1	-8.3	7.9	10.6	3.4
Nominal exchange rate	-10.1	-6.5	8.8	5.2	2.5
Imports, volume	-1.4	2.5	10.0	12.9	8.4
Exports, volume	7.2	6.1	7.2	6.7	6.7
Traditional exports, volume	3.7	4.0	4.3	1.6	3.3
Non-traditional exports, volume	11.8	11.3	10.1	9.8	10.4
Tourism, volume	9.1	-6.5	4.6	9.0	2.4
Price deflator, GDP	5.9	1.8	2.2	4.7	2.9
Price deflator, private consumption	6.0	2.2	2.4	3.8	2.8
Terms of trade	3.6	-3.1	-0.6	3.4	-0.1

Regional Effects

Although the MONASH results indicate that the sharp tourism downturn forecast for the December quarter 2001 will have only minor effects on Australia's macroeconomic prospects, it may have substantial negative effects in some Australian regions. The regions most at risk are those in Table 4. About 85 per cent of direct international tourism employment occurs in these regions, and these are the only regions in which international tourism employment is more than 1.7 per cent of total employment. The estimates in Table 4 were made by combining data from two sources. First, we obtained tourism employment by region from *The Tourism Employment Atlas for Australia* published by the Tourism Task Force. Second, we estimated the share of tourism in each region accounted for by international tourism, using data from the *International and National Visitors Surveys*, published by the Bureau of Tourism Research. We based our share estimates on data from the surveys on nights in each region accounted for by international and national visitors.

The region in Table 4 with the highest dependence on international tourism is Far North Queensland. For this region, a 16 per cent reduction in international tourism would have a first-round effect on employment of -1.23 per cent ($= -0.16 \times 7.7$). With multiplier effects, this is likely to translate into a reduction in total employment in the region of about 4 per cent.

More serious regional effects can be found when we look at sub-regions of the regions in Table 4. Some of these sub-regions have extremely high tourism dependence. For example, tourism activities absorb 46 per cent of employment in Petermann (Northern Territory) and 42 per cent of employment in Whitsunday (Far North Queensland). For their parent regions, the shares of international tourism in total tourism are 34 and 43 per cent. If Petermann and Whitsunday have the same share of international tourism in total tourism as their parent regions, then international tourism accounts for 16 per cent ($= 46 \times 0.34$) of employment in Petermann and 18 per cent ($= 42 \times 0.43$) of employment in Whitsunday. Assuming a multiplier of 3, a 16 per cent downturn in international tourism would reduce employment in Petermann by about 8 per cent ($= 16 \times 0.16 \times 3$) and employment in Whitsunday by about 9 per cent ($= 18 \times 0.16 \times 3$).

Other sub-regions in which tourism employment is over 30 per cent are: Port Douglas (Qld); Kakadu (NT); Christmas Island; Snowy River (NSW); Lord Howe Island; Kangaroo Island (SA); Cairns (Qld); Tasman Peninsula (Tas); and Magnetic Island (Qld). For all of these sub-regions, the tourism downturn is likely to cause economic growth over the next few quarters to be considerably slower than it otherwise would have been.

Table 4: Statistical Regions Heavily Dependent on International Tourism

	<i>Percentage of employment devoted to international tourism</i>	<i>Number of jobs devoted to international tourism</i>
Far North (Qld)	7.7	8,223
Northern Territory	2.7	3,298
Mackay (Qld)	2.5	1,694
Sydney (NSW)	2.4	50,333
Moreton (Qld)	2.3	6,084
Northern (Tas)	2.0	1,132
Kimberley (WA)	1.9	272
Melbourne (Vic)	1.8	30,266
Perth (WA)	1.7	11,136
Brisbane (Qld)	1.7	14,838

Concluding Remarks

After many years of rapid expansion, Australia's international tourism industry is facing a sharp downturn. This will have serious adverse effects on employment in some heavily tourist-dependent regions and sub-regions. However, even in the worst affected regions and sub-regions, we are not expecting overall reductions in employment of much more than 10 per cent. This is for two reasons. First, international tourism is, on average, only about a quarter of total tourism in Australia, and is no more than 43 per cent in any heavily tourist-dependent sub-region. Even on a worst-case scenario international tourism is facing a downturn of no more than 20 per cent. Thus we do not expect many of Australia's tourist businesses to experience initial contractions of more than 9 per cent. In the most tourist-dependent sub-regions, a 9 per cent contraction in tourism employment would imply a -4 per cent impact effect on total employment. With multiplier effects, this could translate into a total reduction in employment of 12 per cent. Second, we expect the Australian economy to grow satisfactorily over the next three years. With annual growth in Australia's GDP averaging about 3.5 per cent, most Australian tourism businesses will show positive growth, despite reduced demand from international visitors.

A crucial assumption underlying our forecasts of continuing strong GDP and employment growth in Australia is that the current slowdown in the world economy will not seriously affect investor confidence. In an earlier article in the *Bulletin* (Adams *et al.* 1999), we looked at various threats to employment. The one that stood out was a reduction in investor confidence. In preparing that article, we were concerned that investor confidence would be damaged by the Asian crisis. We showed that a reduction in investor confidence would have a

far greater negative effect on the economy than contraction in Asian demand for Australian exports.

That analysis is relevant in the present situation. The reduction in Australia's tourism exports associated with September 11 will not, by itself, have significant macroeconomic consequences. Even the present slowdown in the world economy will not cause a major dip in Australian growth. However, our earlier analysis indicates that aggregate employment in Australia can be seriously reduced when an export slowdown is combined with a loss of investor confidence. With a loss of confidence there is an increase in required rates of return on capital that can be accommodated in the short-run only by a reduction in real wage rates. With downward stickiness in real wage rates, an increase in required rates of return quickly translates into a reduction in investment and employment. Fortunately, there is currently no evidence to suggest that the present difficulties in the world economy are causing a loss of confidence in the Australian economy by either domestic or foreign investors.

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