

COMMONWEALTH TREASURY  
OF  
AUSTRALIA

# Economic Roundup

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2002

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**This issue includes data up to 2 October 2002**



# 2001-02 in review: strong growth in the midst of an international slowdown

*The Australian economy grew strongly in 2001-02, in excess of the forecasts in the 2001-02 Budget and 2001-02 Mid-Year Economic and Fiscal Outlook (MYEFO). Growth was driven by residential construction and household consumption expenditure, which more than offset a decline in net exports associated with the weaker global economic environment.*

*The Government's enhanced First Home Owners Grant, in addition to historically low mortgage interest rates, contributed to a strong rebound in residential construction. This, together with low interest rates and rising household wealth, flowing primarily from large rises in established house prices, underpinned solid household consumption growth.*

*Consumer confidence and business sentiment proved to be remarkably resilient, rebounding quickly from their temporary falls associated with the events of September 11.*

*Employment growth moderated from the previous year and was concentrated in the retail trade and construction sectors, reflecting the main drivers of growth in the economy over 2001-02.*

*With Australia's growth continuing to outpace that of its major trading partners, net exports subtracted from growth in 2001-02. However, the terms of trade continued to improve despite the weak global economic conditions. The current account deficit increased from its 20-year low as a proportion of GDP in 2000-01 but remained below its average over the 1990s.*

*Inflation remained within the 2 to 3 per cent medium-term target band in 2001-02, with labour costs remaining subdued, reflecting moderate wages growth combined with rapid increases in productivity.*

## Overview of the economy in 2001-02

*Strong growth in 2001-02*

The Australian economy grew strongly in 2001-02, by 3.8 per cent in year average terms, in excess of the forecasts in the 2001-02 Budget (Budget) and the 2001-02 Mid-Year Economic and Fiscal Outlook (MYEFO). Growth was driven by residential construction and household

consumption expenditure, which more than offset a decline in net exports associated with the weaker global economic environment.

*In contrast with weaker global conditions*

The Australian economy strengthened as 2001 progressed, despite the weak global economic conditions, and remained solid in the first half of 2002, recording 3.8 per cent growth through the year to the June quarter 2002. Australia's economy was one of the strongest in the developed world in 2001-02.

The world economy grew by 2.2 per cent in 2001, the slowest rate of growth in almost a decade, after recording strong growth of 4.7 per cent in 2000.

The economic forecasts were revised down slightly at MYEFO, in the wake of the September 11 terrorist attacks in the US, as it was expected that these events could be detrimental to consumer confidence and could possibly delay some business investment decisions. In the event, consumer and business confidence recovered quickly from their sharp decline in the immediate aftermath of September 11 and contributed to the Australian economy maintaining momentum throughout 2001-02.

Dwelling investment rebounded strongly from the temporary slowdown in 2000-01, increasing 18.7 per cent in 2001-02, to contribute 0.9 percentage points to GDP growth in the year.

The strength of residential construction boosted spending on durable goods. Consumer spending was also assisted by low interest rates, declining petrol prices and strong growth in household wealth.

Private new business investment grew by 5.2 per cent in 2001-02, contrasting with a 2.9 per cent decline the year before. Subdued business investment in previous years, coupled with strong corporate profitability, low interest rates, a competitive exchange rate and strengthened business sentiment created supportive conditions for the pick up in private new investment in 2001-02.

Employment increased by 1.1 per cent in 2001-02, following three years of annual growth above 2 per cent and was concentrated primarily in the areas of retail trade and construction. The unemployment rate averaged 6.6 per cent in 2001-02, although by the June quarter it was down to 6.3 per cent.

Average non-farm earnings rose by 3.8 per cent in 2001-02, unchanged from the previous year. Inflation remained within the 2 to 3 per cent medium-term target band in 2001-02, with a 2.9 per cent increase in the CPI in year average terms.

The current account deficit increased moderately to 3.1 per cent of GDP in 2001-02, but remained well below its average share of GDP during the 1990s.

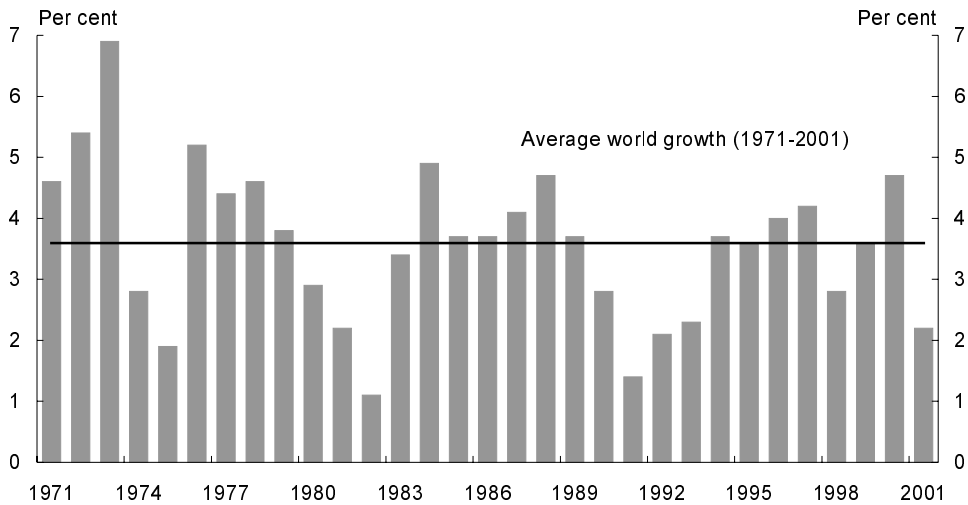
## **Comparison of forecasts against outcomes**

### **International economy**

*World growth  
slowed in 2001*

Australia's economy continued to perform strongly in 2001-02, despite many of Australia's trading partners experiencing much slower growth. The world economy grew by 2.2 per cent in 2001, the slowest rate of growth in almost a decade, after recording strong growth of 4.7 per cent in 2000 (see Chart 1). The outcome for 2001 was well below the Budget forecast of 3¼ per cent, but was in line with the revised 2¼ per cent growth forecast in the MYEFO, the latter forecast being prepared in the immediate aftermath of September 11 and in the light of mounting evidence of a significant slow down in the United States.

**Chart 1: World GDP Growth<sup>(a)</sup>**



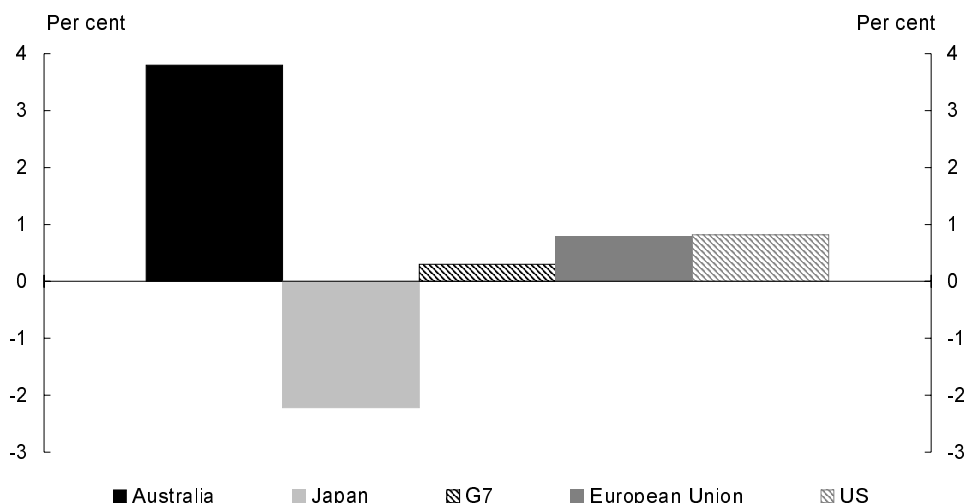
(a) World GDP growth rates are calculated using GDP weights based on purchasing power parity. Source: National statistical publications, International Monetary Fund.

*In 2001, the US, Japan and Germany were in recession*

The major industrial countries of the G7 were in recession during 2001 and experienced their weakest period of growth since the early 1980s. The United States (US) entered recession in early 2001, and Australia's largest trading partner, Japan, experienced recession for the third time in ten years. Growth in the European Union stalled in 2001 with Germany, the major economy in the region, also entering recession. The weakness in developed economies was transmitted to developing countries principally through slower demand for their exports. Consequently, the economies of Australia's major trading partners in East Asia also weakened in 2001, with output falling in several countries, particularly those highly dependent on exporting high-tech equipment. In contrast with these international developments, Australia's economy performed strongly in 2001-02 (see Chart 2).



**Chart 2: Australia's GDP growth outperforms the world in 2001-02<sup>(a,b)</sup>**



- (a) Percentage change on previous year.
- (b) Growth rates for the G7 and the European Union are calculated using weights based on purchasing power parity. The G7 comprises the United States, Japan, Germany, France, Italy, the United Kingdom and Canada.

Source: National Statistical publications, International Monetary Fund.

*Excess capacity in ICT*

The slow down in growth developed in the world economy over 2001 can be attributed, in part, to the speculative excesses of the late 1990s. Of particular note was the extremely high investment in information and communication technology (ICT) capacity — which was most pronounced in the US. Expectations of returns on ICT investment in the US were (until recently) very optimistic, providing a powerful magnet for capital, which was sourced mainly from foreign savings. After a prolonged period of exceptionally strong growth, capital spending by US businesses fell sharply during 2001.<sup>1</sup> ICT spending accounted for around two-thirds of the overall reduction in capital spending, as faltering demand exposed the excess capacity in this area.

1 Business capital spending in the US declined in the first three quarters of 2001 by \$88.2 billion in annualised inflation-adjusted, or real terms. That represented 154 per cent of the \$57.4 billion decline in real GDP over the same period.

*September 11  
weakened  
confidence*

The unprecedented shock and the aftermath of September 11 were expected to exacerbate the weakness in the US and the world economy, raising the spectre of a sharper and deeper downturn. In the US, inventory accumulation was wound back and investment spending reduced further in line with weaker demand and overcapacity, particularly in the manufacturing and high-tech sectors. The decline in confidence soon spread as global business and consumer sentiment fell against a heightened state of uncertainty and risk aversion. This was reflected in sharp falls on global equity markets immediately following September 11, although markets recovered later in 2001.

*US policymakers  
responded to the  
downturn*

Monetary policy was eased aggressively in 2001 to counter the weakness in US demand that emerged with the contraction in investment spending and the instability that followed the terrorist attacks of September 11. By the end of 2001, the Federal Reserve had lowered the federal funds rate by 475 basis points to 1¾ per cent, the lowest level in forty years. This action, together with tax cuts in June 2001 (worth around 0.4 per cent of GDP) helped support an already resilient household sector through the US recession in 2001 (which was relatively mild) and averted a more serious downturn.

*World-wide easing  
of policies*

Immediately following the events of September 11, central bankers worldwide responded by cutting interest rates aggressively. The US Federal Reserve reduced rates by 150 basis points in the month following September 11, the European Central Bank and the Bank of England both cut rates by 100 basis points over a similar period—many other developed and developing economies did the same. Several countries also announced additional fiscal stimulus packages. The US had already provided tax cuts in June 2001 but followed this up with additional corporate and personal tax cuts worth around 1 per cent of GDP. Japan announced an additional fiscal stimulus package worth around 0.2 per cent of GDP. In continental Europe targeted packages were introduced, with the most notable being the French government's assistance provided to affected

airports and airlines. A number of East Asian countries also announced additional stimulus measures, including tax relief in Hong Kong and Singapore and public works programs in China, South Korea and Malaysia.

*Signs of global recovery emerged in early 2002*

Signs of a global recovery began to emerge in early 2002 as inventory adjustments neared completion and business and consumer confidence strengthened. Combined with very supportive monetary and fiscal policies in many economies, prospects appeared to be favourable for an early recovery. World trade began to rebound in the early part of 2002 as inventory rebuilding commenced and US imports rebounded strongly.<sup>2</sup> As a result, global industrial production began to strengthen over this period despite ongoing weakness in the Euro area.

*Corporate accounting concerns emerge*

That said, as 2002 progressed, US corporate governance and financial accounting standards came under intense scrutiny, leading to increased uncertainty in financial markets. Corporate accounting malpractices were exposed, with notable examples being first Enron, and then subsequently Worldcom and Quest Communications, companies that had reported artificially inflated profits through questionable accounting practices. A series of Securities and Exchange Commission and US Justice Department investigations brought to light the extent of the corporate malaise, raising investor concerns.

*Stock markets fell globally*

These factors led to a sharp fall in equity prices in all major financial markets in 2001-02 that has continued to date (see Chart 3).

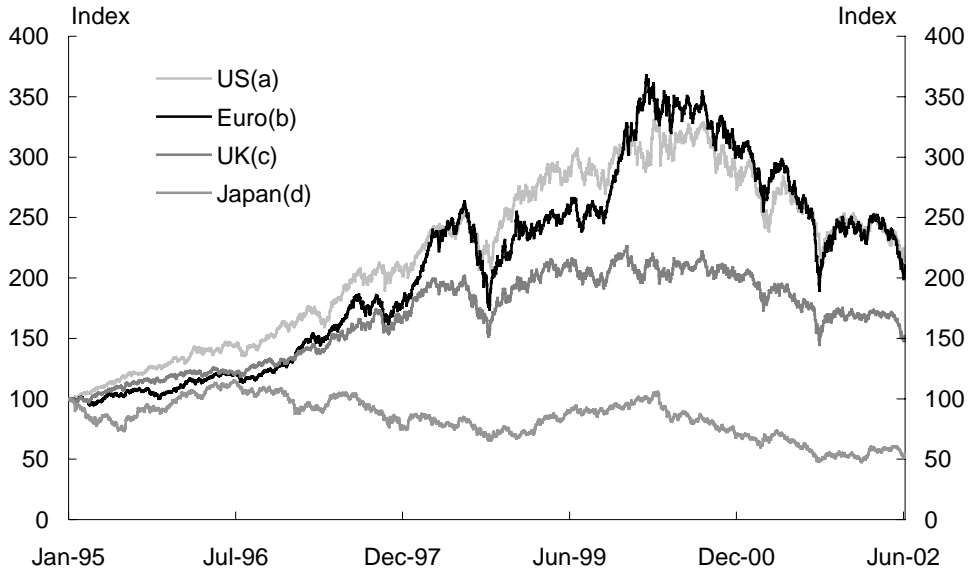
While signs of a global economic recovery had emerged early in 2002, it became apparent by mid 2002 that the recovery was vulnerable to risks surrounding the outlook for the US economy. These included a low saving rate, high levels of debt in both the corporate and

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<sup>2</sup> This surge in US imports reflected the recovery in domestic demand over the first half of 2002.

household sectors, and a large current-account deficit in excess of 4 per cent of GDP. This renewed onset of uncertainty about the US economy was reflected in continued weakness in US and global equity markets, which further eroded both business and consumer confidence.

**Chart 3: Movements in major indices  
(January 1995 to June 2002)**



- (a) S&P 500 index
- (b) Euro STOXX Broad Euro-zone index
- (c) FTSE 100 index
- (d) Nikkei 225 index

Source: Reuters

### **Domestic economy**

Table 1 compares the actual outcomes for the domestic economy in 2001-02 with both the Budget and MYEFO forecasts.

**Table 1: 2001-02 Budget and MYEFO forecasts and outcomes**

	Outcomes(a) 2000-01	2001-02 Budget Forecasts	2001-02 MYEFO Forecasts	Outcomes(a) 2001-02
	Year Average(b)	Year Average(b)	Year Average(b)	Year Average(b)
<b>Panel A - Demand and output(c)</b>				
Household consumption	2.7	3	3 1/4	3.9
Private investment				
Dwellings	-20.5	5	20	18.7
Total business investment(d)	-2.9	5	-1	5.2
Other buildings and structures(d)	-19.8	6	5	12.2
Machinery and equipment(d)	1.3	3	-5	3.4
Private final demand(d)	0.0	3 1/2	4	5.3
Public final demand(d)	0.7	2 1/4	3 1/2	3.3
Total final demand	0.2	3 1/4	3 3/4	4.9
Change in inventories(e)				
Private non-farm	-0.1	- 1/4	- 1/4	-0.3
Farm and public authorities	-0.1	0	0	0.2
Gross national expenditure	0.2	3	3 3/4	4.7
Exports of goods and services	7.3	5	0	-2.0
Imports of goods and services	-1.3	4	3	2.5
Net exports(e)	1.9	1/4	- 3/4	-1.0
Gross domestic product	2.0	3 1/4	3	3.8
Non-farm product	2.0	3	3	3.7
Farm product(f)	0.6	7	3	2.7
<b>Panel B - Other selected economic measures</b>				
<b>Prices and wages</b>				
Consumer Price Index -Headline	6.0	2	2 3/4	2.9
Gross non-farm product deflator	4.5	1 1/2	1 3/4	2.3
Average earnings(g)	3.8	3 3/4	4 1/4	3.8
<b>Labour market</b>				
Employment (Labour Force Survey basis)	2.1	1	3/4	1.1
Unemployment rate (per cent)	6.4	7	7	6.6
Unemployment rate (per cent)(h)	6.8	7	7	6.3
Participation rate (per cent)	63.7	63 3/4	63 3/4	63.7
<b>External accounts</b>				
Terms of trade	3.1	- 3/4	-1 1/4	2.6
Current account balance				
\$billion	-18.2	-20	-26	-22.2
Percentage of GDP	-2.7	-3	-3 3/4	-3.1

(a) Calculated using original data, except average earnings and the quarterly labour market measures which are calculated using seasonally adjusted data.

(b) Percentage change on preceding year unless otherwise indicated.

(c) Chain volume measure.

(d) Excluding transfers of net second-hand asset sales from the public sector to the private sector.

(e) Percentage point contribution to growth in GDP.

(f) Calculated at basic prices.

(g) Average non-farm compensation of employees (national accounts basis).

(h) The level in the June quarter of each year.

## ***Domestic demand***

*Growth was expected to pick-up in 2001-02...*

The Budget forecasts were prepared on the basis that economic growth would return to around the longer-term trend rate in 2001-02, following the temporary dwelling investment-led weakness observed in the latter part of calendar 2000.

*...underpinned by a rebound in the dwellings sector and solid business investment*

With an absence of imbalances in the Australian economy, domestic demand was expected to grow strongly in 2001-02. In particular, a rebound in dwelling investment and a solid contribution from business investment were forecast to be the key factors underpinning the pick-up in GDP growth.

The increase in demand was expected to outweigh an anticipated decline in net exports due to the expected weakness in global economic conditions.

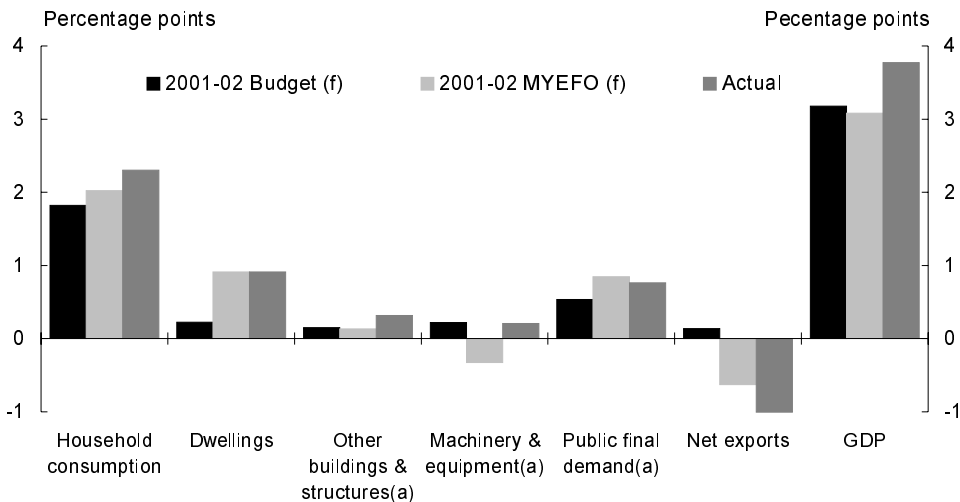
*The September 11 attacks prompted a slight downgrade to the growth forecast at MYEFO...*

The economic growth forecast was subsequently revised down slightly at MYEFO in the wake of the September 11 terrorist attacks. The downgrade predominantly reflected a significant reduction to the forecast contribution from net exports. The business investment forecast was also revised down, in anticipation of some deferral of investment projects. Consumers were also assumed to moderate their spending in response to the heightened uncertainty. On the other hand, in view of the momentum already evident in the dwelling sector and forward indicators such as commencements, the forecast for dwelling investment was revised up significantly at MYEFO.

*...but the economy proved to be more resilient than expected.*

In the event, the Australian economy proved to be more resilient than anticipated and overall economic growth in 2001-02 was higher than forecast at both Budget and MYEFO. The contribution of household consumption in particular was stronger than had been forecast. This outcome, combined with a contribution from dwelling investment which was in line with that forecast at MYEFO, more than offset a larger than anticipated subtraction from net exports.

**Chart 4: Contributions to GDP growth 2001-02**



(a) Excluding transfers of net second hand asset sales from the public sector to the private sector.

*Household consumption provided solid contribution to growth.*

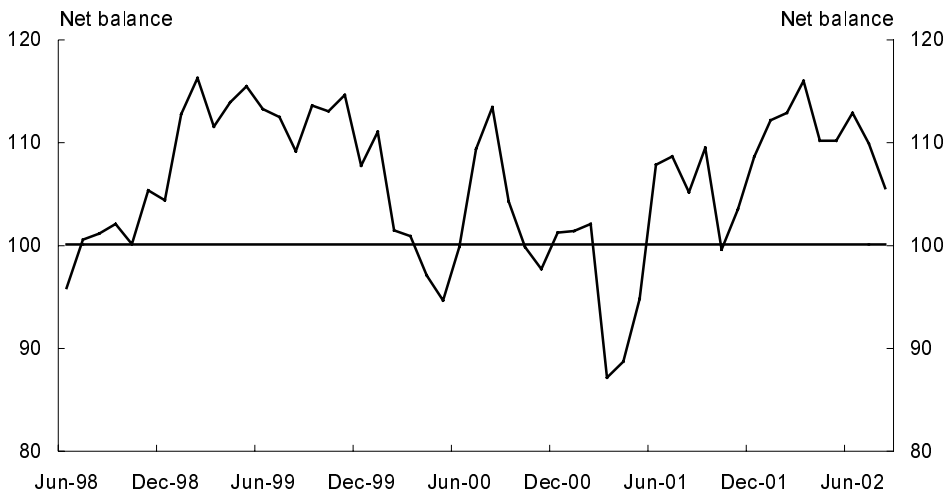
**Household consumption** rose strongly by 3.9 per cent and contributed 2.3 percentage points to GDP growth in 2001-02.

The 3.9 per cent increase in household consumption was above the 3 per cent forecast in the Budget and the 3¼ per cent forecast in the MYEFO. The stronger outcome than forecast reflected a robust end to 2001-02 with three consecutive quarters of growth well above trend. This period of strength, which followed moderate growth in the September quarter 2001, surpassed expectations with consumers showing remarkable resilience to the events of and surrounding September 11.

*Consumer confidence recovered after the events of September 11.*

Consumer confidence, as measured by the Westpac-Melbourne Institute index, fell sharply in the first reading following September 11 before rebounding to be well above the relatively high pre-September 11 levels (Chart 5). In contrast, the MYEFO forecasts were prepared on the assumption that consumer confidence would decline sharply and remain at below average levels well into 2002.

**Chart 5: Westpac-Melbourne Institute Consumer Sentiment Index**



*Strong household consumption built on solid base.*

Robust consumption growth was particularly evident in spending on durable goods, which, in part, reflected high levels of activity in the residential housing market. More generally, declining interest rates, lower petrol prices and strong growth in household wealth provided conditions conducive to the solid pace of consumption growth.

Household spending power was boosted by falling household interest expenses, as official interest rates fell by 2 percentage points over the course of 2001. The strong gains in household wealth flowed primarily from large rises in established house prices.

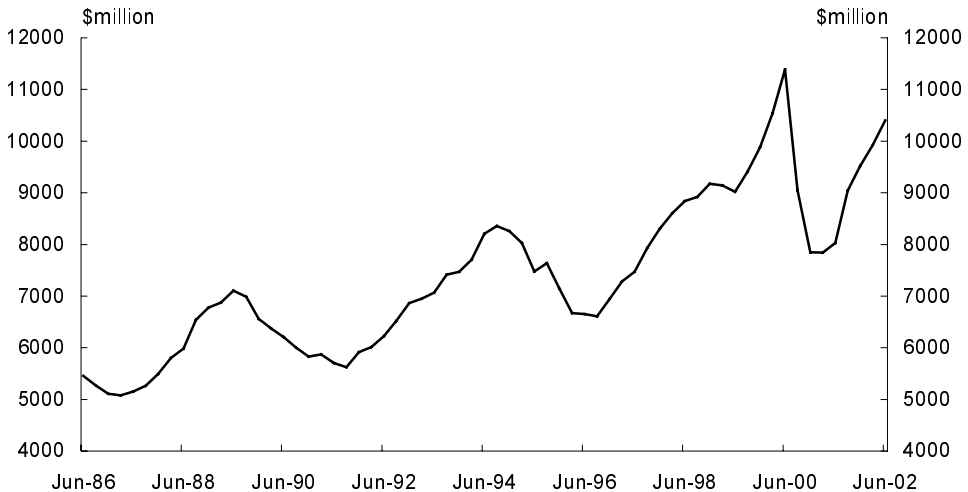
*Solid contribution to GDP growth from dwelling investment.*

**Dwelling investment** rebounded strongly from the temporary slowdown in 2000-01, increasing 18.7 per cent in 2001-02, to contribute 0.9 percentage points to GDP growth in the year. By June 2002, activity in this sector



was near the record level reached in the lead up to the implementation of *The New Tax System*, and well above previous cyclical peaks.

**Chart 6: Dwelling investment (chain volume measure)**



Source: ABS Cat. No. 5206.0.

*Significant upward revision to the forecast at MYEFO.*

The rebound in dwelling investment in 2001-02 was significantly stronger than forecast in the Budget, but in line with the MYEFO forecast. By MYEFO, a combination of the apparent strong take-up of the additional *First Home Owners Scheme* (FHOS) and the reduction in housing interest rates to historical lows prompted a substantial upward revision to the forecast.

*Construction of new dwellings was particularly strong...*

The recovery in dwelling investment saw the construction of new dwellings increase by 21.4 per cent in 2001-02. The proportion of housing finance going to first home buyers increased to 25 per cent in the second half of 2001, above its longer run average of around 21 per cent. Mortgage interest rates fell to a historical low of 6 per cent by the end of 2001.

*and was supported by growth in alterations and additions.*

Alterations and additions also grew strongly in 2001-02, continuing the upturn of the first half of 2001. In year-average terms, alterations and additions rose 15.2 per cent, the largest financial year increase in over 25 years. Strong gains in household wealth, largely reflecting solid increases in house prices in recent years,

coupled with low interest rates also underpinned activity in the home improvement market.

*Dwelling investment boosted economic growth.*

The rebound in dwelling investment in 2001-02 contributed to sustaining strong growth in the domestic economy during a year in which many of Australia's major trading partners' were in recession. In 2001-02, the sector contributed 0.9 percentage points to GDP growth of 3.8 per cent. The recovery in dwelling investment had important flow on effects to other parts of the economy, particularly household consumption and the labour market.

*Business investment rose despite global downturn.*

**Private new business investment** recovered in 2001-02, growing by 5.2 per cent. This outcome was in line with the Budget forecast of 5 per cent, but above the 1 per cent decline forecast in the MYEFO.

The business investment forecast was revised down at MYEFO in anticipation that the heightened international uncertainty following the September 11 terrorist attacks in the US would result in a delay or cancellation of some investment projects.

In the event, most measures of business confidence only declined for a brief period after September 2001. Business investment continued to grow, reflecting the sound fundamentals of the domestic economy.

In year average terms, private non-residential construction grew by 12.2 per cent in 2001-02, above both the Budget forecast of 6 per cent growth and the MYEFO forecast of 5 per cent growth.

*Rebound in non-residential building construction following post Olympic slow down.*

Non-residential construction recovered strongly from the decline that resulted from the end of Olympic-related work as several large engineering construction projects came on-line.

Investment in new machinery and equipment rose by 3.4 per cent in 2001-02, following modest growth of 1.3 per cent in 2000-01. The 2001-02 outcome was in line with the Budget forecast of 3 per cent growth and above the MYEFO forecast of a decline of 5 per cent.

*Exceptional growth in investment in the mining industry was the main factor in the growth in machinery and equipment investment.*

The growth in new machinery and equipment was driven by a very strong increase in the mining industry. This reflected high levels of profitability in the mining sector which was buoyed by the competitive level of the Australian dollar together with higher prices for some commodity exports on world markets, such as gold. This was against a background of subdued mining investment over the previous two years.

In 2001-02, underlying **public final demand**<sup>3</sup> increased at a solid pace, with growth of 3.3 per cent (in line with the MYEFO forecast), well above the 0.7 per cent increase recorded in 2000-01. At the Commonwealth Government level, this reflected spending associated with the war on terror, airport security and border protection. State and Local government investment also grew strongly, underpinned by a number of infrastructure projects.

Underlying public final demand contributed 0.8 percentage points to economic growth in 2001-02, in line with the MYEFO forecast.

### ***External sector***

*Export growth declined ...*

Reflecting the weakness in the world economy, **export** volumes fell by 2.0 per cent in 2001-02, much weaker than the Budget forecast of 5 per cent growth and the MYEFO forecast of no growth. Merchandise exports grew by a modest 0.1 per cent, while service exports declined by a record 9.4 per cent.

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3 Underlying public final demand is calculated by abstracting from the sale of assets by the public sector to the private sector (the sales are added back into the estimates of government investment).

*...following the Olympics Games...*

The record decline in service exports (mainly inbound tourism) largely reflected an unwinding of the impact of the Olympic Games on inbound tourism (which grew by 11.7 per cent in 2000-01). Tourism was further affected by the terrorist attacks of 11 September 2001, the collapse of Ansett, and the subsequent global downturn in travel.

*... and the decline in farm exports....*

Rural commodity exports also declined substantially, falling by 5.7 per cent in 2001-02, the largest decline in 7 years. While production of cereals increased by 4.2 per cent in 2001-02, part of the increase went into stocks rather than being exported. Wool exports declined with lower sheep numbers. Higher prices for lamb and mutton relative to wool encouraged increased slaughtering. Beef exports fell, partly reflecting lower demand associated with food safety concerns in Japan.

Growth in exports of non-rural commodities slowed in 2001-02, at 0.7 per cent, as production approached capacity constraints. Growth in the exports of elaborately transformed manufactures remained markedly below trend, rising by just 1.0 per cent in 2001-02, reflecting the weak global economic conditions despite a very competitive level of the Australian exchange rate.

*while imports were recovering.*

Following the decline in 2000-01, **import** volumes rose by a moderate 2.5 per cent in 2001-02 in year average terms, somewhat lower than the Budget forecast of 4 per cent, but up by 11.9 per cent over the year to June 2002.

The turnaround in imports was largely driven by the increase in capital good imports, which rose by 10 per cent in 2001-02. Growth in consumption and intermediate good imports remained below trend, rising by 3.2 per cent and 2.3 per cent.

*The terms of trade rose, despite the global downturn...*

The **terms of trade** continued to increase in 2001-02, up by 2.6 per cent, compared with Budget and MYEFO forecast declines of  $\frac{3}{4}$  per cent and  $1\frac{1}{4}$  per cent respectively (Chart 7).

*...as export prices rose...*

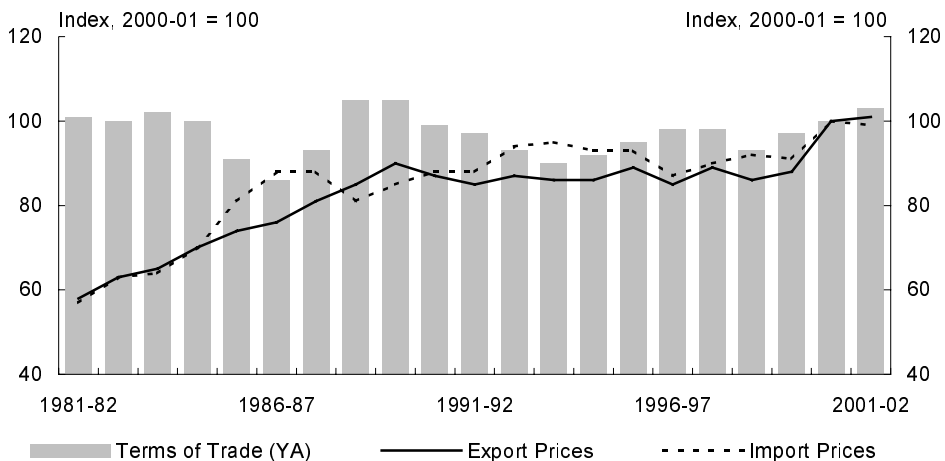
**Export prices** rose by 1.2 per cent in 2001-02. The increase in part reflected the favourable conditions for world prices of rural and non-rural commodities, which

rose by 1.7 per cent and 4.3 per cent in US dollar terms. This was sufficient to offset the large decline in base metal prices, which fell by 13.3 per cent.

...and import prices fell.

**Import prices** fell by 1.4 per cent in 2001-02. The decline in import prices was particularly evident in the prices of fuels and computer equipment. The price of fuels and lubricants fell by 20.0 per cent, partly unwinding the 42.3 per cent increase in the previous year. The price of ICT products continued the decline evident in recent years, falling by 13.2 per cent in 2001-02.

**Chart 7: Australia's terms of trade**



Source: ABS Cat. No. 5302.0.

The increase in the terms of trade in 2001-02 stands in contrast with Australia's longer term historical experience, where the terms of trade have usually fallen sharply during global downturns, with significant, adverse effects on domestic incomes. In contrast, since 2000 Australia's terms of trade has increased despite the slowing of the world economy. In addition, the rising terms of trade reflected steady export prices and a decline in import prices, therefore putting downward pressure on inflation (longer terms of trade trends in Australia are discussed in more detail in the 2002-03 Budget Statement 4, reproduced in the Autumn 2002 *Economic Roundup*).

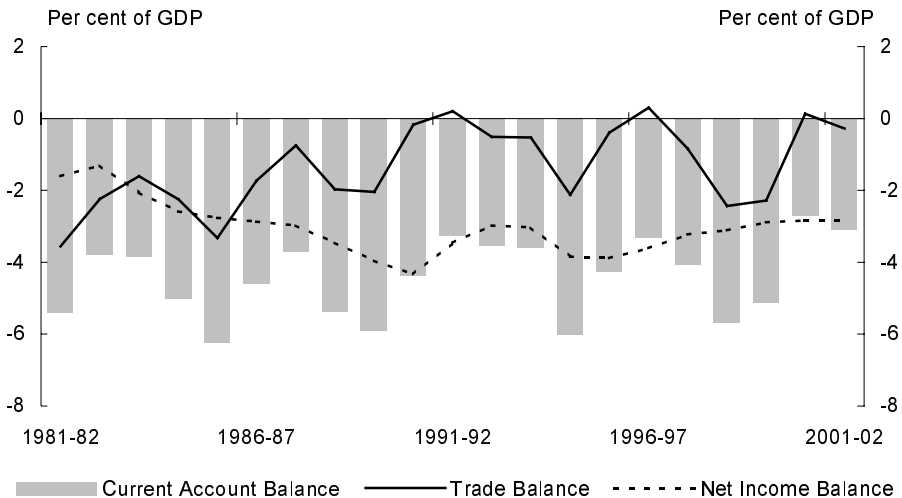
The CAD increased from its 20-year low.

The current account deficit (CAD) increased moderately from its 20-year low of 2.7 per cent of GDP in 2000-01, to 3.1 per cent of GDP in 2001-02 (Chart 8). This compares with the Budget and MYEFO forecasts of 3 per cent and 3¾ per cent of GDP respectively.

The increase in the CAD mainly reflected the large net export subtraction to GDP growth, partly offset by the increase in the terms of trade. The servicing of Australia’s net foreign liabilities — the net income deficit — remained unchanged from 2000-01 at 2.8 per cent of GDP.

Despite the moderate increase in 2001-02, the CAD remained well below the 10-year average of around 4¼ per cent of GDP, and markedly below historical peaks of around 6 per cent of GDP. The debt servicing ratio — the proportion of exports required to pay the interest on net foreign debt — continued to trend downwards, to be 9.2 per cent in the June quarter 2002, well below the peak of 20.0 per cent recorded in the September quarter 1990.

**Chart 8: Current account balance as a share of GDP**



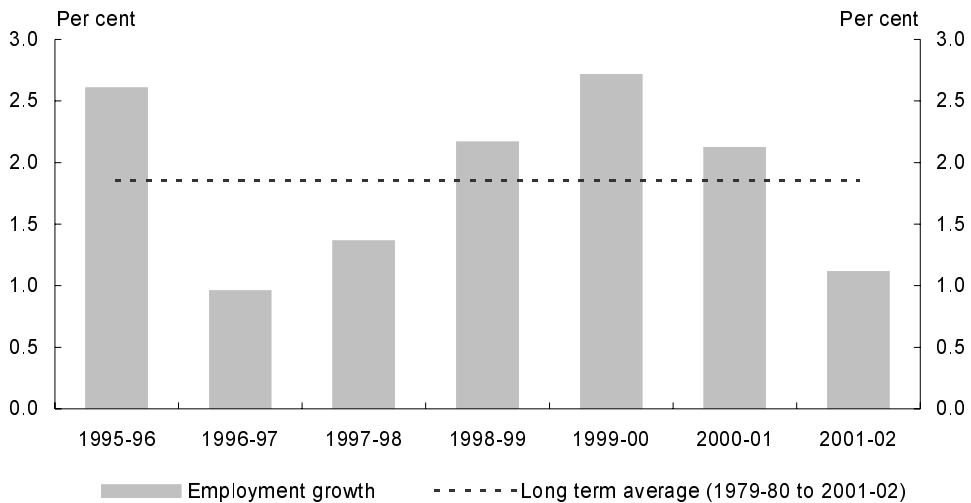
Source: ABS Cat. No. 5302.0.

## Labour market

*Continued expansion in part-time employment*

In year-average terms, employment increased by 1.1 per cent in 2001-02, following growth of 2.1 per cent in the previous year (Chart 9). The increase in employment was driven by a 5.8 per cent increase in part-time employment (an increase of 142 000 persons), partly offset by a 0.6 per cent decline in full-time employment (a decline of 40 000 persons).

**Chart 9: Year-average employment growth**



Source: ABS Cat. No. 6202.0.

*Employment growth consistent with forecasts*

The moderation in overall employment growth in 2001-02 was in line with the Budget forecast for employment growth of 1 per cent, although above the  $\frac{3}{4}$  of a percentage point growth forecast in the MYEFO.

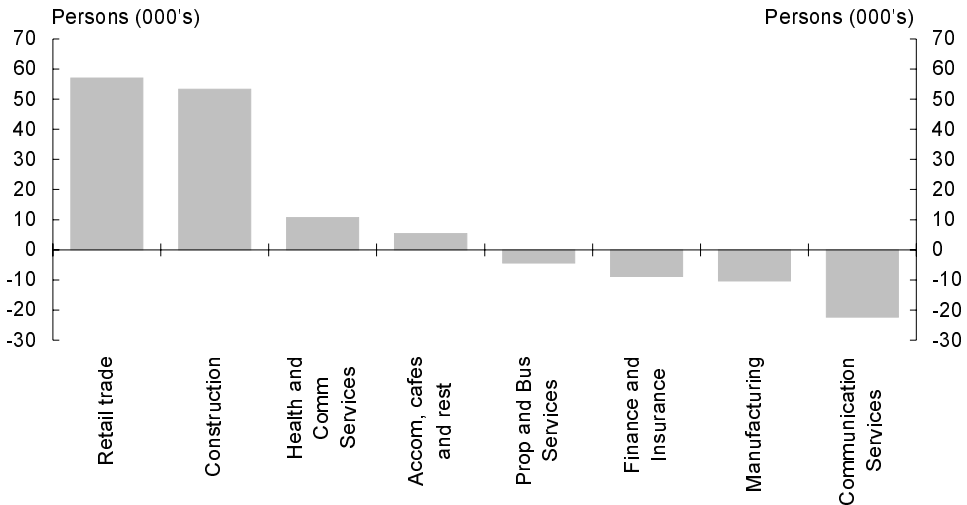
The downward revision to the employment growth forecast at MYEFO reflected a slight downward revision to the GDP growth forecast, due to the uncertain global economic environment and its expected impact on business confidence and hiring intentions.

*Employment growth was concentrated in the retail and construction sectors*

Solid growth in the retail sector over 2001-02 led to a pick-up in the number of retail jobs, which is likely to have added significantly to the overall expansion in part-time employment in 2001-02. In addition, the strong rebound in residential building activity flowed on to

robust employment growth in the construction sector. The surge in activity across residential construction and retail trade in 2001-02 resulted in overall employment growth being concentrated in these two labour intensive sectors through the year to June 2002 (Chart 10).

**Chart 10: Employment growth in selected industries (level change, through the year to June 2002)**



Source: ABS Cat. No. 6203.0.

*Sectoral differences in employment growth*

In contrast, there were significant declines in employment in the communications and information technology areas. Employment in the manufacturing sector also declined in 2001-02.

*The unemployment rate resumed its overall downward trend in 2002*

In year-average terms, the unemployment rate was 6.6 per cent in 2001-02 — below the 7 per cent forecast in both the Budget and MYEFO. A surge in employment growth in the early months of 2002 helped the unemployment rate to fall to an average of 6.3 per cent in the June quarter of 2002.

### **Wages and prices**

*Wages growth remained moderate in 2001-02.*

**Wages** growth remained moderate in 2001-02, with most measures indicating a fall in the rate of wages growth from 2000-01. Average non-farm earnings on a National Accounts (AENA) basis increased by 3.8 per cent in 2001-02, unchanged from 2000-01. This outcome was in



line with the Budget forecast of 3¾ per cent, but below the MYEFO forecast of 4¼ per cent. The wage cost index (WCI) increased by 3.3 per cent in 2001-02, down from 3.5 per cent in 2000-01.

In contrast, average weekly ordinary time earnings (AWOTE) grew by 5.5 per cent in 2001-02, up from 5.3 per cent in 2000-01. However, this measure is significantly affected by compositional factors, including changes in the industry composition of full time employment.

*The headline CPI increased by less than 3 per cent in 2001-02.*

The **headline CPI** increased by 2.9 per cent in year average terms and 2.8 per cent in through the year terms in 2001-02, within the 2-3 medium term target band. This outcome was higher than the Budget forecast of 2 per cent, but consistent with the MYEFO forecast of 2¾ per cent.

*The medium-term drivers of inflation had a moderate impact...*

The medium-term drivers of inflation remained moderate in 2001-02. Growth in unit labour costs was subdued, reflecting steady wages growth as outlined above and significant gains in labour productivity, and there was little evidence of supply constraints developing in the economy. Further, compared with 2000-01, the exchange rate was largely unchanged in year average terms.

*Airfares, meat and fruit prices and insurance costs rose..*

A significant proportion of the CPI increase in 2001-02 relative to the expectation at Budget can be attributed to price rises in a few key expenditure classes. Airfares were affected by the collapse of Ansett and the events of September 11, increasing the price of domestic and overseas holiday travel. Fruit prices rose due to adverse supply conditions and meat prices increased due to strong export demand. The price of hospital and medical services increased, due in part to increased private health insurance premiums.

*partly offset by lower petrol prices.*

Partly offsetting these increases, domestic petrol prices fell by around 5 per cent, driven by a 20 per cent decline in world oil prices.

## ***Fiscal policy***

The Government's medium-term fiscal strategy is to maintain budget balance, on average, over the course of the economic cycle. Budgetary outcomes in 2001-02 were consistent with this broad objective.

The Commonwealth general government sector recorded an underlying cash deficit in 2001-02 of around \$1.3 billion (0.2 per cent of GDP). The fiscal deficit in 2001-02 was around \$4 billion (0.5 per cent of GDP).

*Further reduction in net debt*

Commonwealth general government net debt was again reduced, from 5.8 per cent of GDP at 30 June 2001 to 5 per cent of GDP at 30 June 2002, as the proceeds of asset sales were used to retire debt.

*Fiscal policy was used to maintain solid economic growth*

In both 2000-01 and 2001-02 expansionary fiscal policy supported the domestic economy in the face of a weaker international environment. The medium-term fiscal strategy allows fiscal policy to respond to short-term economic fluctuations, and policy settings in the past two years helped Australia maintain solid economic growth relative to other developed countries.

## ***Monetary policy***

Over the course of 2001-02, Australian monetary policy moved from an easing cycle to a tightening cycle.

In the second half of 2001, the Reserve Bank of Australia (RBA) continued to move monetary policy to a more expansionary stance in order to support growth in domestic demand, as the international economic environment weakened. The RBA lowered official interest rates on three occasions in the second half of 2001, by a total of 75 basis points, to 4.25 per cent. Two of these moves came after the events of September 11 as central banks world-wide lowered rates aggressively in the face of financial market instability and risks to the economic outlook.

In the first half of 2002, the RBA removed the additional stimulus introduced after September 11, as global

economic recovery appeared to take hold and with the Australian economy continuing to make solid gains. The RBA increased official interest rates on two occasions, in May and June, by a total of 50 basis points. The cash rate was 4.75 per cent in June 2002.

As noted above, there was further easing of monetary policy in major economies in the second half of 2001, due to the continuing deterioration of the international economic environment. This trend accelerated after the terrorist attacks in the US. Some countries, including Canada and New Zealand, increased rates in 2002 (following reductions in late 2001), to reduce economic stimulus in response to improving domestic economic conditions.

### ***Bond and equity markets***

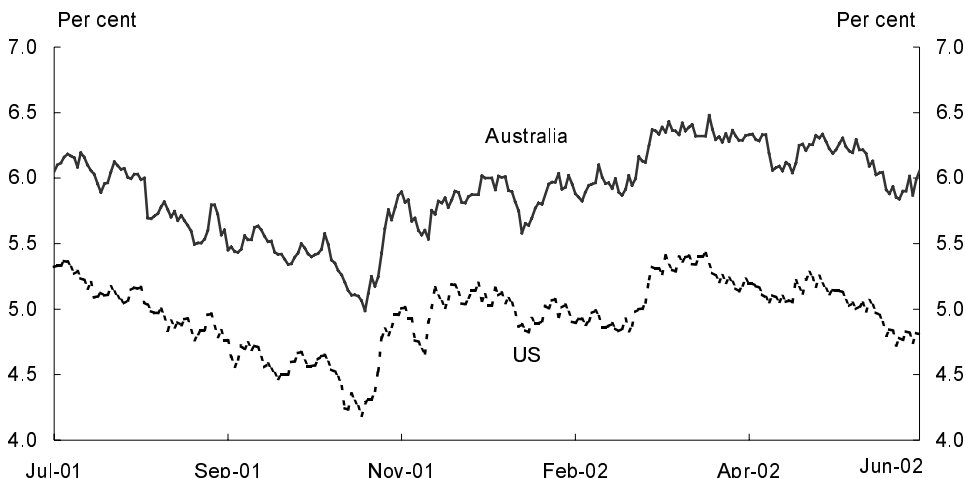
*Bond yields fell significantly following the September 11 terrorist attacks in the United States.*

Australian and US 10 year bond yields moved broadly in line with each other over the course of 2001-02. Australian yields fell from above 6 per cent at the start of the period to a low of just under 5 per cent in early November, reflecting concerns about the global economic slowdown and the aftermath of the September 11 terrorist attacks in the US. Yields then rose sharply, to 5.9 per cent in late November, as it became increasingly likely that Australia had emerged largely unscathed from the global economic slowdown. During the first half of 2002 yields fluctuated between 5.5 per cent and 6.5 per cent, ending the period at around 6 per cent. This fluctuation largely reflected uncertainty over the global economic recovery, concerns over the possibility of further terrorist attacks and volatility on global equity markets.

*The spread between Australian and US bond yields rose during the first half of 2002.*

The spread between Australian and US 10 year bond yields remained steady over the second half of 2001, averaging around 80 basis points. In the first half of 2002, the yield spread increased to around 110 basis points in February, and then remained reasonably steady, fluctuating within a small band. The widening in the spread in 2002 partly reflected the strength and prospects of the Australian economy relative to the US.

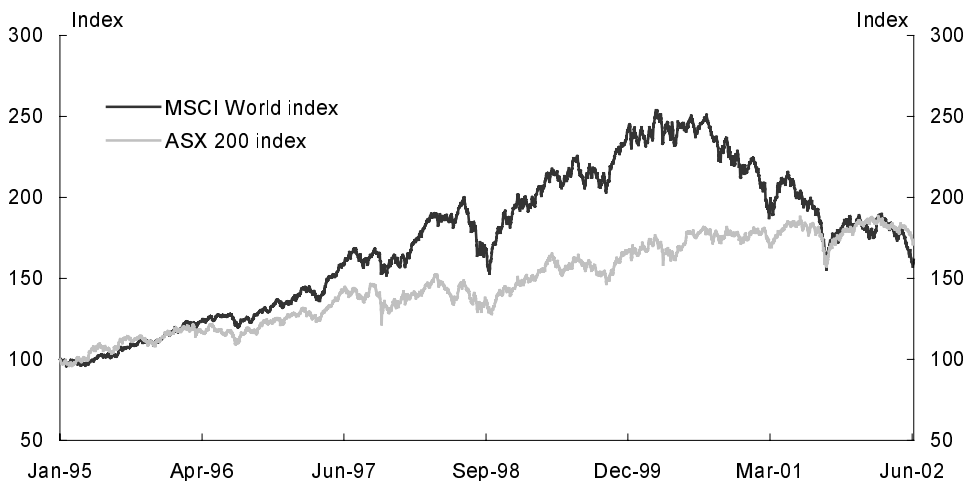
**Chart 11: 10 year bond yields — Australia and the US, 2001-02**



Source: Reuters.

Australian equity prices, as measured by the ASX200 index, fell by around 6.5 per cent during the course of 2001-02, compared with much larger falls of around 18 per cent in the US Wilshire 5000 index, and around a 32 per cent decline in Japan's Nikkei index. This continued the trend evident over recent years where Australian share prices have been more stable than in many overseas markets.

**Chart 12: Movements in major stock indices 2000-01**



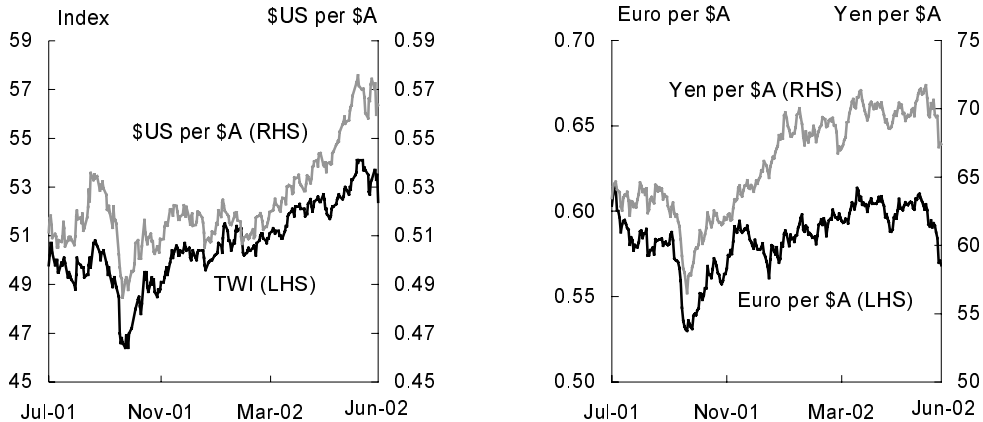
Source: Reuters.

## Exchange rates

*The \$A appreciated in 2001-02.*

The \$A appreciated by about 10 per cent against the \$US and about 5 per cent in trade weighted terms over the course of 2001-02 (Chart 13). The currency also rose against the yen, but depreciated against the euro.

**Chart 13: The Australian Dollar — 2001-02**



Source: Reuters.

Source: Reuters.

Following the September 11 attacks on the US, the exchange rate fell against the major currencies. In the first half of 2002, the currency appreciated strongly as a result of improving prospects for a rebound in international growth. The broad weakness in the US currency supported the \$A.

*The \$A continued to support net exports.*

Despite the increase in the exchange rate over 2001-02, the currency was well below its 1990s average and remained supportive of net exports.

## Concluding comments

*The economy was remarkably resilient in 2001-02,*

The Australian economy proved to be remarkably resilient in 2001-02 in the midst of an international slowdown. Strong domestic demand throughout the year more than offset declining net exports associated with the global economic weakness.

*supported by the medium term macroeconomic policy framework,*

The Government's medium-term fiscal and monetary policy frameworks supported the economy. Interest rates have been able to be maintained at historically low levels, supportive of both consumption and investment.

*a supportive exchange rate,*

The floating exchange rate also helped cushion Australia from the recent global volatility. The supportive level of the dollar acted to increase the competitiveness of both export and import-competing industries.

*rising and more stable terms of trade.*

Rising and more stable terms of trade, reflecting in part import price falls, raised real incomes, contributed to macroeconomic stability and reduced inflationary pressures.

*An absence of imbalances*

The Australian economy also benefited from an absence of significant imbalances, like those present in the US linked to the investment boom in ICT capacity.

*Reaping the benefits from a long-standing comprehensive program of microeconomic reform.*

Finally, the enhanced flexibility and robustness of the economy resulting from the comprehensive program of microeconomic reform undertaken in Australia since the mid-80s also appears to be an important factor behind the economic resilience experienced in the past year.

# Sustainable development — to what end?

*The recent World Summit on Sustainable Development once again has focused attention on the relationship between economic development and the state of the environment. Sustainable development remains a nebulous concept. Problems with its implementation and the trade-offs that arise often highlight differences in individual, national and international views of wellbeing.*

## Introduction

Sustainable development remains a contentious issue ten years after the Rio Earth Summit in 1992. This arises partly because, beyond the basic idea, no common understanding exists of what sustainable development entails in practice, how it should be measured and how to develop policies consistent with the concept. Ideas differ about how best to promote human wellbeing as it applies to the current generation but also in terms of future generations' needs and preferences. In addition, no common understanding exists on how to balance economic, environmental and social considerations in a manner consistent with the concept.

The absence of a clear conceptual underpinning for sustainable development hampers implementation of the idea, as different stakeholders, at times, have formulated their own interpretations. From this point of view, policies that seek to balance competing uses of our resources may leave some unsatisfied.

This article discusses the evolution of the sustainable development debate, and the problems that arise when governments seek to operationalise the concept through policy. The latter issue was highlighted in September at the World Summit on Sustainable Development, in Johannesburg, South Africa. Negotiations during and leading up to the Summit were difficult and protracted, with significant disagreement on issues such as trade and finance, financing for development, renewable energy and climate change. The message that emerges is that in promoting sustainable development, we often are confronted with trade-offs between economic, environmental and social objectives, as well as the different preferences at the individual, national and international level.

## The concept of sustainable development

Even though UN members at the Earth Summit in Rio in 1992 accepted the concept of sustainable development, in practice, we are still struggling to reach a common understanding of what it means. Whilst the basic premise that development should be sustainable is broadly accepted, the concept continues to evolve and its measurement remains difficult. Governments tend to adopt broad definitions that rely on general notions of wellbeing. Consequently, individuals, communities, interest groups and governments interpret the concept differently, in ways that accord with their framework of values.

### Evolution of the concept

The Brundtland Report (World Commission on Environment and Development 1987) established a conceptual basis for sustainable development and produced what has become the most widely recognised definition of sustainable development as

‘development that meets the needs of the present without compromising the ability of future generations to meet their own needs.’

This definition arose as a political construct during a time when there were increasing concerns that certain patterns of economic growth could adversely affect both ecosystems and the social fabric of society. Disquiet mounted, at least in the minds of some, over the sustainable extraction of what appeared to be a diminishing natural resource base. Nonetheless, economic growth can improve dramatically the wellbeing of those less well off. Hence, the concept aims to incorporate the need to simultaneously address poverty (through development) and environmental degradation, while ensuring equity within and between generations.

Contemporary definitions refer less to the *needs* of current and future generations, but rather, incorporate notions of *wellbeing*. Nobel Laureate Robert Solow (1992) defines a sustainable path as

‘one that allows every future generation the option of being as well off as its predecessors.’

This recognises that a minimalist notion of sustainable development, one that is based on needs, is inadequate, particularly for developed countries where society’s basic human needs such as food and shelter largely have been met. Communities in these countries are looking beyond their basic needs to



broader aspirations involving larger consumption opportunities, both in material consumption and services derived from ecosystems, such as eco-tourism. As countries continue to develop, their views will change on what development is sustainable. In other words, the target may move.

## **The notion of wellbeing**

Grounding sustainable development on the notion of wellbeing may provide a more inclusive definition. However, wellbeing is ill defined. Firstly, whilst notions of wellbeing are readily applied to measures of individual welfare, methodological problems arise when we aggregate wellbeing across individuals, communities and countries. Wellbeing operates not just at the individual, but also at the regional and national level. For some, wellbeing may be reflected primarily through choice of consumption possibilities. For instance, consumption of material goods may comprise a significant component of what constitutes wellbeing. For others, wellbeing primarily may be affected by the scale and composition of wilderness areas. Across communities, the distribution of these consumption possibilities may matter. And, at the national level, the quantity of consumption possibilities may matter more.

Secondly, wellbeing also operates at the inter-generational level as the transfer of assets through inheritance reflects. For instance, much has been made of the potential transfer between generations as the baby-boomer generation approaches retirement. At the individual level, parents may be able to gauge, at least partly, their children's preferences in relation to their inheritance. Yet this is unlikely to be possible at both the national level and in terms of future generations.

## **The relative importance of economic, environmental and social objectives**

The lack of common understanding of what sustainable development means also is due to the lack of guidance on what weighting should be attached to the economic, environmental, and social dimensions encompassed by the concept. Economic growth, a clean environment and sound social policy can be mutually supportive goals. They all contribute to improving the wellbeing of people, both now and in the future. However, these three dimensions, commonly referred to as the 'three pillars', each correspond to a domain that has its own distinct driving force and objectives (Box 1). This allows stakeholders to pursue a particular objective (be it economic, environmental or

social) that accords with their interpretation of what sustainable development should achieve.

### **Box 1: The three pillars of sustainable development**

The economic dimension is geared towards improving the overall welfare of society by increasing the stock of human-made and knowledge capital. It does this primarily through attaining the highest achievable income and consumption possibilities. It is concerned with the optimal allocation of resources to meet the preferences of both current and future generations.

The environmental dimension focuses on protecting the integrity of ecological systems (natural capital stock) and ensuring that economic activity operates within ecological limits to prevent irreversible effects. This is achieved through satisfying the minimum conditions of ecosystem stability and resilience through time (Constanza et al. 1991; Common and Perrings 1992; Arrow et al. 1995).

The social dimension seeks to build the social capital necessary to improve equity within and across generations, through the development of transparent, democratic institutions built on good governance and participation.

If we accept that these different forms of capital (human-made, natural and social capital) contribute to wellbeing, then an individual's assessment of whether sustainable development is improving will depend, in part, on:

- how they weight each of these forms of capital;
- which components of the capital stock increase or decrease; and
- what the direction and magnitude of that change is.

For instance, low-income households may weight improvements in their education, incomes and access to housing more heavily than do high-income households. Once households achieve a certain level of economic wellbeing, they may attach greater value to environmental resources such as wilderness areas.

These weights also, largely, reflect an ethical judgement on the need to preserve the natural capital stock in all its dimensions. In Australia, the community broadly supports a ban on whaling and the absence of nuclear

power generation. On the other hand, it does not agree on the extent that land management should incorporate environmental objectives such as greenhouse abatement, salinity reduction and maintenance of biodiversity. Consequently, from a community perspective, landholders may undertake too little environmental conservation or too much environmental degradation.

## **Assessing the overall state of the environment**

Difficulties in measuring the natural capital stock also contribute to a lack of common understanding on whether environmental goals are improving. Due to a number of conceptual difficulties, the Australian Bureau of Statistics only estimates environmental assets that fall within a particular asset boundary in the National Accounts. For an asset to fall within the boundary, it must have an identifiable owner, and that owner must be able to derive an economic benefit from the use of the asset, and data must be available. Environmental assets such as the atmosphere and terrestrial ecosystems are outside the boundary, as they do not have an identifiable owner who can derive an economic benefit from them. Water and fish stocks are not included due to lack of available data.

Furthermore, we must remember that the natural capital stock comprises a mix of environmental assets and attributes, such as biodiversity, air quality, vegetative cover, and areas of natural and cultural significance. As countries develop, some attributes may improve while others may be degraded further. The *Australia State of the Environment* reports provide the most comprehensive assessment of Australia's ecosystems. The most recent report notes improvements in vegetative cover and urban air quality, but key threats to biodiversity and our marine environment remain (Australian State of the Environment Committee 2001). Importantly, depictions that all aspects of the environment as a whole are being degraded are simplistic, because some environmental attributes, including important ones such as urban air quality, have improved.

Consequently, assessing the overall state of the environment is difficult, as, unlike human-made capital, no numeraire exists that allows comparison of environmental assets. Consider, for example, the difficulty in aggregating individual environmental areas such as pristine wilderness areas, where some are improving and others are declining, as noted in the recent *Australia State of the Environment 2001* report. Nor are there obvious weights to attach to different environmental assets. How do you compare a lake with a forest without a common measure of value?

## **Substitutability between different forms of capital**

To assess whether things are getting better or worse overall, when some dimensions are improving and some are worsening, economists tend to think about how substitutable different dimensions are for each other. How legitimate this approach is for natural capital is quite controversial. Notably, communities, interest groups and governments will have different views about the extent to which different forms of capital are substitutable. This gives rise to two competing views characterised as the 'weak' and 'strong' forms of sustainability (Box 2).

### **Box 2: Weak and strong forms of sustainability**

Weak sustainability holds that all forms of capital are complete substitutes in production and consumption. Trade-offs are allowed between the different forms of capital, so long as the total capital stock is not declining (Solow 1986; Hartwick 1977). This allows certain irreversible impacts that may improve wellbeing overall, but are not necessarily ecologically sustainable. An example is the extraction of mineral resources, such as iron ore, gas and oil. By their very nature, such resources are limited, so we cannot extract them from the Earth's mantle indefinitely. Nonetheless, we continue to extract such resources because they confer considerable benefits on individuals, communities and society.

The weak form of sustainable development is challenged on two fronts. Firstly, it may not always be technically possible to substitute between different forms of capital. At a practical level, some environmental assets, such as the biosphere, are irreplaceable and cannot be fully substituted by other forms of capital. Consequently, current and future generations will have lower levels of wellbeing. Secondly, for some, trade-offs between the different forms of capital are ethically indefensible (Sharp 2001).

*Continued ...*

## **Box 2: Weak and strong forms of sustainability (continued)**

Strong sustainability imposes the constraint of a non-declining natural capital stock as a necessary condition for sustaining an economy's productive potential. This views natural capital and human-made capital as complements and only marginally substitutable in production and consumption processes. For instance, natural capital provides the raw materials into production processes and the assimilative capacity services that absorb the waste by-products of production. Strong sustainability acknowledges the limitations imposed by natural thresholds and irreversibility on the trade-offs that different forms of capital can achieve, without threatening the sustainability of individual ecosystems (Pezzey 1992). As we approach threshold decisions, trade-offs become less important whereas moral judgements become more important.

In a general policy context, policy makers need to judge the relative importance of various forms of natural and human-made resources, and aim for a socially optimal rate of use. Consequently, decision-making needs to recognise the complex inter-relationships between economic, environmental and social objectives.

## **Implementing sustainable development**

One consequence of the lack of common understanding of what sustainable development actually means is that implementing the concept is much more difficult than envisioned. In particular, the concept has not been effective in preventing the loss of ecosystem services, such as biodiversity. For instance, the recent *Australia State of the Environment 2001* report points out that 'Australia is far from achieving sustainability, and major problems and impediments remain' (Australian State of the Environment Committee 2001, p. 112). This is partly because the concept polarises much of the debate between those who believe environmental protection is a precondition of social and economic progress, and those who feel economic growth should be given priority over environmental concerns. In turn, a polarised debate may lead to the pursuit of singular policies that may not be consistent with sustainable development. For example, policies to protect the environment that do not adequately consider economic and social consequences would violate sustainable development principles, as would poorly managed economic development that leads to excessive environmental degradation.

## **A polarised debate**

The absence of a clear conceptual underpinning of sustainable development has meant that different stakeholders either formulate their own interpretations of the concept, or establish a definition that more closely reflects their value judgements. This often has meant that sustainability has been taken to mean outcomes that are 'environmentally desirable' (Pezzey and Toman 2002). For instance, criticism has been directed at the strong form of sustainability because it does not provide enough flexibility to allow for trade-offs between competing economic, environmental and social goals. It is also criticised because it allows certain groups to impose their sets of values on the rest of society, where their preference or value of an environmental amenity is relatively higher than the rest of society's. Pursuit of an environmental interpretation of sustainable development thus may be viewed as an enhanced form of environmental protection (Reid 1995).

## **The pursuit of singular policies**

Narrowly promoting singular policies on the basis of their respective economic, environmental or social contribution to wellbeing may not be consistent with sustainable development. What is less appreciated is that policies pursued under the sustainable development banner may involve implicit trade-offs between different environmental pressures. The natural capital stock comprises a disparate mix of environmental assets and attributes that are not easily compared. The pursuit of environmental objectives may adversely affect the scale and composition of these assets. For instance, the pursuit of environmental objectives, such as lower greenhouse emissions, through policies that promote renewable energy may impact adversely on the availability and quality of wilderness areas (for example, windfarms on pristine coastlines). Whilst this is the subject of the accompanying article on renewable energy, two key insights are offered here. First, singular environmental policies that seek to address a particular environmental issue may result in the substitution of one form of environmental problem with another. Second, such policies also may mask implicit value judgements about the relative importance between competing environmental outcomes.

## **Recognising values and priorities**

Few could, in principle, have anything against the sustainable use of our environment, and the need to look after it into the future. The problem of deciding which policy objectives to pursue remains at the heart of sustainable development. In choosing a particular sustainable development path, policy makers will need to consider the broader community interests, the human derived values from ecosystem services and prioritise which environmental problems they should deal with first. Ultimately this comes down to the question of which values we should uphold. In this regard, disentangling the various interpretations of the concept and clearly spelling out the trade-offs will be important in pursuing development that can be universally seen to maximise the wellbeing of both current and future generations.

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# Renewable energy — a clean alternative?

*Renewable energy could have a significant role in our future energy supply, but policy makers should be aware that renewables may not be the 'clean and green' panacea. In the absence of certainty regarding the costs and benefits of renewable energy use, policy makers should ensure their policies are appropriately focussed on promoting cleaner energy within a flexible framework.*

## Introduction

Renewable Energy has received considerable attention in recent years, culminating in September of this year at the World Summit on Sustainable Development (WSSD) in Johannesburg. Here, the European Union proposed that countries set a target to increase the renewable component of energy production to 15 per cent by 2015. This was a highly contentious issue at the Summit. The resulting agreement calls for countries to act 'with a sense of urgency' to substantially increase the global share of renewable energy sources.

Recent advances in renewable energy technologies indicate they have significant potential as a viable source of future energy requirements. However, policy makers should exercise caution when promoting renewable energy. Common justifications for renewable energy are not clear cut. Contrary to commonly-held beliefs: the world is unlikely to run out of fossil fuels even over a time horizon of several centuries; its is not clear that promotion of renewables should be pursued to replace energy imports; current renewable energy technology entails environmental costs; and renewable energy may not be the most cost-effective way to reduce air pollution and greenhouse gas emissions.

In light of the uncertainty surrounding the costs and benefits of renewable energy production and use, broad-based, non-prescriptive market instruments are likely to be the best way to simultaneously stimulate the development of cleaner energy technologies and achieve good environmental and economic outcomes generally.

## **The case for renewable energy**

Renewable energy is increasingly recommended as a solution to air pollution problems such as particulate emissions and smog, rising greenhouse gas emissions and diminishing fossil fuel energy sources.

A big selling point for renewable energy is that it is, as its name suggests, renewable. It is energy derived from sources such as agricultural by-products, the sun and wind. An increase in the use of renewable energy implies less use of non-renewable energy sources, such as coal and oil. This then would reduce the rate at which exhaustible resources are depleted. Another reason renewable energy is promoted is that it could reduce Australia's reliance on imported energy.

In addition, renewable energy sources can displace carbon intensive energy sources and those that contribute to other forms of air pollution. Therefore, the increased use of renewable energy may reduce emissions in the atmosphere. This could therefore lead to a reduction in air pollution and greenhouse gases and an improvement in the environment.

In the following sections we examine the arguments in favour of renewable energy in more detail.

## **Outlook on fossil fuel availability in the medium term**

Technological advances in extraction, new discoveries and improved efficiencies in energy generators suggest that we are not running out of fossil fuels in the medium term. If anything, they are becoming increasingly plentiful.

The World Energy Assessment estimates humans have used less than 6 per cent of the world's fossil fuel energy resources since the onset of industrialisation (World Energy Assessment, 2000). If these resources begin to become scarce, their prices should rise. This will cause consumption to fall and signal to producers that consumers need alternative energy sources. This should stimulate investment in alternative energy sources, leading to invention, innovation and dispersion of alternative sources of energy.

Therefore, promoting renewable energy on the grounds that it would reduce the rate at which fossil fuels are depleted seems to be ill founded. However, most fossil fuels do impose external costs on the community and future

generations by increasing levels of greenhouse gases and air pollution generally and this is a serious problem.

## **Reducing reliance on energy imports**

Australia is a net exporter of energy. However, it does import some forms of energy, such as crude oil. It does this because the technical characteristics of Australian feedstocks make them unsuitable for some applications. In other words, Australia imports some forms of energy because it is cheaper to do so than to produce domestic alternatives. These price savings reduce household and business costs. This allows people to enjoy a larger range of other goods and services, and allows businesses to be more competitive.

Increasing the use of renewable energy in order to reduce Australian energy imports would only be of a net benefit to the Australian economy if domestic renewable energy could be produced at a lower or comparable cost to imported energy.

If domestic renewable energy (or other domestic energy sources) costs more to produce than imported energy, then policies to promote its use would impact on the competitiveness of Australian business and reduce real household disposable income. Such an outcome would be analogous to those arising in countries that have pursued discredited import replacement strategies.

## **Renewable energy is not always environmentally benign**

While current renewable energy sources offer benefits to some aspects of the environment, they may damage others. Even though renewable energy is renewable, it does not necessarily mean it is environmentally benign. Like fossil fuels, renewable energy can also impose external costs on the community. For example, biomass, wind and solar renewable energy sources are not without environmental costs.

Not all renewable fuels provide more greenhouse gas benefits than petrol/diesel (CSIRO 2001).<sup>1</sup> Renewable fuels can also have mixed effects on

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1 For example, the CSIRO found that a 10 per cent ethanol petrol blend was found to be greenhouse neutral.

air quality.<sup>2</sup> The CSIRO found that the greenhouse and air quality benefits of renewable fuels are highly dependant on certain variable factors, such as production technology, the feedstock or raw material used to produce the fuel and whether this feedstock is a by-product of an agricultural process or grown specifically for fuel stock.

In addition, promotion of these renewable fuels may have indirect environmental costs. Development of renewable fuels from biomass may stimulate additional production of biomass from sugar cane, wheat or canola oil. This expansion of farming activities, however, may put pressure on scarce water resources, adversely affect ecologically sensitive areas and have adverse economic impacts elsewhere. For example, it is considered that agricultural activities in the adjacent Great Barrier Reef catchment are affecting the reef. To the extent that increased agricultural production places greater pressure on the reef, it may also have negative economic impacts, perhaps affecting the economic sustainability of tourism industries that operate within the reef, as they depend on a relatively pollutant free ecosystem.

While wind power is a low carbon intensive form of energy,<sup>3</sup> the large-scale use of wind turbines may adversely affect landscapes, migrating bird species, and pristine wilderness areas. Additionally, it may result in noise and aesthetic pollution, particularly when it is situated near residences (Bradley 1999). Commercial solar power operations would require considerable tracts of land. For example, a 1000 megawatt<sup>4</sup> average solar electric system placed at the equator would require 20,000 hectares of land (70 square miles) or about 100 times more than a natural gas plant (Richter, 2002).

In essence, policy makers need to be aware that, while renewable energy technologies may have an important role to play in meeting our future energy requirements, they are not without their own environmental problems. These need to be taken into account when examining the costs and benefits of renewable energy projects.

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2 For example, biodiesel is comparable to diesel in its embodied emissions, however CSIRO found that biodiesel has higher NOx emissions. (CSIRO 2001)

3 Greenhouse gas emissions are still emitted in the manufacture and installation of wind turbines.

4 The Loy Yang B Power Station in Victoria's LaTrobe Valley has 1000 megawatt capacity, this provides around 16 per cent of Victoria's electricity needs.

## **There are other ways to achieve environmental outcomes**

To minimise environmental damage associated with energy use, policy makers can look at new methods and technology which minimise the impact on the environment. However, they should also aim to reduce the environmental impacts of current technology. Often they need to combine both approaches.

For example, there are several ways to reduce greenhouse gas emissions, including efficiency gains in carbon fuel use, carbon sequestration,<sup>5</sup> fuel switching and geosequestration.<sup>6</sup> Geosequestration potentially offers scope for very large scale emissions abatement. In addition, production methods can be improved to minimise any potential damage from resource extraction technologies.

Some argue that the most cost-effective methods of reducing greenhouse emissions may lie in improving the efficiency of current energy sources through improving the generation, delivery and storage of coal-fired electricity. Alternative clean technologies such as hydrogen based technologies, also could be derived from fossil fuels, and may prove to be the most viable method of reducing greenhouse gas emissions in the future (Mitchell 2001).

In any case, the most appropriate path forward for society is not clear, and policy makers should be aware of the risks of prescriptive policy instruments aimed at 'picking winners'.

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5 Carbon sequestration is a process where carbon dioxide is removed from the atmosphere and retained in a carbon 'sink' (for example, trees).

6 Geosequestration is a process where carbon dioxide is pumped and stored deep underground.

## The least cost approach to environmental policy

In this situation of uncertainty, it is likely that the best approach to addressing pollution is through the use of broad-based market measures. Market-based measures seek to influence the price signals individuals face, so individuals take into account environmental effects when making production and consumption decisions.

A major cause of undesirable environmental degradation is the existence of external costs and benefits associated with production and consumption decisions. Because these decisions are made in a framework that does not reflect the full costs and benefits of actions, it can mean producers and consumers undertake too little environmental conservation or too much environmental degradation. However, when resource users face the *full* costs and benefits of their actions, they take into account the costs and benefits born by *others*, in addition to the costs and benefits they accept *themselves*.

Under these circumstances, people are more likely to behave in ways that are consistent with society's objectives. Therefore, policies should aim to provide incentives that reflect better the costs of environmental degradation. Strategies to achieve this include changing prices through imposing emission charges or tradeable permit schemes, regulating to prevent damage, applying liability to parties whose actions may affect others, and improving the clarity and enforcement of property rights.

Market instruments are non-prescriptive, so they give individuals the flexibility to choose the amount and means of reducing environmental degradation, depending on their own circumstances. Those who can abate emissions only at a very high cost can opt to pay an established market price which represents a value of the environmental damage instead of reducing emissions, while those who can abate emissions at a relatively low cost can do so.

A further advantage of market instruments is that they provide a continuing incentive to find innovative ways to further reduce emissions, such as the development of more advanced clean energy sources. As these instruments do not prescribe certain technologies, they are less likely to lock communities into costly emission reduction strategies. This has the effect of inducing a least-cost path to reducing emissions.

The New South Wales load-based licensing scheme (NSW EPA, 1999) is an example of a market mechanism. Under the system polluting industries are charged a variable licensing fee, which is determined by the amount of

pollution, how harmful it is and where the pollution is released. Pollution fees are levied on the annual total pollutant discharged by a firm, which provides ongoing incentives for innovation and cost-effective pollution abatement. Another example of a market mechanism is the sulphur dioxide emissions trading market in the United States. The sulphur market has resulted in estimated cost savings of up to \$1 billion US per year (Stavins, 1998) and significant investment in new technologies (Schmalensee, *et al*, 1998), when compared to prescriptive regulatory alternatives that were considered by Congress in prior years.

## **Conclusion**

Recent advances in renewable energy technologies indicate they may have a significant role as a future source of energy supply. However, there are several misconceptions surrounding current renewable energy technologies, in particular that fossil fuels are running out, that increased renewable energy use will reduce Australia's reliance on imported energy and that renewable energy, by the simple fact of being renewable, is always more environmentally friendly.

Deeper exploration of these issues reveals much uncertainty of future conditions. Faced with such uncertainty, broad based market mechanisms are likely to provide the best means to achieve desired environmental outcomes and to stimulate further development of clean technologies. There is a danger that prescriptive approaches could lock the economy into a high cost emissions reduction path.

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# Risks to the global economic outlook — Implications for the Asia-Pacific region

*Over the last few months, risks to the global economic outlook have heightened, raising doubts about the sustainability and strength of the global recovery. These risks include higher oil prices, the continued sharp fall in equity prices and widening current account imbalances. This article assesses the potential impact on the Asia-Pacific region, if the risks are realised, using the Asia-Pacific G-cubed model.<sup>1</sup>*

## Introduction

The world economy grew by only 2.2 per cent in 2001, the slowest rate of growth in almost a decade. The global economy has now entered a period of recovery, with most economies recording a significantly improved real GDP growth performance in the first half of 2002.

Over the last few months, however, risks to the international economic outlook have heightened, raising doubts about the sustainability and strength of the recovery. Of particular concern are: a sustained increase in oil prices; continued sharp falls in equity prices; and widening current account imbalances.

Significantly higher oil prices, if maintained for a considerable period of time (around a year or more), would increase global inflation and depress real global output. The increasing tension in the Middle East has already caused oil prices to rise. The West Texas Intermediate Oil price has risen from around US\$19 per barrel in January 2002 to around US\$30 per barrel in September 2002. During the Gulf War, oil prices rose from US\$15 per barrel in June 1990 to US\$40 per barrel in October 1990, but settled back relatively quickly to US\$19 per barrel by the end of the war in February 1991 (Chart 1). The impact of higher oil prices on the global economy will depend not only on the price of oil but for how long the higher price is maintained.

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<sup>1</sup> The Asia-Pacific G-cubed model was developed by McKibbin and Wilcoxon — see Box 1 for more detail on the model. Full specifications of the model can be found at [www.gcubed.com](http://www.gcubed.com).

**Chart 1: West Texas intermediate crude oil**



Source: Datastream.

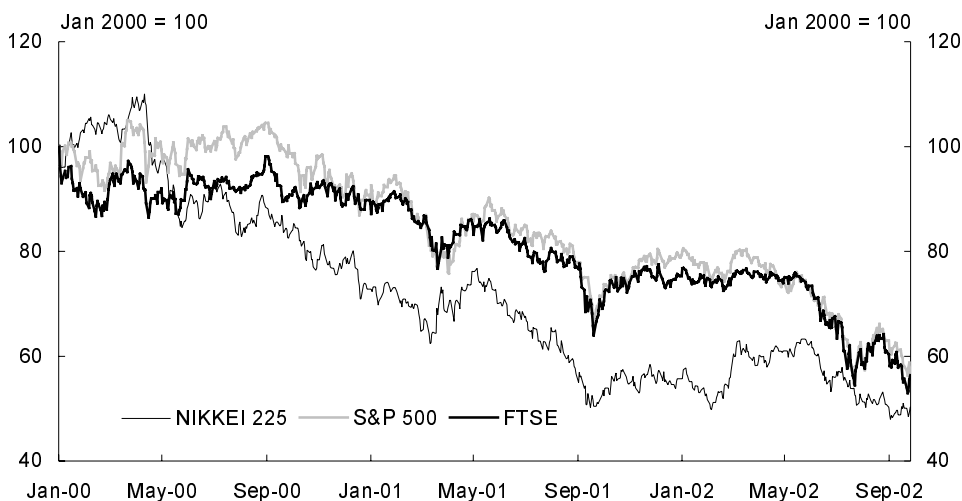
Previous studies by the IMF have investigated the impact of a 20 per cent rise in oil prices, using the IMF Multimod model.<sup>2</sup> These studies showed that a 20 per cent rise in oil prices would be accompanied by a spike in global inflation and a fall in real global GDP one year after the shock of 0.3 per cent relative to baseline. However, the IMF study noted that the results possibly underestimated the global impact, as they do not incorporate the impact of higher prices on other energy products.

Falling equity prices represent a risk to the global economic outlook as they reduce wealth and confidence and impact negatively on consumption and investment expenditures. Equity markets weakened substantially over the September quarter 2002. Weak profit reports combined with uncertainties surrounding a potential war with Iraq led to falls in the major indices. In the US, the S&P 500 has declined by almost 50 per cent from its peak in March 2000 to the end of September 2002 (Chart 2).

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<sup>2</sup> IMF, 'The Impact of Higher Oil Prices on the Global Economy', December 2000 and World Economic Outlook, April and September 2002.

**Chart 2: Equity markets in the US, Japan and UK**



Source: Datastream.

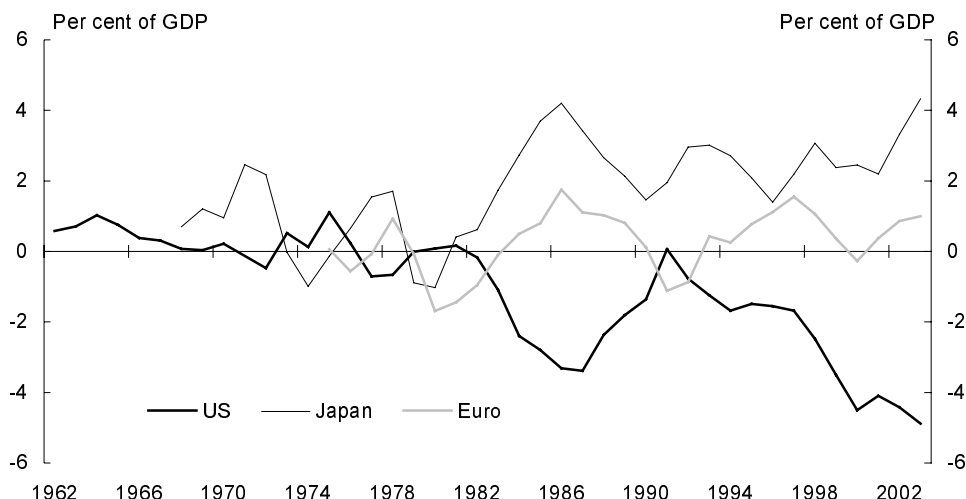
The sustained fall in global equity prices began with the bursting of the Information and Communications Technology (ICT) bubble and has continued with the increasingly uncertain world economic outlook. The situation has been exacerbated in the US and Europe because of a series of accounting scandals and corporate collapses, particularly in the ICT sector. Major US companies, notably Enron and Worldcom, used questionable accounting practices that have led to a decline in confidence in US corporate reporting, and the biggest corporate bankruptcies in US history.

The current account deficit (CAD) in the US widened to a record US\$130 billion (5.0 percent of GDP) for the June quarter 2002. This deficit is being counterbalanced by surpluses in many countries and regions, including Japan, the Euro area and emerging East Asia (Chart 3). Very large US CADs in the past have not usually been maintained for very long, as they can only be sustained while the rest of the world (ROW) is willing to fund the CAD through investment in the US.<sup>3</sup> Concerns have been raised about the possibility of a sharp and disorderly adjustment to the size of the US CAD and the potential impact on the US and the ROW.

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3 A recent IMF study (IMF, World Economic Outlook, September 2002) showed that after three years of large current account deficits, the average country experienced an improvement in the current account of 2 percentage points of GDP over the next three years. The adjustment is usually associated with a significant depreciation of the real exchange rate and a fall in output growth, both beginning a year or more in advance of the current account adjustment.

**Chart 3: Current account balances**



Source: OECD Economic Outlook Database (April 2002).  
OECD forecasts for 2002.

This article explores the potential impact on the Asia-Pacific region if these risks were realised.<sup>4</sup> The risks and their impacts are quantified through various simulations conducted using the APG-cubed model, a multi-country model developed by McKibbin and Wilcoxon (see Box 1 for a discussion of the main features of the model). While these risks are simulated independently of each other, it is possible that a combination of these risks could arise together. Under these circumstances, the potential impact would be more substantial than what the independent simulations predict. On the other hand, while the model incorporates some policy reactions to shocks, the simulations do not include the impacts of actual policy actions already in train or that could be undertaken in addition to those embedded in the model. The actual impacts could therefore be less than the simulations predict.

It should be stressed that the results generated by the Asia-Pacific G-cubed model should not be interpreted as a definitive prediction of the outcome following a shock to the system. This model, as with all models, is a simplification of a very complex set of relationships. It provides a particular theoretical path of adjustment that reflects the model structure. Models that are structured differently will give different results. The model results therefore only provide a broad indicative guide to possible outcomes.

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4 All references to East Asia excluding Japan and China are calculated using GDP weights based on purchasing power parity.

## **Box 1: The Asia-Pacific G-cubed model**

The Asia-Pacific-G-cubed multi-country model was developed by McKibbin and Wilcoxon. It is a sophisticated general equilibrium macroeconomic model that recognises the important trade and financial linkages that exist between countries. The model has a detailed country coverage (including 6 sectors in each of 18 economies) and links between countries through goods and asset markets. Each economy consists of several economic agents, covering households, the government, the financial sector and 6 production sectors. The behaviour of each type of agent is modelled and includes intertemporal budget constraints and forward-looking behaviour in investment and consumption. Agents are assumed to optimise their behaviour; for example, firms choose inputs and their level of investment in order to maximise their stock market value.

Flows of financial assets between countries (including investment) are driven by expected rates of return. Existing differences between rates of return in different countries are generated by various restrictions that generate a risk premium on country denominated assets. Shocks in the model induce changes in expected rates of return in different countries, and these changes generate flows of financial capital reacting to return differentials at the margin. Flows of financial assets are also linked to the real sector, so a country with a net capital inflow will also have a current account deficit. This is because each financial asset represents a claim over real resources; for example, foreign assets represent a claim over the future exports of the debtor country.

The main features of the model are:

- based on explicit intertemporal optimisation by agents (households and firms) in each economy;
- the behaviour of agents is modified to allow for short-run deviations from optimising behaviour either due to myopia or restrictions of households and firms to borrow at the risk free-rate on government bonds;
- explicit treatment of financial assets, including money;
- short-run nominal wage rigidity which allows for a significant period of unemployment; and
- a distinction between the stickiness of physical capital within sectors and within countries and the flexibility of financial capital which immediately flows to where expected returns are highest.

The model measures the impact of shocks by estimating the movement away from a baseline. This baseline is where the particular economy is estimated to be if the shock had not occurred. For example, the model predicts that a sustained increase in energy prices would reduce real GDP in the US by 2¾ percentage points from the baseline after two years. This does not mean that there would necessarily be a recession in the US, but that the level of real GDP would be 2¾ percentage points below where it would otherwise have been in two years time.

## The scenarios

### Scenario 1 – Sustained increase in energy prices

Scenario 1 simulates a sustained increase in energy prices due largely to a sustained rise in oil prices. This simulation overcomes the limitation of the IMF study in that it incorporates the effects of contemporaneous shifts in the prices of other oil-related energy products.

The simulation is conducted by applying a supply shock in the energy sector for 3 years, causing the price of energy to rise by around 30 per cent. This energy price shock aims to capture the potential effects of the sustained increase in oil prices of around 60 per cent observed from January to September 2002.

Petroleum is estimated to account for over a third of total primary energy consumption. It is assumed that a 60 per cent rise in oil prices would flow through to an increase of around 23 per cent in natural gas prices and around a 3 per cent rise in the price of other energy products.<sup>5</sup>

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5 Energy Price Shock = 0.60 (x) +.60 $\alpha$  (y) +.03 (z) where:

x = 0.37 is the share of oil in total primary energy consumption;

y = 0.25 is the share of natural gas in total primary energy consumption;

z = 0.38 is the share of other energy products in total primary energy consumption; and

$\alpha$  = 0.38 is the regression coefficient of the responsiveness of natural gas prices to oil prices.

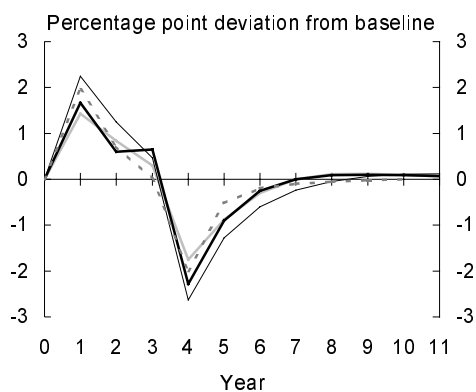
The assumed small price increase in other sources of energy are consistent with IMF findings that price increases in petroleum spill over into the price for natural gas – the source of energy most competitive with petroleum, but not significantly into the market for coal, the other leading source of energy (IMF, 'The Impact of Higher Oil Prices on the Global Economy', December 2000, p 45).

This method of simulating an oil price shock using this model will tend to overestimate the negative impact on global real GDP, as it does not adequately capture the income gains made by energy producing countries.<sup>6</sup>

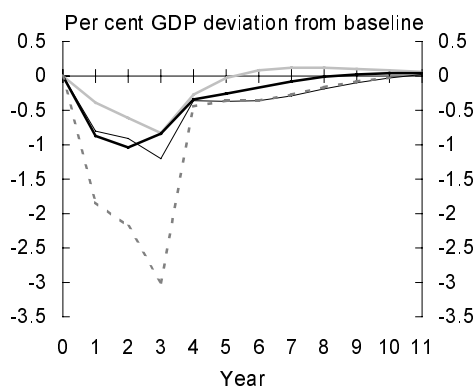
The simulation shows that a sustained negative supply shock in the energy sector that leads to increases in energy prices, would cause a worldwide spike in consumer price inflation and a decline in global real GDP from baseline.

In the model, consumers seek to offset the impact of higher oil prices through higher wages and producers attempt to restore profit margins through increasing prices. These immediate wage/price responses cause a spike in consumer price inflation (Chart 4). As a result, real disposable income falls and so does private consumption (Chart 5).

**Chart 4: CPI Inflation**



**Chart 5: Consumption**



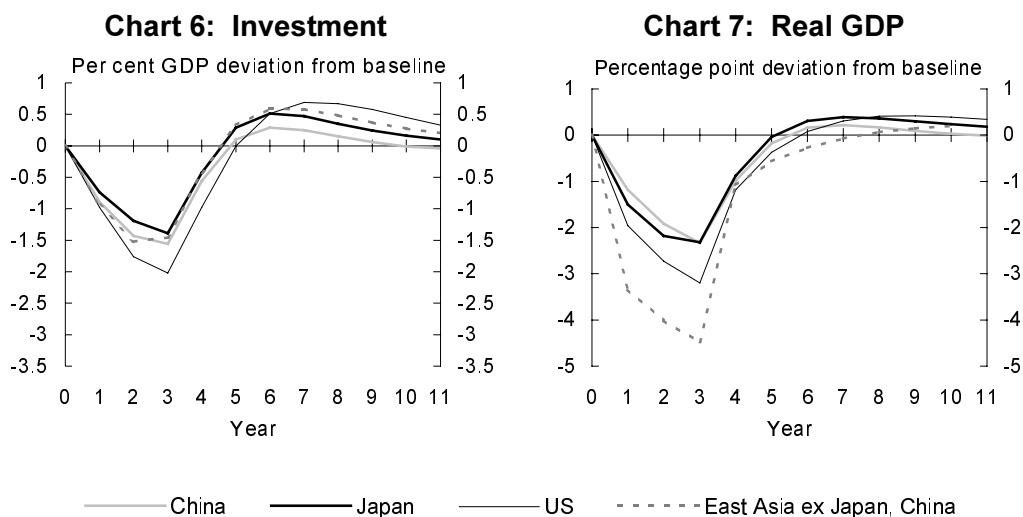
— China    — Japan    — US    - - - - East Asia ex Japan, China

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6 In the model, the energy produced in one country is not highly substitutable for the energy produced in another country. Therefore, a shock to the energy sector in one country alone would not necessarily drive up global energy prices. To get around this problem and achieve an increase in the price of global energy of around 30 per cent in the model, it is necessary to apply a negative shock to the energy sector in each country. This is quite different from the situation where the increase in the price of energy being simulated is solely due to a fall in OPEC's supply of oil.

The negative impact of the energy shock is therefore overestimated, because energy production would not necessarily be reduced in each country in the real world. This overestimation is significant for countries where the energy sector is an important part of the economy.

Monetary authorities in the model are assumed to counter the wage/price spiral by tightening monetary policy, causing short-term interest rates to rise. The increase in the price of energy inputs and higher interest rates lead to increases in the cost of producing goods and services in the economy, putting pressure on profit margins. Lower expected future profits result in declining equity prices and investment. The wealth effect of the decline in the value of equities has a further negative impact on consumption. The reduction in both consumption and investment (Chart 6) leads to overall declines in real GDP from baseline (Chart 7).



In contrast to previous studies that only investigated the impact of oil prices, the current simulation indicates that the impact on the global economy would be significantly higher if prices of other energy products also rise as the oil price increases.

## Scenario 2 – Sustained fall in global equity prices

Scenario 2 simulates a sustained fall in global equity prices as investors re-assess equity risk premia.<sup>7</sup>

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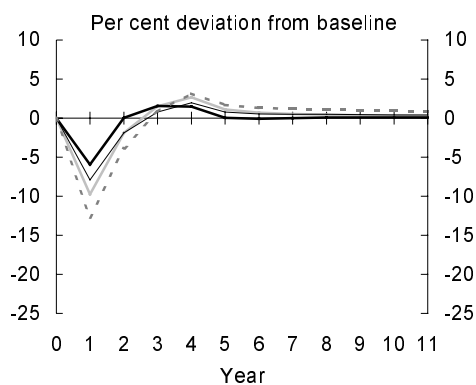
<sup>7</sup> A similar simulation was done by McKibbin & Stoeckel using the MSG3 model with similar results. 'What could be the impact of the Worldcom and other US corporate failures,' EconomicScenarios.com, Issue 3, August 2002.



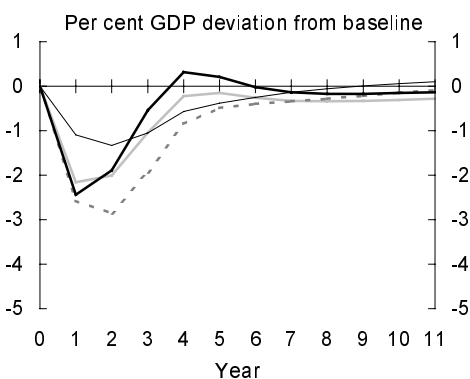
The rise in the equity risk premium is modelled as a 10 percentage point increase in the first year, which implies that equities require a rate of return 10 percentage points higher than baseline over riskless government bonds. It is further assumed that authorities will act to improve corporate governance and reporting requirements, and so the rise in the risk premium will be reduced to 8 percentage points in the second year, 5 percentage points in the third year and then return to baseline.

In the model, the immediate impact of a higher equity risk premium is a sharp drop in equity prices, as investment funds are diverted to other assets such as bonds and real estate. The resulting decline in the Tobin's  $q^8$  ratio (Chart 8) causes investment spending to fall (Chart 9). The Tobin's  $q$  ratio recovers relatively quickly, rising above baseline in the third year as investors become attracted to the market by underpriced shares and the potential for higher future growth.

**Chart 8: Tobin's Q durable manufacturing**



**Chart 9: Investment**



— China — Japan — US - - - - East Asia ex Japan, China

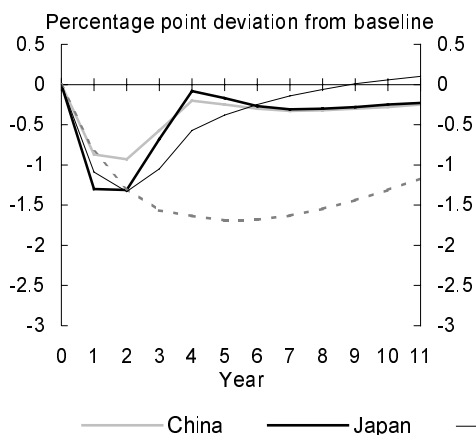
According to the model, consumption rises above baseline for a number of years. This may be explained by the positive wealth effects from increased prices of other assets, particularly real estate, which more than offset the negative wealth effects of lower equity prices. However, consumption eventually falls as household income falls.

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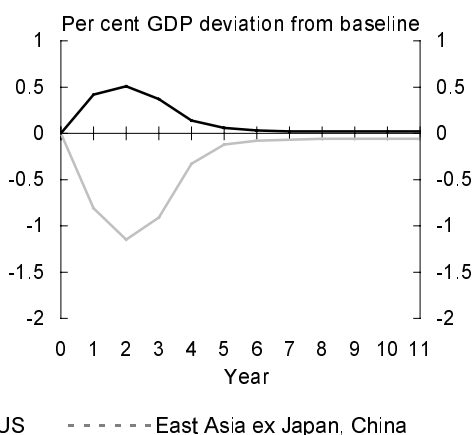
8 Tobin's  $q$  ratio is an estimate of the value the stock market places on a firm's assets relative to the cost of producing those assets. With a high ratio, firms will be encouraged to produce more assets, raising investment. Conversely, when the ratio is low investment will fall.

The sharp falls in investment predicted by the model cause real GDP to fall below baseline and remain there for over 10 years in most economies (Chart 10). The worldwide reduction in real GDP from baseline contracts international trade and reduces demand for exports in all countries, which further reduces real GDP growth. The model also predicts some adjustment to current account imbalances with a reduction in the US current account deficit and a reduction in the current account surplus of Japan (Chart 11).

**Chart 10: Real GDP**



**Chart 11: Current Account Balances**



### Scenario 3 – Sharp adjustment to current account imbalances

This scenario simulates a sharp adjustment to current account imbalances, arising from an assumed very sharp fall in investor confidence in the US. This is followed by large capital outflows from the US which would result in a rapid exchange rate adjustment.

The loss of confidence is simulated as a 5-year reduction in the exchange rate risk premium of the ROW, which increases the attractiveness of investment assets outside of the US. The exchange rate risk premium in the ROW is reduced by 15 per cent in the first 2 years and then by 10 per cent in the remaining 3 years. This size of shock is intended to show the extent of adjustment in exchange rates, investment and consumption required to force the US CAD to adjust by around 2 per cent of real GDP.

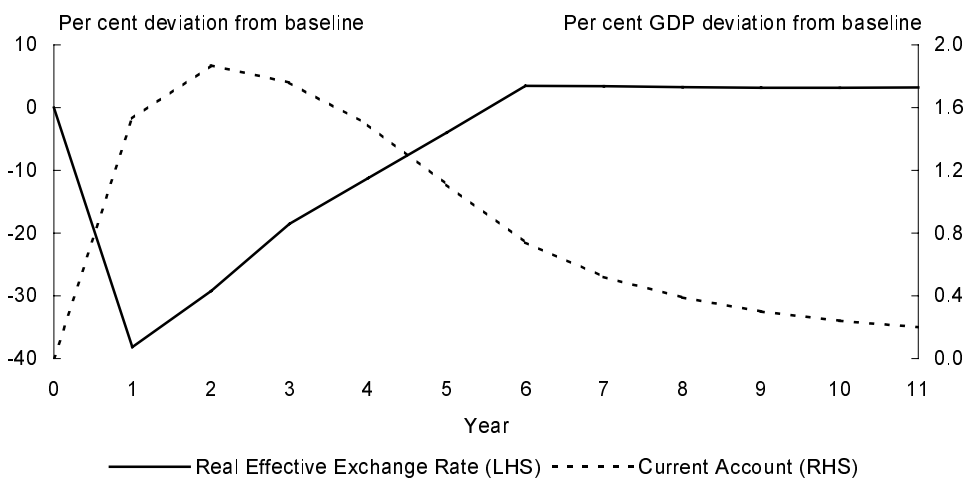
In the model, the shock causes a substantial depreciation of the US exchange rate as capital flows out of the US economy causing investment, real GDP and

private consumption to fall significantly (Chart 12). The real effective exchange rate (REER) in the US falls initially by 38 per cent, tapering off to around 4 per cent at the end of the 5-year shock (Chart 13). A depreciation of this size would not be exceptional when viewed in a historical context. For example, from its peak in 1985 to the 1991 recession, the REER in the US depreciated by around 50 per cent. During this period, the current account balance in the US changed from a deficit of 3.5 per cent of GDP in 1986 to a surplus of 0.8 per cent of GDP in 1991 (Chart 14).

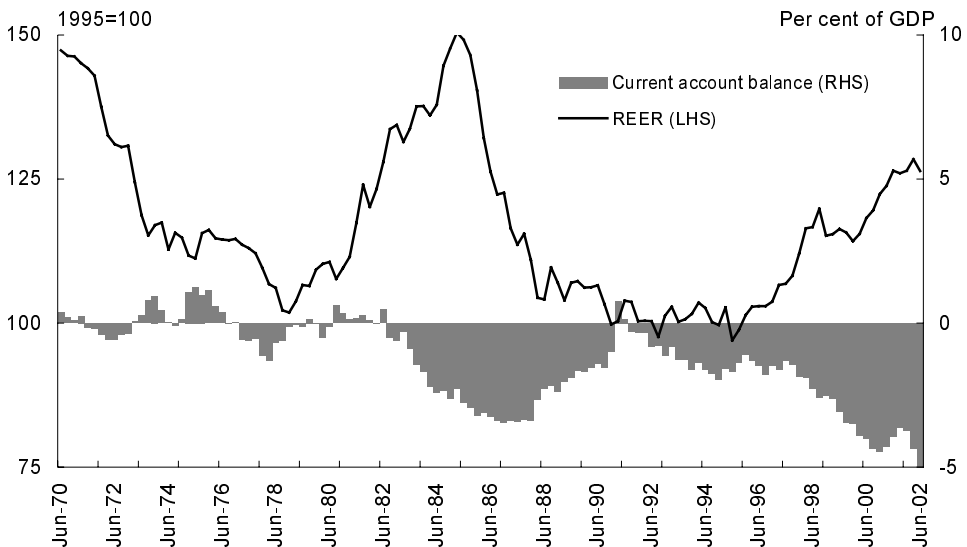
**Chart 12: US Investment, consumption and real GDP**



**Chart 13: US REER and current account balance (simulation)**



**Chart 14: US REER and current account balance**



Source: US, CAD, Treasury estimates from BEA Data; REER OECD Main Economic Indicators Database.

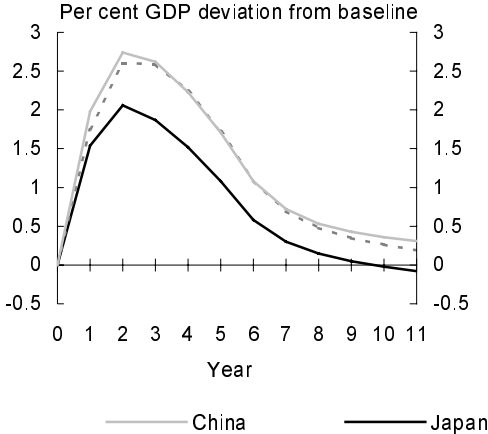
Under the model's adjustment path, the substantial depreciation in the exchange rate improves the US trade balance, resulting in a significant reduction in the US CAD. If the current US CAD of around 5 per cent of GDP were taken to be the baseline, this would mean a reduction in the CAD to around 3 per cent of GDP two years after the initial shock. However, this improvement in the CAD erodes fairly rapidly after the shock is complete.

The model predicts that a very large capital outflow from the US, which forces the US CAD to adjust, would generally be beneficial for the East Asian economies.<sup>9</sup> This arises because the positive effects on investment in East Asian economies would more than offset the negative impacts on the trade side. As capital funds previously flowing into the US are redirected to East Asian economies, interest rates in East Asia would fall below baseline for a number of years, causing investment to rise significantly (Chart 15) — this in turn causes real GDP to increase. The positive effect on real GDP in East Asia is partially offset by falls in exports, driven by reduced US demand and increased competitiveness of US exports resulting from the US dollar depreciation. In most countries, the export effect is enough to cause real GDP

9 While the shock in Scenario 3 is based on a sharp fall in confidence in the US only, it would be possible that such a shock would also drag down confidence in East Asia. If that occurred, the positive GDP results for East Asia would be weaker than shown.

to fall slightly below baseline (Chart 16) initially, before being offset by higher investment.

**Chart 15: ROW Investment**



**Chart 16: ROW Real GDP**

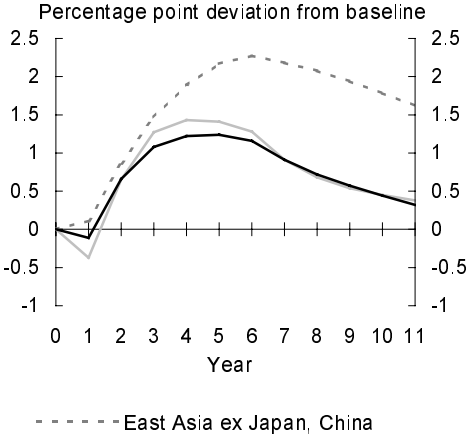


Table 1 summarises the model’s results from the three shocks that have been simulated.

**Table 1: Effects of various shocks after two years — per cent deviation from baseline**

	Real GDP	Investment (% of GDP)	Inflation	Current Account (% of GDP)
<b>Scenario 1</b>				
Sustained increase in energy prices				
United States	-2.73	-1.76	1.25	-0.28
Japan	-2.18	-1.19	0.60	-0.33
China	-1.92	-1.43	0.84	0.10
East Asia (excluding Japan and China)	-4.01	-1.52	0.72	-0.07
<b>Scenario 2</b>				
Sustained fall in global equity prices				
United States	-1.33	-2.27	0.09	0.51
Japan	-1.31	-1.89	-0.65	-1.15
China	-0.93	-2.01	-0.19	0.22
East Asia (excluding Japan and China)	-1.29	-2.86	0.35	0.71
<b>Scenario 3</b>				
Sharp adjustment to CA imbalances				
United States	-1.91	-6.56	2.40	1.87
Japan	0.66	2.06	-0.56	-0.51
China	0.65	2.74	-0.83	0.21
East Asia (excluding Japan and China)	0.87	2.61	-0.51	-2.93

## Conclusion

This article has examined potential effects of the risks to the global outlook. While there are identifiable risks to the global outlook, monetary and fiscal policies have been eased substantially around the globe and are supporting the real economy, which has been in recovery for a few quarters. A quick resolution or abatement of some of the major uncertainties currently facing the world could easily see the global recovery gather momentum.

It is also important to note that the theoretical results of the Asia-Pacific G cubed model should only be used as a broad indicative guide in the event of certain shocks to the global economy eventuating.

According to the model, a sustained rise in energy prices would lead to a significant fall in global real GDP growth below baseline and an increase in inflation. A sustained fall in global equity markets would also lead to a significant reduction in world real GDP growth from baseline, which also results in a reduction in current account imbalances.

The scenario modelling a sharp adjustment to current account imbalances showed that a substantial depreciation of the US exchange rate would be required to force a significant reduction in the US CAD. If this were to arise from a sudden loss of confidence in the US, leading to substantial capital outflows, real GDP in the US would fall from baseline, while the ROW and East Asia in particular would benefit from the capital reallocation and increased investment.





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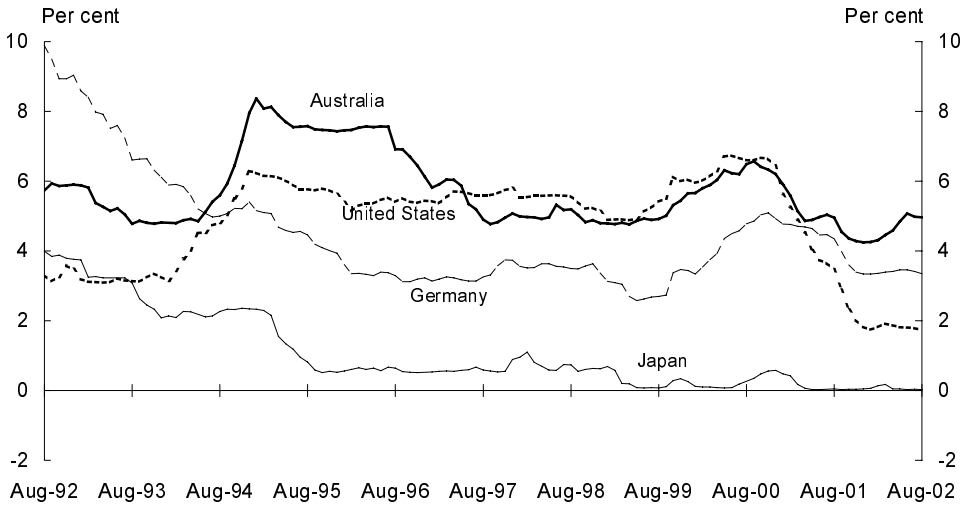
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- n.a. not available  
n.y.a. not yet available  
.. change less than 0.05 per cent

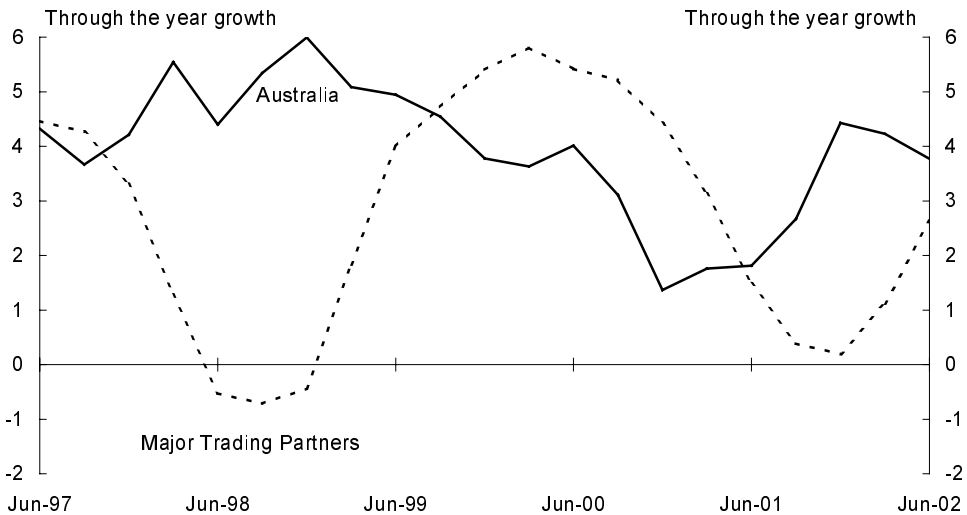
**Chart 1: Selected international indicators**  
**Panel A: Short-term interest rates**<sup>(a)</sup>



(a) Short-term interest rates are monthly averages and are defined as follows: US — 3 month certificates of deposits, Japan — 3-month certificates of deposit, Australia — 90 day bank accepted bills and Germany — 3 month FIBOR.

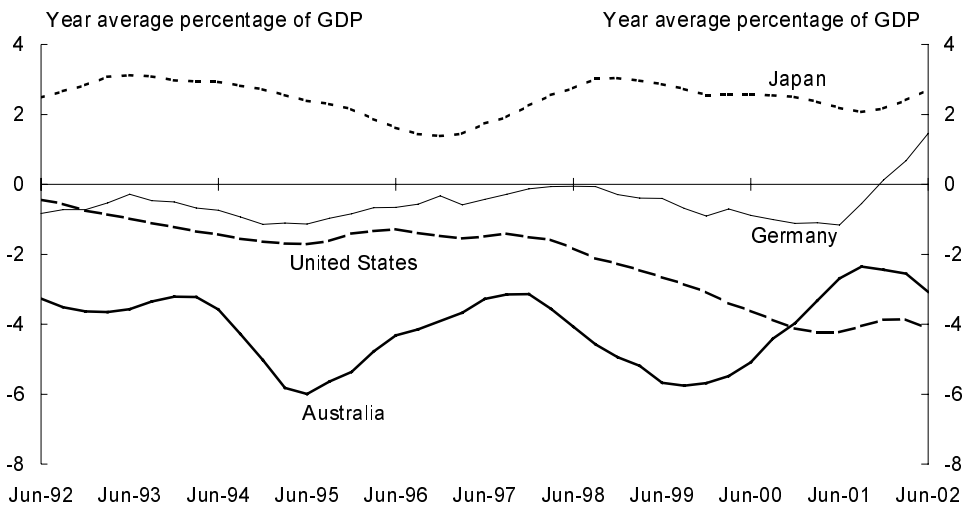
Source: OECD Main Economic Indicators.

**Panel B: Real output**<sup>(a)</sup>



(a) Seasonally adjusted real GDP growth for each major trading partner is weighted by their respective shares of total Australian merchandise exports averaging from 1998-99 to 2000-01. The major trading partners are composed of the OECD and Asian major trading partners. Major trading partners from the OECD comprise the G7 (US, Japan, Germany, France, UK, Italy and Canada) and New Zealand. Asian major trading partners consist of South Korea, Taiwan, Hong Kong, Singapore, China, Malaysia, Indonesia, Thailand, India and the Philippines.

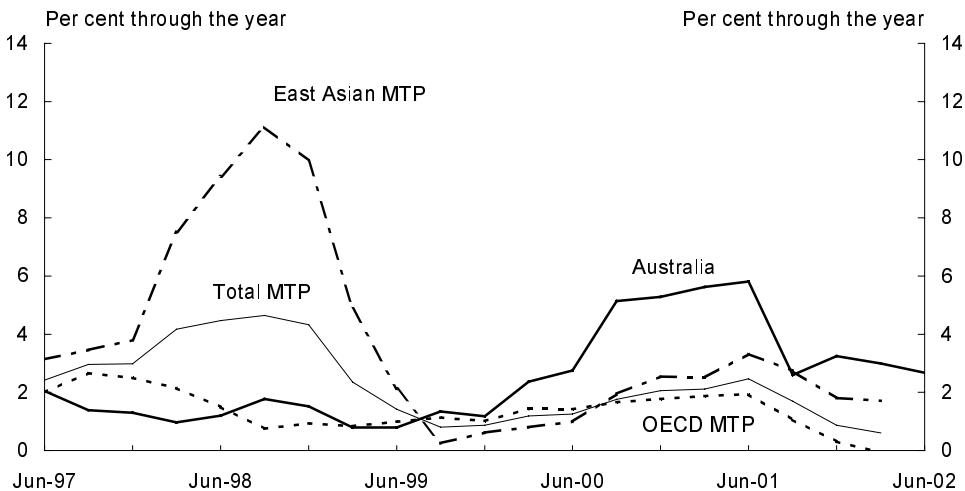
**Panel C: Current account balances** <sup>(a)</sup>



(a) Data are seasonally adjusted. Germany refers to Western Germany until June 1990, and unified Germany thereafter.

Source: Data are sourced from statistical agencies of respective countries, except for data from Germany which is sourced from the OECD Main Economic Indicators.

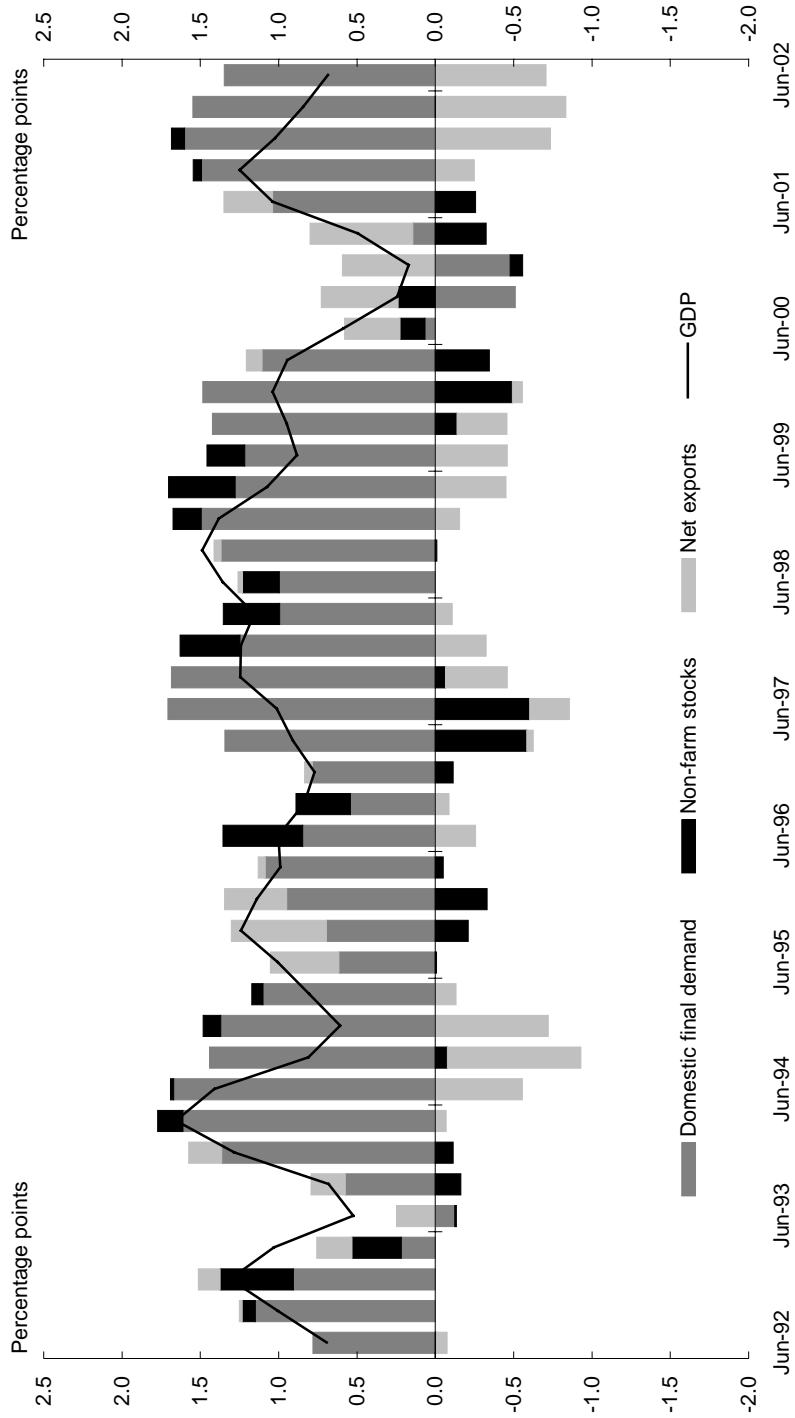
**Panel D: Consumer price inflation** <sup>(a)</sup>



(a) The aggregate inflation rates are derived from the weighted average of inflation rates of individual trading partners, with the weights being their respective shares of Australian total merchandise trade from 1998-99 to 2000-01.

Source: Major trading partners consist of US, Japan, Germany, UK, New Zealand, Canada, South Korea, Singapore, Indonesia, Taiwan, Hong Kong, France, Italy, India, China, Malaysia, Thailand and the Philippines. Data for US, Japan, Germany, UK, New Zealand, Canada, South Korea, Singapore, Indonesia, Taiwan and Hong Kong are sourced from the ABS All Groups CPI (excluding housing) measure. For the rest of Australia's MTP (France, Italy, China, Malaysia, Thailand and the Philippines), the CPI are sourced from each country's respective all groups CPI series which exclude the effects of mortgage interest rate changes.

**Chart 2: Contributions to trend quarterly GDP growth**  
(Chain volume measures)



Source: ABS Cat. No. 5206.0.

**Table 1: Components of Gross Domestic Product (chain volume measures)**

Year	Final domestic demand							Imports	Exports	GDP
	Household consumption	Private investment in dwellings	Private business investment	Private final demand	Public final demand	Domestic final demand	Domestic final demand			
1999-00	4.2	13.7	6.6	5.3	4.7	5.2	9.3	12.5	4.0	
2000-01	2.7	-20.5	-5.7	-0.5	2.3	0.2	7.3	-1.3	2.0	
2001-02	3.9	18.7	4.3	5.2	3.7	4.9	-2.0	2.5	3.8	
<b>Quarter</b>	(Percentage change on preceding year)									
2001 Jun	0.9	5.7	-0.3	1.1	0.9	1.0	0.1	-1.3	1.0	
Sep	0.8	8.3	1.1	1.5	1.6	1.5	-0.8	0.3	1.2	
Dec	1.0	7.0	3.2	1.8	1.0	1.6	-0.8	2.6	1.0	
2002 Mar	1.3	5.3	4.1	2.0	0.1	1.5	0.0	3.8	0.8	
Jun	1.3	3.9	3.4	1.8	-0.3	1.3	0.7	3.8	0.7	
<b>Quarter</b>	(Percentage change on preceding quarter - Seasonally adjusted)									
2001 Jun	0.7	2.3	-2.5	0.3	-0.2	0.2	1.1	-0.9	1.0	
Sep	0.6	12.7	3.6	2.0	1.1	1.8	-1.3	-1.1	1.2	
Dec	1.1	5.3	3.6	1.7	3.4	2.1	-3.6	4.0	1.1	
2002 Mar	1.3	4.3	-0.4	1.3	-1.4	0.7	3.0	2.6	0.7	
Jun	1.5	4.8	8.1	2.5	0.6	2.1	0.4	6.0	0.6	
<b>Quarter</b>	(Percentage change on a year earlier - Trend)									
2001 Jun	3.2	-22.0	-4.6	0.1	0.8	0.2	3.0	-5.9	2.0	
Sep	3.5	-5.9	-2.5	2.2	2.5	2.2	0.8	-4.8	3.0	
Dec	3.7	15.7	2.3	4.6	3.5	4.4	-0.7	-0.5	3.9	
2002 Mar	4.0	29.0	8.4	6.5	3.6	5.8	-1.5	5.4	4.2	
Jun	4.5	26.8	12.4	7.2	2.4	6.1	-0.8	10.9	3.9	

Source: ABS Cat. No. 5206.0.

**Table 2: Contributions to change in Gross Domestic Product (chain volume measures)**

Year	Final domestic demand				Change in inventories			GDP		
	Household consumption	Private investment in dwellings	Private business fixed investment	Private final demand	Public final demand	Total final demand	Private non-farm		Farm & public authority	Net exports
1999-00	2.5	0.8	0.8	4.2	1.0	5.2	-0.3	0.0	-0.8	4.0
2000-01	1.6	-1.3	-0.7	-0.4	0.5	0.2	-0.1	-0.1	1.9	2.0
2001-02	2.3	0.9	0.5	4.0	0.8	4.9	-0.3	0.2	-1.0	3.8
<b>Quarter</b>	(Contribution to change in GDP - Trend)									
2001 Mar	0.5	-0.3	-0.2	0.1	0.0	0.1	-0.3	-0.1	0.7	0.5
Jun	0.5	0.3	0.0	0.8	0.2	1.0	-0.3	-0.1	0.3	1.0
Sep	0.5	0.4	0.1	1.1	0.4	1.5	0.1	0.0	-0.2	1.2
Dec	0.6	0.4	0.3	1.4	0.2	1.6	0.1	0.1	-0.7	1.0
2002 Mar	0.8	0.3	0.4	1.5	0.0	1.5	0.0	0.0	-0.8	0.8
Jun	0.8	0.2	0.4	1.4	-0.1	1.3	0.0	-0.1	-0.7	0.7
<b>Quarter</b>	(Contribution to change in GDP - Seasonally adjusted)									
2001 Mar	1.0	0.0	0.1	1.2	0.1	1.2	-1.0	-0.2	0.5	0.9
Jun	0.4	0.1	-0.3	0.3	0.0	0.2	0.4	0.0	0.5	1.0
Sep	0.3	0.6	0.4	1.5	0.2	1.8	0.0	-0.2	-0.1	1.2
Dec	0.7	0.3	0.4	1.3	0.8	2.1	-0.2	0.6	-1.7	1.1
2002 Mar	0.8	0.2	0.0	1.0	-0.3	0.7	0.4	-0.3	0.1	0.7
Jun	0.9	0.3	0.9	2.0	0.1	2.1	-0.3	-0.1	-1.3	0.6

Source: ABS Cat. No. 5206.0.

**Table 3: Gross value-added by industry (chain volume measures)**

Year	Agriculture, forestry & fishing		Manufacturing		Electricity, gas & water		Construction		Wholesale trade		Accommodation, cafes & restaurants		Transport & storage		Communication services		Finance & insurance services		Property & business services		Government administration & defence		Education services		Health & community services		Cultural & recreational services		Personal services	
	7.0	7.2	2.8	2.8	5.5	5.4	4.4	6.6	3.9	10.5	2.8	4.8	0.2	1.7	2.4	3.5	9.6													
1999-00	0.7	8.5	-0.5	3.1	-16.8	0.4	0.9	2.9	1.3	8.0	4.7	8.2	2.9	1.5	7.2	12.4	6.3													
2000-01	2.6	-0.3	3.2	-0.9	11.7	3.6	5.5	4.1	3.2	3.0	4.7	4.9	1.0	1.5	5.7	1.5	7.6													
2001-02	(Percentage change on preceding year)																													
<b>Quarter</b>	(Change on previous quarter - Trend)																													
2001 Mar	2.4	0.9	-0.8	-0.7	-2.1	-0.4	1.0	1.9	0.8	1.1	1.4	2.0	0.5	0.4	3.6	-1.4	3.8													
Jun	0.6	-0.1	0.7	-0.6	4.6	0.7	1.2	1.8	1.2	0.8	1.3	2.2	0.1	0.4	2.4	0.0	3.1													
Sep	-1.0	-0.5	1.6	-0.1	4.9	1.6	1.1	0.7	1.0	0.3	1.1	2.0	-0.2	0.4	0.6	2.0	2.2													
Dec	0.6	-0.4	1.5	0.1	3.6	1.6	1.6	0.0	0.8	0.6	1.0	0.5	0.0	0.4	0.3	0.3	0.9													
2002 Mar	2.8	-0.2	1.1	0.1	3.2	1.3	1.8	0.4	1.0	1.2	1.0	-0.6	0.5	0.4	1.0	-0.5	0.0													
Jun	2.3	-0.3	1.1	0.0	2.8	0.9	1.6	0.8	0.9	1.6	1.1	-1.1	0.6	0.3	1.2	-1.0	-0.5													
<b>Quarter</b>	(Change on previous quarter - Seasonally adjusted)																													
2001 Mar	9.9	2.0	-2.4	0.3	2.3	1.2	1.2	2.3	1.4	2.2	1.7	1.5	1.9	0.4	6.0	1.0	3.3													
Jun	-0.3	-0.9	3.3	-1.5	4.5	0.5	0.6	1.5	1.9	1.4	1.2	2.9	-1.6	0.4	1.1	1.2	4.2													
Sep	-6.0	-1.4	0.0	-0.6	4.1	0.3	1.2	2.6	0.4	-0.6	1.2	2.0	1.3	0.4	-0.2	2.6	0.3													
Dec	1.1	0.9	2.4	2.3	4.9	3.8	1.6	-2.6	0.6	0.0	0.9	0.7	-1.1	0.4	1.4	-0.7	2.8													
2002 Mar	8.9	-0.2	0.6	-2.0	0.3	0.2	1.9	0.5	1.3	2.2	0.7	-0.7	0.7	0.4	-0.7	0.1	-0.4													
Jun	-2.1	-1.1	1.3	0.9	5.8	0.4	2.0	3.4	1.2	1.7	1.7	-2.1	1.5	0.4	3.5	-2.0	-2.0													
<b>Quarter</b>	(Change on year earlier - Trend)																													
2001 Mar	2.9	8.1	-2.5	2.0	-20.5	-1.4	1.2	3.2	1.0	6.8	5.3	8.7	3.3	1.5	9.1	8.1	7.9													
Jun	4.0	5.1	-2.7	-0.2	-13.7	-1.1	2.8	5.0	2.1	4.9	5.6	8.9	2.6	1.5	11.3	2.3	11.9													
Sep	3.0	2.1	-0.2	-1.3	-1.3	1.0	4.0	5.4	3.2	3.6	5.4	8.6	1.3	1.5	10.3	0.6	13.1													
Dec	2.6	-0.1	3.0	-1.3	11.2	3.5	4.9	4.4	3.9	2.8	4.8	6.7	0.5	1.5	7.0	0.8	10.4													
2002 Mar	2.9	-1.1	5.0	-0.5	17.2	5.2	5.8	3.0	4.1	2.9	4.5	4.0	0.5	1.5	4.3	1.7	6.3													
Jun	4.7	-1.3	5.4	0.0	15.2	5.5	6.3	2.0	3.8	3.8	4.2	0.7	1.0	1.5	3.1	0.8	2.6													

Source: ABS Cat. No. 5206.0.

**Table 4: Real household income<sup>(a)</sup>**

	Non-farm employees	Non-farm average earnings	Non-farm compensation employees	Gross mixed income	Household income	Household disposable income
<b>Year</b>	(Percentage change on preceding year)					
1999-00	2.2	1.8	3.9	6.2	4.5	4.0
2000-01	2.7	-0.8	1.9	1.4	3.0	5.0
2001-02	0.9	1.6	2.5	9.3	2.1	1.7
<b>Quarter</b>	(Percentage change on preceding quarter - Seasonally adjusted)					
2001 Jun	-0.4	1.4	1.0	0.9	1.4	2.7
Sep	0.7	0.2	0.9	5.4	0.3	-0.5
Dec	-0.2	0.3	0.1	-0.3	0.6	0.8
2002 Mar	1.0	-0.6	0.4	5.5	-0.1	-0.5
Jun	-0.1	1.3	1.3	-0.5	1.4	0.8
<b>Quarter</b>	(Percentage change on year earlier - Seasonally adjusted)					
2001 Jun	0.8	0.5	1.3	-0.1	2.2	5.2
Sep	0.8	1.6	2.4	6.2	1.9	0.9
Dec	0.2	2.0	2.2	9.1	2.3	2.7
2002 Mar	1.1	1.3	2.5	11.9	2.1	2.5
Jun	1.4	1.3	2.7	10.3	2.1	0.6

(a) Deflated by the implicit price deflator for private final consumption expenditure.  
Source: ABS Cat. Nos. 5204.0 and 5206.0.



**Table 5: Wages, labour costs and company income**

Year	Average weekly earnings (survey base)		Non-farm average earnings (national accounts basis) <sup>(a)</sup>		Unit labour costs		Factor shares	
	Full-time adult ordinary time earnings <sup>(e)</sup>	All persons total earnings <sup>(a)</sup>	Non-farm average earnings (national accounts basis) <sup>(a)</sup>	Non-farm average earnings change on preceding year	Unit labour costs		Factor shares	
					Nominal <sup>(b)</sup>	Real <sup>(c)</sup> (Index)	Wage share <sup>(d)</sup> (per cent)	Profit share <sup>(e)</sup> (per cent)
1999-00	3.3	2.9	3.1	1.6	95.7	54.4	23.4	
2000-01	5.3	4.8	3.8	4.0	96.1	54.7	23.2	
2001-02	5.5	5.3	3.8	1.0	94.9	53.8	23.7	
<b>Quarter</b>				(Percentage change on preceding quarter - Seasonally adjusted)				
2001 Jun	-0.9	1.7	2.1	0.8	96.9	54.9	22.8	
Sep	2.0	1.6	0.4	-1.1	95.8	54.5	22.9	
Dec	-0.1	0.9	0.9	-0.4	94.4	53.8	23.9	
2002 Mar	1.4	1.9	0.4	1.7	94.5	53.3	24.0	
Jun	-0.5	0.7	1.6	1.0	94.9	53.6	23.9	
<b>Quarter</b>				(Percentage change on year earlier - Seasonally adjusted)				
2001 Jun	5.3	4.4	5.4	4.8				
Sep	5.1	4.0	4.0	1.6				
Dec	5.7	4.9	4.4	-0.2				
2002 Mar	6.2	4.2	3.8	1.0				
Jun	5.2	3.7	3.2	1.3				

(a) All numbers derived from seasonally adjusted data.

(b) Ratio of nominal hourly labour costs (non-farm compensation of employees, plus payroll tax and fringe benefits tax less employment subsidies, per hour worked by non-farm wage and salary earners) to average hourly productivity (real gross non-farm product per hour worked by all employed persons).

(c) Nominal unit labour costs as defined in footnote (a) deflated by the derived implicit price deflator for gross non-farm product. (Base for index: 1998-99 = 100.0). Compensation of employees as a share of total factor income.

Gross operating surplus of corporations as a share of total factor income.

Sources: ABS Cat. Nos. 5204.0, 5206.0 and 6302.0.

**Table 6: Prices**

	Consumer price index <sup>(a)</sup>		Implicit price deflators <sup>(b)</sup>	
	All groups	All groups excl housing	Gross non-farm product	Household final consumption expenditure
<b>Year</b>	(Percentage change on preceding year)			
1997-98	0.0	1.2	1.5	1.6
1998-99	1.2	1.2	0.3	0.9
1999-00	2.4	2.0	2.4	1.4
2000-01	6.0	5.4	4.4	4.6
2000-01	2.9	2.9	2.5	2.2
<b>Quarter</b>	(Percentage change on preceding quarter)			
2000 Mar	0.9	0.9	1.4	0.7
Jun	0.8	0.8	0.8	0.7
Sep	3.7	3.1	2.1	2.6
Dec	0.3	0.4	0.0	0.6
2001 Mar	1.1	1.2	1.5	0.9
Jun	0.8	1.0	0.5	0.7
Sep	0.3	0.0	0.0	0.1
Dec	0.9	1.0	0.4	0.6
2002 Mar	0.9	0.9	1.6	1.0
Jun	0.7	0.7	2.5	1.9
<b>Quarter</b>	(Percentage change on a year earlier)			
2000 Mar	2.8	2.4	2.5	1.3
Jun	3.2	2.7	3.5	1.8
Sep	6.1	5.1	4.8	4.3
Dec	5.8	5.3	4.4	4.6
2001 Mar	6.0	5.6	4.5	4.8
Jun	6.0	5.8	4.2	4.8
Sep	2.5	2.6	2.0	2.4
Dec	3.1	3.2	2.4	2.3
2002 Mar	2.9	3.0	2.5	2.4
Jun	2.8	2.7	2.5	1.9

(a) Based on the weighted average of eight capital cities consumer price index.

(b) Quarterly figures are derived from seasonally adjusted data.

Sources: ABS Cat. Nos. 6401.0 and 5206.0.

**Table 7: Labour market**

	ANZ Bank job advertisements series	Employed persons			Unemployment		Participation rate (per cent)
		Full-time	Part-time	Total	Rate (per cent)	Persons ('000)	
<b>Year<sup>(a)</sup></b>	(Percentage change on preceding year)						
1998-99	15.2	1.6	3.7	2.2	7.4	691.7	63.1
1999-00	15.7	2.5	3.4	2.7	6.6	634.5	63.4
2000-01	-22.5	1.5	3.8	2.1	6.4	625.5	63.7
2001-02	-12.1	-0.6	5.8	1.1	6.6	656.8	63.7
<b>Quarter<sup>(a)</sup></b>	(Percentage change on preceding quarter - Seasonally adjusted)						
2001 Sep	-0.1	-0.6	1.8	0.1	6.8	669.2	63.7
Dec	-1.9	0.2	0.5	0.3	6.9	676.6	63.7
2002 Mar	6.3	0.8	1.6	1.0	6.6	655.8	63.9
Jun	7.0	-0.2	0.9	0.1	6.3	629.3	63.6
<b>Quarter<sup>(a)</sup></b>	(Percentage change on a year earlier - Seasonally adjusted)						
2001 Sep	-25.1	-1.5	5.3	0.3			
Dec	-20.1	-1.1	6.2	0.9			
2002 Mar	-7.6	0.0	6.8	1.8			
Jun	11.5	0.3	4.9	1.5			
<b>Month</b>	(Percentage change on preceding month - Seasonally adjusted)						
2001 Sep	-1.1	0.7	-3.3	-0.4	6.7	662.6	63.5
Oct	-1.9	-0.8	2.9	0.2	7.0	693.6	63.8
Nov	0.0	0.2	-0.1	0.1	6.8	670.9	63.6
Dec	1.4	0.0	0.3	0.1	6.7	665.3	63.6
2002 Jan	12.5	0.8	0.5	0.7	7.0	692.5	64.1
Feb	-5.4	-0.3	1.7	0.2	6.6	652.5	63.9
Mar	-8.8	0.5	-0.6	0.2	6.3	622.3	63.8
Apr	23.6	-0.8	0.4	-0.5	6.3	621.6	63.4
May	-8.2	1.1	-1.2	0.5	6.3	622.5	63.6
Jun	-1.8	-1.0	3.1	0.1	6.5	643.9	63.7
Jul	-0.6	-0.3	-0.4	-0.3	6.2	609.4	63.3
Aug	0.2	1.3	0.0	1.0	6.2	622.7	63.8

(a) All figures refer to period averages.

Sources: ANZ Bank and ABS Cat. No. 6202.0.

**Table 8: Current account**

	Balance on		Net current transfers	Current account balance		Net income balance		Volume of		
	merchandise trade	goods & services (\$ million)		income balance	(\$ million)	Percentage of GDP (per cent)	Percentage of current account balance (per cent)	Exports of goods & services (\$ million)	Imports of goods & services	Terms of trade <sup>(a)</sup>
Year										
1999-00	-12955	-14351	-18150	218	-33607	-5.1	56.2	143062	-154607	97.0
2000-01	-30	875	-19077	32	-32283	-2.7	105.0	153511	-152636	100.0
2001-02	-757	-1975	-20220	-17	-18170	-3.1	91.0	150468	-156408	102.6
Quarter					(Seasonally adjusted)					
2001 Mar	871	525	-4772	73	-4174	-2.5	114.3	38120	-37636	100.1
Jun	1712	1561	-5003	28	-3414	-2.0	146.5	38557	-37306	100.7
Sep	2007	1948	-4979	25	-3006	-1.7	165.6	38062	-36908	102.0
Dec	-893	-1284	-4992	-85	-6361	-3.6	78.5	36697	-38389	101.1
2002 Mar	130	-16	-5214	28	-5202	-2.9	100.2	37804	-39373	104.1
Jun	-1732	-2355	-5129	15	-7469	-4.1	68.7	37964	-41737	103.5
Month					(Seasonally adjusted)					
2001 Sep	423	349								
Oct	282	169								
Nov	65	-29								
Dec	-316	-352								
2002 Jan	-119	-234								
Feb	-421	-484								
Mar	-152	-329								
Apr	-411	-488								
May	-579	-650								
Jun	-762	-880								
Jul	-595	-720								
Aug	-769	-948								

(a) The ratio of the implicit price deflator for exports of goods and services to the implicit price deflator for imports of goods and services, 2000-01 = 100, calculated on a National Accounts basis.

Sources: ABS Cat. Nos. 5368.0, 5302.0 and 5206.0.

**Table 9: Australia's external liabilities**

	Public sector gross debt	Private sector gross debt	Total gross debt	Net debt	Net external liabilities
(Levels of Australian foreign liabilities)					
(\$A million)					
As at end					
2000 Jun	63445	358326	421771	277804	326505
2001 Jun	68950	429825	498775	313472	361034
2002 Jun	n.y.a.	n.y.a.	n.y.a.	329763	390527
2001 Mar	68703	460850	529552	331195	364488
Jun	68950	429825	498775	313472	361034
Sep	71530	448864	520394	323009	380057
Dec	67426	439590	507016	321277	370123
2002 Mar	69777	439171	508948	327433	377473
Jun	n.y.a.	n.y.a.	n.y.a.	329763	390527
As at end					
(Percentage of GDP)					
2000 Jun	10.1	56.9	67.0	44.2	51.9
2001 Jun	10.3	63.9	74.2	46.6	53.7
2002 Jun	n.y.a.	n.y.a.	n.y.a.	46.1	54.5
2001 Mar	10.4	69.5	79.9	50.0	55.0
Jun	10.3	63.9	74.2	46.6	53.7
Sep	10.5	65.9	76.5	47.5	55.8
Dec	9.7	63.4	73.1	46.3	53.4
2002 Mar	9.9	62.3	72.2	46.5	53.6
Jun	n.y.a.	n.y.a.	n.y.a.	46.1	54.5

Source: ABS Cat. Nos. 5302.0 and 5206.0.

**Table 10: Australia's income flows**

	Public sector gross debt	Private sector gross debt	Total gross debt	Net debt	Net external liabilities
(Gross and net interest payable, and net investment income)					
(\$A million)					
Year ended					
2000 Jun	3455	13756	17210	13300	18013
2001 Jun	3105	16290	19395	14770	18908
2002 Jun	n.y.a.	n.y.a.	n.y.a.	13931	20094
Quarter ended					
2001 Mar	712	4284	4996	3769	4778
Jun	783	3984	4767	3682	5008
Sep	748	3948	4696	3630	5372
Dec	736	3702	4438	3386	4480
2002 Mar	797	3760	4557	3507	5070
Jun	n.y.a.	n.y.a.	n.y.a.	3408	5172
Year ended	(Percentage of exports of goods and services)				
2000 Jun	2.7	10.9	13.7	10.6	14.3
2001 Jun	2.0	10.6	12.6	9.6	12.3
2002 Jun	n.y.a.	n.y.a.	n.y.a.	9.2	13.2
Quarter ended					
2001 Mar	1.9	11.5	13.4	10.1	12.8
Jun	2.0	10.2	12.2	9.4	12.8
Sep	1.9	10.0	11.8	9.2	13.5
Dec	1.9	9.6	11.5	8.8	11.6
2002 Mar	2.1	10.1	12.2	9.4	13.6
Jun	n.y.a.	n.y.a.	n.y.a.	9.3	14.1

Source: ABS Cat. No. 5302.0.

**Table 11: Selected economic indicators**

Year	Inventories to total sales <sup>(e)</sup>	Imports to domestic sales <sup>(e)</sup>	Saving ratio <sup>(b)</sup>	Nominal exchange rates		Real exchange rate
				USD / AUD <sup>(c)</sup>	Trade weighted index <sup>(c)</sup>	
1999-00	0.880	0.386	2.3	0.6290	55.2	104.9
2000-01	0.877	0.415	4.6	0.5379	50.3	100.1
2001-02	0.833	0.390	2.2	0.5239	50.8	102.8
Quarter						
2001 Mar	0.877	0.406	2.6	0.5321	50.0	100.2
Jun	0.869	0.414	4.7	0.5127	49.6	100.1
Sep	0.861	0.393	3.4	0.5138	49.3	99.7
Dec	0.839	0.391	3.0	0.5123	49.6	99.5
2002 Mar	0.825	0.386	1.2	0.5181	51.0	104.3
Jun	0.807	0.389	0.5	0.5515	53.4	107.5

(a) ABS National Accounts measure. All numbers derived from seasonally adjusted data.

(b) Ratio of household saving to household disposable income derived from seasonally adjusted data.

(c) Exchange rates refer to the period average.

(d) Treasury estimate using GDP deflators.

Sources: ABS Cat. Nos. 5206.0, 5302.0.





# Articles in the Economic Roundup

Details of articles published in the past two editions of the Economic Roundup are listed below:

Winter 2002	Inquiry into superannuation and standards of living in retirement – Submission by the Commonwealth Treasury
	The effectiveness of fiscal policy in Australia – selected issues
	A survey of international fiscal policy issues – current drivers and future challenges
	Key themes from the Treasury Business Liaison Program – May/June 2002
Autumn 2002	Spreading the Benefits of Globalisation: ‘Selling’ the Compounding Benefits of Reforms
	Economic Outlook
	Australia’s Terms of Trade – Stronger and Less Volatile

Copies of these articles are available from the Treasury. Written requests should be sent to The Manager, Economic Conditions Unit, Department of the Treasury, Langton Crescent, Parkes, ACT, 2600. Telephone requests should be directed to Ms Brenda McGregor on (02) 6263 3788.

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