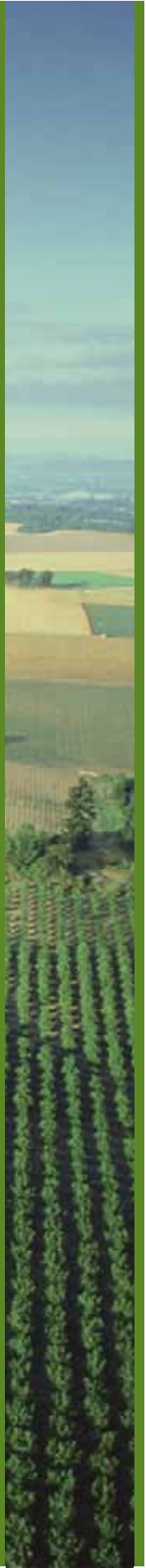
Australian commodities

December quarter 09.4



Postal address GPO Box 1563 Canberra ACT 2601 Australia

Switchboard +61 2 6272 2000

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Abbreviations

f ABARE forecast
s ABARE estimate

Economic overview

Neil Thompson

- After contracting sharply in late 2008 and early 2009, world economic recovery is underway. Activity in the world economy is assumed to increase by 3.4 per cent in 2010, following an estimated decline of 1.1 per cent in 2009.
- In the short term, the recovery in emerging and developing economies is expected to be the major stimulus to world economic growth. The expansion in OECD economies is assumed to be relatively subdued with high unemployment continuing in much of 2010.
- A factor that could significantly affect the performance of the export orientated commodity sector is the recent significant appreciation of the Australian exchange rate. A markedly higher value of the Australian dollar, if sustained, will adversely affect commodity export earnings.

The world economy

The recovery of the global economy has begun, with a significant improvement in world financial market conditions. However, the pace of world economic recovery is expected to be gradual and the outlook for employment in major OECD countries remains weak. Emerging and developing economies are further ahead on the road to recovery, led by China, India and other emerging economies in Asia. Over the past 12 months or so, emerging and developing economies have withstood the financial turmoil much better than previously expected.

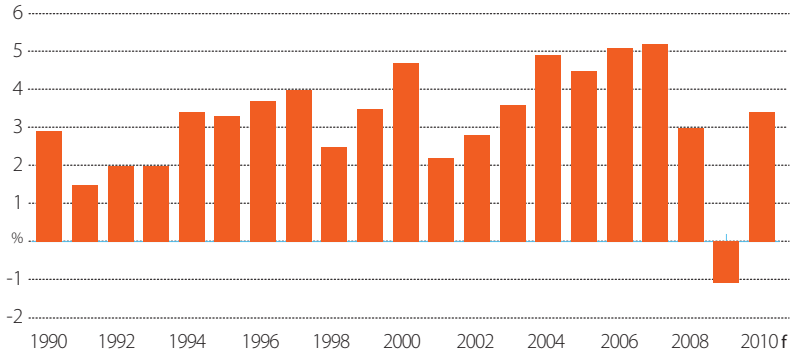
The major factor contributing to the world economic recovery is strong public policy responses across OECD and emerging economies, which have allayed concerns about systemic financial collapse and restored consumer and business confidence. Nevertheless, the world economic slowdown associated with the global financial crisis was significant. For 2009 as a whole, world economic activity is estimated to contract by around 1.1 per cent.

Prospects for world economic growth in 2010

Although world economic recovery is gaining momentum, there are a number of constraints that could delay a major recovery in 2010. In particular, consumption and investment in OECD countries are expected to strengthen only gradually, held back by rising unemployment and high excess capacity. This will especially be the case in the United States and some European countries such as the United Kingdom. In the United States, for example, consumers are unlikely to increase spending markedly in the short term, given an unemployment rate of more than 10 per cent in late 2009.

In preparing this set of commodity forecasts, the world economy is assumed to achieve growth of 3.4 per cent in 2010.

World economic growth



In the OECD area, economic activity is assumed to grow by 1.6 per cent in 2010, following a decline of 3.5 per cent in 2009. Among the major OECD economies, the United States and Western Europe are expected to achieve only a gradual economic recovery, supported mainly by continued fiscal stimulus and accommodating monetary policy. For Japan, the recovery in export performance and industrial production in recent months is encouraging and, if sustained, will be the basis for improved economic activity in 2010.

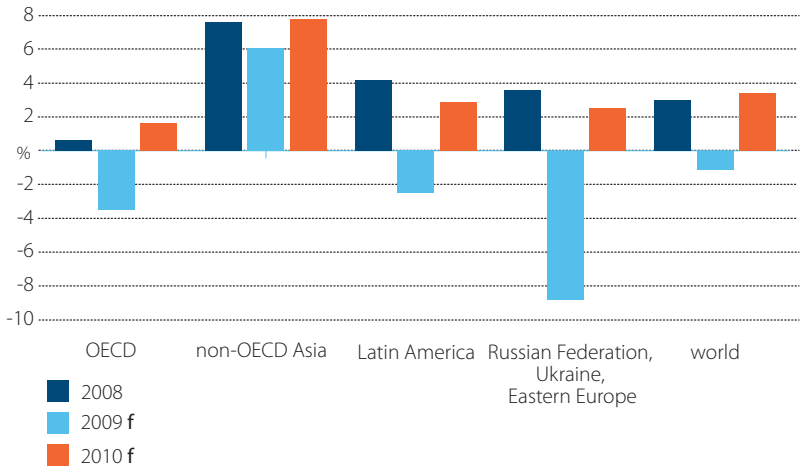
For emerging and developing economies as a whole, economic growth is assumed to expand by 6 per cent in 2010, following weak growth of 3.3 per cent in 2009. Leading indicators from the Asian economies continue to show signs of improvement. In particular, the economic outlook for China and South-East Asian economies has strengthened, with growth in domestic demand supporting a faster than expected recovery.

However, there are considerable downside risks in the current world economic outlook. The major challenge is associated with weak private demand in the OECD region. With sharply increasing fiscal deficits in OECD countries, many governments are confronted with the difficult choice of whether to maintain fiscal stimulus in the short to medium term. Given relatively weak domestic demand, OECD economic activity could be adversely affected if fiscal stimulus is removed prematurely.

The situation is more varied in many emerging economies. For example, in China there are concerns about 'overheating' or 'asset price bubbles' emerging in some sectors of the economy. There is a strong possibility that the authorities in emerging economies will begin tightening their fiscal and monetary stance much sooner than in major OECD economies.

Short-term risks are, of course, not only on the downside. As has been evident over the past year or so, a more rapid than currently expected increase in world economic activity is possible, especially if consumer confidence and business sentiment continue to improve. A quicker recovery in consumer spending and business investment in the OECD region will markedly improve economic performance in OECD countries and prospects for emerging and developing economies through the trade linkages and investment flows.

Regional economic growth

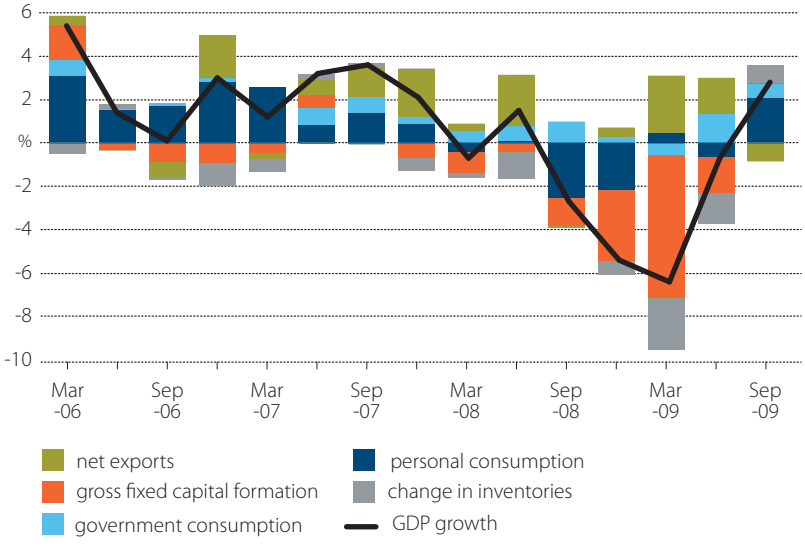


Economic prospects in Australia's major export markets

United States

After contracting significantly in the first half of 2009, economic growth in the United States has resumed. Real gross domestic product is estimated to have expanded at an annualised rate of 2.8 per cent in the September quarter 2009, after contracting by 0.7 per cent in the June quarter and 6.4 per cent in the March quarter.

Contributions to quarterly US economic growth, annualised



Key macroeconomic assumptions

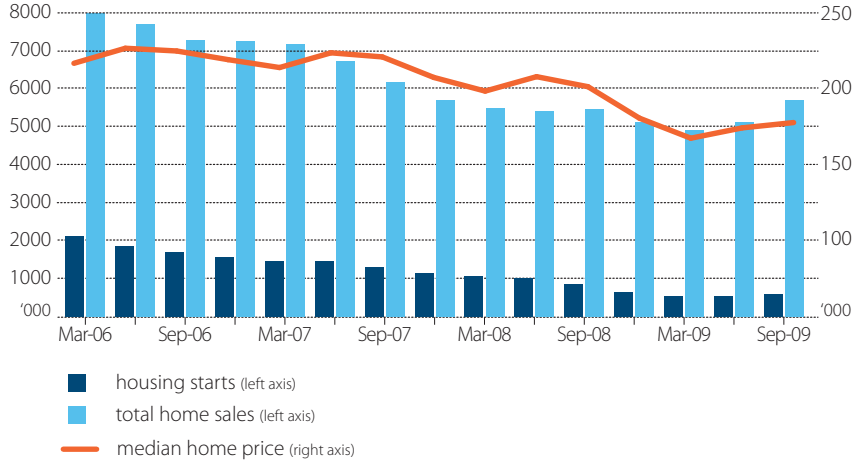
World		2007	2008	2009 f	2010 f
Economic growth					
OECD	%	2.7	0.6	– 3.5	1.6
United States	%	2.1	0.4	– 2.5	2.0
Japan	%	2.3	– 0.7	– 5.4	1.5
Western Europe	%	2.7	0.7	– 4.3	1.0
– Germany	%	2.5	1.2	– 4.9	1.2
– France	%	2.3	0.3	– 2.4	1.2
– United Kingdom	%	2.6	0.7	– 4.6	0.9
– Italy	%	1.6	– 1.0	– 5.0	0.8
Korea, Rep. of	%	5.1	2.2	– 1.0	3.6
New Zealand	%	3.2	0.2	– 1.6	2.2
Developing countries	%	8.6	6.4	3.3	6.0
– non-OECD Asia	%	10.6	7.6	6.1	7.8
South-East Asia a	%	6.3	4.8	0.8	4.5
China b	%	13.0	9.0	8.2	9.5
Chinese Taipei	%	5.7	0.1	– 3.5	4.0
Singapore	%	7.8	1.1	– 2.5	4.5
India	%	9.4	7.3	6.5	7.4
– Latin America	%	5.7	4.2	– 2.5	2.9
Russian Federation	%	8.1	5.6	– 7.5	3.0
Ukraine	%	7.9	2.1	– 14.0	2.7
Eastern Europe	%	5.5	3.0	– 5.0	1.8
World c	%	5.2	3.0	– 1.1	3.4
Industrial production					
OECD	%	2.4	– 2.5	– 13.2	5.2
Inflation					
United States	%	2.9	4.1	– 0.4	1.7
Interest rates					
US prime rate d	%	6.6	5.1	3.3	3.3
US exchange rates e					
Yen/US$		118	104	94	98
Euro/US$		0.73	0.68	0.72	0.67
		2006	2007	2008	2009
Australia		-07	-08	-09	-10 f
Economic growth	%	3.2	3.7	1.0	1.5
Inflation	%	2.9	3.4	3.1	2.3
Interest rates g	%	6.9	7.7	6.3	6.0
Australian exchange rates					
US$/A$		0.78	0.90	0.75	0.89
Yen/A$		93	99	75	84
TWI for A$ h		65	70	60	70

a Indonesia, Malaysia, the Philippines, Thailand and Viet Nam. **b** Excludes Hong Kong. **c** Weighted using 2008 purchasing-power-parity (PPP) valuation of country GDPs by the IMF. **d** Commercial bank prime lending rates in the United States. **e** Average of daily rates. **g** Large business weighted average variable rate on credit outstanding. **h** Base: May 1970 = 100. **f** ABARE assumptions.
Sources: ABARE; ABS; IMF; OECD; RBA.

A significant increase in government spending has been the main factor underpinning the improved US economic performance. The stimulus package (US$787 billion) implemented since late 2008 has provided support for consumer spending and residential investment. Partial indicators released recently suggest that the housing market may have stabilised. Government incentives for first home buyers have increased sales of existing homes and stabilised house prices. Nevertheless, stocks of unsold houses remain high, meaning house prices are unlikely to increase significantly in the short term. The US Government has recently extended the first home buyer tax credit to the end of April 2010, which is expected to provide support to housing activity in the near term.

Activity in the manufacturing sector is also showing signs of recovery, with industrial production recording small rises in recent months. The US dollar has depreciated markedly against other major international floating currencies over the past six months, which has improved the competitiveness of US exports on world markets.

US housing market indicators
quarterly, ended September 2009



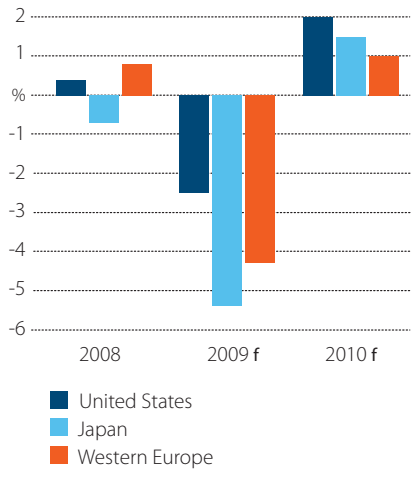
Despite the recent improvement in economic activity, considerable concerns remain about the strength and sustainability of US economic recovery. Of particular concern is a marked increase in the unemployment rate, which was at 10 per cent in November 2009. The US economy has lost 7.9 million jobs since December 2007. If higher unemployment has a significant effect on consumer spending, the US economic recovery could prove to be markedly slower than currently expected.

Monetary and fiscal support is expected to continue in the short term. There has been a significant loosening in fiscal stance in the United States, mainly as a result of the current economic downturn. According to the US Congressional Budget Office, the US budget deficit is estimated to have reached around 10 per cent of gross domestic product in fiscal year 2009

(October 2008 to September 2009). The federal funds rate has been reduced to near zero. The significant loosening in both monetary and fiscal stances has raised concerns about the implications for US economic prospects over the short to medium term. There are questions about the extent of continued support to stimulate economic growth and also the balance to be struck between short-term requirements and medium-term fiscal consolidation.

In preparing the current set of commodity forecasts, the US economy is assumed to contract by 2.5 per cent in 2009, mainly because of the sharp decline in the first half of the year. Growth is expected to strengthen gradually in the short term, reflecting the continuing fiscal support and improved activity associated with the inventory cycle and the housing market. However, given the effect of rising unemployment, the temporary nature of the fiscal stimulus and subdued growth in many major trading partners in the OECD region, economic growth is assumed to remain relatively low at 2 per cent for 2010 as a whole.

OECD economic growth



There is considerable uncertainty in the current outlook for the US economy. The major downside risk stems from the weakness in household and company balance sheets and rising unemployment, which may weigh on private consumption and business investment, leading to weaker than assumed economic growth. On the upside, the strong policy response and a rapid recovery in emerging markets, especially in China and South-East Asia, could lead to a significant improvement in consumer and business confidence and hence stronger economic growth in 2010.

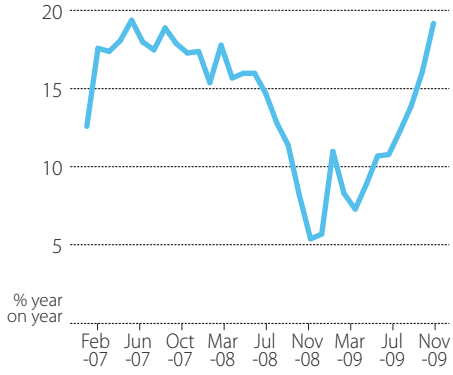
China

Economic growth in China continues to rebound strongly from the slowdown in late 2008 and early 2009. Expansionary monetary and fiscal policies provided the impetus for real gross domestic product to grow at a year on year rate of 8.9 per cent in the September quarter 2009, following growth of 7.9 per cent in the June quarter and 6.1 per cent in the March quarter.

The 4 trillion yuan (US$586 billion) fiscal stimulus package introduced by the Chinese Government in November 2008 continues to provide support for the economy. Public infrastructure spending and private construction have increased markedly with urban fixed asset investment rising, year on year, by 32.1 per cent in the first 11 months of 2009. This compares with average growth of 25.5 per cent in 2008.

Partial indicators released recently suggest investment expenditure and consumer spending are underpinning growth in industrial production. For example, growth in retail sales, although weaker than in 2008, reached 15.3 per cent year on year in the first 11 months of 2009. While export performance remains relatively weak, expected improvements in economic activity in the United States and the European Union should begin to provide support to export growth in the foreseeable future.

Growth of industrial value added, China monthly, ended November 2009



Looking forward, growth in investment spending and household consumption will continue to be the basis for economic growth, while the recovery in exports could be gradual. In preparing this set of commodity forecasts, economic growth in China is assumed to be around 8.2 per cent in 2009, before strengthening to an average of 9.5 per cent in 2010.

There are both upside and downside risks surrounding the economic outlook for China. One major downside risk is associated with the pace of economic recovery in major OECD countries, especially the United States and Western European countries. Because the OECD economies are major destinations for China's exports, the strength of their economic recovery, and hence import demand, could have important implications for China's export performance. Given recent significant growth in industrial production in China, there are considerable concerns in the marketplace about its sustainability and the implications for minerals and energy commodity demand if a strong recovery in China's exports does not eventuate in the near term.

Because China's economic performance in recent years has consistently exceeded market expectations, there remains an upside risk in the current outlook that growth in domestic demand could be stronger than assumed. Given the significance of Chinese demand in world commodity markets, especially for minerals and energy, a stronger economic performance in China could lead to world commodity prices averaging higher than currently forecast.

Japan and the Republic of Korea

After contracting in late 2008 and early 2009, the economies of Japan and the Republic of Korea have continued to recover. In Japan, real gross domestic product grew at an annualised rate of 1.3 per cent in the September quarter 2009, compared with 2.7 per cent in the June quarter and a decline of 12.2 per cent in the March quarter. In the Republic of Korea, real gross domestic product expanded by 2.9 per cent in the September quarter 2009, following growth of 2.6 per cent in the June quarter.

Rebounding economic activity in both countries largely reflects the effects of stimulus packages implemented by their respective governments. There have also been gradual improvements in exports, mainly stemming from higher demand in China as a result of the Chinese Government's stimulus package. However, compared with a year earlier, export performance remains weak in both countries. In Japan, exports declined year on year by 23 per cent in October 2009, following a fall of 31 per cent in September. This compares with a decline of 41 per cent in May. In November 2009, exports from the Republic of Korea rose for the first time in 13 months, albeit from a low base.

In the short term, economic growth in both countries is expected to be dependent on domestic demand, which could remain volatile. For example, in the Republic of Korea,

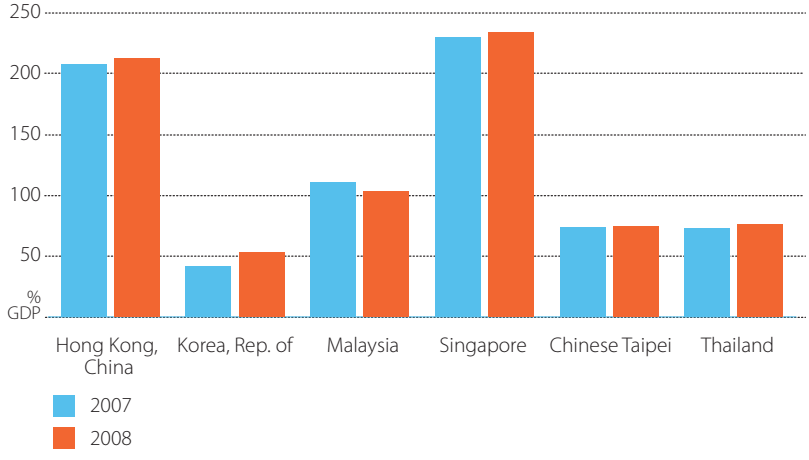
employment has increased in recent months, with the unemployment rate at 3.2 per cent in October 2009. However, industrial production growth slowed year on year to 0.2 per cent in October 2009, following an 11 per cent rise in September. In Japan, the unemployment rate fell slightly to 5.1 per cent in October 2009, while the decline in industrial production slowed to 15.1 per cent in the same month, compared with 18.4 per cent in September.

Despite the recent improvements, economic growth is likely to be modest in Japan in the next few quarters, as the effect of the stimulus package gradually subsides. There are also concerns that the relatively high unemployment rate could affect consumer spending, and a stronger yen especially against the US dollar could prolong the weakness in export performance.

Against this backdrop, the Japanese economy is assumed to achieve weak growth of 1.5 per cent in 2010, compared with an estimated contraction of 5.4 per cent in 2009.

Economic activity in the Republic of Korea is estimated to contract by 1 per cent in 2009. In 2010, a recovery in economic growth, and hence import demand, in major OECD countries and continued strong performance in the Chinese economy are likely to provide support for the Republic of Korea. Economic growth in the Republic of Korea is assumed to be around 3.6 per cent in 2010.

Exports as a share of GDP



Non-OECD Asia

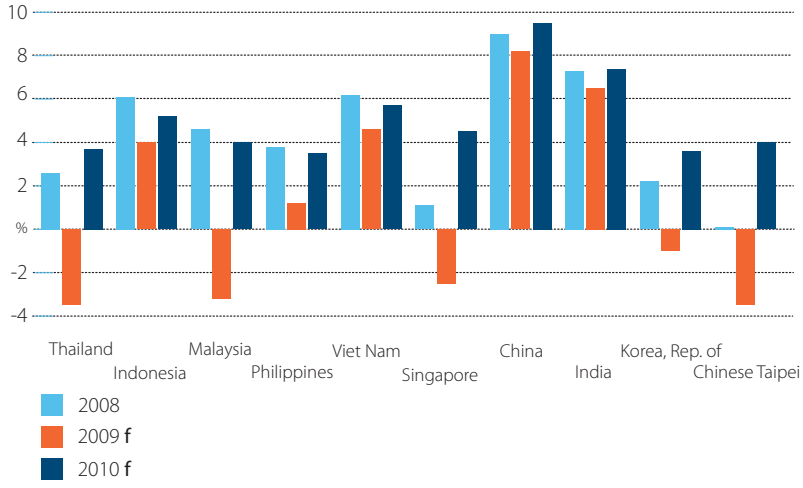
Economic activity in non-OECD Asia has improved in recent months, mainly as a result of strong domestic demand. For example, real gross domestic product in Singapore is estimated to have grown year on year by 0.6 per cent in the September quarter 2009, after declining by 3.3 per cent in the June quarter and 9.5 per cent in the March quarter. In India, the economy expanded year on year by 7.9 per cent in the September quarter 2009 after growth of 6.1 per cent in the June quarter and 5.8 per cent in the March quarter.

Domestic demand across the region has been supported by fiscal stimulus packages and accommodating monetary policies. For example, in Indonesia, the government has implemented a stimulus package that includes tax breaks, subsidies and infrastructure spending equivalent to around 1.4 per cent of gross domestic product, while the central bank has reduced the official interest rate by 300 basis points since December 2008.

Export performance in the region remains weak, although improvement has been achieved in trade with China. For example, exports from Chinese Taipei to China grew year on year by 9.8 per cent in October 2009, compared with a 16.5 per cent decline in exports to the United States in the same month. As world economic activity gradually recovers, industrial production and private investment in non-OECD Asia are expected to increase in response to rising export demand.

In the next few quarters, domestic demand will continue to be the main factor underpinning economic growth in non-OECD Asia, while exports are likely to remain relatively subdued. Against this background, economic growth in non-OECD Asia is assumed to strengthen to around 7.8 per cent in 2010, compared with an estimated average of 6.1 per cent in 2009.

Economic growth in Asia



Western Europe

In Western Europe, economic conditions have improved, although the performance of individual economies remains mixed. For the euro area as a whole, real gross domestic product grew by a seasonally adjusted rate of 0.4 per cent in the September quarter 2009, following contractions of 0.2 per cent in the June quarter and 2.5 per cent in the March quarter.

The resumption of economic growth in Germany, France and Italy has largely been a result of increased consumer spending, supported by governments' incentives and transfer payments to the unemployed and low income groups. There are also tentative signs that export

performance is gradually improving. In Germany, exports recorded a monthly increase of 2.5 per cent in October 2009, supported by higher demand from the Asian region.

In contrast, economic activity in the United Kingdom and Spain continues to be weak. In both countries, the sharp decline of house prices has put significant downward pressure on consumer spending and construction activity. In the United Kingdom, credit availability remains an issue, mainly as a result of the continued weakness in its financial sector.

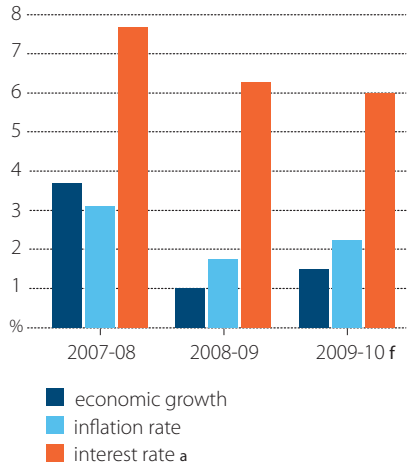
Economic activity in Western Europe is estimated to contract by 4.3 per cent in 2009, reflecting the severe effect of the global financial crisis on employment and business investment. In 2010, economic activity is assumed to gradually recover, averaging around 1 per cent for the year as a whole.

Economic prospects in Australia

Following modest growth in early 2009, economic activity in Australia has strengthened. Real gross domestic product, in seasonally adjusted terms, rose by 0.6 per cent in the June quarter 2009. This compares with growth of 0.4 per cent in the March quarter.

Growth in domestic demand has been a major factor underpinning economic activity in Australia. For example, retail sales, in seasonally adjusted terms, rose by 0.3 per cent in October 2009 from September as a result of improved consumer confidence. Economic activity in Australia has also benefited from a faster than expected recovery of economic growth in its major trading partners, such as China and economies in South-East Asia, with consequent increases in exports, especially for mineral resources.

Australian economic indicators



a Large business weighted average variable rate on credit outstanding.

Looking forward, private sector activity is expected to continue to recover. While export earnings could be adversely affected by a significant appreciation of the Australian exchange rate, especially against the US dollar, an expected strengthening in consumer spending is likely to provide support for general economic activity. Public infrastructure spending is also expected to underpin economic growth in the near term, while the recovery in business investment gains momentum.

Economic growth in Australia is assumed to average 1.5 per cent in 2009-10. This compares with growth of 1 per cent in 2008-09.

Inflation

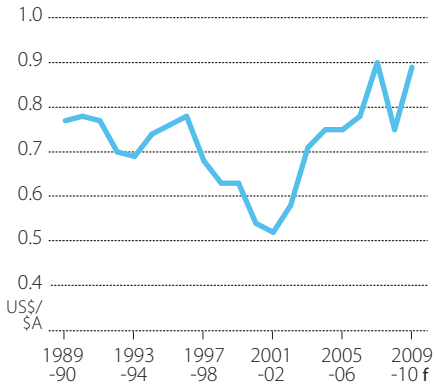
Inflationary pressures in Australia moderated further in the third quarter of 2009. The consumer price index rose year on year by 1.3 per cent in the September quarter 2009, compared with increases of 1.5 per cent in the June quarter and 2.5 per cent in the March quarter. Contributing most to the slower inflation rate in the September quarter were prices of other financial services (-2.3 per cent), vegetables (-5.6 per cent), fruit (-5.4 per cent), pharmaceuticals (-4.4 per cent) and audio, visual and computing equipment (-2.2 per cent).

Inflationary pressures are expected to remain relatively low in the short term. For 2009-10 as a whole, Australia's inflation rate is assumed to average around 2.25 per cent. This compares with inflation of 3.1 per cent in 2008-09.

Exchange rate

Over the past few months the Australian dollar has appreciated significantly, both against the US dollar and on a trade weighted basis. The Australian dollar was trading around US91c and TWI 70 in early December 2009, compared with US87c and TWI 67 in early October and US84c and TWI 66 in late August. For the first half of 2009-10, the Australian dollar is estimated to have averaged around US87c and TWI 68.

US-Australian exchange rate



There are a number of factors that have underpinned the recent significant appreciation of the Australian dollar. In addition to the rapidly improving world economic outlook, which has been perceived by financial markets as the basis for an increase in Australia's terms of trade, stronger economic performance in Australia relative to other OECD economies and recent rises in Australian interest rates are also likely to have contributed to the increase in the value of the Australian dollar.

Changes in financial market sentiment toward the US dollar may have also significantly affected the recent movements in the Australian exchange rate against the US dollar. Reflecting the sharp increase in the US budget deficit and the relatively weak outlook for the US economy, the value of the US dollar has weakened markedly against other major international floating currencies. The US dollar was trading around ¥88 and €0.68 in early December 2009, compared with ¥96 and €0.71 in early July and ¥98 and €0.79 in early March 2009.

The value of the Australian dollar is likely to remain strong, at least in the short term. The assumed world economic recovery is expected to provide support for demand for mineral resources and, hence, Australia's minerals and energy exports. Because Australia is in a more advanced stage of economic recovery than in other OECD countries, there is a distinct possibility interest rates in Australia will rise more rapidly than in other OECD countries.

However, as economic recovery gathers pace in other OECD countries toward mid-2010, financial market sentiment could turn more favourable toward other OECD countries, placing some downward pressure on the value of the Australian dollar.

Taking the above into account, the Australian dollar is assumed to average around US89c and TWI 70 in 2009-10. This compares with an average of US75c and TWI 60 in 2008-09.

There is considerable uncertainty surrounding the short-term outlook for the Australian dollar. This is because movements in the Australian exchange rate can be significantly influenced by changes in financial market sentiment, leading to strong volatility in the Australian exchange rate. Over the past 12 months, the Australian dollar fluctuated from a low of US63c and TWI 54 in early March to a high of US93c and TWI 71 in mid-November. Since its floating in December 1983, the Australian dollar has had an average annual fluctuation range of more than US10c. Consequently, it remains important for primary producers and exporters to manage the risks associated with fluctuations in the Australian exchange rate.

Outlook for Australia's commodity sector

Commodity export prices

The index of unit export returns for Australian commodities, in aggregate, is forecast to fall by 23.6 per cent in 2009-10, following a rise of 29.2 per cent in 2008-09. The forecast decline largely reflects sharply lower contract prices for bulk commodities, including iron ore and coal, and the assumed higher average value of the Australian dollar.

For farm commodities, the index of unit export returns is forecast to decline by 6.8 per cent in 2009-10, after rising slightly in 2008-09. Forecast lower world indicator prices for wheat, coarse grains and oilseeds are expected to more than offset the effect of forecast higher wool, cotton, sugar and dairy product prices.

Unit export returns for Australian mineral resources are forecast to fall by 26.4 per cent in 2009-10, following a rise of 35.3 per cent in 2008-09. Unit returns for energy exports are forecast to decline by 37.8 per cent in 2009-10, compared with an increase of 68.8 per cent in 2008-09. Unit export returns for metals and other minerals are forecast to fall by 14.8 per cent in 2009-10, after rising by 12.6 per cent in 2008-09.

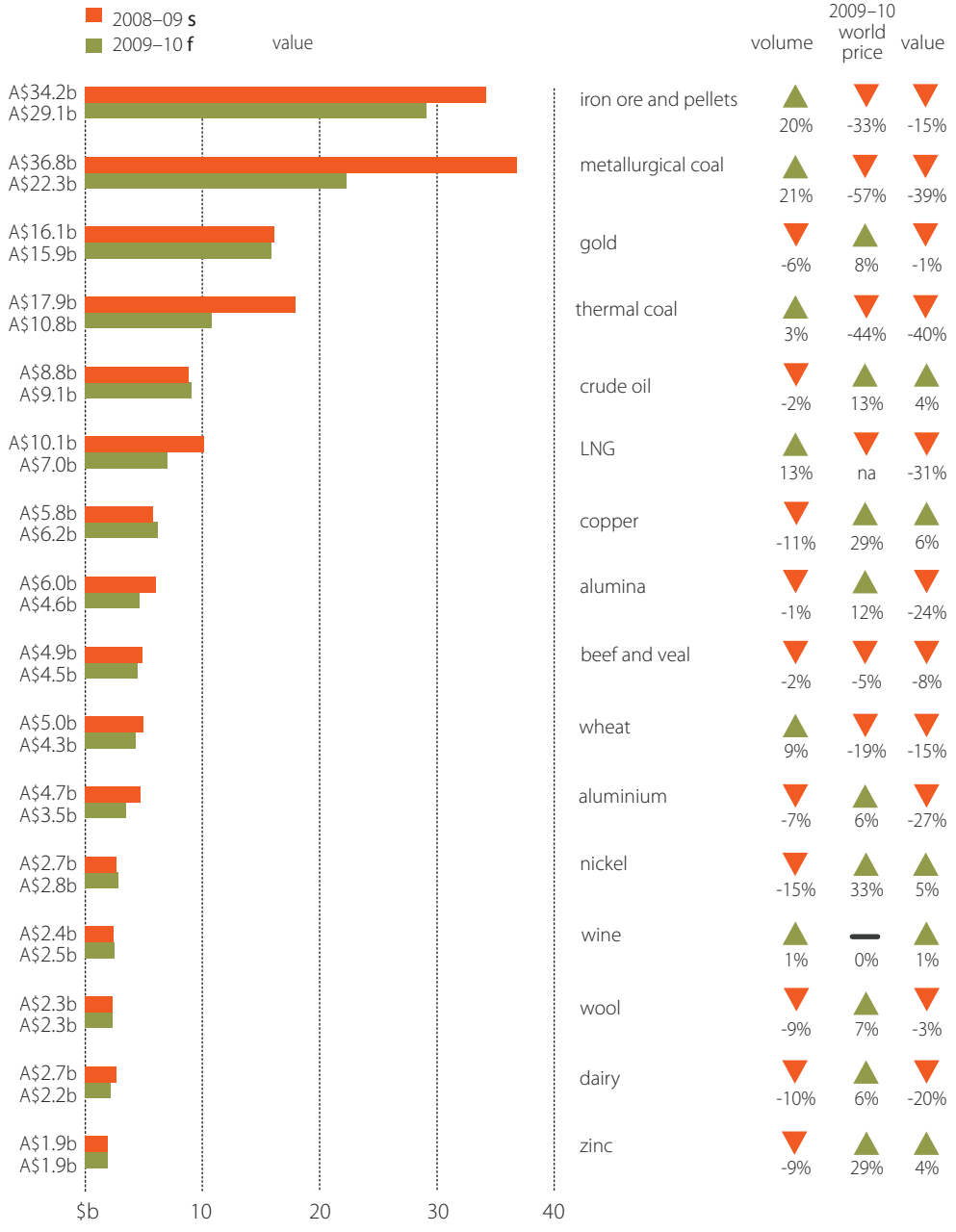
Commodity export earnings

The value of Australia's commodity exports is forecast to be around $162.6 billion in 2009-10, which is a fall of 17.7 per cent from the record of $197.4 billion in 2008-09.

Reflecting a downward revision to winter crop production in the current season and an assumed higher average value of the Australian dollar, export earnings for farm commodities are forecast to be around $30 billion in 2009-10, which is a decline of 6.4 per cent from $32 billion in 2008-09. Farm commodities for which export earnings are forecast to increase in 2009-10 include raw cotton, sugar, chickpeas, peas and rice. However, these gains are expected to be offset by lower export earnings for wheat, barley, canola and livestock and livestock products.

Major Australian commodity exports

World prices are in US$ for all commodities except wool, beef and veal and wine which are in $A.
For export value, annual forecasts are the sum of quarterly forecasts. As a result, annual averages for export values do not necessarily reflect variations in export volumes, world prices and exchange rates.
Iron ore, thermal coal and metallurgical coal are negotiated contract prices for Japanese Fiscal Year running April 2009 to March 2010.



For forest and fisheries products, export earnings are forecast to be around $3.6 billion in 2009-10, which is a decline of 6.7 per cent from 2008-09.

Export earnings from Australian mineral resources are forecast to be around $129 billion in 2009-10, compared with $161.5 billion in 2008-09. The value of energy exports is forecast to decline by 31 per cent to $53.7 billion in 2009-10. For metals and other minerals, export earnings are forecast to fall by 10 per cent to $75.3 billion in 2009-10.

Australian production of mineral resources is forecast to increase by 6.6 per cent in 2009-10, after remaining largely unchanged in 2008-09. Production of metals and other minerals is forecast to increase by 5.3 per cent in 2009-10, following a decline of 3.8 per cent in 2008-09. Production of energy minerals is forecast to increase by 7.6 per cent in 2009-10, after a rise of 4.5 per cent in the previous year.

Major indicators of Australia's commodities sector

		2004 -05	2005 -06	2006 -07	2007 -08	2008 -09	2009 -10 f	*change from previous year* *2008-09* %	*2009-10* %
Commodity exports									
Exchange rate	US$/A$	0.75	0.75	0.78	0.90	0.75	0.89	*– 16.7*	*18.7*
Unit returns a									
Farm	index	100.0	99.5	104.5	116.0	116.7	108.8	*0.6*	*– 6.8*
Mineral resources	index	100.0	132.3	145.5	152.1	205.8	151.5	*35.3*	*– 26.4*
– energy minerals	index	100.0	136.1	124.4	142.0	239.7	149.0	*68.8*	*– 37.8*
– metals and other minerals	index	100.0	129.2	162.1	160.0	180.1	153.5	*12.6*	*– 14.8*
Total commodities	index	100.0	123.5	134.6	142.0	183.5	140.2	*29.2*	*– 23.6*
Value of exports									
Farm	A$m	27 901	27 824	27 900	27 530	32 038	29 982	*16.4*	*– 6.4*
– crops	A$m	13 679	13 996	13 086	13 027	16 872	16 042	*29.5*	*– 4.9*
– livestock	A$m	14 222	13 828	14 815	14 503	15 166	13 939	*4.6*	*– 8.1*
Forest and fisheries products	A$m	3 660	3 687	3 849	3 813	3 872	3 611	*1.5*	*– 6.7*
Mineral resources	A$m	69 511	92 616	107 976	117 635	161 526	128 964	*37.3*	*– 20.2*
– energy minerals	A$m	29 696	39 328	39 427	45 591	77 868	53 698	*70.8*	*– 31.0*
– metals and other minerals	A$m	39 816	53 288	68 549	72 043	83 657	75 266	*16.1*	*– 10.0*
Total commodities	A$m	101 072	124 127	139 725	148 978	197 435	162 557	*32.5*	*– 17.7*
Farm sector									
Gross value of farm production b	A$m	36 537	38 696	36 312	43 840	44 812	42 304	*2.2*	*– 5.6*
– crops	A$m	18 717	20 901	18 060	24 320	25 012	23 798	*2.8*	*– 4.9*
– livestock	A$m	17 820	17 796	18 252	19 521	19 800	18 506	*1.4*	*– 6.5*
Farm costs	A$m	29 243	31 276	31 413	37 262	36 962	35 524	*– 0.8*	*– 3.9*
Net cash income c	A$m	12 582	11 309	10 045	10 798	8 416	11 571	*– 22.1*	*37.5*
Net value of farm production d	A$m	7 294	7 420	4 898	6 579	7 850	6 780	*19.3*	*– 13.6*
Farmers' terms of trade	index	91.7	91.0	94.1	91.0	91.0	89.8	*0.0*	*– 1.3*
Volume of farm production	index	107.8	111.5	95.3	104.8	111.5	111.3	*6.4*	*– 0.2*
– crops	index	111.3	119.6	84.7	105.2	119.9	122.1	*14.0*	*1.8*
– livestock	index	103.1	102.6	105.4	102.7	101.0	98.5	*– 1.7*	*– 2.5*
Crop area and livestock numbers									
Crop area (grains and oilseeds)	'000 ha	23 809	22 111	21 054	23 237	23 417	23 298	*0.8*	*– 0.5*
Sheep	million	100.6	91.0	85.7	76.9	71.6	68.1	*– 6.9*	*– 4.9*
Cattle	million	27.3	28.1	28.3	27.3	27.0	27.3	*– 1.1*	*1.1*
Minerals and energy sector									
Volume of mine production	index	118.6	118.0	121.3	120.7	121.0	129.0	*0.2*	*6.6*
– energy	index	113.4	111.6	118.8	116.7	121.9	131.2	*4.5*	*7.6*
– metals and other minerals	index	123.5	124.2	124.2	124.7	119.9	126.3	*– 3.8*	*5.3*
Gross value of mine production	A$m	66 731	88 912	103 657	112 929	155 065	123 805	*37.3*	*– 20.2*
New capital expenditure e	A$m	10 843	19 659	23 621	29 201	37 977	37 880	*30.1*	*– 0.3*
Exploration expenditure	A$m	2 073	2 503	3 940	5 496	6 034	na	*9.8*	*na*
– energy	A$m	1 192	1 484	2 533	3 501	4 293	na	*22.6*	*na*
– metals and other minerals	A$m	881	1 018	1 407	1 995	1 741	na	*– 12.8*	*na*
Employment									
Agriculture, forestry and fishing	'000	357	348	350	353	358	na	*1.4*	*na*
Mining	'000	105	129	135	145	167	na	*15.3*	*na*
Australia	'000	9 767	10 070	10 353	10 621	10 741	na	*1.1*	*na*

a Base: 2004-05 = 100. **b** For a definition of the gross value of farm production see table 21. **c** Gross value of farm production less increase in assets held by marketing authorities and less total cash costs. **d** Gross value of farm production less total farm costs. **e** Mining industry (ANZSIC subdivision B) only. **s** ABARE estimate. **f** ABARE forecast. **na** Not available.

Note: ABARE revised the method for calculating farm price and production indexes in October 1999. The indexes for the different groups of commodities are calculated on a chain weight basis using Fishers' ideal index with a reference year of 1997-98 = 100.

Sources: Australian Bureau of Statistics; ABARE.

Effect of a higher Australian dollar on farm export earnings

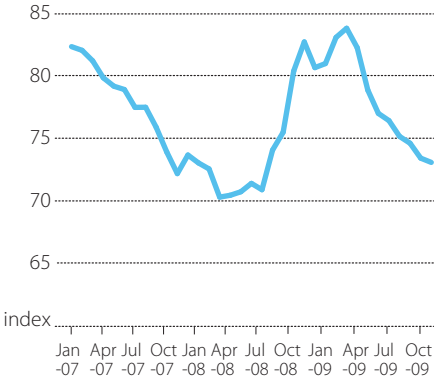
Over the past few months, the Australian dollar has appreciated markedly. The Australian dollar was trading around US91c in early December 2009, compared with a low of US63c in early March 2009 and a high of US98c in mid-July 2008. The Australian dollar is estimated to average around US87c in the first half of 2009-10. This compares with an average of US75c in 2008-09.

There are many factors contributing to the recent appreciation of the Australian dollar, including relatively strong performance in the Australian economy, a higher domestic interest rate structure compared with other OECD countries, and an expected increase in Australia's terms of trade in response to an improved outlook for world economic performance.

One major factor that has contributed notably to the recent sharp appreciation of the Australian exchange rate against the US dollar is a marked weakening of the value of the US dollar. The US dollar was trading around €0.68, £0.61 and ¥88 in early December 2009, compared with €0.80, £0.71 and ¥99 in early March 2009. Against a basket of other major floating international currencies, the US dollar depreciated by around 13 per cent between March and November 2009.

Movement in the US dollar against other major floating currencies

monthly, ended November 2009



Source: Board of Governors of the Federal Reserve System.

The value of the US dollar increased significantly during the global financial crisis in late 2008 and early 2009. The significant upward movement in the value of the US dollar during that period appears to be associated with changing financial market sentiment in favour of the US dollar as a 'safe haven' as a result of the global financial crisis. However, as the prospects for world economic growth improve, the willingness of financial market participants to hold assets in other world economies with a higher risk profile has increased. This has led to a reduction in capital inflows into the United States and the associated demand for the US dollar.

In addition to the change in financial market sentiment, there have also been a number of other developments that have potential to maintain downward pressure on the value of the US dollar, at least in the short term.

First, there has been a significant loosening in fiscal stance in the United States, mainly as a result of the current economic downturn. According to the US Congressional Budget Office, the US budget deficit is estimated to have increased from around 1 per cent of gross domestic product in fiscal year 2007 (October 2006 to September 2007) to around 10 per cent of gross domestic product in fiscal year 2009. Given the significant stimulus packages that have been implemented over the past year or so, the US budget deficit is projected to remain close to 10 per cent of gross domestic product in fiscal year 2010.

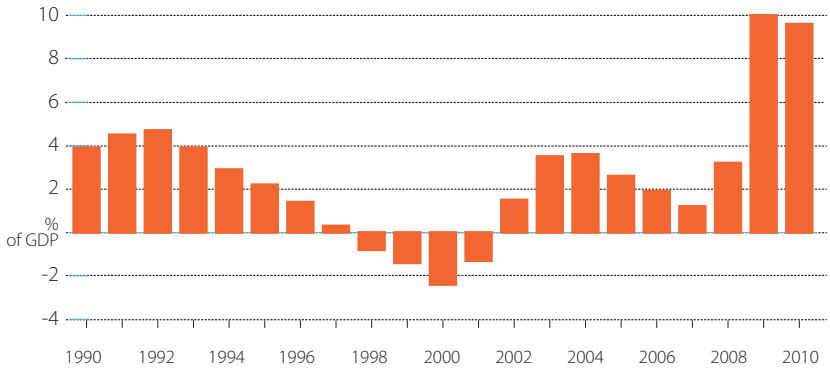
US interest rates have been kept relatively low compared with other major world economies, with the federal funds rate currently at near zero. Given the interest rate differentials with other major world economies, the value of the US dollar would have to remain low in order to attract sufficient capital inflows to finance the significant increase in the borrowing requirements of the US Government.

Second, the current economic outlook for the United States remains relatively weak. Although there have been emerging signs of economic improvements, the pace of economic recovery in that

continued...

Effect of a higher Australian dollar on farm export earnings *continued*

US budget deficit as a percentage of GDP



Note: In fiscal years.
Source: US Congressional Budget Office.

country is widely expected to be only gradual in the short term. Consequently, returns from the business sector are unlikely to increase significantly in the near future, reducing the attractiveness of the United States as an international investment destination. This may also lead to weaker demand for the US dollar and place downward pressure on the US exchange rate.

Implications for farm export earnings

Because the Australian farm sector exports around 60 per cent of its production to world markets, farm export earnings are a major factor influencing farm sector performance and farm incomes.

Farm export contracts are mostly denominated in US dollar terms. As a result, a significant appreciation of the Australian dollar against the US dollar has the potential to adversely affect farm export earnings. However, at the same time, this will be partially offset by downward pressure on the cost of imported farm inputs, such as fertiliser, fuel and machinery, as a result of a higher Australian exchange rate. However, the net effect on the farm sector is likely to be negative.

To make a quantitative assessment of the effect of a higher Australian dollar on the farm sector, an insight into the factors contributing to the appreciation of the Australian dollar is necessary. For example, if the appreciation of the Australian dollar is completely because of changes in domestic factors, then it is likely that farm export prices, which are denominated in US dollars, would remain largely unchanged. In contrast, if the appreciation of the Australian dollar reflects mainly a decline in the value of the US dollar, then export prices in US dollar terms would rise (assuming all else is equal). As higher export prices in US dollars would have a partial offsetting effect, the adverse impact on Australian farm export earnings would be more significant in the former than in the latter.

Using the OECD AGLINK model, Penm et al. (2002) estimated the possible effects on world agricultural prices of a depreciation of the US dollar. Under a scenario of a 15 per cent decline in the value of the US dollar, world grains prices were estimated to rise by around 3 to 4 per cent. While livestock product prices on world markets were estimated to decline, those estimated results were mainly because of the assumed lower world economic growth in the simulation, which is not the case in the current economic environment. Removing the negative effect of the assumed lower world economic growth, livestock export prices would be likely to increase in US dollar terms at least as much as world grains prices in that simulation.

continued...

Effect of a higher Australian dollar on farm export earnings *continued*

One major difficulty in estimating the effect on farm export earnings of a higher Australian dollar is assessing the extent to which the appreciation of the Australian dollar is attributable to the decline in the value of the US dollar. A regression analysis indicates that, since the beginning of 2009, at least 60 per cent of the fluctuations in the Australian–US exchange rate can be explained by movements in the US dollar against other major floating international currencies (it reached a high of around 90 per cent in the June quarter 2009). Similar results were obtained for the relationship between the Australian–US exchange rate and the value of the US dollar on a trade weighted basis over the same period. Because of the complexity in the determination of exchange rate movements, considerable uncertainty remains in drawing definite conclusions from these regression results.

Estimation of the effect on farm export earnings

The effect of an appreciation of the Australian dollar on farm export earnings is estimated based primarily on two assumptions. One is that around 60 per cent of the appreciation of the Australian dollar is because of the effect of a weaker US dollar. The other assumes that a devaluation of 15 per cent in the US dollar will increase agricultural export prices, in aggregate, by around 4 per cent. The estimation does not allow any supply response to changes in export prices or export earnings.

Using ABARE's current forecast of farm export earnings in 2009-10 (around $30 billion) as the basis, a further appreciation of the Australian dollar by US1c is estimated to directly reduce farm export earnings by a maximum of around $330 million in 2009-10, all else equal.

Because a major driver of the recent appreciation of the Australian dollar is the weakening US dollar, this effect needs to be incorporated in the calculations. Under the assumption that around 60 per cent of this US1c appreciation of the Australian dollar is because of the declining US dollar, agricultural export prices would rise in US dollar terms and offset the negative effect on farm export earnings by around 16 per cent. This would reduce the loss in farm export earnings to around $280 million.

A higher Australian dollar would also help reduce the price pressure on imported farm inputs, such as chemicals, fertiliser and machinery. Imported farm inputs account for around 20 per cent of total farm costs (forecast at around $35.5 billion in 2009-10). Consequently, farm costs would be reduced by around $80 million, assuming the full pass through of price reductions to farmers by importers, wholesalers and retailers. Thus, the total effect on the farm sector would be further reduced to around $200 million.

Although a weaker US dollar could also place some upward pressure on the price of imported farm inputs in US dollar terms, the effect on total farm costs is not expected to be significant.

This estimation is sensitive to the extent to which the appreciation of the Australian dollar is attributable to the decline in the value of the US dollar. For example, under an alternative assumption that 90 per cent of this US1c appreciation of the Australian dollar can be attributed to the declining US dollar, the negative effect on the farm sector would be reduced to around $175 million.

Similarly, the result is also sensitive to the assumed magnitude of the increase in farm export prices (in US dollar terms) as a result of the weaker US dollar. Under an alternative assumption that the weaker US dollar would increase agricultural export prices and provide a partial offset of around 30 per cent on farm export earnings, the negative impact on the farm sector would be reduced to around $155 million.

Reference

Penm, J, Maurer, A, Fairhead, L and Tran QT 2002, 'US dollar – impact of a depreciation of the US$ on Australian commodities', *Australian commodities*, vol. 9, no. 3, pp. 485-94, ABARE, Canberra.

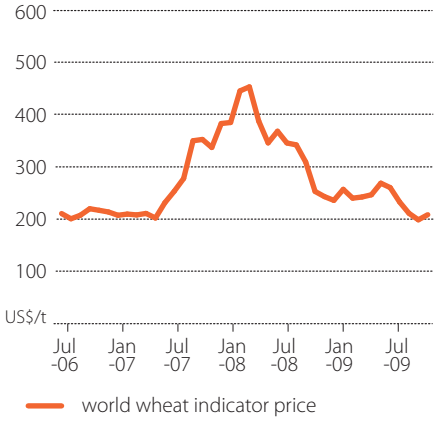
Crops

Wheat

Henry To

World wheat production in 2009-10 is expected to be the second highest on record at around 667 million tonnes. This follows on from last season's record production of 687 million tonnes. When combined with opening season stocks, global wheat supplies for 2009-10 are forecast to increase by 3 per cent to a record 830 million tonnes.

Wheat prices
monthly, ended November 2009



The expected increase in global supplies has put downward pressure on the world wheat indicator price (US hard red winter, fob Gulf ports). For the first five months of 2009-10, the world wheat price averaged around US$216 a tonne, compared with US$271 a tonne for 2008-09 as a whole. Taking into account both the forecast record supply of wheat and lower expected global demand for feed wheat, the world wheat indicator price is forecast to average US$219 a tonne in 2009-10.

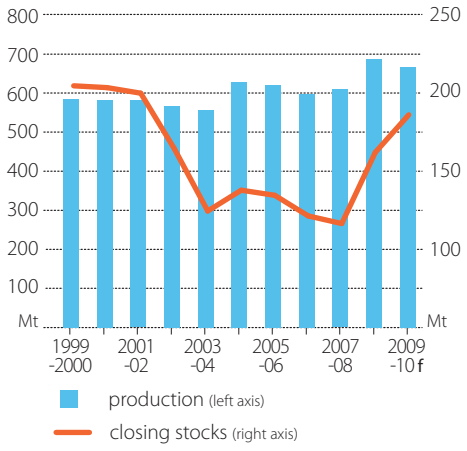
Lower world prices and higher domestic supplies are expected to place downward pressure on Australian domestic wheat prices. Domestic production and exportable supplies are forecast to rise from last season but the relatively high Australian dollar, if sustained, will adversely affect returns for Australian wheat producers. The average pool return for Australian premium white wheat is forecast to be A$256 a tonne in 2009-10, compared with A$324 a tonne in 2008-09.

The domestic cash price for wheat used for livestock feed has fallen to average A$229 in November 2009 after averaging A$323 for the whole of 2008-09. However, there are currently quality concerns surrounding the 2009-10 wheat harvest, with the cash price for livestock feed likely to fall further if there is a significant amount of wheat downgraded to feed quality.

Wheat production in 2009-10 to be second highest on record

World wheat production in 2009-10 is forecast to be the second highest on record at around 667 million tonnes, 3 per cent lower than last season. Production in the major producing regions (the European Union, China, India, the Russian Federation and the United States) is estimated to have fallen by 23 million tonnes in 2009-10, despite increases in China and India.

World wheat



Wheat production in the European Union, the world's largest producing region, is estimated to have declined 14 million tonnes to 137 million tonnes in 2009-10. The growing season was mixed for the European Union with northern producing countries experiencing better growing conditions than those in the south. In most southern European producing countries, warm and dry conditions throughout much of the growing season adversely affected production.

In the United States, total wheat production is estimated to have declined by 8 million tonnes, to 60 million tonnes in 2009-10. The reduction reflects a 7 per cent decline in area planted and lower yields compared with last season. The quality of the crop was also slightly below last season's harvest.

In China and India, wheat production is estimated to have increased by 1 per cent and 2.5 per cent, respectively. Wheat production in China is estimated to be around 114 million tonnes, while Indian production is estimated to be 81 million tonnes. Favourable growing conditions increased yields in both countries, but the areas planted were largely unchanged from last season.

World wheat consumption to rise slightly in 2009-10

Global wheat consumption in 2009-10 is forecast to be slightly higher than in 2008-09 at around 643 million tonnes. Wheat used for human consumption continues to dominate, accounting for around 70 per cent of the total consumed. Human consumption is increasing by around 1 per cent a year, reflecting global population growth. Human consumption of wheat is forecast to increase by a similar amount in 2009-10, to 452 million tonnes.

Partially offsetting this growth in human consumption of wheat is lower use of wheat in livestock feed. The largest consumers of feed wheat are the European Union and the Russian Federation, which together account for around 70 per cent of global feed wheat consumption. In 2009-10, lower livestock numbers in the European Union are expected to result in lower feed wheat consumption in that region. Also, a greater availability of alternative feed grains, such as corn, is forecast to lead to global feed wheat consumption falling by 4 per cent to 104 million tonnes in 2009-10.

Wheat trade forecast to be lower in 2009-10

After reaching a record 136 million tonnes in 2008-09, world wheat trade is forecast to decline 15 per cent to 116 million tonnes in 2009-10. Increased domestic production in many major importing countries is expected to reduce import demand, leading to lower global wheat trade in 2009-10.

Iran imported a record 8 million tonnes of wheat in 2008-09 as drought reduced domestic production. In 2009-10, imports by Iran are forecast to decline by 60 per cent to 3.5 million tonnes as domestic production recovers from last season. Increases in domestic production are also expected to cut imports by Algeria, Morocco, Syria and Turkey in 2009-10. Partially offsetting a forecast rise in imports by Saudi Arabia.

Combined exports by the five major exporters (United States, European Union, Canada, Australia and Argentina) are forecast to decline by 14 million tonnes in 2009-10. EU exports of wheat are forecast to fall 24 per cent to 19 million tonnes because of strong competition from the Black Sea region. After exporting nearly 9 million tonnes in 2008-09, Argentine exports are forecast to decline to around 2 million tonnes in 2009-10. The reduction is a result of the lowest planted wheat area since 1951. Restrictions on wheat exports, for food security reasons, were in effect in Argentina during the autumn planting period which discouraged producers from sowing wheat. The restrictions were removed in October 2009. The United States and Canada are also forecast to ship less wheat in 2009-10.

World stocks highest since 2001-02

World season ending stocks of wheat are forecast to increase by 24 million tonnes to 187 million tonnes in 2009-10. These are the largest end of season stocks since 2001-02. Stocks held by the five major exporters are forecast to increase from 46 million tonnes to 49 million tonnes in 2009-10 as a result of lower exports.

Wheat stocks in the United States are forecast to increase, despite lower production. Opening stocks in 2009-10 were more than double that of the previous season. Combined with expected lower exports and lower domestic use, season ending stocks in the United States are forecast to increase by 6 million tonnes to 24 million tonnes in 2009-10.

The increase in world wheat stocks is also being driven by higher stocks in China and India, which are both forecast to record higher wheat production in the current season. Wheat stocks in China and India have been growing significantly since 2005-06 and are forecast to increase by 27 per cent and 37 per cent, to 56 million tonnes and 18 million tonnes respectively, in 2009-10.

Australian production to rise

Domestic wheat production is forecast to rise by 5 per cent to 22 million tonnes in 2009-10. Harvesting is complete in Queensland, nearing completion in New South Wales and well underway in the other states. Spring weather conditions varied considerably between the wheat producing states and resulted in a mixed outcome for the wheat crop across Australia.

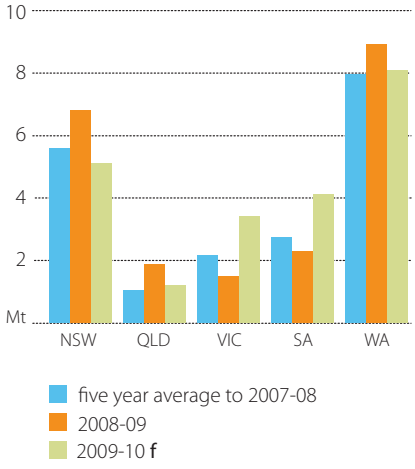
Victoria and South Australia received average rainfall throughout spring and yields in these two states are expected to be above average. However, high temperatures in the lead up to harvest followed by heavy rainfall during harvest have raised concerns over the quality of the crop. Wheat production in Victoria is forecast to be 3.4 million tonnes in 2009-10, compared with 1.7 million tonnes in 2008-09. In South Australia, wheat production is forecast to be 4.1 million tonnes in 2009-10, up from the 2.4 million tonnes produced last season.

In contrast, New South Wales and Queensland recorded very much below average rainfall during spring. The dry conditions resulted in an earlier than normal harvest in Queensland and higher grain protein. However, wheat production in Queensland is forecast to be 1.25 million tonnes in 2009-10, compared with 1.8 million tonnes produced last season.

Poor spring conditions in the central west and southern regions of New South Wales mean production has been revised down substantially from earlier forecasts. Lack of rainfall, high temperatures and frosts reduced yields and led to crop failures in some areas. Wheat production in New South Wales is forecast to be 5.1 million tonnes in 2009-10, compared with 6.9 million tonnes produced last season.

Dry conditions in the latter stages of spring in Western Australia's cropping regions have resulted in yields being lower than earlier forecasts. Recent rainfall has also caused some interruptions to harvest and concerns over crop quality. Wheat production in Western Australia is forecast to be 8.1 million tonnes in 2009-10, which is similar to last season's harvest but below earlier expectations.

Australian wheat production



Australian exports to increase

Australian wheat exports on a marketing year basis (October to September) are forecast to rise to 15.1 million tonnes in 2009-10, 3 per cent higher than in 2008-09. This increase reflects higher expected production for the year. However, because of a forecast lower world wheat price and an assumed higher Australian dollar, the value of Australia's wheat exports on a financial year basis is forecast to fall by 15 per cent to $4.3 billion.

Wheat outlook

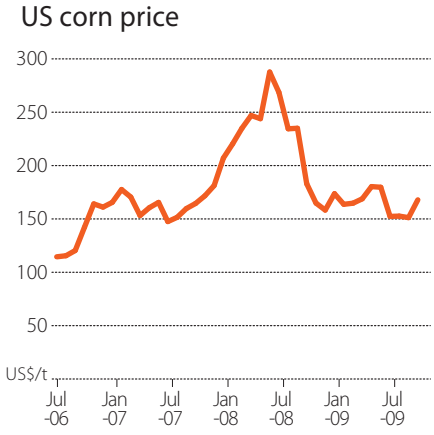
		2007 -08	2008 -09	2009 -10 f	% change
World					
Production	Mt	609	687	667	*– 2.9*
– China	Mt	109	113	114	*0.9*
– European Union 27	Mt	120	151	137	*– 9.3*
– India	Mt	76	79	81	*2.5*
– Russian Federation	Mt	49	64	60	*– 6.3*
– United States	Mt	56	68	60	*– 11.8*
Consumption	Mt	614	641	643	*0.3*
– human	Mt	446	447	452	*1.1*
– feed	Mt	87	108	104	*– 3.7*
Closing stocks	Mt	118	163	187	*14.7*
Trade	Mt	110	136	116	*– 14.7*
Exports					
– Argentina	Mt	10	9	2	*– 77.8*
– Australia	Mt	7	13	15	*15.4*
– Canada	Mt	16	18	17	*– 5.6*
– European Union 27	Mt	11	25	19	*– 24.0*
– United States	Mt	34	27	25	*– 7.4*
Price	US$/t	362	271	219	*– 19.2*
Australia					
Area	'000 ha	12 578	13 151	13 788	*4.8*
Production	kt	13 569	20 938	21 993	*5.0*
Exports **a**	kt	7 408	13 410	14 640	*9.2*
– value	A$m	2 990	5 028	4 271	*– 15.1*
APW 10 net pool return **b**	A$/t	423	324	256	*– 21.0*

a July-June year. **b** Australian premium white wheat, 10 per cent protein. From 2008-09, the pool return is an estimated average across the major companies offering grain pools.

Coarse grains

Henry To

The world coarse grains indicator price (US corn, fob Gulf) is forecast to fall in 2009-10, to average US$161 a tonne over the September to August marketing year. This represents a 7 per cent reduction from the 2008-09 average price and is substantially lower than the record US$218 a tonne in 2007-08. The fall in price is being driven by forecast record global coarse grains supplies. Australian feed barley prices are forecast to average A$195 a tonne in 2009-10 down from A$228 a tonne in 2008-09.



Second highest production on record for 2009-10

World coarse grains production in 2009-10 is forecast to decline slightly from last season's record production, but is expected to be the second highest ever at around 1.09 billion tonnes. World corn production is forecast to be similar to last year at around 790 million tonnes, but barley production is forecast to decline 4 per cent to 148 million tonnes in 2009-10. Coupled with high closing stocks from last season, world coarse grains supplies are forecast to be a record 1.3 billion tonnes in 2009-10.

The United States is the world's largest coarse grains producer and US production is expected to increase in 2009-10. Corn production in the United States is estimated to be the second highest on record at 328 million tonnes, up from 307 million tonnes harvested last season. However, the current pace of the 2009-10 US harvest is the slowest in 30 years. Cold and wet weather has resulted in only 68 per cent of the current harvest being completed by late November compared with the five year average of around 95 per cent. The wet harvest has raised concerns over the quality of the corn crop with reports of ear rot and vomitoxin contamination in some areas. This could potentially render affected corn harmful in animal feed and for human consumption. Largely as a result of these quality concerns, US corn prices rose from late September through to November 2009.

In China, the corn harvest was completed in early November 2009 and production is estimated to have been around 155 million tonnes. This represents a 7 per cent reduction from last season's record despite a larger planted area. The lower production is a result of serious drought in parts of China's main corn growing regions. Drought in large parts of the north-east cropping region and central China adversely affected yield potential.

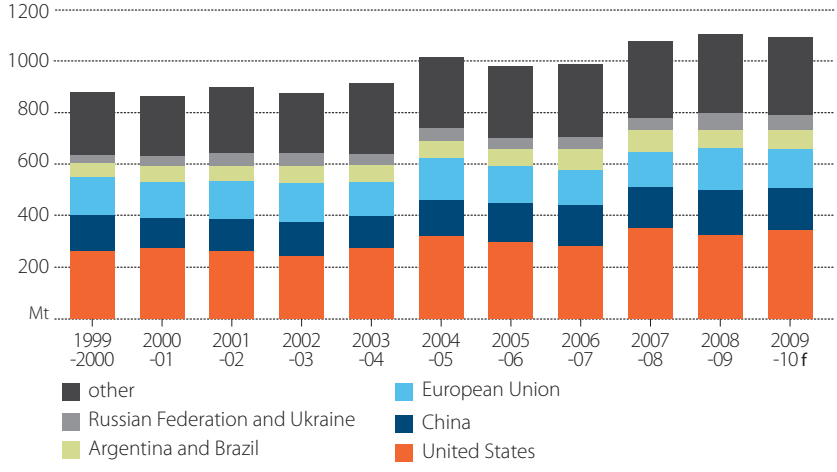
Corn production in the European Union is estimated to decline by 9 per cent in 2009-10, to 57 million tonnes. Inadequate rainfall in some regions in summer and early spring, particularly in southern and eastern Europe, reduced yields. Barley production is estimated to be around 62 million tonnes in 2009-10, which is a 6 per cent decline from last season. Unfavourable

weather reduced production in Spain, the Czech Republic and Hungary, which more than offset production increases in Germany and France.

Following the drought affected corn crop in 2008-09, production in South America is forecast to recover in 2009-10 as better growing conditions return yields closer to their historical averages. Corn planting in Brazil was completed by the end of November, with rains occasionally slowing progress. Plantings are estimated to have fallen because of some land being switched to soybeans, which are higher priced and relatively lower cost to plant. In Brazil, the area planted to corn in 2009-10 is estimated to decline by 6 per cent to 13 million hectares while production is forecast to increase by 2 per cent to 51 million tonnes. In Argentina, the area planted to corn has fallen to less than 2 million hectares. This is the smallest area planted since 1989-90 and reflects farmers responses to anticipated lower prices because of export restrictions put in place for food security reasons at the time of planting.

Barley production in the Black Sea countries is forecast to decline from last season's record. The Russian Federation is forecast to produce 18 million tonnes in 2009-10 after reaching a record 23 million tonnes last season. The decline is because of drought in the Southern and Volga regions, which has reduced yields. Although barley production is forecast to decline 5 per cent to 12 million tonnes in Ukraine in 2009-10, this would be the second highest production in this country since 1994-95.

World coarse grains production



Consumption continues to rise unabated

Coarse grains consumption in 2009-10 is forecast to reach a new record of 1.1 billion tonnes. If achieved, this will be the fourth consecutive year in which consumption has been more than 1 billion tonnes. Driving the increased consumption is continuing growth in ethanol production in the United States and a forecast increase in global coarse grains usage in animal feeds.

Ethanol production leading the rise in consumption

Global industrial use of coarse grains is forecast to reach a record 445 million tonnes in 2009-10, an increase of 4 per cent from 2008-09. This increase is driven by mandated increases in ethanol production and use in the United States with corn being the major feed stock.

The Energy Independence and Security Act (EISA) 2007 included the Renewable Fuel Standard (RFS) which mandates minimum amounts of biofuels that are to be blended into transport fuels in the United States. Ethanol is the main biofuel produced in the United States and production has risen markedly from the 1.6 billion gallons (6.1 billion litres) produced in 2000. In 2009, at least 11 billion gallons (42 billion litres) is expected to be produced under the mandate. Production is mandated to rise to at least 13 billion gallons (49 billion litres) in 2010.

In 2009-10, it is estimated that at least 107 million tonnes of corn will be used for ethanol production in the United States, which is an increase of 12 million tonnes from 2008-09. Ethanol production and consumption are expected to both reach new heights in 2009.

This time last year, the financial viability of the ethanol industry was affected because of the significant fall in the price of ethanol and relatively high input costs. As a result, many ethanol plants in the United States were made idle. The recent reduction in input prices, such as corn and natural gas, and increasing petroleum consumption in the United States have seen improved profitability in the ethanol industry. Many idle ethanol plants have been put back online, which could lead to further increases in ethanol production.

Higher feed use in 2009-10

Global consumption of coarse grains in animal feeds is forecast to increase 2 per cent to 655 million tonnes in 2009-10. The largest consumers of coarse grains in feed are the United States, China and the European Union.

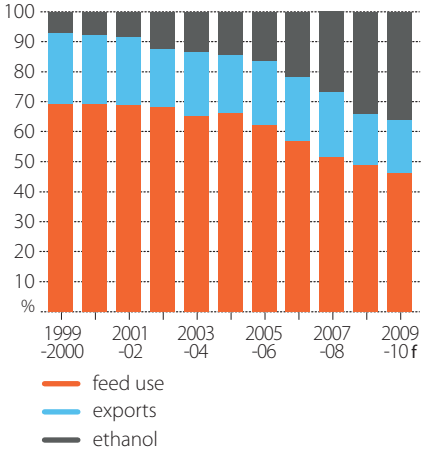
In the United States and the European Union, total feed grains consumption (including wheat) is forecast to decline in 2009-10. This is because the economic downturn has led to a decline in livestock numbers as a result of a fall in consumption of meat. In the United States, an increase in feed corn utilisation is likely to occur mainly at the expense of feed wheat, and to a lesser extent, barley and grain sorghum. Feed corn prices have fallen in recent months, making corn relatively less expensive than other feed grains. Feed corn consumption is forecast to rise to 137 million tonnes in the United States in 2009-10.

Consumption of coarse grains for animal feed in China is forecast to increase 5 per cent in 2009-10, to 117 million tonnes. China's economic outlook for 2009-10 is relatively positive compared with the United States and the European Union. This is expected to lead to increased livestock numbers, meat production and feed use in China.

Trade to increase

World coarse grains trade is forecast to rise 3 per cent in 2009-10 to around 110 million tonnes. A rise in corn trade is forecast to more than offset a decline in barley trade.

US corn use



Corn exports from the United States are forecast to increase by 13 per cent to 53 million tonnes in 2009-10. This increase will be driven by production shortfalls in other countries and a relatively low US dollar making US corn more price competitive. Mexico is forecast to import 9 million tonnes of corn, an increase of 1.6 million tonnes from last season. Corn production in Mexico is estimated to have declined by 2.5 million tonnes to 22.5 million tonnes in 2009-10. Canada is also forecast to import a greater volume of corn because of lower 2009-10 production and lower opening stocks. Malaysia and the Republic of Korea are both forecast to increase corn imports by 500 000 tonnes each, reflecting a forecast increase in meat production in these countries. Global corn trade is forecast to increase by 6 per cent to 84 million tonnes in 2009-10.

World barley trade is forecast to decline by 14 per cent to 17 million tonnes in 2009-10. This decline is a combination of reduced exportable supplies in major exporters such as Ukraine, the Russian Federation, the European Union and Canada and increased domestic production in major importing markets such as the Middle East and North Africa.

Closing stocks to fall

Coarse grain stocks at the end of 2009-10 are forecast to be 6 per cent lower than in 2008-09, at 178 million tonnes. The forecast decline is mainly the result of increased coarse grains consumption and lower coarse grains production. While corn stocks are forecast to fall, world barley stocks are forecast to rise by around 1 million tonnes to 31 million tonnes.

World corn stocks are forecast to decline by 9.5 million tonnes to 134 million tonnes in 2009-10. The largest decline is forecast for China where corn stocks are forecast to decline by 4.5 million tonnes to 49 million tonnes because of an increase in domestic feed consumption and lower domestic production.

US corn stocks are forecast to fall by around 1 million tonnes to 42 million tonnes in 2009-10, despite production increasing by more than 20 million tonnes. The fall reflects the increased utilisation of corn for ethanol production, greater domestic consumption of corn in feed and higher exports. EU corn stocks are forecast to decline by around 48 per cent to less than 3 million tonnes because of lower corn production and slightly higher industrial use.

Lower summer crop production expected in 2009-10

Australian coarse grains production is forecast to be 12 million tonnes in 2009-10, 3 per cent less than 2008-09 production. An increase in barley production is expected to be more than offset by a decline in grain sorghum production.

Australian barley production is forecast to rise by 8 per cent to 8.3 million tonnes in 2009-10, compared with 7.7 million tonnes produced last season. The increase in barley production is a result of higher production in South Australia and Victoria compared with 2008-09. However, the rains during harvest have raised concerns about crop quality and greater quantities of feed grade barley are expected.

Barley production in Victoria is forecast to increase by 50 per cent to 2.1 million tonnes in 2009-10, compared with 1.4 million tonnes in 2008-09. In South Australia, barley production is forecast to rise by 40 per cent to 2.6 million tonnes in 2009-10, after last season's 1.9 million tonnes.

In contrast, barley production in New South Wales in 2009-10 is forecast to be 120 000 tonnes lower than last year, at 1.28 million tonnes. Barley production in Western Australia has also been revised down to 2.2 million tonnes in 2009-10. This compares with last season's 2.81 million tonnes.

The poor spring conditions in northern New South Wales and southern Queensland have affected grain sorghum plantings. Soil moisture profiles in the summer cropping regions are low because of the lack of spring rainfall. To date, grain sorghum plantings are well below what was planted this time last season. The Australian Bureau of Meteorology in its latest seasonal outlook (24 November 2009) for the summer period indicates there is a 50 per cent chance of exceeding median rainfall for most of Australia, except for northern Queensland. If more rainfall is received in the near future, there could be more grain sorghum planting. For the 2009-10 season, the area planted to grain sorghum is forecast to be 637 000 hectares, a decline of 16 per cent from 2008-09. Grain sorghum production is forecast to be around 1.6 million tonnes in 2009-10.

Barley exports to rise, grain sorghum exports to fall

Australian barley exports are forecast to increase to 4.3 million tonnes in 2009-10, which is a 10 per cent increase on the previous year. While volume is forecast to rise, the value of barley exports is forecast to fall by 1 per cent to $1.3 billion in 2009-10.

Grain sorghum exports were a record 1.37 million tonnes in 2008-09. In 2009-10, with lower expected production, grain sorghum exports are forecast to decline to 1.05 million tonnes, which is a fall of 23 per cent. The value of grain sorghum exports in 2009-10 is forecast to decline by 20 per cent to $325 million.

Australian coarse grains exports in 2009-10 are forecast to be around 5.6 million tonnes, similar to the volume shipped in 2008-09. The assumed appreciation of the Australian dollar against the US dollar is expected to adversely affect the value of coarse grains exports, which is forecast to fall 7 per cent to be around $1.7 billion.

Coarse grains outlook

		2007 -08	2008 -09	2009 -10 f	% change
World					
Production	Mt	1 076	1 100	1 091	*– 0.8*
– barley	Mt	133	154	148	*– 3.9*
– corn	Mt	792	791	790	*– 0.1*
Consumption	Mt	1 056	1 073	1 100	*2.5*
Trade	Mt	127	107	110	*2.8*
Closing stocks	Mt	160	189	178	*– 5.8*
US corn price (fob Gulf, Sept–Aug)	US$/t	218	173	161	*– 6.9*
Australia					
Area	'000 ha	7 510	6 825	6 444	*– 5.6*
– barley	'000 ha	4 902	4 790	4 479	*– 6.5*
– sorghum	'000 ha	942	754	637	*– 15.5*
Production	kt	13 289	12 416	12 000	*– 3.3*
– barley	kt	7 159	7 669	8 292	*8.1*
– sorghum	kt	3 790	2 671	1 594	*– 40.3*
Exports a	kt	4 429	5 563	5 577	*0.3*
– value	A$m	1 620	1 820	1 694	*– 6.9*
Feed barley price	A$/t	308	228	195	*– 14.5*
Malting barley price	A$/t	350	291	206	*– 29.2*

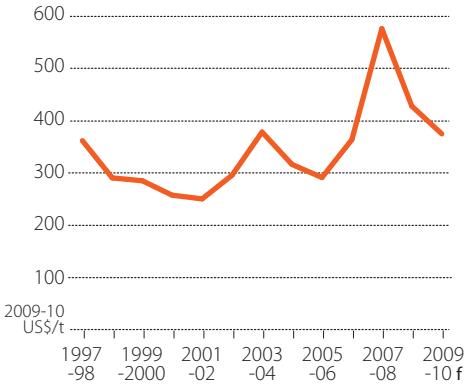
a July-June year.

Oilseeds

Daniel Mackinnon and Gayathiri Bragatheswaran

In 2009-10 the world oilseed indicator price (soybeans, cif, Rotterdam) is forecast to decline by 11 per cent. The forecast decline in world oilseed prices in 2009-10 is a result of expected record global oilseed production, which will outweigh the effect of a modest increase in world consumption. The world oilseed indicator price is forecast to average around US$375 a tonne in 2009-10. This compares with an average of US$421 a tonne in 2008-09 and the high of US$549 a tonne in 2007-08.

World oilseed indicator prices



Increased world production

In 2009-10, world oilseed production is forecast to rise to a record 429 million tonnes, with production in most major oilseed producing countries expected to be higher.

The area sown to soybeans in Argentina is forecast to increase by 18 per cent in 2009-10, as farmers switch from corn to soybeans. This switch has been driven by a longer planting window for soybeans relative to corn during the spring, and higher returns for soybeans. Soybean production in Argentina is forecast to be 57.2 million tonnes, which is a 60 per cent increase on the drought affected crop of 2008-09.

In the United States, the 2009-10 soybean harvest is well underway despite being delayed by unseasonal rainfall at the start of autumn. Soybean production is estimated to increase by 12 per cent to 90.3 million tonnes in 2009-10. Although total production is forecast to increase, the wet harvest conditions have raised concerns over bean quality in some regions.

Soybean production in Brazil in 2009-10 is forecast to be a record 63 million tonnes, which is 11 per cent higher than in 2008-09. Soybean yields are forecast to average 2.78 tonnes a hectare, which is 5 per cent higher than the average achieved for the past five years.

The European Union and Canada are the world's largest canola producers and together account for more than 50 per cent of global production. Harvest in Canada has been completed with production estimated to have been around 10.2 million tonnes, a decline of 19 per cent from the record of the previous season. This reduction was because of lower harvested area and reduced yields.

Harvest for the 2009-10 season has also been completed in the European Union with production estimated at a record of 21.2 million tonnes. Yields are estimated to have been around 3.23 tonnes a hectare, 5 per cent higher than the five year average.

Consumption forecast to rise in 2009-10

In 2009-10 oilseed consumption is forecast to rise by 3 per cent to 413 million tonnes. Consumption of oilseed meal is forecast to increase by nearly 4 per cent to 236 million tonnes in 2009-10, compared with 228 million tonnes in 2008-09. Vegetable oil consumption is forecast to be 135 million tonnes in 2009-10, a 5 per cent rise on 2008-09, as food and fuel use both increase.

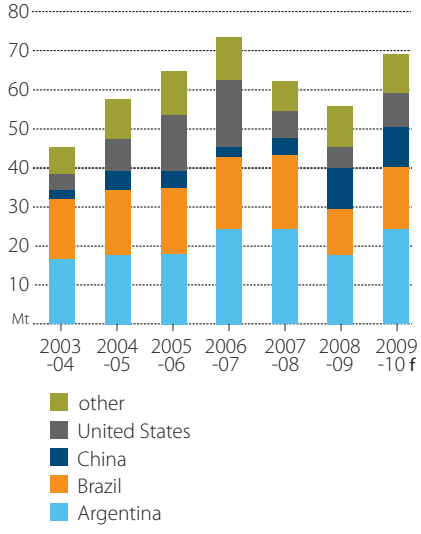
Industrial consumption continues to grow

Global industrial consumption of vegetable oils has grown by an average of 15 per cent annually over the past five years, with consumption forecast to be 8 per cent higher in 2009-10. Industrial consumption of vegetable oil is mainly for biodiesel production. The rise in biodiesel demand in many countries, mainly because of government mandated targets for biofuel use in the transport sector, is driving the increased demand for vegetable oil. These mandates have provided significant support for vegetable oil prices. The European Union is the world's largest industrial consumer, accounting for around 35 per cent of world industrial consumption. EU consumption is forecast to grow by 5 per cent in 2009-10.

Human consumption of vegetable oil forecast to increase

In 2009-10, global human consumption of vegetable oil is forecast to increase by 4 per cent, a rate similar to the annual growth of the past five years. South Asia, the European Union and North America are the three largest consumers of vegetable oil. Human consumption of vegetable oil is forecast to rise by 4 per cent in South Asia to 19.2 million tonnes, 1 per cent in the European Union to 13.3 million tonnes and by 3 per cent to 12.3 million tonnes in North America.

World oilseed closing stocks



Meal consumption continues to increase

Total oilseed meal consumption is forecast to increase to 236 million tonnes in 2009-10, compared with 228 million tonnes in 2008-09. Soybean meal is forecast to account for 67 per cent of total oilseed meal consumed in 2009-10. China is one of the world's largest consumers of soybean meal and is forecast to account for 22 per cent of total global soybean consumption in 2009-10. Over the past five years, soybean meal consumption in China has grown by an average of 11 per cent a year, largely as a result of China's expanding livestock sector. In 2009-10, China's consumption of soybean meal is forecast to increase by 9 per cent, to 34.4 million tonnes.

Ending stocks to increase

Over the past two years, global oilseed production has been insufficient to meet the growth in oilseed

consumption, resulting in lower oilseed stocks and high oilseed prices. In 2009-10, world season ending oilseed stocks are forecast to grow by 23 per cent to 69 million tonnes, the second highest ending stocks on record. This forecast increase in ending stocks mainly reflects higher soybean production in Argentina, Brazil and the United States.

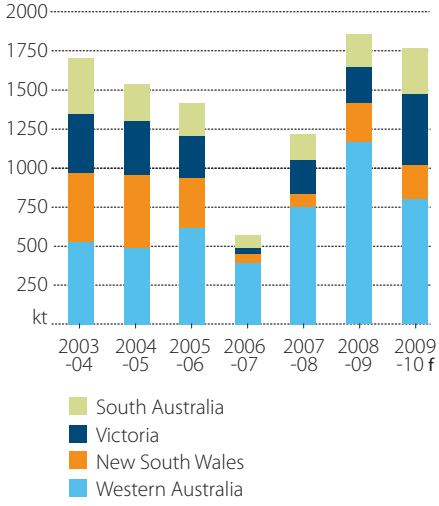
Australian canola production remains high

Australian canola production is forecast to be around 1.77 million tonnes in 2009-10, which is 5 per cent less than last year's production, but well above the five year average of 1.32 million tonnes.

In New South Wales, canola production is estimated at 220 000 tonnes in 2009-10, down from 256 000 tonnes produced last season. Below average spring rainfall in the key growing regions of central and southern New South Wales and frosts in early October have adversely affected the crop, with production well below mid-year expectations.

In contrast, canola production in Victoria is forecast to rebound from last year's drought affected crop to around 450 000 tonnes in 2009-10, which is higher than earlier expectations. Good spring rainfall across most of the state is estimated to lift Victorian canola yields to a record of around 2 tonnes a hectare. Although the area planted was lower than in the preceding year, improved yields in South Australia are forecast to result in a 42 per cent rise in canola production to around 300 000 tonnes in 2009-10. In Western Australia, the largest canola producing state, production is forecast to be around 800 000 tonnes in 2009-10, 31 per cent below last year's record.

Australian canola production



Australian canola exports to decline

Australian canola exports are forecast to fall by 2 per cent to 955 000 tonnes in 2009-10. Lower shipments, combined with forecast sharply lower export prices, mean the value of Australia's canola exports is forecast to fall by 26 per cent to around $441 million. Export prices are likely to remain relatively weak in the short term because of the effect of an assumed higher Australian dollar and reduced import demand from the European Union as a result of increased EU production.

Oilseeds outlook

		2007 -08	2008 -09	2009 -10 f	% change
World					
Production	Mt	392	395	429	*8.6*
Consumption	Mt	400	400	413	*3.3*
– oilseed meal	Mt	230	228	236	*3.5*
– vegetable oil	Mt	125	129	135	*4.7*
Closing stocks	Mt	62	56	69	*23.2*
Soybeans indicator price	US$/t	549	421	375	*– 10.9*
Australia					
Total production	kt	1 577	2 574	2 494	*– 3.1*
– winter	kt	1 241	1 890	1 801	*– 4.7*
– summer	kt	337	684	693	*1.3*
Canola					
Production	kt	1 214	1 861	1 770	*– 4.9*
Exports a	kt	519	973	955	*– 1.8*
– value	$m	303	595	441	*– 25.9*
Price (Nov–Oct) (delivered Melbourne)	A$/t	696	525	430	*– 18.1*

a July-June year.

Sugar

Max Foster

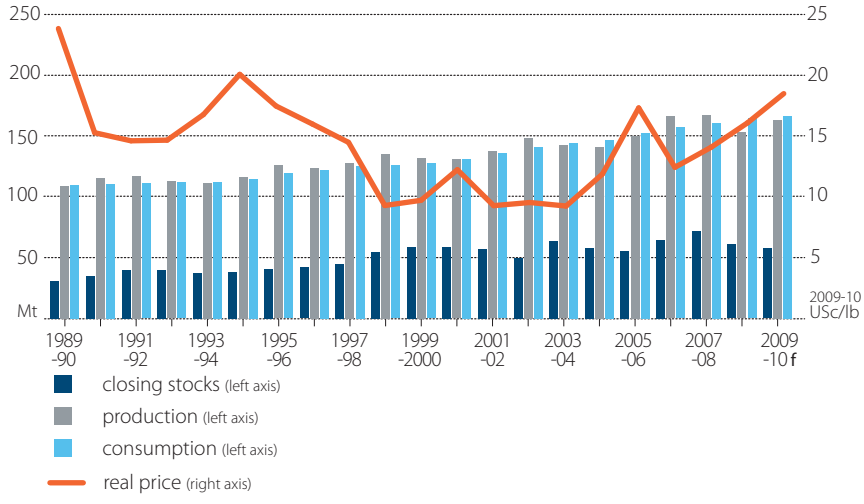
Higher world sugar prices in 2009-10

The world indicator price for sugar (Intercontinental Exchange, no. 11 spot, fob Caribbean) is forecast to average US18.5 cents a pound in 2009-10, up from US15.9 cents a pound in 2008-09, as world sugar supplies remain relatively constrained.

This forecast is based on an assessment that downward pressure on sugar prices is likely to emerge from early 2010 in anticipation of increased supplies from the new Brazilian cane harvest which starts around March 2010. There could be a further easing of world prices from June 2010 if a normal Indian monsoon occurs in the June to September period.

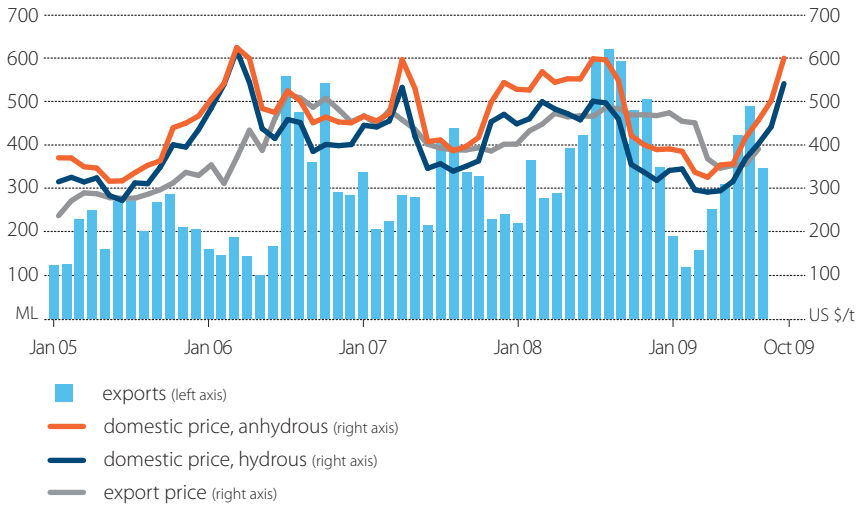
At 9 December 2009, the sugar indicator price was US22.5 cents a pound. The forecast of declining world sugar prices throughout the remainder of 2009-10 is broadly consistent with the pattern of sugar futures prices on the Intercontinental Exchange. On 9 December 2009, the March 2010 contract was US22.2 cents a pound but the October 2010 contract was only US20.1 cents a pound.

World sugar indicators



Ethanol prices are an important determinant of how Brazilian sugar cane is allocated between sugar and ethanol production. Brazilian domestic and export prices for ethanol have been increasing in response to higher sugar and world oil prices. Brazil provided nearly 40 per cent of world ethanol exports over the five years to 2008, excluding intra-European Union trade. The price relativities between sugar and ethanol favour increased use of sugar cane for sugar production, rather than for ethanol production, in Brazil in 2009-10.

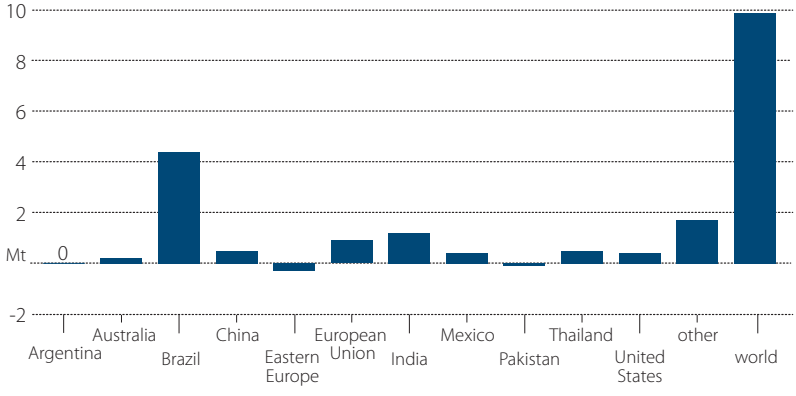
Monthly ethanol prices and ethanol exports, Brazil



Rebound in world sugar production in 2009-10

World sugar production is forecast to increase to 163 million tonnes in 2009-10 (October to September), up from the poor world harvest of 153 million tonnes in 2008-09, as production responds to the recent sharp rise in world prices. Sugar production increases are forecast for most of the major producing regions in 2009-10, excluding Eastern Europe.

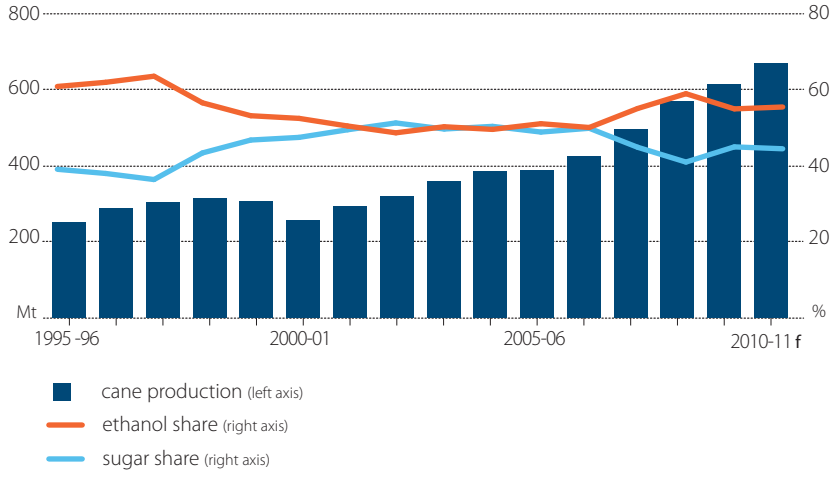
Changes in world sugar production in 2009-10
by region



Brazilian sugar production is forecast to increase to 41.2 million tonnes in 2009-10 (October to September), compared with 36.8 million tonnes in 2008-09. The Brazilian crop year runs from April to March, so 2009-10 production on an October to September year consists of production in the last six months of Brazil's 2009-10 crop year and the first six months of

its 2010-11 crop year. Rain has adversely affected cane production and sugar recovery in Brazil's 2009-10 crop year, with around 50 million tonnes of the cane originally intended to be harvested with potential to be left in the field. However, cane production in Brazil's 2010-11 crop year is forecast to increase by 14 per cent. Moreover, the proportion of cane used for sugar production is forecast to increase to 45 per cent in Brazil's 2009-10 crop year and ease only slightly in its 2010-11 crop year, compared with 41 per cent in 2008-09. This higher sugar proportion reflects favourable sugar prices compared with ethanol prices.

Brazilian cane production and allocation a



a April to March years.

Despite an Indian monsoon season that delivered rainfall 23 per cent below normal, Indian sugar production in 2009-10 is forecast to recover to 17.3 million tonnes from the poor harvest of 16.3 million tonnes in 2008-09. The area of sugar cane harvested is forecast to decline by 2.3 per cent, but this is forecast to be offset by a recovery in sugar yields from cane. The forecast for Indian sugar production in 2009-10 reflects a relatively high proportion being processed into the traditional sweetener forms of khandsari and gur (jaggery), rather than into sugar.

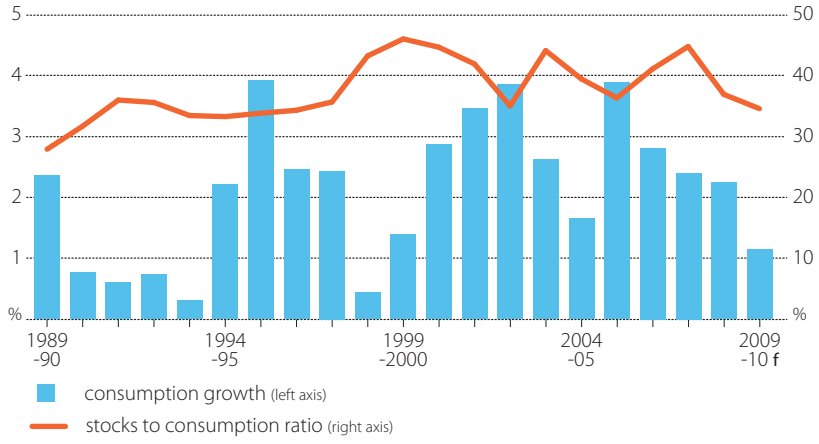
Excellent seasonal conditions for sugar beet in the European Union have resulted in estimated sugar production of 16.4 million tonnes in 2009-10, which is 0.9 million tonnes higher than in 2008-09 and around 1.9 million tonnes more than the European sugar production quota. Some of this 'above quota' sugar may be used for ethanol production rather than sold as sugar.

Higher sugar prices in the second half of 2009 are also forecast to induce higher sugar production in most other sugar producing countries in 2009-10. However, the full production response is unlikely to be felt until 2010-11.

Constrained world sugar consumption growth in 2009-10

Consumption of sugar is forecast to grow by 1.2 per cent in 2009-10 compared with the average increase of 2.6 per cent in the five years to 2008-09, as high sugar prices slow growth in use. The slowing effect on consumption of high prices is likely to be most significant in lower income countries.

World sugar consumption and stocks to consumption ratio



Generally, world consumption of sugar has a relatively low responsiveness to changes in income, so the assumed global economic recovery in 2009-10 is forecast to have only a small effect on world sugar consumption. However, the severe economic downturn in the Russian Federation is forecast to result in little growth in sugar consumption in that country in 2009-10.

Record world sugar exports in 2009-10

World sugar exports are forecast to be a record 53 million tonnes (raw sugar equivalent) in 2009-10, up 3.2 million tonnes on 2008-09. The record exports mostly reflect increased import requirements by India, following its production shortfalls in both 2008-09 and 2009-10.

Indian sugar imports in 2009-10 are forecast to be 5 million tonnes, compared with 2.6 million tonnes in 2008-09. In an attempt to contain increases in domestic prices of sugar and maintain employment in sugar refineries, India has implemented various import arrangements since February 2009 to allow duty-free imports of sugar for extended periods of time. For raw sugar that is to be further refined in India, the duty-free period has now been extended to January 2011. Selected state trading entities were also allowed to import up to 1 million tonnes of white (refined) sugar in aggregate by 30 November 2009.

It is expected that India's sugar imports in 2009-10 will largely be met from Brazil, where export availabilities are around 4.5 million tonnes higher than in 2008-09.

The increase in European Union production in 2009-10 has implications for its exports. The sugar exports of the European Union were 0.7 million tonnes in 2008-09, but it can export up to 1.4 million tonnes under its World Trade Organization export subsidy commitment. EU sugar exports are forecast to increase to around 1.1 million tonnes in 2009-10. EU sugar imports will still increase slightly in 2009–10 because Economic Partnership Agreements guarantee certain African, Caribbean and Pacific countries duty-free (but quota limited) access to the European Union sugar market.

Smaller world sugar deficit in 2009-10

World season ending stocks of sugar are forecast to decline to 57.5 million tonnes in 2009-10, as world sugar production falls short of consumption by 3.2 million tonnes. However, the forecast world sugar deficit (the difference between production and consumption) in 2009-10 is much lower than the estimated deficit of 11.3 million tonnes in 2008-09. The ratio of world sugar ending stocks to consumption is forecast to decline to 34.6 per cent in 2009-10, compared with nearly 37 per cent in 2008-09 which was the lowest ratio since 1996-97.

Following two years of poor domestic production, Indian carryover stocks of sugar in 2009-10 are forecast to decline to 7.9 million tonnes from 9.7 million tonnes in 2008-09, equivalent to around four months of sugar consumption.

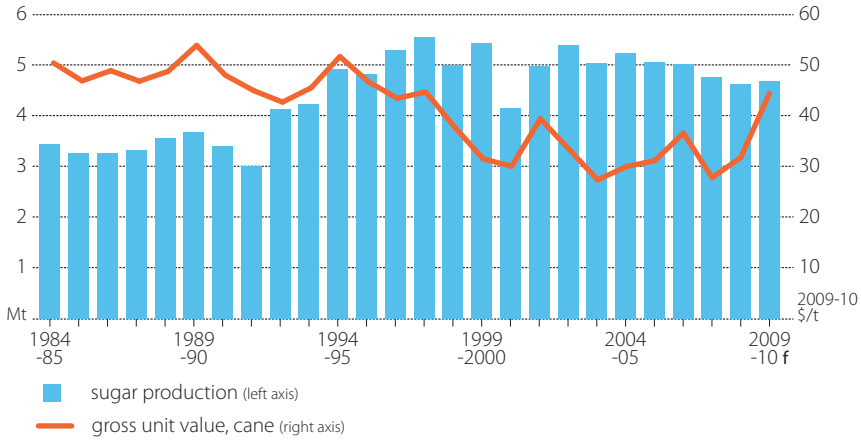
Buoyant returns to Australian cane growers in 2009-10

The rising world sugar prices mean favourable returns to Australian cane growers in 2009-10, despite the assumed appreciation of the Australian dollar. The average return to Australian growers for cane in 2009-10 is forecast to be around $44 a tonne, compared with an estimated $31 a tonne in 2008-09 and $26 a tonne in 2007-08.

The indicative price at 7 December 2009 for the season pool offered by Queensland Sugar Limited (QSL) for 2009-10 production (harvested in the second half of 2009) was $468 to $498 a tonne IPS (International Pol Scale), compared with $333 a tonne IPS for 2008-09 production. At the same time, the indicative price for QSL's aggressive pool for 2009-10 production was $431 to $471 a tonne IPS. The return to millers and cane growers in any year also reflects returns from long-term contracts and from higher priced markets, the United States and the European Union, in which import tariff quotas are applied.

Unusually dry winter and spring conditions in the sugar growing regions of Queensland and northern New South Wales enabled an early finish to the 2009-10 cane harvest in Australia. While the dry conditions adversely affected cane yields, they were favourable for sugar content in the cane. Australian sugar production is forecast to be 4.5 million tonnes in 2009-10, 2.5 per cent less than in 2008-09.

Production and returns to Australian sugar growers



Sugar outlook

		2007 -08	2008 -09	2009 -10 f	% change
World					
Production	Mt	167.1	153.0	163.0	*6.5*
– Brazil	Mt	30.7	36.8	41.2	*12.0*
Consumption	Mt	160.7	164.3	166.2	*1.2*
Closing stocks	Mt	72.0	60.7	57.5	*– 5.3*
Change in stocks	Mt	7.5	– 11.3	– 3.2	
Price	USc/lb	13.7	15.9	18.5	*16.4*
Australia					
Area	'000 ha	381	367	365	*– 0.5*
Production	kt	4 763	4 634	4 519	*– 2.5*
Exports	kt	3 493	3 244	3 249	*0.2*
– value	A$m	1 006	1 335	1 603	*20.1*

Cotton

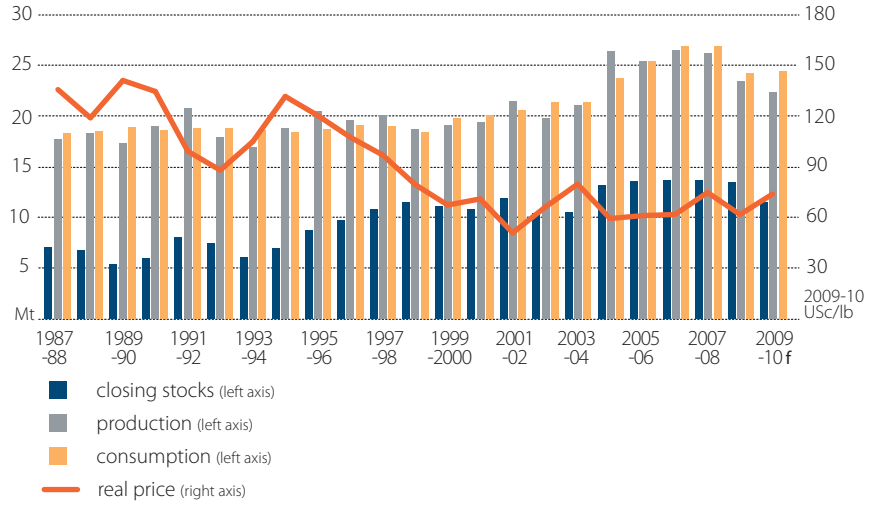
Max Foster

World cotton prices to increase in 2009-10

The world indicator price for cotton (the Cotlook 'A' index) is forecast to increase by 21 per cent from 2008-09, to average US74 cents a pound in 2009-10, as world cotton production declines for the third consecutive year and world demand for apparel fibres recovers.

At 9 December 2009, the world cotton indicator price (a spot price) was US75.5 cents a pound. The expectation of improving world cotton prices throughout the remainder of 2009-10 is reflected in the pattern of cotton futures prices on the Intercontinental Exchange. On 2 December 2009, the March 2010 contract was US74.4 cents a pound and the July 2010 contract was at US76.5 cents a pound.

World cotton indicators

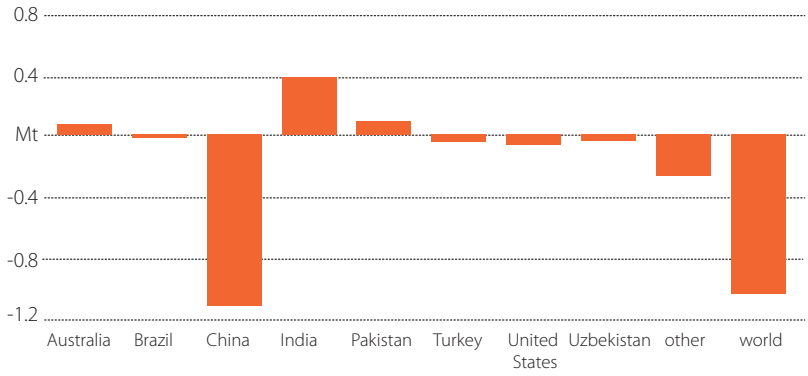


World cotton production lower again in 2009-10

World cotton production is forecast to decline to 22.4 million tonnes in 2009-10, down from 23.4 million tonnes in 2008-09, largely because of a poor harvest in China, which more than offset increased production in India.

Indian cotton production is forecast to be a near-record 5.3 million tonnes, up 0.4 million tonnes from 2008-09, despite monsoonal rainfall being 23 per cent below the long-term average. Cotton plantings increased by 13 per cent in India in 2009-10, reflecting improved pest management strategies, such as the introduction in 2004 of genetically-modified insect-resistant varieties, that have boosted the profitability of cotton growing in India.

Changes in world cotton production in 2009-10, by country



The area harvested of cotton in the United States is estimated to have increased by 2 per cent in 2009-10, as a lower abandonment rate more than offset the 4 per cent reduction in cotton plantings. However, with rain disruptions during the harvest period affecting lint yields, US cotton production in 2009-10 is estimated to be down 2.5 per cent from the drought affected harvest of 2008-09, to 2.7 million tonnes. US cotton production has been declining for the past four years and forecast 2009-10 production represents only 52 per cent of the record achieved in 2005-06.

Chinese cotton production is forecast to be 6.9 million tonnes in 2009-10, down from nearly 8 million tonnes in 2008-09. Chinese cotton plantings in 2009-10 were down by 20 per cent, largely because of expected higher returns from alternative crops. Area harvested and lint yields were further reduced as a result of severe drought during the growing season.

Seasonal conditions and prices for cotton in 2009 did not favour cotton plantings elsewhere, with only Australia and Pakistan expecting production increases in 2009-10.

Modest recovery in world cotton consumption in 2009-10

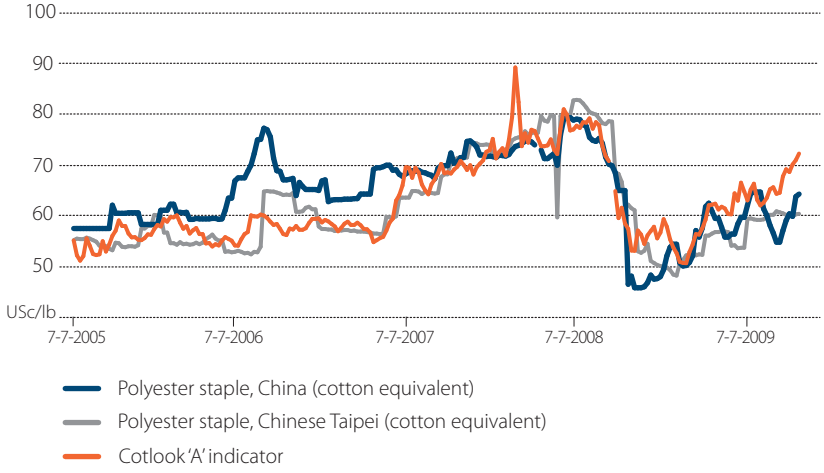
Mill consumption of cotton is forecast to grow by 0.8 per cent in 2009-10, compared with a decline of 10 per cent in 2008-09 because of the global economic downturn. Demand for cotton is expected to grow in 2009-10 but could be constrained by high world cotton prices relative to prices for synthetic fibres.

Polyester competes most closely with cotton in apparel consumption. World prices for polyester have also recovered in recent months, because of improving economic conditions and higher oil prices, but the increase so far has been less than for cotton.

World cotton stocks to decline sharply in 2009-10

In 2009-10, world carryover stocks of cotton are forecast to decline by 2 million tonnes, to 11.5 million tonnes. The ratio of world cotton stocks to consumption is forecast to decline to 46.9 per cent, the lowest since 1995-96.

Weekly cotton and polyester fibre prices

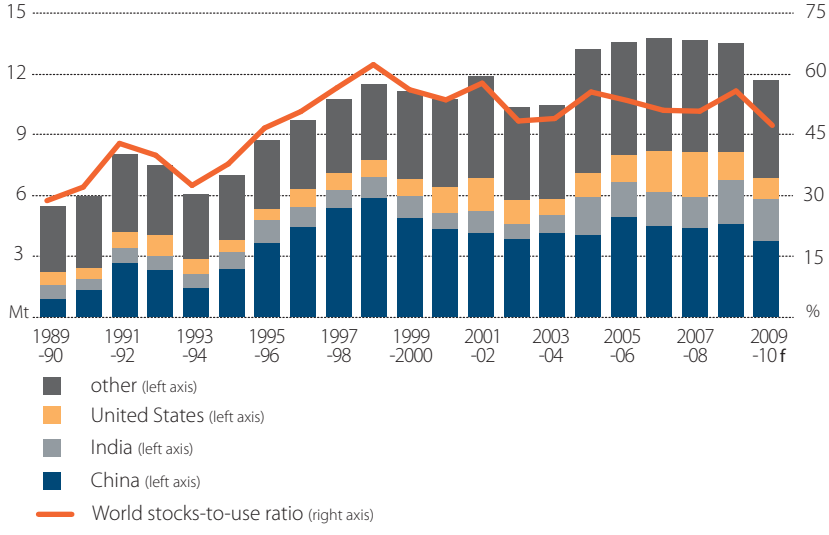


The drawdown in world cotton stocks in 2009-10 is expected to occur mostly in China, the world's largest holder of cotton stocks, and in the United States. In India, carryover stocks of cotton in 2009-10 are forecast to be only slightly lower than the record of 2008-09.

Australian cotton production to increase in 2009-10

With the forecast sharp increase in world cotton prices being largely offset by the assumed appreciation in the Australian dollar, returns to Australian cotton growers for lint are forecast to increase by only 3 per cent in 2009-10. This forecast reflects that around 50 per cent

World stocks of cotton



of expected Australian cotton lint production in 2009-10 has been sold forward at prices averaging around $420 a bale. At 9 December 2009, the price on offer to Australian cotton growers for uncommitted 2009-10 production was $425 a bale.

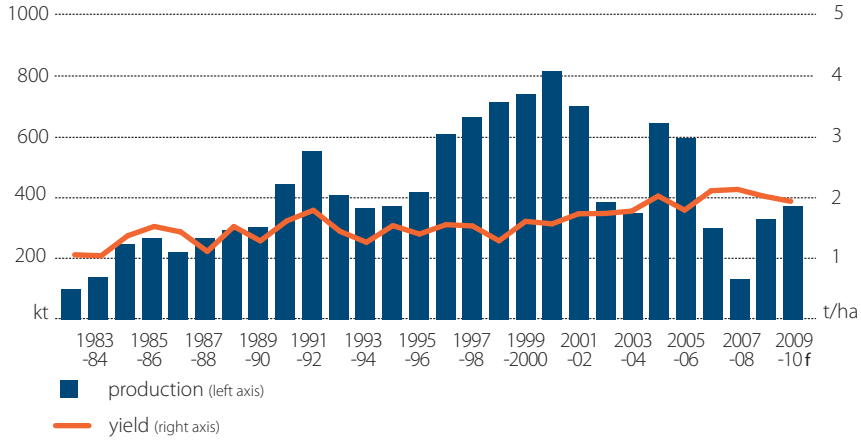
Drought in the Australian cotton growing regions continues in 2009-10, because of well below average winter and spring rainfall. On a regional production weighted average basis, the major dams serving the cotton industry were at 21 per cent capacity in early December 2009, compared with 26 per cent at the same time in 2008. Poor spring rainfall also meant that plantings of dryland cotton were constrained by poor soil moisture conditions.

The planting window for the genetically modified (GM) cotton varieties that make up more than 90 per cent of Australian cotton plantings closed on 24 November 2009. This restriction was imposed as part of the industry plan for maintaining the effectiveness of the in-plant insecticide coming from genetic modification.

Australian cotton plantings are estimated to have been 203 000 hectares in 2009-10, made up of irrigated plantings of 160 000 hectares and dryland plantings of 43 000 hectares. Australian cotton production is forecast to increase to 374 000 tonnes, up 14 per cent from 2008-09.

The increased cotton plantings in Australia mainly reflect improved expected returns from cotton production relative to returns from production alternatives. The profitability of cotton growing in Australia has been boosted in the past two years by the introduction of improved cotton varieties. However, to date, the improved varieties have not been reflected in the aggregate yield data for Australia because lower yielding dryland cotton has made up an unusually high proportion of total Australian cotton plantings in recent seasons.

Production and cotton yields in Australia



Cotton outlook

		2007 -08	2008 -09	2009 -10 f	% *change*
World					
Production	Mt	26.2	23.4	22.4	*– 4.3*
Consumption	Mt	26.9	24.2	24.4	*0.8*
Closing stocks	Mt	13.7	13.5	11.5	*– 14.8*
Stocks to consumption ratio	%	50.8	55.8	46.9	*– 15.9*
Cotlook 'A' index	USc/lb	72.9	61.2	74.0	*20.9*
Australia					
Area harvested	'000 ha	63	164	203	*23.8*
Lint production	kt	133	329	374	*13.7*
Exports	kt	266	260	322	*23.8*
– value	A$m	466	500	661	*32.2*

Livestock

Beef and veal

Peter Berry

The Australian weighted average saleyard price of cattle is forecast to fall by almost 5 per cent in 2009-10 to 282 cents a kilogram (dressed weight). This forecast mainly reflects the effect of increased competition in major export markets including Japan, the United States and the Republic of Korea. However, under an assumption of a return to more favourable seasonal conditions in the remainder of 2009-10, domestic herd rebuilding is expected to provide some support for saleyard prices.

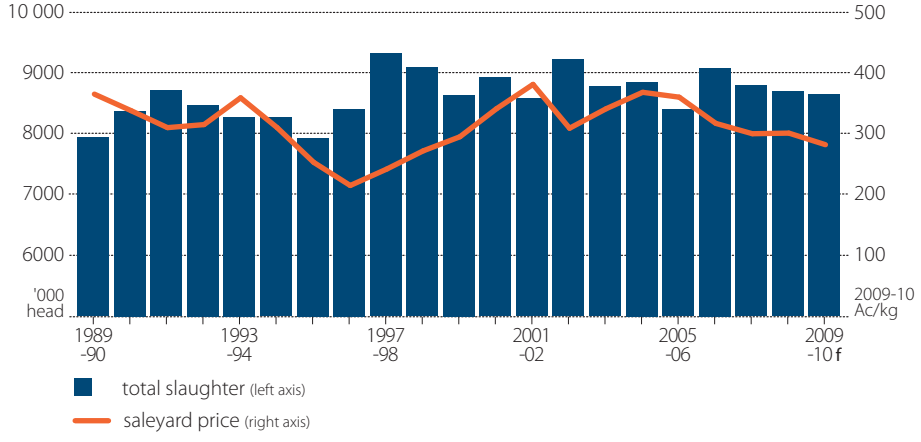
Uncertainty surrounding short-term seasonal conditions remains a major risk in the current outlook for beef saleyard prices. The Bureau of Meteorology's latest forecast (24 November) of a shift in the odds toward average summer rainfall across much of Australia, if fulfilled, is expected to result in lower rates of cattle turn-off as graziers seek to rebuild herds. Should the seasonal conditions prove to be less favourable through summer and into autumn, cattle turn-off in the eastern states could be significantly higher, leading to markedly lower saleyard prices than currently forecast.

Herd rebuilding in 2009-10

Herd rebuilding is dependent on seasonal conditions. For 2009-10 as a whole, total cattle slaughter is forecast to fall by 1 per cent to around 8.65 million head, on the assumption of a return to average rainfall across much of Australia in the remainder of 2009-10. Improved seasonal conditions, if realised, should promote pasture growth and support herd rebuilding in northern cattle producing regions in particular. Australia's cattle herd was around 27 million head at the end of 2008-09 and is forecast to increase to around 27.3 million head at the end of 2009-10.

Reflecting the reduction in cattle slaughter, Australian beef and veal production is forecast to fall by 1 per cent to around 2.1 million tonnes in 2009-10.

Australian cattle slaughter and average saleyard price



Lower Australian beef exports in 2009-10

In 2009-10, Australian beef and veal exports are forecast to fall by 2 per cent to around 950 000 tonnes (shipped weight), as a result of increased competition in key export markets. With Japan, the Republic of Korea and the United States accounting for around 80 per cent of Australian beef exports, developments in these markets will significantly affect export returns, and hence domestic saleyard prices, for Australian producers.

Lower Australian beef exports to Japan

Japan's total beef imports are forecast to increase by around 1 per cent to 470 000 tonnes in 2009-10. Increased beef imports are expected to be driven by improved consumer demand as Japan gradually recovers from the economic slowdown. However, much of this increased import demand is expected to be filled by supplies of US beef. Australian grass-fed beef exports to Japan fell year on year by 10 per cent in the period July to November 2009. This compares with a year on year increase of 9 per cent in Australian grain-fed beef to Japan over the same period.

For 2008-09 as a whole, total Australian beef exports to Japan fell by around 1 per cent. In 2009-10, total Australian beef exports to Japan are forecast to fall by a further 2 per cent to 355 000 tonnes. With a more significant appreciation of the Japanese yen against the US dollar since mid-2009, Japanese imports of US beef are expected to increase in the short term, further displacing some of the market share gained by Australian beef over the past several years.

Korean imports of US beef to increase

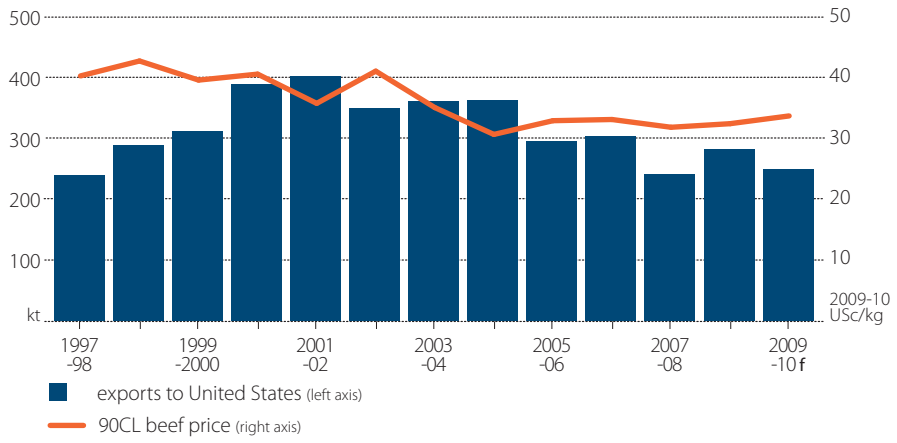
Import demand for beef in the Republic of Korea has been gradually recovering as domestic consumer demand strengthens. In the first four months of 2009-10, Korean beef imports rose year on year by around 12 per cent to 78 700 tonnes, with most of this growth coming from increased imports from the United States. In contrast, Australian beef exports to the Republic of Korea declined year on year by 1 per cent over the same period. This mainly reflects a year on year decline of 26 per cent, to 10 900 tonnes, of Australian exports of bone-in beef to the Republic of Korea. Australian boneless beef exports to that country rose by 9 per cent, to 42 300 tonnes, over the same period.

Looking forward, increased competition from the United States is expected in the Korean market. This is especially the case following the recent significant appreciation of the Australian dollar against the US dollar. Despite a forecast increase of 3 per cent in Korean total beef imports in 2009-10, Australian exports to the Republic of Korea are forecast to fall by around 5 per cent to 107 000 tonnes.

A decline in beef exports to the United States

In 2009-10, Australian beef exports to the United States are forecast to decline by 11 per cent to 250 000 tonnes (shipped weight), following a rise of nearly 18 per cent in 2008-09. The significant increase in 2008-09 was mainly a result of a significant depreciation of the Australian dollar against the US dollar and increased US demand for lower priced manufacturing beef in response to the economic downturn.

Australian beef exports to the United States

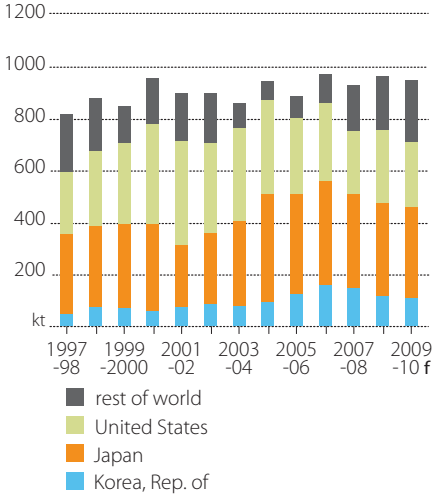


Note: 90CL beef is 90 per cent chemically lean beef.

There are a number of factors supporting the assessment of a decline in Australian beef exports to the United States in the short term. The assumed higher average value of the Australian dollar against the US dollar in 2009-10 is expected to weaken the competitiveness of Australian beef in the US market. Although US demand for lower priced manufacturing beef is likely to remain relatively strong in the short term, given the economic weakness in that country, the significant appreciation of the Australian dollar over the past few months will inevitably place downward pressure on the demand for manufacturing beef sourced from Australia.

There has also been an increase in the US domestic supply of manufacturing beef as a result of an increased cull of US dairy cows that began in mid-2008. The US dairy industry has subsidised the cull of more than 270 000 dairy cows as a means of supporting domestic milk prices and there remains a possibility of further subsidised culls in the year ahead. Given the low profitability of many US dairy farms, higher rates of cow slaughter are expected to continue, at least in the short term.

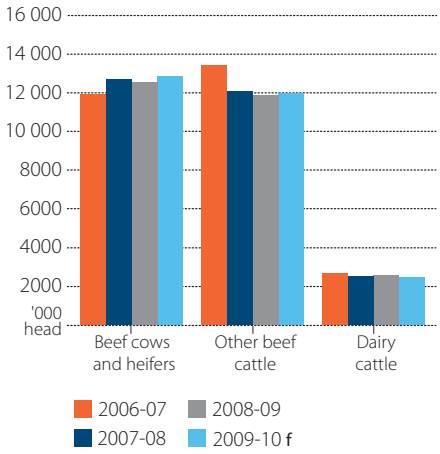
Australian beef exports
by destination



The increased supply of domestic manufacturing beef is also expected to put downward pressure on the price of Australian beef, the bulk of which is directed to the US manufacturing beef market.

Higher slaughter rates for US dairy cattle are expected to offset a lower slaughter rate for US beef cattle this year. Lower numbers of beef cattle being slaughtered are a result of the combined effect of lower US cattle prices and expectations of lower feed prices, which reduce incentives for turn-off. Overall, US beef and veal

Australian cattle numbers



production is forecast to fall slightly to around 11.7 million tonnes in 2009-10.

Other export markets

Australian beef exports to the Russian Federation are forecast to decline sharply in 2009-10, by around 60 per cent to 15 000 tonnes. This reflects weak, though improving, economic conditions in that country, an assumed higher value of the Australian dollar and increased competition from lower priced imports from Brazil. Despite this expected sharp decline, Australian exports to the Russian Federation will remain higher than the annual average between 2000-01 and 2006-07 of 3000 tonnes.

Australia's beef exports to Indonesia are forecast to increase by 10 per cent to 42 000 tonnes (shipped weight) in 2009-10, largely as a result of strong consumer demand and lower Indonesian beef production. Despite this forecast increase in export volumes, the assumed appreciation of the Australian dollar against the Indonesian rupiah will moderate growth in export earnings from shipments to that country.

Live exports to decline in 2009-10

Australian exports of live cattle increased by 20 per cent in 2008-09, to 856 000 head. The major market for Australian live cattle exports is Indonesia, with shipments to that country increasing strongly in the past few years. Indonesian import demand for live cattle is driven by strong growth in beef consumption and rising demand from feedlot enterprises set against a declining domestic herd. However, in 2009-10, Australia's live exports are forecast to fall by 1 per cent, to 848 000 head, largely as a result of reduced supplies of cattle suitable for export, mainly because of expected herd rebuilding in Queensland.

Beef and veal outlook

		2007 -08	2008 -09	2009 -10 f	% change
Cattle numbers	million	27.3	27.0	27.3	*1.1*
– beef	million	24.8	24.5	24.9	*1.6*
Slaughterings	'000	8 799	8 702	8 650	*– 0.6*
Production	kt	2 155	2 148	2 119	*– 1.4*
Exports (shipped weight)					
– to United States	kt	240	282	250	*– 11.3*
– to Japan	kt	365	363	355	*– 2.2*
– to Korea, Rep. of	kt	146	113	107	*– 5.3*
– total	kt	930	968	950	*– 1.9*
– value	A$m	4 190	4 857	4 470	*– 8.0*
Live cattle	'000	713	856	848	*– 0.9*
Price					
– saleyard	Ac/kg	286	296	282	*– 4.7*
– US import	USc/kg	303	303	295	*– 2.6*
– Japan import	USc/kg	510	450	445	*– 1.1*

Sheep meat

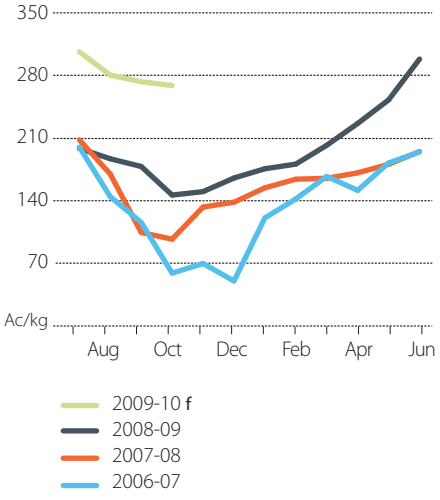
Gwen Rees

The Australian weighted average saleyard price for lambs is forecast to fall to 410 cents a kilogram in 2009-10, which is a 3 per cent decline relative to 2008-09. The principal drivers of this forecast decline are an expected increase in lambs marked relative to 2008-09 and continued high turn-off in response to favourable prices.

The Australian weighted average saleyard price for sheep is forecast to increase by 31 per cent compared with 2008-09, to average 260 cents a kilogram. This forecast is an upward revision to that presented in the September quarter 2009 *Australian commodities*. It reflects higher than expected saleyard prices from July to November, combined with a downward revision to forecast sheep slaughter in 2009-10.

In the three months September to November 2009, weekly saleyard prices for sheep in all states averaged more than 225 cents a kilogram. Prices were particularly strong in Victoria, which produces the most mutton, with weekly saleyard prices averaging 298 cents a kilogram. Although prices have eased from the highs achieved in mid-2009, they are still well above those received in the same months of recent years.

Mutton price
nominal



The high spring sheep prices can be attributed to a fall in adult sheep slaughter. High lamb prices have provided an incentive for producers to retain breeding stock for prime lamb production. Also, relatively favourable spring pasture growth in southern Australia has encouraged producers to hold onto stock. These factors have reduced the availability of sheep for slaughter so far this season.

The demand for mutton remains strong, as indicated by continued high saleyard sheep prices and favourable export unit returns. Shipments of mutton increased each month from July to September, despite the appreciation of the Australian dollar over this period.

Lamb slaughter to rise

Lamb slaughter in 2009-10 is forecast to total around 21 million head, which is a 1 per cent increase from 2008-09. Producers have responded to high prices by increasing the number of ewes joined, particularly to meat-breed rams. Also, spring rainfall in southern Western Australia, South Australia and Victoria was generally above average. The improved seasonal conditions in these areas have supported turn-off rates. Given these states account for around 60 per cent of the national sheep flock, total lambs marked are forecast to increase in 2009-10.

Production of lamb is forecast to grow by around 1 per cent to 428 000 tonnes in 2009-10, with average carcass weights expected to remain similar to those in 2008-09.

Sheep slaughter to fall

Adult sheep slaughter in 2009-10 is forecast to fall by around 7 per cent relative to 2008-09, to 10.5 million head. This represents a downward revision to the forecast presented in the September quarter. An increase in spring slaughter was expected because of the unfavourable seasonal outlook released by the Australian Bureau of Meteorology at that time. However, this outlook did not eventuate. Sheep slaughter for the September quarter was 19 per cent less than in the same period a year earlier. With relatively favourable seasonal conditions, producers held on to stock, particularly breeding ewes, resulting in lower slaughter for this period.

In addition, the preliminary estimate from the Australian Bureau of Statistics for the Australian total adult sheep flock at 30 June 2009 (51.9 million head) was lower than previously expected. This has also contributed to the downward revision of the sheep slaughter forecast for 2009-10.

Average carcass weights in 2009-10 are expected to be slightly lower than in 2008-09. This reflects increased competition between buyers, including processors, live exporters and restockers, as a result of continued strong demand. The high prices have encouraged producers to offer sheep for sale at lower weights rather than keeping them longer to sell at higher weights. In 2009-10, mutton production is forecast to total 217 000 tonnes, a decline of 8 per cent on the previous year.

Lamb export value affected by a high Australian dollar

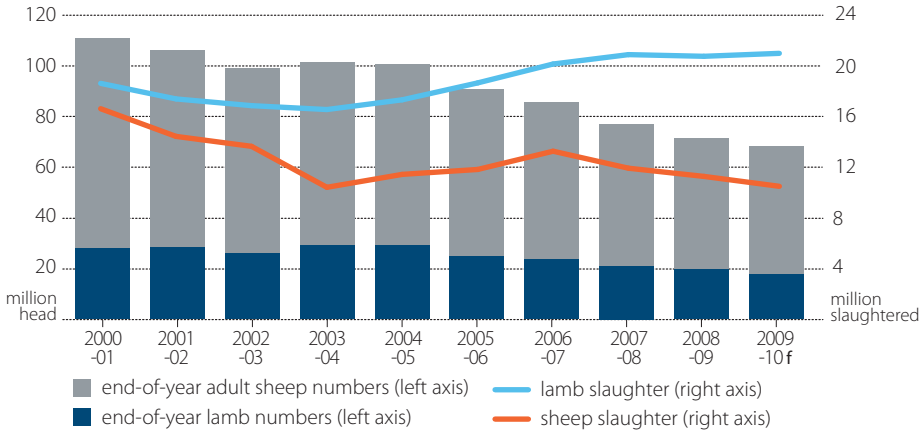
Following the expected increase in lamb production, Australian lamb exports in 2009-10 are forecast to total 162 000 tonnes shipped weight, up by 4 per cent on last year. Lamb exports for the July to September period totalled 37 500 tonnes shipped weight, a year on year rise of 28 per cent. Export unit values for the September quarter averaged around 12 per cent higher than in the same quarter of 2008-09. Although export demand is expected to remain strong, the effect is likely to be offset by increased supplies and the assumed higher value of the Australian dollar in the remainder of 2009-10. The total value of lamb exports in 2009-10 is forecast to fall by around 2 per cent, to $910 million.

Lamb exports to United States buoyed by strong demand

For 2009-10 as a whole, lamb exports to the United States are forecast to grow by around 8 per cent, to 41 000 tonnes shipped weight.

Lamb exports to the United States for the September quarter 2009 increased year on year by around 20 per cent. In contrast, US imports of lamb from New Zealand declined by 37 per cent over the same period. This significant fall in lamb imports from New Zealand appears to be largely a reflection of lower New Zealand lamb production. As a result, Australia's share of the US market rose to around 70 per cent in the quarter, compared with 55 per cent in the same period a year earlier. The improved economic outlook for the United States and expected lower US lamb production are forecast to support demand for Australian lamb in the remainder of 2009-10.

Australian sheep flock and slaughter numbers

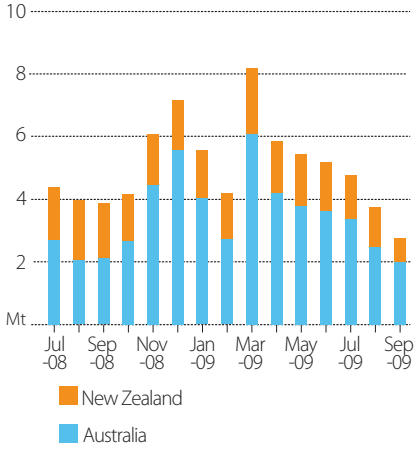


Australian mutton exports are forecast to total 133 000 tonnes in 2009-10, a decline of 9 per cent on 2008-09. In the first three months of 2009-10, mutton export volumes fell year on year by 11 per cent; however, prices averaged 16 per cent higher. The total value of mutton exports is forecast to decline by 8 per cent to $443 million in 2009-10, mainly because of expected lower export volumes.

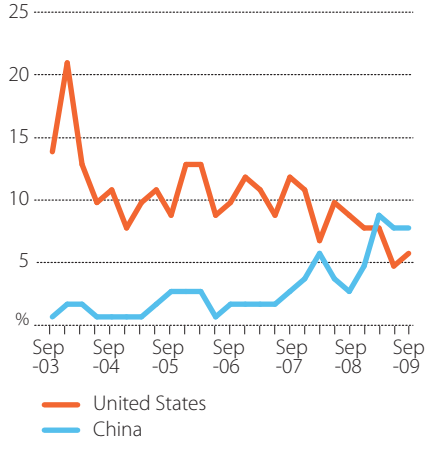
Changing pattern of mutton exports

Over the past few years, there have been changes in the relative importance of export markets for Australian mutton. While Saudi Arabia and the United Arab Emirates remain the largest export destinations, accounting for 13 per cent and 11 per cent, respectively, of mutton exports in the September quarter 2009, the relative importance of China and the United States has changed.

US monthly lamb imports



Share of Australian mutton exports
by volume, quarterly



Sources: United States Department of Agriculture, ABS.

Between 2003-04 and 2006-07, China was a relatively small export destination for Australian mutton, accounting for around 2 per cent of total exports. Since 2007-08, Australian mutton exports to China have increased and in the September quarter 2009 China's share was around 8 per cent. In contrast, the importance of the United States as a destination for mutton exports has declined. In the September quarter 2009, around 6 per cent of Australian mutton exports went to the US market. This compares with an average share of 11 per cent over the period 2003-04 to 2007-08.

Live exports lower in 2009-10

Live sheep exports from Australia in 2009-10 are forecast to fall by around 9 per cent, to 3.7 million head. This forecast decline reflects a weakening in demand from the Middle East as a result of Australia losing the contract to supply sheep for the religious festival of Hajj in November 2009, and the tightening domestic supply situation for sheep. In the first three months of 2009-10, live exports declined year on year by 26 per cent. Saudi Arabia, which was the destination for 23 per cent of live exports in 2008-09, took no shipments in August and September 2009.

Export prices for live sheep are expected to remain high in 2009-10, reflecting relatively strong saleyard sheep prices in Australia. The total value of Australian live sheep exports is forecast to be around $313 million in 2009-10.

Sheep meat outlook

		2007 -08	2008 -09	2009 -10 f	% *change*
Slaughterings					
Sheep	'000	11 929	11 282	10 500	*– 6.9*
Lamb	'000	20 899	20 767	21 000	*1.1*
Production					
Mutton	kt	258	235	217	*– 7.7*
Lamb	kt	435	423	428	*1.2*
Exports (shipped weight)					
Mutton	kt	158	146	131	*– 10.3*
Lamb	kt	163	156	164	*5.1*
– to United States	kt	42	38	41	*7.9*
Total sheep meat					
– value	$m	1 246	1 407	1 361	*– 3.3*
Live sheep	'000	4 069	4 064	3 700	*– 9.0*
Saleyard prices					
Mutton	Ac/kg	159	199	260	*30.7*
Lamb	Ac/kg	335	424	410	*– 3.3*

Wool

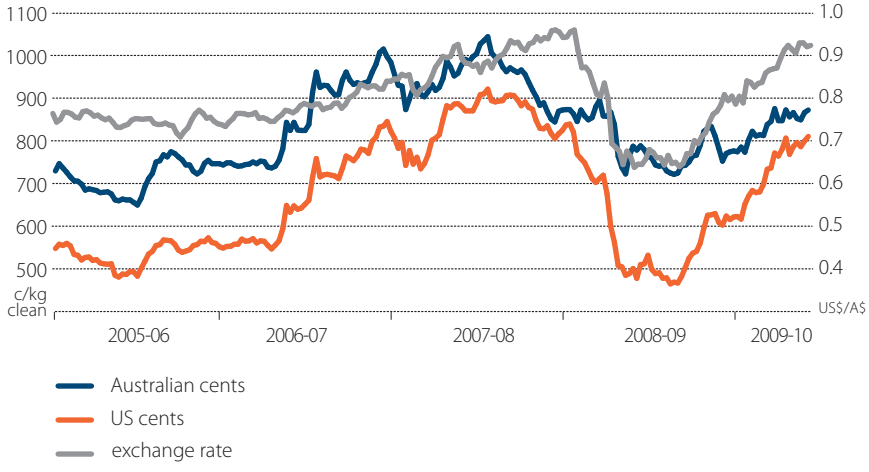
Gwen Rees

The Australian Eastern Market Indicator (EMI) price for wool is forecast to average 850 cents a kilogram clean in 2009-10. This represents a 7 per cent increase compared with 2008-09. This forecast implies an EMI average of around 860 cents for the remainder of 2009-10.

The EMI averaged 833 cents a kilogram from July to November 2009, a year on year increase of 0.3 per cent. The EMI fell sharply in late 2008 during the onset of the global economic slowdown, and remained low in the first half of 2009. This resulted in the EMI averaging 794 cents a kilogram for 2008-09 as a whole. As the demand for apparel, and hence the derived demand for raw wool, has recently strengthened in response to continued strong demand in China and improved economic prospects in major apparel-importing countries such as the United States, the EMI is forecast to average higher in the short term, despite an assumed significant appreciation of the Australian dollar relative to the US dollar.

Over the period July to November 2009, the EMI increased by around 10 per cent in Australian dollar terms, despite a concurrent appreciation of 15 per cent in the Australian exchange rate against the US dollar. This indicates that, during this period, the effects of strengthening demand and continued low supply more than offset the adverse effect of the appreciation of the Australian exchange rate. Given the outlook for a further strengthening in demand for woollen textiles and apparel in major OECD economies, the EMI is expected to average higher in the remainder of 2009-10, despite the adverse effect of exchange rate movements.

Australian eastern market indicator
weekly, ended 4 December 2009



Chinese textile manufacture supports raw wool demand

Demand for apparel has strengthened in China, with retail sales of textiles, clothing and footwear growing year on year by 18 per cent for the period January to October 2009. Chinese textile manufacture over the same period grew by 8 per cent year on year. Given more than 50 per cent of Chinese raw wool imports from Australia are consumed domestically, stronger retail sales in China are expected to lead to an increase in demand for Australian raw wool.

In the United States, retail clothing sales have been rising, albeit at a slow rate. Sales increased by 5 per cent and 8 per cent, respectively, in July and August but declined by 9 per cent in September. Despite the recent improvement in the outlook for US economic growth, a major recovery in consumer spending is not expected to occur until well into 2010. Expectations of a significant pick-up in US consumption of woollen textiles and apparel after mid-2010 will strengthen demand for raw wool in the processing pipeline during the second half of 2009-10, placing upward pressure on wool prices.

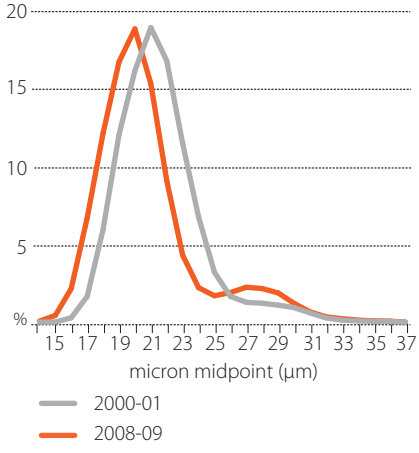
Shorn wool production continues to decline

Australian shorn wool production is forecast to decline 11 per cent in 2009-10, to 330 000 tonnes greasy equivalent. The Australian sheep flock is estimated by the Australian Bureau of Statistics to have been around 71.56 million head at 30 June 2009, a decline of 7 per cent from 2008. Reflecting this lower flock number, the number of sheep shorn in 2009-10 is forecast to be around 77.5 million head.

Micron profile of the Australian clip

Data from the Australian Wool Testing Authority (AWTA) indicate that the volume of wool tested (by weight) for the July to November 2009 period was around 7 per cent lower than for the same period last year.

Distribution of first-hand offerings by micron range



Source: AWTA.

There are also indications that superfine wool (19.5 microns or less) constitutes a greater percentage of the total wool clip. Over the first four months of 2009-10, wool tested under 19.5 micron accounted for around 39.6 per cent of the total clip tested, a rise of 4 per cent from the same period a year earlier.

This shift toward finer wool production continues the trend exhibited in historical AWTA data. For example, in 2000-01 the micron profile of the clip showed that the greatest amount of wool (around 19 per cent) was in the 21 micron category. In 2008-09 the profile has shifted. Wool in the 21 to 25 micron band has declined in percentage terms, while the 15 to 19 micron ranges now represents a greater proportion than previously. These movements reflect the increasing specialisation of Australian producers toward finer wool production.

Wool cut per head in 2009-10 is forecast to fall slightly compared with 2008-09, reflecting the ongoing shift from merino to meat-breed sheep. Mitigating any further significant reduction is the relatively favourable seasonal conditions in many wool-growing regions over winter and early spring 2009. The average to above-average rainfall received in Victoria, South Australia and parts of Western Australia in this period is expected to have supported relatively good fleece weights in the spring 2009 shearing season.

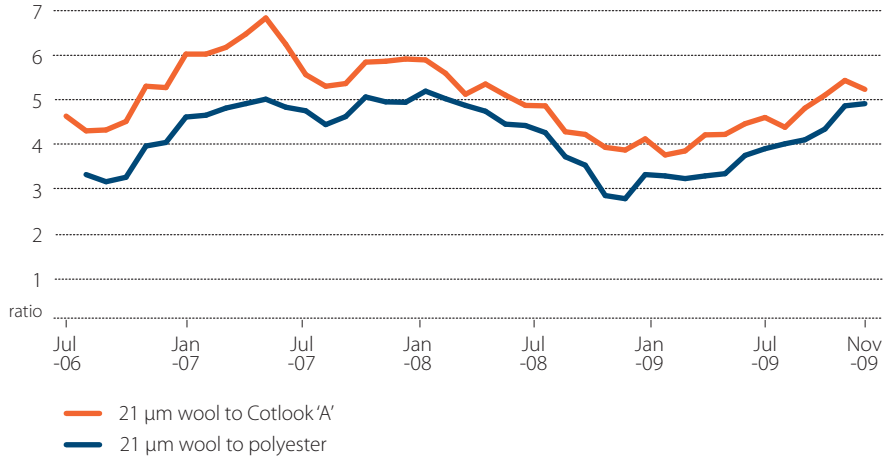
Wool exports to fall in line with production

In 2009-10 Australian wool exports, which include greasy and semi-processed wool and wool on skins, are forecast to total 400 000 tonnes in greasy equivalent. This represents a 9 per cent reduction relative to 2008-09. The total value of wool exports is forecast to be around $2.3 billion in 2009-10.

Wool's competitiveness falling as prices rise

Between July and November 2009, the eastern 21 micron average wool price increased year on year by 12 per cent in US dollar terms. In comparison, the Cotlook 'A' indicator price for cotton fell year on year by around 4 per cent over the same period and the average 1.5 denier polyester staple fibre price declined by 13 per cent. These movements indicate a weakening in the competitiveness of wool against cotton and polyester, which may encourage processors to substitute more cotton and polyester for wool in fibre blends.

Wool to alternative fibre ratios



Fibre price movement and substitution in processing

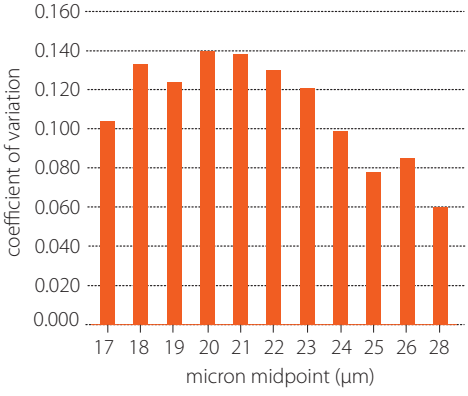
The demand for raw wool is derived from the final consumer demand for textiles and apparel. Substitution also exists between different fibres at the spinning stage of processing for some categories of textiles and apparel.

In making production decisions, processors may attempt to minimise the cost of production by varying the ratio of different fibres in certain categories of textiles and apparel, provided there will be little effect on final consumer demand. As a result, substitution of fibres will occur in response to relative price changes depending on the extent to which different fibres can be spun into yarns with similar end use characteristics. As the price of wool substitutes, such as cotton and polyester, declines relative to wool, there will be incentives for processors to reduce the proportion of wool used in textile production.

However, the extent of substitution with other fibres differs between wool of different microns. A greater potential degree of substitution, other things being equal, is likely to produce greater price fluctuations.

Average price variation by micron

July 2005 to November 2009



Source: Australian Wool Exchange.

Using weekly Eastern Market micron price averages from the Australian Wool Exchange, the coefficient of variation, a measure of volatility, has been calculated for prices of different microns over the period July 2005 to November 2009. As demonstrated in the accompanying graph, the prices for wool in the 20 to 23 micron range experienced greater volatility over this period. This is consistent with the situation in which substitution with cotton and polyester appears to have mainly been for wool in the 20 to 23 micron range. This also suggests that changes in prices of cotton and polyester will have a greater effect on the prices of wool in the 20 to 23 micron range relative to superfine wool or coarser wool.

Wool outlook

		2007 -08	2008 -09	2009 -10 f	% *change*
Sheep numbers	million	77	72	68	*– 5.6*
Sheep shorn	million	95	87	77	*– 11.5*
Wool production (greasy)					
– shorn	kt	408 a	371	330	*– 11.1*
– other	kt	51	34	32	*– 5.9*
– total	kt	459	404	362	*– 10.4*
Wool exports (balance of payments basis)					
– volume (gr. equiv.)	kt	477	439	400	*– 8.9*
– value	A$m	2 796	2 322	2 250	*– 3.1*
Market indicator (clean)					
– eastern	Ac/kg	945	794	850	*7.1*
– western	Ac/kg	947	762	825	*8.3*
Auction price (greasy)	Ac/kg	599	499	534	*7.0*

a ABS special data service.

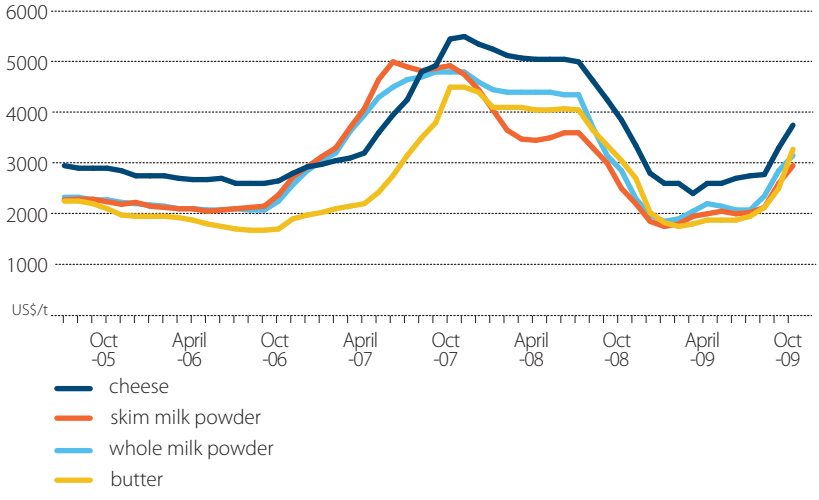
Dairy

David Barrett

World dairy product prices rose sharply in September and October 2009, following modest increases between February and August. However, prices were still well below the highs recorded in late 2007 and early 2008.

The rise in world dairy product prices, particularly for milk powders, has been driven by increased import demand from Asian and North African countries. At the same time, milk production in the major northern hemisphere countries has declined since mid-2009, with the prospect of further falls in the remainder of 2009-10. Furthermore, milk production in New Zealand and Australia was adversely affected in the first few months of 2009-10, by a cool and wet start to the season.

World dairy prices



Strengthening world economic activity over the remainder of 2009-10 is expected to support the demand for dairy products, particularly in developing countries. Milk production is forecast to contract or stabilise in the major dairy producing countries in 2009-10. However, the build-up of intervention stocks in the European Union and the United States since early 2009 is expected to limit further gains in world dairy product prices, at least in the near term. The timing and release of these government stocks will influence world dairy supply and market prices.

Overall, the world indicator prices for whole milk powder and butter are forecast to average US$2852 a tonne and US$2746 a tonne, respectively in 2009-10, which are around 12 per cent and 11 per cent higher, respectively, than the average prices for 2008-09. World skim milk

powder prices are forecast to increase by 14 per cent to US$2650 a tonne and cheese prices by 5 per cent to US$3431 a tonne in 2009-10.

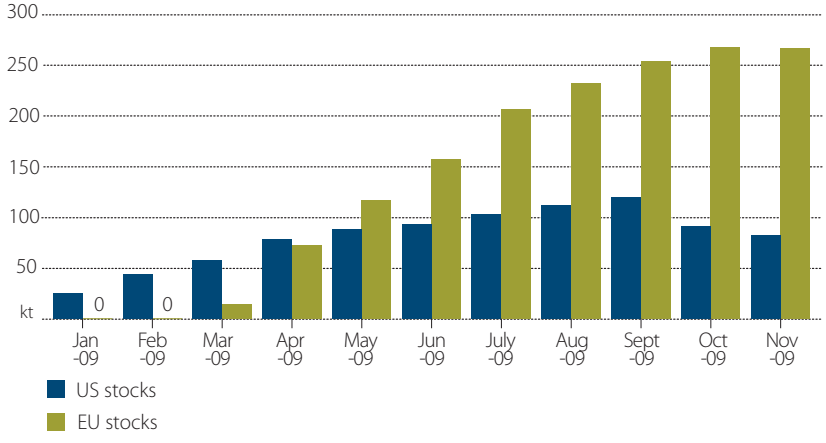
While world dairy product prices are expected to average higher in 2009-10, the recent significant appreciation of the Australian dollar, if sustained, will temper the returns to Australian exporters. Overall, the Australian farm-gate price for milk is forecast to decline by 20 per cent to average 34 cents a litre in 2009-10.

World dairy stocks start to fall

European Union

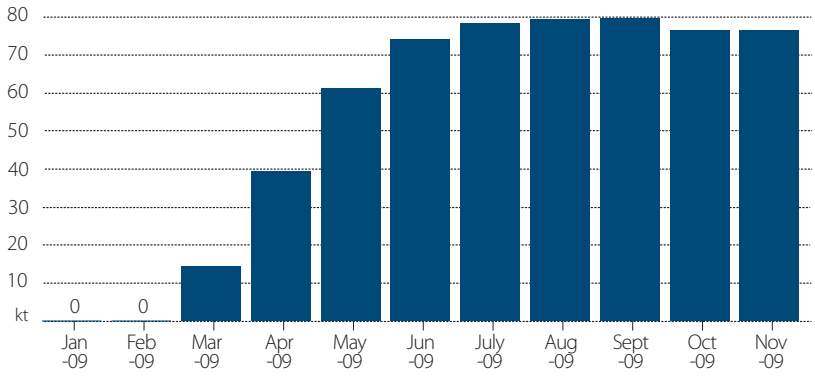
A tighter dairy market demand-supply balance led to higher domestic prices in the European Union in the first half of 2009-10. Consequently, the quantity of dairy products being offered into intervention storage declined and almost ceased between September and November 2009. EU intervention stocks of butter fell by 3000 tonnes to 76 449 tonnes between mid-September and early November 2009. At the same time, butter stocks held under the Private Storage Scheme were 62 451 tonnes as at 5 November 2009, which was around 17 per cent lower than in mid-November 2008. In early November 2009, EU butter stocks represented around 7 per cent of EU butter production. Similarly, EU intervention stocks of skim milk powder fell slightly to 267 458 tonnes (representing 28 per cent of SMP production) between mid-October and early November 2009.

EU and US skim milk powder stocks



The extent to which the tighter demand-supply balance in the European Union continues over the remainder of 2009-10 will depend on continued recovery in demand growth and limited supply increases in the European Union and the world dairy product market.

EU butter stocks



Favourable seasonal conditions in the main dairying regions of the European Union led to milk deliveries increasing year on year by 1.6 per cent in the first three months of the 2009-10 marketing year (April to March). However, milk production in July 2009 was 1.8 per cent less than production in the same period a year earlier. Overall, EU milk production in 2009-10 is expected to remain largely unchanged from last year as the effect of lower milk prices will be largely offset by lower feed costs.

In the first four months of the 2009-10 marketing year, milk in the European Union continued to be switched from the production of whole milk powder and cheese to butter and skim milk powder. Production of whole milk powder fell year on year by 20 per cent in the period April to July 2009. In contrast, skim milk powder production increased year on year by 21 per cent over the same period.

In November 2009, the European Union removed its export subsidies on whole milk powder, condensed milk, fresh milk products, cheese, butter and butter oil. Export refunds for skim milk powder were removed in October 2009. Export refunds had been introduced for all dairy products in January 2009 in response to the sharp fall in world dairy prices in 2008.

United States

US wholesale dairy prices have strengthened during the second half of 2009, reflecting lower dairy product output as US milk production began to contract. With wholesale dairy prices rising above domestic support prices, little product was purchased by the Commodity Credit Corporation in late 2009. As a result, stocks of skim milk powder held by the Commodity Credit Corporation fell by 31 per cent to 82 300 tonnes between September and November 2009 and are expected to fall further in the short term in response to lower US milk production.

US milk production fell year on year by around 1 per cent in the three months ending October 2009. This is the first year on year decline in milk production since mid-2004 and mainly reflects the effect of sharply lower milk prices on production.

The US dairy cow herd is estimated to decline by around 3 per cent in 2009, with a further fall of 2 per cent forecast for 2010. In early October 2009, Co-operatives Working Together announced its third herd retirement program for 2009 in which around 26 000 cows are expected to be culled. This program, combined with two programs in the second half of 2008, are expected to have removed around 276 000 cows — equivalent to around 3 per cent of the US cow herd in 2008. However, US cow numbers have not contracted by a similar percentage, indicating that some dairy farmers have expanded their herds.

By November 2009 world dairy product prices were close to or slightly above US domestic wholesale prices. Therefore, few dairy products have been exported under the Dairy Export Incentive Program (DEIP) since the end of October 2009. The maximum quantities exported each year under the DEIP are limited by ceilings set under the World Trade Organization (WTO) Agreement on Agriculture. At the end of October 2009, the balance of product able to be exported in the remainder of 2009-10 was: 3890 tonnes for butter (WTO limit of 21 097 tonnes); 30 973 tonnes for skim milk powder (WTO limit of 68 201 tonnes); and 1187 tonnes for cheese (WTO limit of 3030 tonnes). If world dairy product prices continue to strengthen in the short term, the quantity of dairy product exported under the DEIP is expected to be limited.

New Zealand

Following record production in 2008-09, milk output in New Zealand is forecast to increase slightly in 2009-10 as a result of a further increase in the dairy herd. While some farmers have reduced their herds in response to low milk prices, the conversion of sheep and beef farms to dairy farms in the South Island has continued, which is expected to add an additional 105 000 cows to the national herd in 2009-10.

Most of the increase in milk production in 2009-10 is expected to be used for the manufacture of whole milk powder to meet relatively strong import demand from Asia, particularly from China.

Global trade strengthens

Strengthening demand for dairy products, particularly milk powders, in Asia and North Africa has supported the rise in world dairy prices. While this partly reflects wholesale buyers in these countries re-building inventories, China has emerged as a significant importer of whole milk powder.

Chinese imports of whole milk powder increased from 46 000 tonnes in 2008 to an estimated 160 000 tonnes in 2009. This increase is largely a result of the effect of the melamine contamination in 2008 on consumer demand for domestic product. Furthermore, China's milk production is estimated to decline by around 16 per cent in 2009, following several years of strong growth. However, an expected recovery in Chinese milk production in 2010 is likely to lead to lower import demand. A significant reduction in Chinese import demand could limit further increases in world milk powder prices.

The ASEAN region imports around 700 000 tonnes of milk powders annually and many regional economies have shown signs of strengthening economic growth in the short term. While demand for milk powders has increased in recent months, a further strengthening in economic growth in the region is expected to underpin dairy demand in the short term.

In contrast, import demand for dairy products, such as cheese, is expected to remain relatively subdued in other important markets, such as the Russian Federation and Japan. In September 2009, the Russian Federation raised the import duty on various cheeses to stimulate domestic production. However, this increase in import duty is expected to lead to higher domestic prices at a time when consumer demand has been adversely affected by relatively weak economic activity. In Japan, cheese imports are estimated to fall further in 2009, following a decline of 17 per cent in 2008, as a result of continued weak consumer demand.

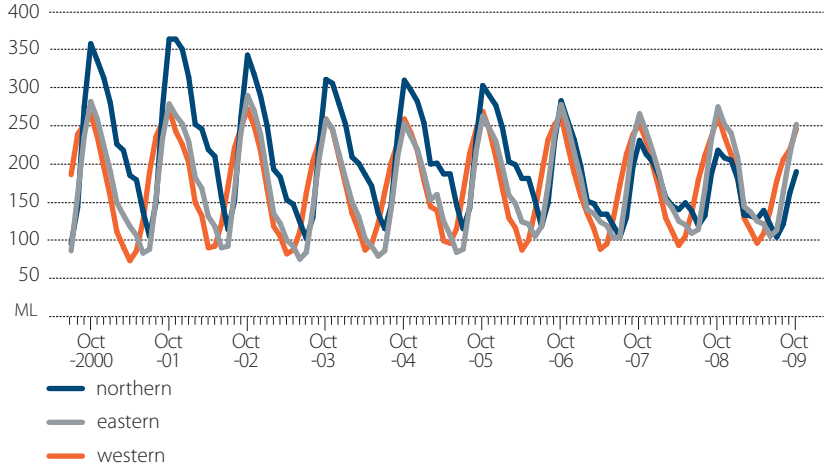
Australian milk production

Australian milk production declined year on year by 4.9 per cent in the first four months of 2009-10, with sharply lower production in Victoria and Tasmania. Many dairying regions of Victoria and Tasmania experienced cool and wet seasonal conditions in early spring, and some dairy farmers have reduced their herds in response to lower milk prices.

In the eastern and western dairying regions of Victoria, milk production fell year on year by 4.6 per cent and 6 per cent, respectively, in the four months ending October 2009, while production was down 12.2 per cent in northern Victoria over the same period. In Tasmania, milk production in the first four months of 2009-10 fell by 7.3 per cent compared with the corresponding period a year earlier.

Overall, Australian milk production is forecast to fall by 3 per cent to 9100 million litres in 2009-10. While seasonal conditions will continue to have a strong bearing on milk production

Victorian milk production by region



in the remainder of 2009-10, other factors affecting production include farm-gate milk prices, the availability of irrigation water and the cost of feed grains and the availability of fodder.

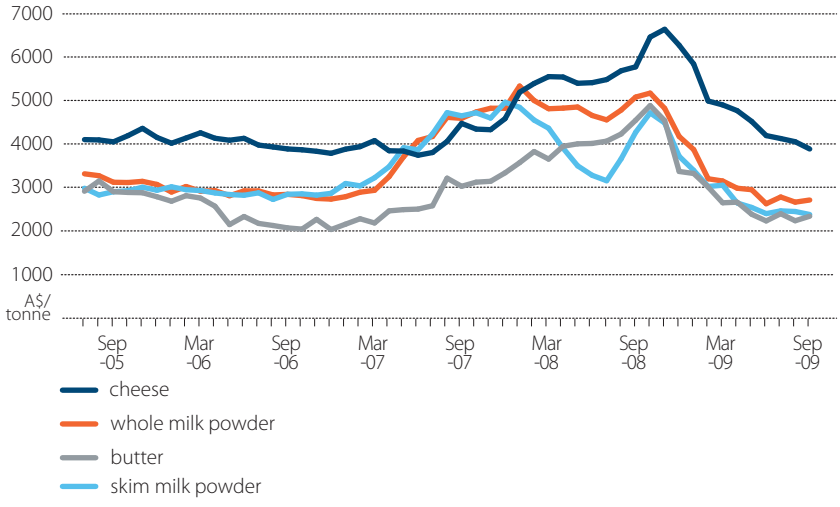
In recent years, milk production in the irrigation areas of northern Victoria and southern New South Wales has declined as a result of drought and low water allocations in the Murray-Darling irrigation system. With significant rainfall in most catchments areas in spring 2009, water allocations for 2009-10 improved markedly. As at 2 November 2009, the Murray system allocation was 53 per cent of high-reliability water shares and the Goulburn system allocation was 40 per cent.

The cost of supplementary feeding is expected to be lower in the remainder of 2009-10 reflecting lower grain prices and the increased availability of hay and silage, particularly in south-eastern Australia.

Australian dairy exports to decline

The total value of Australian dairy exports is forecast to fall by 20 per cent to $2.15 billion in 2009-10. Reflecting the combined effects of lower export volumes and the assumed higher average of the Australian dollar, butter export earnings are forecast to decline by 29 per cent to $165 million. The value of cheese and whole milk powder exports is forecast to decline by 20 per cent and 15 per cent, respectively, to $640 million and $402 million, and the export value of skim milk powder is forecast to fall by 22 per cent to $431 million.

Australian dairy export unit returns (fob)



Dairy outlook

		2007 -08	2008 -09	2009 -10 f	% change
Cow numbers	'000	1 640	1 645	1 600	*– 2.7*
Milk yields	L/cow	5 624	5 707	5 688	*– 0.3*
Production					
Total milk	ML	9 223	9 388	9 100	*– 3.1*
– market sales	ML	2 202	2 243	2 280	*1.6*
– manufacturing	ML	7 021	7 145	6 820	*– 4.5*
Butter	kt	128	148	130	*– 12.2*
Cheese	kt	359	340	326	*– 4.1*
Whole milk powder	kt	142	148	147	*– 0.7*
Skim milk powder	kt	164	212	191	*– 9.9*
Farm-gate milk price	Ac/L	49.6	42.4	34.0	*– 19.8*
Value of exports	A$m	2 763	2 679	2 154	*– 19.6*
World prices					
Butter	US$/t	4 027	2 485	2 746	*10.5*
Cheese	US$/t	5 073	3 281	3 431	*4.6*
Skim milk powder	US$/t	4 204	2 333	2 650	*13.6*
Whole milk powder	US$/t	4 563	2 546	2 852	*12.0*

Farm financial performance 2009-10 – projections for broadacre and dairy farms

Peter Martin, Sarah Crooks and Paul Phillips

Broadacre farm incomes lower in 2009-10

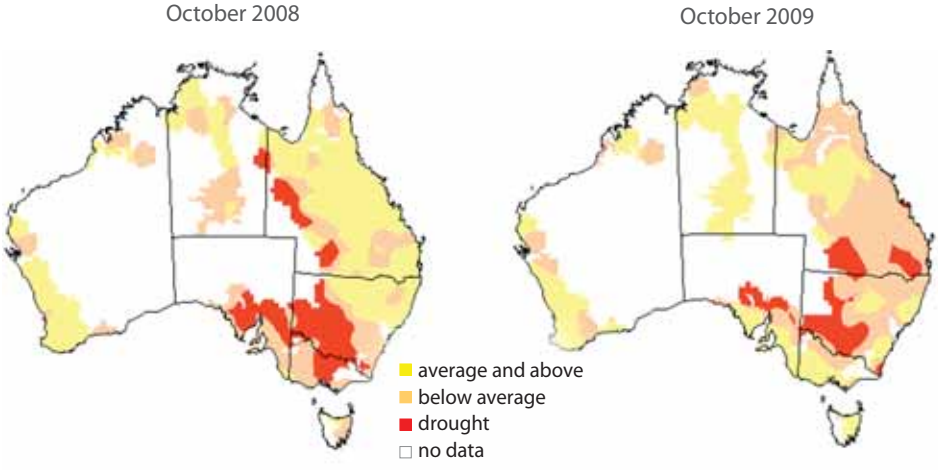
According to preliminary estimates of farm financial performance from ABARE's farm surveys program, the financial performance of Australian broadacre farms is projected to decline, on average, in 2009-10, reversing the improvement recorded in 2008-09.

Nationally, farm cash incomes are projected to decline, mainly as a consequence of lower grain, oilseed and pulse prices in combination with a return to dry seasonal conditions in many parts of Queensland and New South Wales. Winter crop production increased markedly in areas with better seasonal conditions in 2009 compared with 2008 (maps 1 and 2), particularly in South Australia and Victoria. As a result, average farm cash incomes are projected to increase in these states in 2009-10. However, in other states, winter grain production has either been reduced or is insufficient to offset the effect of lower grain prices on farm receipts.

Receipts from beef cattle, sheep and lambs are expected to remain strong in 2009-10, but receipts from wool are projected to fall on the back of reduced production.

Despite reductions in expenditure on fertiliser, fodder and interest paid, overall an increase is projected for farm cash costs in 2009-10. Farmers are projected to increase expenditure on harvesting and marketing, because of a larger winter grain crop, as well as on farm labour, fuel and sheep purchases.

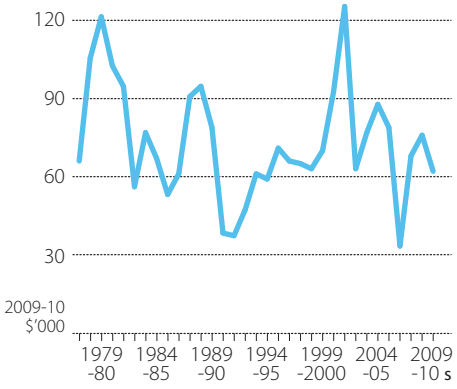
map 1 **Seasonal conditions, broadacre and dairy farms**



Seasonal conditions as reported by farmers in ABARE farm surveys.

Nationally, average farm cash income for broadacre farms increased from $64 400 in 2007-08 to $74 400 in 2008-09 and is projected to decline to $62 000 in 2009-10, which is around 20 per cent below the average of $77 000 (in real terms) for the 10 years to 2008-09.

Farm cash income for broadacre farms, Australia



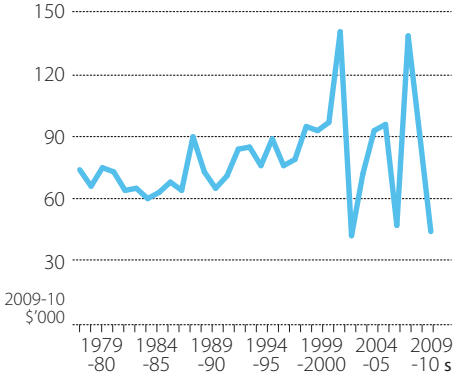
In 2007-08, average farm cash income for broadacre farms increased from the historical low recorded in 2006-07, a year of severe widespread drought.

In 2008-09, farm cash income improved further, particularly in northern Australia and in grain growing areas of northern New South Wales, Queensland and Western Australia. The improvement was because of increased winter and summer grain production and increased livestock production as a result of improved seasonal conditions in combination with relatively high grain prices and strong prices for sheep, lambs and beef cattle. However, farm financial performance remained low in southern New South Wales, Victoria, Tasmania and South Australia. Farm financial performance was particularly poor in irrigation areas, including the southern Murray-Darling Basin where availability of irrigation water was low.

Dairy farm income to fall sharply in 2009-10

The financial performance of Australian dairy farms is projected to fall sharply in 2009-10 because of a reduction in milk prices, particularly for milk used for manufactured dairy products, combined with a small decrease in milk production. The large reduction in milk receipts is projected to be partly offset by reductions in expenditure on fodder and fertiliser as a consequence of lower prices for these inputs. Expenditure on interest paid is expected to fall because of lower interest rates in 2009-10 relative to the higher interest rates applying in the second half of 2008. While feed grain and fodder prices are forecast to be lower in 2009-10, overall expenditure by dairy farms on fodder is still expected to remain relatively high in historical terms, particularly in northern Victoria and southern New South Wales because of continued dry conditions and low availability of irrigation water.

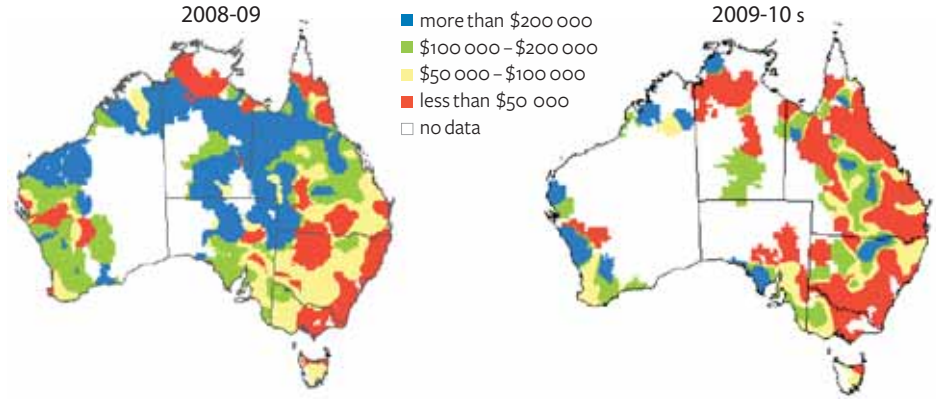
Farm cash income for dairy farms, Australia



Nationally, average farm cash income for dairy farms fell from a high of $130 650 in 2007-08 to $89 700 in 2008-09 and is projected to fall to $44 000 in 2009-10, which is well below the average for the 10 years to 2008-09 of $91 000 and similar to the average farm cash income recorded in the drought of 2002-03 (in real terms).

map 2 Farm cash income, broadacre and dairy farms

average, 10 years ending



Average farm cash income expressed in 2009-10 dollars. **s** Provisional estimate.

Major financial performance indicators

Farm cash income = total cash receipts – total cash costs

total revenues received by the farm business during the financial year

payments made by the farm business for materials and services and for permanent and casual hired labour (excluding owner manager, partner and family labour)

Farm business profit = farm cash income + changes in trading stock – depreciation – imputed labour costs

Broadacre and dairy farms

Broadacre and dairy farms account for 67 per cent of commercial-scale Australian farm businesses. They are also responsible for the management of more than 90 per cent of the total area of agricultural land in Australia, account for the majority of Australia's family owned and operated farms, are located in all regions and form a vital part of rural communities and economies across the country.

Each year, ABARE interviews the operators of around 1600 broadacre farm businesses in its annual Australian Agricultural and Grazing Industries Survey (AAGIS) and 300 dairy farm businesses in the Australian Dairy Industry Survey (ADIS), as part of its annual farm survey program. The AAGIS is targeted at commercial-scale broadacre farms; that is, farms which grow grains or oilseeds, or run sheep or beef cattle and which have an estimated value of agricultural output exceeding $40 000. The ADIS is targeted at commercial-scale milk producing farms.

Methodology

Data provided in this note have been collected via interviews and incorporate detailed farm financial accounting information. The 2009-10 projections are based on data collected via on-farm interviews and telephone interviews in the period October to December 2009. The 2009-10 projections include crop and livestock production, receipts and expenditure up to the date of interview together with expected production, receipts and expenditure for the remainder of the 2009-10 financial year. Modifications have been made to expected receipts and expenditure for the remainder of 2009-10 where significant price change has occurred post interview.

State and regional financial performance of broadacre and dairy farms

There is considerable variation across states and regions in farm cash incomes projected for 2009-10 and how these incomes rank in historical terms (map 2).

In New South Wales, lower farm cash incomes are projected in 2009-10 for most grain growing areas with the exception of north-western New South Wales where relatively large increases in grain production increased farm receipts. Elsewhere in New South Wales smaller cropping areas, poor spring rainfall and high temperatures resulted in reduced grain production and, in combination with lower grain prices, led to lower farm cash incomes. Farm cash incomes for livestock farms are projected to be maintained in the tablelands areas to the east and to increase in northern areas as turn-off of beef cattle and lambs increases.

Victorian cropping farm cash incomes are projected to generally increase in 2009-10, with improved seasonal conditions leading to large increases in grain production, relative to 2008-09, offsetting lower grain and oilseed prices. Receipts from beef cattle are projected to be reduced, with lower turn-off resulting from the better seasonal conditions compared with 2008-09 combined with lower saleyard prices. However, receipts from sheep and lambs are projected to increase slightly and underpin farm cash incomes for many livestock producers. On average, farm cash incomes for broadacre farms in Victoria are projected to rise to average $81 000 a farm in 2009-10, around 20 per cent above the average farm cash income (in real terms) recorded for the 10 years to 2008-09.

Queensland cropping farm cash incomes are projected to fall significantly in 2009-10 because of substantial reductions in wheat production, combined with lower prices. Prospects for grain sorghum and summer crops remain uncertain at this time, but dry spring conditions, combined with lower feed grain prices, are expected to limit grain sorghum plantings.

Farm financial performance, by state

average per farm

	farm cash income				farm business profit a			
	2007-08	2008-09 p		2009-10 s	2007-08	2008-09 p		2009-10 s
	$	$		$	$	$		$
Broadacre industries								
New South Wales	20 360	48 400	(13)	27 000	–56 680	–21 800	(29)	–48 000
Victoria	79 320	42 300	(11)	81 000	14 000	–28 400	(18)	12 000
Queensland	68 930	68 400	(10)	29 000	19 080	21 100	(43)	–13 000
Western Australia	118 130	234 200	(10)	138 000	24 370	120 000	(18)	27 000
South Australia	75 150	60 200	(13)	98 000	–15 380	–24 700	(34)	13 000
Tasmania	38 010	40 300	(26)	48 000	–48 490	–25 700	(41)	–3 000
Australia	64 400	74 400	(5)	62 000	–10 460	1 400	(295)	–11 000
Dairy industry								
Australia	131 650	89 700	(11)	44 000	68 170	7 900	(119)	–55 000

a Defined as farm cash income plus buildup in trading stocks, less depreciation and the imputed value of operator, partner and family labour. **p** Estimates for 2008-09 have been revised but remain preliminary pending release of final 2008-09 Australian Bureau of Statistics production and population data. **s** Provisional estimate.
Note: Figures in parentheses are standard errors expressed as a percentage of the estimate provided.

However, despite lower beef cattle prices, beef cattle receipts are projected to increase in 2009-10, particularly in eastern regions. Following an increase in beef cattle numbers in 2008-09, beef cattle turn-off is projected to increase in 2009-10 as a result of expectations of drier seasonal conditions. On average, farm cash income for broadacre farms in Queensland is projected to fall to $29 000 a farm in 2008-09, with lower crop receipts and increased expenditure on fodder offsetting higher beef cattle receipts.

Western Australian broadacre farm cash incomes are projected to fall in 2009-10, but to remain relatively high in historical terms. Production of wheat is expected to be similar to 2008-09, but production of barley and grain legumes is projected to fall and, in combination with lower grain prices, is projected to reduce crop receipts this season. Receipts from beef cattle are projected to fall slightly but receipts from sheep and wool are expected to be maintained. Substantial pool payments for grain delivered in 2008-09 will boost farm receipts, resulting in a projected average farm cash income for Western Australian broadacre farms of around $138 000. While significantly lower than the record farm cash income estimated in 2008-09 of $234 200, the farm cash income projected for 2009-10 is still around 12 per cent more than the average for the 10 years ending 2008-09.

Despite lower grain prices, South Australian broadacre farm cash incomes are projected to increase substantially as a result of much higher grain production compared with 2007-08 and 2008-09. Beef cattle receipts are expected to fall slightly because of expected lower prices and reduced turn-off as cattle numbers are rebuilt, but receipts from sheep and lambs are expected to be maintained by continued strong prices. Wool receipts are projected to increase.

Tasmanian broadacre farm cash incomes are projected to increase modestly in 2009-10, with improved seasonal conditions following several years in which dry seasonal conditions reduced sheep and cattle numbers and severely constrained crop and livestock production. A small increase is projected in wool receipts because of higher prices, but rebuilding of livestock numbers is projected to result in reduced sheep and cattle turn-off and lower farm cash receipts overall. Improvement to Tasmanian farm cash income is projected to mainly occur through a reduction in farm cash costs as expenditure on fodder and interest paid is reduced, despite increases in livestock purchases as flocks and herds are rebuilt. In addition, the rebuilding of livestock numbers is projected to result in an increase in the value of on-farm inventories and a significant further reduction in farm business losses from those recorded in 2007-08 and 2008-09.

Energy and minerals overview

Apsara Maliyasena

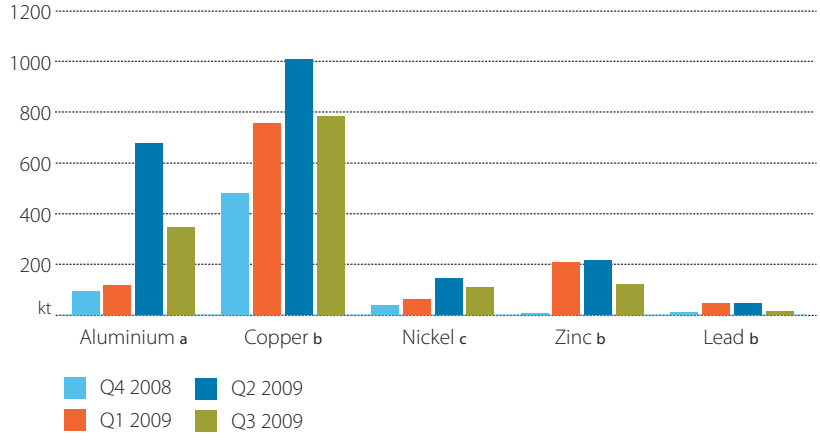
After sharp declines between mid-2008 and early 2009, prices for many minerals and energy commodities have strengthened. The rally in prices has largely been supported by the improved outlook for world economic growth, strong import demand from China and the production cuts that occurred in late 2008 and early 2009. The continued weakness of the US dollar against other major international floating currencies has also provided support for the prices of most minerals and energy commodities denominated in US dollars. The US dollar on a trade weighted basis has declined by around 15 per cent since March 2009.

Continued strengthening in commodities demand from China

Continued demand in China has been a major driver behind increasing minerals and energy commodity prices since early 2009. In particular, increased consumption of mineral resources in China has more than offset falling import demand in many OECD economies. For example, in the first nine months of 2009, apparent consumption (production plus net imports adjusted for known stock changes) in China grew strongly year on year for most minerals and energy commodities. In addition to increased infrastructure developments as a result of the Chinese Government's economic stimulus package, private and public stock building has also provided support for resources demand in China.

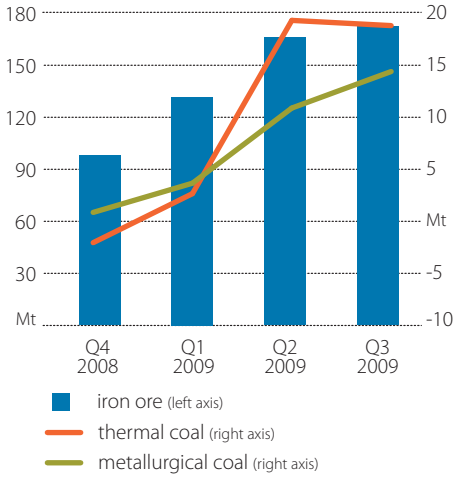
Restarts in domestic production and an end to restocking may contribute to slowing growth in import demand in China in 2010. Although domestic consumption of mineral resources remains high in China, imports of most base metals, including copper, aluminium, nickel and zinc, declined in the September quarter 2009. Encouraged by the recent upward movement in world commodity prices, some of the high cost mining and processing capacity that was shut down in late 2008 has restarted in China, especially for zinc, aluminium and nickel.

Chinese net imports of base metals



a Refined and alloy; b Refined; c Finished nickel content.
Source: CNIA, CISA, China Metals, Macquarie Research, October 2009.

Chinese net imports of coal and iron ore



Source: CNIA, CISA, China Metals, Macquarie Research, October 2009.

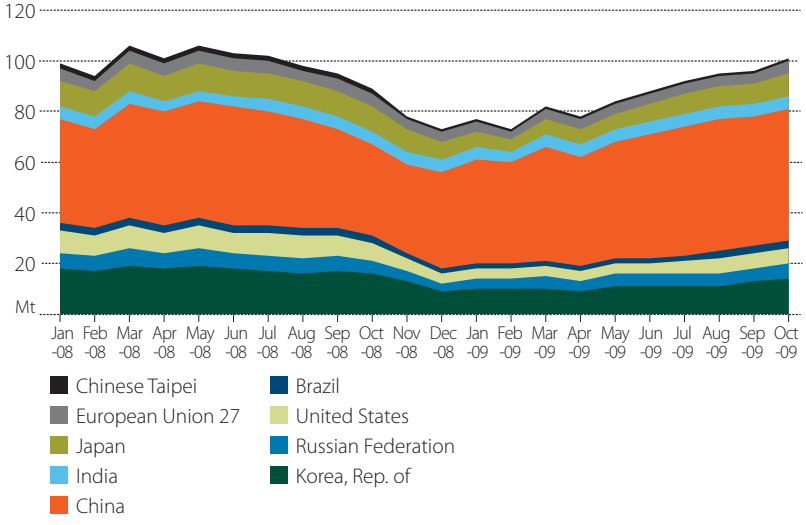
For bulk commodities (metallurgical coal, thermal coal and iron ore), Chinese imports remain strong. Although China's imports of iron ore moderated in the December quarter 2009, import demand is forecast to continue to increase in 2010.

Non-China demand forecast to increase

The outlook for minerals and energy commodities in 2010 has improved over the course of 2009, reflecting expectations of stronger economic growth around the world. China will continue to have a significant influence over the demand for minerals and energy commodities in 2010, but consumption is also forecast to increase gradually in OECD economies.

In 2010, an improvement in construction and automobile manufacturing demand and continued government investment in commodity intensive infrastructure development are expected to support the demand for minerals and energy commodities, particularly in China, India and the United States. Global steel production is forecast to increase by 10 per cent to 1.4 billion tonnes in 2010. Steel production in China is forecast to increase by 8 per cent to around 618 million tonnes.

Monthly steel production
major producers



In addition to increased consumption, there is the potential, outside China, for a return to inventory rebuilding. During the global economic slowdown, many consumers drew down stocks, which reinforced the sharp weakening of underlying demand. The rebuilding of stocks in 2010, if it occurs, will provide additional support for minerals and energy commodity demand.

In 2010, prices for most minerals and energy commodities are forecast to be higher in year average terms. However, the increase in minerals and energy prices in 2010 is not expected to be large, especially given the price gains that have already occurred and the assumed gradual recovery in OECD economic growth.

While the outlook for 2010 is generally positive, there is considerable uncertainty surrounding commodity price movements. Slower than expected world economic growth, and hence, minerals and energy commodity demand, could result in actual price outcomes being lower than currently forecast. Continued weak labour market conditions in many OECD economies could constrain a major recovery in consumer spending, and hold back business investment in the short term. Another downside risk to the price outlook is the rate at which idled production capacity will be restarted. If the mining and processing facilities restart more rapidly than currently anticipated, actual price outcomes could be lower than currently forecast. Alternatively, slower than anticipated restart of idled capacity represents an upside risk to current price forecasts.

Australian minerals and energy outlook

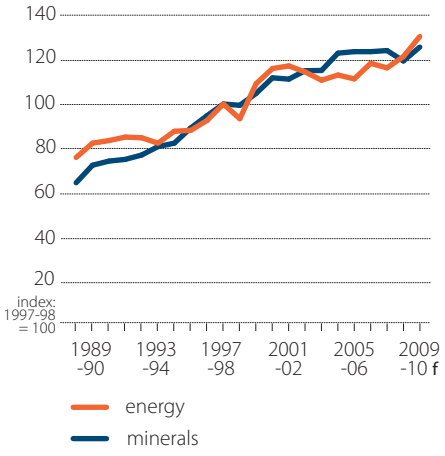
The index of minerals and energy export prices, in aggregate, is forecast to decrease by 26 per cent in 2009-10. The index of energy minerals export prices is forecast to decrease by 38 per cent, which mainly reflects forecast lower contract prices for thermal coal and metallurgical coal for Japanese Fiscal Year 2009 (JFY, April 2009 to March 2010). The index of metals and other minerals export prices is forecast to decrease by 15 per cent, as lower export prices for iron ore are expected to more than offset higher export prices for other commodities.

The volume of Australian mine production is forecast to rise by 7 per cent in 2009-10, with increases in both energy commodities and metals and other minerals. Production of metals and other minerals is forecast to increase by 5 per cent in 2009-10, with higher production of iron ore (up 20 per cent), gold (13 per cent) and lead (8 per cent). Lower production is forecast for nickel (down 15 per cent), aluminium (2 per cent), zinc (2 per cent) and mined copper (2 per cent).

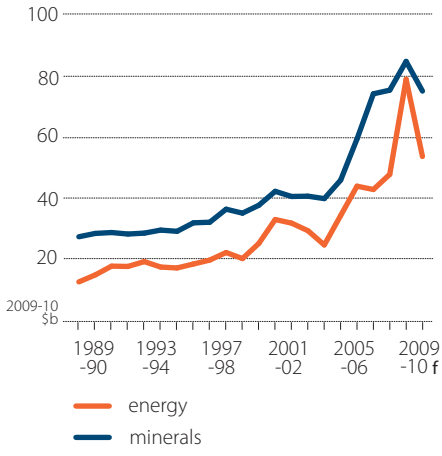
The volume of energy mineral production is forecast to rise by 8 per cent in 2009-10. Increased production of metallurgical coal (up 20 per cent), gas (10 per cent) and thermal coal (4 per cent) is expected to more than offset lower uranium (down 12 per cent) and crude oil output (2 per cent).

Despite higher export volumes forecast for 2009-10, earnings from Australia's minerals and energy exports are forecast to decline by 20 per cent to $129 billion. The combined effect of forecast lower bulk commodity contract prices for JFY 2009 and an assumed stronger Australian dollar is expected to more than offset the positive effect of forecast higher export volumes in 2009-10.

Australian mine production index



Australian export earnings



Export earnings from energy minerals are forecast to decrease by 31 per cent to $54 billion in 2009-10. Energy commodities for which lower export earnings are forecast include metallurgical coal (down $14.4 billion), thermal coal ($7.1 billion) and liquefied natural gas (LNG) ($3.1 billion).

The export value of metals and other minerals is forecast to decrease by 10 per cent to $75 billion in 2009-10, with significant decreases forecast for iron ore (down $5.1 billion), alumina ($1.5 billion) and aluminium ($1.3 billion).

Oil

Suwin Sandu and Alan Copeland

World oil prices in West Texas Intermediate (WTI) terms have been trading in a range of US$70 to $US80 a barrel since October 2009. The WTI oil price is estimated to average around US$77 a barrel in the December quarter 2009, which is a 12 per cent increase from the September quarter. For 2009 as a whole, oil prices are estimated to average around US$62 a barrel.

The increase in oil prices over the past few months reflects a combination of expectations of a world economic recovery, that will lead to higher oil consumption, and continued weakness in the US dollar against other major international floating currencies. While oil prices have risen steadily since March 2009, this has occurred at a time of high oil stocks in OECD economies and significant spare production capacity in OPEC. The higher prices may be an indication that investment and speculative demand is also a significant factor contributing to the recent increase in world oil prices.

In 2010, the WTI oil price is forecast to average around US$83 a barrel, which is a 35 per cent increase from 2009. This reflects the improved world economic outlook and the associated growth in world oil consumption, leading to a gradual decline in OECD oil stocks and OPEC spare capacity. Growth in oil consumption in many emerging and developing regions such as the Middle East, the Russian Federation and Latin America is expected to be particularly strong.

Other factors contributing to the forecast higher WTI price in 2010 include continued investment and speculative demand in world oil markets and weakness in the US dollar, which will place upward pressure on oil prices denominated in US dollar terms.

Oil prices increase despite high stocks and spare capacity...

Since March 2009, oil prices have more than doubled despite a high level of oil stocks associated with weak global demand and relatively high OPEC spare capacity. Historically, a combination of high oil stocks and excess production capacity usually puts downward

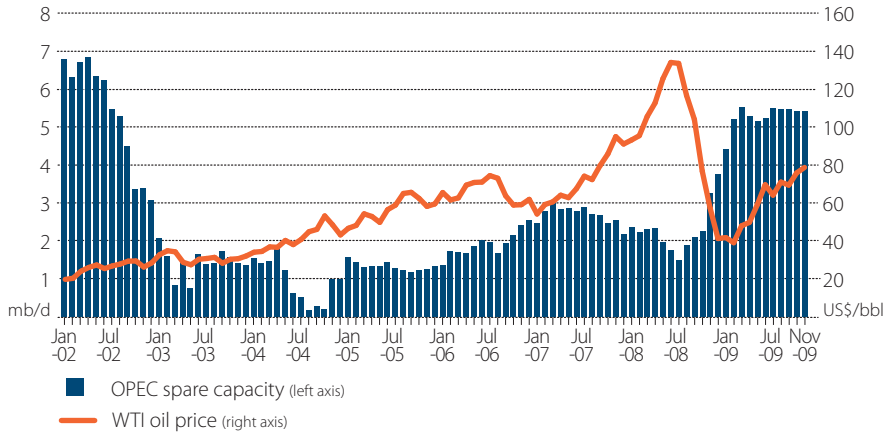
pressure on oil prices. This is because high stocks and spare capacity tend to reduce investment and speculative demand for oil associated with the risk of sudden or unexpected increases in oil demand or significant shortfalls in oil supply.

At the end of September 2009, industry stocks of crude oil in OECD economies were at 60 days of OECD consumption. Although this was a slight decline from the peak of 62 days at the end of the June quarter 2009, it is still 12 per cent greater than the average over the past 10 years.

Oil stocks in non-OECD economies are also likely to increase in the short term. For example, China is pursuing plans to increase its strategic oil stocks. Recently, China completed phase one of its strategic oil reserve program, which resulted in stocks rising by 102 million barrels. A second phase of stock building is scheduled to be completed by 2011, leading to a further capacity increase of 170 million barrels.

OPEC spare production capacity in October is reported to have been around 5.5 million barrels a day, which is the highest amount since mid-2002. This compares with spare capacity of 1.5 million barrels a day in mid-2008 when oil prices peaked at US$145 a barrel.

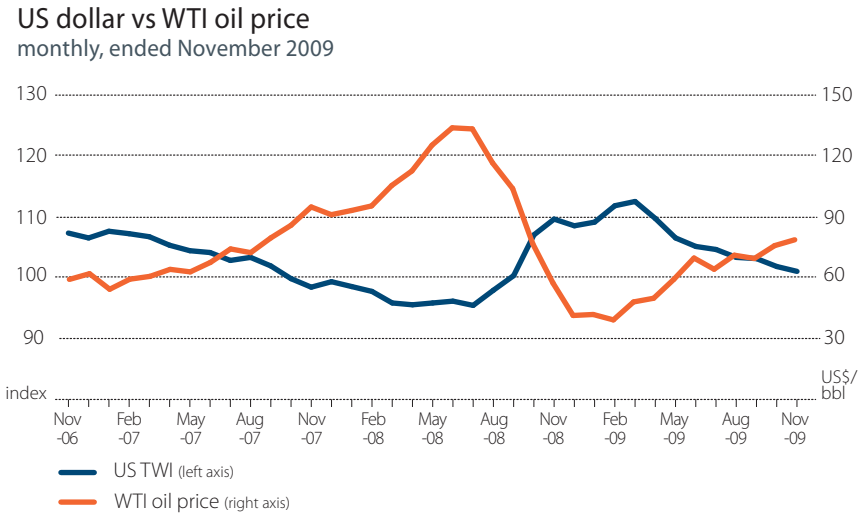
OPEC spare capacity and WTI oil price
monthly, ended November 2009



...supported by speculative demand and the devaluation of the US dollar

The recent devaluation of the US dollar against other major international floating currencies has partly contributed to the increase in oil prices denominated in US dollar terms. The US dollar on a trade weighted basis has declined by around 15 per cent since March 2009.

Because world oil prices are denominated in US dollars, a depreciation of the US dollar reduces oil prices in other international floating currencies. Other things being equal, demand for oil in those countries with a floating currency will not respond significantly to higher US dollar denominated oil prices. This is especially the case in the euro area, Japan, Australia and New Zealand.



In addition, many major oil consuming economies, including China, India and some South-East Asian countries, have fixed or subsidised prices for petrol or other oil products, which results in consumers being shielded from increases in international oil prices. Under these domestic arrangements, increases in international oil prices are not fully passed on to consumers in these economies, who in turn will not significantly change their consumption patterns.

Support for higher oil prices could also come from improved investment sentiment and speculative interest in the marketplace, especially if the outlook for global economic growth continues to improve. While the scheduled increase in China's strategic oil reserves could place downward pressure on speculative demand in the marketplace, increased purchases as a result of China's stock building will also lead to upward pressure on oil prices in spot markets.

Growth in world oil consumption to resume

In 2009, world oil consumption is estimated to fall by 2 per cent to 84.7 million barrels a day, reflecting the effect of weaker activity in many major world economies such as the United States, the European Union and Japan. World oil consumption in 2010 is forecast to increase by 1.8 per cent to 86.2 million barrels a day underpinned by increased global economic activity.

Oil consumption growth stronger in non-OECD economies...

Non-OECD oil consumption in 2009 is estimated to increase by around 2 per cent, to average 39 million barrels a day. The strongest growth in oil consumption in 2009 has been in China and the Middle East, while lower consumption has been reported for the Russian Federation. In 2010, oil consumption is forecast to increase by 3 per cent to 40.1 million barrels a day, reflecting the assumption of stronger economic growth throughout most non-OECD economies.

In 2009, China's oil consumption is estimated to increase by 4 per cent to average around 8.2 million barrels a day. Rising oil demand has been underpinned by higher industrial

use (particularly in the petrochemical industry), increased consumption in the transport sector and the build-up of strategic stocks. Reflecting the assumption of continued strong economic growth and the expansion of strategic oil reserves, oil demand in 2010 is forecast to increase by 5 per cent to average 8.6 million barrels a day. At this rate, China will remain a major contributor to the growth in world oil demand and the world's second largest oil consumer.

In the Middle East, oil consumption is estimated to average 7.2 million barrels a day in 2009, a 2 per cent increase from 2008. Higher oil consumption in the region reflects the continued use of oil as an energy source in the petrochemical and construction industries, as well as for electricity generation. Oil consumption in the Middle East is forecast to grow by a further 3 per cent in 2010, to an average of 7.5 million barrels a day.

Oil consumption in the Russian Federation in 2009 is estimated to decline by 4 per cent to 2.8 million barrels a day, reflecting the effect of significantly weaker economic activity triggered by the global economic downturn. A significant proportion of the Russian Federation's economic activities are centred around commodity industries, including oil. In 2010, oil consumption is forecast to grow by 2 per cent to 4.2 million barrels a day, as an expected increase in commodity demand encourages higher economic activity and oil consumption.

Oil consumption in Latin America in 2009 is estimated to be largely unchanged from 2008. However, in 2010, oil consumption in the region is forecast to grow by 2 per cent, to 6 million barrels a day, as a result of assumed strong economic growth.

...as growth in OECD economies gathers pace

In 2009, OECD oil consumption is estimated to fall by 4 per cent to an average of 45.7 million barrels a day. Lower oil consumption in 2009 reflects lower demand for industrial use, which offset increased consumption in the transport sector and for heating purposes. In 2010, OECD oil consumption is forecast to increase by less than 1 per cent to 46 million barrels a day.

In North America, oil consumption in 2009 is estimated to decline by 4 per cent to average 23.2 million barrels a day. In the United States, the single largest global consumer, oil consumption has been falling continuously since 2006. The recent decline in oil consumption in the United States has occurred across the transport sector. However, an assumed gradual economic recovery in 2010 is expected to support higher crude oil consumption. In 2010, oil consumption in North America is forecast to increase by around 1.2 per cent to 23.5 million barrels a day.

Oil consumption in the European Union is estimated to decline by 5 per cent in 2009. This is a reflection of lower consumption for industrial use associated with declining economic activity throughout the European Union. In 2010, oil consumption is forecast to increase at a modest rate, to 14.6 million barrels a day, given the assumed gradual pace of economic recovery in the region.

World oil production to increase in 2010

In the first nine months of 2009, world oil production declined year on year by 2.4 per cent as producers, particularly in OPEC, responded to lower prices. For 2009 as a whole, world oil production is estimated to average around 84.7 million barrels a day, a fall of 2.1 per cent. In 2010, world oil supply is forecast to increase by 1.8 per cent to 86.2 million barrels a day, as producers respond to increased world demand and higher prices.

OPEC spare production capacity to remain high

In the first three quarters of 2009, OPEC's crude oil production averaged 28.5 million barrels a day, which was a decrease of around 10 per cent from the corresponding period in 2008. Reduced OPEC production reflected its decision in late 2008 to cut back production in the wake of lower oil prices. As a result of reduced production, OPEC's spare capacity was the highest in recent years.

The rate of OPEC crude oil production in 2010 will depend on changes to OPEC production quotas and the extent to which the quotas are adhered. If oil prices continue to rise, pressure may be placed on OPEC to increase production quotas. If production quotas are not increased, some OPEC members may be tempted to increase production beyond their quotas to take advantage of higher oil prices.

In addition to the high amount of spare capacity, a number of new production fields, particularly in Saudi Arabia, could start production in the next 12 months. These include Khurais (capacity 1.2 million barrels a day), Shaybah (250 000 barrels a day) and Nuayyim (100 000 barrels a day). The Khursaniyah field could also increase production to 500 000 barrels a day in 2010.

Non-OPEC production to increase further in 2010

In 2009, non-OPEC production is estimated to average around 51 million barrels a day, an increase of less than 1 per cent from 2008. In OECD economies, increased production in the United States has been offset by falling production from fields in the North Sea. Non-OECD oil production is estimated to increase by 2 per cent in 2009, reflecting higher output from the Russian Federation, Brazil, Azerbaijan and Kazakhstan.

Non-OPEC oil production in 2010 is forecast to increase by a further 1.5 per cent to 51.9 million barrels a day. Increased production in Brazil, the Russian Federation and the United States will be partially offset by falling production in Mexico and the North Sea.

In the United States, oil production is forecast to increase for the first time since 1991, supported by the start-up and ramping up of a number of projects, including Tahiti (capacity of 125 000 barrels a day), Shenzi (100 000 barrels a day) and Thunder Hawk (45 000 barrels a day). In addition, oil production from the Shenzi field is expected to be greater than initially expected as a result of larger than anticipated oil reserves.

In Brazil, oil production in 2010 is forecast to increase by around 8 per cent to 2.7 million barrels a day. The start-up of production from the Parque das Conchas project in 2009, which has

a peak production capacity of 100 000 barrels a day, is expected to support this growth. In addition, the start-up of other new fields such as Jabuti, Piranha, Tupi and Urugua/Tambau in 2010, with a combined production capacity of around 150 000 barrels a day, will also underpin oil production growth in Brazil.

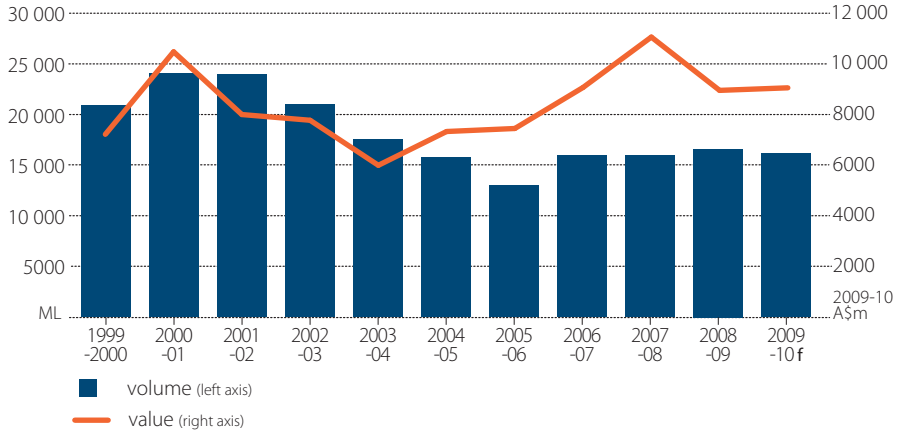
In the Russian Federation, oil production in 2009 is estimated to increase by 1.4 per cent to 10.1 million barrels a day. Production increased in the first half of 2009 from new fields in Eastern Siberia such as Vankor (capacity 400 000 barrels a day) and Alinskoye (95 000 barrels a day). In addition, production of natural gas liquids (condensate) started from the Sakhalin project in March 2009. In 2010, oil production is forecast to increase by a further 1.2 per cent to around 10.3 million barrels a day.

Australia's oil production to fall

In 2009-10, Australia's crude oil and condensate production is forecast to total 27.2 gigalitres, a decline of 2.3 per cent from 2008-09. Two new oil fields are scheduled to commence operation in the first quarter of 2010, Pyreness (capacity of 96 000 barrels a day) and Van Gogh (63 000 barrels a day). While these fields are large by Australian standards, the effect of their initial output on total Australian production in 2009-10 will be offset by continued maintenance at the Woollybutt field and natural decline from other mature fields. The full benefits of production from Pyreness and Van Gogh will be evident beyond 2009-10.

Reflecting lower production in 2009-10, Australia's crude oil and condensate exports are forecast to decline by 2.4 per cent to 16.2 gigalitres. The value of Australia's crude oil and condensate exports in 2009-10 is forecast to increase by 3.5 per cent to $9.1 billion. The effect of higher world oil prices on export earnings is expected to more than offset lower export volumes and an assumed appreciation of the Australian dollar against the US dollar.

Australian crude oil and condensate exports



Oil outlook

		2008	2009 f	2010 f	% change
World					
Production	mbd	86.5	84.7	86.2	*1.8*
Consumption	mbd	86.3	84.7	86.2	*1.8*
Trade weighted crude oil price	US$/bbl	94.60	59.64	80.45	*34.9*
West Texas Intermediate crude oil price	US$/bbl	98.62	61.90	83.38	*34.7*
		2007 -08	**2008 -09**	**2009 -10 f**	
Australia					
Crude oil and condensate					
Production	ML	25 789	27 788	27 157	*– 2.3*
Exports	ML	15 975	16 588	16 192	*– 2.4*
– value	A$m	10 484	8 755	9 059	*3.5*
Imports	ML	26 223	24 303	25 614	*5.4*
LPG					
Production	ML	3 971	3 930	3 994	*1.6*
Exports	ML	2 589	2 500	2 725	*9.0*
– value	A$m	1 182	1 044	1 089	*4.3*

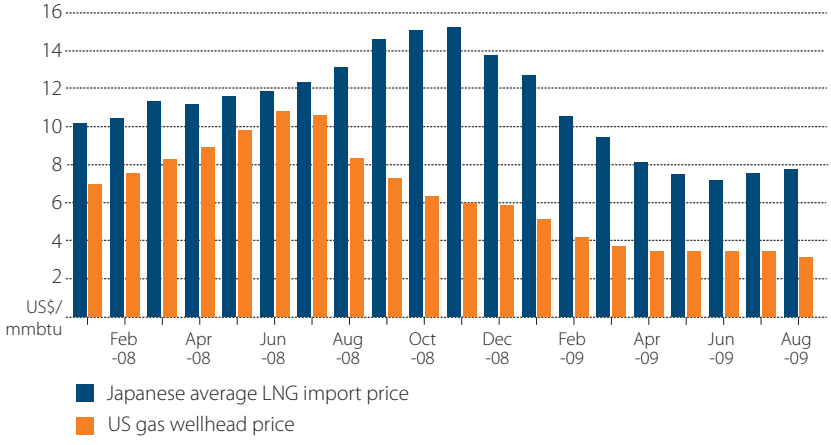
Natural gas

Alan Copeland

In 2009, world liquefied natural gas (LNG) trade is estimated to increase by 3 per cent to 176 million tonnes. This growth in trade reflects increased imports by the European Union and the United States, which have been partly offset by lower Asian demand. On the supply side, there have been significant additions to capacity during the year.

The global economic downturn has resulted in lower energy demand in the northern Asian gas market, which has led to lower gas consumption and LNG imports by countries such as Japan, the Republic of Korea and Chinese Taipei. Lower demand in northern Asia, particularly for spot cargoes, has resulted in LNG prices falling significantly since late 2008. This has resulted in many shipments being sold into the European market. Reflecting this, imports by north Asian markets in the first three quarters of 2009 were 9 per cent lower year on year, while imports by the European Union and the United States grew strongly over the same period.

Gas prices



In 2010, north Asian LNG imports are forecast to increase, being supported by stronger economic growth which will underpin increased gas consumption. Likewise, in the European Union, LNG imports are forecast to increase associated with the start-up of new import terminals that are obligated to receive contracted LNG shipments. Overall, world LNG trade in 2010 is forecast to increase 16 per cent to 205 million tonnes.

Japanese and Korean imports to rebound in 2010...

In 2009, Japan's LNG imports are estimated to fall by around 7 per cent to 65 million tonnes. The economies of Japan and its major trading partners have been adversely affected by the global economic downturn, resulting in gas consumption decreasing by 7 per cent in the

period January to August 2009 compared with the corresponding period in 2008. As all of Japan's gas supply is imported in the form of LNG, the fall in gas consumption resulted in an 8 per cent decrease in LNG imports over the same period.

With Japan's economy estimated to contract by around 5.4 per cent in 2009, lower gas consumption reflects trends in both electricity generation and industrial production. In addition, Japan's nuclear energy utilisation rate has increased during the year, further reducing the reliance on gas-fired electricity generation.

Japan's gas consumption in 2010 is expected to increase, being underpinned by assumed economic growth of around 1.5 per cent. The return to economic growth in 2010 will support an increase in electricity demand and gas consumption for industrial production. For example, electricity sales by the 10 largest power utilities are forecast to increase by 2 per cent to 868 terawatt hours during Japanese Fiscal Year 2010 (April 2010 to March 2011), as economic growth resumes.

In the Republic of Korea, LNG imports in 2009 are estimated to fall by around 12 per cent to 24 million tonnes. This fall in imports reflects lower demand from the electricity generation sector, high domestic stocks, which utilities have elected to run down, and fuel switching to fuel oil and thermal coal reflecting relative cost competitiveness. These three factors were reflected in a 13 per cent decrease in LNG imports in the eight months to August 2009, compared with the corresponding period in 2008.

In 2010, the Republic of Korea's LNG imports are forecast to increase 8 per cent to 26 million tonnes. Increased imports in 2010 will be supported by forecast higher average oil and thermal coal prices and the assumed economic recovery, which will support an increase in demand from the electricity generation sector. Increased gas imports in 2010 will be supplied by new long-term contracts with suppliers in Indonesia, the Russian Federation and Yemen.

...while China's continue to grow

Offsetting lower demand in Japan and the Republic of Korea has been growth in China's LNG imports. In the period January to August 2009, China's LNG imports increased by 38 per cent, year on year. China's growth in LNG imports has been supported by increased electricity generation and new LNG import capacity. The fall in LNG prices has also encouraged the purchase of spot cargoes.

In 2010, China's LNG imports are forecast to rise to 9 million tonnes, reflecting increased energy consumption in a growing economy. The increased LNG imports will be supplied to the Dapeng (capacity of 6.2 million tonnes a year), Fujian (2.6 million tonnes a year) and Shanghai (1.1 million tonnes a year) LNG terminals through long-term contracts with Australia, Indonesia, Qatar and Malaysia.

Atlantic imports to continue increasing in 2010

Despite an estimated decline in natural gas consumption in the Atlantic market in 2009 associated with the economic downturn, regional LNG imports are expected to rise in the

short term. Lower spot LNG prices and the availability of natural gas storage capacity in the European Union and the United States have underpinned LNG imports in this market. In the European Union, natural gas storage capacity has been increasing as a measure to mitigate potential supply disruptions such as that which occurred in early 2009 as a result of the dispute between the Russian Federation and Ukraine. In addition, the start-up of a number of regasification terminals in the United Kingdom has supported imports. For example, the Dragon LNG terminal, which has a 4 million tonne a year regasification capacity, was commissioned in July, while the second phase (6.5 million tonnes a year) of the Grain LNG terminal was completed in late 2008. The operation of these terminals has underpinned the significant increase in LNG imports by the United Kingdom during 2009.

Excess capacity to continue in 2010

In addition to weak demand, a significant expansion of LNG export capacity in major producing countries has also placed downward pressure on prices. Since early 2009, 44 million tonnes of capacity has been commissioned, including 23.4 million tonnes in Qatar, 9.6 million tonnes in the Russian Federation and 7.6 million tonnes in Indonesia. The start-up of these LNG projects is estimated to have resulted in annual world export capacity increasing by 21 per cent to around 250 million tonnes at the end of 2009.

In 2010, world LNG production capacity is expected to increase by a further 12.1 million tonnes, being underpinned by the addition of a seventh train at Qatar's RasGas project (7.8 million tonnes) and the start-up of the Pluto project (4.3 million tonnes) in Australia.

Over the next two years, some of the older LNG production plants could reduce their output in response to an oversupplied market. For example, some LNG plants in Brunei, Malaysia, Indonesia, Nigeria and Oman have reduced production to either carry out maintenance or divert natural gas for domestic consumption. However, it is unlikely that a reduction in supply from these plants will offset increased production associated with the start-up of new capacity.

Australia's gas production and exports to increase in 2009-10

A significant development in Australia's gas industry in 2009 was the decision to proceed with the development of the Gorgon project. While the project will not contribute to Australia's gas production during the current forecast period, a significant contribution is expected from when it commences operation around the middle of the next decade (see box).

In 2009-10, Australia's gas production is forecast to increase by 10 per cent to 48.5 billion cubic metres. Supporting this increase will be the start-up of new gas fields, including Blacktip (an initial volume of 650 million cubic metres) off the north-west coast of Australia; Henry (300 million cubic metres) and Longtom (670 million cubic metres) off south-east Australia; and Pyrenees (620 million cubic metres) off Western Australia.

Coal seam methane is also expected to make an important contribution to higher gas production in Australia. A number of projects have recently been completed or are due for completion in 2009-10, which could increase production of coal seam methane by 27 per cent. These projects include the Spring Gully and Talinga fields, with a combined annual production capacity of 1.2 billion cubic metres, and the Lacerta field (160 million cubic metres) in Queensland.

Gorgon: Australia's single largest resources project

In September 2009, the Gorgon Joint Venture, which consists of Chevron (50 per cent), ExxonMobil (25 per cent) and Shell (25 per cent), made a final investment decision on the $43 billion Gorgon LNG project. In capital expenditure terms, it is the single largest resource project in Australia's history and will have a capacity of 15 million tonnes a year of LNG. Currently, Australia's LNG production capacity is slightly less than 20 million tonnes a year. The Gorgon project, which is scheduled to produce its first LNG in late 2014, will involve the development of a number of gas fields, the largest of which are the Io/Jansz and Gorgon fields. It is estimated that the total gas reserves of fields in the Gorgon area are around 40 trillion cubic feet (around 42 000 petajoules). This is equivalent to 35 years of Australia's domestic gas consumption at 2007-08 levels.

The origins of the Gorgon project can be traced back to the discovery of the West Tryal Rocks field in 1973. Over the following 15 years, a number of other gas discoveries were made (including Gorgon in 1984) which enabled the project proponents to undertake Front End Engineering and Design studies on an 8 million tonne a year LNG plant located on the Burrup Peninsula. The Asian financial crisis in 1998 halted work on the project, reflecting the financial uncertainty throughout the region. In 2001, the Io and Jansz fields were discovered which added significant quantities of gas to the reserves associated with the project. This encouraged the joint venture to reactivate the engineering and design study, targeting two 5 million tonne a year LNG trains located on Barrow Island. Environmental approval was granted two years later, in 2007, but the Joint Venture concluded that the project scope and costs justified three 5 million tonne trains. In 2009, 26 years after the first gas discovery, the project was given a final investment decision.

The Gorgon project will consist of subsea infrastructure associated with the extraction of natural gas and condensate in water that is 1300 metres deep, two 240 kilometre pipelines to transport the gas and liquids to Barrow Island, three LNG trains with a capacity of 5 million tonnes a year, a gas plant capable of processing 300 terajoules a day for the Western Australian gas market, a branch pipeline to the Dampier Bunbury pipeline and the world's largest carbon sequestration operation. The sequestration part of the project, which will store carbon dioxide 2 kilometres below Barrow Island, will require an investment of around $2 billion.

Marketing

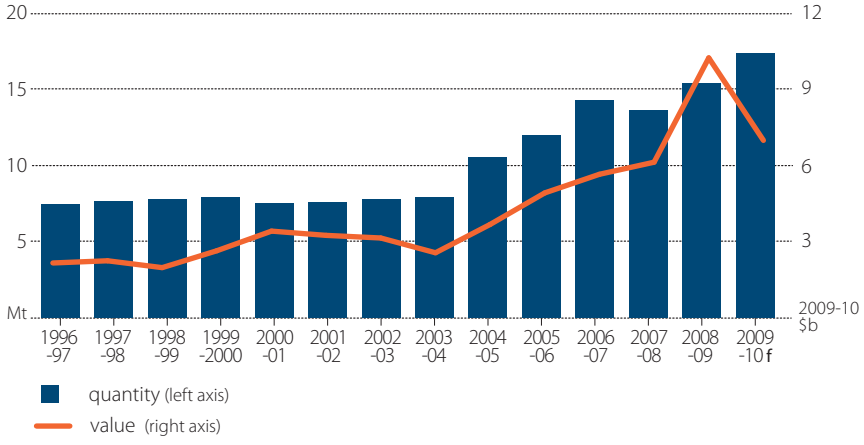
Each of the Joint Venture companies is responsible for marketing their share of the LNG. That is, Chevron, ExxonMobil and Shell have a share of the LNG production in proportion to their ownership stake. Some of the long-term contracts include agreements allowing the LNG purchasers to take equity in the project. For example, the sales and purchase agreement Chevron signed with Osaka Gas and Tokyo Gas allowed them to purchase stakes of 1.25 per cent and 1 per cent, respectively. In the LNG industry, it is common for consumers to purchase small stakes in the LNG plants from which they are supplied. As shareholders, the consumers are entitled to information about the operation and technical and financial performance of the LNG project. It also strengthens the relationship between the two parties.

JVP	Buyer/Import terminal	Country	Quantity (Mtpa)	Duration (years)
Chevron	Osaka Gas	Japan	1.375	25
Chevron	Tokyo Gas	Japan	1.1	25
Chevron	Chubu Electric	Japan	1.5	25
Chevron	GS Caltex	Korea, Rep. of	0.5	20
Chevron	KOGAS	Korea, Rep. of	1.5	15
Shell	PetroChina	China	2.0	20
Shell	BP Singapore	Singapore	na	na
Shell	Haizara	India	na	na
Shell	Energia Costa Azul	Mexico	na	na
ExxonMobil	Petronet	India	1.5	20
ExxonMobil	PetroChina	China	2.25	20

In 2009-10, Australian LNG exports are forecast to increase by 13 per cent to 17.4 million tonnes, which reflects a full year of operation at the fifth train of the North West Shelf project.

Although the global economic downturn has not (to date) affected the volumes of Australia's LNG exports because the bulk of the exports are under long-term contracts, there has been an adverse effect on the value of exports because of lower prices for LNG cargoes. In addition, the higher value of the Australian dollar against the US dollar has reduced the value of shipments in Australian dollar terms. As a result, the value of exports in 2009-10 is forecast to decrease by 31 per cent to $7 billion.

Australian LNG exports



Gas outlook

		2007 -08	2008 -09	2009 -10 f	% *change*
Australia					
Production	Gm^3	41.7	44.1	48.5	*10.0*
LNG exports	Mt	13.68	15.41	17.38	*12.8*
– value	A$m	5 854	10 086	7 008	*– 30.5*

Thermal coal

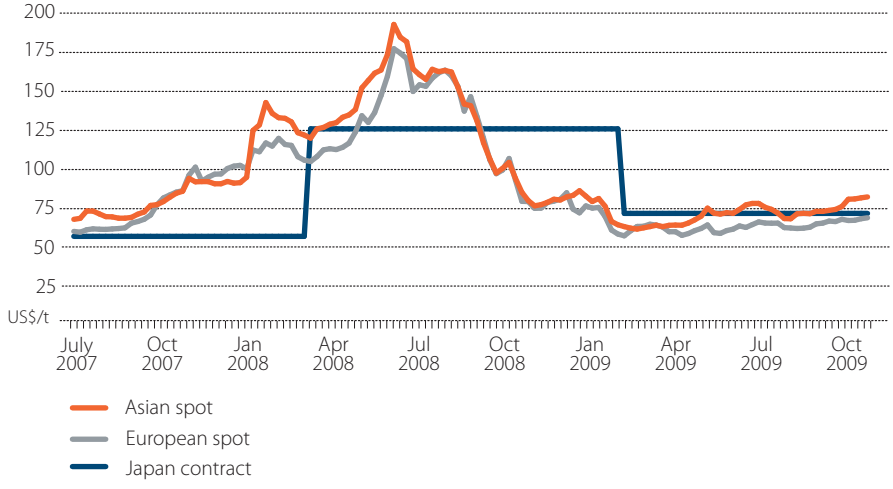
Rebecca Petchey

In late November, the spot price for Newcastle thermal coal exports was US$80.40 a tonne. This was an increase of 34 per cent from March 2009 when coal prices were at their recent lows as a result of the global economic downturn. Increasing spot prices since March have been supported by strong import demand from China and India. In comparison, the thermal coal contract price between Australian suppliers and Japanese power utilities was settled at around US$70 to US$72 a tonne for Japanese Fiscal Year 2009 (JFY, April 2009 to March 2010), which was a 44 per cent decrease from JFY 2008.

Over the course of 2009 a price differential has appeared between spot prices of thermal coal loaded at the ports of Newcastle and Richards Bay in South Africa. Historically, prices at Richards Bay and Newcastle have tracked closely after taking into account the freight differential associated with transporting coal from the Pacific market into the Atlantic market and vice versa. The price differential reached almost US$15 a tonne in July, and remained at around US$10 a tonne throughout the September quarter. This reflected lower demand in the Atlantic market, which placed downward pressure on Richards Bay prices, and stronger demand in the Pacific market, which provided support for Newcastle spot prices.

There was an increase in the Richards Bay spot price, partially closing the gap between the two spot prices between July and October. This was largely because of the increased purchase of coal from South Africa by India and higher demand from the European Union as winter approaches. India has the ability to source coal from either the Atlantic or Pacific market and has been importing more from South Africa because of the price differential. China has also started to import thermal coal from South Africa, taking a shipment in August—its first in seven years. Since November, both the Newcastle and Richards Bay spot prices have increased, largely reflecting strong demand from Asia.

Thermal coal indicator prices
weekly, ended November 2009



World trade to increase slightly on increased demand from China and India

In 2009, world thermal coal trade is estimated to increase by 1 per cent to 712 million tonnes. Higher import demand from China, the Republic of Korea and India has offset lower imports by Japan and the European Union. In 2010, world trade is forecast to increase by 3 per cent to 735 million tonnes, being underpinned by stronger global economic growth, particularly in Asia.

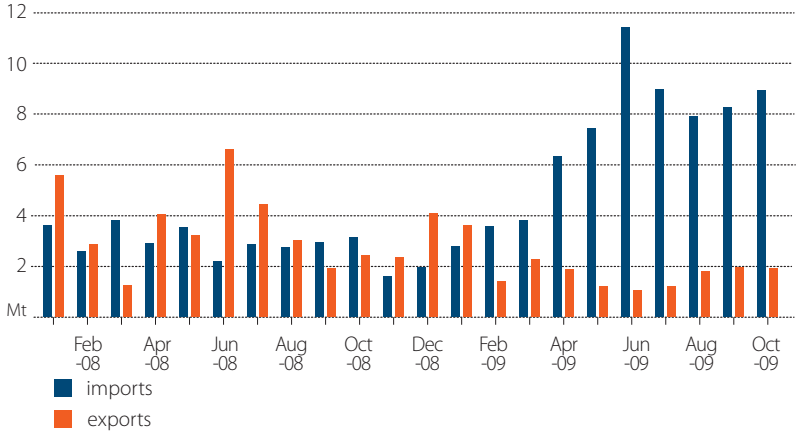
Import demand continues to expand rapidly in China and India

In the first nine months of 2009, China's thermal coal imports totalled 60 million tonnes, compared with 27 million tonnes in the same period in 2008. Strong import growth has occurred in China because of a combination of factors, including lower international coal prices and freight rates, growing electricity demand and limited growth in domestic production. For 2009 as a whole, China's thermal coal imports are estimated to increase by 126 per cent to 80 million tonnes.

During 2009, domestic coal prices in China have remained high relative to the delivered price of imported coal. With international freight rates falling, it has been cheaper to import coal into China's southern coastal region rather than source it domestically from the main producing regions in the north of the country. This has resulted in the recent surge in China's import demand for coal.

While China's thermal coal production has increased during 2009, it has been unable to match the pace of demand growth. Domestic production growth has been limited by lower production from a number of locally owned mines, as many have been shut down for safety reasons and as part of the central government's policy of consolidating the mining industry. The future policy stance of the Chinese Government remains a major factor affecting coal production and imports in China. This will especially be the case if coal prices continue to rise.

China's imports and exports of thermal coal
January 2008 to October 2009



In 2010, higher international thermal coal prices coupled with stronger domestic production are expected to limit the growth in imports. Therefore, imports are expected to remain unchanged at 80 million tonnes.

China's thermal coal exports in the first nine months of 2009 totalled 16 million tonnes, compared with 33 million tonnes in the corresponding period in 2008. The significant decrease in exports reflects domestic coal prices above those in the international market and weaker demand in its largest export market, Japan. Rising domestic prices combined with limited production growth because of mine closures are expected to continue to limit exports. For 2009 as a whole, exports are estimated to total 22 million tonnes, which is a decline of around 50 per cent from 2008. This trend is expected to continue in 2010 with exports of thermal coal decreasing to around 20 million tonnes.

India's imports of thermal coal are estimated to have increased by 32 per cent to 45 million tonnes in 2009. India has been rapidly expanding its imports of thermal coal as a result of lower than expected domestic production. Coal India Limited recently announced that the supply gap in the year ending April 2010 is estimated to be 71 million tonnes (thermal and metallurgical coal), which will need to be filled by increased imports.

India also has plans to add significant new coal-fired electricity generation capacity. As of September 2009, an additional 4.6 gigawatts of coal-fired capacity had been commissioned, which represents around 36 per cent of the target for 2009-10. Although India is not expected to reach its generation targets, most of the coal used in the new power stations that are currently under construction is expected to be sourced from imports. India's coal imports are forecast to rise to 50 million tonnes in 2010, an increase of 11 per cent from 2009.

Japan's imports fall, while the Republic of Korea's rise

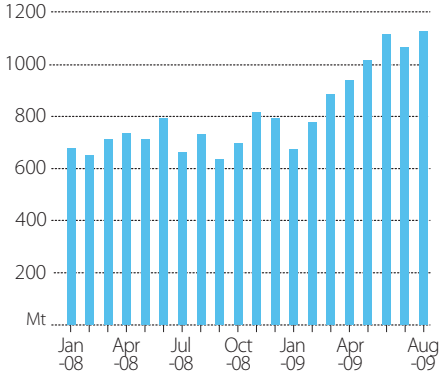
Japan's thermal coal imports in 2009 are estimated to fall by 10 per cent to 115 million tonnes. This estimated decline reflects falling electricity consumption, particularly by the industry sector, associated with economic contraction. In addition, the nuclear utilisation rate has remained above 60 per cent since June, further reducing the demand for coal-fired electricity generation. In 2010, imports are forecast to grow by 2 per cent to 117 million tonnes, reflecting an assumed recovery in economic growth.

Imports of thermal coal by the Republic of Korea are estimated to increase by 10 per cent to 83 million tonnes in 2009, supported by the recent addition of coal-fired electricity generation capacity. In 2010, the Republic of Korea's thermal coal imports are forecast to grow at a slower rate compared with 2009. The program to expand coal-fired generation capacity was largely completed in the first half of 2009 and limited new capacity is scheduled to be completed in the near future. Growth in coal consumption will largely reflect the ramp up of power stations commissioned during late 2008 and 2009. Therefore, imports are forecast to grow by 2 per cent to 85 million tonnes in 2010.

European Union imports to remain weaker because of high stocks

Imports by the European Union are estimated to decline by 6 per cent to 174 million tonnes in 2009, largely reflecting weak economic conditions. However, in Germany, plans to increase coal-fired electricity generation capacity are likely to lead to an increase in import demand. As coal production has declined in Germany following a program to close coal mines, most of the coal required for the 6 gigawatts of new capacity currently under construction is expected to be imported. This would support increased imports in 2010.

Coal stocks of generators in the United Kingdom monthly



The increase in imports by some European countries is expected to be more than offset by a decline in imports by most of the major importers. High stocks in the United Kingdom, Italy and Spain are expected to place downward pressure on import demand. Stocks in the United Kingdom are the highest since records began in 1995. In addition, substitution into relatively cheaper natural gas has further reduced demand for coal, and this is not expected to change until well into 2010. Higher demand for electricity in the winter months, and increasing cost competitiveness of coal under the assumption of higher gas prices, are expected to lead to increasing demand for coal in the second half of 2010.

The improved economic outlook for the European Union could support higher electricity demand and, hence, thermal coal imports in 2010. The European Union's imports are forecast to increase slightly to 175 million tonnes.

Colombia's exports fall . . .

In the first eight months of 2009, exports from Colombia were around 41 million tonnes, which is a year on year decrease of 9 per cent. This was mainly the result of weaker demand in the Atlantic market, which is the major export destination for coal from Colombia. Also contributing to the lower exports was falling production as a result of labour disputes following a number of safety incidents at coal mines.

For 2009 as a whole, exports are estimated to decline by 5 per cent to 70 million tonnes. In 2010, exports are forecast to increase by 6 per cent to 74 million tonnes, underpinned by an expected recovery in coal import demand in the European Union and the United States.

. . . but demand from India and China supports other major exporters

South Africa's exports in 2009 are estimated to have increased by 3 per cent to 63 million tonnes. Higher demand from India has more than offset weaker import demand from the European Union. The planned expansion of rail infrastructure capacity is intended to complement the expansion of the Richard's Bay Coal Terminal, and is expected to support increased exports in 2010. However, rail capacity is expected to remain a constraint as it has not kept pace with expansions at the port.

Exports from South Africa are forecast to increase by 3 per cent to 65 million tonnes in 2010, as producers respond to recovering demand in the Atlantic market and continued growth in demand from Asia, particularly India.

Indonesia's exports are estimated to have increased by 3 per cent in 2009 to 198 million tonnes, and are forecast to rise a further 6 per cent to 210 million tonnes in 2010. In November 2009, the Indonesian Government requested that 30 per cent of producers' output be set aside to supply new coal-fired electricity generation capacity in 2010. However, it is likely that Indonesian producers will be able to increase production so as to meet both domestic obligations and international demand.

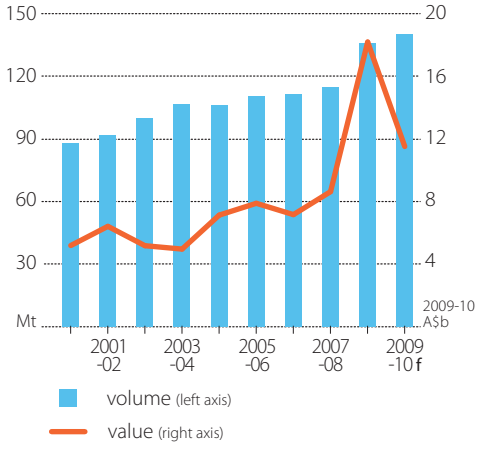
The Russian Federation's exports are estimated to have increased by 5 per cent to 90 million tonnes in 2009. This increase has been assisted by new port capacity at Vanino in the east, which has facilitated additional exports to Japan, the Republic of Korea and China. In 2010, exports are forecast to increase by 4 per cent to 94 million tonnes, in response to recovering growth in the European Union and continued strong demand from China.

Australian exports to increase

In 2008-09, Australia's thermal coal production is estimated to have increased by 10 per cent to 205 million tonnes. This was facilitated by mine capacity expansions during the year. Further additions to capacity are expected to be completed in 2010, including Moolarben, Narrabri and Blakefield South, which will contribute to a forecast production increase of 4 per cent to 213 million tonnes in 2009-10.

Export volumes in 2008-09 are estimated to have increased by 19 per cent to 136 million tonnes. This was driven by strong demand for coal throughout Asia in the second half of 2008 and by increased export volumes to China in the first half of 2009. In 2009-10, Australia's thermal coal exports are forecast to increase by 3 per cent to 141 million tonnes. This forecast increase will be underpinned by higher production and new export infrastructure capacity, such as the expansion of the Kooragang Island coal terminal and the new export terminal at Newcastle. Asian markets will be the main destination for the forecast increase in exports.

Australia's thermal coal exports



Export values increased by 114 per cent to A$17.9 billion in 2008-09. Sharply higher contract prices coupled with an increase in export volumes were the factors behind this increase. Mainly reflecting the 44 per cent decrease in contract price for JFY 2009, export values in 2009-10 are forecast to decline by 40 per cent to A$10.8 billion.

Thermal coal outlook

		2008	2009 f	2010 f	%
World					*change*
Total trade	Mt	704.0	712.4	735.2	*3.2*
Imports					
Asia	Mt	388.0	426.6	440.0	*3.1*
– China	Mt	35.4	80.0	80.0	*0.0*
– Chinese Taipei	Mt	60.3	55.0	58.0	*5.5*
– India	Mt	34.0	45.0	50.0	*11.1*
– Japan	Mt	128.2	115.0	117.0	*1.7*
– Korea, Rep. of	Mt	75.5	83.0	85.0	*2.4*
– Malaysia	Mt	16.6	16.0	16.5	*3.1*
– other Asia	Mt	37.9	32.6	33.5	*2.8*
Europe	Mt	222.5	203.1	208.0	*2.4*
– European Union 27	Mt	184.6	173.9	174.8	*0.5*
– other Europe	Mt	37.9	29.2	33.2	*13.7*
Other	Mt	93.5	82.7	87.2	*5.4*
Exports					
Australia	Mt	126.4	139.4	146.0	*4.7*
China	Mt	42.7	22.0	20.0	*– 9.1*
Colombia	Mt	73.6	70.0	74.0	*5.7*
Indonesia	Mt	193.0	198.0	210.0	*6.1*
Russian Federation	Mt	85.8	90.0	94.0	*4.4*
South Africa	Mt	61.3	63.0	65.0	*3.2*
United States	Mt	35.1	20.0	22.0	*10.0*
Other	Mt	86.1	110.0	104.2	*– 5.3*
		2007 -08	2008 -09	2009 -10 f	
Australia					
Production	Mt	185.9	204.5	213.0	*4.2*
Exports	Mt	115.1	136.4	140.6	*3.1*
– value	A$m	8 365	17 901	10 824	*– 39.5*

Metals

Steel and steel-making raw materials

Robert New

Economic recovery in many major consuming countries has led to an increase in demand for steel, and therefore steel-making raw materials. Government investments in steel-intensive infrastructure and recovering consumption of consumer durables, supported by government stimulus and improving consumer and business sentiment, has prompted many steel producers to restart mills idled in late 2008 and early 2009. Demand for steel is expected to continue to grow over 2010, further increasing demand for iron ore and metallurgical coal — Australia's two largest commodity export earners.

World steel demand to recover from a decline in 2009...

In 2009, significant idling of steel-making capacity early in the year, associated with the global economic slowdown, is estimated to result in an 8 per cent decline in global steel production, to 1.2 billion tonnes. Lower production in OECD economies is expected to be partially offset by an estimated 14 per cent increase in China's production. Over the past few months, some idled production capacity has been restarted and, in line with assumed improvements in world economic growth, global steel production is forecast to increase by 10 per cent to 1.4 billion tonnes in 2010.

Summary of announced blast furnace restarts, excluding China

region	restarted capacity million tonnes per annum (mtpa)
Asia	15.4
CIS	5
Eastern Europe	4.3
North America	7.3
South America	8.3
Western Europe	21.3
Total	61.6

Source: Macquarie 9 October 2009.

...and Chinese steel production to maintain growth in 2010

In China, government infrastructure investment is expected to continue through 2010, resulting in strong domestic demand for steel. While robust consumer and business sentiment will support domestic demand for consumer durables, the effect could be offset to some extent if the Chinese Government chooses to tighten domestic credit growth, as widely reported by media. Assumed economic recovery in China's major export markets, including the United States and Western Europe, is also expected to lead to an increase in steel-intensive exports. On balance, China's steel consumption is forecast to increase by 9 per cent to 527 million tonnes in 2010.

Steel consumption in OECD economies forecast to increase in 2010

In 2009, total steel consumption in the United States, the European Union and Japan is estimated to decline by 24 per cent to 304 million tonnes. In 2010, steel consumption in these major economies is forecast to increase by 4 per cent, to 316 million tonnes, in response to

World steel outlook

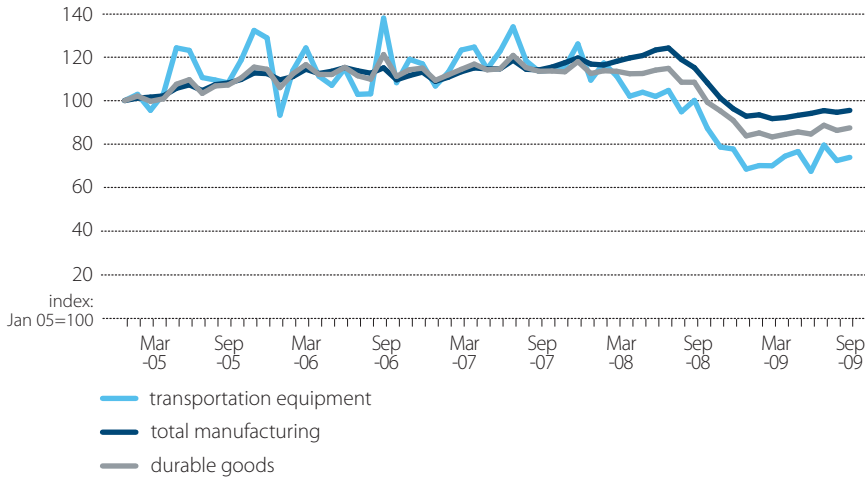
	2007	2008	2009	2010
Crude steel consumption (Mt)				
European Union 27	221	215	161	169
United States	114	103	77	79
Brazil	25	25	22	24
Russia	47	48	45	48
China	427	452	484	527
Japan	86	82	66	68
Korea, Rep. of	56	59	53	56
Chinese Taipei	22	23	19	21
India	55	60	60	65
World steel consumption	1 332	1 347	1 226	1 309
Crude steel production (Mt)				
European Union 27	210	198	145	157
United States	98	91	59	71
Brazil	34	34	27	31
Russia	72	69	63	65
China	489	502	571	617
Japan	120	119	89	104
Korea, Rep. of	51	53	43	50
Chinese Taipei	20	20	17	20
India	53	55	55	62
World steel production	1 344	1 330	1 230	1 351

the assumed recovery in economic growth. However, consumption in 2010 is still forecast to be 21 per cent less than 2008 consumption.

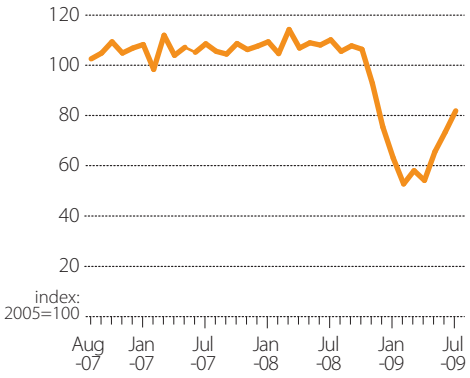
In the United States, activity in the manufacturing sector declined sharply in late 2008, but gradually stabilised during the first half of 2009. More recently, there have been signs of further improvement in US manufacturing activity, which has provided support for an assumption of modest growth in 2010. Reflecting this assumption, US steel production in 2010 is forecast to increase by 20 per cent to 71 million tonnes. While this forecast represents a substantial increase from the estimated production of 2009, it remains around 22 per cent below production achieved in 2008.

In Japan, capacity utilisation in the steel industry has increased since mid-2009, after a significant decline in late 2008 and early 2009. While steel production in Japan is forecast to rise in the next 12 months, it is unlikely to reach full capacity. Japanese steel production is forecast to increase by 17 per cent to 104 million tonnes in 2010.

US seasonally adjusted new orders of manufactured goods



Japanese iron and steel capacity utilisation



Outlook for world iron ore trade (Mt)

	2007	2008	2009	2010
Iron ore imports				
European Union 27	170	161	118	128
Japan	139	140	109	124
China	383	444	572	618
Korea, Rep. of	46	50	39	45
Chinese Taipei	16	15	13	15
World imports	830	895	913	987
Iron ore exports				
Australia	267	309	360	394
Brazil	269	282	267	295
India	94	101	80	65
Canada	28	28	25	27
South Africa	30	33	40	42
Sweden	19	18	19	21
World exports	830	895	913	987

Strong steel production to support iron ore demand

Reflecting higher expected steel production, demand for iron ore is forecast to increase in 2010. World trade in iron ore is forecast to increase by 8 per cent to 987 million tonnes in 2010, compared with an estimated rise of 2 per cent in 2009. The main contributors to increased import demand are likely to be China, Japan and the European Union. However, import volumes to most countries, with the exception of China, are forecast to remain well below those of 2008.

In 2009, China has provided significant support for an otherwise weak iron ore market. China's imports of iron ore are estimated to increase by 29 per cent to 572 million tonnes in 2009, reflecting increased steel production and lower domestic iron ore production. Imports of iron ore by China are forecast to increase by 8 per cent to 618 million tonnes in 2010. This slower forecast growth for Chinese import demand reflects an expectation that some domestic production capacity, which was shut down in late 2008 and early 2009, will restart during the next 12 months.

Imports by OECD economies, such as the United States, the European Union and Japan, are expected to increase in 2010. Higher steel production is forecast for these major OECD economies, largely in response to the effects of government stimulus packages on manufacturing activity and consumer demand for durables.

Higher production from major exporters in 2010

The majority of import demand growth is expected to be captured by Australian and Brazilian iron ore exporters, reflecting their relative cost competitiveness compared with other producers. As such, production in these countries is expected to be at, or close to, capacity throughout 2010.

Australian iron ore exports are forecast to increase by 9 per cent to 394 million tonnes in 2010, when significant additional production and export capacity is scheduled for completion. Rio Tinto's Brockman 4 and Mesa A projects are expected to provide an additional 47 million

tonnes of capacity, CITIC Pacific's Sino Iron Project is expected to add 28 million tonnes, and BHP Billiton's Rapid Growth Project 4 is expected to add 26 million tonnes. These capacity expansions will provide support for production and export growth in 2010, with the full effect expected to reach beyond 2010.

Brazilian iron ore exports are forecast to increase by 10 per cent to 295 million tonnes in 2010, reflecting a return to close to full production capacity. Vale, Brazil's largest producer of iron ore, idled significant capacity earlier in 2009 because of weak demand, particularly from the European Union. An improved outlook for iron ore demand, particularly from China and the European Union, has prompted Vale to restart idled production capacity since mid-2009.

In 2010, Indian exports of iron ore are forecast to decline by 19 per cent to 65 million tonnes. While production of iron ore is expected to increase, this is expected to be more than offset by increased consumption by domestic steel producers. Exports from Canada, South Africa and Sweden are all forecast to increase in 2010, although the rates of increase are forecast to be relatively low.

Metallurgical coal demand to increase in 2010

Despite a significant increase in China's metallurgical coal imports, world trade, in volume terms, is estimated to decline by 10 per cent to 215 million tonnes in 2009. The improved economic outlook for major import markets, and continued strong demand from China are forecast to result in world metallurgical coal trade increasing by 8 per cent to 232 million tonnes in 2010.

Before 2009, China was largely self-sufficient in metallurgical coal, with production primarily in the central north and north-western areas of the country. A significant decline in international freight rates (increasing the competitiveness of imported coal) and lower domestic production, particularly in Shanxi province, led to an increase in demand for imported coal. For 2009 as a

Chinese metallurgical coal imports

Outlook for world metallurgical coal trade (Mt)

	2007	2008	2009	2010
Metallurgical coal imports				
European Union 27	56	56	44	51
Japan	54	57	47	50
China	6	7	34	27
Korea, Rep. of	23	24	19	22
Chinese Taipei	8	6	6	6
India	22	29	25	28
Brazil	10	11	9	11
World imports	227	238	215	232
Metallurgical coal exports				
Australia	138	135	135	145
Canada	26	27	21	24
United States	29	39	29	34
Russia	10	16	15	17
World exports	227	238	215	232

whole, China's imports of metallurgical coal are estimated to be around 34 million tonnes. In 2010, the restart of domestic production capacity is likely to reduce, to some extent, demand for imported metallurgical coal. China's imports of metallurgical coal are forecast to be around 27 million tonnes in 2010.

Australian exporters have captured a significant share of China's imports, accounting for around 70 per cent in the first three quarters of 2009, up from a 20 per cent share in 2008.

The restart of steel-making capacity in other important metallurgical coal importing markets, such as the European Union, Japan and the Republic of Korea, is expected to further support import demand for metallurgical coal in the short term. In 2010, imports of metallurgical coal are forecast to be around 51 million tonnes in the European Union (a rise of 16 per cent from 2009), 50 million tonnes in Japan (a rise of 6 per cent) and 22 million tonnes in the Republic of Korea (an increase of 16 per cent). Despite these forecast significant increases, the total imports by these three major consumers remain 10 per cent below that achieved in 2008.

Improved outlook for metallurgical coal producers

Increased metallurgical coal exports from Australia are expected to contribute to more than 50 per cent of the forecast growth in world trade in 2010. Higher exports are expected to occur in response to rail and port expansion in the Goonyella system. In mid-2009, the Dalrymple Bay Coal Terminal capacity was expanded to 85 million tonnes a year. In late 2009, rail capacity in the Jilalan Rail Yard system was upgraded to 130 million tonnes a year. It is assumed that this new system capacity will be fully operational in early 2010.

As demand increases over the course of 2010, a number of producers with relatively high costs are also expected to increase production. Reflecting this, total exports from North America are forecast to increase by 16 per cent to 58 million tonnes in 2010.

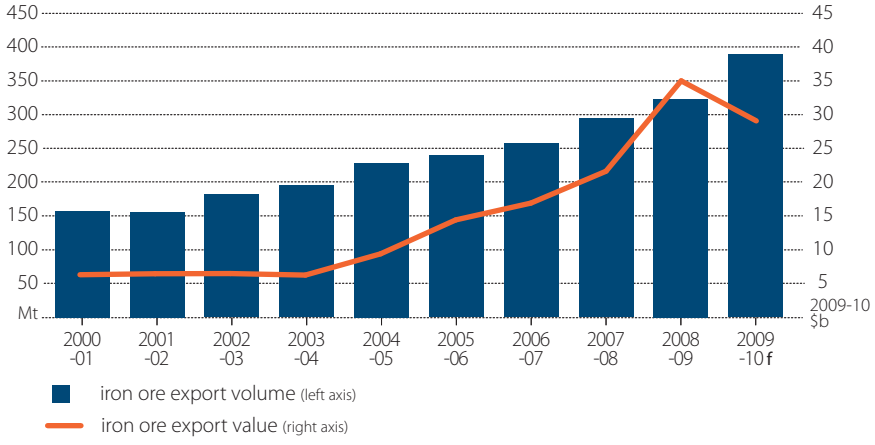
Canadian exports of metallurgical coal are forecast to increase by 14 per cent to 24 million tonnes in 2010. Teck Cominco, which accounts for the majority of Canadian coal production, increased production in the September quarter 2009. Previously planned temporary shutdowns were cancelled or reduced in length to meet increased demand. Similarly, exports of metallurgical coal by the United States are forecast to increase by 17 per cent to 34 million tonnes in 2010.

Australian exports

In 2009-10, Australian iron ore production is forecast to increase by 20 per cent to 425 million tonnes. This reflects the ramp up of capacity at Rio Tinto's Hope Downs operation, continued growth in production at Atlas Iron's Pardoo DSO operation, and higher production volumes from BHP Billiton operations, despite tie-in activities associated with the Rapid Growth Project 4.

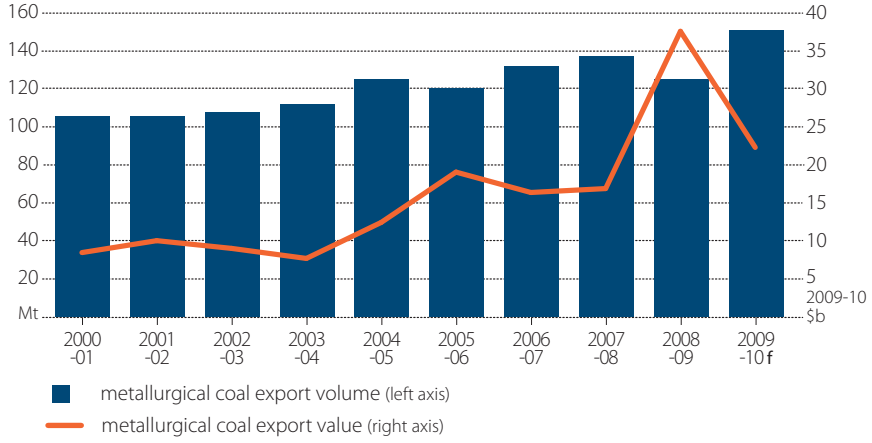
Despite higher production volumes, Australian export earnings from iron ore are forecast to decline by 15 per cent to $29 billion in 2009-10, primarily as a result of lower contract prices for Japanese Fiscal Year 2009 (JFY, April 2009 to March 2010). Lower contract prices and an assumed appreciation of the Australian dollar against the US dollar is expected to more than offset the effect of a forecast increase in export volumes.

Australian iron ore exports



Australian export earnings from metallurgical coal are forecast to decline by 39 per cent to $22 billion in 2009-10, despite export volumes being forecast to increase by 21 per cent to 151 million tonnes. Lower contract prices and the assumed higher value of the Australian dollar are the major contributing factors to this forecast decline in export earnings.

Australian metallurgical coal exports



Iron ore and steel outlook - Australia

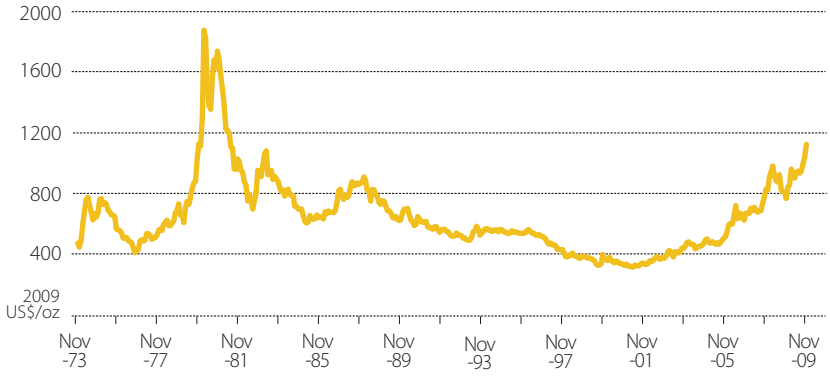
		2007 -08	2008 -09	2009 -10 f	% *change*
Production					
Iron and steel s	Mt	8.15	5.57	7.19	*29.1*
Iron ore	Mt	324.7	353.0	424.7	*20.3*
Metallurgical coal	Mt	139.4	130.5	156.4	*19.8*
Exports					
Iron and steel	Mt	2.13	1.74	1.92	*10.3*
– value	A$m	1 562	1 363	1 177	*– 13.6*
Iron ore	Mt	294.3	323.5	388.8	*20.2*
– value	A$m	20 511	34 234	29 097	*– 15.0*
Metallurgical coal	Mt	137	125	151	*20.8*
– value	A$m	16 038	36 770	22 338	*– 39.2*

Gold

Andrew Schultz

During the September quarter 2009, the gold price rose to an average of US$960 an ounce, 4 per cent higher than in the June quarter. The price of gold has subsequently risen further, reaching US$1200 an ounce by early December 2009.

Gold price
monthly, ended November 2009



Investment demand for gold as an alternative store of value has driven the recent price increase. Encouraging investors has been a steady decline in the US dollar against other international floating currencies. The recent significant decline in the value of the US dollar has supported the gold price by both raising the purchasing power of other floating currencies and reducing the appeal of alternative similar risk profile assets, such as US Treasury bonds.

Gold and the US dollar
daily, ended 30 November 2009

Increased demand from the official sector (comprising central banks and other official institutions) has also placed upward pressure on the gold price, with central banks moving from being net sellers to net purchasers of gold. Partially offsetting this has been decreased consumer demand for gold jewellery resulting from lower income growth and a higher gold price. For 2009 as a whole, the gold price is estimated to average around US$980 an ounce, an increase of 12 per cent from the 2008 average.

Investment demand to drive gold prices higher in 2010

In 2010, the price of gold is forecast to rise by 9 per cent to average US$1060 an ounce. Assuming continued improvement in global economic performance and a US monetary policy that remains stimulatory in the short term, investment in gold is expected to remain strong. Ongoing weakness in the US dollar is expected to sustain the hedge appeal of gold as an alternative store of value to US dollar denominated assets, especially those with a low rate of return. While growth in retail investment in physical gold, such as bars, coins and gold bought in exchange traded funds is expected to moderate in 2010, continued uncertainty as to the pace of global economic recovery is expected to sustain the appeal of holding physical gold as a low-risk asset.

Over the outlook period, net purchases of gold by central banks are likely to be largely offset by a lower rate of producer dehedging during the year. While gold fabrication demand and mine supply are expected to grow modestly, these factors are unlikely to significantly influence gold price movements in 2010.

A major risk factor to this price outlook relates to the assumed nature of the world economic recovery. For investors, the appeal of gold as a store of value increases during periods of market volatility and uncertainty. Should the world economy recover or the US dollar strengthen more rapidly than currently expected, considerable downward price pressure could emerge on gold as investors' interest in other asset classes returns. In contrast, any weakening in confidence in global financial markets or further sharp declines in the value of the US dollar against other floating currencies has the potential to place significant upward pressure on the gold price.

A high gold price to limit growth in gold fabrication demand

Gold fabrication consists of gold used in jewellery, electronics, dental applications, medals, coins and other industrial uses. In 2009, high prices and a decline in global economic activity have led to gold fabrication falling by an estimated 17 per cent to 2410 tonnes, the lowest amount since 1988. Contributing most to this decrease is gold for use in jewellery on the Indian subcontinent which is estimated to have fallen by 27 per cent. China is the only country estimated to have increased its use of gold for jewellery during 2009, mainly reflecting continued economic growth.

In 2010, a forecast higher average gold price is expected to constrain, to some extent, demand for gold used in jewellery and other applications. However, an assumed improvement in global economic growth is forecast to result in a modest 3 per cent rise in gold fabrication demand, to 2475 tonnes.

World mine production to increase in 2009

World gold mine production in 2009 is estimated to rise by around 3 per cent to 2481 tonnes. Increases in production have been recorded in Indonesia (up 14 per cent), the Russian Federation (up 10 per cent), China (up 7 per cent), Canada and Australia (both up 5 per cent). Partly offsetting these increases are estimated falls in South Africa (down 9 per cent) and the United States (down 2 per cent).

In Indonesia, the scheduled mining of higher grade ores at Freeport-McMoRan's Grasberg mine is estimated to increase production by more than 37 tonnes in 2009. In the Russian Federation, production from several projects, including Kinross Gold's Kupol project, Peter Hambro Mining's Pioneer project and High River Gold Mines' Berezitovy mine is contributing to growth in mine production. In South Africa, lower ore grades have contributed to mine production falling for the seventh consecutive year.

In 2010, world gold mine production is forecast to remain largely unchanged at 2503 tonnes. The ramping up of new operations in Australia, China and the Russian Federation is forecast to increase production in these countries, while lower ore grades are expected to contribute to declining production in Indonesia and South Africa.

Official sector sales to remain low over outlook period

Net sales from the official sector are estimated to fall to 20 tonnes in 2009, a fall of more than 200 tonnes compared with 2008. This fall largely reflects decreased sales of gold by central banks that are signatories to the Central Bank Gold Agreement (CBGA).

The CBGA places a collective limit of 400 tonnes a year on the quantity of gold which signatories (comprising 18 European central banks, including the European Central Bank) are permitted to sell from their reserves. The current CBGA began in September 2009 and is set to expire in 2014.

The current appeal of gold as a strategic low-risk asset is expected to limit sales and encourage modest gold purchases by central banks over the outlook period. Net sales by the official sector are forecast to be well below 100 tonnes in 2010.

Producer dehedging to fall over the outlook period

Producer hedging involves gold producers borrowing gold from central banks and selling it on to the spot market, to reduce exposure to the risk of lower gold prices at the time of actual production. As a result, the value of future mine production of gold is effectively brought forward.

Dehedging, through the buying back or unwinding of these hedged positions, has largely occurred because of producers' expectations of a higher gold price in the future. Net dehedging, occurring when gold repayments to central banks exceed new producer hedging, imposes upward pressure on the current gold price through the reduction of gold supplied to the spot market.

In 2009, net dehedging is estimated to fall by around 27 per cent to 255 tonnes, the lowest rate of dehedging since 2005. The limited size of remaining hedged positions is expected to result in the rate of dehedging continuing to fall, with around 65 tonnes forecast to be returned to central banks by gold producers in 2010. The majority of outstanding hedged positions are owned by AngloGold Ashanti.

Australian gold production to rise in 2009-10

In contrast to declines over the past two years, Australian gold mine production is forecast to rise by 13 per cent to 246 tonnes in 2009-10. The majority of this growth is attributable to the start-up of Newmont's US$3 billion Boddington redevelopment in Western Australia, which is expected to produce more than 31 tonnes a year for the first five years of operation.

The ramping up of Apex Minerals' Wiluna project, OzMinerals' Prominent Hill project and Avoca's Higginsville operations are each expected to add more than 2 tonnes to Australian gold mine production in 2009-10. Several other projects are forecast to increase production by at least 1 tonne each during the year. These include Newcrest's Telfer project, Norton Gold Fields' Paddington operations, Citigold's Charters Towers project and Ramelius Resources' Wattle Dam project.

Partially offsetting these increases are estimated falls in production of around 1 tonne each from Resolute Mining's Ravenswood operations, St Barbara's Southern Cross, Intrepid Mines' Paulsens project and BHP Billiton's Olympic Dam.

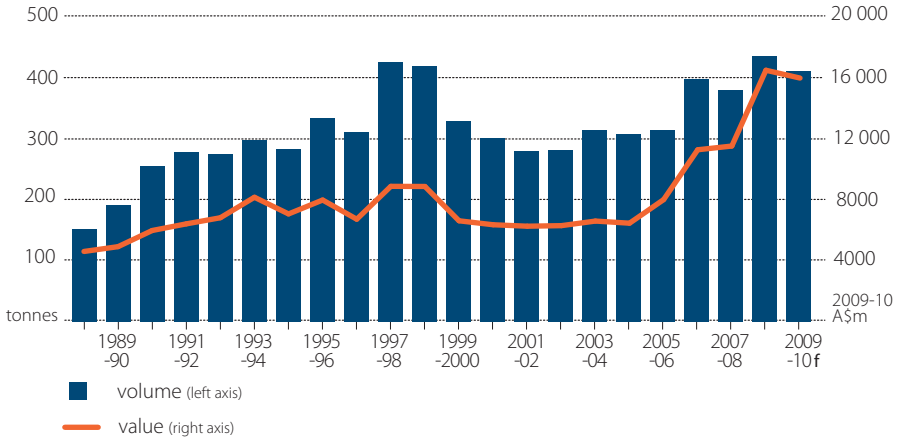
Encouraged by a high gold price in US dollars and improving access to finance, several operations previously in administration have been recapitalised and are estimated to recommence production in 2009-10 under new owners. These include Swan Gold Mining's Carnegie and Mt Ida projects, Crocodile Gold's Northern Territory assets and Navigator Resources' Bronzewing project.

Exports to remain near record levels

Following a record 437 tonnes of gold exported in 2008-09, Australian gold exports are forecast to fall by 6 per cent to 412 tonnes in 2009-10. This fall reflects lower volumes of imported gold that are refined in Australia and re-exported, partly offset by higher exports of Australian mined gold.

A record $16.1 billion of gold was exported by Australia in 2008-09. In 2009-10, an assumed appreciation of the Australian dollar against the US dollar is expected to lead to only a marginal rise in the Australian dollar denominated gold price. The forecast fall in the volume of gold exports is expected to more than offset the effect on earnings of this price rise, leading to a 1 per cent decline in the value of exports to $15.9 billion.

Australian gold exports



Gold outlook

		2008	2009 f	2010 f	% change
World					
Fabrication consumption	t	2 888	2 410	2 475	*2.7*
Mine production	t	2 416	2 481	2 503	*0.9*
Scrap sales	t	1 209	1 500	950	*– 36.7*
Net stock sales	t	– 737	–1 571	– 978	*– 37.7*
– official sector	t	236	20	70	*250.0*
– private sector	t	(622)	(1 336)	(983)	
– producer hedging	t	(351)	(255)	(65)	
Price	US$/oz	873	976	1 060	*8.6*
		2007 -08	**2008 -09**	**2009 -10 f**	
Australia					
Mine production	t	230	218	246	*12.8*
Exports	t	382	437	412	*– 5.7*
– value	A$m	10 903	16 146	15 930	*– 1.3*
Price	A$/oz	917	1 186	1 203	*1.4*

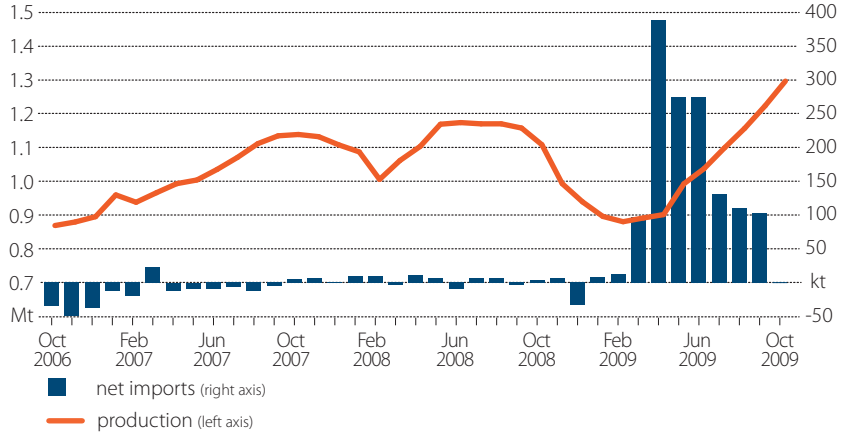
Aluminium

Michael Lampard

In 2009, the world aluminium price is estimated to average around US$1650 a tonne, 34 per cent below the 2008 average price. This is the largest annual decline in aluminium prices on record, mainly as a result of consumption falling faster than production and stocks increasing to around 10 weeks of world consumption.

Helping to restrain the extent of the price decline in 2009 was strong growth in China's imports of aluminium. In the nine months to September, Chinese imports of aluminium reached 1.4 million tonnes, compared with 12 000 tonnes for 2008 as a whole. Contributing to China's import growth was a sharp decline in domestic production that coincided with strong demand growth. However, in response to recent price increases, China's production of aluminium has increased, leading to reduced imports of aluminium. As production is expected to remain around current levels for most of 2010, import demand from China is not expected to provide significant support for world aluminium prices in 2010.

China's production and net imports of aluminium
monthly

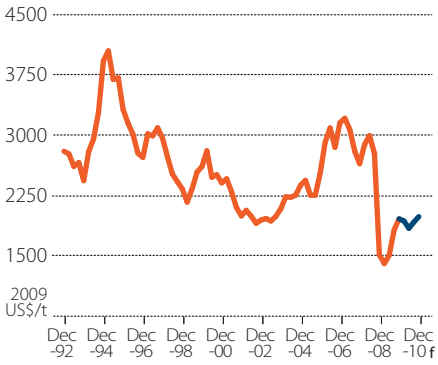


World prices to average higher in 2010

In 2010, production is expected to exceed consumption for the fourth consecutive year and, hence, stocks are forecast to increase further to around 8 million tonnes (12 weeks of consumption). Reflecting the continued increase in stocks and lower forecast import demand from China, the aluminium price in 2010 is forecast to average around US$1950 a tonne, 18 per cent higher than the previous year, but lower than its current price.

Major risks to this forecast include the extent to which expectations about recovering demand from developed economies are met in 2010 and the effect of large stocks, which are expected to continue to accumulate through 2010, have on prices.

Real aluminium prices
quarterly



World consumption to increase in 2010

In 2009, a rapid slowing of construction and manufacturing activity in most developed economies is estimated to result in aluminium consumption declining by 6 per cent to 34.8 million tonnes.

Aluminium consumption is forecast to increase gradually in 2010 as an expected improvement in manufacturing and non residential construction activity occurs in developed economies. In China, continued infrastructure expansion and production of automobiles are also expected to be positive influences on aluminium consumption. For 2010 as a whole, consumption is forecast to increase by 6 per cent to around 36.7 million tonnes.

China's consumption to increase further in 2010

Chinese aluminium consumption is estimated to increase by 16 per cent to 14.5 million tonnes in 2009. Increased consumption has been driven by China's US$586 billion fiscal stimulus package, which has increased infrastructure spending and encouraged domestic consumption of aluminium intensive consumer durables. Producer restocking and strategic stock building are also thought to have underpinned demand throughout 2009.

In 2010, China's aluminium consumption is forecast to increase as non residential construction activity continues to expand and export demand for aluminium intensive goods recovers in line with an assumed strengthening of OECD economic activity. Offsetting some of this increased demand is an expected end to producer stock building in 2010.

Developed economies to drive consumption growth in 2010

Aluminium consumption in OECD economies is estimated to decline by 25 per cent in 2009, as a result of producer destocking and falling demand from manufacturing and construction activity. In 2010, a reversal of this trend is expected as an assumed recovery in economic activity is forecast to result in aluminium consumption increasing by 10 per cent to around 14 million tonnes. Increased industrial production in most OECD economies is expected to contribute to growth in demand for aluminium used in the manufacture of automobiles and other aluminium intensive consumer durables.

In the United States, aluminium consumption, which peaked in 2006 at 6.2 million tonnes, is estimated to decline by 23 per cent to 3.8 million tonnes in 2009. This reflects significant declines in industrial production and construction activity. In 2010, a gradual recovery in construction activity and motor vehicle production, two large consumers of aluminium, is forecast to result in aluminium consumption increasing by around 8 per cent to 4.1 million tonnes.

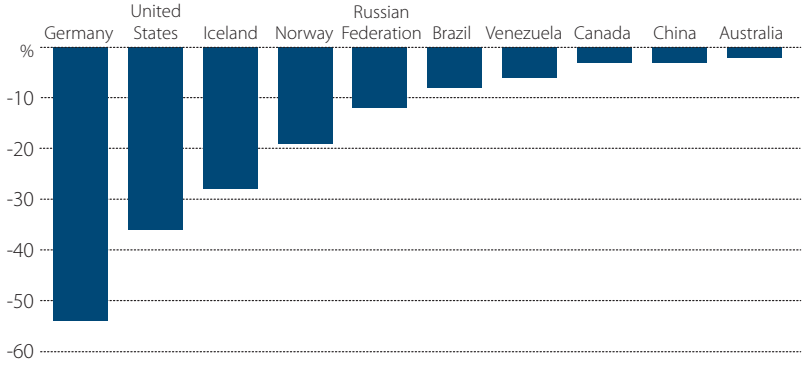
Large cuts to production in 2009...

Reflecting a sharp fall in the demand for aluminium, and thus prices, world production is estimated to decline by 7 per cent to nearly 36.6 million tonnes in 2009. Production is

estimated to decline in most major producing countries, with the largest declines occurring in Germany, the United States and Iceland. Production in all aluminium producing countries in Europe, with the exception of Ukraine, is estimated to be lower in 2009.

In China, the world's largest aluminium producer, output is estimated to decline by 3 per cent to 12.7 million tonnes. Production in China declined sharply in the first half of 2009 as lower aluminium prices led to the closure of some smelting capacity. However, higher prices in the second half of 2009 have encouraged Chinese producers to reopen closed capacity.

Estimated declines in aluminium production of major producing countries in 2009 year on year change



The Middle East is the only region where aluminium production increased in 2009. The availability of low cost energy compared with that of the United States and the European Union means producers in the Middle East have some of the lowest cash costs in the aluminium industry. Low cash costs have encouraged the development of new smelters in recent years and also enabled aluminium smelters to remain operational despite recent price falls. As a result, aluminium production in the Middle East is estimated to increase by 8 per cent to 2.4 million tonnes in 2009.

...although production increasing in 2010

World aluminium production is forecast to increase by around 5 per cent to 38.5 million tonnes in 2010. Underpinning increased production is the expected restart of smelter capacity which closed or reduced output as a result of lower prices at the start of 2009. For example, in China it is estimated that up to 3.5 million tonnes of capacity that was idled at the end of 2008 has been restarted in the second half of 2009.

Also contributing to higher production in 2010 is the expected commissioning of new capacity, especially in the Middle East and China. In the Middle East, new smelting capacity in the United Arab Emirates (UAE) and Qatar is forecast to result in production increasing by 29 per cent to 3.1 million tonnes. In Qatar, Hydro Aluminium and Qatar Petroleum are expected to commission their 585 000 tonne Qatalum smelter, while in the UAE, a 700 000 tonne joint venture between Dubai Aluminium and Mubadala is expected to be completed. In China, it is estimated that up

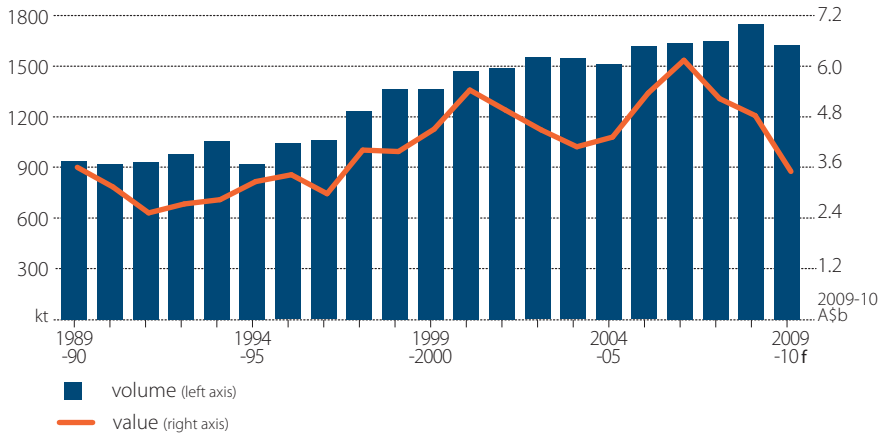
to 1 million tonnes of new smelter capacity is scheduled to be commissioned over the course of 2010. This, combined with smelter restarts, is estimated to result in China's production of aluminium increasing by around 8 per cent in 2010.

Australian production and export earnings to decline

In 2009-10, Australia's production of aluminium is forecast to decline by 2 per cent to 1.9 million tonnes, primarily reflecting lower production at Alcoa's Portland smelter in Victoria. In response to reduced demand for aluminium, Alcoa has announced two production cuts at the smelter since November 2008.

The value of Australia's aluminium exports is forecast to decline by around 27 per cent to $3.5 billion in 2009-10. This mainly reflects lower export volumes, combined with forecast lower export prices and an assumed appreciation of the Australian dollar.

Australia's aluminium exports



Alumina

Alumina prices reached a low of US$177 a tonne in March 2009, but then recovered to average US$315 a tonne in November. Although prices have recovered from recent lows, as expectations surrounding future demand for aluminium have improved, they still remain below historical averages as spare capacity in the alumina market remains high. For 2009 as a whole, alumina spot prices are estimated to average 34 per cent lower at around US$250 a tonne.

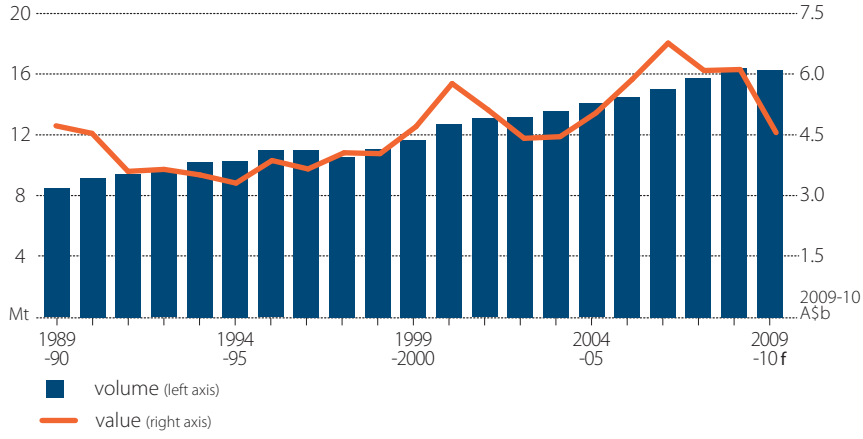
In 2010, a forecast increase in aluminium demand is expected to result in increased alumina consumption. Production is forecast to increase at a slower rate than consumption, providing support for alumina prices. In 2010, alumina spot prices are forecast to increase by 28 per cent to average close to US$320 a tonne.

Australia's export earnings to decline

In 2009-10, Australia's production of alumina is forecast to increase by around 3 per cent to 20 million tonnes. No new refineries or expansions to existing capacity are expected in the remainder of the financial year.

Export volumes are forecast to remain flat at around 16.3 million tonnes in 2009-10. The value of alumina exports is forecast to fall by 24 per cent to $4.6 billion, which reflects the effect on earnings of lower export prices and the assumed higher Australian dollar.

Australia's alumina exports



Aluminium and alumina outlook

		2008	2009 f	2010 f	% change
World aluminium					
Production	kt	39 256	36 569	38 493	*5.3*
Consumption	kt	37 020	34 765	36 746	*5.7*
Closing stocks	kt	4 672	6 476	8 223	*27.0*
– weeks consumption		6.6	9.7	11.6	*19.6*
Price	US$/t	2 487	1 651	1 949	*18.0*
	USc/lb	112.8	74.9	88.4	*18.0*
World alumina					
Spot price	US$/t	381	250	319	*27.6*
		2007 -08	**2008 -09**	**2009 -10 f**	
Australia					
Production					
Bauxite	Mt	63.5	64.0	65.8	*2.8*
Alumina	kt	19 359	19 597	20 098	*2.6*
Aluminium	kt	1 964	1 974	1 943	*– 1.6*
Exports					
Alumina	kt	15 739	16 395	16 291	*– 0.6*
– value	A$m	5 809	6 015	4 564	*– 24.1*
Aluminium	kt	1 650	1 748	1 624	*– 7.1*
– value	A$m	4 967	4 724	3 472	*– 26.5*

Nickel

Chloe Haseltine

Fluctuating demand for nickel has led to significant volatility in nickel prices. Swift destocking of nickel inventories in the European Union and Japan has been followed by a period of rapid stockpiling of nickel in China. Restocking efforts in China have added to demand at a time of weak demand for nickel end use products elsewhere.

2009 finishes with higher prices...

For 2009 as a whole, nickel prices are estimated to average US$14 600 a tonne. The price has ranged from a low of around US$9000 a tonne in March to a high of more than US$20 000 in August. In the first half of 2009, the price averaged US$11 600 a tonne and has since improved with an average of US$17 600 for July to November 2009.

The increase in prices appears to be a result of increased demand for nickel by Chinese stainless steel makers as they stockpile nickel in anticipation of stronger demand for stainless steel in 2010 in line with the stronger global economic outlook. Much of this stock building appears to have been supported by China's fiscal stimulus package which increased credit availability and fiscal spending. The stimulus measures are expected to continue to support Chinese domestic demand for stainless steel products in construction and infrastructure projects.

Nickel price rises tend to be moderated by increases in supply of nickel pig iron. Nickel pig iron production increases when the nickel price rises. Nickel pig iron is a ferronickel pig iron, typically containing less than 5 per cent nickel, which Chinese producers use as a substitute for refined conventional ferronickel (25 to 40 per cent nickel) in the production of stainless steel. Nickel pig iron is cheaper than conventional ferronickel but limited in its use and is typically used in the production of 200 series stainless steel rather than the more widely consumed 300 series stainless steel. An estimated 100 000 to 150 000 tonnes of nickel pig iron is currently available in China.

...but nickel stocks remain high

Stocks are estimated to remain at around 10 weeks of consumption at the end of 2009, with an estimate of more than 130 000 tonnes of nickel being held in London Metal Exchange (LME) warehouses. Production of nickel has declined in 2009 but at a slower rate than nickel consumption, leading to the large build-up of stocks. In 2010, nickel closing stocks are forecast to decline 3 per cent to around 9.6 weeks of consumption. Nickel production is forecast to continue to exceed consumption, at least in the near term, until the pace of world economic recovery strengthens and leads to stronger growth in demand for nickel end use products.

Against this background, the nickel price is forecast to increase in the short term, averaging around US$18 500 in 2010.

Consumption weak for 2009 but recovering in 2010

Nickel consumption is estimated to have declined by 9 per cent to 1.16 million tonnes in 2009. Following the global financial crisis, sharply lower world economic activity has led to decreased demand for nickel. The main nickel consuming economies are those with large manufacturing

Daily LME nickel price
September 2008 to 8 December 2009

Source: London Metal Exchange.

industries including the United States, the European Union (mainly Germany, Italy, Finland, Spain and Belgium), Japan, the Republic of Korea, Chinese Taipei and China. During 2009, nickel consumption fell in all EU countries, the United States and Japan. In contrast, apparent consumption of nickel in China grew in 2009 by 16 per cent. Over the first nine months of 2009, Chinese consumption of nickel increased year on year by 20 per cent. In the Republic of Korea and Chinese Taipei, nickel consumption has almost recovered to pre financial crisis levels.

In 2010, nickel consumption is forecast to increase as demand for nickel end use products recovers. Stainless steel production accounts for two-thirds of nickel end use and, of that, one-quarter is used in the engineering sector. The engineering sector comprises chemical and petrochemical sectors as well as the food processing industries and storage tank manufacturers. Rapid economic growth in China and the follow-on benefits for the engineering sector is a large source of nickel demand. Chinese demand for stainless steel is expected to continue to grow in 2010 on the basis of strong domestic consumption and infrastructure-focused stimulus spending. For the rest of the world, in particular the United States and the European Union, nickel demand is expected to recover slowly in 2010 and stay below pre financial crisis levels. Global nickel consumption is forecast to increase by 12 per cent to 1.3 million tonnes in 2010.

Production has declined in 2009...

The rapid decline in nickel prices in late 2008 and early 2009 resulted in many nickel mines being shut down or, for new projects, delays in starting up. As a consequence, nickel mine production is estimated to decline by 18 per cent to 1.22 million tonnes in 2009.

After a year of significantly fluctuating prices, producers may be reluctant to begin or restart idled production unless there is improved price certainty. Decisions to start new projects will require a stabilisation of prices to a point where profits can be made, but these prices vary depending on the type of nickel deposit and processing technology used. Some producers have already resumed production but the continuing strike at Vale Inco's Sudbury and Voisey's Bay mines and Port Colborne refinery in Canada has constrained nickel production in 2009.

...and will only moderately improve in 2010

Nickel mine production is expected to begin to recover in 2010. If prices remain relatively high, some producers with idled capacity could increase production. Further potential for increased nickel mine production will also come from new projects.

In 2010 there is an expected start-up of several large nickel laterite projects. These projects will be closely watched by the nickel industry as some large-scale nickel laterite projects have not been proven as a reliable source of mine production. Almost three-quarters of the world's nickel reserves are in laterite deposits, but laterite deposits currently only account for around 44 per cent of nickel mine production. Sulfide deposits are generally easier to exploit than laterites.

Many new laterite mines are planning on using High Pressure Acid Leach (HPAL) technology to process the nickel. Current nickel production using HPAL includes Sherritt's Joint Venture Moa Bay nickel project in Cuba and Minara Resources' Murrin Murrin plant in Western Australia. Examples of difficulties experienced by some laterite projects include the Moa Bay and Ravensthorpe projects. The Moa Bay project has been suspended since the beginning of 2009 because of high costs. The Ravensthorpe project, which was recently sold by BHP Billiton, was shut down in January 2009 after only a few months of production because of high costs and low nickel prices.

Several new nickel laterite projects (Goro, Ramu and Onca Puma) are in prospect for commencement in 2010. If HPAL processing is successful in these new projects, nickel production will increase significantly in the future. However, given past experience including the extended commissioning period, it is not expected that these expansions will significantly contribute to increased nickel production in 2010. Overall, nickel mine production is forecast to recover strongly in 2010, by 11 per cent to 1.3 million tonnes. Refined nickel production is also expected to begin to recover by a forecast 8 per cent to 1.3 million tonnes in 2010.

New nickel laterite projects expected to start up in 2010

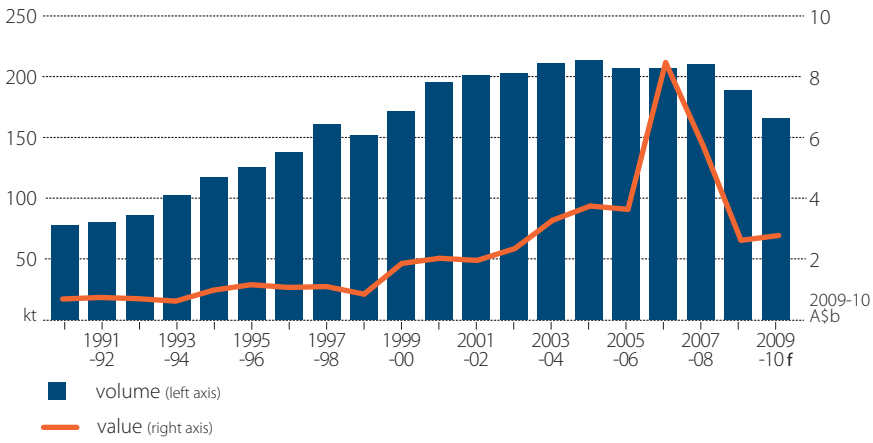
name	company	country	processing method	production (annual capacity in tonnes)	start up
Goro	Vale Inco	New Caledonia	HPAL	60 000	January 2010
Ramu	various Chinese	Papua New Guinea	HPAL	31 150	June 2010
Onca Puma	Vale Inco	Brazil	HPAL	58 000	late 2010

Sources: Vale Inco website, Highlands Pacific website (part owner of Ramu).

Australian mine production lower in 2009-10...

Australian nickel mine production is forecast to decline by around 15 per cent to 157 000 tonnes in 2009-10. In 2008 and early 2009, many small mines in Australia were closed or placed on care and maintenance. As a result, there is an estimated 40 000 tonnes a year of mine capacity in Australia not currently in production and it is unlikely this will be restarted in the first half of 2010. One exception is Western Area's new Spotted Quoll mine which is expected to start in early 2010.

Australian nickel exports



...but refined production increasing

In 2009-10, refined nickel production in Australia is forecast to increase by 9 per cent to 121 000 tonnes. This increase reflects a return to normal production levels for BHP Billiton's Kalgoorlie and Kwinana smelter and refinery in Western Australia, which suffered gas supply disruptions in late 2008.

Export earnings stable in 2009-10

Australia's nickel exports are forecast to decline to 161 000 tonnes in 2009-10, as a result of forecast lower mine production. The increase in nickel prices is expected to offset the effect on revenues of lower export volumes and an assumed appreciation of the Australian dollar, resulting in forecast export earnings increasing by 5 per cent to around $2.8 billion in 2009-10.

Nickel outlook

		2008	2009 f	2010 f	% change
World					
Production	kt	1 396	1 223	1 317	*7.7*
Consumption	kt	1 278	1 157	1 299	*12.3*
Closing stocks	kt	155	221	239	*8.1*
– weeks consumption		6.3	9.9	9.6	*– 3.0*
Price	US$/t	21 116	14 596	18 500	*26.7*
	USc/lb	958	662	839	*26.7*
		2007 -08	**2008 -09**	**2009 -10 f**	
Australia					
Production					
Mine	kt	190	185	157	*– 15.1*
Refined	kt	121	111	121	*9.0*
Intermediate	kt	45	21	17	*– 19.0*
Exports	kt	211	189	161	*– 14.8*
– value	A$m	5 655	2 656	2 784	*4.8*

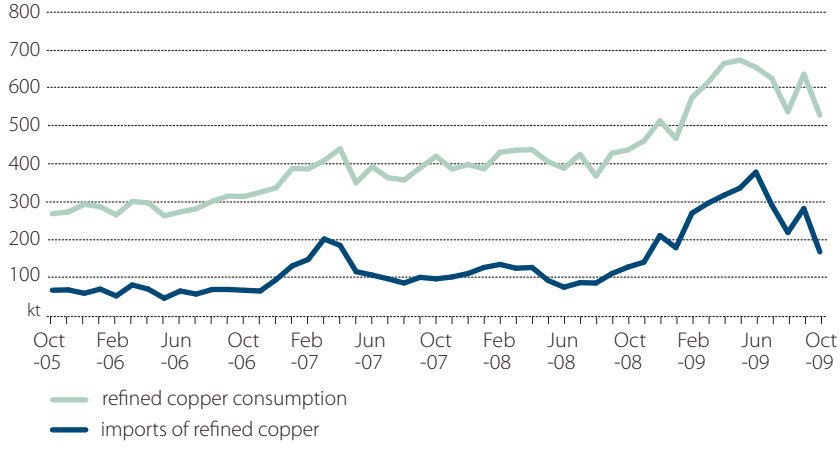
Copper

Michael Lampard

In the September quarter 2009, copper prices averaged US$5630 a tonne, an increase of 20 per cent on the June quarter. Since September, copper prices have strengthened further trading in a range of US$6000 to US$7000 a tonne. Contributing to higher copper prices have been expectations of improving copper demand in developed economies as a result of the improved outlook for OECD economies. Given the low prices recorded in the first half of the year, the copper price is estimated to average around US$5085 a tonne in 2009, 27 per cent lower than in 2008.

Chinese imports of refined copper have increased year on year by almost 150 per cent, to 2.7 million tonnes in the first 10 months of 2009. A number of factors have contributed to increased copper imports: China's large fiscal stimulus package, stock building by China's Strategic Reserve Bureau, producer restocking, reduced availability of copper scrap and a positive price differential between the Shanghai Futures Exchange and the London Metal Exchange in the first half of 2009. China's increased demand for refined copper has been a significant factor in the strong rise in copper prices over the course of 2009.

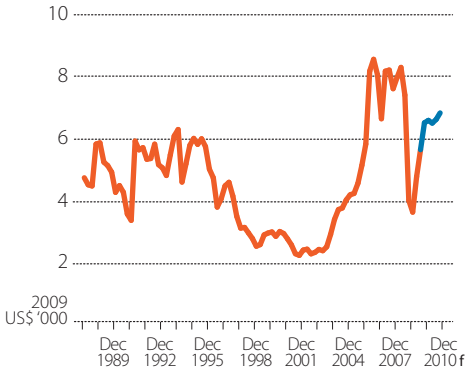
Chinese imports and consumption of refined copper



Copper prices to average higher in 2010

Copper prices are forecast to average around US$6750 a tonne in 2010, 33 per cent higher than in 2009. An assumed gradual recovery in OECD economic growth and, thus, demand for copper will be critical to the price outcome. Increased copper demand from developed economies is forecast to be partially offset by expected lower apparent copper consumption (production plus net imports minus reported stock changes) in China. China's apparent copper consumption is forecast to decline modestly in 2010 as an end to producer stock building is expected to more than offset the demand effects of increased consumption of copper.

World copper price
quarterly



Considerable uncertainty remains regarding the extent to which producer restocking has occurred in China. It is estimated that Chinese producers have stockpiled up to 1.2 million tonnes of refined copper over the course of 2009. If significant private stock building has also occurred, the extent to which these stocks are drawn down through the course of 2010 presents a risk to the price forecast. If stocks are drawn down faster than assumed, China's import demand for copper could be lower than forecast, placing significantly more downward pressure on prices. Alternatively, if producer stocks are not drawn down as fast or stock building is not as large as assumed, China's import demand for refined copper may be higher in 2010, possibly resulting in higher than forecast world copper prices.

Apparent consumption

Measuring consumption is difficult for some commodities as countries have limited capacity to collect and report consumption data in a timely manner. As a result, apparent consumption, rather than actual consumption, is commonly used as an approximation. A country's apparent consumption is its domestic production plus net imports minus reported stock changes. It therefore represents the volume available for consumption adjusted for reported stock changes. Although apparent consumption is a good approximation of actual consumption, it is subject to many measurement errors. For example, unreported changes in stocks, either at the retail or wholesale level, can result in large differences between apparent consumption and actual consumption.

The pace of world economic recovery in 2010, especially in major OECD economies, is another key risk factor associated with the copper price forecast. If economic growth recovers faster than currently assumed, world copper demand, and therefore prices, could be higher than currently forecast. Alternatively, if economic growth in key copper consuming nations proves to be weaker than currently assumed, copper prices could average significantly lower than currently forecast.

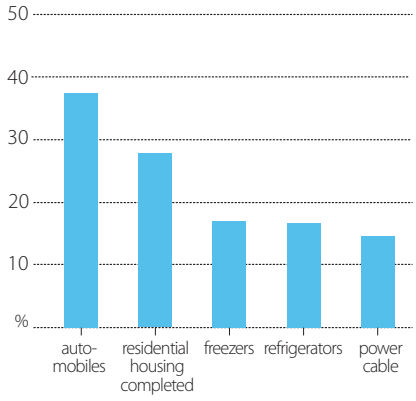
Moderate consumption growth in 2010

Copper consumption is estimated to remain little changed at around 18.1 million tonnes in 2009, as increased apparent consumption in China has been offset by falling consumption in other major copper consuming economies. In 2010, growing demand for copper in developed economies is forecast to more than offset the effect of an end to producer restocking in China. World copper consumption is forecast to increase slightly to 18.3 million tonnes in 2010.

Higher consumption in China in 2009

For 2009 as a whole, China's apparent consumption of copper is forecast to increase by around 35 per cent to 6.9 million tonnes. China's fiscal stimulus package has supported copper consumption in 2009 with significant expenditure on copper intensive infrastructure, such as public sector construction and electrical distribution networks. The fiscal stimulus package has also coincided with significant growth in the production of key copper intensive consumer durables such as automobiles, freezers, refrigerators and air conditioners. Unreported changes in producer stocks are also thought to have contributed to the significant increase in China's apparent copper consumption in 2009.

China's production of key copper intensive goods
September 2009, year to date change



In 2010, China's consumption of copper is forecast to increase in line with continued urban infrastructure spending and a recovery in export demand for copper intensive goods. Nevertheless, China's apparent consumption of copper is likely to decline moderately in 2010, as both reported and unreported stock building in 2009 is not expected to continue.

OECD consumption to pick up in 2010

Copper consumption in OECD economies is estimated to decline by 16 per cent to around 7.3 million tonnes in 2009. Lower copper consumption reflects reduced construction and manufacturing activity as a result of declining economic activity in most OECD economies.

In the United States, the world's second largest copper consumer, copper consumption is estimated to decline by 17 per cent to around 1.7 million tonnes in 2009. Lower copper consumption is partially attributable to declining construction activity and lower production of consumer durables. In October 2009, US housing starts and housing permits, two leading indicators of construction activity, remained low, while production of consumer durables, which tend to be copper intensive, declined by 8 per cent year on year.

Reflecting assumed weakness in key copper consuming sectors of the US economy, US copper consumption is forecast to remain relatively weak into the early part of 2010. However, an assumed strengthening in US industrial production and economic growth in the latter part of 2010 is forecast to result in increased construction activity and production of copper intensive goods. Reflecting this, US copper consumption is forecast to increase by 6 per cent to around 1.8 million tonnes in 2010.

For the OECD as a whole, an assumed improvement in economic activity, particularly in industrial production, is forecast to result in copper consumption increasing by 12 per cent to 8.2 million tonnes in 2010.

Mine production to increase in 2010

Mine production is estimated to increase slightly to around 15.8 million tonnes in 2009, as increased production in Indonesia and Africa is partially offset by lower production in Canada, Australia and the United States. In Indonesia, mine production is estimated to increase by around 330 000 tonnes, reflecting the intersection of higher grade ore at Freeport's Grasberg mine and improved metal recovery at Newmont's Batu Haiju mine. In Africa, mine production is estimated to increase by around 160 000 tonnes to 1.2 million tonnes, primarily reflecting the start-up of Freeport's Tenke-Fungurume mine in the Democratic Republic of Congo and Equinox Minerals' Lumwana mine in Zambia. Offsetting some of this growth is lower production at Vale's Canadian copper operations following industrial disputes in the third quarter of 2009. Also in North America, production in the United States is estimated to decline by around 6 per cent, primarily reflecting lower output at Phelps Dodge's Morenci mine and BHP Billiton's Pinto Valley operation.

In 2010, world mine production is forecast to increase by 2 per cent to 16.2 million tonnes as production in Africa, Chile and Australia increases. In Africa, mine production is forecast to increase to around 1.4 million tonnes, as Vedanta's Konkola Deep mining project in Zambia enters production and operations started in 2009 approach full capacity. In Chile, production is forecast to increase by 6 per cent to around 5.8 million tonnes as the Escondida, Codelco Norte and Candelaria mines return to full production and expansions at Pelambres and Collahuasi are completed. Australian mine production in 2010 is forecast to increase by 15 per cent as production from Oz Minerals' Prominent Hill and Newmont's Boddington gold mine offset lower production from BHP Billiton's Olympic Dam. Some mines which closed in 2008 as a result of low prices are expected to reopen during the course of 2010. This is also expected to lead to increased world mine production.

Refined production lower in 2009 before increasing in 2010

Refined production of copper is estimated to decline by 1 per cent in 2009 to around 18.3 million tonnes. Weak demand and low profit margins in the European Union and most developed economies have resulted in lower refined primary production in these economies. In addition, secondary refined production of copper is estimated to decline by around 4 per cent in 2009 as reduced scrap availability in the first half of 2009 limited production. Helping to offset these production declines was the start-up of Solvent Extraction Electrowinning (SX-EW) operations in Africa and Europe. These include the commissioning of Tenke Fungurume in Africa and Las Cruces in Spain.

In 2010, refined copper production is forecast to increase by 1 per cent to 18.5 million tonnes as both primary and secondary refined copper production increases. Primary refined copper production is forecast to increase by 1 per cent, primarily reflecting increased SX-EW production in Africa and Europe as capacity commissioned in 2009 continues to increase production. An expected increase in the availability of scrap in 2010 is also forecast to lead to increased production of secondary refined copper.

Australian copper production to decrease in 2009-10

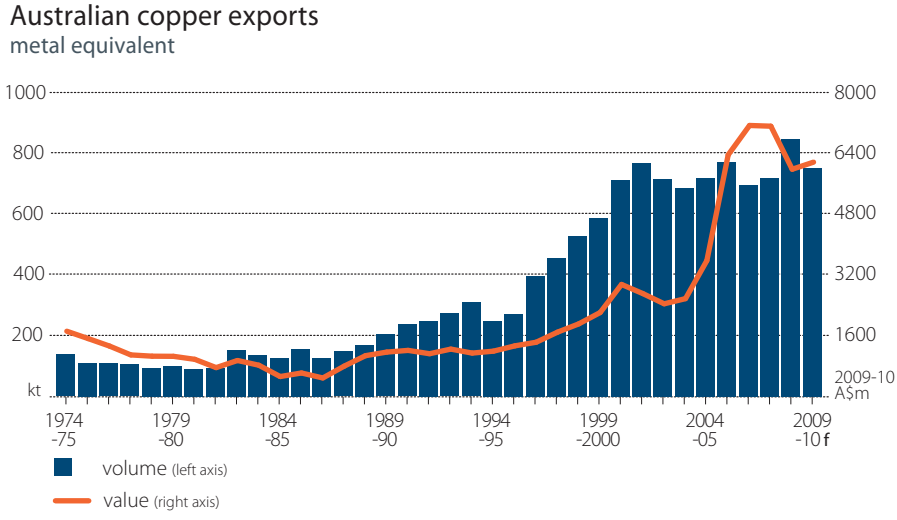
Australian copper mine production is forecast to decline in 2009-10, as increased production at some operations is expected to be offset by a production disruption at BHP Billiton's Olympic Dam. In October 2009, a mechanical failure in the prime haulage shaft at Olympic Dam occurred. The shaft, which transports 75 per cent of the mine's ore to the surface, is currently being repaired and is not expected to be fully operational until the March quarter 2010. As a result of this incident, production at the mine may be up to 70 000 tonnes lower than previously forecast in 2009-10. Helping to offset this lost production is expected higher output at Newmont's recently started Boddington gold mine and a full year's production at Oz Minerals' Prominent Hill operation.

Lower forecast output at Olympic Dam and the continued closure of some SX-EW capacity is forecast to result in refined production declining by around 18 per cent to 408 000 tonnes in 2009-10. If realised, this will be the lowest refined copper production recorded in Australia since 1998-99.

Reflecting forecast lower production, the metallic content of copper exports is forecast to decrease by around 11 per cent to 753 000 tonnes in 2009-10. Refined copper exports are forecast to account for most of this decline, with export volumes falling by around 28 per cent to 261 000 tonnes.

Export earnings higher in 2009-10

Australia's copper export earnings are forecast to increase by 6 per cent to nearly $6.2 billion in 2009-10. This reflects forecast higher average prices more than offsetting the effect on earnings of lower export volumes and an assumed appreciation of the Australian dollar.



Copper outlook

World		2008	2009 f	2010 f	% change
Production					
– mine	kt	15 529	15 804	16 152	*2.2*
– refined	kt	18 484	18 307	18 490	*1.0*
Consumption	kt	18 102	18 141	18 286	*0.8*
Closing stocks	kt	808	975	1 179	*20.9*
– weeks consumption		2.3	2.8	3.4	*21.4*
Price	US$/t	6 976	5 085	6 745	*32.6*
	USc/lb	316.4	230.7	305.9	*32.6*
		2007 -08	**2008 -09**	**2009 -10 f**	
Australia					
Mine output	kt	863	890	875	*– 1.7*
Refined output	kt	444	499	408	*– 18.2*
Exports					
– ores and concentrates	kt	1 694	1 801	1 820	*1.1*
– refined	kt	296	361	261	*– 27.7*
– total value	A$m	6 730	5 835	6 157	*5.5*

Zinc

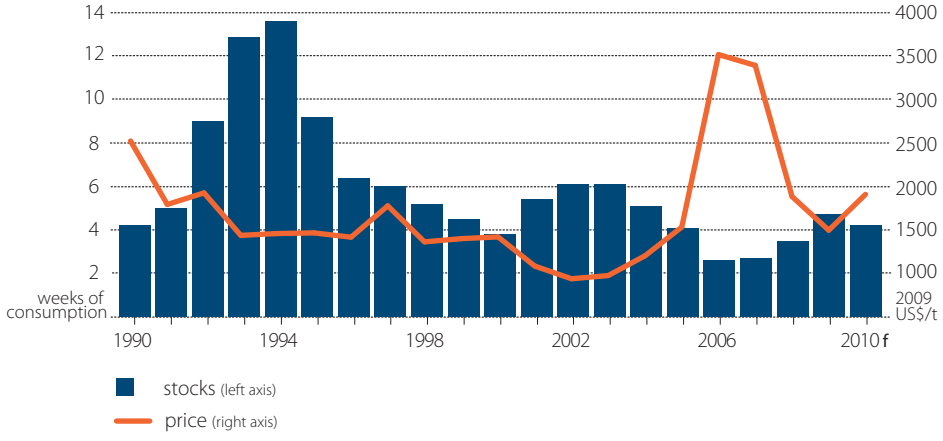
Apsara Maliyasena

Since September 2009 the price of zinc has increased, reaching US$2333 a tonne in early December. This compares with an average zinc price of US$1761 a tonne in the September quarter 2009 and US$1473 a tonne in the June quarter 2009.

Zinc prices higher in 2010

Zinc prices are forecast to average around US$1940 a tonne in 2010, which is an increase of 29 per cent from the estimated average for 2009 (US$1501). This forecast mainly reflects growing confidence in the marketplace about a recovery in zinc demand as a result of the improved outlook for world economic growth. Reflecting this improved outlook, global zinc consumption in 2010 is forecast to exceed zinc production, leading to an 11 per cent decline in zinc stocks to around 4.2 weeks of consumption by the end of the year.

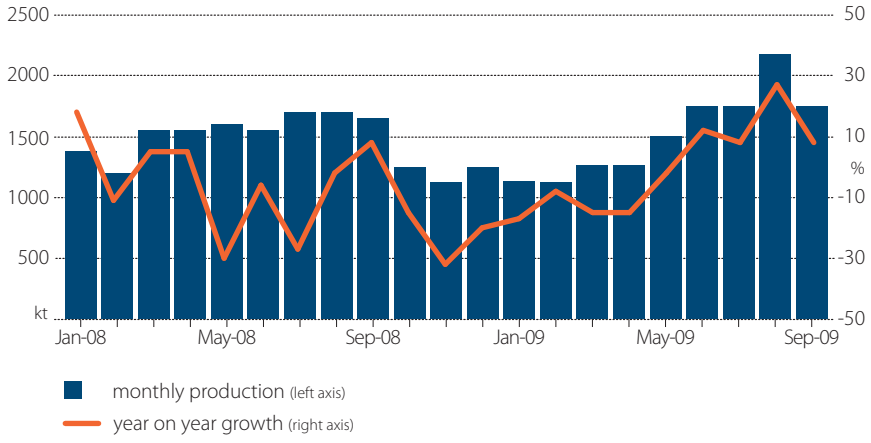
World zinc prices and stocks



Higher forecast zinc prices in 2010 will be underpinned by strong demand in China, particularly from an increase in galvanised steel production in response to growth in the construction and automotive manufacturing industries. More than two-thirds of zinc consumption is used in the form of galvanised (zinc coated) steel to prevent corrosion. Production of galvanised steel in China increased year on year by an average of 15 per cent in late 2009.

A significant downside risk in the current price outlook is associated with the timing and extent of possible restarts of idle zinc capacity. Given the improved price outlook, producers may reverse some of the production cuts implemented in late 2008 and early 2009, which could lead to a significant increase in production and place downward pressure on prices.

Monthly Chinese galvanised steel production



Source: NBS, Maquarie Research, November 2009.

World refined zinc consumption to increase in 2010

World refined zinc consumption is estimated to fall by 7 per cent to around 10.6 million tonnes in 2009. In the first nine months of 2009, global refined zinc consumption fell by around 9 per cent, with only China and India recording significant increases. Underpinning the increase in refined zinc consumption in China in 2009 was infrastructure investment and strong motor vehicle production. For example, in the first nine months of 2009, total vehicle sales in China rose year on year by around 34 per cent to 9.7 million units.

In 2010, continued strong economic growth in China and India and an assumed economic recovery in the United States, Japan and other major zinc consuming countries is expected to lead to stronger growth in zinc consumption. World refined zinc consumption is forecast to increase by 6 per cent to 11.2 million tonnes in 2010. Underpinning this forecast consumption growth is continued strong demand in China, which will be supported by growth in the construction, motor vehicle and domestic appliance industries.

World zinc mine and metal production set to rise

Global zinc mine production is estimated to decline by around 8 per cent in 2009 to 10.8 million tonnes, mainly as a result of production cuts. It is estimated that close to 1.5 million tonnes of mine production has been shut down since the onset of the global financial crisis. World refined zinc metal production is also estimated to decline by around 7 per cent to 10.8 million tonnes in 2009.

Looking forward, world zinc mine production is forecast to rise by around 2 per cent to 11 million tonnes in 2010. In response to higher zinc prices, some producers have already made announcements to increase output. For example, HudBay Minerals restarted operations at its Chisel North mine and concentrator in Canada in September 2009, with full production expected in the second quarter of 2010. Nyrstar, the world's largest producer of

zinc, announced in September 2009 that it would restart some production at its idled zinc operations in Belgium.

World refined zinc production is forecast to increase by around 3 per cent to 11.2 million tonnes in 2010. A downside risk to this forecast relates to current weak prices for sulphuric acid. Zinc smelters produce sulphuric acid as a by-product. Lower prices for sulphuric acid have the potential to adversely affect the profitability of zinc refineries.

Australian zinc production to decline in 2009-10

Australian zinc mine production is forecast to decline by 2 per cent to around 1.4 million tonnes in 2009-10, as the full effect of production cuts and closures is realised. Lower production is expected to come from several mines in 2009-10, including the Endeavor mine in New South Wales, the McArthur River mine in the Northern Territory and the Golden Grove mine in Western Australia. In contrast, higher production is forecast for Terramin's Angas zinc mine in South Australia (60 000 tonnes a year) and Xstrata's Mt Isa lead zinc mine in Queensland. The Mt Isa concentrator has been expanded to process an additional 110 000 tonnes of lead/zinc concentrates.

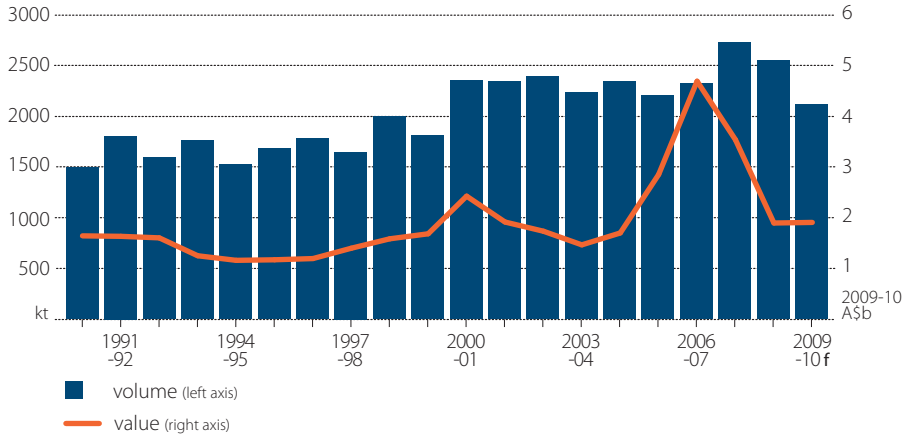
Production of refined zinc in Australia is forecast to remain steady at around 505 000 tonnes in 2009-10. At this stage, it is uncertain what the effect on refined output in 2009-10 of the suspension of the concentrator at the Century zinc operation in Queensland in October 2009. Century, the world's second largest zinc mine, suspended shipments of concentrate after a pipeline carrying wet concentrate from the mine to a storage facility in the port of Karumba burst. The Century mine primarily provides concentrates for the Port Pirie (capacity of 45 000 tonnes of zinc) refinery and also exports concentrates for the Budelco refinery in Holland.

Australian export earnings to fall

Australian exports of zinc ores and concentrates are forecast to decrease by around 11 per cent in 2009-10 to around 1.9 million tonnes, in line with forecast lower mine production. Exports of refined zinc are forecast to fall by 6 per cent to around 426 000 tonnes in 2009-10.

In 2009-10, the total value of zinc exports is forecast to remain at around $1.9 billion. Higher forecast world prices in 2009-10 are expected to largely offset the combined effect on revenues of lower export volumes and an assumed appreciation of the Australian dollar.

Australia's zinc exports



Zinc outlook

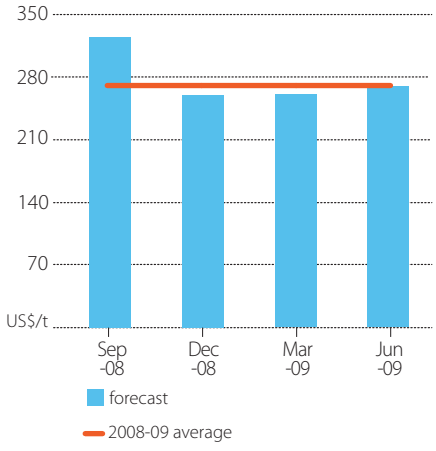
		2008	2009 f	2010 f	% change
World					
Production	kt	11 655	10 839	11 164	*3.0*
Consumption	kt	11 438	10 637	11 222	*5.5*
Closing stocks	kt	764	966	908	*– 6.0*
– weeks consumption		3.5	4.7	4.2	*– 10.6*
Price	US$/t	1 878	1 501	1 940	*29.2*
	USc/lb	85.2	68.1	88.0	*29.2*
		2007 -08	**2008 -09**	**2009 -10 f**	
Australia					
Mine output	kt	1 571	1 411	1 381	*– 2.1*
Refined output	kt	507	506	505	*– 0.2*
Exports					
– ores and concentrates	kt	2 323	2 101	1 875	*– 10.8*
– refined	kt	411	451	426	*– 5.5*
– total value	A$m	3 350	1 857	1 928	*3.8*

Understanding ABARE's commodity forecasts

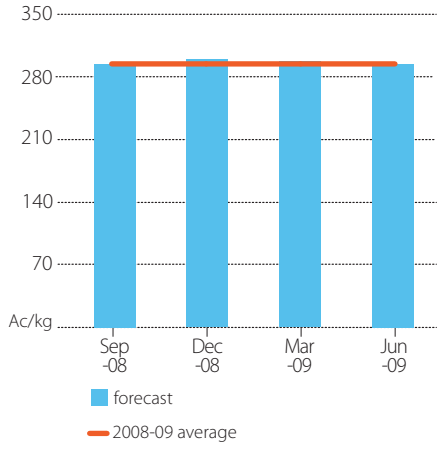
ABARE presents its forecasts of production, consumption, prices and exports of specific commodities as point estimates. These point forecasts are based on an assessment of economic data and information from a variety of sources available at the time the forecasts are made, supported by discussions with industry experts, the use of quantitative analytical tools and professional judgment. The nature of forecasts made by ABARE (and other organisations) is such that actual outcomes can sometimes be significantly different from the initial point forecasts. See figures below for some examples.

Forecasts and the actual outcomes for selected commodity prices

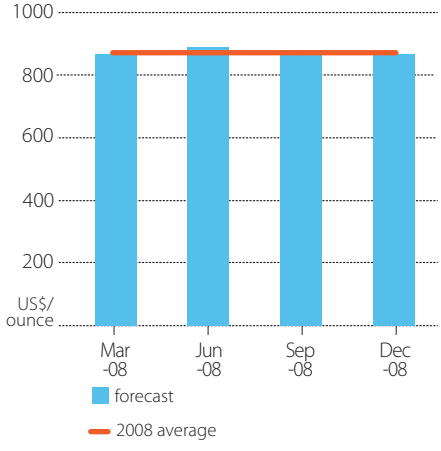
Wheat (world price)



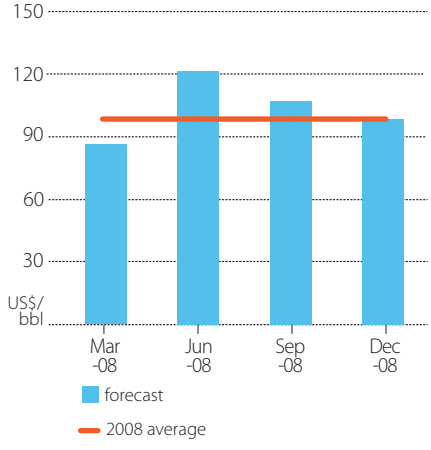
Beef (saleyard price)



Gold (world price)



WTI oil price



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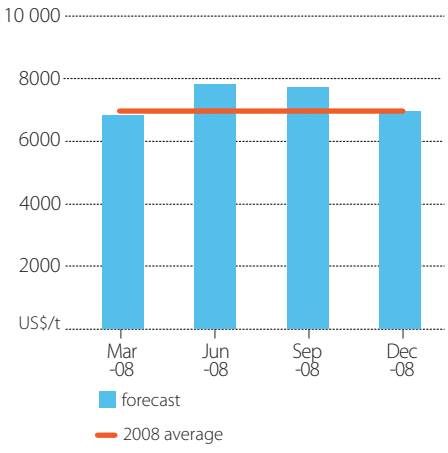
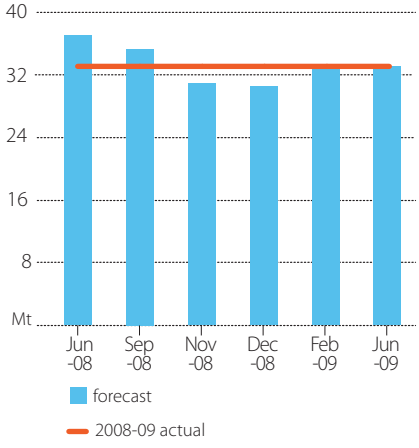
Understanding ABARE's commodity forecasts *continued*

Copper (world price)



Forecasts and actual outcome of winter crop production



Note: Blue bars indicate ABARE's forecasts made in the corresponding quarter during the financial year 2008-09 or the calendar year 2008, while the red line shows the actual average price for that commodity in the associated financial or calendar year.

A key reason for the differences between forecasts and actual outcomes is that ABARE, and other forecasters, are often required to make assumptions about factors that have the potential to affect actual outcomes. As more information becomes available over time, earlier assumptions are updated and forecasts are revised. ABARE forecasts are therefore conditional on the information available at the time they were made.

Also important to note is that the differences between forecasts and actual outcomes reflect the effect of factors that are 'unforeseeable'. These can include unanticipated policy changes, unpredictable macroeconomic developments, changing climatic or seasonal conditions (especially for agricultural commodities) and unplanned production or supply disruptions (particularly for energy and mineral commodities).

In forecasting the major non-irrigated crops in Australia, ABARE considers information on the seasonal outlook released by the Australian Government Bureau of Meteorology and yield forecasts provided by the Agricultural Production Systems Research Unit of Queensland Primary Industries and Fisheries. Forecasts and the actual outcome for 2008-09 winter crop production are illustrated.

For world agricultural production, ABARE uses the estimates and forecasts released by the International Grains Council (IGC) and US Department of Agriculture (USDA), among other sources. Any variation in those estimates/forecasts from the actual outcomes will also affect ABARE's assessment of variables, ranging from commodity production to prices.

Changes in seasonal conditions over the forecast period are a major risk in forecasting agricultural production and, hence, agricultural prices. Using the forecast of world wheat indicator price (US hard red winter wheat, fob, Gulf) as an example, the actual outcome for 2008-09 was significantly affected by a number of factors, especially a larger than expected increase in world wheat production. When ABARE's price forecast was prepared in the September quarter 2008, for example, the harvest of northern hemisphere wheat crops had not been completed. An initial estimate from the International

continued...

Understanding ABARE's commodity forecasts *continued*

Grains Council put world wheat production at 672 million tonnes for the 2008-09 season (IGC 2008a). Based on this initial estimate, ABARE formulated its forecast of world wheat indicator price at US$325 a tonne for 2008-09 as a whole.

When ABARE was preparing its forecasts in the December quarter 2008, world wheat production in 2008-09 had been revised upward to 683 million tonnes, mainly as a result of better than expected yields in the Russian Federation and major producers in the European Union in response to improved seasonal conditions (IGC 2008b). Taking this new information (and other updates) into account, in the December quarter 2008 ABARE revised down its forecast of the average wheat price in 2008-09 to US$260 a tonne.

In addition to the unexpected effect of changing seasonal conditions, there were other significant, but unforeseeable factors that also influenced movements in the world wheat indicator price in 2008-09. For example, the onset of the global financial crisis in late 2008 was another major factor underlying ABARE's revised forecast of the world wheat indicator price in the December quarter 2008.

Similarly, a range of risks apply to ABARE's forecasts of energy and minerals commodities. Recently it has become increasingly difficult to accurately forecast movements in energy and minerals prices on world markets. In addition to the fundamental factors important to changes in consumption and production, a number of other factors have emerged as important determinants of movements in world prices. These factors include geopolitical issues and their effects on supply potential; unforeseen supply disruptions, including those related to insurgent action against supply infrastructure or unexpected shutdowns of production facilities; and investment and speculative trading on energy and minerals markets. It is not possible to predict these factors with any certainty.

Exchange rate movements can also have a significant effect on the actual outcomes of commodity prices and export earnings. Because commodity prices are denominated in US dollars on world markets, a significant decline or increase in the value of the US dollar against other floating international currencies (including the Australian dollar) can markedly influence movements in world minerals and energy prices (for example, see Penm et al. 2002). The direction of movements in the Australian dollar against the US dollar is also an important factor. A significant appreciation of the Australian dollar against the US dollar has the potential to markedly reduce earnings for commodity exporters and producers.

There is considerable uncertainty surrounding any exchange rate outlook. This is because exchange rate movements can be significantly affected by changes in financial market sentiment, leading to strong volatility. For example, over the past 18 months, the Australian dollar depreciated from a high of US98c and TWI 74 in mid-July 2008 to a low of US60c and TWI 51 in late October 2008, before recovering strongly to around US91c and TWI 70 in early December 2009.

Movements in the value of the US dollar were also volatile over the same period. Against major floating international currencies, the value of the US dollar increased from an index of 70.4 in early July 2008 to a high of 84.9 in late November 2008, before declining sharply to around 72.8 in late November 2009.

The occurrence and effect of events such as extreme seasonal conditions, political upheavals, supply disruptions and sharp exchange rate fluctuations cannot be predicted and therefore cannot be incorporated into commodity forecasts before the event. While ABARE forecasts attempt to balance a range of upside and downside risks, some of the key judgments relating to forecasts will inevitably be different from the actual outcomes.

continued...

Understanding ABARE's commodity forecasts *continued*

Despite being largely unpredictable, information about the potential risks some of these factors pose to the point forecasts will be useful for decision-makers in the commodity sector. For this reason, ABARE incorporates discussion of the risk factors in the associated notes presented in *Australian commodities*. Decision-makers are encouraged to read the report in full to gain a comprehensive understanding of the context of ABARE's commodity forecasts.

References

International Grains Council (IGC) 2008a, *Grain market report*, GMR No. 381, London, 29 August.

International Grains Council (IGC) 2008b, *Grain market report*, GMR No. 383, London, 30 October.

Penm, J, Maurer, A, Fairhead, L and Tran QT 2002, 'US dollar – impacts of a depreciation of the US$ on Australian commodities', *Australian commodities*, vol. 9, no. 3, pp. 485-94, ABARE, Canberra.

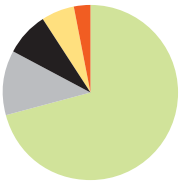
Australian commodities

Statistical tables

Contribution to GDP

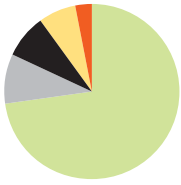
Australia reference year 2008-09

1998-99
$809.7b



services	71%
manufacturing	12%
mining	8%
building and construction	6%
agriculture, forestry and fishing	3%

2008-09
$1095.4b

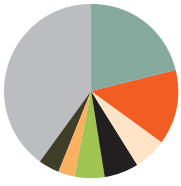


services	73%
manufacturing	9%
mining	8%
building and construction	7%
agriculture, forestry and fishing	3%

Share of Australian imports in 2008-09 dollars

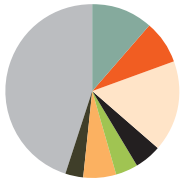
Total

1998-99 $133.3b



United States	21%
Japan	14%
China	6%
Germany	6%
United Kingdom	6%
Singapore	3%
New Zealand	4%
other	40%

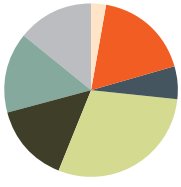
2008-09 $219.5b



United States	12%
Japan	8%
China	17%
Germany	5%
United Kingdom	4%
Singapore	6%
New Zealand	3%
other	45%

Agriculture

1998-99 $6.3b



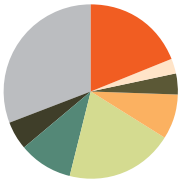
China	3%
ASEAN	18%
other Asia	6%
European Union 27	29%
New Zealand	15%
United States	15%
other	14%

2008-09 $11.0b

China	7%
ASEAN	17%
other Asia	5%
European Union 27	29%
New Zealand	15%
United States	11%
other	16%

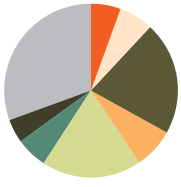
Minerals and energy

1998-99 $12.3b



Indonesia	19%
Malaysia	3%
Singapore	4%
Viet Nam	8%
other Asia	20%
Middle East	10%
New Zealand	5%
other	31%

2008-09 $47.2b

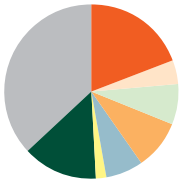


Indonesia	6%
Malaysia	6%
Singapore	21%
Viet Nam	7%
other Asia	19%
Middle East	6%
New Zealand	4%
other	31%

Markets for Australian exports in 2008-09 dollars

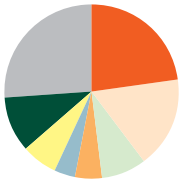
Total

1998-99 $117.5b



Japan	19%
China	5%
Republic of Korea	7%
United States	9%
New Zealand	7%
India	2%
European Union 27	14%
other	37%

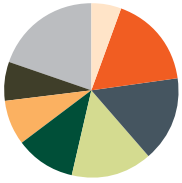
2008-09 $230.7b



Japan	23%
China	17%
Republic of Korea	8%
United States	5%
New Zealand	4%
India	7%
European Union 27	10%
other	26%

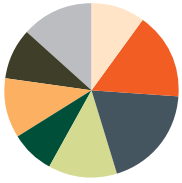
Agriculture

1998-99 $31.5b



China	6%
Japan	17%
ASEAN	16%
other Asia	15%
European Union 27	11%
Middle East	8%
United States	7%
other	20%

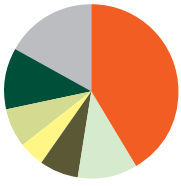
2008-09 $32.0b



China	10%
Japan	16%
ASEAN	19%
other Asia	13%
European Union 27	8%
Middle East	11%
United States	9%
other	13%

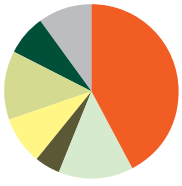
Energy

1998-99 $19.7b



Japan	42%
Republic of Korea	11%
Chinese Taipei	7%
India	5%
other Asia	7%
European Union 27	11%
other	17%

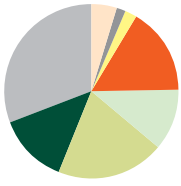
2008-09 $77.9b



Japan	42%
Republic of Korea	14%
Chinese Taipei	5%
India	9%
other Asia	13%
European Union 27	8%
other	10%

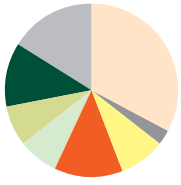
Minerals

1998-99 $34.4b



China	5%
Thailand	2%
India	2%
Japan	16%
Republic of Korea	11%
other Asia	20%
European Union 27	13%
other	31%

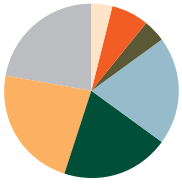
2008-09 $83.7b



China	33%
Thailand	3%
India	8%
Japan	13%
Republic of Korea	7%
other Asia	8%
European Union 27	12%
other	16%

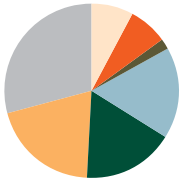
Manufacturing

1998-99 $28.0b



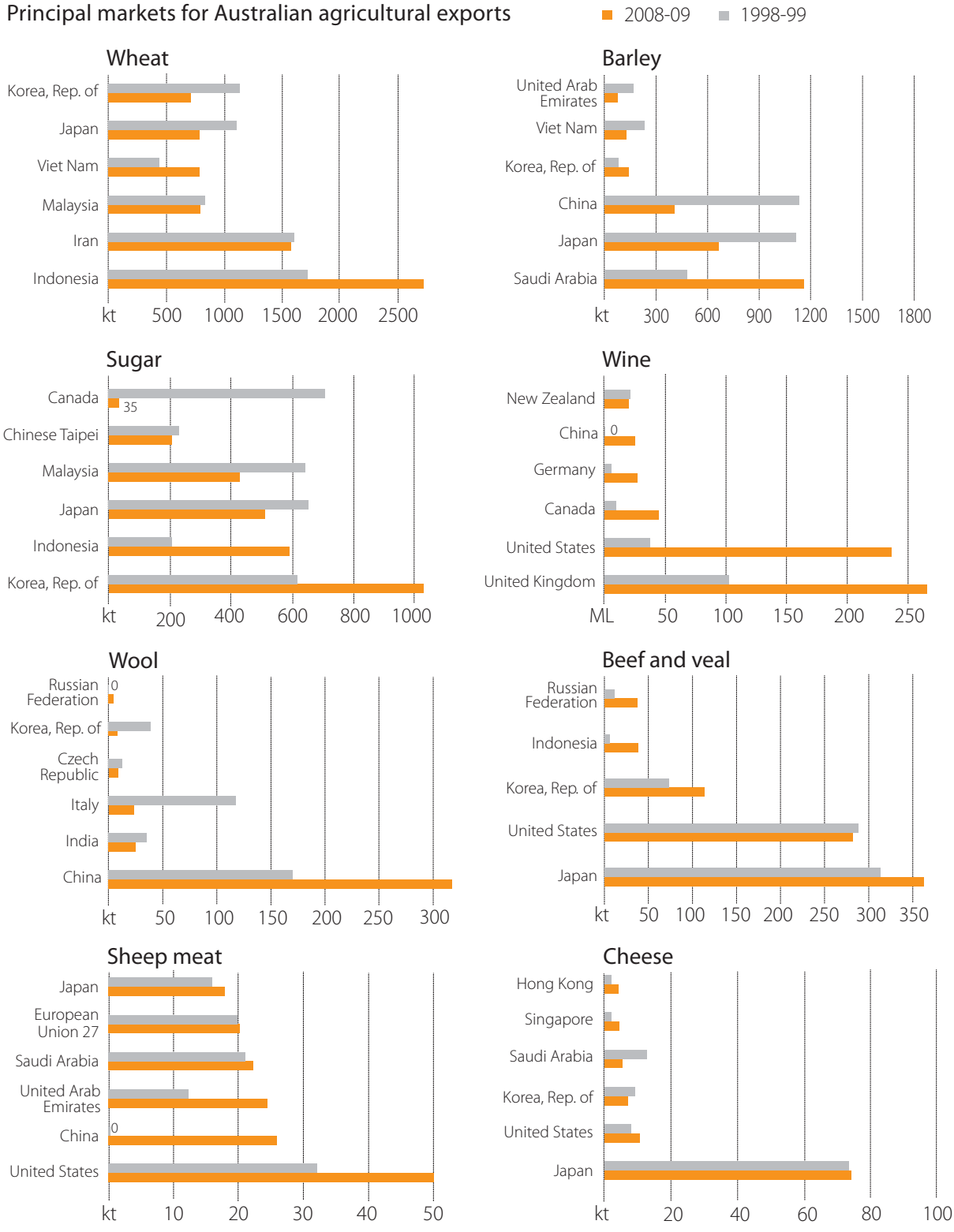
China	4%
Japan	7%
Republic of Korea	4%
New Zealand	20%
European Union 27	20%
United States	23%
other	22%

2008-09 $33.3b



China	8%
Japan	7%
Republic of Korea	2%
New Zealand	17%
European Union 27	17%
United States	20%
other	29%

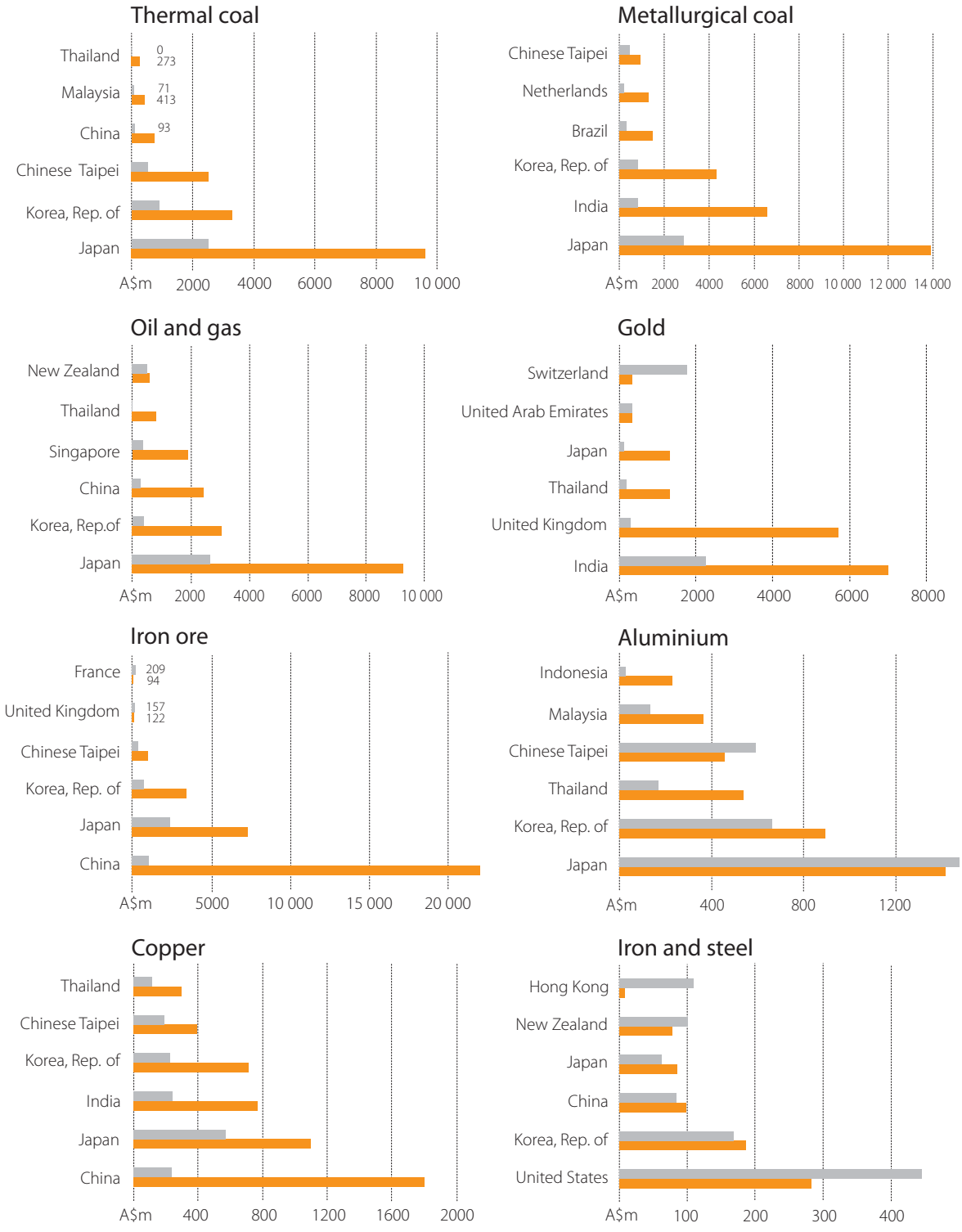
Principal markets for Australian agricultural exports



Principal markets for Australian mineral and energy exports

2008-09 ■ 1998-99 ■

in 2008-09 dollars



1 Indexes of prices received by farmers

Australia

	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10 f
Crops sector							
Grains							
Winter crops							
barley	105.9	100.1	93.9	153.3	196.9	151.9	120.7
canola	104.4	84.5	86.5	102.8	140.7	106.2	86.9
lupins	120.4	105.2	99.8	135.8	171.0	94.3	138.1
oats	101.1	98.1	107.8	176.6	205.7	144.6	133.7
wheat	109.1	99.6	102.5	122.4	197.2	168.3	128.0
Summer crops							
sorghum	93.8	79.4	84.6	126.1	152.4	126.5	125.2
Total grains a	105.2	95.8	97.2	126.9	182.3	148.1	118.8
Cotton	88.2	87.0	85.0	86.2	87.3	95.5	97.6
Sugar	76.3	84.1	90.9	105.0	80.6	90.7	136.2
Hay	125.0	128.0	143.7	151.8	165.1	169.2	172.6
Fruit	123.9	114.3	127.6	169.8	136.9	140.3	143.1
Vegetables	124.6	122.2	137.3	145.0	157.7	161.7	164.9
Total crops sector	106.9	99.9	103.3	123.2	137.7	123.8	114.9
Livestock sector							
Livestock for slaughter							
cattle	160.4	177.2	181.3	174.3	164.6	170.1	166.1
lambs b	190.1	184.5	177.7	165.7	165.9	213.0	205.7
sheep	230.3	196.1	202.7	156.4	178.5	225.8	295.4
live sheep for export	178.0	164.1	176.1	179.1	180.7	214.2	216.9
pigs	109.4	117.8	115.6	124.8	120.7	180.8	157.8
poultry	97.7	91.9	83.5	84.5	109.4	111.5	149.2
total	149.2	157.4	157.5	152.6	152.1	168.1	171.5
Livestock products							
wool	116.5	107.4	97.7	115.5	127.9	126.7	135.7
milk	93.4	105.7	111.0	111.1	166.1	142.1	113.9
eggs	89.2	85.4	86.3	95.2	100.3	105.3	115.8
total	101.6	104.6	104.0	111.5	146.4	133.3	121.1
Store and breeding stock	149.3	157.4	157.6	152.6	152.1	168.1	171.6
Total livestock sector	129.3	135.4	135.2	135.1	147.4	152.7	150.6
Total prices received	117.0	115.9	117.7	127.8	141.2	135.9	129.9

a Total for the group includes commodities not separately listed. **b** Lamb saleyard indicator weight 18-20kg to 2002-03, 18-22kg from 2003-04. **s** ABARE estimate. **f** ABARE forecast.

Note: 1 ABARE revised the method for calculating these indexes in October 1999. The indexes for commodity groups are calculated on a chained weight basis using Fisher's ideal index with a reference year of 1997-98 = 100. Indexes for most individual commodities are based on annual gross unit value of production. 2 Prices used in these calculations exclude GST.

Source: ABARE.

2 Indexes of prices paid by farmers, and terms of trade

Australia

	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10 f
Farmers' terms of trade a	95.2	91.7	91.0	94.1	91.0	91.0	89.8
Materials and services							
Seed, fodder and livestock							
fodder and feedstuffs	148.3	140.4	126.4	151.0	195.7	173.8	151.5
seed, seedlings and plants	104.9	95.3	93.8	109.5	135.2	124.6	113.7
store and breeding stock	144.0	159.5	157.6	152.6	153.0	164.7	159.3
total	142.0	140.3	130.8	146.7	178.3	165.7	148.8
Chemicals	110.0	111.9	114.6	124.7	149.7	136.7	123.0
Electricity	100.0	101.3	104.6	107.6	111.3	120.8	134.6
Fertiliser	102.8	108.8	111.6	121.4	220.4	231.3	173.4
Fuel and lubricants	144.3	167.2	210.6	208.3	243.7	211.0	220.4
Total	125.3	128.7	130.9	140.2	170.9	164.8	152.6
Labor	121.6	125.7	129.7	133.5	138.0	143.1	147.4
Marketing	118.7	121.5	125.4	129.1	143.2	137.1	143.3
Overheads							
Insurance	128.8	131.9	135.1	139.4	143.5	155.6	168.7
Interest paid	118.1	120.9	123.8	127.8	142.6	116.7	111.1
Rates and taxes	121.9	124.8	128.9	132.7	137.3	141.5	144.7
Other overheads	118.1	121.0	124.8	128.5	132.8	137.1	140.4
Total	120.6	123.5	126.8	130.8	141.8	126.6	124.3
Capital items	121.3	124.4	128.4	132.3	136.8	141.1	144.6
Total prices paid	123.0	126.3	129.4	135.8	155.2	149.4	144.6
Excluding capital items	123.1	126.5	129.4	136.1	157.4	150.4	144.7
Excluding capital and overhea	123.7	127.2	129.9	137.5	161.7	157.4	150.6
Excluding seed, fodder and store and breeding stock	119.2	123.6	129.2	133.6	150.3	145.9	143.6

a Ratio of index of prices received by farmers and index of prices paid by farmers. **s** ABARE estimate. **f** ABARE forecast.
Note: 1 ABARE revised the method for calculating these indexes in October 1999. The indexes for commodity groups are calculated on a chained weight basis using Fisher's ideal index with a reference year of 1997-98 = 100. 2 Prices used in these calculations exclude GST.
Sources: Australian Bureau of Statistics; ABARE.

3 Farm costs and returns

Australia

	unit	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10 f
Costs							
Materials and services							
chemicals	$m	1 691	1 749	1 545	1 902	1 733	1 575
fertiliser	$m	1 851	1 843	1 659	3 036	3 217	2 437
fuel and lubricants	$m	1 765	2 223	2 199	2 552	2 172	2 292
marketing	$m	3 433	3 612	2 748	3 193	3 795	3 883
repairs and maintenance	$m	2 493	2 602	2 466	3 140	3 341	3 271
seed and fodder	$m	4 267	3 827	4 921	6 214	5 537	4 603
other	$m	3 473	3 692	3 543	3 661	3 846	3 972
total	$m	18 974	19 548	19 081	23 699	23 640	22 034
Labor	$m	3 410	3 778	3 654	3 668	3 840	3 757
Overheads							
interest paid	$m	2 306	3 249	3 848	4 901	4 331	4 455
rent and third party insurance	$m	432	446	447	462	477	487
Total	$m	6 148	7 473	7 950	9 031	8 647	8 699
Total cash costs	$m	25 122	27 021	27 031	32 730	32 287	30 733
Depreciation a	$m	4 122	4 255	4 383	4 532	4 675	4 791
Total farm costs	$m	29 243	31 276	31 413	37 262	36 962	35 524
Returns							
Gross value of farm production	$m	36 537	38 696	36 312	43 840	44 812	42 304
Gross farm cash income b	$m	37 703	38 330	37 076	43 527	40 703	42 304
Net returns and production							
Net value of farm production c	$m	7 294	7 420	4 898	6 579	7 850	6 780
Real net value of farm production d	$m	8 405	8 285	5 314	6 903	7 987	6 780
Net farm cash income e	$m	12 582	11 309	10 045	10 798	8 416	11 571
Real net farm cash income d	$m	14 498	12 628	10 899	11 330	8 563	11 571

a Based on estimated movements in capital expenditure and prices of capital inputs. **b** Gross value of farm production less increase in farmers' assets held by marketing organisations. **c** Gross value of farm production less total farm costs. **d** In 2009-10 Australian dollars. **e** Gross farm cash income less total cash costs. **s** ABARE estimate. **f** ABARE forecast.

Note: Prices used in these calculations exclude GST.

Sources: Australian Bureau of Statistics; ABARE.

4 Unit export returns

Australia

Annual indexes a	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10 f
Farm	106.0	105.1	104.5	109.8	121.8	122.6	114.3
Energy minerals	120.2	166.1	226.0	206.6	235.8	398.2	247.4
Metals and other minerals	106.1	125.4	162.1	203.4	200.6	225.9	192.5
Total mineral resources	111.7	141.2	186.8	205.5	214.8	290.7	214.0
Total commodities	110.2	129.9	160.4	174.8	184.4	238.3	182.1

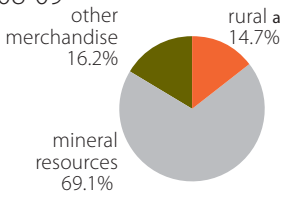
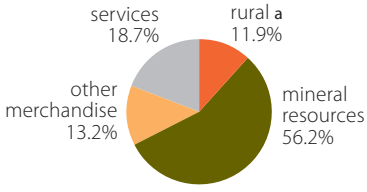
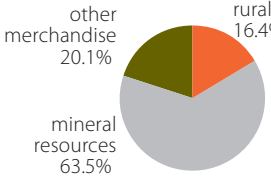
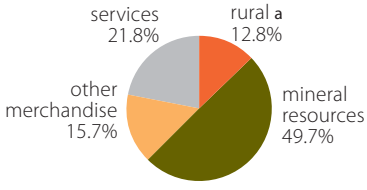
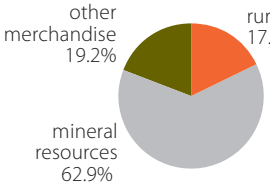
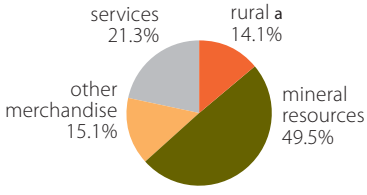
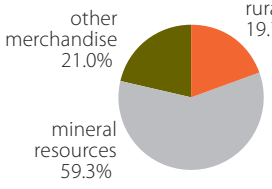
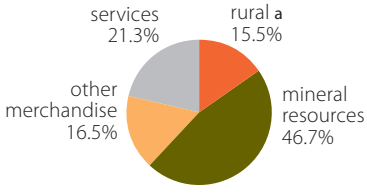
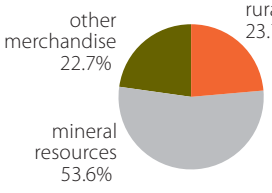
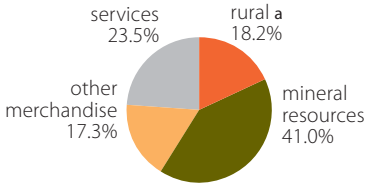
	2007-08	2008-09				2009-10			
Quarterly indexes b	June	Sep.	Dec.	Mar.	June p	Sep. s	Dec. f	Mar. f	June f
Farm	124.8	128.7	138.3	114.8	105.1	108.4	114.3	114.4	114.4
Energy minerals	328.5	432.6	530.0	433.9	292.7	258.8	244.7	259.4	286.8
Metals and other minerals	234.2	249.3	272.5	251.7	205.2	198.5	209.5	207.8	218.0
Total mineral resources	270.9	318.9	369.9	321.4	240.1	222.8	224.0	228.6	245.1
Total commodities	219.6	253.2	290.8	251.3	194.1	180.7	183.6	189.0	202.1

a In Australian dollars. Base: 1989-90 = 100. **b** In Australian dollars. Base: 1994-95 = 100. **p** Preliminary. **s** ABARE estimate. **f** ABARE forecast.

Source: ABARE.

5 Contribution to exports by sector, balance of payments basis

Australia

	Proportion of merchandise exports	Proportion of exports of goods and services
2008-09		
2007-08		
2006-07		
2005-06		
2004-05		

a Includes farm, forest and fisheries products.

Sources: Australian Bureau of Statistics; ABARE.

6 Annual exports summary, balance of payments basis

Australia

	2004-05 $m	2005-06 $m	2006-07 $m	2007-08 $m	2008-09 $m	2009-10 f $m
At current prices						
Rural						
Cereal grains and products	5 160	4 852	4 171	4 975	6 881	6 077
Sugar and honey	1 296	1 765	1 671	1 158	1 517	1 845
Meat and meat preparations	6 933	6 709	7 080	6 542	7 454	6 954
Wool and sheepskins	2 837	2 539	3 065	2 796	2 322	2 250
Other rural a	14 082	14 566	14 413	14 500	15 738	14 640
Total	30 308	30 431	30 400	29 971	33 912	31 765
Mineral resources						
Coal, coke and briquettes	17 240	24 352	21 928	24 599	54 916	33 301
Other mineral fuels	11 154	13 220	15 641	18 889	20 711	18 291
Metalliferous ores and other minerals bs	20 535	29 772	36 041	41 964	52 563	45 506
Gold	6 472	9 087	10 740	12 272	17 507	17 406
Other metals cs	13 159	14 863	22 330	18 453	14 292	13 113
Total s	68 561	91 294	106 680	116 177	159 989	127 617
Total commodities sector s	98 869	121 725	137 080	146 148	193 901	159 381
Other merchandise s	28 943	32 310	32 444	36 804	37 505	na
Total merchandise s	127 812	154 035	169 524	182 952	231 406	na
Services	39 289	41 641	45 956	50 645	53 287	na
Total goods and services	167 101	195 676	215 480	233 597	284 693	na
Chain volume measures d						
Rural						
Cereal grains and products	8 673	8 168	6 196	4 975	7 322	8 246
Sugar and honey	1 371	1 317	1 240	1 158	1 080	1 101
Meat and meat preparations	6 366	6 220	6 771	6 543	6 630	6 507
Wool and sheepskins	3 448	3 271	3 454	2 796	2 545	2 314
Other rural a	14 134	15 194	15 212	14 500	15 763	16 668
Total	33 992	34 170	32 873	29 972	33 340	34 835
Mineral resources						
Coal, coke and briquettes	22 699	22 473	23 748	24 599	25 173	27 610
Other mineral fuels	16 523	15 725	18 910	18 890	19 750	21 525
Metalliferous ores and other minerals bs	34 603	37 048	37 258	41 964	42 754	48 601
Gold	10 518	11 636	11 906	12 272	13 583	12 842
Other metals cs	22 169	22 419	22 451	18 453	18 880	17 109
Total s	106 512	109 300	114 273	116 178	120 139	127 687
Total commodities sector s	140 504	143 471	147 147	146 149	153 479	162 522
Other merchandise s	26 682	27 675	29 878	36 803	33 835	na
Total merchandise s	167 186	171 146	177 025	182 952	187 314	na
Services	42 579	43 977	47 242	50 645	51 578	na
Total goods and services	211 403	216 254	224 872	233 598	238 890	na

a Includes other farm, forest and fisheries products. Includes exports of wine and of paper and paperboard, which are not included in this balance of payments item by the ABS. **b** Includes diamonds, which are not included in this balance of payments item by the ABS. **c** Includes ABARE estimates for steel and nickel which were confidentialised by the ABS. **d** For a description of chain volume measures, see ABS, *Introduction of chain volume measures,* in the Australian National Accounts, cat. no. 5248.0, Canberra. Reference year is 2007-08. **s** ABARE estimate. **f** ABARE forecast. **na** Not available.

Sources: ABS, *Balance of Payments and International Investment Position, Australia,* cat. no. 5302.0, Canberra; ABARE.

7 Quarterly exports summary, balance of payments basis

Australia

	2007-08	2008-09				2009-10			
	June	Sep.	Dec.	Mar.	June p	Sep. p	Dec. s	Mar. f	June f
	$m	$m	$m	$m	$m	$m	$m	$m	$m
At current prices									
Rural									
Cereal grains and products	1 829	1 362	1 399	2 231	1 889	1 375	1 464	1 674	1 563
Sugar and honey	267	404	407	274	432	664	517	295	369
Meat and meat preparations	1 789	1 787	2 241	1 702	1 724	1 598	1 744	1 771	1 841
Wool and sheepskins	656	535	702	560	525	384	663	589	614
Other rural a	3 755	3 804	4 247	3 887	3 799	3 630	3 791	3 421	3 798
Total	8 296	7 892	8 996	8 654	8 369	7 652	8 178	7 750	8 184
Mineral resources									
Coal, coke and briquettes	9 299	14 191	18 303	12 707	9 715	8 692	7 893	7 717	8 999
Other mineral fuels	5 393	6 054	6 508	4 510	3 639	4 204	4 752	4 642	4 693
Metalliferous ores and other minerals bs	12 791	14 657	14 081	12 868	10 957	10 966	10 994	11 218	12 327
Gold	3 044	4 027	4 283	5 754	3 443	3 045	4 612	4 954	4 795
Other metals cs	4 614	4 183	3 991	2 967	3 152	3 243	3 167	3 177	3 527
Total s	35 141	43 112	47 165	38 806	30 906	30 150	31 418	31 708	34 341
Total commodities sector s	43 437	51 004	56 161	47 460	39 275	37 802	39 596	39 458	42 525
Other merchandise s	9 869	10 302	10 667	8 390	8 147	8 260	na	na	na
Total merchandise s	53 306	61 306	66 828	55 850	47 422	46 062	na	na	na
Services	12 912	13 155	13 615	13 599	12 918	13 720	na	na	na
Total goods and services	66 218	74 461	80 443	69 449	60 340	59 782	na	na	na
Chain volume measures d									
Rural									
Cereal grains and products	1 592	1 212	1 250	2 510	2 350	1 747	1 968	2 321	2 210
Sugar and honey	250	344	259	183	294	396	308	176	220
Meat and meat preparations	1 758	1 618	1 805	1 538	1 669	1 603	1 649	1 594	1 661
Wool and sheepskins	679	565	675	649	656	471	655	587	602
Other rural a	3 755	3 774	3 808	3 852	4 329	4 166	4 271	3 904	4 326
Total	8 034	7 513	7 797	8 732	9 298	8 383	8 852	8 581	9 019
Mineral resources									
Coal, coke and briquettes	6 476	6 672	6 453	5 502	6 546	7 104	7 130	6 658	6 718
Other mineral fuels	4 586	4 667	5 366	4 915	4 802	5 052	5 927	5 342	5 204
Metalliferous ores and other minerals bs	10 564	10 916	10 566	10 027	11 244	11 425	12 067	12 419	12 690
Gold	2 933	3 824	3 341	3 808	2 610	2 423	3 339	3 601	3 479
Other metals cs	5 008	4 386	4 976	4 671	4 847	4 224	4 118	4 172	4 595
Total s	29 567	30 465	30 702	28 924	30 049	30 228	32 580	32 193	32 686
Total commodities sector s	37 601	37 977	38 499	37 656	39 347	38 611	41 432	40 774	41 706
Other merchandise s	9 375	9 642	8 874	7 287	8 032	8 604	na	na	na
Total merchandise s	46 976	47 619	47 373	44 943	47 379	47 215	na	na	na
Services	12 740	12 821	13 179	13 168	12 410	13 137	na	na	na
Total goods and services	59 681	60 439	60 552	58 111	59 788	60 352	na	na	na

a Includes other farm, forest and fisheries products. Includes exports of wine and of paper and paperboard, which are not included in this balance of payments item by the ABS. **b** Includes diamonds, which are not included in this balance of payments item by the ABS. **c** Includes ABARE estimates for steel and nickel which were confidentialised by the ABS. **d** For a description of chain volume measures, see ABS, *Introduction of chain volume measures,* in the Australian National Accounts, cat. no. 5248.0, Canberra. Reference year is 2007-08. **p** Preliminary. **s** ABARE estimate. **f** ABARE forecast. **na** Not available.

Sources: ABS, *Balance of Payments and International Investment Position,* Australia, cat. no. 5302.0, Canberra; ABARE.

8 Industry gross value added [a]

Australia

	unit	2004-05	2005-06	2006-07	2007-08	2008-09
Agriculture, forestry and fishing						
agriculture	$m	26 328	27 123	21 899	23 616	26 874
forestry and fishing	$m	1 259	1 275	1 253	1 286	1 304
total	$m	27 362	28 147	23 152	24 901	28 178
Mining						
mining (excludes services to mining)	$m	69 622	70 455	75 739	77 021	78 953
services to mining	$m	5 152	5 161	5 677	6 363	6 137
total	$m	74 793	75 613	81 416	83 384	85 090
Manufacturing						
food, beverage and tobacco	$m	19 812	19 668	19 847	19 769	19 804
textile, clothing, footwear and leather	$m	3 380	3 153	3 102	2 961	2 567
wood and paper products	$m	7 331	7 044	6 875	6 591	6 161
printing, publishing and recorded media	$m	10 600	10 400	10 645	10 949	10 302
petroleum, coal, chemical, etc.	$m	15 528	14 896	14 704	15 061	13 600
non–metallic mineral products	$m	4 618	5 148	5 257	5 533	5 366
metal products	$m	16 751	16 582	18 322	20 350	19 652
machinery and equipment	$m	19 681	20 560	20 509	21 020	20 510
other manufacturing	$m	4 463	4 032	4 028	4 490	4 331
total	$m	101 845	101 319	103 293	106 724	102 290
Building and construction	$m	63 491	68 746	72 407	77 094	79 205
Electricity, gas and water supply	$m	21 827	22 117	21 854	21 843	22 892
Taxes less subsidies on products	$m	79 285	80 906	83 172	85 080	84 013
Statistical discrepancy	$m	0	0	1	– 20	5 627
Gross domestic product	$m	982 786	1 012 269	1 045 674	1 084 451	1 095 370

a Chain volume measures, reference year is 2007-08.

Source: ABS, *Australian National Accounts: National Income, Expenditure and Product*, cat. no. 5206.0, Canberra.

9 Volume of production indexes
Australia

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10 f
Farm						
Grains and oilseeds	113.2	132.8	58.2	88.2	114.8	117.6
Total crops	111.3	119.6	84.7	105.2	119.9	122.1
Livestock slaughterings	109.3	108.5	115.5	113.8	112.8	112.0
Total livestock	103.1	102.6	105.4	102.7	101.0	98.5
Total farm sector	107.8	111.5	95.3	104.8	111.5	111.3
Forestry a						
Broadleaved	126.2	121.8	123.6	132.9	120.3	127.3
Coniferous	128.9	130.5	132.0	135.0	128.7	132.7
Total forestry	127.6	126.2	127.9	133.9	124.6	130.0
Mine b						
Energy minerals	113.4	111.6	118.8	116.7	121.9	131.2
Metals and other minerals	123.5	124.2	124.2	124.7	119.9	126.3
Total minerals	118.6	118.0	121.3	120.7	121.0	129.0

a Volume of logs harvested excluding firewood. **b** Uranium is included with energy. **s** ABARE estimate. **f** ABARE forecast.
Note: ABARE revised the method for calculating production indexes in October 1999. The indexes for the different groups of commodities are calculated on a chained weight basis using Fishers' ideal index with a reference year of 1997-98 = 100.
Sources: Australian Bureau of Statistics; ABARE.

10 Employment a, b
Australia

	2003-04 '000	2004-05 '000	2005-06 '000	2006-07 '000	2007-08 '000	2008-09 p '000
Agriculture, forestry and fishing						
agriculture	317	307	300	306	301	318
forestry and logging	9	9	8	8	8	7
commercial fishing c	16	14	12	10	14	9
total (including services)	367	357	348	350	353	358
Mining						
coal	21	23	29	27	26	34
oil and gas extraction	6	7	9	10	11	14
metal ore	37	34	42	45	46	48
other mining (including services)	31	42	49	53	62	70
total	96	105	129	135	145	167
Manufacturing						
food, beverages and tobacco	193	217	205	214	228	224
textiles, clothing, footwear and leather	65	55	56	50	50	48
wood and paper product	84	77	77	78	69	67
printing, publishing and recorded media	58	58	52	51	54	51
petroleum, coal and chemical product	100	92	88	92	98	90
non–metallic mineral product	44	36	38	36	42	39
metal product	156	138	161	161	158	155
other manufacturing	334	379	347	342	358	344
total	1 033	1 051	1 025	1 024	1 056	1 017
Other industries	8 015	8 254	8 568	8 843	9 067	9 199
Total	9 510	9 767	10 070	10 353	10 621	10 741

a Average employment over four quarters. **b** ANZSIC 2006. **c** Includes aquaculture and fishing. **p** Preliminary.
Source: ABS, *Labour Force, Australia,* cat. no. 6291.0, Canberra.

11 Business income
Australia

	2004-05	2005-06	2006-07	2007-08	2008-09
	$m	$m	$m	$m	$m
Farm					
Net value of farm production	7 294	7 420	4 898	6 579	7 850
Company profits in selected industries a					
Mining	18 257	36 432	40 311	40 184	67 402
Manufacturing					
food, beverages and tobacco	5 207	5 237	4 532	5 757	6 166
textiles, clothing, footwear and leather	471	481	548	501	245
wood and paper product	1 106	988	1 085	1 184	729
printing, publishing and recorded media	608	528	578	620	170
petroleum, coal and chemical product	4 555	5 074	3 859	6 192	2 484
non–metallic mineral product	952	1 240	1 108	1 359	978
metal product	5 635	5 234	10 004	7 924	2 761
machinery and equipment	2 641	2 572	1 640	1 937	2 745
other manufacturing	651	603	762	851	637
total	21 826	21 957	24 116	26 325	16 915
Other industries (including services)	99 195	81 476	88 238	95 403	72 329
Total (including services)	139 278	139 865	152 665	161 912	156 646

a Company profits before income tax, based on ANZSIC 2006. **na** Not available.
Sources: ABS, *Australian National Accounts: National Income, Expenditure and Product* , cat. no. 5206.0, Canberra; ABS, *Company Profits, Australia,* cat. no. 5651.0, Canberra; ABS, *Business Indicators, Australia,* cat. no. 5676.0, Canberra; ABS, *Australian Industry,* cat. no. 8155.0,

12 All banks lending to business a
Australia

	2006-07	2007-08				2008-09			
	June	Sep.	Dec.	Mar.	June	Sep.	Dec.	Mar.	June
	$b	$b	$b	$b	$b	$b	$b	$b	$b
Agriculture, fishing and forestry	47.2	49.9	51.0	52.1	53.7	54.1	56.0	56.8	56.0
Mining	9.6	11.3	12.3	12.8	11.7	13.0	14.4	14.1	11.5
Manufacturing	41.1	43.0	42.5	45.5	45.2	48.2	47.8	48.6	43.5
Construction	24.8	26.5	27.4	31.1	30.5	31.6	30.7	33.2	31.5
Wholesale, retail trade, transport and storage	75.3	77.3	83.6	85.5	87.8	93.2	95.1	93.7	90.0
Finance and insurance	92.4	113.9	126.6	139.4	134.8	143.7	140.0	126.8	136.0
Other	248.9	263.3	284.8	290.3	299.8	315.7	318.5	320.4	319.0
Total	539.2	585.3	628.3	656.7	663.6	699.6	702.5	693.5	687.6

a Includes variable and fixed interest rate loans outstanding plus bank bills outstanding.
Source: Reserve Bank of Australia, *Bank Lending to Business - Selected Statistics,* Bulletin Statistical Table D8.

13 Rural indebtedness to financial institutions a

Australia

	2003-04 $m	2004-05 $m	2005-06 $m	2006-07 $m	2007-08 $m	2008-09 $m
Rural debt						
All banks a	34 115	39 261	43 546	47 188	53 743	56 159
Other government agencies b	891	977	1 073	1 286	1 409	1 620
Pastoral and other finance companies	3 379	3 112	3 454	4 592	5 126	4 462
Large finance institutional debt	38 385	43 350	48 073	53 066	60 278	62 242
Other farm debt cs	2 067	na	na	na	na	na
Total rural debt	40 452	na	na	na	na	na
Deposits						
Farm management deposits	2 619	2 792	2 797	2 782	2 879	2 843

a Derived from all banks lending to agriculture, fishing and forestry. **b** Includes the government agency business of state banks and advances made under War Service Land Settlement. Prior to 1996 includes loans from the Queensland Industry Development Corporation. From 1996 these loans are included in bank lending. **c** Includes loans from life insurance companies, lease agreements and indebtedness to hire purchase companies, trade creditors, private lenders and small financial institutions. **s** ABARE estimate. **na** Not available.

Sources: Department of Agriculture, Fisheries and Forestry; Reserve Bank of Australia, *Estimated Rural Debt to Specified Lenders,* Bulletin Statistical Table D9; ABARE.

14 Capital expenditure of private enterprises
Australia

	2004-05 $m	2005-06 $m	2006-07 $m	2007-08 $m	2008-09 $m
At current prices					
Gross fixed capital formation a					
All sectors	231 739	260 761	284 705	320 165	343 989
New capital expenditure					
Mining b	10 843	19 659	23 621	29 201	37 977
Manufacturing					
food, beverages and tobacco	2 386	2 419	2 256	2 596	2 492
textiles, clothing, footwear and leather	228	157	139	112	118
wood and paper product	733	835	759	928	897
printing, publishing and recorded media	323	502	353	396	450
petroleum, coal and chemical product	2 376	2 412	1 767	2 126	2 239
non–metallic mineral product	502	571	467	474	609
metal product	3 481	4 976	4 761	4 137	4 608
machinery and equipment	1 570	2 058	1 436	1 110	1 160
other manufacturing	80	100	58	164	108
total	11 675	14 032	12 106	12 340	12 682
Total surveyed industries	64 369	80 611	87 475	96 773	113 121
Chain volume measures c					
Gross fixed capital formation a					
All sectors	247 992	269 932	284 705	312 938	326 215
New capital expenditure					
Mining	12 345	21 480	24 512	29 200	36 692
Manufacturing	11 816	14 033	11 940	12 340	12 154
Other selected industries	40 539	45 950	50 492	55 230	61 234
Total surveyed industries	65 560	81 652	87 038	96 771	110 080

a Estimates taken from ABS national accounts, which include taxation based statistics. **b** ANZSIC 2006 Division B. **c** Reference year is 2007-08.
Sources: ABS, *Australian National Accounts: National Income, Expenditure and Product*, cat. no. 5206.0, Canberra; ABS, *Private New Capital Expenditure and Expected Expenditure, Australia*, cat. no. 5625.0, Canberra; ABARE.

15 Private mineral exploration expenditure
Australia

	2003-04 $m	2004-05 $m	2005-06 $m	2006-07 $m	2007-08 $m	2008-09 $m
At current prices						
Energy						
Petroleum						
onshore	230.5	270.1	355.8	498.2	493.8	492.3
offshore	713.6	774.6	906.1	1727.3	2 541.1	3 318.4
total	944.1	1 044.7	1 261.9	2 225.5	3 034.9	3 810.7
Coal	81.5	126.8	166.4	193.2	234.8	297.3
Uranium	10.6	20.7	56.1	114.1	231.5	185.2
Total	1 036.2	1 192.2	1 484.4	2 532.8	3 501.2	4 293.2
Metals and other minerals a						
Gold	397.1	391.7	399.6	455.9	592.6	438.0
Iron ore	63.7	137.9	161.3	285.4	449.8	588.7
Base metals, silver and cobalt b	151.9	261.3	356.7	555.0	783.2	519.1
Mineral sands	23.8	27.6	29.2	37.3	37.0	30.6
Diamonds	25.9	23.7	22.6	26.9	21.7	10.0
Other	32.2	38.7	48.8	46.8	110.8	154.3
Total metals and other minerals a	694.6	880.9	1 018.2	1 407.3	1 995.1	1 740.7
Total expenditure	1 730.8	2 073.1	2 502.6	3 940.1	5 496.3	6 033.9

a Uranium is included with energy. b Base metals include copper, lead, nickel and zinc.
Sources: ABS, *Mineral and Petroleum Exploration, Australia,* cat. no. 8412.0, Canberra; ABARE.

16 Annual world indicator prices of selected commodities

	unit	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10 f
Crops							
Wheat a	US$/t	154	176	212	362	271	219
Corn b	US$/t	97	104	151	201	190	163
Rice c	US$/t	278	301	320	551	609	562
Soybeans d	US$/t	275	261	335	549	421	375
Cotton e	USc/lb	52.4	56.0	58.1	72.9	61.2	74.0
Sugar g	USc/lb	10.5	15.8	11.7	13.7	15.9	18.5
Livestock products							
Beef h	USc/kg	286	276	282	303	303	295
Wool i	Ac/kg	767	713	864	945	794	850
Butter j	US$/t	2 208	1 998	2 023	4 027	2 485	2 746
Cheese j	US$/t	2 856	2 792	3 004	5 073	3 281	3 431
Skim milk powder j	US$/t	2 210	2 175	3 188	4 204	2 333	2 650
Energy							
Crude oil							
Dubai	US$/bbl	40.29	57.75	60.86	90.19	63.88	72.70
West Texas Intermediate	US$/bbl	48.78	64.24	63.32	96.73	68.83	77.78
brent	US$/bbl	46.16	62.47	63.93	95.37	67.18	76.27
world trade weighted average k	US$/bbl	41.18	57.25	59.45	91.97	66.05	75.30
Uranium (U_3O_8) l	US$/lb	22.20	36.79	81.17	80.75	51.25	47.81
Minerals and metals m							
Aluminium	US$/t	1 807	2 245	2 692	2 665	1 781	1 890
Copper	US$/t	3 151	5 062	7 087	7 791	4 936	6 380
Gold n	US$/oz	422	527	639	823	874	1 123
Iron ore (negotiated) o	USc/dmtu	35.99	61.72	73.45	80.43	144.67	97.00
Lead	US$/t	964	1 061	1 694	2 893	1 454	2 202
Manganese (negotiated) q	US$/mtu	2.45	3.98	3.00	2.70	11.20	3.50
Nickel	US$/t	14 961	15 510	37 909	28 564	13 322	17 741
Silver r	USc/oz	695	928	1 274	1 544	1 289	1 823
Tin	US$/t	8 491	7 403	11 455	18 529	13 531	14 965
Zinc	US$/t	1 171	2 118	3 672	2 599	1 401	1 784

a US hard red winter wheat, fob Gulf. **b** US no. 2 yellow corn, delivered US Gulf. **c** Prices previously reported by the Thailand Board of Trade are no longer available. From September 1998 the price quoted is the USDA sourced nominal quote for Thai white rice, 100 per cent, Grade B, fob, Bangkok (August–July basis). **d** US cif Rotterdam (October–September basis). **e** Cotlook 'A' index. **g** Average of monthly averages of New York no.11 spot price; basis: fob Caribbean ports (October-September basis). **h** US cif price. **i** Australian Wool Exchange eastern market indicator. **j** Average of traded prices (excluding subsidised sales). **k** World trade weighted average price compiled by the US Department of Energy. Official sales prices or estimated contract terms for major internationally traded crude oils. **l** Average of weekly restricted spot prices over the period, published by Ux Consulting. **m** Average LME spot price unless otherwise stated. **n** London gold fix, London Bullion Market Association. **o** Australian hematite fines to Japan (fob) for Japanese fiscal year commencing 1 April. **q** Japanese fiscal year commencing 1 April. **r** London silver fix, London Bullion Market Association. Prior to March 2001, Handy and Harman, commercial bar price used. **s** ABARE estimate. **f** ABARE forecast. **na** Not available.

Sources: Australian Bureau of Statistics; Australian Dairy Corporation; Meat and Livestock Australia; Australian Wool Exchange; Cotlook Ltd; Food and Agriculture Organisation; General Agreement on Tariffs and Trade; International Energy Agency; International Wheat Council; ISTA Mielke and Co.; London Bullion Market Association; The London Metal Exchange Ltd; New York Board of Trade; Reuters Ltd; Ux Consulting Company; Platts Oilgram; US Department of Agriculture; US Department of Energy; World Bureau of Metal Statistics; ABARE.

17 Quarterly world indicator prices of selected commodities

	unit	2007-08 June	2008-09 Sep.	Dec.	Mar.	June	2009-10 Sep. p	Dec. s	Mar. f	June f
Crops										
Wheat a	US$/t	368	333	244	247	259	215	217	224	223
Corn b	US$/t	260	246	169	167	176	152	163	163	172
Rice c	US$/t	889	722	584	609	570	566	500	551	629
Soybeans d	US$/t	585	566	377	394	461	451	421	363	377
Cotton e	USc/lb	74.9	76.3	57.4	54.7	60.1	64.4	73.0	77.0	78.0
Sugar g	USc/lb	13.1	15.1	12.9	13.6	15.8	21.3	23.0	19.0	17.0
Livestock products										
Beef h	USc/kg	347	386	283	266	279	291	290	296	303
Wool i	Ac/kg	893	864	786	746	780	815	858	872	856
Butter j	US$/t	4 058	3 683	2 592	1 792	1 875	2 192	2 825	2 883	3 083
Cheese j	US$/t	5 050	4 625	3 333	2 533	2 633	2 942	3 483	3 533	3 767
Skim milk powder j	US$/t	3 517	3 300	2 183	1 833	2 017	2 250	2 717	2 750	2 883
Energy										
Crude oil										
Dubai	US$/bbl	117.23	108.53	52.00	39.19	55.81	63.57	72.09	77.18	77.98
West Texas Intermediate	US$/bbl	123.97	114.50	58.80	41.70	60.31	68.60	77.00	82.00	83.50
brent	US$/bbl	122.13	114.51	54.50	41.20	58.52	66.85	75.65	80.79	81.80
world trade weighted average k	US$/bbl	118.79	110.10	56.50	40.25	57.34	65.72	75.25	79.57	80.66
Uranium (U_3O_8) l	US$/lb	61.33	60.67	51.00	45.00	48.33	45.25	47.00	48.00	51.00
Minerals and metals m										
Aluminium	US$/t	2 940	2 787	1 490	1 360	1 488	1 805	1 950	1 940	1 865
Copper	US$/t	8 448	7 692	3 940	3 435	4 675	5 630	6 600	6 690	6 600
Gold n	US$/oz	897	869	797	908	922	960	1 114	1 250	1 170
Lead	US$/t	2 307	1 912	1 247	1 157	1 500	1 927	2 230	2 300	2 350
Nickel	US$/t	25 730	18 980	10 889	10 475	12 943	17 607	17 358	17 000	19 000
Silver o	USc/oz	1 718	1 510	1 019	1 260	1 376	1 469	1 766	1 988	2 053
Tin	US$/t	22 650	20 551	13 131	11 024	13 540	14 576	14 985	15 100	15 200
Zinc	US$/t	2 113	1 771	1 186	1 174	1 473	1 530	1 825	1 870	1 910

a US hard red winter wheat, fob Gulf. **b** US no. 2 yellow corn, delivered US Gulf. **c** Prices previously reported by the Thailand Board of Trade are no longer available. From September 1998 the price quoted is the USDA sourced nominal quote for Thai white rice, 100 per cent, Grade B, fob, Bangkok. **d** US cif Rotterdam. **e** Cotlook 'A' index. **g** Average of monthly averages of New York no.11 spot price; basis: fob Caribbean ports. **h** US cif price. **i** Australian Wool Exchange eastern market indicator. **j** Average of traded prices (excluding subsidised sales). **k** World trade weighted average price compiled by the US Department of Energy. **l** Average of weekly restricted spot prices over the period, published by Ux Consulting. **m** Average LME spot price unless otherwise stated. **n** London gold fix, London Bullion Market Association. **o** London silver fix, London Bullion Market Association. Prior to March 2001, Handy and Harman, commercial bar price used. **p** preliminary. **s** ABARE estimate. **f** ABARE forecast.

Sources: Australian Bureau of Statistics; Australian Dairy Corporation; Meat and Livestock Australia; Australian Wool Exchange; Cotlook Ltd; Food and Agriculture Organisation; General Agreement on Tariffs and Trade; International Energy Agency; International Wheat Council; ISTA Mielke and Co.; Reuters Ltd; London Bullion Market Association; The London Metal Exchange Ltd; New York Board of Trade; Ux Consulting Co.; Platts Oilgram; US Department of Agriculture; US Department of Energy; World Bureau of Metal Statistics; ABARE.

18 Gross unit values or prices of farm products a

	unit	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10 f
Crops b							
Grains and oilseeds							
Winter crops							
barley	$/t	159	149	244	313	242	192
canola	$/t	326	334	397	543	410	335
field peas	$/t	235	272	284	548	402	394
lupins	$/t	206	195	266	335	273	270
oats	$/t	134	147	241	281	198	183
triticale	$/t	152	176	339	384	265	225
wheat	$/t	197	203	242	390	333	253
Summer crops							
maize	$/t	193	190	422	376	319	313
rice	$/t	297	283	346	414	495	520
sorghum	$/t	134	143	213	258	214	212
soybeans c	$/t	283	301	353	554	482	395
sunflower seed c	$/t	341	428	706	814	488	400
Industrial crops							
Cotton lint d	c/kg	167	179	176	191	193	195
Sugar cane (cut for crushing)	$/t	26	28	34	26	31	45
Wine grapes	$/t	715	615	643	787	527	516
Livestock for slaughter							
Beef e	c/kg	320	322	292	286	296	282
– yearling e	c/kg	359	366	329	324	330	314
– ox e	c/kg	331	332	318	308	315	299
– cow e	c/kg	289	288	255	253	269	251
Lamb eg	c/kg	360	347	326	335	424	410
Mutton e	c/kg	170	175	136	159	199	260
Pig e	c/kg	243	232	255	240	330	315
Poultry h	c/kg	525	498	490	534	549	544
Livestock products							
Wool i	c/kg	767	713	864	945	794	850
Milk j	c/L	31.5	33.1	33.2	49.6	42.4	34.0

a Average gross unit value across all grades in principal markets, unless otherwise indicated. Includes the cost of containers, commission and other expenses incurred in getting the commodities to their principal markets. These expenses are significant. **b** Average unit gross value relates to returns received from crops harvested in that year, regardless of when sales take place, unless otherwise indicated. **c** Price paid by crusher. **d** Australian base price for sales in the financial year indicated. **e** Average saleyard price (dressed weight). **g** Lamb saleyard weight indicator 18-22kg. **h** Retail price, fresh whole chickens. **i** Australian Wool Exchange eastern market indicator. **j** Weighted average farmgate price. **s** ABARE estimate. **f** ABARE forecast.
Note: Prices used in these calculation exclude GST.
Sources: Australian Bureau of Statistics; ABARE.

19 World production, consumption, stocks and trade for selected commodities a

	unit	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10 f
Farm							
Grains							
Wheat							
production	Mt	628	621	598	609	687	667
consumption	Mt	615	625	611	614	641	643
closing stocks	Mt	139	136	123	118	163	187
exports b	Mt	110	110	111	110	136	116
Coarse grains							
production	Mt	1 015	979	985	1 076	1 100	1 091
consumption	Mt	977	990	1 007	1 056	1 073	1 100
closing stocks	Mt	179	166	139	160	189	178
exports b	Mt	101	107	118	127	107	110
Rice							
production c	Mt	402	418	421	433	446	432
consumption c	Mt	407	413	418	426	435	435
closing stocks c	Mt	73	76	75	80	91	86
exports bd	Mt	29	32	28	28	30	30
Oilseeds and vegetable oils							
Oilseeds							
production	Mt	382	391	404	392	395	429
consumption	Mt	367	384	393	400	400	413
closing stocks	Mt	58	65	74	62	56	69
exports	Mt	74	76	83	93	94	94
Vegetable oils							
production	Mt	112	119	122	128	132	137
consumption	Mt	108	116	122	125	129	135
closing stocks	Mt	11	11	10	10	12	11
exports	Mt	43	47	49	52	55	56
Vegetable protein meals							
production	Mt	207	216	224	231	229	238
consumption	Mt	204	216	223	230	228	236
closing stocks	Mt	8	8	8	7	6	6
exports	Mt	61	66	68	71	69	71
Industrial crops							
Cotton							
production	Mt	26	25	27	26	23	22
consumption	Mt	24	25	27	27	24	24
closing stocks	Mt	13	14	14	14	14	11
exports	Mt	8	10	8	8	6	7
Sugar							
production	Mt	141	150	166	167	153	163
consumption	Mt	147	153	157	161	164	166
closing stocks	Mt	58	56	65	72	61	58
exports	Mt	48	48	49	48	50	53

Continued

19 World production, consumption, stocks and trade for selected commodities a

continued

	unit	2004-05	2005-06	2006-07	2007-08	2008-09 s	2009-10 f
Livestock products							
Meat deg							
production	Mt	238	240	243	249	250	251
consumption	Mt	231	236	238	246	248	250
closing stocks	Mt	2.3	2.3	3.9	4.4	4.6	5.0
exports b	Mt	20.7	20.8	21.9	23.9	22.3	20.8
Wool h							
production	kt	1 218	1 234	1 202	1 170	1 063	1 056
consumption di	kt	1 225	1 196	1 210	1 165	970	1 050
closing stocks j	kt	163	165	75	55	60	75
exports k	kt	578	567	590	515	482	460
Butter dg							
production	kt	6 779	7 021	7 428	7 780	8 224	8 250
consumption	kt	6 336	6 723	7 142	7 393	7 856	7 930
closing stocks	kt	347	283	178	186	217	200
exports	kt	797	760	811	709	686	710
Skim milk powder gl							
production d	kt	3 317	3 266	3 469	3 574	3 715	3 700
consumption d	kt	3 330	3 144	3 167	3 176	3 241	3 450
closing stocks d	kt	377	278	247	367	583	550
exports	kt	1 012	1 013	1 138	1 096	998	1 050
Energy d							
Crude oil							
Production							
world m	mbd	84.5	85.4	85.6	86.5	84.7	86.2
OPEC n	mbd	34.2	35.1	34.9	35.9	33.6	34.3
Consumption m	mbd	83.5	84.7	86.5	86.3	84.7	86.2
OECD o	days	51.0	53.0	51.0	na	na	na
Coal d							
Production							
hard coal q	Mt	4 812	5 087	5 306	5 715	5 900	6 050
brown coal	Mt	929	937	945	950	955	937
Exports							
metallurgical coal	Mt	206	210	227	238	214	230
thermal coal	Mt	610	673	696	704	712	735
Uranium (U_3O_8) d							
Production rs	kt	49.2	46.9	48.6	51.6	55.5	57.7
Consumption	kt	78.8	77.2	77.7	76.2	77.7	81.3
Metals d							
Bauxite production	kt	177 028	191 655	209 018	216 377	190 000	200 550
Alumina production	kt	66 692	72 790	79 619	78 905	72 916	76 964
Aluminium							
production	kt	32 017	33 975	38 108	39 256	36 569	38 493
consumption	kt	31 689	33 954	37 561	37 020	34 765	36 746
closing stocks t	kt	3 010	2 764	2 960	4 672	6 476	8 223

Continued

19 World production, consumption, stocks and trade for selected commodities a

continued

	unit	2004-05	2005-06	2006-07	2007-08	2008-09 s	2009-10 f
Iron and steel d							
Production							
iron ore u	Mt	1 315	1 498	1 664	1 725	1 725	1 829
pig iron	Mt	801	881	946	926	934	1 022
crude steel	Mt	1 146	1 250	1 344	1 330	1 230	1 351
Iron ore trade	Mt	715	762	823	882	900	958
Gold d							
Mine production	t	2 546	2 486	2 481	2 416	2 481	2 503
Supply	t	4 107	3 984	3 923	3 861	4 001	3 523
Fabrication consumption v	t	3 291	2 936	3 076	2 888	2 410	2 475
Base metals d							
Copper							
production w	kt	16 610	17 343	18 029	18 484	18 307	18 490
consumption	kt	16 639	16 974	18 109	18 102	18 141	18 286
closing stocks	kt	547	703	668	808	975	1 179
Lead							
production w	kt	7 623	7 924	8 117	8 671	8 931	9 556
consumption	kt	7 786	8 063	8 182	8 665	8 882	9 459
closing stocks	kt	287	270	265	306	740	766
Nickel							
production w	kt	1 293	1 352	1 430	1 396	1 223	1 317
consumption	kt	1 248	1 392	1 326	1 278	1 157	1 299
closing stocks	kt	112	87	125	155	221	239
Tin							
production w	kt	350	351	349	334	330	328
consumption	kt	345	363	359	338	304	326
closing stocks	kt	38	33	35	32	59	61
Zinc							
production w	kt	10 222	10 655	11 360	11 655	10 839	11 164
consumption	kt	10 611	11 016	11 307	11 438	10 637	11 222
closing stocks	kt	828	548	580	764	966	908
Mineral sands d							
Production							
ilmenite x	kt	10 999	11 774	11 997	11 330	11 975	12 838
titaniferous slag	kt	2 274	2 419	2 525	2 166	2 320	2 610
rutile concentrate	kt	418	528	605	609	566	681
zircon concentrate	kt	1 189	1 277	1 320	1 235	1 256	1 276

a Some figures are not based on precise or complete analyses. **b** Includes intra–EU trade. **c** Milled equivalent. **d** On a calendar year basis, e.g. 1991-92 = 1992. **e** Beef and veal, mutton, lamb, goat, pig and poultry meat. **g** Selected countries. **h** Clean equivalent. **i** Virgin wool at the spinning stage in 65 countries. **j** Held by marketing bodies and on-farm in five major exporting countries. **k** Five major exporting countries. **l** Nonfat dry milk. **m** Includes crude oil, marine bunkers, refinery fuel, nonconventional oil and natural gas liquids. 1 million litres a year equals about 17.2 barrels a day. **n** Includes OPEC natural gas liquids. **o** Industry stocks in OECD countries at the start of the financial year. **q** Includes anthracite and bituminous coal, and for the United States, Australia and New Zealand, sub-bituminous coal. **r** World production data has been revised to exclude reprocessed uranium. **t** LME and producer stocks. **u** China's iron ore production adjusted to world average. **v** Includes jewellery consumption. **w** Primary refined metal. **x** Excludes some small producers and large tonnages produced from ilmenite–magnetite ore in the Commonwealth of Independent States. **s** ABARE estimate. **f** ABARE forecast. **na** Not available.

Sources: Australian Bureau of Statistics; Meat and Livestock Australia; Commodities Research Unit; Commonwealth Secretariat; Consolidated Gold Fields; Department of Agriculture, Fisheries and Forestry Australia; Economic Commission for Europe; Fearnleys; Food and Agriculture Organisation; Gold Fields Mineral Services; International Atomic Energy Agency; International Energy Agency; International Iron and Steel Institute; International Lead–Zinc Study Group; International Nickel Study Group; International Sugar Organization; International Wheat Council; ISTA Mielke and Co.; Metallgesellschaft A.G.; Ministry of Agriculture, Forestry and Fisheries (Japan); New Zealand Dairy Board; New Zealand Wool Board; UNCTAD Trust Fund on Iron Ore; United Nations; Uruguayan Association of Wool Exporters; US Department of Agriculture; World Bureau of Metal Statistics; ABARE.

20 Commodity production

Australia

	unit	2004-05	2005-06	2006-07	2007-08	2008-09 s	2009-10 f
Crops							
Grains and oilseeds							
Winter crops							
barley	kt	7 740	9 482	4 257	7 159	7 669	8 292
canola	kt	1 542	1 419	573	1 214	1 861	1 770
chickpeas	kt	116	123	232	313	378	447
field peas	kt	289	478	140	268	252	357
lupins	kt	937	1 289	470	662	716	613
oats	kt	1 282	1 688	748	1 503	1 205	1 264
triticale	kt	611	676	199	450	503	568
wheat	kt	21 905	25 150	10 822	13 569	20 938	21 993
Summer crops							
cottonseed s	kt	912	844	388	188	466	528
maize	kt	420	380	240	387	368	282
rice	kt	339	1 003	163	18	63	165
sorghum	kt	2 011	1 929	1 283	3 790	2 671	1 594
soybeans	kt	54	55	32	35	102	80
sunflower seed	kt	62	98	18	73	80	52
other oilseeds a	kt	70	63	46	68	66	64
Total grains and oilseeds	kt	38 291	44 677	19 611	29 695	37 337	38 069
Industrial crops							
Cotton lint	kt	645	597	301	133	329	374
Sugar cane (cut for crushing)	kt	37 822	37 128	36 397	32 621	30 284	29 889
Sugar (tonnes actual)	kt	5 234	5 063	5 026	4 763	4 634	4 519
Wine grapes	kt	1 925	1 902	1 397	1 837	1 684	1 820
Livestock slaughterings							
Number slaughtered							
Cattle and calves	'000	8 853	8 401	9 081	8 799	8 702	8 650
Cattle exported live b	'000	574	549	638	713	856	848
Sheep	'000	11 443	11 830	13 271	11 929	11 282	10 500
Lambs	'000	17 331	18 666	20 158	20 899	20 767	21 000
Sheep exported live b	'000	3 233	4 248	4 138	4 069	4 064	3 700
Pigs	'000	5 342	5 370	5 322	5 217	4 522	4 700
Meat produced							
Beef and veal c	kt	2 162	2 077	2 226	2 155	2 148	2 119
Lamb c	kt	354	382	413	435	423	428
Mutton c	kt	237	244	271	258	235	217
Pig meat	kt	389	389	382	377	324	336
Poultry meat c	kt	792	817	855	835	866	879
Total	kt	3 934	3 909	4 147	4 061	3 997	3 979

Continued

20 Commodity production *continued*

Australia

	unit	2004-05	2005-06	2006-07	2007-08	2008-09 s	2009-10 f
Livestock products							
Wool d	kt	520	520	502	459	404	362
Milk e	ML	10 127	10 089	9 583	9 223	9 388	9 100
Butter g	kt	147	146	133	128	148	130
Cheese	kt	388	373	364	359	340	326
Casein	kt	13	12	8	10	10	9
Skim milk powder h	kt	189	205	191	164	212	191
Whole milk powder	kt	189	158	135	142	148	147
Buttermilk powder	kt	17	16	14	13	15	13
Forestry							
Logs	'000 m^3	26 998	26 734	27 182	28 461	26 480	27 626
Fisheries i							
Tuna j	kt	11.3	12.7	13.1	14.7	13.0	10.2
Salmonids k	kt	17.1	21.0	25.6	25.5	30.0	32.5
Other fish l	kt	155.4	128.4	118.8	120.0	122.4	120.4
Prawns	kt	23.7	23.6	20.8	22.4	23.2	22.2
Rock lobster	kt	17.9	16.2	13.5	13.8	11.8	10.0
Abalone	kt	6.0	5.5	5.5	5.3	5.5	5.5
Scallops	kt	15.5	9.0	10.6	10.3	8.2	10.8
Oysters	kt	11.8	12.1	14.4	12.5	13.6	13.9
Other molluscs	kt	10.3	8.6	9.4	6.8	9.1	9.2
Other crustaceans	kt	7.9	6.7	7.0	6.6	7.2	7.1
Energy							
Coal							
black, salable	Mt	305.0	307.0	325.2	326.8	333.6	369.4
black, raw	Mt	393.4	398.9	414.4	421.2	438.0	486.1
brown	Mt	67.2	67.7	65.6	66.0	65.0	64.0
Petroleum							
crude oil and condensate	ML	27 311	24 316	28 809	25 789	27 788	27 157
petroleum products m	ML	44 555	40 679	43 652	44 086	44 111	43 258
natural gas n	Gm^3	37.3	38.9	40.8	41.7	44.1	48.5
LPG (naturally occurring)	ML	4 628	4 722	4 550	3 971	3 930	3 994
Uranium (U_3O_8)	t	10 964	9 974	9 594	10 114	10 311	9 055
Metalliferous minerals and metals o							
Aluminium							
bauxite	Mt	57.6	60.9	62.7	63.5	64.0	65.8
alumina	kt	17 161	17 826	18 506	19 359	19 597	20 098
aluminium (ingot metal)	kt	1 890	1 912	1 954	1 964	1 974	1 943
Copper							
mine production q	kt	895	936	859	863	890	875
refined, primary	kt	486	461	435	444	499	408
Gold							
mine production q	t	265.2	249.4	250.8	229.7	217.9	246.4

Continued

20 Commodity production *continued*

Australia

	unit	2004-05	2005-06	2006-07	2007-08	2008-09 s	2009-10 f
Metalliferous minerals and metals (continued)							
Iron and steel							
ore and concentrate r	Mt	251.9	263.9	287.7	324.7	353.0	424.7
iron and steel	Mt	7.4	7.9	8.0	8.2	5.6	7.2
Lead							
mine production q	kt	682	762	642	641	596	644
refined s	kt	234	234	191	203	213	212
bullion	kt	153	141	114	152	155	148
Manganese							
ore, metallurgical grade	kt	3 563	4 082	5 046	5 412	3 730	5 293
metal content of ore	kt	1 710	1 959	2 422	2 598	1 791	2 765
Nickel							
mine production q	kt	192	186	191	190	185	157
refined, class I u	kt	117	105	104	105	95	111
refined, class II v	kt	10	10	15	15	15	11
total ore processed w	kt	229	224	225	222	218	186
Silver							
mine production q	t	2 303	2 218	1 674	1 867	1 775	1 726
refined	t	722	655	618	605	751	776
Tin							
mine production q	t	2 055	1 805	2 061	1 631	3 879	5 679
refined	t	445	736	321	na	na	na
Titanium							
ilmenite concentrate	kt	1 993	2 185	2 383	2 205	2 070	2 033
leucoxene concentrate	kt	68	87	169	156	164	183
rutile concentrate	kt	173	184	279	333	308	285
synthetic rutile t	kt	751	711	729	672	716	582
titanium dioxide pigment t	kt	204	208	207	201	221	266
Zinc							
mine production q	kt	1 352	1 380	1 375	1 571	1 411	1 381
refined	kt	464	446	496	507	506	505
Zircon concentrate	kt	432	442	557	580	534	478
Other minerals							
Diamonds	'000 ct	32 471	25 354	24 632	16 528	15 430	11 774
Salt	kt	12 254	11 467	10 857	11 243	11 202	11 413

a Linseed and safflowerseed. **b** Excludes animals exported for breeding purposes. **c** In carcass weight and includes carcass equivalent of canned meats. **d** Greasy equivalent of shorn wool (includes crutching), dead and fellmongered wool and wool exported on skins. **e** Includes the wholemilk equivalent of farm cream intake. **g** Includes the butter equivalent of butteroil, butter concentrate, ghee and dry butterfat. **h** Includes mixed skim and buttermilk powder. **i** Liveweight. **j** Tuna captured under joint venture or bilateral agreements or transhipped at sea is included. **k** Includes salmon and trout production. **l** Includes an estimated value of aquaculture but excludes inland commercial fisheries. **m** Includes production from petrochemical plants. **n** Includes ethane, methane and noncommercial natural gas. **o** Uranium is included with energy. **q** Primary production, metal content. **r** Excludes iron oxide not intended for metal extraction. **t** Includes lead content of lead alloys from primary sources. **v** Products with a nickel content of 99 per cent or more. Includes electrolytic nickel, pellets, briquettes and powder. **w** Products with a nickel content of less than 99 per cent. Includes ferronickel, nickel oxides and oxide sinter. **v** Includes imported ore for further processing. **s** ABARE estimate. **f** ABARE forecast.

Sources: Australian Bureau of Statistics; Australian Dairy Corporation; Consolidated Gold Fields; Coal Services Pty Limited; Department of Resources, Energy and Tourism; International Nickel Study Group; Queensland Government, Department of Natural Resources and Mines; Raw Cotton Marketing Advisory Committee; ABARE.

21 Gross value of farm and fisheries production

Australia

	2004-05 $m	2005-06 $m	2006-07 $m	2007-08 $m	2008-09 s $m	2009-10 f $m
Crops						
Grains and oilseeds						
Winter crops						
barley	1 233	1 417	1 039	2 244	1 855	1 594
canola	503	473	227	659	762	593
chickpeas	36	57	153	195	166	196
field peas	68	130	40	147	101	141
lupins	193	251	125	222	195	166
oats	172	249	181	423	238	231
triticale	93	119	68	173	133	128
wheat	4 317	5 099	2 619	5 292	6 970	5 565
Summer crops						
maize	81	72	101	145	117	88
rice	101	284	56	7	31	86
sorghum	270	276	274	977	572	338
soybeans	15	17	11	19	49	31
sunflower seed	21	42	13	59	39	21
other oilseeds a	36	30	25	50	52	42
Total grains and oilseeds	7 364	8 825	5 145	10 897	11 545	9 492
Industrial crops						
Cotton lint and cotton seed b	1 222	995	542	253	685	794
Sugar cane (cut for crushing)	980	1 032	1 221	861	942	1 339
Wine grapes	1 377	1 172	898	1 446	887	940
Total industrial crops	3 578	3 199	2 661	2 559	2 514	3 073
Horticulture						
Table and dried grapes	220	207	240	202	233	224
Fruit and nuts (excl grapes)	2 547	2 627	3 499	2 758	2 684	2 927
Vegetables	2 315	2 833	3 103	3 363	3 430	3 493
Other horticulture	1 372	1 675	1 730	1 683	1 812	1 945
Total horticulture	6 454	7 342	8 572	8 005	8 158	8 589
Other crops nei c	1 321	1 536	1 683	2 858	2 795	2 644
Total crops	18 717	20 901	18 060	24 320	25 012	23 798

Continued

21 Gross value of farm and fisheries production *continued*

Australia

	2004-05 $m	2005-06 $m	2006-07 $m	2007-08 $m	2008-09 s $m	2009-10 f $m
Livestock slaughterings						
Cattle and calves d	7 455	7 327	7 550	6 902	7 110	6 849
Cattle exported live e	374	358	437	451	559	555
Sheep g	418	444	380	414	477	575
Lambs gh	1 327	1 378	1 387	1 466	1 829	1 790
Sheep exported live	207	291	289	286	339	313
Pigs	906	890	944	902	1 160	1 050
Poultry	1 304	1 223	1 294	1 637	1 730	1 755
Total livestock slaughterings k	12 033	11 960	12 335	12 109	13 255	12 938
Livestock products						
Wool i	2 166	2 054	2 282	2 309	2 015	1 934
Milk j	3 194	3 341	3 178	4 572	3 981	3 094
Eggs	328	376	388	468	463	450
Honey and beeswax	100	65	70	64	86	90
Total livestock products	5 788	5 836	5 917	7 412	6 545	5 568
Total farm	36 537	38 696	36 312	43 840	44 812	42 304
Forestry products						
Logs	1 653	1 673	1 713	1 872	1 747	1 861
Fisheries products l						
Tuna m	172	175	161	210	168	160
Salmonids n	147	231	291	299	324	358
Other fin fish o	412	367	397	416	393	402
Prawns	307	305	267	268	281	267
Rock lobster	415	477	443	407	412	363
Abalone	233	225	217	189	183	160
Scallops	47	23	29	33	29	33
Oysters	74	75	91	89	99	103
Pearls	122	122	124	114	91	84
Other molluscs q	67	66	69	60	67	67
Other crustaceans	66	60	75	70	66	68
Total fish r	2 086	2 166	2 211	2 187	2 080	2 004

a Linseed, safflowerseed and peanuts. **b** Value delivered to gin. **c** Mainly fodder crops. **d** Includes dairy cattle slaughtered. **e** Excludes animals exported for breeding purposes. **g** Excludes skin values. **h** Lamb saleyard indicator weight 18-22kg. **i** Shorn, dead and fellmongered wool and wool exported on skins. **j** Milk intake by factories and valued at farmgate. **k** Total livestock slaughterings includes livestock disposals. **l** Value to fishermen of product landed in Australia. **m** Tuna captured under joint venture or bilateral agreements or transhipped at sea is included. **n** Includes salmon and trout production. **o** Includes an estimated value of aquaculture. **q** Includes Northern Territory aquaculture production. **r** Also includes fish and aquaculture values not elsewhere included. **s** ABARE estimate. **f** ABARE forecast.

Note: The gross value of production is the value placed on recorded production at the wholesale prices realised in the market place. The point of measurement can vary between commodities. Generally the market place is the metropolitan market in each state and territory. However, where commodities are consumed locally or where they become raw material for a secondary industry, these points are presumed to be the market place.

Note: Prices used in these calculations exclude GST.

Sources: Australian Bureau of Statistics; ABARE.

22 Crop areas and livestock numbers

Australia

	unit	2004-05	2005-06	2006-07	2007-08	2008-09 s	2009-10 f
Crop areas							
Grains and oilseeds							
Winter crops							
barley	'000 ha	4 646	4 406	4 182	4 902	4 790	4 479
canola	'000 ha	1 377	971	1 052	1 277	1 670	1 265
chickpeas	'000 ha	113	105	244	306	313	373
field peas	'000 ha	413	280	384	293	279	285
lupins	'000 ha	845	809	736	752	578	483
oats	'000 ha	894	931	1 003	1 238	856	919
triticale	'000 ha	389	347	369	360	355	350
wheat	'000 ha	13 399	12 443	11 798	12 578	13 151	13 788
Summer crops							
maize	'000 ha	72	76	49	68	70	59
rice	'000 ha	51	102	20	2	8	19
sorghum	'000 ha	755	766	613	942	754	637
soybeans	'000 ha	26	24	14	15	45	41
sunflower seed	'000 ha	46	79	17	48	43	38
other oilseeds a	'000 ha	55	54	43	49	43	42
Total grains and oilseeds	'000 ha	23 809	22 111	21 054	23 237	23 417	23 298
Industrial crops							
Cotton	'000 ha	321	336	144	63	164	203
Sugar cane b	'000 ha	434	398	409	381	367	365
Winegrapes	'000 ha	153	158	163	166	157 e	171
Livestock numbers c							
Cattle							
beef	million	24.41	25.32	25.61	24.78	24.46	24.85
dairy	million	2.86	2.79	2.66	2.54	2.55	2.45
milking herd d	million	1.94	1.88	1.80	1.64	1.65	1.60
total	million	27.27	28.11	28.27	27.32	27.01	27.30
Sheep	million	100.6	91.0	85.7	76.9	71.6	68.1
Pigs	million	2.71	2.73	2.61	2.41	2.45	2.50

a Linseed and safflowerseed. **b** Cut for crushing. **c** At 30 June. **d** Cows in milk and dry. **e** This figure is for grapes only. Prior to 2008-09 this figure includes grapes used for winemaking and other purposes such as drying and table. **s** ABARE estimate. **f** ABARE forecast.

23 Average farm yields

Australia

	unit	2004-05	2005-06	2006-07	2007-08	2008-09 s	2009-10 f
Crops							
Grains and oilseeds							
Winter crops							
barley	t/ha	1.67	2.15	1.02	1.46	1.60	1.85
canola	t/ha	1.12	1.46	0.54	0.95	1.11	1.40
chickpeas	t/ha	1.02	1.17	0.95	1.02	1.21	1.20
field peas	t/ha	0.70	1.71	0.36	0.91	0.90	1.25
lupins	t/ha	1.11	1.59	0.64	0.88	1.24	1.27
oats	t/ha	1.43	1.81	0.75	1.21	1.41	1.38
triticale	t/ha	1.57	1.95	0.54	1.25	1.42	1.62
wheat	t/ha	1.63	2.02	0.92	1.08	1.59	1.60
Summer crops							
maize	t/ha	5.83	5.03	4.90	5.69	5.25	4.78
rice	t/ha	6.60	9.83	8.15	8.15	7.75	8.87
sorghum	t/ha	2.66	2.52	2.09	4.02	3.54	2.50
soybeans	t/ha	2.07	2.33	2.35	2.34	2.27	1.95
sunflower seed	t/ha	1.35	1.24	1.06	1.51	1.85	1.37
Industrial crops							
Cotton (lint)	t/ha	2.01	1.78	2.10	2.12	2.01	1.84
Sugar cane (for crushing)	t/ha	87	93	89	86	83	82
Winegrapes	t/ha	12.6	12.0	8.6	11.1	10.7	10.6
Livestock							
Wool a	kg/sheep	4.42	4.42	4.09	4.30	4.27	4.26
Whole milk	L/cow	5 215	5 367	5 336	5 624	5 707	5 688

a Shorn (including lambs). **s** ABARE estimate. **f** ABARE forecast.
Sources: Australian Bureau of Statistics; ABARE.

24 Volume of commodity exports

Australia

	unit	2004-05	2005-06	2006-07	2007-08	2008-09 s	2009-10 f
Farm							
Grains and oilseeds							
Winter crops							
barley a	kt	6 500	5 316	3 136	4 051	3 900	4 302
canola	kt	1 019	884	238	519	973	955
chickpeas	kt	151	211	244	218	468	520
lupins	kt	419	469	174	76	133	125
oats (unprepared)	kt	165	190	62	115	196	206
peas b	kt	116	156	248	142	118	168
wheat c	kt	15 780	15 168	11 196	7 408	13 410	14 640
Summer crops							
cottonseed	kt	214	204	104	18	37	152
rice	kt	271	258	491	78	32	81
sorghum	kt	513	173	46	251	1 368	1 046
other oilseeds d	kt	28	18	13	11	10	33
Total grains and oilseeds	kt	25 176	23 049	15 950	12 886	20 646	22 227
Industrial crops							
Raw cotton e	kt	410	650	487	266	260	322
Sugar	kt	4 153	3 883	3 719	3 493	3 244	3 249
Wine	ML	661	736	798	709	750	760
Meat and live animals for slaughter							
Beef and veal gh	kt	948	892	974	930	968	950
Live cattle i	'000	574	549	638	713	856	848
Lamb g	kt	123	143	150	163	156	164
Live sheep i	'000	3 233	4 248	4 138	4 069	4 064	3 700
Mutton g	kt	137	145	162	158	146	131
Pig meat g	kt	43	44	41	39	32	35
Poultry meat g	kt	20	22	28	30	37	37
Wool							
Greasy js	kt	372	377	402	343	314	283
Semi-processed	kt (gr.eq.)	115	92	82	67	62	58
Skins	kt (gr.eq.)	61	75	83	67	63	59
Total js	kt (gr.eq.)	548	544	567	477	439	400
Dairy products							
Butter k	kt	69	83	81	57	70	57
Cheese	kt	228	202	213	203	146	136
Casein	kt	13	8	12	9	8	7
Skim milk powder	kt	141	181	164	123	162	142
Whole milk powder	kt	105	110	94	82	116	111

Continued

24 Volume of commodity exports *continued*

Australia

	unit	2004-05	2005-06	2006-07	2007-08	2008-09 s	2009-10 f
Forest products							
Woodchips	kt	5 598	5 363	5 952	6 166	5 255	5 506
Fisheries products							
Tuna l	kt	10.9	11.7	11.6	12.6	11.5	9.3
Other fish	kt	15.0	11.6	11.4	9.8	14.2	10.8
Prawns m							
headless	kt	0.4	0.1	0.1	0.4	0.5	0.5
whole	kt	9.6	8.4	6.0	3.9	4.0	4.2
Rock lobster							
tails	kt	1.8	1.6	1.5	1.0	0.8	0.6
whole	kt	10.2	9.9	8.3	8.1	8.4	6.6
Abalone							
fresh, chilled or frozen	kt	2.0	2.1	2.2	2.1	2.1	2.1
prepared or preserved	kt	2.0	1.5	1.7	1.4	1.2	1.2
Scallops n	kt	1.2	1.5	1.4	1.1	1.1	1.2
Mineral resources							
Energy							
Crude oil o	ML	15 731	13 026	15 965	15 975	16 588	16 192
LPG	ML	2 844	2 800	2 824	2 589	2 500	2 725
LNG qs	Mt	10.589	12.029	14.332	13.678	15.410	17.382
Bunker fuel r	ML	2 207	2 163	2 156	2 169	2 217	2 196
Petroleum products	ML	1 846	2 082	1 752	1 807	1 162	1 382
Metallurgical coal	Mt	124.9	120.5	132.0	136.9	125.2	151.0
Thermal coal	Mt	106.4	110.8	111.6	115.1	136.4	140.6
Uranium (U_3O_8)	t	11 249	10 253	9 519	10 139	10 114	9 055

Continued

24 Volume of commodity exports *continued*

Australia

	unit	2004-05	2005-06	2006-07	2007-08	2008-09 s	2009-10 f
Mineral resources (continued)							
Metalliferous minerals and metals t							
Aluminium							
alumina	kt	14 073	14 499	15 056	15 739	16 395	16 291
aluminium (ingot metal)	kt	1 512	1 617	1 638	1 650	1 748	1 624
Copper							
ore and concentrate u	kt	1 326	1 635	1 493	1 694	1 801	1 820
refined	kt	322	314	290	296	361	261
Gold v	t	309	315	400	382	437	412
Iron and steel							
iron ore and pellets	Mt	228.5	239.4	257.4	294.3	323.5	388.8
iron and steel w	kt	2 338	2 428	2 648	2 131	1 741	1 917
Lead							
ores and concentrates	kt	417	502	422	308	382	386
refined	kt	243	244	215	193	261	213
bullion	kt	164	140	112	169	147	148
Manganese u	kt	3 128	3 215	4 667	5 105	3 227	4 809
Nickel vs	kt	214	207	207	211	189	161
Titanium							
ilmenite concentrate x	kt	633	722	999	894	1 538	2 079
leucoxene concentrate	kt	93	86	123	56	20	19
rutile concentrate	kt	158	169	307	399	550	588
synthetic rutile s	kt	517	472	508	513	512	496
titanium dioxide pigment	kt	175	177	171	175	141	192
Refined silver	t	517	482	431	335	423	476
Tin v	t	1 529	1 556	1 867	3 079	4 159	5 937
Zinc							
ores and concentrates u	kt	1 953	1 821	1 948	2 323	2 101	1 875
refined	kt	397	388	374	411	451	426
Zircon concentrate y	kt	428	438	555	637	685	689
Other minerals							
Diamonds	'000 ct	32 471	25 354	24 632	16 528	16 279	11 774
Salt	kt	12 128	10 776	10 749	10 686	10 978	11 185

a Includes the grain equivalent of malt. **b** Includes field peas and cowpeas. **c** Includes the wheat equivalent of flour. **d** Includes soybeans, linseed, sunflowerseed, safflowerseed and peanuts. Excludes meals and oils. **e** Excludes cotton waste and linters. **g** In shipped weight. Fresh, chilled or frozen. **h** Includes meat loaf. **i** Excludes breeding stock. **j** ABS recorded trade data adjusted for changes in stock levels held overseas by Wool International. **k** Includes ghee, dry butterfat, butter concentrate and butteroil, dairy spreads, all expressed as butter. **l** Exports of tuna landed in Australia. Tuna captured under joint venture or bilateral agreements or transhipped at sea is not included. **m** Excludes volume of other prawn products. **n** Includes crumbed scallops. **o** Includes condensate and other refinery feedstock. **q** 1 million tonnes of LNG equals about 1.31 billion cubic metres of gas. **r** International ships and aircraft stores. **t** Uranium is included with energy. **u** Quantities refer to gross weight of all ores and concentrates. **v** Quantities refer to total metallic content of all ores, concentrates, intermediate products and refined metal. **w** Includes all steel items in ABS, *Australian Harmonized Export Commodity Classification* , ch. 72, 'Iron and steel', excluding ferrous waste and scrap and ferroalloys. **x** Excludes leucoxene and synthetic rutile. **y** Data from 1991-92 refer to standard grade zircon only. **s** ABARE estimate. **f** ABARE forecast.

Sources: ABS, *International Trade, Australia,* cat. no. 5465.0, Canberra; Australian Mining Industry Council; Department of Foreign Affairs and Trade; Department of Agriculture, Fisheries and Forestry; Department of Resources, Energy and Tourism; International Nickel Study Group; ABARE.

25 Value of commodity exports (fob)

Australia

	2004-05 $m	2005-06 $m	2006-07 $m	2007-08 $m	2008-09 s $m	2009-10 f $m
Farm						
Grains and oilseeds						
Winter crops						
barley a	1 275	1 108	833	1 496	1 321	1 302
canola	397	331	108	303	595	441
chickpeas	65	106	168	139	276	324
lupins	89	99	38	31	49	45
oats	36	47	20	37	64	57
peas b	33	43	80	61	63	72
wheat c	3 488	3 296	2 765	2 990	5 028	4 271
Summer crops						
cottonseed	55	53	31	8	19	85
rice	173	171	347	71	31	77
sorghum	96	33	13	76	405	325
other oilseeds d	33	21	22	27	27	55
Total grains and oilseeds	5 739	5 308	4 426	5 240	7 878	7 055
Industrial crops						
Raw cotton e	771	1 137	823	466	500	661
Sugar	1 098	1 454	1 510	1 006	1 335	1 603
Wine	2 748	2 799	2 990	2 683	2 428	2 450
Total	4 617	5 391	5 323	4 155	4 264	4 714
Other crops	3 322	3 298	3 337	3 632	4 730	4 274
Total crops	13 679	13 996	13 086	13 027	16 872	16 042
Meat and live animals for slaughter						
Beef and veal	4 584	4 272	4 634	4 190	4 857	4 470
Live cattle g	374	358	437	451	559	555
Lamb	673	767	748	803	925	923
Live sheep g	207	291	289	286	339	313
Mutton	398	432	458	443	482	437
Pig meat	150	143	142	128	124	128
Poultry meat	20	21	26	32	43	43
Total	6 405	6 284	6 734	6 333	7 329	6 870
Wool						
Greasy h	1 993	1 863	2 316	2 115	1 729	1 666
Semi-processed	505	389	393	362	281	274
Skins	339	287	356	319	312	309
Total h	2 837	2 539	3 065	2 796	2 322	2 250
Dairy products						
Butter	188	225	179	195	232	165
Cheese	877	837	824	968	796	640
Casein	116	89	113	125	107	85
Skim milk powder	420	529	505	533	553	431
Whole milk powder	324	334	275	392	475	402
Other dairy products	559	556	542	550	515	431
Total	2 485	2 569	2 438	2 763	2 679	2 154
Other livestock exports	2 496	2 436	2 577	2 611	2 836	2 665
Total livestock exports	14 222	13 828	14 815	14 503	15 166	13 939
Total farm exports	27 901	27 824	27 900	27 530	32 038	29 982

Continued

25 Value of commodity exports (fob) *continued*

Australia

	2004-05 $m	2005-06 $m	2006-07 $m	2007-08 $m	2008-09 s $m	2009-10 f $m
Forest products						
Woodchips	858	839	950	1 072	997	1 006
Pulp and paper products	854	872	949	1 005	964	948
Other e	406	429	455	394	382	396
Total	2 119	2 140	2 355	2 471	2 343	2 350
Fisheries products						
Tuna i	166	179	162	206	177	154
Other fish	139	115	118	119	157	116
Prawns j						
headless	7	3	2	6	8	7
whole	153	129	89	56	71	65
Rock lobster						
tails	101	97	102	63	53	39
whole	330	387	357	333	405	332
Abalone						
fresh, chilled or frozen	124	132	139	124	119	113
prepared or preserved	139	114	107	93	89	73
Scallops k	33	39	35	28	33	33
Pearls	291	290	314	264	366	270
Other fisheries products	61	62	69	49	52	59
Total	1 542	1 547	1 494	1 342	1 529	1 261
Total rural exports l						
Derived as sum of above	31 561	31 511	31 749	31 343	35 910	33 593
On balance of payments basis m	30 308	30 431	30 400	29 971	33 912	31 765
Mineral resources						
Energy						
Crude oil n	6 330	6 638	8 317	10 484	8 755	9 059
LPG	804	1 002	1 038	1 182	1 044	1 089
LNG	3 199	4 416	5 222	5 854	10 086	7 008
Bunker fuel o	951	1 322	1 295	1 457	1 537	1 347
Other petroleum products	844	1 195	1 098	1 323	787	1 114
Metallurgical coal	10 758	17 003	15 039	16 038	36 770	22 338
Thermal coal	6 336	7 206	6 758	8 365	17 901	10 824
Uranium (U_3O_8)	475	546	660	887	990	919
Total						
derived as sum of above	29 696	39 328	39 427	45 591	77 868	53 698
on balance of payments basis (excl. bunker fuel)	28 394	37 572	37 569	43 488	75 627	51 592
Metalliferous minerals and metals						
Aluminium						
bauxite s	118	90	108	206	192	162
alumina	4 383	5 262	6 243	5 809	6 015	4 564
aluminium (ingot metal)	3 726	4 788	5 650	4 967	4 724	3 472
Copper p						
ore and concentrate	1 750	3 492	3 914	4 151	3 594	4 039
refined	1 332	2 161	2 612	2 579	2 241	2 118

Continued

25 Value of commodity exports (fob) *continued*

Australia

	2004-05 $m	2005-06 $m	2006-07 $m	2007-08 $m	2008-09 s $m	2009-10 f $m
Mineral resources (continued)						
Metalliferous minerals and metals (continued)						
Gold p	5 523	7 089	10 320	10 903	16 146	15 930
Iron and steel						
iron ore and pellets	8 120	12 854	15 512	20 511	34 234	29 097
iron and steel	2 031	1 674	1 743	1 562	1 363	1 177
Lead p						
ores and concentrates	490	711	855	757	617	793
refined	305	350	457	674	560	582
bullion	246	235	268	595	432	553
Manganese						
ore s	473	424	482	1 532	1 406	978
Titanium						
ilmenite concentrate q	63	76	113	104	171	232
leucoxene concentrate	25	25	35	15	12	12
rutile concentrate	114	138	259	277	335	322
synthetic rutile s	306	321	361	305	258	216
titanium dioxide pigment	422	441	408	375	396	475
Nickel s	3 749	3 642	8 469	5 655	2 656	2 784
Refined silver	161	197	221	187	245	334
Tin p	8	12	25	42	70	115
Zinc p						
ores and concentrates	852	1 542	2 590	2 031	934	991
refined	614	998	1 707	1 319	923	937
Zircon concentrate r	319	398	478	421	540	327
Total	35 132	46 920	62 830	64 979	78 065	70 210
Other minerals						
Diamonds s	683	836	726	625	676	380
Salt	226	229	239	232	237	247
Other	3 775	5 303	4 754	6 207	4 680	4 428
Total mineral resources exports	69 511	92 616	107 976	117 635	161 526	128 964
Total commodity exports						
Derived as sum of above	101 072	124 127	139 725	148 978	197 435	162 557
On balance of payments t	98 869	121 725	137 080	146 148	193 901	159 381

a Includes the grain equivalent of malt. **b** Field peas and cowpeas. **c** Includes the wheat equivalent of flour. **d** Includes soybeans, linseed, sunflowerseed, safflowerseed and peanuts. Excludes meals and oils. **e** Excludes cotton waste and linters. **g** Excludes breeding stock. **h** On a balance of payments basis. ABS recorded trade data adjusted for changes in stock levels held overseas by Wool International. **i** Exports of tuna landed in Australia. Tuna captured under joint venture or bilateral agreements or transhipped at sea is not included. **j** Other prawn products included in other fisheries products. **k** Includes crumbed scallops. **l** Sum of farm, forest and fisheries products. **m** The value of exports derived as the sum of published detailed items differs from the balance of payments aggregates shown in table 6 for two main reasons: the ABS makes special adjustments to some recorded trade data for balance of payments purposes; and ABARE derives its own estimates, (using non-ABS sources), for several items as footnoted. For more detail on a balance of payments basis, see table 7. **n** Includes condensate and other refinery feedstock. **o** International ships and aircraft stores. **p** Value of metals contained in host mine and smelter products are not available separately and are included in the value of the mineral product or metal in which they are exported. **q** Excludes leucoxene and synthetic rutile; data from 1991-92 refer to bulk ilmenite only. **r** Data refers to standard grade zircon only. **t** As derived in table 6. **s** ABARE estimate. **f** ABARE forecast.

Sources: ABS, *International Trade, Australia,* cat. no. 5465.0, Canberra; Department of Resources, Energy and Tourism; ABARE.

26 Value of imports and exports of selected commodities

Australia

	2004-05	2005-06	2006-07	2007-08	2008-09
	$m	$m	$m	$m	$m
Vegetable oilseeds and products a					
Imports	504	532	771	756	911
Exports	552	472	240	490	837
Dairy products					
Imports					
cheese	248	292	302	377	365
other dairy products	137	140	178	280	265
total	384	432	480	656	631
Horticulture					
Imports					
fruit	704	741	846	928	991
vegetables	512	528	621	731	842
Exports					
fruit	791	829	774	760	898
vegetables	340	365	410	384	397
Edible fisheries products					
Imports					
shellfish b	412	426	483	417	458
fin fish	547	602	701	715	825
total	959	1 028	1 184	1 132	1 283
Exports					
shellfish b	932	943	878	741	811
fin fish c	304	295	280	325	334
total	1 236	1 237	1 158	1 065	1 145
Forest products					
Imports					
sawnwood	492	419	418	492	405
wood based panels	216	228	276	284	271
pulp and paper products	2 807	2 839	3 007	3 049	3 130
other d	589	530	569	586	653
total	4 104	4 017	4 271	4 412	4 459
Mineral resources					
Imports					
aluminium (ingot metal)	17	20	11	10	10
diamonds	347	403	397	444	417
ferroalloys	137	123	116	154	181
gold (refined and unrefined)	2 462	4 800	5 309	7 311	11 250
ingot steel	2 041	2 075	2 479	2 225	3 192
iron ore	145	222	338	311	269
phosphate rock	49	42	32	80	193
silver	30	33	98	80	223
Energy resources					
Imports					
crude oil e	9 996	12 822	13 360	17 149	14 721
natural gas	0	152	800	724	2 166
petroleum products g	5 121	8 608	7 784	12 730	13 133

a Includes peanuts, oilseeds, vegetable oils and vegetable protein meals. b Includes all crustaceans and molluscs including canned. c Excludes tuna transhipped at sea or captured under joint venture or bilateral agreements. d Includes roundwood, other processed wood and minor forest products. e Includes condensate and other refinery feedstock. g Includes LPG. s ABARE estimate.

Sources: ABS, *International Trade, Australia,* cat. no. 5465.0, Canberra; Department of Agriculture, Fisheries and Forestry; ABARE.

ABARE Contacts

Deputy Secretary – Department of Agriculture, Fisheries and Forestry, and Executive Director – ABARE	Phillip Glyde	pglyde@abare.gov.au	6272 2100
Deputy Executive Director	Terry Sheales	tsheales@abare.gov.au	6272 2054
Chief Commodity Analyst/ Chief Economist	Jammie Penm	jpenm@abare.gov.au	6272 2030
Agriculture			
General Manager	Bruce Bowen	bbowen@abare.gov.au	6272 2219
Agricultural Commodity Analysis	John Hogan	jhogan@abare.gov.au	6272 2056
Agricultural Economic Analysis	Ben Buetre	bbuetre@abare.gov.au	6272 2404
Survey Analysis	Milly Lubulwa	mlubulwa@abare.gov.au	6272 2069
Resources, Energy and Trade			
General Manager	Jane Mélanie	jmelanie@abare.gov.au	6272 2349
Energy	Trish Gleeson	tgleeson@abare.gov.au	6272 2124
Resources	Alan Copeland	acopeland@abare.gov.au	6272 2270
Agricultural Trade	Yeon Kim	ykim@abare.gov.au	6272 2136
Productivity, Water and Fisheries			
General Manager	Peter Gooday	pgooday@abare.gov.au	6272 2138
Productivity	Shiji Zhao	szhao@abare.gov.au	6272 2027
Water	Tim Goesch	tgoesch@abare.gov.au	6272 2009
Fisheries	Robert Curtotti	rcurtotti@abare.gov.au	6272 2014
Climate Change and Environment			
General Manager	Helal Ahammad	hahammad@abare.gov.au	6272 2366
Climate Change	Edwina Heyhoe	eheyhoe@abare.gov.au	6272 2109
Forests and Land Use	Sinniah Mahendrarajah	smahendrarajah@abare.gov.au	6272 2304
Integrated Research ABARE/BRS			
General Manager (acting)	Annette Blyton	ablyton@abare.gov.au	6272 2222
Survey Collection (acting)	Neil Bingham	nbingham@abare.gov.au	6272 2208
Data Management	Geoff Armitage	garmitage@abare.gov.au	6272 2367
Communications	Debra Mewett	dmewett@abare.gov.au	6272 2290
Media, Marketing and Events	Maree Finnegan	mfinnegan@abare.gov.au	6272 2260
Publication enquiries	Denise Flamia	dflamia@abare.gov.au	6272 2211

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