Australian commodities

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Economic overview 4
Outlook for Australia's commodity sector 12

Crops 26
Wheat 26
Coarse grains 31
Oilseeds 37
Sugar 43
Cotton 50

Livestock 57
Beef and veal 57
Sheep meat 65
Wool 70
Dairy 75

Woodchips 81

Energy and minerals overview 85
Oil and gas 91
Thermal coal 98

Metals 104
Steel and steel-making raw materials 104
Gold 113
Aluminium and alumina 119
Nickel 125
Copper 132
Zinc 137

Statistical tables 143

ABARES contacts 182

Abbreviations

a ABARES macro assumption s ABARES estimate f ABARES forecast z ABARES projection

Economic overview

Neil Thompson, Patrick Hamshere and Jammie Penm

- After strong growth of 5 per cent in 2010, world economic growth is assumed to moderate to 4.1 per cent in 2011 before improving to 4.4 per cent in 2012.
- Emerging economies, particularly China and India, are expected to remain the main driver of world economic growth. In contrast, the prospects for major OECD economies remain subdued as a result of weak private sector demand and concerns over public sector debt.
- In Australia, rebuilding from the effect of adverse weather events in early 2011 is expected to increase economic activity in coming months.

The global economy

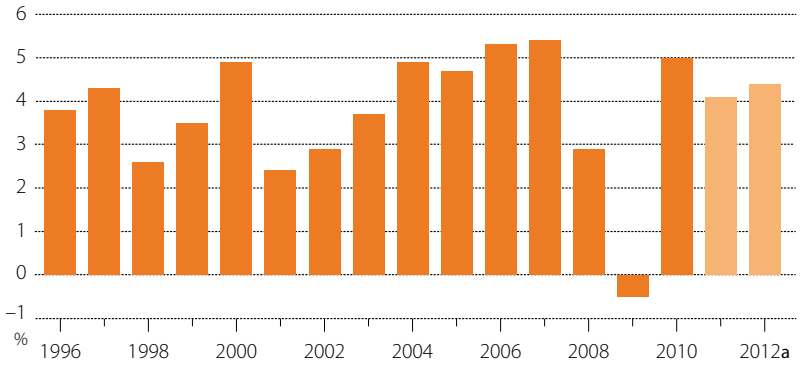
Global economic growth to moderate in 2011

Following strong activity in early 2010, the pace of global economic growth moderated in late 2010 and in the early part of 2011. Emerging economies, particularly in Asia, continue to underpin world growth, while weak private sector demand remains a key constraint to the recovery of major OECD economies.

Private sector demand in major OECD economies is assumed to remain weak in the near term. The winding up of stimulus spending, combined with high unemployment and subdued housing markets, is expected to lead to weak growth in consumer and business spending. Further tightening of government spending is likely in some OECD economies in response to continued financial market concerns over public sector debt levels.

For the OECD as a whole, economic growth is assumed to average around 2 per cent in 2011, before rising to 2.6 per cent in 2012.

World economic growth



In contrast, the outlook for emerging economies, particularly China and India, remains positive. Intraregional trade is expected to underpin export performance in developing economies, despite the possibility of weakened import demand from major OECD economies. Strong domestic demand has resulted in rising inflationary pressures in non-OECD Asia. In response, Asian central banks have begun to tighten monetary policies. For developing economies as a whole, economic growth is assumed to average 6.9 per cent in 2011 and 6.7 per cent in 2012.

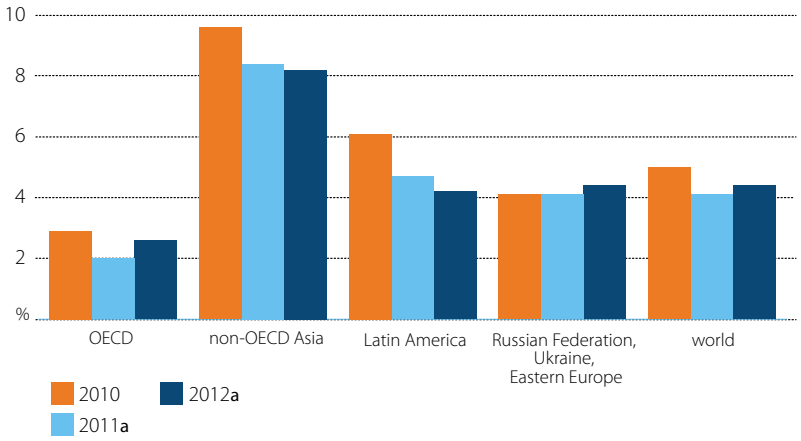
Against this backdrop, the world economy is assumed to grow by 4.1 per cent in 2011, before improving modestly to grow by 4.4 per cent in 2012. This compares with a rate of 5 per cent in 2010.

Key macroeconomic assumptions

World		2009	2010	2011 a	2012 a
Economic growth					
OECD	%	– 3.4	2.9	2.0	2.6
United States	%	– 2.6	2.9	2.6	2.9
Japan	%	– 6.3	4.0	0.1	2.2
Western Europe	%	– 4.2	1.7	1.6	1.8
– Germany	%	– 4.7	3.6	2.5	2.1
– France	%	– 2.7	1.5	1.4	1.8
– United Kingdom	%	– 4.9	1.3	1.6	2.1
– Italy	%	– 5.2	1.3	0.9	1.0
Korea, Rep. of	%	0.3	6.2	4.2	4.6
New Zealand	%	– 2.1	1.5	1.0	3.9
Developing countries	%	4.0	7.8	6.9	6.7
– non-OECD Asia	%	6.6	9.6	8.4	8.2
South-East Asia b	%	1.7	6.9	5.4	5.8
China c	%	8.7	10.3	9.5	9.0
Chinese Taipei	%	– 1.9	10.9	5.2	5.0
Singapore	%	– 0.8	14.5	5.8	5.4
India	%	6.9	9.0	8.5	8.5
– Latin America	%	– 1.7	6.1	4.7	4.2
Russian Federation	%	– 7.9	3.9	4.4	4.5
Ukraine	%	– 14.8	4.2	4.3	4.7
Eastern Europe	%	– 3.6	4.2	3.7	4.0
World d	%	– 0.6	5.0	4.1	4.4
Industrial production					
OECD	%	– 14.1	7.5	3.6	4.5
Inflation					
United States	%	– 0.4	1.6	2.0	1.6
Interest rates					
US prime rate e	%	3.3	3.3	3.3	3.5
		2008	2009	2010	2011
Australia		–09	–10	–11 a	–12 a
Economic growth	%	1.4	2.3	2.25	4.0
Inflation	%	3.1	2.3	3.0	3.0
Interest rates g	%	6.3	6.0	6.6	7.0
Australian exchange rates					
US$/A$		0.75	0.88	0.99	1.01
TWI for A$ h		60	69	74	75

a ABARES assumption. **b** Indonesia, Malaysia, the Philippines, Thailand and Vietnam. **c** Excludes Hong Kong. **d** Weighted using 2010 purchasing-power-parity (PPP) valuation of country GDPs by the IMF. **e** Commercial bank prime lending rates in the United States. **g** Large business weighted average variable rate on credit outstanding. **h** Base: May 1970 = 100.
Sources: ABARES; ABS; IMF; OECD; RBA.

Regional economic growth



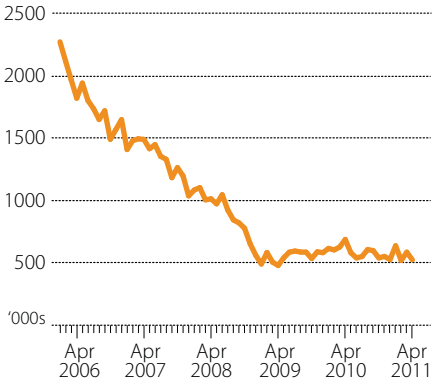
Economic prospects in Australia's major export markets

The United States

In the United States, real gross domestic product is estimated to have expanded by an annualised rate of 1.8 per cent in the March quarter 2011, following growth of 3.1 per cent in the December quarter 2010. This easing of economic growth in the March quarter mainly reflects slow growth in private sector demand and the effect of a withdrawal of fiscal stimulus.

The slow recovery of private sector demand, particularly consumer spending, reflects largely subdued consumer confidence and weakness in the labour market. The unemployment rate was at 9.1 per cent in May 2011, compared with a recent low of 4.8 per cent in February 2008. Improvement in housing activity has been slow, with new home construction at an annualised pace of 523 000 units in April 2011, compared with 478 000 units in April 2009 at the height of the global financial crisis.

US housing starts
annualised monthly

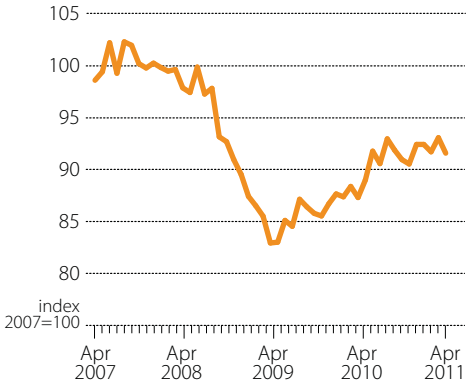


Inventory rebuilding and exports, supported by a sharply weaker US dollar, have been the main factors supporting economic activity. Industrial production expanded at a year-on-year rate of 5 per cent in April 2011, following growth of 5.3 per cent in March. Although growth in the manufacturing sector has been robust, it has not been sufficient to significantly improve the labour market. In the first five months of 2011, only 16 per cent of the 783 000 jobs created were in manufacturing.

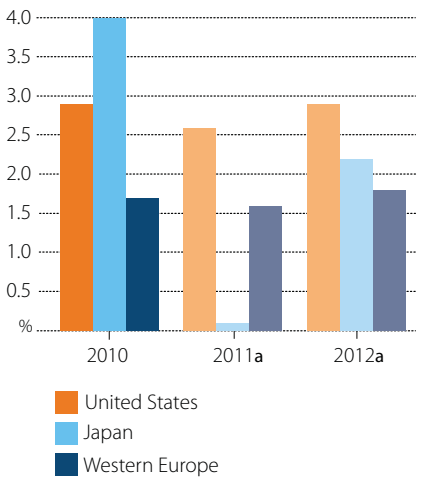
In the short term, economic activity in the United States is assumed to strengthen only gradually. For 2011 as a whole, economic growth is assumed to

average 2.6 per cent, compared with growth of 2.9 per cent in 2010. In 2012, a modest increase in private consumer spending is assumed, which is expected to provide support for general economic activity. Economic growth in the United States is assumed to be 2.9 per cent in 2012.

US industrial production



OECD economic growth



China

Economic growth in China remained strong in early 2011, with real gross domestic product expanding at a year-on-year rate of 9.7 per cent in the March quarter 2011, following growth of 9.8 per cent in the December quarter 2010. Domestic demand was the main driver of economic growth in recent months, while strong external demand also made a significant contribution.

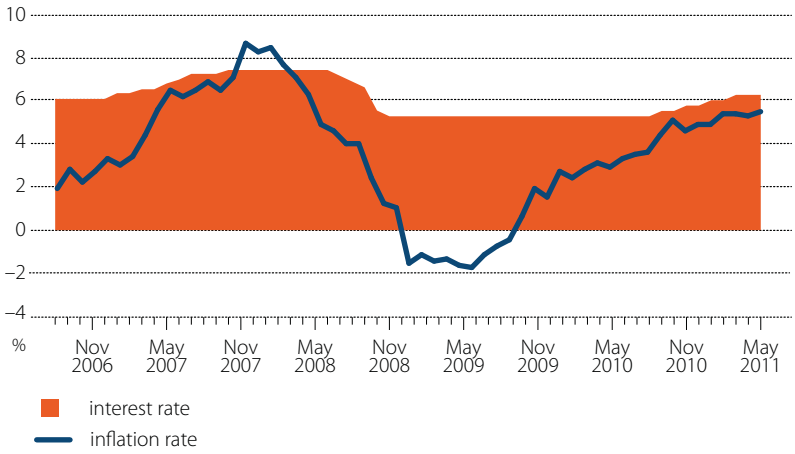
Growth in consumer and business spending remains solid, albeit at a rate marginally slower than that achieved in 2010. Retail sales rose at a year-on-year rate of 16.9 per cent in May and 17.1 per cent in April 2011. Growth in fixed asset investment increased by 25 per cent year-on-year in the March quarter 2011, compared with growth of 26.4 per cent for the same period a year earlier. Exports continue to grow strongly, rising at a year-on-year rate of 30 per cent in April and 36 per cent in March 2011.

In the face of continued strong economic growth, the monthly consumer price index has risen year-on-year by more than 5 per cent since February. In particular, food prices have risen markedly since early 2011, with year-on-year increases of 11.7 per cent in May and 11.5 per cent in April 2011.

The sharp rises of food prices have led the Chinese Government to implement a number of measures to ease inflationary pressures. Since August 2010, interest rates have been raised four times, to 6.31 per cent in late May 2011, and bank reserve ratio requirements have been increased five times.

In the short term, continued concerns about inflationary pressures are expected to lead to further monetary tightening. Against this backdrop, economic growth in China is assumed to average around 9.5 per cent in 2011, before easing slightly to 9 per cent in 2012. This compares with growth of 10.3 per cent in 2010.

Domestic interest rates and inflation in China



Japan

Economic activity in Japan contracted in the March quarter 2011, with real gross domestic product declining year-on-year by 1 per cent. This compares with growth of 2.2 per cent in the December quarter 2010.

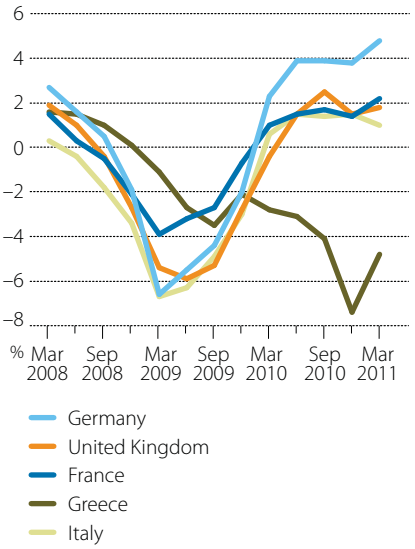
Partial indicators released recently suggest that economic activity in Japan has fallen further in the June quarter, reflecting the devastating effects of the recent earthquakes and tsunami (see box). Industrial production declined year-on-year by 13.6 per cent in April 2011 and 13.1 per cent in March, as a consequence of earthquake-induced damage to production facilities and disruptions to transport and electricity networks.

Looking forward, economic activity could continue to be adversely affected in the next few months, before picking up later in the year as rebuilding begins and electricity supplies increase. Against this backdrop, economic growth in Japan is assumed to average 0.1 per cent in 2011. In 2012, economic growth is expected to increase to 2.2 per cent, underpinned by reconstruction efforts.

Western Europe

In Western Europe, economic performance varies significantly among the regional economies. While real gross domestic product in Germany grew year-on-year by 4.8 per cent in the March quarter 2011, economic activity contracted in Greece at a year-on-year rate of 4.8 per cent

Quarterly economic growth in selected Western European economies year-on-year



over the same period. Economic activity in the United Kingdom and France grew at a year-on-year rate of 2.2 per cent and 1.8 per cent, respectively, in the March quarter 2011.

Looking forward, different economic performance is likely to continue among countries in Western Europe. In Germany, economic growth is assumed to remain relatively strong in the short term, supported by growth in external demand and manufacturing activity. In the United Kingdom, economic growth is unlikely to strengthen significantly in the next few years as fiscal tightening continues. In addition, ongoing concerns over large public sector debts, particularly in countries such as Italy, Greece, Ireland, Portugal and Spain, are expected to place downward pressure on consumer spending and business investment, leading to subdued economic activity in many other regional economies.

In preparing this set of commodity forecasts, economic growth in Western Europe as a whole is assumed to be around 1.6 per cent in 2011 and 1.8 per cent in 2012. This compares with growth of 1.7 per cent in 2010.

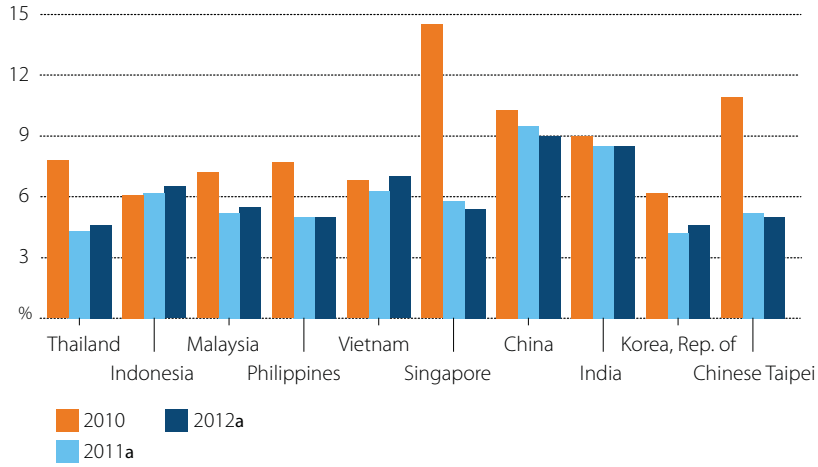
Non-OECD Asia

Following strong performance in 2010, economic growth in non-OECD Asia remains robust, despite a withdrawal of fiscal stimulus and unwinding of accommodative monetary policy in many regional economies. In Singapore, real gross domestic product grew at a year-on-year rate of 8.3 per cent in the March quarter 2011, after expanding by 12 per cent in the December quarter 2010. In Indonesia, the economy grew year-on-year by 6.5 per cent in the March quarter 2011, compared with 6.9 per cent in the December quarter 2010.

Despite continued strong income growth, an emerging issue in the region is rising inflationary pressures. In India, consumer prices rose by 9.1 per cent year-on-year in May 2011 and 8.7 per cent in April, while in Vietnam, prices rose year-on-year by 19.8 per cent in May and 17.5 per cent in April. In response, regional governments have raised interest rates. The official interest rate has been raised by 125 basis points in both Thailand and India since October 2010.

In the short term, regional interest rates are likely to be raised further in an attempt to ease upward pressure on inflation. For non-OECD Asia as a whole (excluding Japan and the Republic of Korea), economic growth is assumed to average around 8.4 per cent in 2011 and 8.2 per cent in 2012. This compares with growth of 9.6 per cent in 2010.

Economic growth in Asia

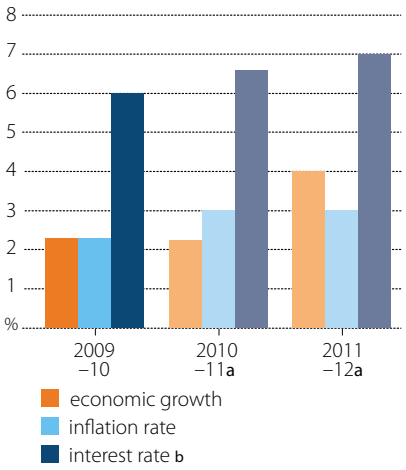


Economic prospects in Australia

In Australia, real gross domestic product rose at a year-on-year rate of 1 per cent in the March quarter 2011, following growth of 2.7 per cent in the December quarter 2010.

The weaker economic growth in the March quarter largely reflects the adverse effects of floods and cyclone Yasi, which occurred in early 2011 in eastern Australia. While there have been widespread reports of flood-related disruption to regional economic activity, an increase in economic growth can be expected in the near future as the pace of rebuilding strengthens.

Australian economic indicators



b Large business weighted average variable rate on credit outstanding.

Despite the significant damage to agricultural production caused by adverse weather events, the total volume of farm production is estimated to increase by 8.3 per cent for 2010–11 as a whole. For mineral resources, the index of mine production is estimated to rise by 1.8 per cent in 2010–11, despite a significant loss of coal production due to the floods.

Against this backdrop, economic growth in Australia is assumed to increase from 2.25 per cent in 2010–11 to 4 per cent in 2011–12.

Inflation

In Australia, the headline consumer price index (CPI) rose year-on-year by 3.3 per cent in the March quarter 2011, partly reflecting the effect of markedly higher prices for fruit (a year-on-year rise of 24.9 per cent) and vegetables (18.7 per cent) due to adverse seasonal conditions in some producing regions in early 2011.

Despite the significant increases in the March quarter, prices for many fruits and vegetables have declined since then.

Excluding volatile items such as fuel, fruit and vegetables, the CPI rose year-on-year by 2.6 per cent in the March quarter 2011, compared with 2.5 per cent in the December quarter 2010.

Looking forward, the headline inflation rate in Australia is expected to decline in the near term because fruit and vegetable prices (except for bananas) have eased from their highs in early 2011. A recent significant appreciation of the Australian exchange rate, especially against the US dollar, is expected to ease any upward price pressure from imports.

Australia's headline inflation rate is assumed to average around 3 per cent in both 2010–11 and 2011–12.

Australian exchange rate

Over the past few months, there has been considerable volatility in the movement of the Australian dollar, especially against the US dollar. The Australian dollar appreciated significantly from around parity against the US dollar in early March 2011 to a post-float (1983) high of US110c in early May, before depreciating gradually to around US107c in mid-June.

On a trade-weighted basis, the Australian dollar was around TWI 77 in mid-June, compared with a recent high of TWI 79 in early May and TWI 75 in early March 2011. For 2010–11 as a whole, the Australian dollar is estimated to average US99c and TWI 74.

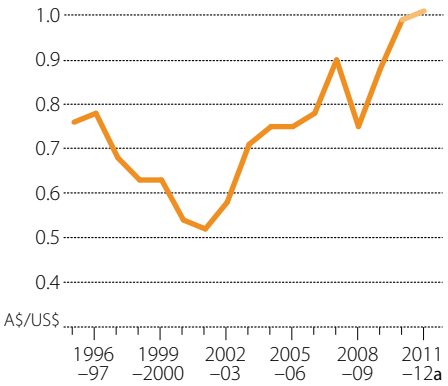
To a large extent, the recent appreciation of the Australian exchange rate reflects changes in the value of the US dollar. Against other major international floating currencies, the US dollar depreciated by around 7 per cent during the first four months of 2011, before a partial reversal of around 2 per cent in May 2011.

In the next 12 months, the value of the Australian dollar is assumed to remain strong against the US dollar. A number of reasons underpin this assessment. First, there has been increasing market concerns over the US Government's fiscal position. According to the Congressional Budget Office, the US budget deficit is projected to increase from an estimated 8.9 per cent of gross domestic product in fiscal year 2010 (October–September) to 9.8 per cent in fiscal year 2011. Public sector debt is also projected to rise, from an estimated 62.1 per cent of gross domestic product in fiscal year 2010 to 69.4 per cent of gross domestic product in fiscal year 2011.

Second, interest rates in the United States are expected to remain at historic lows for most of 2011–12, given the weak state of US domestic demand. In contrast, Australian interest rates are assumed to remain relatively high in 2011–12, given Australia's advanced stage of economic recovery. Furthermore, forecast strong commodity demand, especially for mineral resources, is expected to continue to provide support for the Australian exchange rate.

In preparing this set of commodity forecasts, the Australia dollar is assumed to average around US101c and TWI 75 for 2011–12 as a whole. While the Australian dollar is assumed to remain

Australian exchange rate



strong in the short term, significant volatility in the Australian exchange rate is likely to occur. This is because movements in a floating currency, such as the Australian dollar or the US dollar, can be significantly influenced by changes in financial market sentiment. For example, when looking back over the past year, the Australian dollar has been as low as US84c in early July 2010 and as high as US110c in early May 2011. It is therefore 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 rise by 9.5 per cent in 2011–12, following an estimated increase of 25.9 per cent in 2010–11. The expected increase in 2011–12 largely reflects higher prices for energy and minerals commodities on world markets.

For farm commodities, the index of unit export returns is forecast to decline by around 1 per cent in 2011–12, after an expected rise of 10.8 per cent in 2010–11. Forecast lower world prices for wheat, corn, rice, cotton and sugar are expected to more than offset forecast increases for wool, soybeans and some dairy products.

Unit export returns for Australian mineral resources are forecast to rise by 11.2 per cent in 2011–12, after an expected increase of 28.8 per cent in 2010–11. The rise in 2011–12 largely reflects the effects of higher world prices for coal, iron ore and gold. Unit returns for energy exports are expected to increase by 13.7 per cent in 2011–12, following a forecast rise of 25.5 per cent in 2010–11. For metals and other minerals, unit export returns are expected to increase by 9.4 per cent in 2010–11, after an estimated rise of 31.3 per cent in 2010–11.

Commodity export earnings

Export earnings for farm commodities are forecast to be around $34.1 billion in 2011–12, a rise of 6.6 per cent from an estimated $32 billion in 2010–11. Farm commodities for which export earnings are forecast to be higher in 2011–12 include wheat, oilseeds, rice, raw cotton, wine, sheep meat and wool. For forest and fisheries products, export earnings are forecast to be around $3.9 billion in 2011–12, an increase of 4.6 per cent from their forecast value in 2010–11.

Export earnings for Australian mineral and energy commodities are forecast to be around $218.3 billion in 2011–12, compared with an expected $182 billion in 2010–11. The value of energy exports is forecast to rise by 24.7 per cent to $88.6 billion in 2011–12, reflecting forecast higher prices and export volumes for coal. For metals and other minerals, export earnings are forecast to rise by 16.9 per cent to $129.7 billion in 2011–12, largely driven by expected higher shipments and prices for Australian iron ore and gold.

The value of Australian commodity exports is forecast to be around $256.3 billion in 2011–12, a rise of 17.7 per cent from an expected $217.8 billion in 2010–11.

Major indicators of Australia's commodity sector

		2006–07	2007–08	2008–09	2009–10	2010–11 f	2011–12 f	change from previous year 2010–11 %	change from previous year 2011–12 %
Commodity exports									
Exchange rate	US$/A$	0.78	0.90	0.75	0.88	0.99	1.01	*12.5*	*2.0*
Unit returns b									
Farm	index	100.0	111.1	111.6	98.5	109.1	107.9	*10.8*	*– 1.1*
Mineral resources	index	100.0	104.5	141.5	111.2	143.2	159.2	*28.8*	*11.2*
– energy minerals	index	100.0	114.2	192.8	125.3	157.2	178.7	*25.5*	*13.7*
– metals and other minerals	index	100.0	98.7	111.1	102.8	135.0	147.7	*31.3*	*9.4*
Total commodities	index	100.0	105.5	136.3	109.1	137.4	150.4	*25.9*	*9.5*
Value of exports									
Farm	A$m	27 900	27 527	32 033	28 575	32 016	34 124	*12.0*	*6.6*
– crops	A$m	13 086	13 027	16 886	15 256	17 329	19 445	*13.6*	*12.2*
– livestock	A$m	14 814	14 500	15 147	13 319	14 687	14 679	*10.3*	*– 0.1*
Forest and fisheries products	A$m	3 849	3 813	3 872	3 508	3 720	3 893	*6.1*	*4.6*
Mineral resources	A$m	107 976	117 635	161 758	139 526	182 025	218 328	*30.5*	*19.9*
– energy minerals	A$m	39 427	45 591	77 892	57 472	71 050	88 594	*23.6*	*24.7*
– metals and other minerals	A$m	68 549	72 043	83 865	82 054	110 976	129 734	*35.2*	*16.9*
Total commodities	A$m	139 724	148 975	197 663	171 610	217 762	256 346	*26.9*	*17.7*
Farm sector									
Gross value of farm production c	A$m	36 634	43 688	42 129	39 626	49 380	50 271	*24.6*	*1.8*
– crops	A$m	18 383	24 173	22 820	21 176	27 778	28 479	*31.2*	*2.5*
– livestock	A$m	18 252	19 515	19 309	18 450	21 602	21 792	*17.1*	*0.9*
Farm costs	A$m	31 443	37 137	36 631	34 352	36 642	38 068	*6.7*	*3.9*
Net cash income d	A$m	10 338	10 770	6 066	10 068	17 680	17 296	*75.6*	*– 2.2*
Net value of farm production e	A$m	5 191	6 552	5 499	5 274	12 739	12 202	*141.5*	*– 4.2*
Farmers' terms of trade	index	96.0	91.4	88.9	88.8	99.5	95.0	*12.0*	*– 4.5*
Volume of farm production	index	94.8	103.9	108.2	107.5	116.4	120.0	*8.3*	*3.1*
– crops	index	84.0	103.9	113.4	114.5	132.7	137.4	*15.9*	*3.5*
– livestock	index	105.2	102.3	100.8	98.7	99.2	101.7	*0.5*	*2.5*
Crop area and livestock numbers									
Crop area (grains and oilseeds)	'000 ha	21 191	23 237	24 084	23 793	23 574	24 416	*– 0.9*	*3.6*
Sheep	million	85.7	76.9	72.7	68.0	69.5	70.6	*2.2*	*1.6*
Cattle	million	28.0	27.3	27.9	26.6	27.4	28.0	*3.0*	*2.2*
Minerals and energy sector									
Volume of mine production	index	121.3	120.7	121.4	125.0	127.3	140.1	*1.8*	*10.1*
– energy	index	118.9	116.6	122.8	126.2	118.0	136.4	*– 6.5*	*15.6*
– metals and other minerals	index	124.3	124.8	119.6	123.5	136.8	143.5	*10.8*	*4.9*
Gross value of mine production	A$m	103 657	112 929	155 288	133 945	174 744	209 595	*30.5*	*19.9*
New capital expenditure g	A$m	23 621	29 201	37 977	35 185	na	na	*na*	*na*
Exploration expenditure	A$m	3 940	5 496	6 034	5 727	na	na	*na*	*na*
– energy	A$m	2 533	3 501	4 293	3 984	na	na	*na*	*na*
– metals and other minerals	A$m	1 407	1 995	1 741	1 742	na	na	*na*	*na*
Employment									
Agriculture, forestry and fishing	'000	350	353	358	369	na	na	*na*	*na*
Mining	'000	135	145	167	173	na	na	*na*	*na*
Australia	'000	10 374	10 644	10 767	11 027	na	na	*na*	*na*

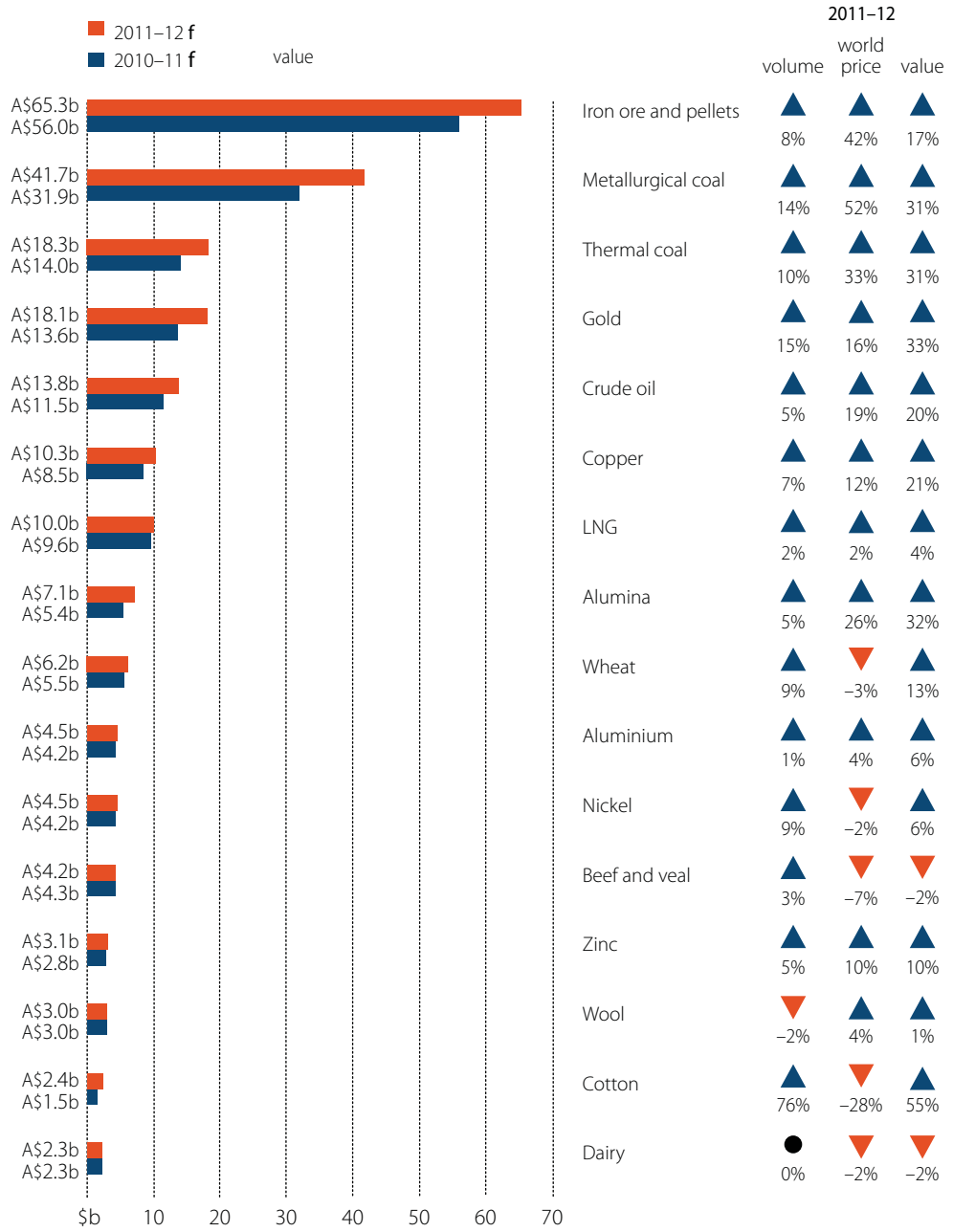
b Base: 2006–07 = 100. **c** For a definition of the gross value of farm production see table 19. **d** Gross value of farm production less increase in assets held by marketing authorities and less total cash costs. **e** Gross value of farm production less total farm costs. **g** Mining industry (ANZSIC subdivision B) only. **f** ABARES 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: ABARES; Australian Bureau of Statistics.

Major Australian commodity exports

LNG, alumina, wool, beef and veal and dairy are export unit returns or domestic prices in $A. All other commodities are world indicator prices in $US. For export value, annual forecasts are the sum of quarterly forecasts. As a result, annual export values do not necessarily reflect variations in export volumes, world prices and exchange rates. Iron ore and metallurgical coal are average negotiated contract prices for calendar years (e.g. 2011–12=2011). Thermal coal is the annual negotiated contract price for the Japanese Fiscal Year running from April 2011 to March 2012.



Impacts of the earthquakes in Japan and the effect on Australia's commodity exports

The recent earthquakes and tsunami in Japan have had a devastating effect on the people of Japan, causing significant property damage and loss of life. Preliminary assessments from the Japanese Government indicate that damage from the disaster could be between US$197 billion and US$307 billion, or around 4–6 per cent of Japan's gross domestic product, while around 23 000 people are listed as missing or dead.

Earthquake and tsunami damage to transport and electricity networks, as well as the destruction of agricultural and industrial facilities in affected regions, has had a negative impact on Japan's economic activity. In particular, the situation at the Fukushima nuclear power plant remains uncertain, while reconstruction in the exclusion zone around the plant cannot begin until the crisis is resolved.

While disruptions to economic activity are expected to continue in the next few months, reconstruction in the affected regions, when it begins, will provide support to economic recovery. The rebuilding of infrastructure and private property and the recovery of industrial production are expected to increase demand for commodities, particularly minerals and energy, of which Australia is a major supplier.

Impact on Japan's agricultural production and trade

In June 2011, the Japanese Ministry of Agriculture, Forestry and Fisheries estimated that losses to crops and livestock and damage to agricultural land and production facilities were around US$9.5 billion. The three prefectures most affected by the tsunami (Miyagi, Iwate and Fukushima) account for around 8 per cent of Japanese agricultural production, including around 14 per cent of Japanese rice production and 5 per cent of fruit and vegetable production.

Australia's agricultural exports to Japan are not expected to be significantly affected. Japan is Australia's single largest export destination, accounting for around 14 per cent (or $4.3 billion) of the total value of Australian agricultural exports in 2009–10. The major agricultural commodities exported to Japan from Australia in 2009–10 were beef ($1.7 billion), cheese ($358 million), wheat ($299 million), barley ($284 million), sugar ($189 million) and canola ($109 million). Japan also accounts for around 17 per cent ($265 million) of Australia's seafood exports and 34 per cent ($774 million) of Australia's forest product exports.

According to the Japanese Ministry of Finance, total Japanese imports of agricultural commodities (in Japanese yen terms) rose at a year-on-year rate of 11 per cent in April 2011. The main drivers of this increase were higher imports of cereals, sugar and dairy products. The import value of Australian agricultural products rose year-on-year by 2 per cent.

Because of radiation leaks from the Fukushima nuclear power plant, agricultural exports from Japan are facing quarantine measures in major OECD countries. In the United States, imports of milk and fruit and vegetables produced around Japan's Fukushima prefecture have been banned, while testing is required for radiation in other products from affected regions. The European Union has requested testing of all food and feed exports from affected Japanese prefectures prior to them leaving Japan. The Australian Quarantine and Inspection Service is testing for radiation in a number of Japanese food imports, including seaweed, seafood, milk products and fruit and vegetables.

continued...

Impacts of the earthquakes in Japan and the effect on Australia's commodity exports continued

Impact on minerals and energy

Japan is a major destination for Australia's minerals and energy exports, accounting for 38 per cent of Australia's energy exports (around $21.9 billion) and 12 per cent of Australia's mineral exports (around $9.8 billion) in 2009–10. The major Australian mineral and energy exports to Japan in 2009–10 were coal ($12.9 billion), iron ore ($6 billion), aluminium ($1.3 billion), copper ($1.2 billion) and liquefied natural gas (LNG) (value not reported).

In April 2011, total Japanese imports of minerals and energy (in Japanese yen terms) rose year-on-year by around 15 per cent, with higher imports of LNG, coal, petroleum, nickel and iron ore. Imports of mineral and energy commodities from Australia increased year-on-year by 14 per cent.

Nuclear energy accounts for more than 20 per cent of total electricity generation capacity in Japan, and around 12 gigawatts, or 6 per cent of Japan's total capacity, has been shut down. Because the shutdown of nuclear capacity is unlikely to return to production for at least several years, this could affect uranium demand in Japan. The shortfall in electricity generation is expected to be made up by higher utilisation of coal and gas-fired power stations, which will require increased Japanese imports of LNG and thermal coal.

Demand for metals (such as iron ore, copper and aluminium) has not been significantly affected. Most of Japan's manufacturing industry is located outside of the worst-affected regions and production has mostly resumed following short-term disruptions. Once reconstruction begins, an increase in Japan's metals demand associated with rebuilding of infrastructure is expected.

Australia's major commodity exports to Japan ($m)

	2007–08	2008–09	2009–10
Minerals and energy			
LNG **b**	7 279	4 993	na
Thermal coal	5 228	9 611	6 056
Metallurgical coal	5 753	13 948	6 889
Iron ore	4 909	7 343	5 999
Aluminium	1 810	1 416	1 303
Copper	1 334	1 108	1 183
Agriculture			
Wheat	13	92	299
Barley (includes malt)	234	335	284
Canola	70	65	109
Sugar	129	192	189
Beef and veal	1 856	2 101	1698
Cheese	427	399	358
Seafood	382	367	265
Forestry	965	860	774

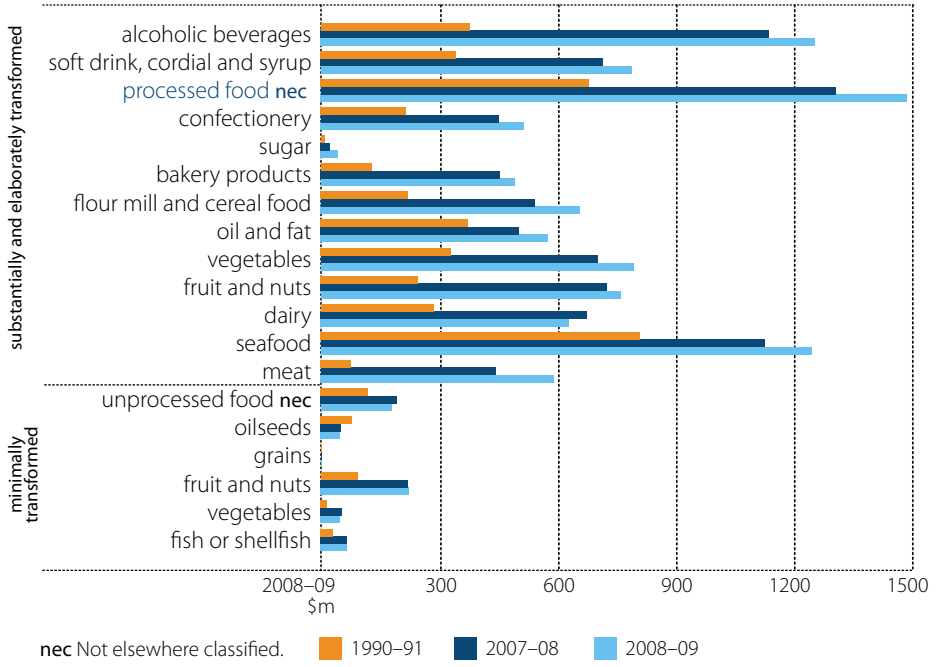
b Calendar years, e.g. 2007–08 = 2008. **na** Not available.

The nutritional value of Australia's food imports

by Neil Thompson and Jammie Penm

Australian food imports totalled $10.4 billion in 2008–09 and have been trending upward, in real terms, over the past decade. In terms of nutritional value, however, food imports as a whole remain an insignificant source compared with domestic food production. Because the majority of Australia's food imports are substantially and elaborately transformed, processing and packaging are major components in the value of food imports (figure 1).

1 Value of Australian food imports by category



To estimate the nutritional content of Australian food imports and production, data from the Australian Bureau of Statistics (ABS 2011) and ABARES were used and matched to the nutritional values—energy in kilojoules (kJ) and protein in grams—taken from the United Nations Food and Agriculture Organization (UNFAO 2001), the United States Department of Agriculture (USDA National Nutrient Database) and Food Standards Australia New Zealand (NUTTAB Food Composition Tables 2006).

Energy content in food imports

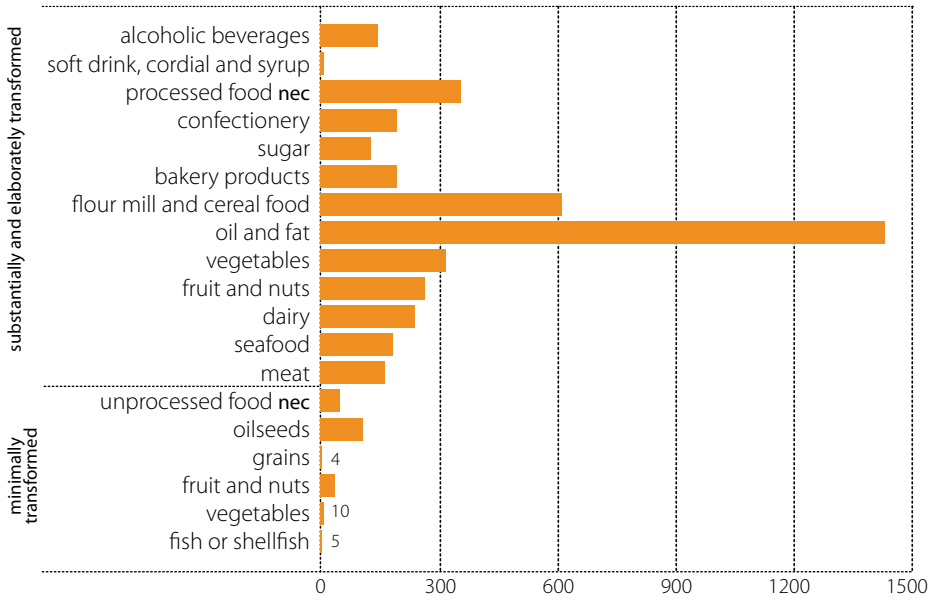
It is estimated that in 2008–09 the energy content of Australia's food imports totalled around 4470 kJ per person per day.

continued...

The nutritional value of Australia's food imports continued

The energy content varied considerably among different categories of food imports (figure 2). Oil and fat (including vegetable oils and lard) accounted for the largest share of food imports in 2008–09, at around 32 per cent. Flour mill and cereal food (including pasta and milled rice) accounted for around 14 per cent of the total energy content of food imports, while processed food not elsewhere classified (such as coffee, tea, and condiments and sauces) accounted for a further 8 per cent.

2 Australian food imports by category
kilojoules per person per day 2008–09



nec Not elsewhere classified.

1 Energy content of imports and domestic production of food by product
kilojoules per person per day 2008–09

	imports kJ	domestic production kJ	exports kJ	available for domestic use kJ
Grain-based products	814	33 824	28 140	6 498
Sugar-based products	129	9 305	6 793	2 641
Oilseeds, oil and fat	1 546	5 727	2 546	4 727
Fresh and processed fruit and nuts	302	1 391	614	1 078
Fresh and processed vegetables	329	2 013	980	1 362
Meat and meat products	165	3 283	1 487	1 961
Dairy products	240	3 281	1 608	1 914
Seafood	190	145	29	307
Eggs	0	120	0	120
Other	757	0	0	757

continued...

The nutritional value of Australia's food imports continued

Of the imports of processed vegetables, which supplied 319 kJ of energy per person per day in 2008–09, more than half came from frozen potato products. For the imports of processed fruit and nuts (265 kJ of energy per person per day), around 40 per cent of the energy content came from nuts and 17 per cent from dried grapes, sultanas and currants, with products such as jam, frozen and canned fruit and fruit juices accounting for the rest. For imports of seafood, the energy content was around 190 kJ per person per day in 2008–09, higher than the 145 kJ per person per day measured for domestic seafood production (table 1).

However, many food imports have multiple uses (including food, feed and other industrial uses) and may not necessarily be consumed domestically. For example, some food imports, such as wheat gluten and oilseed meals, are used for feed in domestic agricultural production, a large proportion of which is then exported. Using information from the National Accounts: Input–Output Tables (ABS 2010), ABARES estimates that, on a per person per day basis, around 179 kJ of energy in food imports was used for domestic production and then re-exported in 2008–09. While around 4292 kJ (or 96 per cent of the energy content) in food imports was utilised domestically on a per person per day basis.

Energy content of domestic food production and exports

For Australia's domestic food production, it is estimated that the total energy content was around 59 089 kJ per person per day in 2008–09. In this estimation, intra-industry use was removed to avoid 'double-counting'.

Based on the above estimations, the energy value of food imports (either including or excluding re-exports) was equivalent to around 7 per cent of the total energy value of domestic food production on a per person per day basis.

Using data on domestic production and export volumes from the Australian Bureau of Statistics, around 71 per cent (or 42 196 kJ per person per day) of the energy content of domestic food production is estimated to have been exported, with the remaining 29 per cent (or 16 893 kJ per person per day) available for domestic use.

Combined with the energy from food imports, a total of 21 184 kJ of food energy was available for domestic use on a per person per day basis in 2008–09.

It is noteworthy that not all of the 21 184 kJ of food energy on a per person per day basis was utilised by human consumption in Australia in 2008–09. Based on the National Nutrition Survey undertaken by the ABS in 1995, an adult, on an average diet, consumes around 8700 kJ of food energy per day (ABS 1998), which is significantly lower than the estimated food energy available for domestic consumption on a per person per day basis in 2008–09.

While a small proportion of food imports and domestic food production is used for industrial purposes (estimated to be around 8 per cent), wastage in the transportation, processing, distribution and final consumption of food is a major factor affecting the amount of food energy actually being consumed. According to the FAO, food wastage from storage, handling and transport through to final consumption can be as high as 20 per cent for meat, 33 per cent for cereals, 40 per cent for fruit and vegetables and 43 per cent for fish and seafood in countries in North America and Oceania (including Australia) (FAO 2011). Given food imports are mostly substantially and elaborately transformed, wastage of food imports in domestic use is likely to be somewhat lower than that for domestic food production, which are mostly minimally transformed products.

continued...

The nutritional value of Australia's food imports continued

Food protein content

In terms of protein, the total value in food imports is estimated to have been around 31 grams per person per day in 2008–09. Almost all of this was utilised domestically.

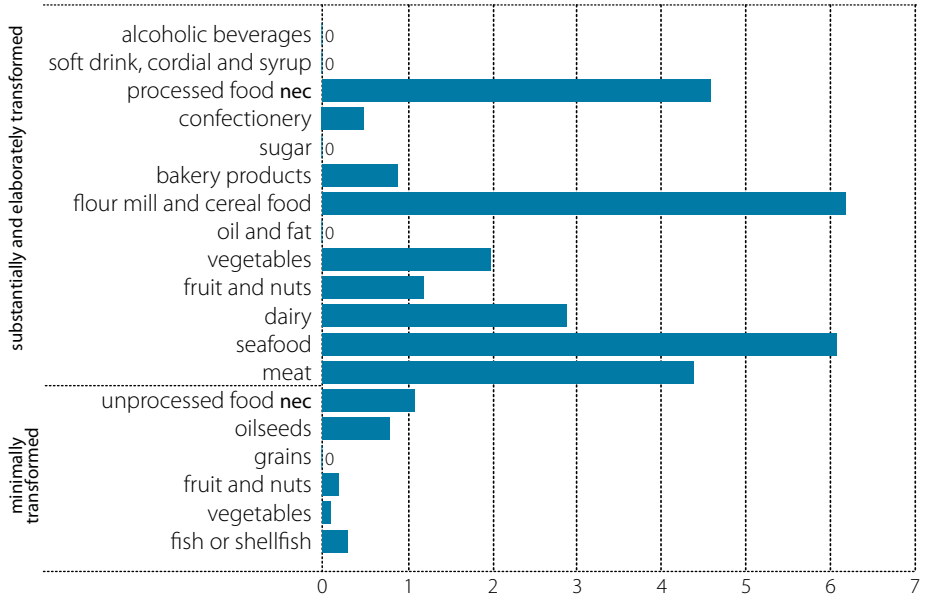
Grain-based products (especially flour mill and cereal food) accounted for the largest share of protein in food imports in 2008–09, at around 23 per cent, followed by seafood at around 20 per cent (figure 3). Other significant import categories included meat and meat products (around 14 per cent of the total protein content in food imports) and dairy products (9 per cent).

In 2008–09, the protein content of food produced in Australia was around 487 grams, on a per person per day basis. In terms of protein, food imports were equivalent to around 6 per cent of domestic food production.

ABARES estimates that around 71 per cent of the protein content of food produced domestically was exported (equivalent to 345 grams per person per day). The protein content of domestic food production available for domestic use was around 143 grams per person per day in 2008–09.

Combined with food imports, a total of around 173 grams of protein was available for domestic consumption on a per person per day basis in 2008–09. According to the 1995 National Nutrition Survey, an Australian adult, on an average diet, consumes around 50 grams of protein a day.

3 Australian food imports by category
grams of protein per person per day 2008–09



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The nutritional value of Australia's food imports continued

2 Protein content of imports and domestic production of food by product grams of protein per person per day 2008–09

	imports	domestic production	exports	available for domestic use
	g	g	g	g
Grain-based products	7	282	235	53
Sugar-based products	0	0	0	0
Oilseeds, oil and fat	1	25	25	1
Fresh and processed fruit and nuts	1	5	2	4
Fresh and processed vegetables	2	27	14	14
Meat and meat products	4	104	50	58
Dairy products	3	35	17	21
Seafood	6	8	1	12
Eggs	0	2	0	2
Other	6	0	0	6

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Coal seam gas developments

Natasha Amerasinghe and Alan Copeland

The recent increase in demand for liquefied natural gas (LNG) for export and energy production in Australia has led to a rise in development applications of unconventional energy sources, primarily coal seam gas (CSG).

State governments currently regulate the CSG industry. This involves assessment, approval and monitoring against a number of planning, environmental and other criteria. The Australian Government has a direct regulatory role if the activity has a significant impact on matters of national environmental significance, as defined by the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act). The Act is based on principles of ecologically sustainable development as the basis upon which environmental, economic and social goals should be integrated in the development process. Three CSG projects have received Australian Government approval under the EPBC Act, subject to a range of additional conditions; several other projects are currently in the exploration and assessment stage.

What is coal seam gas?

CSG (also known as coal bed methane/coal seam methane/coal mine methane) is methane gas occurring in coal seams. Extraction involves drilling a series of wells into targeted coal seams and pumping out groundwater to lower the pressure in the coal seam and allow methane gas to escape. A single development can consist of thousands of wells; for example, the Australia Pacific Liquefied Natural Gas (APLNG) project is proposing to install 10 000 wells over the life of the 30-year project, with 5000 wells in operation during any given year.

Queensland CSG reserves are located within the Walloon Coal Measures of the Surat Basin and Permian coal measures of the Bowen Basin, both part of the Great Artesian Basin. CSG exploration and development of the Surat Basin extends into the northern parts of the Murray–Darling Basin. Projects in the Gloucester Valley, Lower Hunter Valley and Wollongong–Illawarra regions of New South Wales are also in the exploration and assessment stages.

Issues

- **Local water supply**—CSG developments are generally located in agricultural areas where landowners are dependent on surface water and groundwater of sufficient quality. Within the Great Artesian Basin, landowners are also dependent on groundwater pressure to ensure cost-effective access and supply. The Queensland Government has put in place legislated 'make good' arrangements to ensure uninterrupted access to water in case CSG developments affect local water supply.
- **Alienation of agricultural land** occurs as a result of construction of infrastructure such as wells, access tracks and pipelines. For example, the current footprint of one CSG project is estimated to comprise 0.1 hectare for established production wells and up to 1 hectare during development of each well, spaced approximately 750 metres apart. This may have land management and financial implications for farmers through lost farm production or increased production costs. Individual compensation arrangements are negotiated between landholders and CSG companies often in the form of annual rent.
- **Local environmental impacts** on agricultural land can include effects on groundwater and surface water quality, soil salinity, soil erosion, vegetation mortality, increased risk of localised flooding and property damage. CSG extraction will produce a significant volume of saline water as a by-product, which creates implications for brine and salt storage and disposal at

continued...

Coal seam gas developments continued

the surface. The potential to produce methane gas in private bores located within and in close proximity to CSG developments also exists.

- **Regional and local scale impacts to the Great Artesian Basin** include reductions in groundwater levels and pressures that could limit private bore access to water. Water quality could also be affected from induced inter-aquifer groundwater flow and limited recharge to the aquifers. Potential cumulative impacts to the Great Artesian Basin could be significant and currently have the most uncertainty. A substantial network of monitoring bores will be established in conjunction with improved regional hydrogeological modelling to monitor potential impacts. The volumes of CSG water estimated to be produced could be used for other beneficial uses such as agriculture, urban use and industrial use.
- **Hydraulic fraccing** involves injecting a mixture of sand, water and a suite of chemicals under pressure into the coal seam to induce cracks in the seam, increasing gas production. The Queensland Department of Environment and Resource Management (Fact sheet 6050 06/10) states that water and sand comprise 99 per cent of the materials used in fraccing. The remainder comprises compounds such as sodium hypochlorite, hydrochloric acid, surfactants, cellulose, acetic acid and bactericides. Some of the chemicals are toxic in their pure form; however, they are used in very small quantities (less than 1 per cent by volume). The long-term effects of hydraulic fraccing and the chemicals used are unknown.
- **Land access and landowner compensation agreements:** In Queensland, CSG producers must apply for an authority to prospect (ATP) within areas the state government has identified as potentially containing energy resources. The Queensland Minister for Natural Resources, Mines and Energy grants ATPs. The landholder must be given written notice, 10 business days (minimum) before an ATP holder wishes to enter a property to conduct exploration activities. Generally an ATP holder cannot enter the property unless a compensation or deferral agreement is in place.

Economic benefits

Most of the future CSG production will be converted into LNG and exported to economies in the Asia–Pacific region, significantly enhancing energy security in the region. Development of CSG will also enhance energy security in eastern Australia, reducing the need for gas imports. Development of coal seam gas resources will continue to support diversification of the electricity generation fuel mix, with gas expected to account for an increasing proportion of the energy mix in eastern states.

At present, two CSG–LNG projects (Curtis Island and Gladstone LNG) are under construction with a combined export capacity of more than 16 million tonnes. Both projects are scheduled to be in operation around 2015. A further three projects (APLNG, Arrow LNG and Fisherman's Landing) are at various stages of planning and could be in operation by the second half of this decade.

These projects will have a positive economic impact at local, state and national levels with each project requiring capital expenditure of several billion dollars and generating up to 5000 construction jobs and up to 500 operational jobs. This is in addition to the substantial royalty payments, company profits and tax revenue associated with the developments.

Future developments

Future developments in the gas industry may include expansion to other unconventional gas resources, such as shale gas and tight gas/tight sand gas. Vast shale gas reservoirs could be located across Australia, with shale gas production anticipated to be the next big boom in unconventional energy production.

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Coal seam gas developments continued

Location of current approved CSG projects under the EPBC Act

Sources: CSG tenement boundaries: Geoscience Australia. Topographic data: NATMAP Raster 2005, Geoscience Australia. Map produced by ABARES.

Crops

Wheat

James Fell

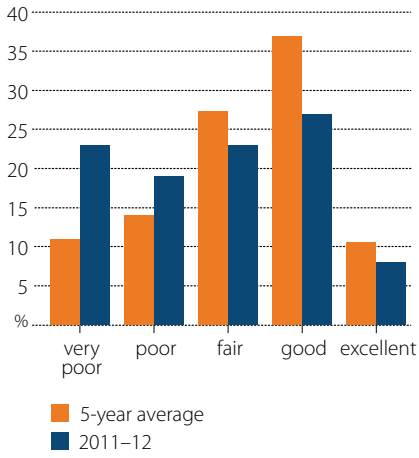
Following a rise of 52 per cent to US$318 a tonne in 2010–11, the world wheat indicator price (US Hard Red Winter, fob Gulf) is forecast to average around US$310 a tonne in 2011–12, reflecting an expected increase in world export supplies. The forecast increase in wheat exports is expected to primarily come from the Black Sea region.

World wheat prices are expected to remain relatively high in the short term because of lower stocks of coarse grains (a close substitute in feed) and reduced supplies of milling wheat following quality downgrades to the 2010–11 production in Canada and Australia.

Production to increase in 2011–12

World production is forecast to increase by 3 per cent in 2011–12 to around 669 million tonnes on the assumption of improved seasonal conditions in the Black Sea region. The total world wheat area to be harvested is forecast to increase by 2 per cent to 224 million hectares.

US winter wheat condition
at 13 June 2011



Source: United States Department of Agriculture

Although the total area of wheat harvested in the United States is forecast to increase by 1 per cent in 2011–12 to around 20 million hectares, US wheat production is forecast to fall by 7 per cent to around 56 million tonnes, largely as a result of adverse seasonal conditions in many Hard Red Winter wheat areas. Parts of Kansas, Oklahoma and Texas had less than one-third of their average rainfall between March and May 2011 and these states typically account for around 40 per cent of US winter wheat production. On 13 June 2011, the US Department of Agriculture rated the majority of the winter wheat crop as being in fair to very poor condition.

In Canada, the area harvested is forecast to increase by 14 per cent in 2011–12 to around 9 million hectares. Wheat production is forecast to increase by 9 per cent to around 25 million tonnes, assuming a return to trend yields.

In the European Union, the area harvested is forecast to fall by 2 per cent in 2011–12 to 25.5 million hectares. The European Union has been experiencing relatively dry seasonal conditions similar to last season, particularly in the key producing countries of France, Germany and the United Kingdom. European Union wheat production is forecast to fall by 1 per cent in 2011–12 to around 134 million tonnes.

In 2011–12, a turnaround is expected in wheat production in the three major Black Sea exporters (the Russian Federation, Ukraine and Kazakhstan) on the assumption of improved seasonal conditions. Wheat production in the region is forecast to increase by 33 per cent to around 91 million tonnes. In the Russian Federation, the area harvested is forecast to increase by 12 per cent in 2011–12 to around 25 million hectares. Production is forecast to increase by 28 per cent to around 53 million tonnes.

In Argentina, wheat production increased by 71 per cent to around 15 million tonnes in 2010–11 because of favourable seasonal conditions leading to an increase of close to 17 per cent in yields. In 2011–12, the wheat area harvested is forecast to rise by 4 per cent to around 5 million hectares. However, production is forecast to decline by 11 per cent to around 13 million tonnes, assuming average yields.

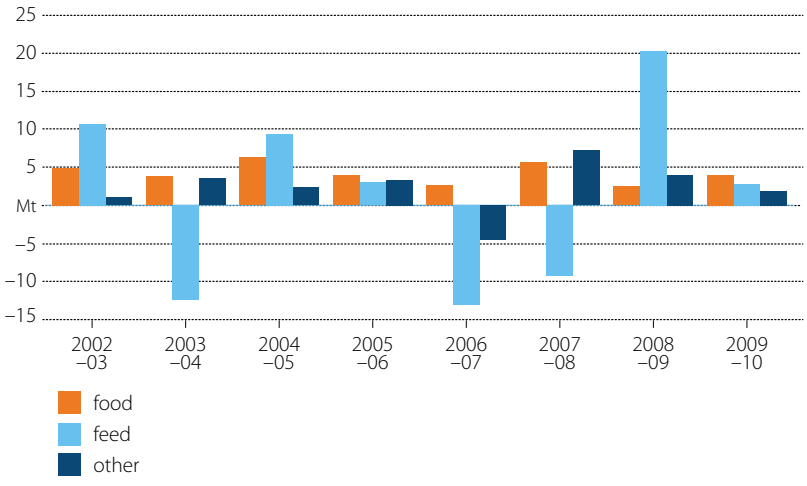
While China and India are not major exporters of wheat, they are major wheat consumers and producers. Changes in production in these countries can influence world markets through import demand. Chinese wheat production is forecast to be around 115 million tonnes in 2011–12, similar to 2010–11. In India, the 2011–12 wheat harvest has been completed and wheat production is estimated to have increased by 4 per cent to around 84 million tonnes. India is not expected to be a major wheat importer in 2011–12.

Corn prices push feed wheat consumption higher

World wheat consumption is forecast to increase by 1 per cent in 2011–12 to around 668 million tonnes. World food use is forecast to increase marginally in 2011–12 to around 458 million tonnes, driven by population growth. Human food consumption accounts for around 70 per cent of world wheat consumption.

World feed use is forecast to increase by 4 per cent in 2011–12 to around 121 million tonnes with a higher corn to wheat price ratio encouraging the substitution of wheat for corn. Even though feed consumption accounts for only around 18 per cent of world wheat consumption, it is the major driver of changes in world wheat consumption because human consumption is relatively stable in the short term.

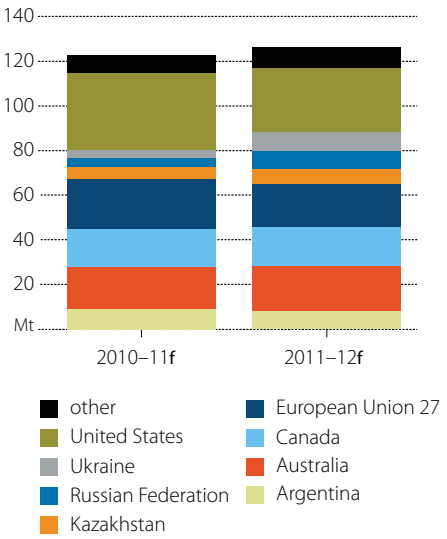
Changes in world wheat consumption



Higher production leads to higher trade

World trade in wheat is forecast to increase by 3 per cent in 2011–12 to around 126 million tonnes, largely reflecting a forecast recovery in production and a relaxation of export bans in the Black Sea region. Combined exports from the Russian Federation, Ukraine and Kazakhstan are forecast to double to around 24 million tonnes in 2011–12.

World wheat exports



Exports from Canada are forecast to rise by 3 per cent to around 18 million tonnes, reflecting forecast higher wheat production. Exports from the European Union are forecast to fall by 4 million tonnes in 2011–12 in response to greater competition in export markets. US exports are forecast to fall by around 17 per cent in response to lower production and reduced opening stocks.

Wheat imports are projected to increase in 2011–12, especially in countries in East Asia, including the Philippines, Thailand and Vietnam, driven by an increase in the use of feed wheat for livestock production.

In response to lower production induced by adverse seasonal conditions, the Russian Federation imposed a ban on exports of wheat and wheat products in August 2010. As well, Ukraine implemented export quotas in October 2010 to limit wheat exports to 500 000 tonnes; in December 2010 it increased the quota to 1 million tonnes.

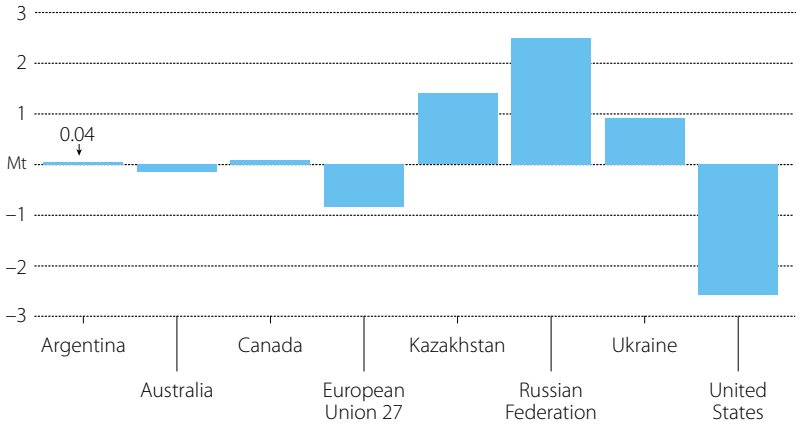
Reflecting the improved prospects for wheat production, the Russian Federation announced on 28 May 2011 the lifting of the ban on exports of wheat from 1 July. In Ukraine, a decision was made in late May to abolish the quota on wheat exports, which was made effective from early June. Nevertheless, Ukraine will implement a wheat export tax, effective from 1 July 2011 until 1 January 2012.

In India wheat exports have been banned since February 2007 (with the exception of government trading). Although Indian wheat production in 2011–12 is estimated to have increased by 4 per cent and India has relatively high opening stocks, the Indian Government has deferred a decision on whether to allow wheat exports.

Stocks

World closing stocks of wheat are forecast to increase by 1 per cent to around 187 million tonnes and the wheat stocks-to-use ratio is forecast to remain almost unchanged in 2011–12 at around 28 per cent. Stocks in the major exporting countries are forecast to rise by around 2 per cent. In particular, closing stocks are forecast to increase in the Black Sea region, following the forecast rebound in wheat production. In 2011–12 stocks are forecast to fall in the United States as a result of relatively high exports and a fall in production, but are still expected to be around 26 per cent above the five-year average at around 20 million tonnes.

Change in major exporters' stocks, 2011–12



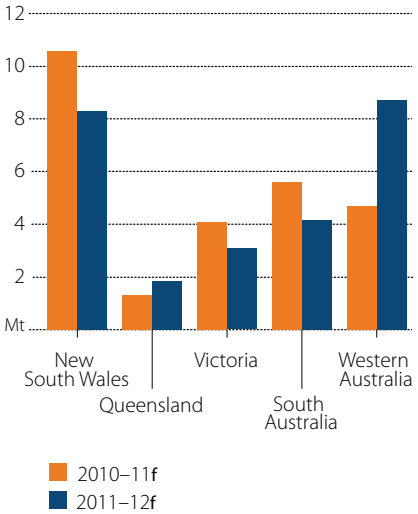
Australia

Planted area to increase

Australian wheat production is forecast to fall by 1 per cent in 2011–12 to around 26.2 million tonnes, following a significant rise of 21 per cent to 26.3 million tonnes in 2010–11.

In New South Wales, Queensland, Victoria and South Australia, the area sown to wheat is forecast to increase by 6 per cent in 2011–12 to around 9 million hectares, reflecting good sub-soil moisture and current favourable wheat prices. However, while above average yields have been assumed, these are below the records achieved in 2010–11. Production in the eastern states is forecast to decrease by 19 per cent to a total of around 17 million tonnes.

Wheat production by state

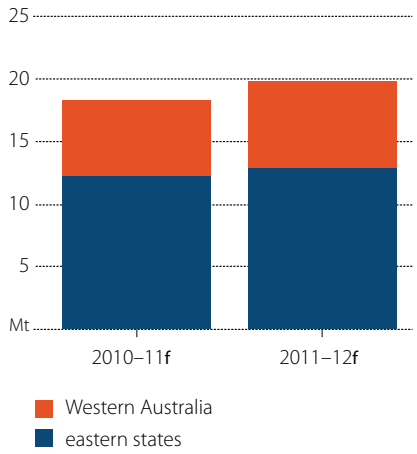


In Western Australia, the area sown to wheat is forecast to increase by 7 per cent in 2011–12 to around 5 million hectares. After very dry conditions in 2010–11, seasonal conditions are assumed to be more favourable in 2011–12 and production is forecast to increase by 86 per cent to around 9 million tonnes.

Increased wheat supplies to boost exports

Australian wheat exports are forecast to rise by 9 per cent in 2011–12 to 20 million tonnes, reflecting forecast large opening stocks and high production in the current season. In particular, the volume of exports from Western Australia is forecast to rise by 13 per cent to around 6.2 million tonnes, as production in that state is forecast to recover.

Australian wheat exports



The value of Australian exports is forecast to rise by 16 per cent in 2011–12 to $6.4 billion. The combined effect of an expected increase in export shipments and an assumed increase in the proportion of exports of milling grade wheat is forecast to more than offset the impact on earnings of an assumed appreciation of the Australian exchange rate.

Wheat outlook

		2009–10	2010–11 f	2011–12 f	% change
World					
Production	Mt	679	650	669	*3.0*
– China	Mt	115	115	115	*0.0*
– European Union 27	Mt	139	135	134	*– 1.1*
– India	Mt	81	81	84	*4.3*
– Russian Federation	Mt	62	42	53	*27.7*
– United States	Mt	60	60	56	*– 6.8*
Consumption	Mt	652	661	668	*1.1*
– human	Mt	452	457	458	*0.3*
– feed	Mt	108	116	121	*4.0*
Closing stocks	Mt	198	186	187	*0.6*
Stocks-to-use ratio	%	30	28	28	*– 0.4*
Trade	Mt	128	123	126	*2.8*
Exports					
– Argentina	Mt	5	9	8	*– 11.1*
– Australia	Mt	14	18	20	*8.5*
– Canada	Mt	18	17	18	*2.9*
– European Union 27	Mt	21	23	19	*– 16.7*
– Kazakhstan	Mt	8	5	7	*34.6*
– Russian Federation	Mt	19	4	8	*116.2*
– Ukraine	Mt	9	4	9	*136.1*
– United States	Mt	24	35	29	*– 17.0*
Price b	US$/t	209	318	310	*– 2.5*
Australia					
Area	'000 ha	13 881	13 374	14 258	*6.6*
Production	kt	21 834	26 325	26 159	*– 0.6*
Exports c	kt	13 725	18 287	19 849	*8.5*
– value	A$m	3 692	5 528	6 246	*13.0*
APW 10 net pool return	A$/t	249	354	307	*– 13.3*

b US hard red winter wheat fob Gulf, July–June. **c** July–June years. **f** ABARES forecast.
Sources: ABARES; Australian Bureau of Statistics; International Grains Council; US Department of Agriculture.

Coarse grains

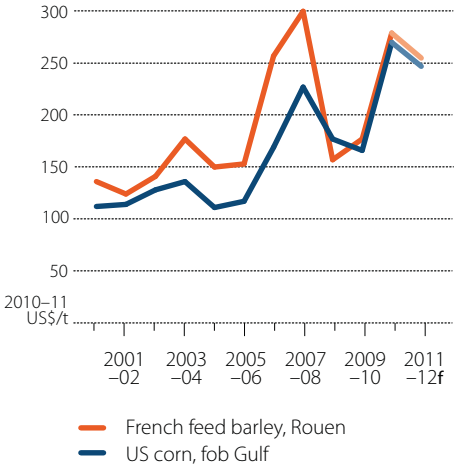
Henry To

The world coarse grains indicator price (US corn, fob Gulf ports) is forecast to average US$251 a tonne in 2011–12, 7 per cent lower than in 2010–11. The world barley indicator price (French Rouen feed barley) is also forecast to average 7 per cent lower in 2011–12, at US$260 a tonne. A forecast recovery in global coarse grains supplies and the expected resumption of exports from the Black Sea region are the main factors underpinning the forecast price decline.

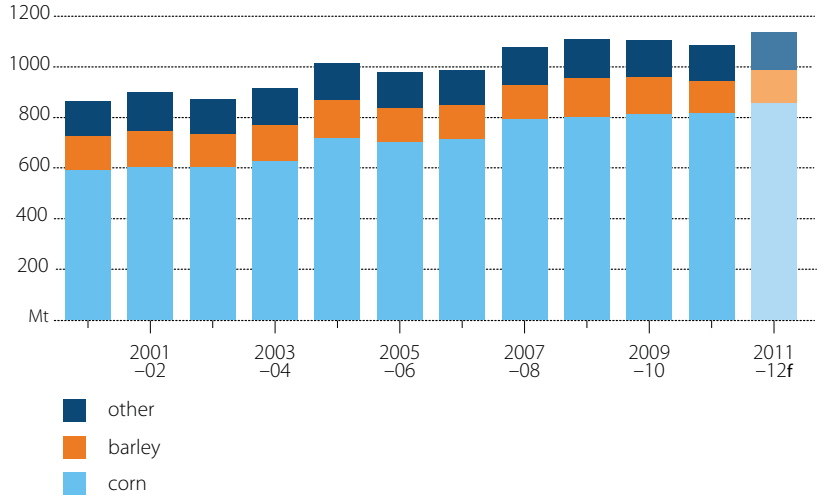
World production to increase

World coarse grains production is forecast to increase by 5 per cent in 2011–12 to 1.1 billion tonnes. Barley production is forecast to recover modestly after a significant decline in 2010–11, while corn production is forecast to reach a new record.

World coarse grains prices



Global coarse grains production



Barley

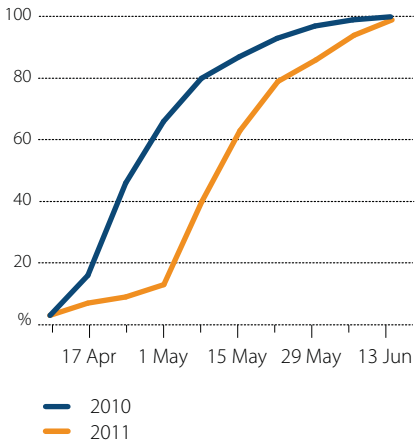
Global barley production is forecast to increase by 6 per cent in 2011–12 to 133 million tonnes. If realised, this would represent a modest recovery in barley production after adverse seasonal conditions in 2010–11 resulted in lower barley production in nearly all major producing countries. In 2010–11, Australia was the only major barley producer to increase production.

In 2010–11, severe drought conditions in the Russian Federation and Ukraine reduced barley production by 54 per cent and 28 per cent, respectively, to 8 million tonnes each. The dry conditions in the Black Sea region also had the effect of reducing soil moisture for the 2011–12 winter plantings. In Ukraine, for example, winter plantings are estimated to have declined by 22 per cent to 1.2 million hectares. Although higher spring plantings are expected in the Russian Federation and Ukraine, these have been delayed by a slow spring thaw. In 2011–12, barley production in the Russian Federation and Ukraine is forecast to increase by 65 per cent to 14 million tonnes and 35 per cent to 11.5 million tonnes, respectively.

In Canada, the barley area is expected to increase by 13 per cent in 2011–12 to 3.2 million hectares, based on current planting intentions. However, wet conditions in the major barley growing region (the Prairies) are delaying planting operations. For example, planting progress in Western Canada was around 60 per cent complete by early June. This compares with a normal progress of around 80 per cent for this time of the season. Under the assumptions that planting intentions will be completed in the remainder of the planting window and that average yields will be achieved, Canadian barley production is forecast to increase by 14 per cent to 9 million tonnes in 2011–12.

In the European Union, the total planted area for barley in 2011–12 is forecast to be largely unchanged at 12 million hectares. The planted area for the winter barley crop is estimated to have increased by around 1 per cent to 4.9 million hectares, while the planted area for the spring crop is forecast to be 1 per cent smaller at 7.5 million hectares. Producers are reported to be favouring plantings of higher priced wheat, rapeseed and corn over barley. Assuming a recovery to average yields, European Union production is forecast to be 3 per cent higher in 2011–12 at 55 million tonnes.

US corn planting progress



Corn

Global corn production is forecast to increase by 5 per cent in 2011–12 to 855 million tonnes, largely driven by expected increases in production in the United States and Latin America. If realised, this would represent a new record for global corn production.

Based on planting intentions, the area for corn in the United States is forecast to increase by 5 per cent in 2011–12 to 37 million hectares. The US Corn Belt experienced wet conditions early in the planting window, which delayed plantings and caused some flooding in the southern regions. However, damage to the corn crop was minimal. Assuming planting intentions for corn are realised and yields improve after

being adversely affected by last year's dry finish, US corn production is forecast to increase by 8 per cent in 2011–12 to a record 345 million tonnes.

In 2010–11, Argentina and Brazil experienced contrasting finishes to their respective corn crops. Weather conditions remained dry in Argentina throughout the growing season, while much of Brazil recorded good rainfall late in the season. Corn production in Argentina is estimated to have decreased by around 10 per cent to 20 million tonnes, while production in Brazil is estimated to be similar to last season at 56 million tonnes.

In 2011–12, the planting of corn crops in Latin America will not occur until September and the area planted will depend, in part, on movements in the prices of corn relative to other competing crops. The planted area for corn is forecast to increase by 3 per cent in Argentina, to 3 million hectares, and to remain largely unchanged at 13 million hectares in Brazil. Assuming a return to average yields, production is forecast to increase by 21 per cent to 25 million tonnes in Argentina and by 7 per cent to 59 million tonnes in Brazil.

World consumption to grow slowly

World consumption of coarse grains is forecast to rise by 1 per cent in 2011–12 to 1.1 billion tonnes. Relatively high prices are expected to moderate growth in the use of coarse grains for feed and industrial purposes.

Global feed consumption of coarse grains is forecast to increase marginally, from 655 million tonnes in 2010–11 to around 658 million tonnes in 2011–12. The consumption of corn for feed is forecast to increase by 1 per cent to 505 million tonnes in 2011–12. In China, consumption is expected to increase by 3 per cent to 118 million tonnes. In contrast, feed consumption of corn is forecast to decline by 2 million tonnes in the United States, the world's largest feed grain market, to around 130 million tonnes in 2011–12.

Global industrial use of coarse grains is forecast to rise by 2 per cent in 2011–12 to 475 million tonnes. Growth in industrial use has been slowing over the past few seasons as the share of corn-based ethanol approaches the limit specified in US ethanol mandates. For 2011 and 2012, the mandates require the production and blending of 53 billion and 58 billion litres of ethanol (mainly corn based) into US transport fuels, respectively. A record 127 million tonnes of corn, 40 per cent of last year's production, was used to produce ethanol in 2010–11. In the coming season, at least 130 million tonnes will be required, as ethanol margins remain positive despite higher corn prices.

World stocks forecast to rise

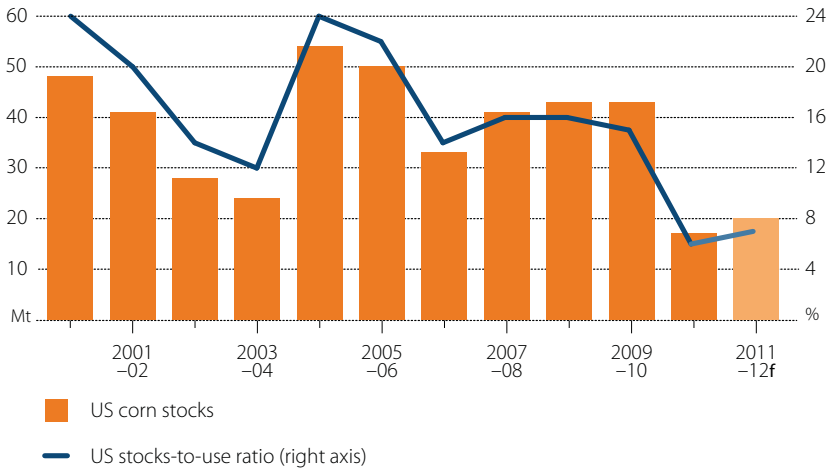
Global coarse grains closing stocks are forecast to increase by 3 per cent in 2011–12 to 160 million tonnes, after declining by 21 per cent in 2010–11. A forecast increase in corn stocks is expected to more than offset a decline in barley stocks.

World closing stocks of corn are forecast to increase by 5 per cent in 2011–12 to 127 million tonnes, after declining by 16 per cent in 2010–11. The forecast recovery is expected to be driven by record corn production and a slowing in consumption growth. With record corn

production forecast for 2011–12, corn stocks in the United States are expected to increase from 17 million tonnes last season to 20 million tonnes. The stocks-to-use ratio in the United States is forecast to increase slightly, but remain historically low at 7 per cent in 2011–12.

In contrast, world closing barley stocks are forecast to decline by a further 15 per cent in 2011–12 to 19 million tonnes, after declining by 39 per cent in 2010–11. The world stocks-to-use ratio for barley is forecast to decline to 14 per cent compared with an estimated 16 per cent in 2010–11.

US corn closing stocks

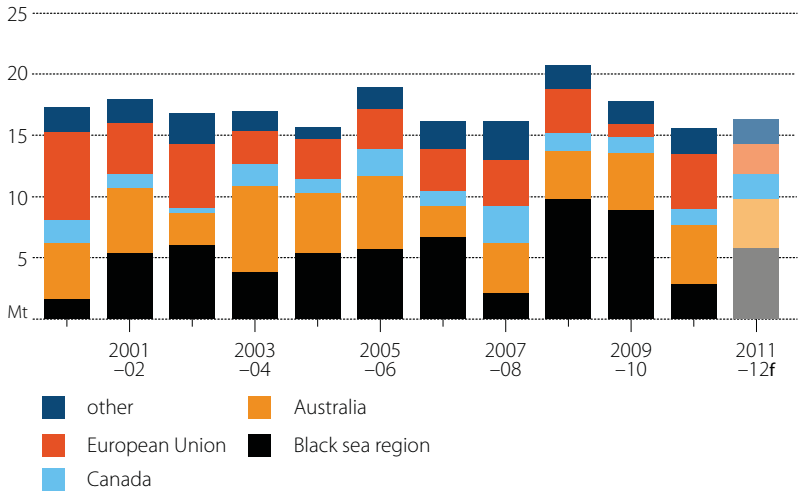


Trade to increase

Global trade in coarse grains is forecast to rise by 1 per cent in 2011–12 to 116 million tonnes. Barley exports are forecast to recover in line with expected higher world barley production and the recent decision to lift restrictions on exports from the Russian Federation and Ukraine. Exports from the Russian Federation are forecast to rise to 1.5 million tonnes, well above the estimated 250 000 tonnes in 2010–11, although still significantly below the exports in previous years. The Russian Federation has announced the abolition of export restrictions on grains from 1 July 2011. Exports from Ukraine are forecast to be 4 million tonnes in 2011–12, 60 per cent higher than in 2010–11. Ukraine removed export quotas in late May 2011, but will impose an export tax effective until 1 January 2012. In addition, forecast higher barley production in Canada is expected to boost Canadian exportable supplies by 14 per cent. Overall, global barley trade is forecast to be 16 million tonnes in 2011–12, compared with 15.5 million tonnes in 2010–11.

Global corn trade for 2010–11 is estimated to be 91 million tonnes and is forecast to rise 1 per cent to 92 million tonnes in 2011–12. This increase is being driven by higher corn exports from the United States, which are forecast to rise by 3 per cent to 51 million tonnes next season.

World barley exports



Australian barley prices to decline

In line with forecast lower world prices, Australian barley prices are expected to average lower in 2011–12, with the feed barley price forecast to fall by 15 per cent to $185 a tonne and the malting barley price by 5 per cent to $245 a tonne. The combined effects of the widespread downgrading of the 2010–11 winter crop and a relatively large sorghum harvest are expected to put downward pressure on domestic feed prices in 2011–12. The forecast decline in the price of malting barley reflects expected lower world barley prices in 2011–12 due to higher world production.

Production to decline

The area planted to barley is forecast to rise marginally by 1 per cent in 2011–12 to 4.1 million hectares. The areas planted to wheat and canola are forecast to increase more significantly than barley because the prices for those grains are presently more attractive to producers.

Yields in the eastern states are forecast to be above average in 2011–12 but lower than the record yields achieved in 2010–11. In Western Australia, yields are forecast to be above those achieved in the very dry 2010–11 season, assuming seasonal conditions return to more favourable patterns.

Reflecting the forecasts for area planted and the yield assumptions, Australian barley production is forecast to decrease by 13 per cent in 2011–12 to 8.1 million tonnes. Total Australian coarse grains production is forecast to decline by 8 per cent to 12.9 million tonnes in 2011–12.

Exports to decline

With total Australian coarse grains production forecast to decline, total coarse grains exports are forecast to decline by 3 per cent to 4.8 million tonnes in the 2011–12 financial year. Similarly, export values are forecast to decline by 5 per cent to A$1.3 billion in 2011–12.

Coarse grains outlook

		2009–10	2010–11 f	2011–12 f	% change
World					
Production	Mt	1 107	1 084	1 138	*5.0*
– barley	Mt	149	125	133	*6.4*
– corn	Mt	812	817	855	*4.7*
Consumption	Mt	1 099	1 125	1 133	*0.7*
Trade	Mt	123	115	116	*0.9*
Closing stocks	Mt	196	155	160	*3.2*
Stocks-to-use ratio	%	18	14	14	*0.0*
US corn price (fob Gulf, Sep–Aug)	US$/t	163	271	251	*– 7.4*
Australia					
Area	'000 ha	6 179	6 022	6 236	*3.6*
– barley	'000 ha	4 422	4 077	4 117	*1.0*
– grain sorghum	'000 ha	498	637	702	*10.2*
Production	kt	11 408	14 043	12 867	*– 8.4*
– barley	kt	7 865	9 334	8 093	*– 13.3*
– grain sorghum	kt	1 508	2 137	2 273	*6.4*
Exports **b**	kt	4 974	4 964	4 818	*– 2.9*
– value	A$m	1 280	1 347	1 281	*– 4.9*
Feed barley price	A$/t	155	217	184	*– 15.2*
Malting barley price	A$/t	202	259	246	*– 5.0*

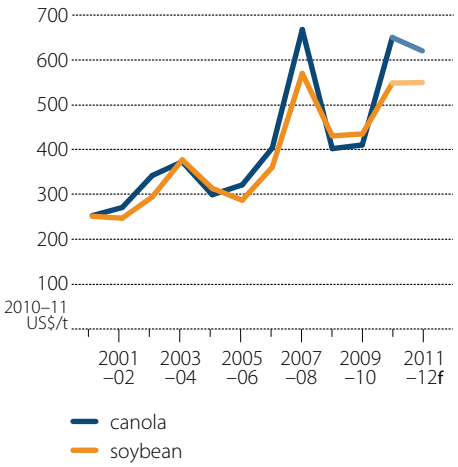
b July to June years. **f** ABARES forecast.
Sources: ABARES; US Department of Agriculture; ABS.

Oilseeds

Fiona Crawford

The world oilseeds indicator price (soybeans, cif, Rotterdam) is forecast to average around US$560 a tonne in 2011–12, slightly higher than the estimated average for 2010–11 (US$549 a tonne). Growth in world soybean consumption is forecast to exceed expected higher world production and put upward pressure on prices.

World oilseed indicator prices



In contrast to soybeans, the world canola indicator price (cif, Hamburg) is forecast to decline by 3 per cent in 2011–12 to US$632 a tonne, reflecting the effect of forecast higher exports from Canada.

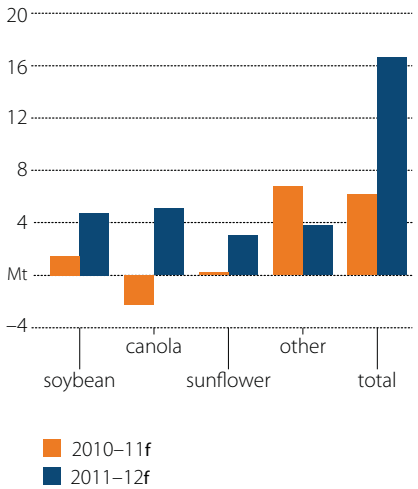
World oilseed production to reach a new high

World oilseed production is forecast to rise by 4 per cent in 2011–12 to a record 465 million tonnes, with the most significant increase (in absolute volume terms) forecast for canola, followed by sunflower and soybean.

Canola

World production of canola is forecast to increase by around 5 million tonnes, or 9 per cent, in 2011–12 to 63 million tonnes, driven mainly by a forecast recovery in Canadian production.

Oilseed production changes



The Canadian canola crop is set to rebound in 2011–12 from last year's weather-affected production. Late snowstorms and wet weather reduced planted area, and production in 2010–11 fell to 12 million tonnes. Although plantings in 2011–12 have been delayed by unfavourable weather conditions, planting intentions have risen markedly in response to higher world prices and the area that will actually be planted is forecast to increase by 14 per cent to 7.8 million hectares. Assuming average yields, Canadian canola production is forecast to increase by 23 per cent in 2011–12 to around 14 million tonnes.

In contrast, canola/rapeseed production in the European Union is forecast to decline by around 6 per cent in 2011–12 to 19 million tonnes. Frost and dry conditions have adversely affected crop development, with the German rapeseed crop being the most

severely affected. In France, rapeseed production is forecast to increase by 4 per cent to 5 million tonnes in 2011–12, driven by a 4 per cent increase in area planted.

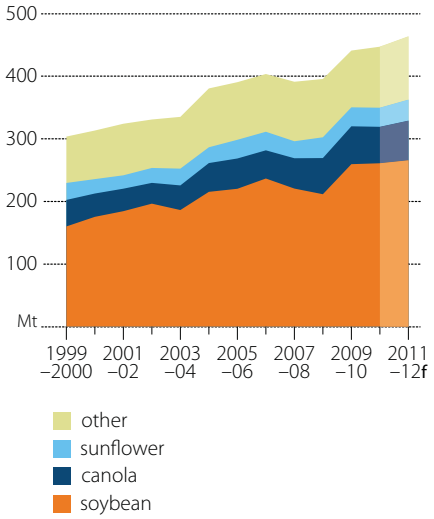
Soybeans

World production of soybeans is forecast to increase by 5 million tonnes, or 2 per cent, in 2011–12 to 266 million tonnes. Reduced production in the United States is forecast to be more than offset by increased production in Brazil and Argentina.

In the United States, soybean plantings are forecast to decline by 1 per cent in 2011–12 to 31 million hectares. Although plantings were adversely affected by seasonal conditions in early May 2011, the progress improved markedly in late May. Assuming the current planting intentions are realised, production is forecast to be around 90 million tonnes in 2011–12, a decline of 2 million tonnes from 2010–11.

The 2010–11 soybean harvest in Brazil has been completed and production is estimated to have been a record of 74 million tonnes (a year-on-year rise of 7 per cent). Brazilian farmers are expected to continue to expand soybean plantings in 2011–12, mainly at the expense of corn, and production is forecast to increase by 5 per cent to around 77 million tonnes.

World oilseed production



In Argentina, drought conditions affected soybean production in 2010–11 and production is estimated to be 10 per cent lower at around 49 million tonnes. In 2011–12, farmers in Argentina are expected to increase the planted area by 4 per cent to 21 million hectares. Argentine soybean production is forecast to increase by 6 per cent in 2011–12 to 53 million tonnes, assuming a return to average yields.

Sunflower

World production of sunflower seed is forecast to increase by 3 million tonnes, or 10 per cent, in 2011–12 to 34 million tonnes, with forecast production increases in the Black Sea region to more than offset a forecast decrease in production in Argentina.

Sunflower plantings in the Black Sea region are forecast to recover in 2011–12 after drought conditions lowered the planted area in 2010–11. Many farmers in the Russian Federation and Ukraine have invested in improved production technologies to capitalise on recent high prices. Sunflower plantings in the Russian Federation and Ukraine are forecast to increase in 2011–12 by 36 per cent and 27 per cent to 8 million hectares and 5.5 million hectares, respectively. Assuming a return to average yields and favourable growing conditions, record sunflower crops are forecast by these two producers in 2011–12, at 8 million tonnes and 7.5 million tonnes, respectively.

The 2010–11 sunflower crop harvest has been completed in Argentina. Production is estimated to have increased by 52 per cent to a record 3.5 million tonnes as a result of record yields and a larger area planted. Although sunflower plantings are forecast to increase in 2011–12 by a further 3 per cent to 1.7 million hectares, Argentine production is forecast to decrease to 3.1 million tonnes, assuming a return to average yields.

Record crush drives up oilseed consumption

World oilseed consumption is forecast to rise by 2 per cent in 2011–12 to around 461 million tonnes. With higher vegetable oil prices supporting crush margins, world oilseed crush in 2011–12 is forecast to increase by 2 per cent to around 393 million tonnes. Higher oilseed crush margins have encouraged investment in new crushing infrastructure, especially in China and Latin America.

The total oilseed crush in China is forecast to increase by 6 per cent in 2011–12 to around 93 million tonnes. In Latin America, the Brazilian and Argentine crush are forecast to increase by 4 per cent and 3 per cent, respectively, in 2011–12. In contrast, the European Union oilseed crush is expected to be reduced by 2 per cent in 2011–12 because of lower stocks and forecast lower rapeseed production.

Consumption of oilseeds products to remain strong

World vegetable oil consumption is forecast to increase by 1 per cent in 2011–12 to a record 152 million tonnes. Population growth in China and India and higher biodiesel use in several countries is underpinning this forecast increase.

World vegetable oil for human consumption is forecast to increase as a result of income growth and diversifying diets, especially in Asia and Latin America. Global consumption of vegetable oil is forecast to increase by 2 per cent to 17 kilograms a person. In China, vegetable oil for human consumption is forecast to increase by 6 per cent in 2011–12 to a total of 27.5 million tonnes.

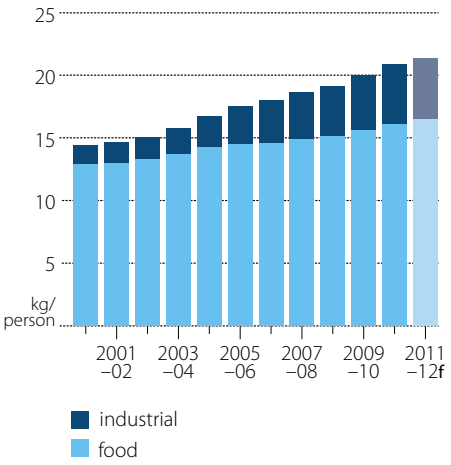
Industrial use of vegetable oil is forecast to rise by 1 million tonnes in 2011–12 to around 34 million tonnes. Global demand for vegetable oil for industrial use has been driven mainly by biodiesel mandates in the Americas and the European Union. The Brazilian and Argentine governments have expressed their intentions to raise the biodiesel blending mandates from 5 per cent (B5) and 7 per cent (B7) to 7 per cent (B7) and 10 per cent (B10), respectively, by the end of 2011.

In the United States, industrial soya oil consumption is forecast to increase by 40 per cent in 2011–12, led by the mandated use of biodiesel. Biodiesel consumption in 2011–12 is forecast to be around 800 million gallons (3 billion litres), a rise from 650 million gallons in 2010–11. Industrial consumption of rapeseed/canola oil in the European Union is also forecast to increase in 2011–12 by around 3 per cent.

World protein meal consumption is forecast to increase by 2 per cent in 2011–12 to around 263 million tonnes. This forecast growth is driven by an increase in demand from the intensive livestock sector, particularly in China. China is the world's largest consumer of protein meal

and is expected to account for almost half of the forecast growth in global oilseed meal consumption in the short term. The consumption of soybean meal, which accounts for the majority of oilseed meal consumed in China, is forecast to increase by 10 per cent to 47 million tonnes in 2011–12.

World vegetable oil use

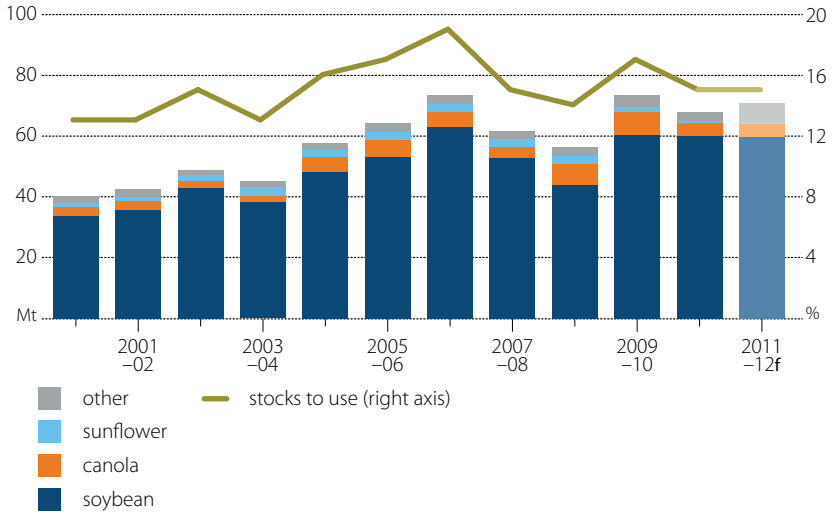


Oilseed closing stocks

World oilseed closing stocks are estimated to decline by 6 million tonnes in 2010–11 to around 68 million tonnes. This fall in stocks mainly reflects lower production in the Black Sea region, Canada and Argentina. Global canola closing stocks fell by 3 million tonnes in 2010–11 to around 4 million tonnes, and sunflower stocks declined by more than half to around 820 000 tonnes.

In 2011–12, global oilseed closing stocks are forecast to increase by 4 per cent to 71 million tonnes. This forecast increase is driven by expected increases in the production of soybeans in Latin America and sunflower in the Black Sea region. Closing soybean stocks are forecast to remain steady in 2011–12 at around 60 million tonnes, while sunflower stocks are forecast to increase by 96 000 tonnes to around 916 000 tonnes. Canola ending stocks are forecast to remain around 4 million tonnes in 2011–12, mainly because of a forecast decline in European Union stocks more than offsetting rises in other parts of the world.

Oilseeds closing stocks



International trade

World oilseed trade is estimated to be 113 million tonnes in 2010–11. In Brazil exports are expected to increase by 13 per cent in 2010–11 to 32 million tonnes, partly offsetting the decline in soybean exports from Argentina. Exports from Argentina are expected to fall by 27 per cent to 9.5 million tonnes because of lower than expected production. China has resumed importing soybean oil from Argentina, importing around 600 000 tonnes in 2010–11.

World trade in oilseeds is forecast to rise by 3 per cent in 2011–12 to 116 million tonnes. World soybean and canola/rapeseed trade are forecast to increase by 3 per cent and 6 per cent to 100 million tonnes and 11 million tonnes, respectively. Lower rapeseed production in the European Union in 2011–12 is expected to reduce European Union export supplies. However, the impact on world trade is forecast to be partially offset by a larger canola crop from Canada. Favourable growing conditions in the Black Sea region are expected to result in higher world sunflower trade, with Ukraine, for example, forecast to double its sunflower exports to 800 000 tonnes in 2011–12.

Australian canola area to rise

The total area sown to canola in Australia is forecast to increase by 4 per cent in 2011–12 to around 1.7 million hectares. The forecast increase reflects current favourable canola prices and improved soil moisture profiles in most cropping regions in the eastern states. The planted area is forecast to increase: by 27 per cent to 395 000 hectares in New South Wales; by 34 percent to 350 000 hectares in Victoria; and by 8 per cent to 210 000 hectares in South Australia. In contrast, the planted area in Western Australia is estimated to have declined by 14 per cent to 750 000 hectares this season because of a lack of rainfall, which did not allow plantings in some regions. Assuming yields will be slightly above average, Australian canola production is forecast to increase by 6 per cent to around 2.3 million tonnes.

Australian exports to rise markedly

In the first six months of the 2010–11 marketing year (November to October), the value of Australian canola exports increased by 53 per cent to $607 million compared with the same period in the previous year. The increase was driven by higher world canola prices and higher export shipments. The Netherlands has been the major export destination for Australian canola in 2010–11, accounting for around 60 per cent of all shipments.

Australian canola exports, by destination, November to April ('000 tonnes)

	2008–09	2009–10	2010–11
Netherlands	402	0	619
Germany	58	0	176
Belgium	58	228	128
France	136	0	46
Japan	7	131	38
Pakistan	0	375	2
Other	4	121	3
Total	665	856	1 011

With forecast higher production, Australian canola exports in the 2011–12 financial year are forecast to increase by around 619 000 tonnes to 1.9 million tonnes. Over the same period, the value of canola exports is forecast to increase by 42 per cent to around $1.1 billion.

Oilseeds outlook

		2009–10	2010–11 f	2011–12 f	% change
World					
Production	Mt	442	448	465	*3.8*
Consumption	Mt	423	451	461	*2.2*
– oilseed meal	Mt	235	258	263	*1.9*
– vegetable oil	Mt	138	151	152	*0.7*
Closing stocks	Mt	73	68	71	*4.4*
Stocks-to-use ratio	%	17	15	15	*0.0*
Soybeans indicator price	US$/t	429	549	560	*2.0*
Australia					
Total production	kt	2 609	3 536	3 955	*11.8*
– winter	kt	1 933	2 151	2 278	*5.9*
– summer	kt	676	1 385	1 677	*21.1*
Canola					
Production	kt	1 920	2 136	2 265	*6.0*
Exports **b**	kt	1 238	1 293	1 912	*47.9*
– value	$m	583	765	1 087	*42.1*
Price (Nov–Oct) (delivered Melbourne)	A$/t	440	572	543	*– 5.1*

b Marketing year; November–October. **f** ABARES forecast.
Sources: ABARES; Australian Bureau of Statistics; US Department of Agriculture.

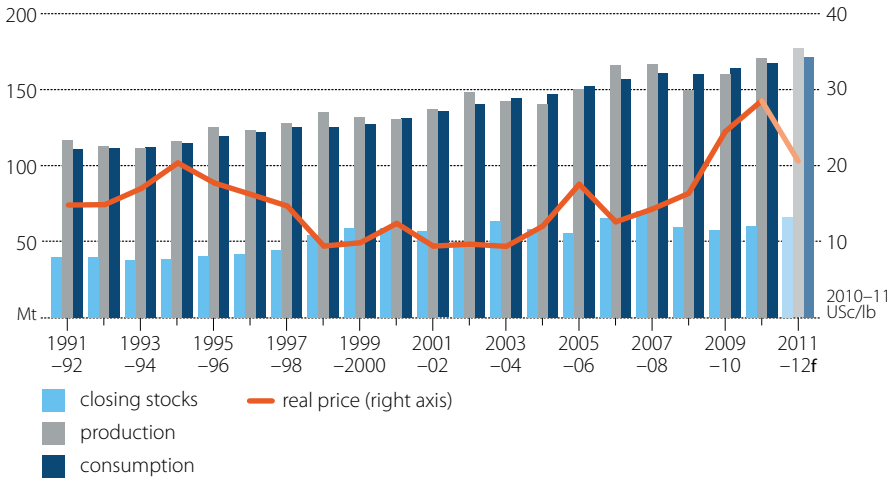
Sugar

Max Foster

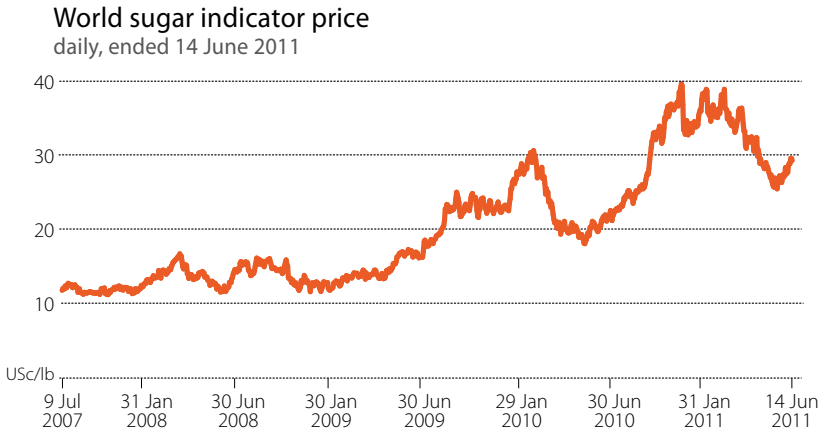
Lower sugar prices in 2011–12

The world sugar indicator price (Intercontinental Exchange, no. 11 spot, fob Caribbean) is forecast to average US20.9c a pound in 2011–12 (October to September), nearly 27 per cent lower than in 2010–11. The forecast decline reflects the effect of record world sugar production in 2011–12 that is expected to outweigh the forecast increase in consumption, enabling substantial rebuilding of world sugar stocks.

World sugar indicators



The world sugar indicator price declined steadily from US36c a pound in early March 2011 to reach US29.3c a pound on 14 June 2011. The decrease followed an unexpected high level of sugar production in Thailand in 2010–11 and commencement of the 2011–12 cane harvest in Brazil (March to February). The indicator price is forecast to ease further over the remainder of 2011, if the expected substantial increase in world sugar stocks is realised.

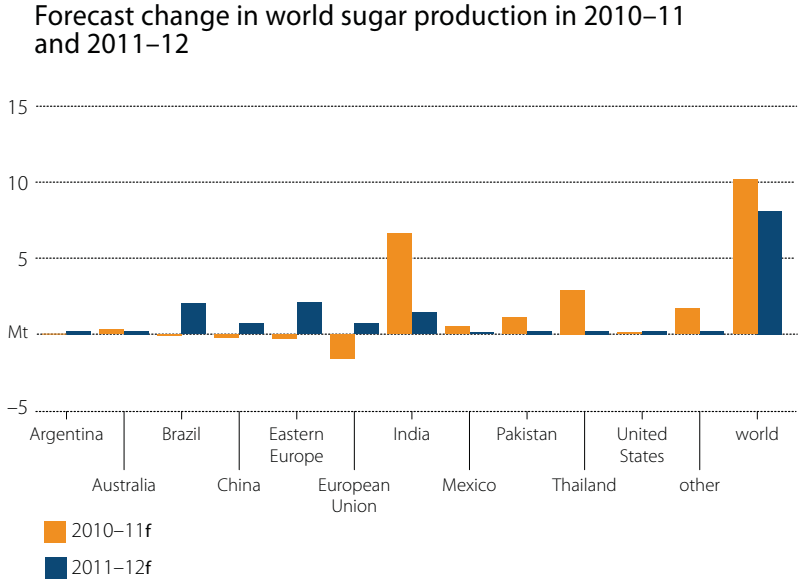


Record world sugar production in 2011–12

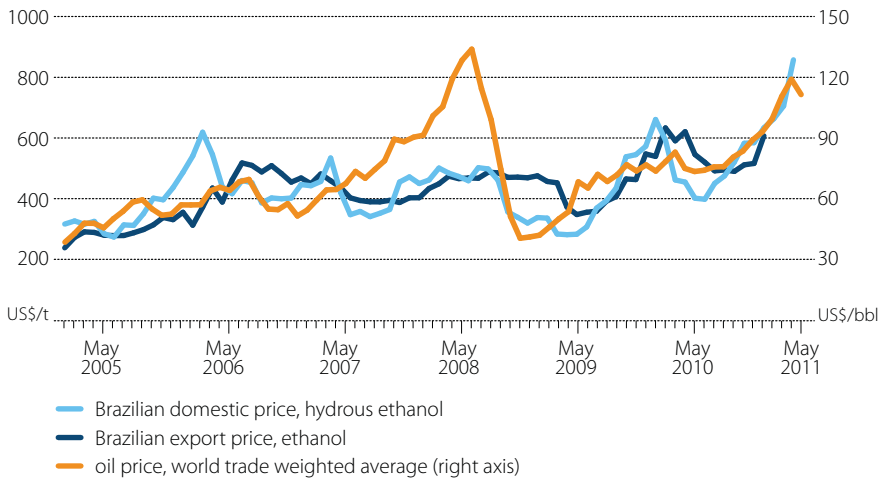
World sugar production is forecast to increase by 8.1 million tonnes in 2011–12 to a record 177.1 million tonnes. Large production increases are forecast for all major sugar producing countries as both sugar cane and beet growers respond to recent high sugar prices.

Forecast change in world sugar production, 2010–11 and 2011–12

Brazilian sugar production is forecast to increase by 5.3 per cent in 2011–12 (October to September) to 42 million tonnes. A forecast 4.6 per cent increase in sugar cane production and a higher sugar yield are expected to be partially offset by a 1.5 per cent increase in the proportion of sugar cane allocated to ethanol production. The combination of higher world oil prices and lower world sugar prices is expected to increase the incentive to divert sugar cane to ethanol production.



Brazilian ethanol prices and world oil prices



Indian sugar production is forecast to increase by 1.4 million tonnes in 2011–12 to 28.5 million tonnes, assuming average yields. The area currently planted to cane is estimated to have increased by 3 per cent in response to high sugar prices in 2010–11. The Indian (or south-west) monsoon, which is the main driver of yields in India, started on time in early June 2011 and has so far delivered average rainfall.

Sugar production in the European Union is forecast to increase by 0.7 million tonnes in 2011–12 to 16.5 million tonnes. This forecast increase is despite drought conditions in some Western European producing countries that are expected to reduce the yield potential of sugar beet crops. The area planted to sugar beets is forecast to increase by 5 per cent.

Russian sugar production is forecast to increase to 4.5 million tonnes in 2011–12, 1.6 million tonnes more than in 2010–11. The forecast increase reflects higher plantings and a return to average yields after dry conditions last season adversely affected production. Ukrainian sugar production is forecast to increase to 2.2 million tonnes in 2011–12, 0.6 million tonnes higher than in 2010–11.

After the surprisingly large sugar harvest of 2010–11, Thailand's sugar production is forecast to increase by 2 per cent in 2011–12 to 10.2 million tonnes. High sugar prices are encouraging Thai farmers to switch from cassava production to sugar cane production.

US sugar production is forecast to increase by 0.2 million tonnes in 2011–12 to 7.4 million tonnes. Most of the forecast increase is expected to be sourced from higher beet production, which should account for nearly 59 per cent of total US sugar production in 2011–12. Most US sugar beet plantings now comprise genetically modified (GM) varieties of beet sugar. A US court ruling has temporarily enabled these varieties to be planted, overriding a previous ruling that prevented GM plantings. The new ruling will remain in force until the US Department of Agriculture provides an appropriate environmental assessment of GM varieties.

Steady growth in world sugar consumption in 2011–12

World sugar consumption is forecast to grow by 2.2 per cent in 2011–12, to 170.3 million tonnes. This forecast growth mainly reflects world population growth and steadily rising consumer incomes, particularly in developing countries such as China and India. Forecast lower world sugar prices in 2011–12 are also expected to encourage increased sugar consumption.

Slightly lower world sugar trade in 2011–12

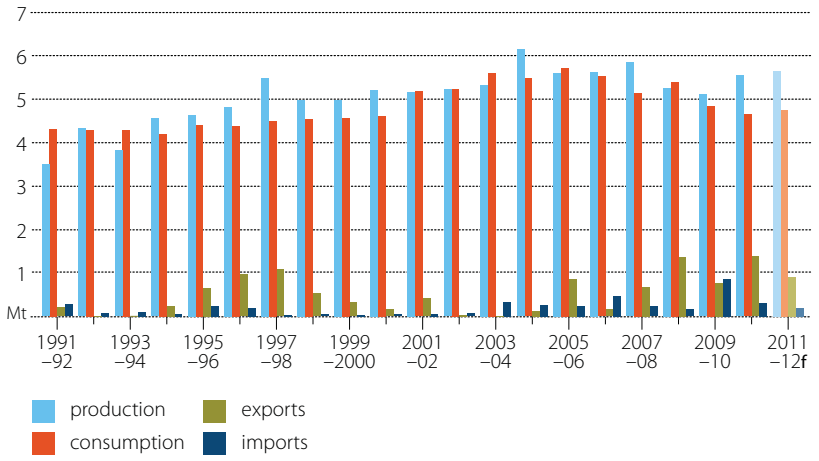
World sugar exports are forecast to decline slightly by 0.7 million tonnes in 2011–12 to 50 million tonnes. The forecast decrease is expected to be driven by lower import demand in 2011–12 in Eastern Europe and China. Export availabilities are forecast to increase in 2011–12 in Brazil, Thailand and India and only slightly in Australia.

Indian sugar exports in 2011–12 are forecast to be 3 million tonnes, similar to exports in 2010–11. India reimposed an import tariff of 60 per cent on raw sugar imports in April 2011, after having lowered the tariff to zero in early 2009 to contain increases in domestic sugar prices.

Mexican sugar industry

Mexico accounts for 3.5 per cent of world sugar production and 1.5 per cent of world sugar exports. It is also a large exporter to the high-priced US sugar market. Virtually all of Mexico's sugar production comes from sugar cane rather than sugar beet. Mexican sugar production peaked at over 6 million tonnes in 2003–04.

Mexican sugar supply and disposal



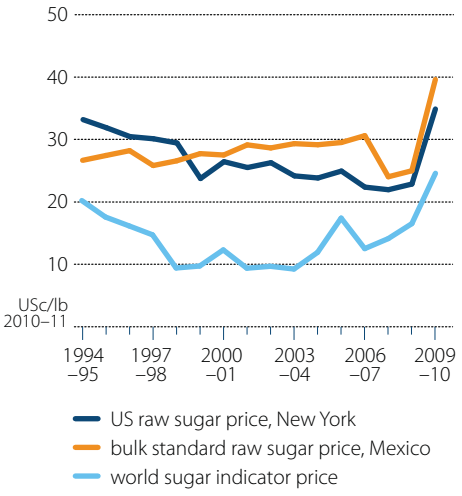
Mexican raw sugar prices are kept well above the world price through use of high tariffs on imports, although in some years tariff-free quotas have been introduced to ease upward pressure on domestic sugar prices.

continued...

Mexican sugar industry continued

Each year, the National Committee for the Sustainable Development of Sugarcane sets a reference price for sugar cane and legislation that requires that approximately 57 per cent of the price be paid to cane growers. In 2010–11, the reference price was 10 222 pesos per metric tonne of sugar, which is equivalent to US37.12c a pound.

Mexican, US and world sugar prices

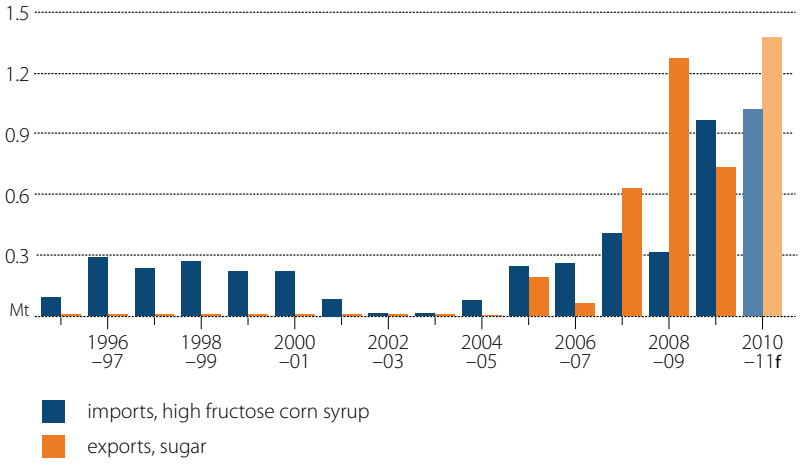


Mexico is a signatory to the North American Free Trade Agreement, which came into effect in 1994. Special arrangements were instituted to phase out trade restrictions on sugar between Mexico and the United States so as to initially not undermine domestic support arrangements for sugar in the United States. This involved tariff-free quotas on US sugar imports from Mexico that were gradually increased in phases from 1994 until trade restrictions were fully removed at the beginning of 2008.

Removal of sugar trade restrictions between these two countries has increased Mexican exports of sugar to the United States and increased exports of high fructose corn syrup from the United States to Mexico. Mexican sugar production has increased since 2009, but domestic sugar consumption has declined since the early 2000s, as high fructose corn syrup has replaced sugar in sweetener consumption.

Mexican raw sugar prices were well above US raw sugar prices until 2008, but since then have more closely aligned.

Mexican sweetener trade with the United States



The OECD estimated that between 2007 and 2009 the domestic sugar price in Mexico averaged 29 per cent above the world sugar price, implying that, on average, around 21 per cent of the farmgate return of Mexican cane growers over this period resulted from government support policies.

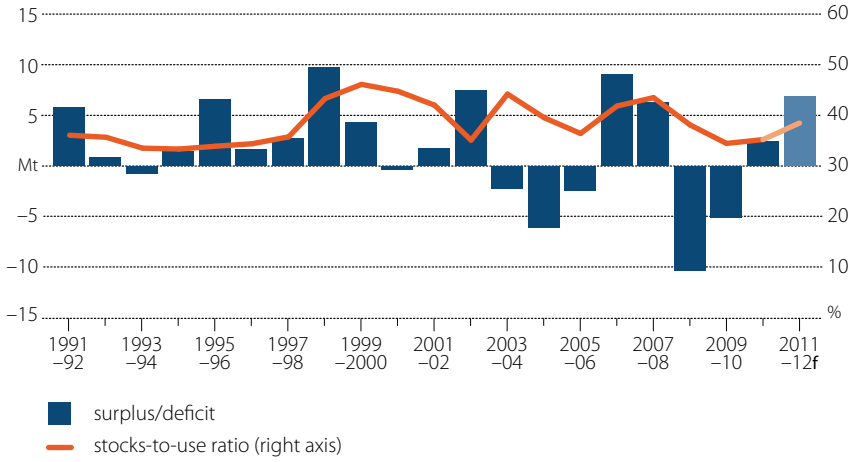
The United States is expected to again increase its tariff free sugar import quota in 2011–12 above the minimum 1.2 million tonnes specified under its World Trade Organization obligations.

The European Union released 500 000 tonnes of over-quota sugar into its domestic market in March 2011 to meet increased demand. Since March 2011, it also opened a zero duty import quota totalling 500 000 tonnes of sugar. These imports are only allowed to occur between April and September 2011.

Substantial recovery in world sugar stocks in 2011–12

A substantial surplus in world sugar production in 2011–12 would increase closing world sugar stocks by 6.8 million tonnes to 65.4 million tonnes. If realised, this would increase the stocks-to-use ratio from 35 per cent in 2010–11 to 38.4 per cent in 2011–12. This ratio would be slightly below the average of 39 per cent for the 10 years to 2010–11.

Indicators of the world sugar balance



Lower Australian production and cane returns in 2011–12

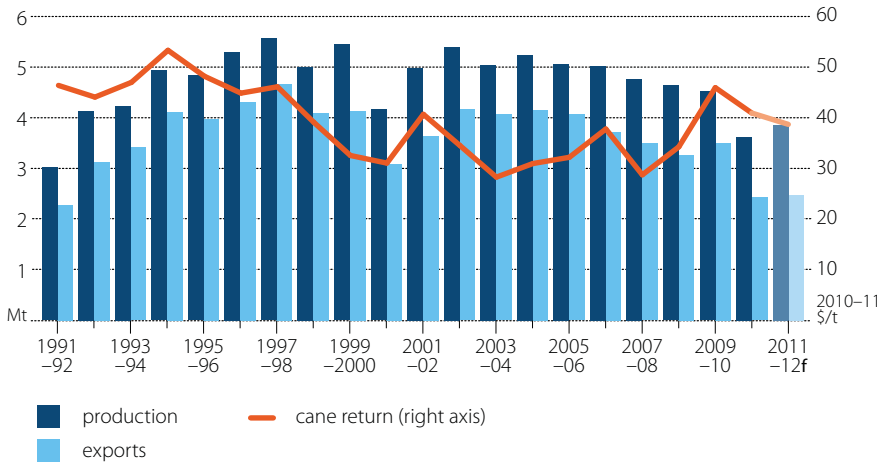
Australian mill-gate returns to cane growers are forecast to decline to $40.9 a tonne in 2011–12, down from $38.7 a tonne in 2010–11. Queensland Sugar Limited (QSL) is forecasting its 2011–12 seasonal pool return to be in the range of $415 to $515 a tonne, International Polarity Scale, compared with around $465 a tonne in 2010–11. More than 90 per cent of Australian sugar exports are marketed through QSL.

In 2010–11, returns for sugar marketed through QSL were adversely affected by a shortfall between forward commitments and actual quantities delivered for marketing. This meant QSL had to buy sugar in a rising market to close out its forward commitments. The shortfall is estimated by QSL to have reduced average grower returns by around $4 a tonne of cane.

Australian sugar production is forecast to increase by only 0.2 million tonnes to 3.85 million tonnes, despite increased plantings. This forecast reflects the effects of damage from tropical cyclone Yasi that is estimated to have reduced yield potential by around 30 per cent in a region that accounts for around 20 per cent of Australian sugar production. The 2011–12 harvest is also expected to include the 5 million tonnes of cane intended to be harvested in 2010–11, but stood over because of wet conditions.

Australian sugar exports are forecast to increase by 2 per cent in 2011–12 to 2.48 million tonnes, in line with an expected increase in sugar production. With lower world sugar prices and an assumed stronger Australian dollar, the value of Australian sugar exports is forecast to remain largely unchanged in 2011–12 at around $1.3 billion.

Australian sugar production, exports and returns



Sugar outlook

		2009–10	2010–11 f	2011–12 f	% change
World b					
Production	Mt	158.2	169.0	177.1	*4.8*
– Brazil	Mt	39.9	40.0	42.0	*5.0*
Consumption	Mt	163.3	166.6	170.3	*2.2*
Exports	Mt	54.2	50.7	50.0	*– 1.4*
Closing stocks	Mt	56.2	58.6	65.4	*11.6*
Change in stocks	Mt	– 5.1	2.4	6.8	
Stocks-to-use ratio	%	34	35	38	*9.1*
Price	USc/lb	24.0	28.5	20.9	*– 26.7*
Australia c					
Area	'000 ha	386	353	380	*7.6*
Production d	kt	4 519	3 620	3 852	*6.4*
Exports	kt	3 506	2 429	2 476	*1.9*
– value	A$m	1 887	1 296	1 287	*– 0.7*

b October–September years. **c** July–June years. **d** Raw tonnes actual. **f** ABARES forecast.
Sources: ABARES; Australian Bureau of Statistics; International Sugar Organization.

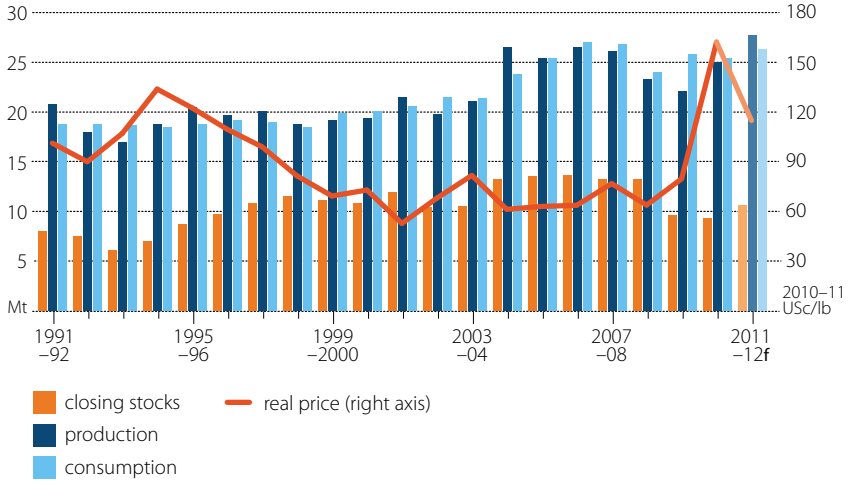
Cotton

Benjamin Komla Agbenyegah

World cotton prices to average lower in 2011–12

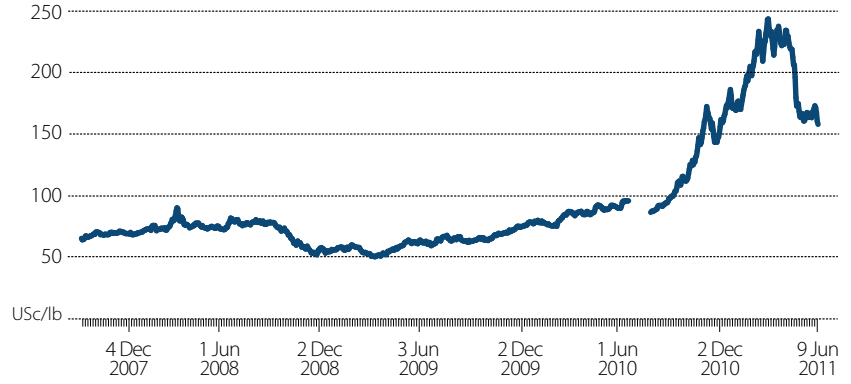
The world indicator price for cotton (the Cotlook 'A' index) is forecast to average around US116c a pound in 2011–12 (August to July), US46c a pound lower than the estimated average in 2010–11. The forecast fall in the cotton price reflects the effect of expected record world cotton production in 2011–12, which will outweigh expected growth in world cotton consumption and allow world cotton stocks to be replenished. Despite the forecast fall, world cotton prices in 2011–12 are expected to remain favourable in historic terms.

World cotton indicators



World cotton indicator price

daily, ended 9 June 2011

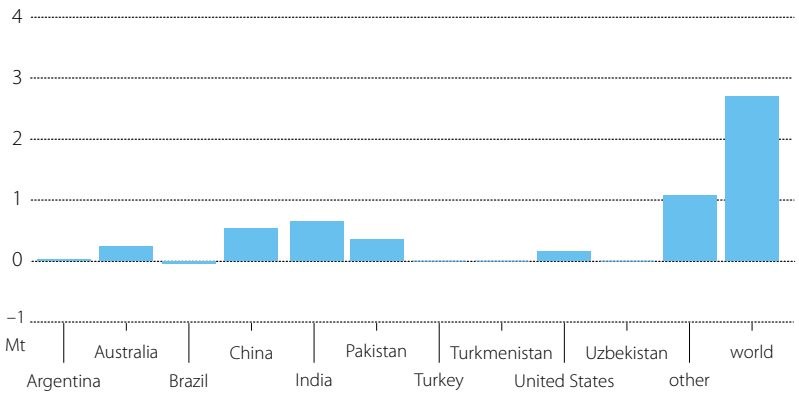


The world cotton indicator price peaked in early March 2011 at US243.7c a pound, before declining to around US157.9c a pound in early June in response to estimates of record cotton harvests in Argentina, Australia and Brazil. The cotton indicator price is forecast to decline further in the remainder of 2011, on the assumption of significantly higher cotton production in India, the United States, Pakistan and China.

Record world cotton production in 2011–12

World cotton production is forecast to increase by 11 per cent in 2011–12 to a record 27.7 million tonnes, compared with a recent high of 26.6 million tonnes in 2006–07. The forecast increase in world cotton production in 2011–12 reflects the combined effects of relatively high returns from cotton compared with production alternatives such as corn and soybeans. The world cotton area harvested is forecast to rise by 7 per cent in 2011–12 to around 36 million hectares, the largest in 17 years.

Change in world cotton production, 2011–12, by country



The area planted to cotton in the United States is forecast to increase by 15 per cent in 2011–12 in response to the relatively high prices received for cotton compared with grains and soybeans. However, US cotton production is forecast to increase by 5 per cent to 4.1 million tonnes because of an assumed return to normal yields and area abandonment level. The current dry seasonal conditions in Texas and flooding in some of the other southern states present a downside risk to the forecast of US cotton production in 2011–12.

Cotton production in India is forecast to increase by 13 per cent in 2011–12 to a record 5.9 million tonnes, driven by an expected increase in planted area. The planted area is forecast to increase by 5 per cent to 11.7 million hectares.

Cotton production in China is forecast to increase to 7.2 million tonnes in 2011–12, an increase of 8.2 per cent over the flood affected crops of 2010–11. This forecast increase also reflects a sharp increase in seed cotton (unginned cotton) prices in 2010–11, which rose much faster than the prices of competing crops in China. The higher seed cotton prices are forecast to drive a 6 per cent increase in the area planted to cotton in 2011–12 to 5.5 million hectares.

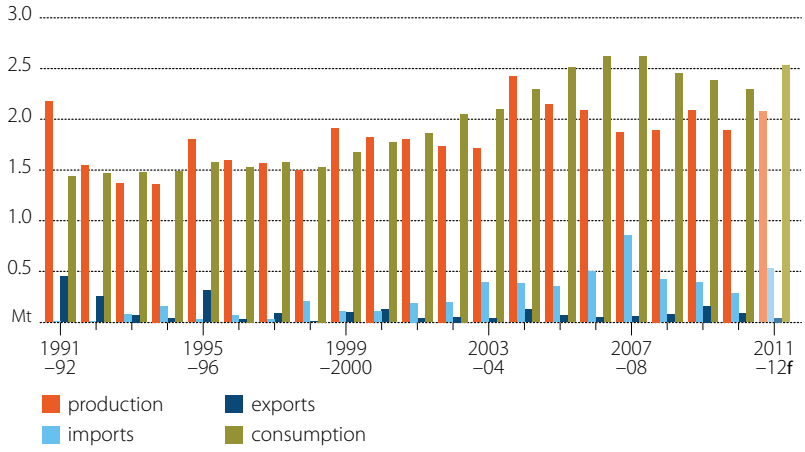
Cotton production in Pakistan is forecast to increase to 2.24 million tonnes in 2011–12, 18 per cent higher than the flood-affected crops of 2010–11.

Cotton industry in Pakistan

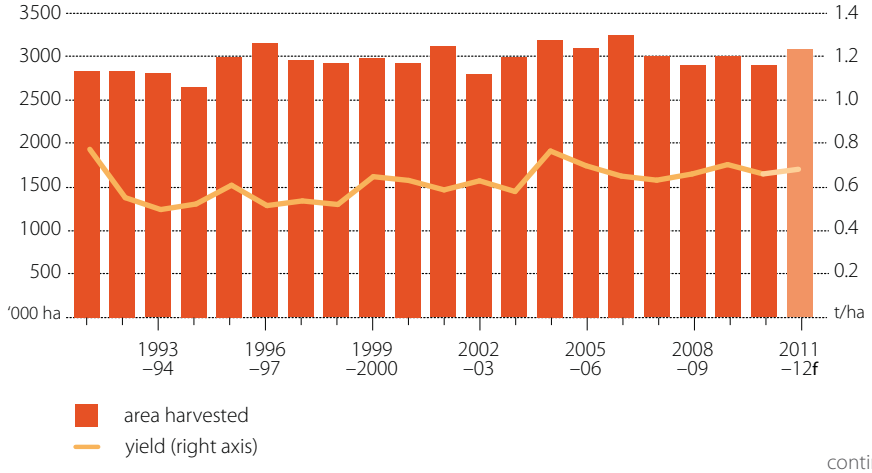
Pakistan is the world's fourth largest producer and third largest consumer of cotton. Pakistan is a world leader in the export of cotton yarn and a net importer of high-quality cotton because of strong domestic demand for better graded cotton.

The cotton industry is significant in Pakistan's economy. Raw cotton production accounts, on average, for 8.6 per cent of the value added in agriculture and 1.8 per cent of Pakistan's gross domestic product (GDP). In 2009, the textile industry in Pakistan accounted for 46 per cent of manufacturing, 54 per cent of employment, 55 per cent of exports and 8.5 per cent of total GDP.

Pakistan cotton indicators



Harvested cotton area and yield, Pakistan



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Cotton industry in Pakistan continued

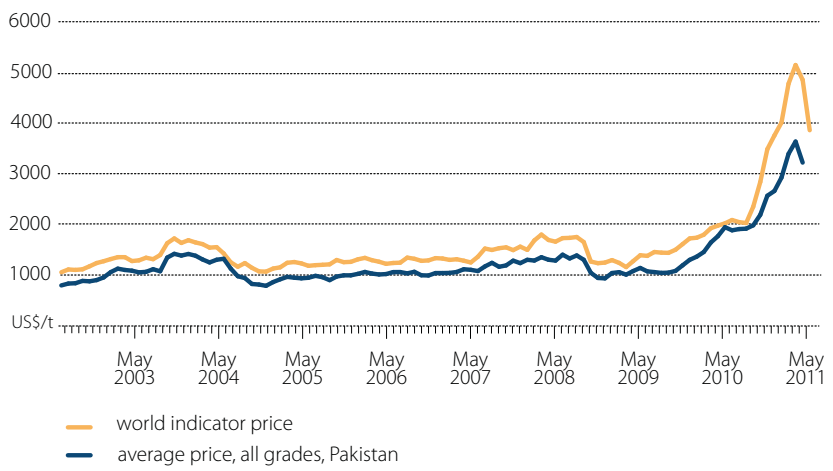
Cotton production in Pakistan peaked in the mid-2000s but has declined substantially since, largely in response to higher returns from grain production. Consequently, Pakistan has become more dependent on cotton imports to sustain its domestic textile industry. Despite increased cotton imports, cotton consumption in Pakistan has languished over the past decade as the textile industry has increased its use of synthetic fibres, particularly polyester.

Pakistan is seeking to increase its cotton production through the adoption of genetically modified (GM) cotton. GM cotton varieties have played an important role in improving cotton yields in other major cotton producing countries. In May 2010, eight varieties of insect-resistant cotton were approved for the first time in Pakistan for general cultivation. However, there are reports that illegal GM cotton varieties have made up more than half of Pakistan's total cotton plantings in recent years (Ahsan, R and Altaf, Z 2009, 'Development, adoption and performance of Bt cotton in Pakistan: a review', *Pakistan Journal of Agricultural Research*, vol. 22, no. 1/2, pp. 73–85).

There are no import tariffs on raw cotton and no quotas or taxes on exports. The Trading Corporation of Pakistan has a charter to stabilise domestic cotton prices but has not exercised the powers since the early 2000s. To encourage cotton production, the government has promoted the use of certified seeds, discouraged late cotton sowing, subsidised fertilisers, provided easy access to loans for cotton farmers to purchase inputs and developed a media campaign.

Domestic cotton prices in Pakistan closely follow movements in world cotton prices. Seed cotton prices in Pakistan increased significantly during 2010–11, reflecting the tight supply and demand situation in Pakistan and the difficulties faced in procuring imported cotton. As a result, domestic prices for cotton in 2010–11 were more favourable to growers than the prices of alternatives crops such as corn and soybeans. The domestic cotton price in Pakistan is expected to decrease in 2011–12, driven by expected lower world cotton prices.

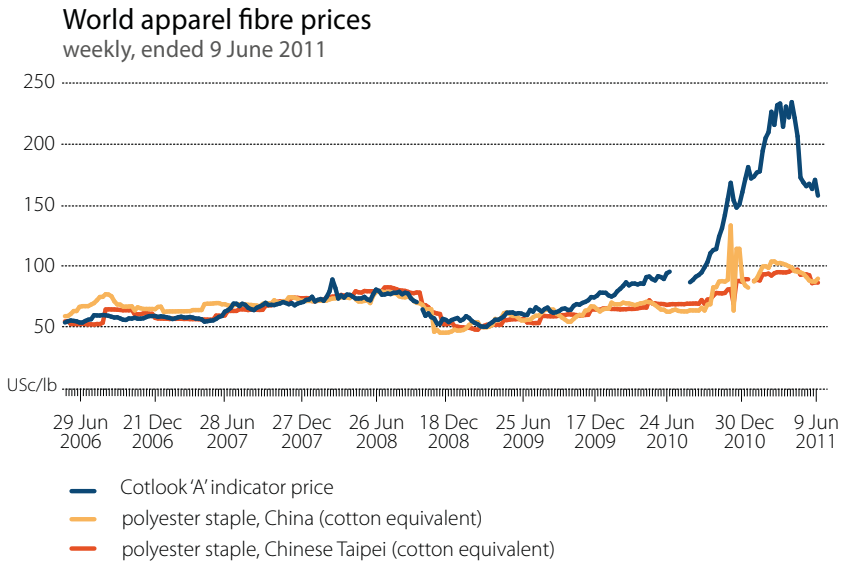
Pakistani and world cotton prices



World cotton consumption growing

World cotton consumption is forecast to increase by 3.5 per cent in 2011–12 to 26.3 million tonnes. The forecast increase is expected to be driven by growth in world income and lower world cotton prices. However, forecast low prices for competing fibres, especially polyester fibres, are likely to constrain the growth in world cotton consumption in 2011–12. The largest increases in mill use of cotton are forecast to take place in India, China, Pakistan and Turkey.

The world textile industry was buoyant in 2010–11, with world production of natural and manmade fibres increasing by a total of 8.6 per cent in 2010, the strongest growth in 25 years. The rate of growth in production was higher for manmade fibres than for cotton, and this resulted in the gap between world polyester and cotton prices widening in 2010–11. However, the forecast marked increased in world cotton production in 2010–11 and 2011–12 is expected to result in the current gap between cotton and polyester prices closing.



World cotton trade growing

World cotton exports are forecast to increase by 8 per cent in 2011–12 to 8.7 million tonnes, driven by strong growth of cotton import demand in China, Bangladesh and Turkey. Larger export supplies are forecast in 2011–12 for the United States, India, Australia, Brazil and Uzbekistan.

Recovery in world cotton stocks in 2011–12

World cotton production is forecast to exceed world consumption in 2011–12 for the first time since 2004–05 and, as a result, world cotton stocks are forecast to increase by 1.3 million tonnes in 2011–12 to 10.6 million tonnes. The world cotton stocks-to-use ratio is forecast to increase to 40.3 per cent in 2011–12, compared with 36.5 per cent in 2010–11.

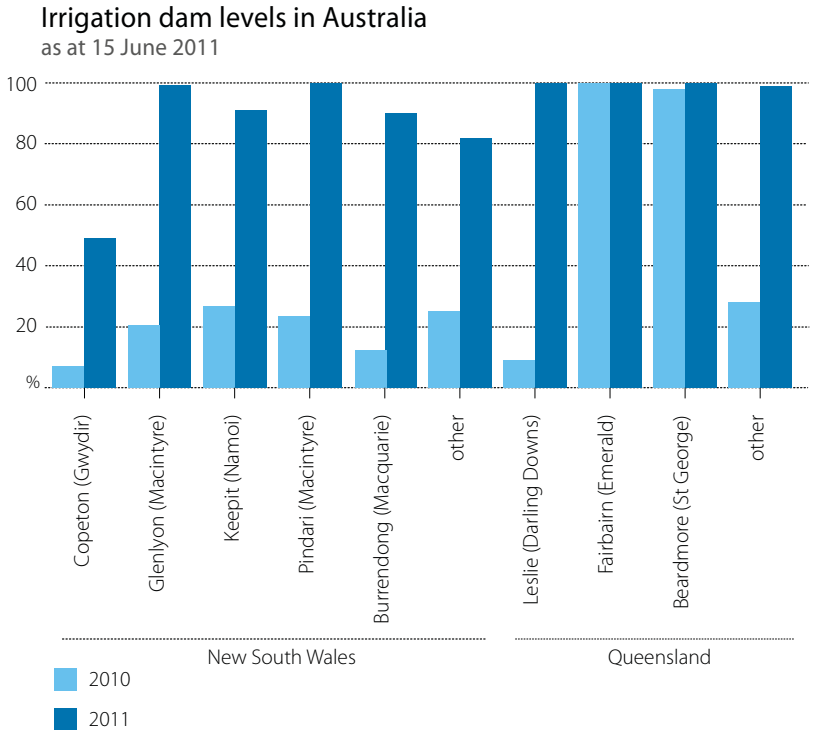
Australian cotton prices lower but still favourable in 2011–12

Returns to Australian cotton growers at the gin gate are forecast to decrease by $79 a bale in 2011–12, to $571 a bale (including the value of cottonseed and net of ginning costs). This forecast fall in returns to Australian growers is in line with the lower forecast world cotton price and an assumed high Australian exchange rate against the US dollar. Nevertheless, the forecast returns are still favourable compared with the average return received by Australian cotton growers over the past 10 years.

Forward prices on offer to Australian cotton growers on 20 May 2011 for 2011–12 production were $615 a bale, declining to $525 a bale for 2012–13 production.

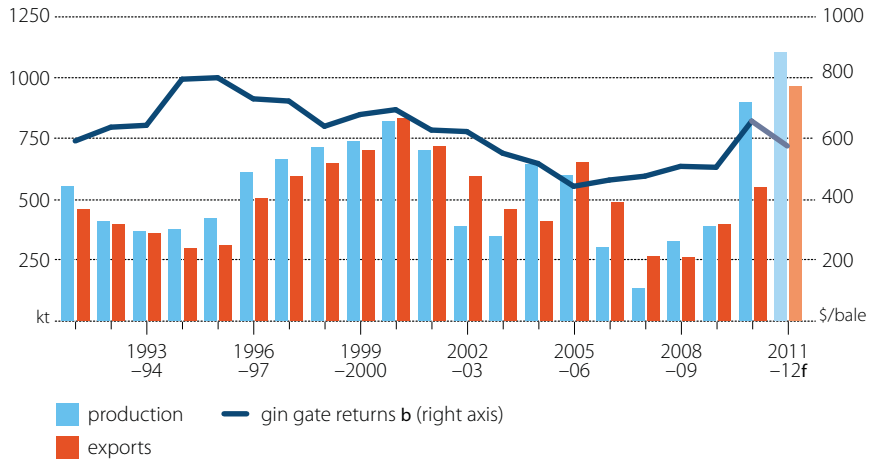
Record high Australian cotton production in 2011–12

Lint production in Australia is forecast to increase by 23 per cent in 2011–12 to a record 1.1 million tonnes. The forecast increase reflects strong cotton prices, abundant supplies of irrigation water and a return to more normal yields following the floods of 2010–11. Plantings of dryland cotton are forecast to decline under the assumption of normal seasonal conditions, but the decline is expected to be partially offset by increased plantings of irrigated cotton. As at 24 May 2011, the average storage level of the public dams serving the cotton regions was at 82 per cent of capacity, compared with 32 per cent at the same time in 2010.



Australian cotton exports are forecast to more than double in 2011–12 to a record 965 000 tonnes. This forecast increase is driven by the expected increase in production and continued strong export demand. Higher exports are expected to move Australia to third place in the ranking of world cotton exporters, behind the United States and India in 2011–12.

Australian cotton production and export



b Value of lint and cottonseed, less ginning costs.

Cotton outlook

		2009 –10	2010 –11 f	2011 –12 f	% *change*
World b					
Production	Mt	22.1	25.0	27.7	*10.8*
Consumption	Mt	25.8	25.4	26.3	*3.5*
Closing stocks	Mt	9.6	9.3	10.6	*14.0*
Stocks-to-use ratio	%	37.4	36.5	40.3	*10.4*
Cotlook 'A' index	USc/lb	77.5	162.0	116.3	*– 28.2*
Australia c					
Area harvested	'000 ha	208	590	550	*– 6.8*
Lint production	kt	387	898	1 106	*23.2*
Exports	kt	395	549	965	*75.8*
– value	A$m	755	1 540	2 384	*54.8*

b August–July years. **c** July–June years. **f** ABARES forecast.
Sources: ABARES; Australian Bureau of Statistics; US Department of Agriculture.

Livestock

Beef and veal

Clay Mifsud, John Hogan and Trish Gleeson

The Australian weighted average saleyard price for beef is forecast to fall by 7 per cent in 2011–12 to 300 cents a kilogram (dressed weight). This forecast price reflects a range of factors that are expected to affect domestic saleyard prices in the short term. While continued strong restocker demand in south eastern Australia, in response to improved seasonal conditions, is expected to place upward pressure on saleyard prices for young cattle, an assumed appreciation of the Australian exchange rate, especially against the US dollar, is likely to adversely affect export prices, which will in turn place downward pressure on domestic saleyard prices, especially for older cattle.

The Australian Government's June 2011 decision to suspend live cattle exports to Indonesia for the purpose of slaughter is expected to result in redirection of some cattle originally for live export to domestic saleyards (see box). This increased supply of cattle may result in some downward pressure on domestic saleyard prices. As Indonesia accounted for only 5 per cent of total cattle turn-off in Australia, this impact is likely to be small in year-average terms. However, cattle producers highly dependant on the live cattle trade in northern Australia are likely to suffer financially if the suspension becomes protracted.

Australian herd rebuilding

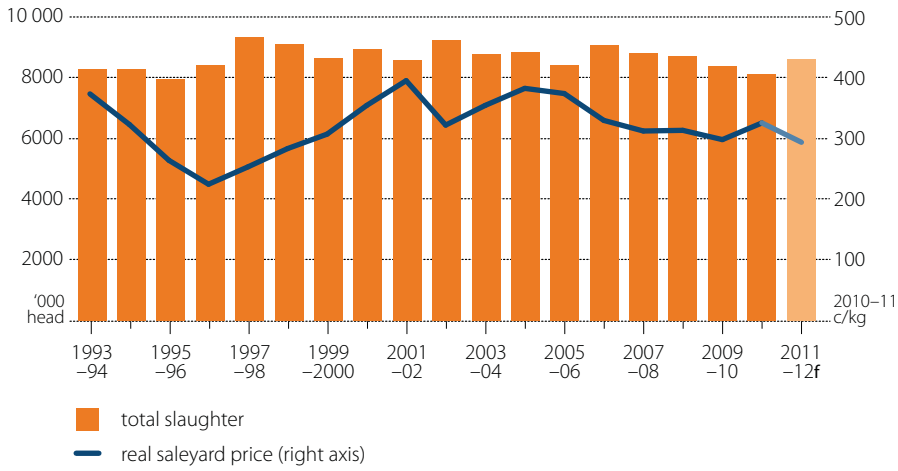
High rainfall throughout eastern and northern Australia in late 2010 and early 2011 improved pasture growth and fodder production, and replenished water supplies. Producers have responded to the improved conditions by retaining greater numbers of female cattle for herd rebuilding. For example, during the March quarter 2011, total Australian female cattle slaughter was 6 per cent lower year-on-year. The national cattle herd is estimated to increase by 3 per cent in 2010–11 to 27.4 million head and is forecast to increase by a further 2 per cent in 2011–12 to around 28 million head.

The total number of cattle slaughtered is estimated to decline by 3 per cent in 2010–11 to around 8.1 million head, which is the lowest since 1996. Over the first nine months of 2010–11, total slaughter was 2 per cent lower year-on-year. In 2011–12, slaughter is forecast to increase by around 6 per cent to 8.6 million head. This forecast increase in slaughter mainly reflects an expected increase in slaughter of calves and male adults.

Beef production to increase

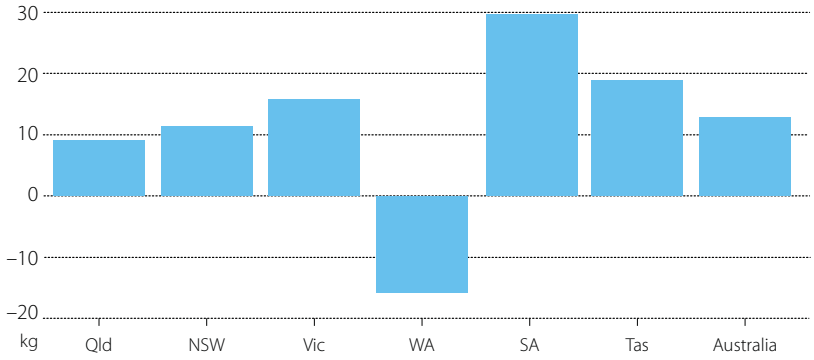
Although beef cattle slaughter is estimated to decline in 2010–11, beef and veal production is estimated to increase by 1 per cent to 2.1 million tonnes, driven primarily by higher carcass weights. In the March quarter 2011, higher average carcass weights were recorded in all states, except Western Australia, compared with the same period last year. Improved seasonal conditions and increased fodder availability in eastern and northern Australia have enabled producers to sell cattle in a more finished condition. In contrast, dry conditions in Western Australia have resulted in a fall in average carcass weights.

Australian slaughter and saleyard price



Change year-on-year in average slaughter weights

March quarter 2011



In 2011–12, beef production is forecast to increase by 3 per cent to around 2.2 million tonnes, underpinned again by forecast higher slaughter of calves and male adults.

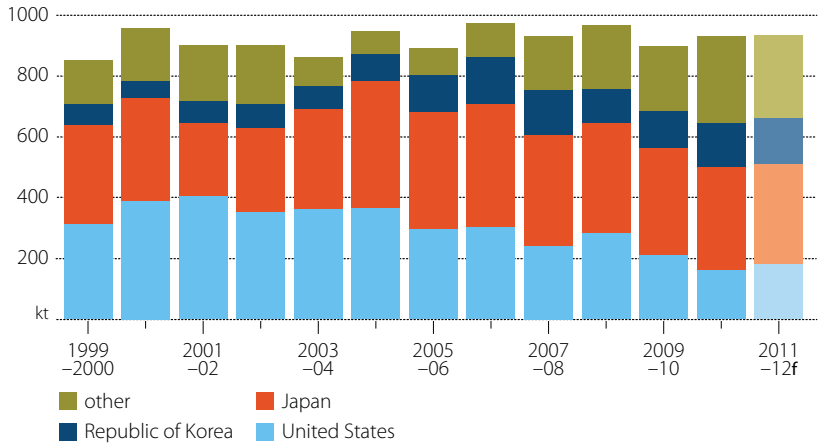
Australian exports to rise slightly

Total Australian beef exports are estimated to increase by 5 per cent in 2010–11 to 945 000 tonnes. The United States, Japan and the Republic of Korea continue to account for around 70 per cent of total Australian beef exports, despite growth achieved in exports to some emerging markets, such as the Russian Federation, during 2010–11.

In 2011–12, Australian beef exports are forecast to rise by around 3 per cent to 975 000 tonnes. Exports to the United States, the Republic of Korea, and emerging markets such as the Russian

Federation, China and the Middle East are forecast to rise, but exports to Japan are forecast to decline. In the Asian markets, particularly Japan and the Republic of Korea, the continued weakness of the US dollar is likely to facilitate growth in market share for US beef at the expense of Australian beef.

Australian beef exports by destination

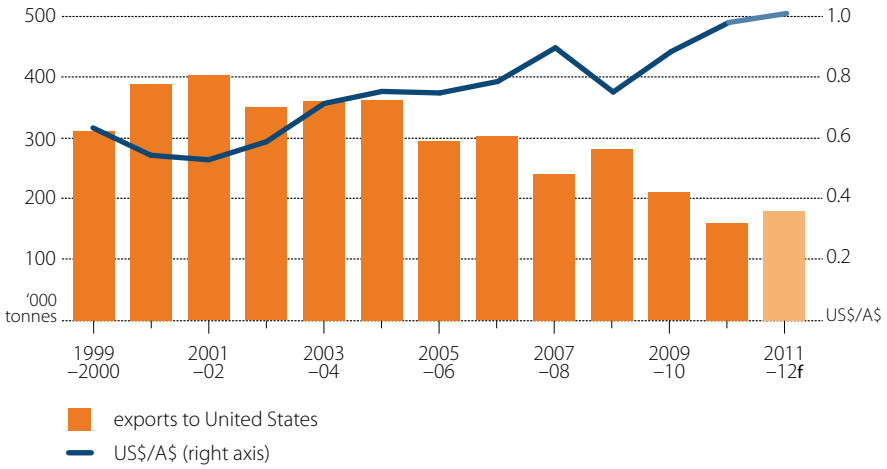


Australian exports to the United States

Australian beef exports to the United States are estimated to fall by 24 per cent in 2010–11 to 160 000 tonnes. This decline mainly reflects the combined effect of increased US cattle slaughter and a higher Australian exchange rate against the US dollar, which has lowered US demand for Australian manufacturing beef. In addition, strong competition from low priced Mexican beef has resulted in considerable downward pressure on demand for Australian beef.

Australian beef exports to the United States are forecast to recover by 13 per cent to 180 000 tonnes in 2011–12. Seasonal conditions are assumed to improve in the major US cattle producing regions in the coming year and this is expected to lead to US producers starting to rebuild herds. As a result, the US Department of Agriculture is forecasting US beef production to fall by 4 per cent in 2011–12, which will support higher demand for imported beef, including from Australia. Despite the forecast recovery in Australian beef exports to the United States, the assumed appreciation of the Australian exchange rate against the US dollar in 2011–12 remains a significant risk to the outlook for Australian beef exports to the US market.

Australian beef exports to the United States and exchange rate



Australian exports to Japan

In 2010–11, Australian beef exports to Japan are estimated to decline by 1 per cent to 346 000 tonnes, despite an estimated 11 per cent increase in total Japanese beef imports. Although beef consumption and imports were not significantly affected by the March 2011 earthquakes and tsunami in Japan, movement in the Australian–US exchange rate over the past year has increased the competitiveness of US beef and therefore negatively affected Australian beef exports to Japan.

In 2011–12, Australian beef exports to Japan are forecast to fall by a further 3 per cent to 335 000 tonnes. With total beef imports in Japan forecast to achieve only weak growth in the coming year, the United States is expected to continue regaining market share in the Japanese market at the expense of Australian beef.

Australian exports to the Republic of Korea

Exports of Australian beef to the Republic of Korea are estimated to increase by 13 per cent in 2010–11 to 140 000 tonnes. Higher Australian beef exports have been underpinned by strong economic growth that increased beef demand, and lower Korean beef production caused by an outbreak of foot-and-mouth disease.

In 2011–12, Australian exports of beef to the Republic of Korea are forecast to rise by a further 7 per cent to 150 000 tonnes. At least two factors support this assessment of a continued increase in Australian beef exports to that market. First, assumed strong Korean economic growth is expected to fuel increased demand for imported beef, particularly from the food services sector. Second, domestic beef production in the Republic of Korea is unlikely to recover markedly given recent culling in response to the foot-and-mouth disease outbreak. This forecast rise in Australian beef exports is expected to occur despite strong competition from US beef in this market. In addition to an assumed favourable US exchange rate, the United States Meat Export Federation has expanded its marketing program since late 2010 in an attempt to convince Korean consumers of the safety of US beef.

Australian exports to other markets

In 2010–11 beef exports are estimated to increase by 39 per cent to a number of emerging markets. For example, exports to the Russian Federation increased by 188 per cent to an estimated 72 000 tonnes; exports to China doubled to an estimated 14 000 tonnes; exports to the European Union increased by 50 per cent to an estimated 14 000 tonnes; and exports to the Middle East rose by 51 per cent to an estimated 30 000 tonnes. In 2011–12 the total volume of exports to emerging markets is forecast to continue rising a further 3 per cent.

Live exports

Total exports of live cattle from Australia are estimated to fall by around 17 per cent in 2010–11 to 723 000 head. The largest decline has been in exports to Indonesia, which are estimated to fall by 38 per cent in 2010–11 to 445 000 head. During 2010, the Indonesian Government limited the release of import permits and enforced a 350 kilograms weight limit on live cattle imports from Australia.

In early June 2011, the Australian Government suspended live cattle exports to Indonesia for the purpose of slaughter. Assuming the trade restarts during 2011–12, albeit at a smaller level than previously, total live exports in 2011–12 are forecast to be around 585 000 head, a reduction of 19 per cent from 2010–11.

It is noteworthy that this forecast of total live exports in 2011–12 is based on the technical assumption that trade with Indonesia will restart during 2011–2012. However, there was considerable uncertainty at the time this forecast was prepared as to when the trade would resume.

Impact of suspension of live cattle exports to Indonesia

The Minister for Agriculture, Fisheries and Forestry, Senator the Hon. Joe Ludwig, announced on 8 June 2011 suspension of export to Indonesia of all livestock for the purpose of slaughter. The impact on the beef industry of the suspension will depend on:

- the length of the suspension
- the capacity to redirect live exports to other markets, including the domestic market
- the extent processed beef exports could expand as an alternative market, and the subsequent effect on export returns and cattle prices as a result of increased beef supplies.

Length of suspension

The Minister has publicly said that the suspension will remain in place 'until the government establishes sufficient safeguards to ensure there is verifiable and transparent supply chain assurance up to and including the point of slaughter for every consignment that leaves Australia'.

The impact on the beef industry will depend on the length of the suspension and the extent to which the market is reopened. In the short term, some cattle may be redirected to other live export markets; and some may be held on farms or sold to feedlots for finishing and eventual slaughter for the domestic and export beef markets.

continued...

Impact of suspension of live cattle exports to Indonesia continued

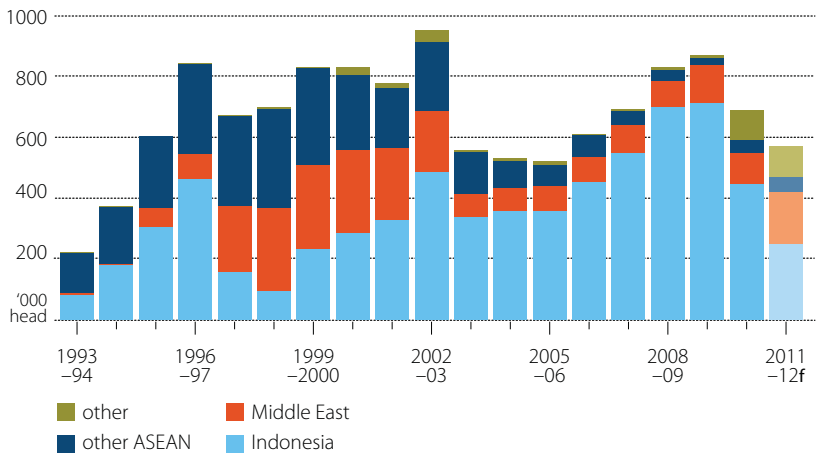
If the suspension becomes protracted, producers previously taking advantage of the live cattle trade will need to adjust their production systems toward finishing cattle for slaughter. The length of the suspension will also have negative implications for the industry that has developed around export of live cattle, such as exporters, port and stevedoring services, shipping companies, road transporters, veterinary and other ancillary service providers particularly in northern Australia.

Capacity to redirect to other markets

Indonesia has been the largest and fastest growing market for Australian live cattle exports since 2000–01. In 2010–11, the proportion of Australian live slaughter cattle exported to Indonesia is estimated to reach around 62 per cent of total live slaughter cattle exports, down from a peak of 82 per cent in 2009–10. During 2010, the Indonesian Government limited release of import permits and enforced a 350 kilograms weight limit on live cattle imports from Australia.

Other key markets for the live cattle trade included Turkey (around 8 per cent), Egypt (7 per cent), Israel (5 per cent) and a range of other smaller markets taking around 1–2 per cent each, including Japan, Jordan, Libya, Malaysia, the Philippines and Saudi Arabia. These markets are likely to be able to take some additional cattle (but nowhere near all), with this prospect being limited by competition in Malaysia and the Philippines from South American beef and Indian buffalo meat.

Australian live cattle exports



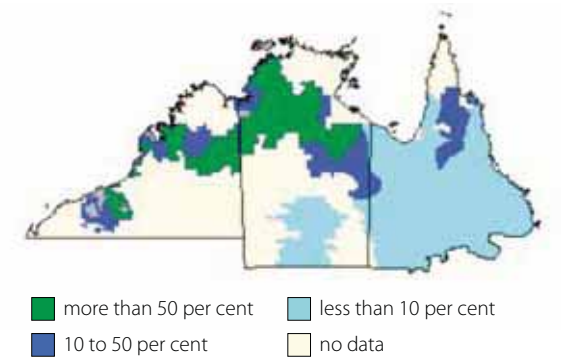
In recent years more than 80 per cent of total live slaughter cattle exports have been sourced from northern Australia. Producers around Darwin, Katherine and the Kimberley region of Western Australia sold more than 50 per cent of their cattle for live export in 2009–10 and are therefore more reliant on live export markets than those in Queensland or around Alice Springs and the Barkly Tablelands in the Northern Territory.

This distribution reflects, in large part, the limited availability of alternative markets for the cattle and, particularly, the limited availability of processing facilities in regions dependent on live trade. Establishment of extra processing capacity in the region may help reduce the impact, but this will

continued...

Impact of suspension of live cattle exports to Indonesia continued

Proportion of beef cattle sold for live export in northern Australia, 2009–10



take some time, will require establishment of supply chains to markets in Australia and/or overseas and will need to take into account the seasonality of cattle production in the pastoral zone in northern Australia where the wet season affects producers' ability to move cattle from farm to market. Moving cattle by road to existing feedlots and abattoirs in the east and south will increase production costs of finishing cattle and long distance transport for northern Australian cattle producers.

Impact on domestic saleyard prices

Suspension of live cattle exports to Indonesia for slaughter is expected to result in some cattle originally destined for live export being redirecting to domestic saleyards. This could lead to downward pressure on domestic saleyard prices, but on year average terms the impact is not expected to be significant. In 2010–11 exports of live cattle to Indonesia are estimated to account for 5 per cent of total cattle turn-off in volume terms and around 4 per cent of the total value of production.

The extra beef production could be exported to Australia's major beef markets in north Asia, the United States and the Middle East. The Indonesian market prefers meat slaughtered locally rather than imports of chilled or frozen beef, principally because of a lack of widespread refrigeration. So the prospect, in the short term, of Indonesia substituting imports of Australian boxed beef for live cattle imports is expected to be limited, despite the suspension.

Beef and veal outlook

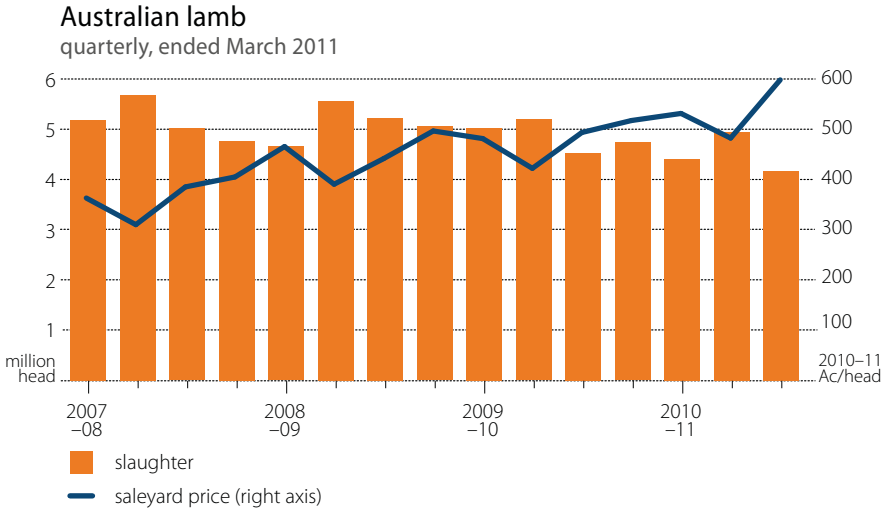
		2009	2010	2011	%
		–10	–11 f	–12 f	*change*
Cattle numbers **b**	million	26.6	27.4	28.0	*2.2*
– beef	million	24.0	24.9	25.5	*2.4*
Slaughterings	'000	8 364	8 107	8 600	*6.1*
Production	kt	2 109	2 129	2 192	*3.0*
Exports (shipped weight)					
– to United States	kt	211	160	180	*12.5*
– to Japan	kt	350	346	335	*– 3.2*
– to Korea, Rep. of	kt	124	140	150	*7.1*
– total	kt	899	945	975	*3.2*
– value	A$m	3 953	4 290	4 193	*– 2.3*
Live cattle	'000	871	723	585	*– 19.1*
Price					
– saleyard	Ac/kg	288	324	300	*– 7.4*
– US import	USc/kg	319	391	362	*– 7.4*
– Japan import	USc/kg	511	575	532	*– 7.5*

b At 30 June. **f** ABARES forecast.
Sources: ABARES; Department of Agriculture, Fisheries and Forestries; Australian Bureau of Statistics.

Sheep meat

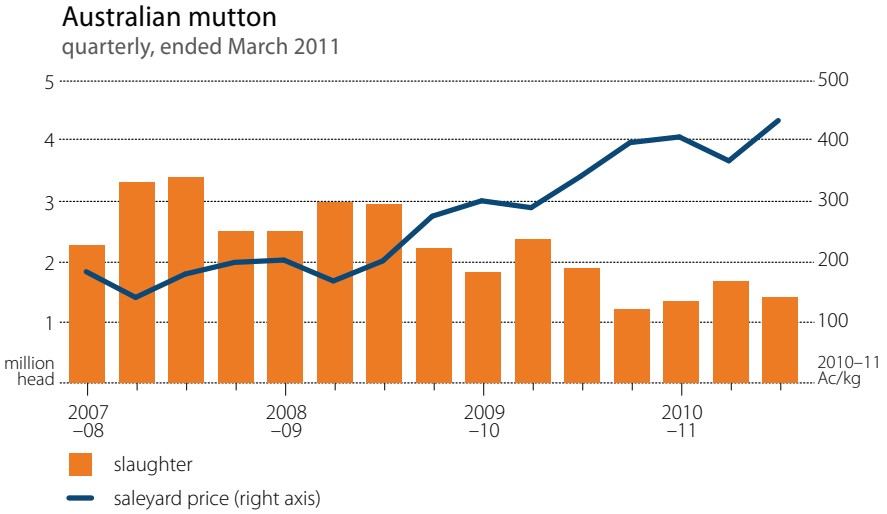
Gwendolen Rees

The Australian weighted average saleyard price of lambs is forecast to increase by 1 per cent in 2011–12, to 555 cents a kilogram. This follows an estimated price rise of around 19 per cent in 2010–11. The forecast price increase in 2011–12 is expected to be driven by strong demand for lambs for domestic consumption, exports and restocking.



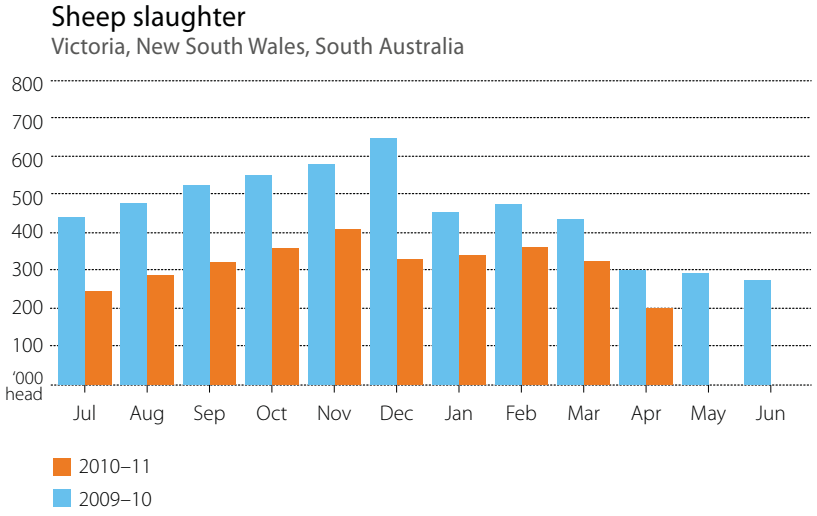
The weighted average saleyard price of sheep is forecast to increase by 2.4 per cent in 2011–12 to a record of 420 cents a kilogram, after rising by an estimated 27 per cent to 410 cents a kilogram in 2010–11. Although the availability of sheep for slaughter is expected to increase in 2011–12, continued strong demand from processors, live exporters and restockers is forecast to drive prices higher in year average terms.

Although the Australian dollar has appreciated markedly against the US dollar during 2010–11, and is assumed to appreciate further in 2011–12, the impact on Australian lamb exports, and hence domestic saleyard prices, is not expected to be significant. The major competitor for Australian lamb exports to the United States and China, the two largest export destinations, is New Zealand. While the Australian dollar is estimated to appreciate by around 20 per cent against the US dollar during 2010–11, the value of the New Zealand dollar has also increased by around 15 per cent against the US dollar over the same period. In the United States, the responsiveness of consumer demand to food price changes (in this case, lamb) is low. At the same time, strong income growth in China is expected to continue. These factors are expected to support demand for Australian lamb.



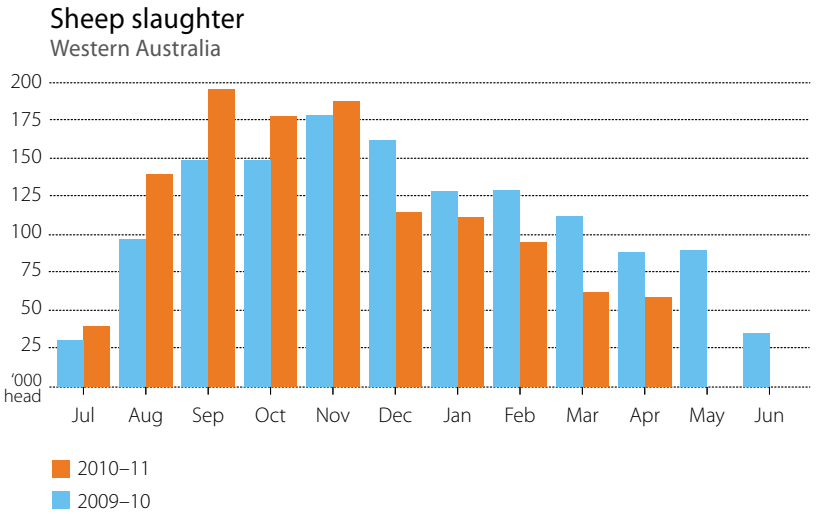
Slaughter and production to increase

Lamb slaughter is forecast to increase by around 6 per cent to 19.2 million head in 2011–12. In 2010–11, lamb slaughter is estimated to fall by around 7 per cent with producers holding more lambs for restocking in response to the positive price outlook. Additionally, lamb marking rates are expected to be high because of favourable seasonal conditions. These factors will increase the number of lambs on farm, allowing higher turn-off and flock rebuilding.



Sheep slaughter is forecast to increase by 12.5 per cent in 2011–12, to 6.3 million head, mainly in response to the favourable price outlook, after an estimated decline of 24 per cent in 2010–11. In Victoria, New South Wales and South Australia, the decrease in sheep slaughter was well

above the national average. The effects of high prices for sheep and wool, combined with improved seasonal conditions, have provided strong incentives for producers to restock in these states.



In contrast, sheep slaughter in Western Australia in 2010–11 is expected to be similar to 2009–10 because less than favourable seasonal conditions encouraged producers to continue destocking. In 2009–10, sheep slaughter in Western Australia was 1.4 million head. In addition, around 1.3 million sheep (including lambs) were transferred from Western Australia to the eastern states in the first 11 months of 2010–11. If seasonal conditions remain relatively poor in 2011–12, the sheep transfer from Western Australia to the eastern states will continue. The favourable price for sheep has made the transfer economical for producers and has helped offset associated costs, such as transport.

Lamb production is forecast to increase by 6 per cent in 2011–12 to around 415 000 tonnes. Slaughter weights are assumed to average around 21.6 kilograms in 2011–12, compared with an average weight of 20.7 kilograms in the five years ending 2010–11. In addition to improved pasture growth and fodder production, this also reflects a continuing trend of rising slaughter weights as more sheep producers have become specialists in lamb production. In terms of production cost, improved pasture and fodder availability is expected to reduce the requirement for supplementary feeding.

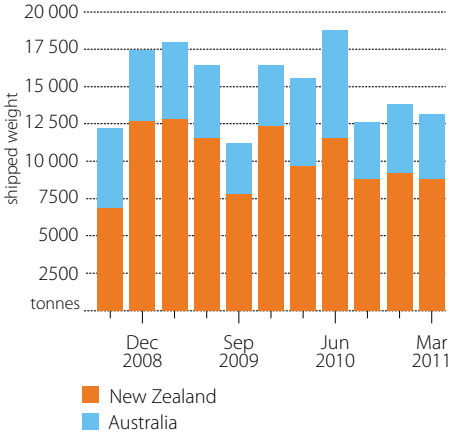
Mutton production is forecast to increase in 2011–12 by 12 per cent to 145 000 tonnes. Sheep slaughter weights are expected to decline slightly in 2011–12, reflecting a declining share of wethers in the adult sheep flock. Although the increase in wool prices has the potential to increase the number of wethers held on-farm, producers are expected to favour retention of ewes for flock rebuilding.

Exports to grow in 2011–12

Total sheep meat exports are forecast to grow by 7 per cent in 2011–12, with lamb exports rising by 3 per cent to 162 000 tonnes and mutton by 14 per cent to 98 000 tonnes.

Despite a significant appreciation in the Australian dollar, export demand has been strong. For lamb, export prices averaged 12 per cent higher year-on-year in the first 10 months of 2010–11, while an increase of 24 per cent was achieved for mutton prices in the same period. In 2011–12, export prices for both lamb and mutton are forecast to remain around current high levels in year-average terms. The assumed appreciation of the Australian dollar in 2011–12 is not expected to dampen export demand.

US lamb imports
quarterly, ended March 2011



Source: United States Department of Agriculture

The total value of Australian sheep meat exports is forecast to increase by 8 per cent in 2011–12 to almost $1.6 billion. This follows an estimated rise of 7 per cent to $1.4 billion in 2010–11.

In the United States, total sheep meat imports are forecast to rise by 6 per cent in 2012. Domestic production is expected to remain stable and any increase in domestic consumption will be met by imports.

Australian lamb shipments to the United States are forecast to increase by 6 per cent in 2011–12 to 35 000 tonnes. This forecast increase follows an estimated decrease of 6 per cent in 2010–11, reflecting lower lamb slaughter and availability for export in Australia as a result of flock rebuilding in response to improved seasonal conditions in major producing regions.

Australian live sheep exports are forecast to increase by 7 per cent in 2011–12 to 3.1 million head, following an estimated decline of 5 per cent in 2010–11. Live sheep export prices are forecast to increase by 5 per cent in 2011–12 to just over $120 per head. The forecast price increase reflects strong demand for Australian live sheep, especially from the Middle East. Given the favourable price outlook, more sheep are expected to be sourced from the eastern states for live export.

Sheep meat outlook

		2009–10	2010–11 f	2011–12 f	% change
Slaughterings b					
Sheep	'000	7 333	5 600	6 300	*12.5*
Lamb	'000	19 478	18 200	19 200	*5.5*
Production c					
Mutton	kt	162	130	145	*11.5*
Lamb	kt	413	393	415	*5.6*
Exports (shipped weight)					
Mutton	kt	111	86	98	*14.0*
Lamb	kt	157	157	162	*3.2*
– to United States	kt	35	33	35	*6.1*
Total sheep meat	kt	268	243	260	*7.0*
– value	$m	1 348	1 440	1 560	*8.3*
Live sheep	'000	3 055	2 900	3 100	*6.9*
– value	$m	297	336	378	*12.5*
Saleyard prices					
Mutton	Ac/kg	322	410	420	*2.4*
Lamb	Ac/kg	464	550	555	*0.9*

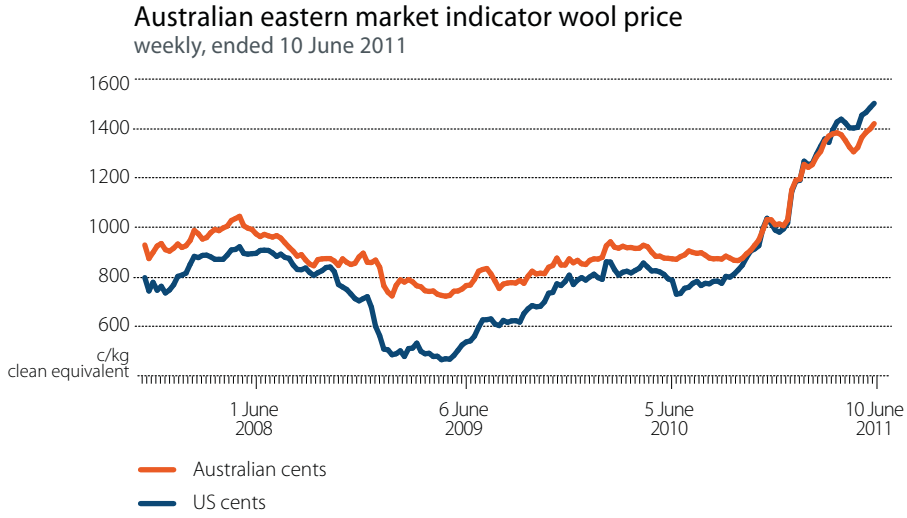
b At 30 June. **c** Carcass weight. **f** ABARES forecast.
Sources: ABARES; Australian Bureau of Statistics; Department of Agriculture, Fisheries and Forestry.

Wool

Gwendolen Rees

Since late September 2010, wool prices have risen by more than 60 per cent, with the Australian Eastern Market Indicator (EMI) price reaching a high of 1420 cents a kilogram clean in early June 2011. This significant price increase has been in response to increased Chinese buying of raw wool as a result of stronger domestic consumption of wool products in China as well as increased demand for exports to the OECD region. This increase has occurred despite a sizable appreciation of the Australian exchange rate over the same period.

In the short term, wool prices are forecast to ease from current highs as more wool becomes available in the spring shearing season. However prices are expected to be supported at relatively favourable levels. For 2011–12 as a whole, the EMI price for wool is forecast to average around 1170 cents a kilogram clean. This compares with the estimated average of 1120 cents a kilogram clean in 2010–11.

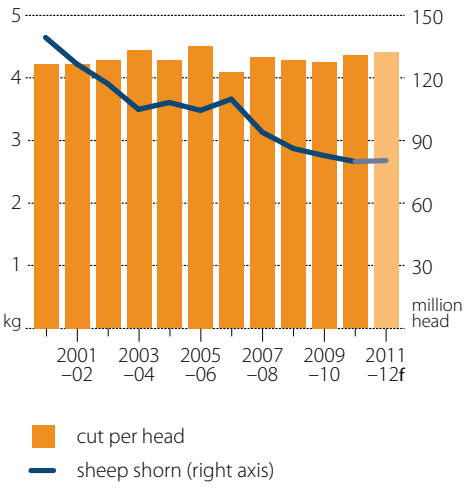


Wool supplies to remain low next season

Although Australian shorn wool production is forecast to rise next financial year, the total supply of wool (production and stocks) is expected to remain largely unchanged in 2011–12 because wool stocks have been run down during the past year in response to favourable prices.

Australian shorn wool production is forecast to rise by around 2 per cent in 2011–12 to 355 000 tonnes. This forecast increase in shorn wool production, if realised, will be the first annual increase since 2005–06. Sheep numbers in Australia are also forecast to rise by around 3 per cent, leading to the number of sheep shorn increasing by 1 per cent to around 80.5 million head. Reflecting the improved seasonal conditions in eastern Australia, wool cut per head is expected to rise from an average of 4.37 kilograms in 2010–11 to around 4.41 kilograms in 2011–12.

Sheep shorn and cut per head

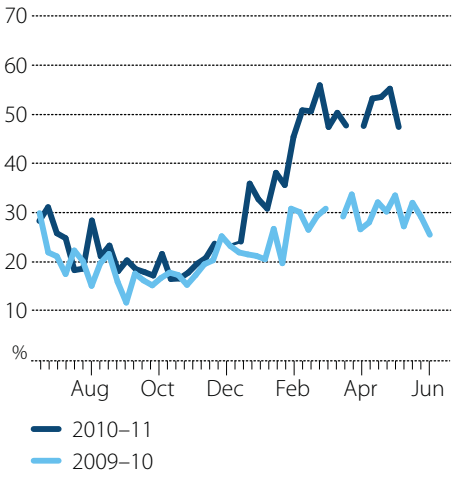


Improved seasonal conditions could affect wool quality

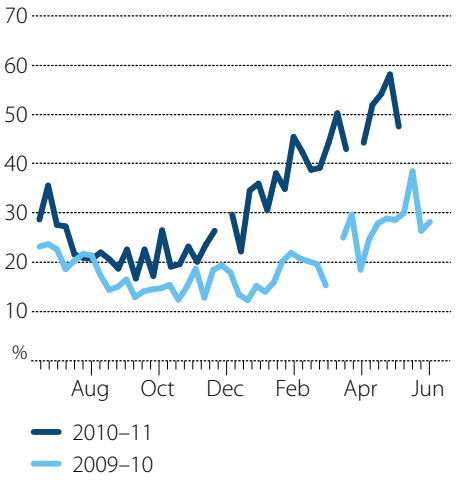
The abundant rainfall received in the eastern states since November 2010 has promoted pasture growth, which will help improve the weight and strength of wool shorn during the autumn of 2011. The improved seasonal conditions will also improve sheep health and marking rates, which will assist flock rebuilding.

One downside, however, is that the improved availability of feed may adversely affect wool quality. Data from the Australian Wool Exchange indicates that the proportion of wool offered that has colour faults and cott (matting of the wool fibres) has increased in the second half of 2010–11. According to the Australian Wool Testing Authority, the average mean fibre diameter and the average proportion of vegetable matter content have also risen by 2 per cent and 27 per cent, respectively, in the second half of 2010–11 compared with the first half. Wool faults lower returns from wool sales as they increase the costs of processing. An increased share of higher micron wool in the wool clip could place downward pressure on average wool prices, but increase price differentials between wools of different qualities, such as super fine, fine and coarse wool.

Proportion of bales offered with cott faults



Proportion of bales offered with colour faults



Source: Australian Wool Exchange

Wool demand to increase at a slower pace

World raw wool demand has increased during 2010–11, supported by stronger demand for wool products as a result of recovering economic growth in key wool-consuming countries and relative fibre price movements that support demand for wool. In 2011–12, growth in wool

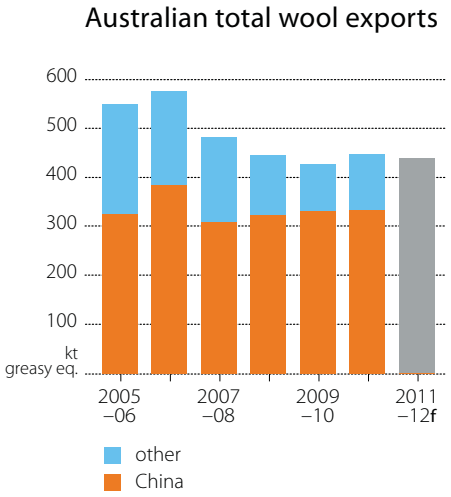
demand is expected to moderate, in response to slower economic growth in key apparel importing countries and increased competition from alternative natural fibres, such as cotton.

Despite the sharp rise in raw wool prices in the second half of 2010–11, prices of wool products at the retail level have been relatively stable. This, if sustained, will help maintain consumer demand for wool products in the presence of weaker world economic growth in the remainder of 2011 and 2012. While growth in consumer demand in some OECD countries, including the United States, Japan and many in Europe, is likely to ease in the short term, continued robust economic growth in non-OECD Asia, especially China, is expected to provide support for wool demand in 2011–12.

Higher wool prices have the potential to result in processors changing blending ratios in textile and apparel production in favour of alternative cheaper fibres. This will enable manufacturers to avoid a significant increase in the cost of production, with limited and acceptable implications for product characteristics from a consumer perspective. While this will help textile and apparel manufacturers maintain retail demand for wool blend products, it will also lower the demand for wool.

China

In the first ten months of 2010–11, China received 74 per cent of total Australian wool shipments on a greasy equivalent basis. This compares with 78 per cent for the same period a year earlier. For the period January to April 2011 Chinese textile manufacturing grew by 7.1 per cent year-on-year. Chinese clothing prices, which fell on average in 2010, increased by around 1 per cent year-on-year for the January to April 2011 period, compared with general price inflation of an annual rate of around 5 per cent in the same period. Reflecting assumed robust economic growth in 2011–12, domestic demand for wool products in China is expected to continue to grow. In contrast, export demand for China's wool products and apparel could weaken in the short term, largely as a result of a slowdown in economic performance of China's major export markets, especially those in the OECD region.

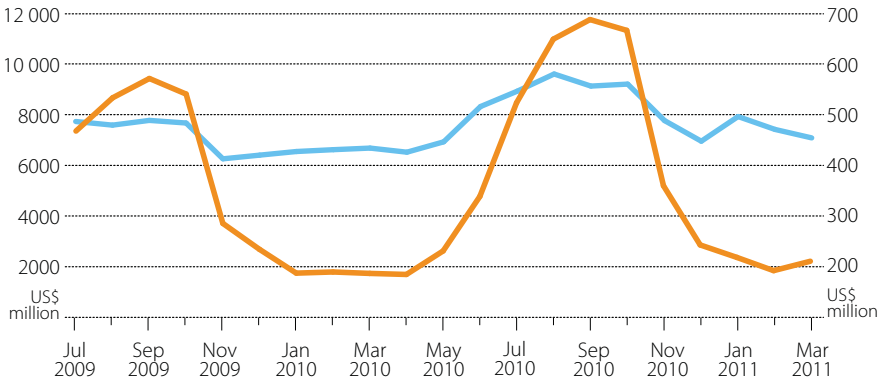


United States

Fibre demand strengthened considerably in the United States in the first three quarters of 2010–11. Total imports of wool products and apparel (in value terms) both increased year-on-year, by 17 per cent and 18 per cent, respectively. These increases reflect improved economic conditions in the United States in 2010–11.

In 2011–12, growth in demand for textiles and apparel in the United States is expected to slow. Economic growth in the United States is assumed to moderate, and growth in consumer spending is expected to ease. As a result, US demand for wool products is unlikely to be maintained at the strong pace achieved in 2010–11.

US monthly apparel imports

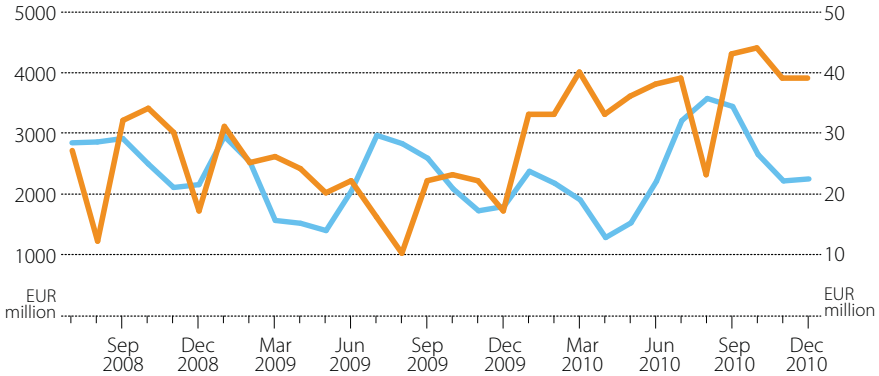


Source: United States Office of Textiles and Apparel

European Union and Japan

Growth in apparel imports in the European Union and Japan is expected to moderate in 2011–12. In Japan, disruptions caused by the March 2011 earthquakes and tsunami will weaken economic activity and retail consumption in the short term. Although economic growth is expected to be boosted by rebuilding activity, that is expected to intensify only in the latter half of 2011–12. In the European Union, continued concerns over public sector debt and short-term economic outlook are expected to dampen any prospects for a significant improvement in consumer demand and retail spending on wool products.

EU 27 textile imports from China
monthly, ended December 2010



Source: EUROSTAT

Source: Japan Ministry of Finance, Trade Statistics

Exports to fall slightly

Australian wool exports are estimated to increase by around 5 per cent in 2010–11 to 450 000 tonnes in greasy equivalents. Exports are estimated to exceed production by around 9 per cent in the year because producers and brokers responded to the higher prices by drawing down stocks. In the first ten months of 2010–11, total wool exports rose year-on-year by 7 per cent in volume terms.

Wool exports are forecast to decline by 2.2 per cent to around 440 000 tonnes greasy equivalent in 2011–12, despite forecast higher wool production. This forecast decline in exports mainly reflects lower stock levels that are unlikely to be drawn significantly for export.

The total value of wool exports is forecast to remain largely unchanged in 2011–12 at around $3 billion. Although wool export prices are expected to average slightly higher for all categories of wool, the effect is expected to be offset by the forecast decline in export shipments.

Wool outlook

		2009–10	2010–11 f	2011–12 f	% change
Sheep numbers **b**	million	68	69	71	*2.9*
Sheep shorn	million	83	80	81	*1.3*
Wool production (greasy)					
– shorn	kt	353	349	355	*1.7*
– other **c**	kt	70	62	67	*8.1*
– total	kt	423	412	422	*2.4*
Wool exports (balance of payments basis)					
– volume (gr. equiv.)	kt	428	450	440	*– 2.2*
– value	A$m	2 307	3 024	3 046	*0.7*
Market indicator (clean)					
– eastern	Ac/kg	872	1 120	1 170	*4.5*
– western	Ac/kg	863	1 108	1 147	*3.5*
Auction price (greasy)	Ac/kg	551	728	772	*6.0*

b At 30 June. **c** Includes wool on sheepskins, fellmongered and slipe wool. **f** ABARES forecast.
Sources: ABARES; Australian Bureau of Statistics; Australian Wool Exchange.

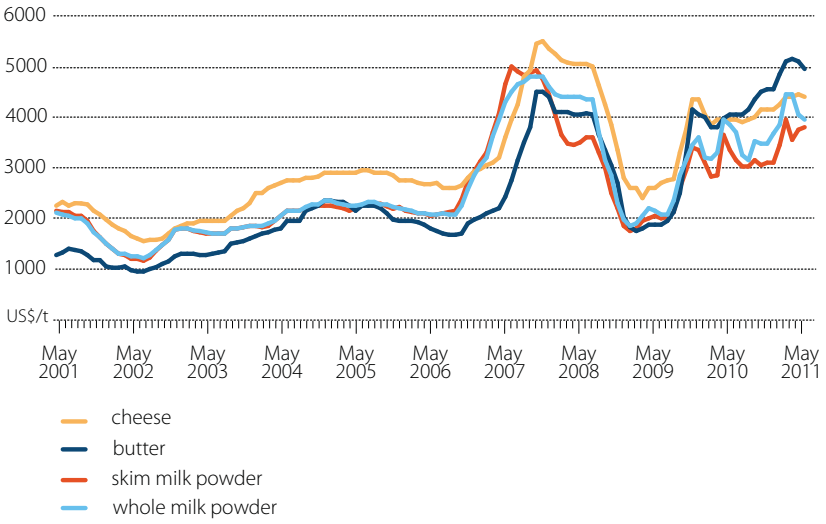
Dairy

David Barrett

World prices for most dairy products are forecast to remain relatively high in 2011–12, after rising in 2010–11 on year average terms. World prices for cheese, whole milk powder and skim milk powder are all forecast to rise by around 1 per cent in 2011–12, in line with expected growth in consumption in developing countries.

In contrast, world butter prices are forecast to average around 10 per cent lower in 2011–12. This forecast decline in world butter prices follows a significant price rise of 35 per cent in 2010–11 and also reflects the effect of expected higher competition from lower priced vegetable oils.

World dairy prices



Australian farmgate milk prices are forecast to remain largely unchanged in 2011–12 at around 43 cents a litre. An assumed higher Australian exchange rate is expected to moderate the effects on export earnings and domestic farmgate milk prices of higher forecast world prices for most dairy products.

Global supplies to increase

After rising by around 1 per cent in 2010–11, global milk production is forecast to increase by around 2 per cent in 2011–12 in response to higher prices for most world dairy products.

European Union

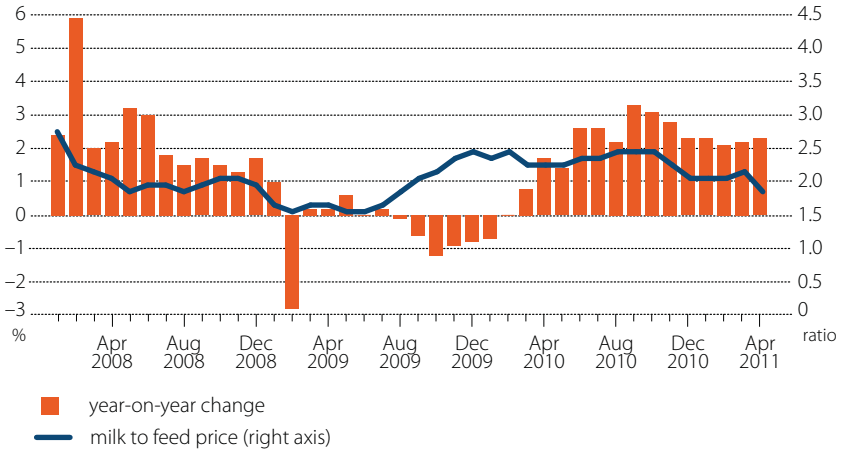
Milk production in the European Union is forecast to increase by 1.5 per cent in 2011–12 but remain well within the production quota, which is being expanded by 1 per cent. Expansion of output in France, Germany, the United Kingdom and the Netherlands is expected to be partially offset by lower production in Bulgaria, Romania and Hungary.

The relatively strong world demand for dairy products has caused the European Union wholesale prices to rise above intervention support prices for butter and skim milk powder over the past 18 months. European Union intervention stocks of butter and skim milk powder have consequently been run down, reaching 1435 tonnes and 147 545 tonnes, respectively in late April 2011. This compares with 75 873 tonnes and 257 037 tonnes at the same time a year earlier. A significant share (around 64 per cent of total stocks or 93 899 tonnes) of current skim milk power stocks is scheduled to be distributed to charities.

United States

Following a 0.2 per cent increase in US milk output in 2009–10, production is estimated to rise by 2.2 per cent in 2010–11 to 88.1 million tonnes. The recent slow growth in US milk production has been driven by relatively high feed grain prices, which increase the input costs of producers. In 2011–12, US milk production is forecast to rise by 1.5 per cent to 89.4 million tonnes, with growth in milk yields expected to more than offset a forecast decline in dairy cow numbers.

US milk production



New Zealand

Milk production in New Zealand is forecast to increase by around 4 per cent in 2011–12 to around 17.6 million litres. The forecast increase assumes favourable seasonal conditions and reflects an expected increase in the dairy cow herd in response to favourable dairy prices.

Strong Chinese demand for milk powders is expected to result in New Zealand dairy manufacturers favouring whole milk powder over butter and cheese production in their product mix in 2011–12.

Argentina

Argentina's milk production is forecast to increase by 4 per cent in 2011–12 in response to high milk prices and an assumed improvement in seasonal conditions. A significant share of the increased milk output is expected to be used in whole milk powder and cheese production.

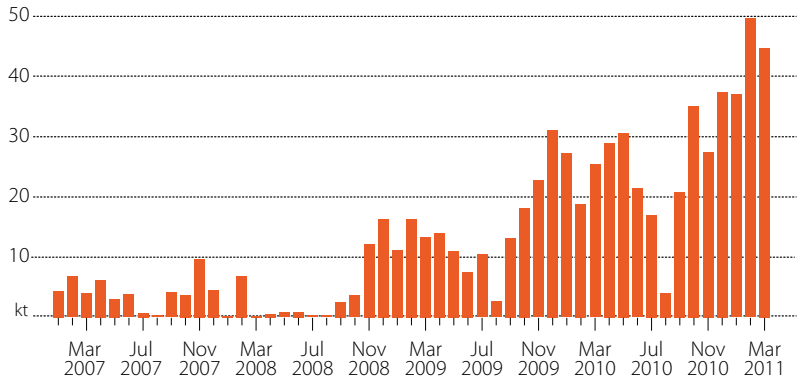
Global dairy trade to expand

World trade of dairy products in 2011–12 is expected to expand, underpinned by increased milk powder imports in China and higher imports of cheese and milk powders in the Russian Federation.

Chinese imports of milk powders are expected to continue increasing in 2011–12, reflecting strong demand and lower domestic production. In April 2011, some milk powder processing plants were closed in China due to noncompliance with food safety regulations. Although Chinese milk production has increased from the sharp fall in 2009, milk output in 2011–12 is forecast to be still around 11 per cent below its 2008 level.

In the first quarter of 2011, New Zealand exports of whole milk powder to China were 84 per cent higher year-on-year. Overall, China's total imports of whole milk powder are forecast to rise by 25 per cent in 2011 to around 400 000 tonnes. New Zealand accounted for around 90 per cent of China's whole milk powder imports in 2010.

NZ exports of whole milk powder to China



Cheese exports from the European Union increased by 17 per cent in 2010 to around 670 000 tonnes with the major markets being the Russian Federation and the Middle East. Exports to the Russian Federation rose by nearly 30 per cent to 300 000 tonnes.

Demand by the Russian Federation for imported cheese and milk powders is expected to remain relatively strong through 2011–12. Russia's domestic milk production is forecast to decline in the short term as a flow-on from the effects of the severe drought and cull of the dairy cow herd in 2010.

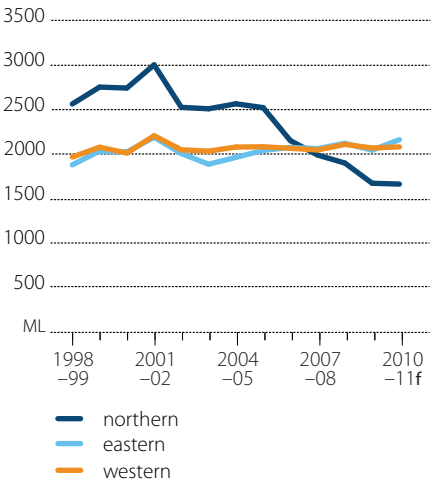
The United States will remain a relatively large cheese exporter in the next 12 months, despite forecast stronger domestic demand. This follows on from a 50 per cent increase in US exports of cheese to 163 000 tonnes in 2010. Additionally, the United States is forecast to increase its skim milk powder exports by 1 per cent in 2011 to around 372 000 tonnes.

Recent developments in India are also likely to influence global import demand for dairy products. In response to high retail prices for dairy products, the Indian Government announced in February 2011 that the National Dairy Development Board would import without duty 30 000 tonnes of milk powder and 15 000 tonnes of butter in 2011.

Australian milk production to expand

Australian milk production is forecast to increase by 2.2 per cent in 2011–12 to 9.3 billion litres, reflecting the combined effects of relatively firm farmgate milk prices, an expected increase in the national dairy herd and further gains in milk yields.

Victorian milk production



Australian dairy cow numbers are forecast to rise by around 1 per cent to 1.61 million head by the end of 2010–11, with a further increase of 0.6 per cent forecast for 2011–12.

Increased availability of water in the main irrigation dams is expected to underpin prospects for higher milk production in 2011–12, particularly in northern Victoria and southern New South Wales. Water storage levels in the Murray–Darling Basin dams averaged approximately 82 per cent of capacity in mid-May 2011, compared with 53 per cent at the same time in 2010. Given the increased water availability for irrigation, dairy farmers in these regions are expected to include a greater share of pasture and fodder in their feed management regimes.

Production of Australian whole milk powder and skim milk powder is estimated to rise by around 18 per cent in 2010–11 to 149 000 tonnes and 224 000 tonnes, respectively. In contrast, production of cheese and butter is estimated to fall slightly in the same period. In 2011–12, forecast world dairy prices will favour production of whole milk powder and cheese in Australia over butter.

The value of Australian dairy exports is forecast to decline by 2.4 per cent in 2011–12 to around $2.3 billion following an estimated rise of 11 per cent to $2.32 billion in 2010–11. The forecast decrease reflects expected lower returns for Australian butter exports and the assumption of a higher Australian dollar.

Higher supermarket sales for home brand milk

Since late January 2011, the major supermarket chains have reduced the retail price for their range of home brand fresh milk to $1 a litre, well below prices for branded milk. Compared with home brand full cream fresh milk, the percentage decline in prices for modified milks (reduced-fat and no-fat milk) has been higher. Up to May 2011, there had been little sustained discounting of branded milk prices in either supermarkets or other retail outlets.

Based on available data, the pricing strategy the major supermarket chains adopted appears to have had some effect on total milk sales. Sales of fresh milk increased by around 3.1 per cent year-on-year in the three months ending April 2011 compared with growth of 1.6 per cent in the first half of 2010–11. The share of fresh milk sold through supermarkets rose by 2 percentage points to 53 per cent in the same period. The average annual growth in fresh milk sales was 1.9 per cent over the five years to 2009–10.

While total fresh milk sales have increased modestly, there has been a more noticeable shift from the supermarket sales of branded milks to home brand. Between the end of January and early May, the share of home brand milk sold through supermarkets increased by 5 percentage points to 55 per cent, with branded milk sales declining to 45 per cent.

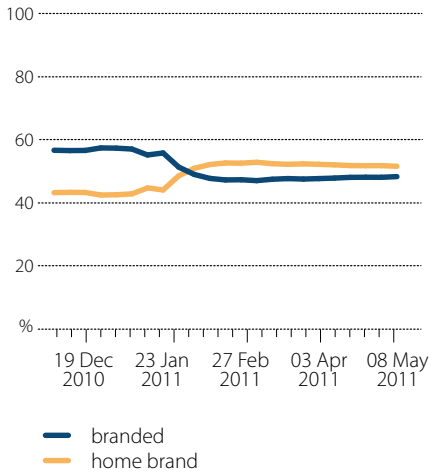
Reflecting the different price discounting between full cream and modified milk, the sales of home brand modified milks, in aggregate, increased by around 10 percentage points to 53 per cent of total modified milk sales by supermarkets. This compares with a rise of home brand full cream milk from 68 per cent to 73 per cent in the total sales of full cream fresh milk by supermarkets.

It appears unlikely that consumption of fresh milk in Australia would increase further in response to the current price discounting, even if it were sustained. On a per person basis, consumption of fresh milk in Australia is already high compared with other OECD countries. In 2008–09, for example, fresh milk consumption was around 102 litres per person a year in Australia, compared with around 83 litres in the United States, 87 litres in France and 92 litres in Canada. Unless there is a further significant decline in market milk prices, fresh milk consumption in Australia is most likely to move in line with population growth.

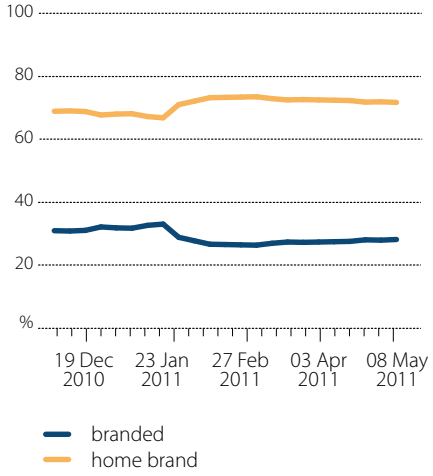
While some increased sales of home brand milk in supermarkets was evident, most appear to have occurred in late January and early February and the share of home brand milk sales has since remained largely unchanged. Unless there is further significant change in the relative price of home brand to branded milk, substantial movements in the share of sales of home brand milk at supermarkets appear unlikely.

Negotiations between milk processors and dairy farmers for annual supply contracts are taking place; no announcements have so far been made by major companies on price outcomes. ABARES is closely monitoring developments in the domestic milk market.

Supermarket sales of fresh white modified milk



Supermarket sales of regular white full cream milk



Dairy outlook

		2009–10	2010–11 f	2011–12 f	% change
Cow numbers b	'000	1 596	1 610	1 620	*0.6*
Milk yields	L/cow	5 653	5 652	5 741	*1.6*
Production					
Total milk	ML	9 023	9 100	9 300	*2.2*
– market sales	ML	2 269	2 300	2 333	*1.4*
– manufacturing	ML	6 754	6 800	6 967	*2.5*
Butter c	kt	128	125	123	*– 1.6*
Cheese	kt	349	332	340	*2.4*
Whole milk powder	kt	126	149	154	*3.4*
Skim milk powder	kt	190	224	217	*– 3.1*
Farmgate milk price	Ac/L	37.3	43.0	43.0	*0.0*
Value of exports	A$m	2 088	2 319	2 264	*– 2.4*
World prices					
Butter	US$/t	3 477	4 675	4 200	*– 10.2*
Cheese	US$/t	3 748	4 208	4 250	*1.0*
Skim milk powder	US$/t	2 948	3 379	3 420	*1.2*
Whole milk powder	US$/t	3 221	3 767	3 820	*1.4*

b At 30 June. **c** Includes the butter equivalent of butteroil, butter concentrate, ghee and dry butterfat. **f** ABARES forecast.
Sources: ABARES; Australian Bureau of Statistics; Dairy Australia.

Woodchips

Philip Townsend

Australia's capacity to supply woodchips to the markets of the Asia–Pacific region is increasing. While the volume of native forest woodchip harvest continues to decline, the reduction is being more than offset by an increase in the harvest from plantations. Australia's exports of woodchips in the coming years will be influenced by a range of factors, including potential supplies from other producers in the Asia–Pacific region, import demand from Japan and emerging Asian markets such as China and India and the prospects for a new pulp mill in Australia.

Australia's woodchip resources

Australia's export woodchip supplies are derived from multiple sources—mature native forests, regrowth forests and plantations. Mature native forests produce woodchips derived from many species and trees of various ages. As a consequence the woodchips have quite variable wood fibre yields and wood properties—thickness, strength, density and colour—relevant to paper production. Regrowth forests have well-defined wood fibre yields and consistent properties, with the trees generally of a common age. Plantations, especially *Eucalyptus globulus* (blue gum), produce wood chips with better intrinsic paper-making properties (in terms of fibre density and producing light-coloured pulp or brightness) and consistent, high wood fibre yields. These properties make blue gum the premium species for manufacturing wood pulp for processing into high quality printing and writing papers.

Average wood fibre yields from Australia's hardwood chips vary between 43 per cent and 50 per cent of the dry weight for mature forest resources. Blue gum wood fibre yields are consistently around 54 to 56 per cent of the dried wood fibre. Regrowth forest woodchip fibre yields lie in between those of mature forest and plantation resources. After pulping, the wood fibres might be used on their own or blended with other fibre sources (or furnish) to produce different grades of paper. An additional source of Australian export woodchips are derived from softwood (coniferous) plantations. These woodchips have different wood fibre properties to hardwood timber species and are generally used to manufacture cardboard and packaging.

Australia's recent woodchip exports

The harvest of native forest logs for woodchips increased steadily up to 2007–08, before falling in 2008–09 as a consequence of the global financial crisis. Despite this decline, the woodchips sourced from hardwood plantation logs have been increasing. Over the period 2005–06 to 2009–10, the average price of woodchip logs delivered to chip mills rose from $57.84 per cubic metre to $67.60 per cubic metre. This price increase reflects, at least in part, that higher prices have been paid for plantation woodchip logs.

Higher export (fob) prices have also been received for plantation woodchips than for native forest woodchips. For the last three years, plantation woodchip prices have remained relatively stable at around $207.40 per bone dry metric tonne (bdmt). This compares with the average export price of $176.92 for native forest woodchips (sourced either from mature or regrowth forests) in 2009–10.

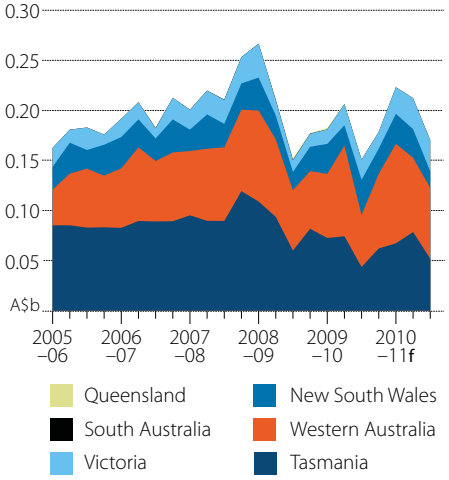
Hardwood logs harvested for woodchips, Australia

	2005–06	2006–07	2007–08	2008–09	2009–10
Native forest logs (million m^3)	4.6	4.7	5.2	4.2	3.1
Hardwood plantation (million m^3)	3.3	3.6	3.8	4.0	4.0
Total hardwood harvest (million m^3)	7.9	8.3	9.0	8.2	7.1
Gross value of logs ($m)	457	487	565	552	480
Average woodchip price ($A/$m^3$)	57.84	58.67	62.78	67.32	67.60

Over the past five years, the origins of Australia's woodchip supplies have changed significantly. The value of hardwood chips from Tasmania has been falling and the value of hardwood chips originating from Western Australia has been increasing. Chips from Tasmania are mainly sourced from native forests, while much of the hardwood chips from Western Australia are from plantations.

Value of Australia's quarterly hardwood chip exports

by origin state for 2005–06 to third quarter 2010–11



Managed investment companies and private sector funded plantations are the major source of higher woodchip supplies in Australia. While plantations in the Greater Green Triangle region are still maturing, investment over the past 15 years has produced significant woodchip plantations within 250 kilometres of ports in Western Australia, Tasmania and Victoria. However, depending on future prices for logs, there is a possibility that some of the sites with either lower productivity or high costs of production will not be replanted once the first harvest is made.

Native forest woodchip exports are expected to remain in the range of 2 to 3 million cubic metres a year in the next few years, while the availability of hardwood chips from plantations will grow substantially. Export demand for Australian woodchips will depend on a range of factors, including growth in emerging and established woodchip markets and the capacity of Australia's competitors (Vietnam, Thailand, Chile, South Africa and Indonesia) to place significant volumes on the market at competitive prices.

Woodchip prices are dependent on wood fibre yields and other characteristics relevant to paper production. The shipping distance between the suppliers and the markets is also a significant factor for the final delivered prices of woodchips. While the price for Australia's hardwood chips is negotiated annually, the recent significant appreciation of the Australian dollar, if sustained, could place downward pressure on prices for the next round of negotiations.

A factor that will affect the outlook for Australia's hardwood chip exports is whether a new pulp mill will be built in Tasmania. If a new pulp mill is built, it will require approximately

3.5 million cubic metres of plantation wood a year. This represents around one-quarter of Australia's long-term hardwood chip supply. However, it may take as long as five years for such a mill to be fully operational once construction starts.

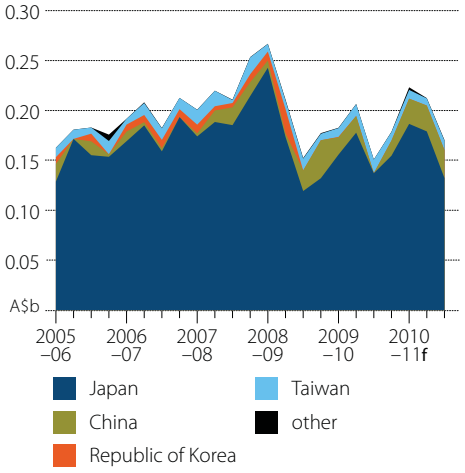
Markets for Australia's hardwood chip exports

Most of Australia's hardwood chip exports are destined for the Japanese market. Over the past five years, Japan purchased, on average, at least 85 per cent (by value) of Australia's hardwood chip exports. China's imports of Australian woodchips have been small and variable as are the purchases by Chinese Taipei, the Republic of Korea and other countries.

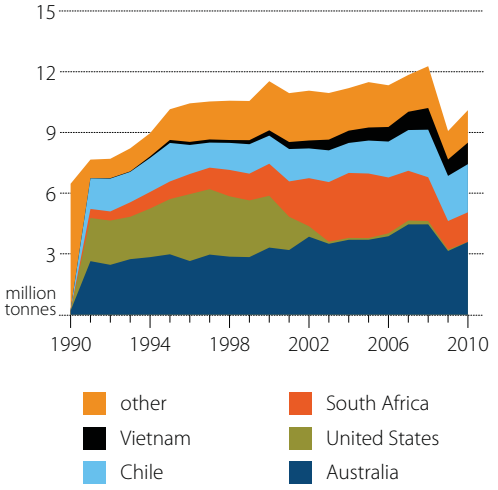
Japan's pulp and paper industry has a diverse group of suppliers, including Vietnam, Chile, South Africa and Thailand. Between 1990 and 2008, woodchip imports into Japan (the world's largest market for hardwood chips) had been growing steadily. A decline in Japan's hardwood chip imports occurred in 2009 due to the global financial crisis. This was followed by a subdued recovery in imports in 2010.

Over the past five years, Australia has been the largest supplier of hardwood chip imports to Japan (in value terms). Emerging competitors in this market are Vietnam and Chile. While Vietnam is able to provide hardwood resources from farm forestry and industrial sources, it may already be very close to its current supply potential. Chile has considerably higher shipping costs for its woodchip exports to be imported into Japan, relative to the shipping costs for Australian woodchips.

Value of Australia's quarterly hardwood chip exports
by destination 2005–06 to third quarter 2010–11



Japan's imports of hardwood chips
by source country, bone dry metric tonnes for 1990 to 2010



Following the global financial crisis, industry rationalisation and closure of inefficient mills have led to a reduction in Japan's pulp and paper manufacturing sector to around 80 to 85 per cent of pre-crisis levels. The remaining pulp and paper mills require consistent, high quality resources for feedstock, leading to increased use of woodchips from plantations.

China's recent woodchip demand from Australia has been highly variable. In the next few years, newly built mills in China are expected to ramp up production of paper products with increased dependence on market pulp. While the domestic pulping capacity is increasing, demand for woodchip imports is unlikely to increase markedly over the next 18 months. From 2013–14 onward, new pulping capacities in Rhizao, Nanting, Chengming, Huati and Bohui are expected to require an additional 7 million cubic metres of woodchips a year. Given the challenges and high costs associated with sourcing woodchips domestically, import demand is likely to rise markedly after 2013–14.

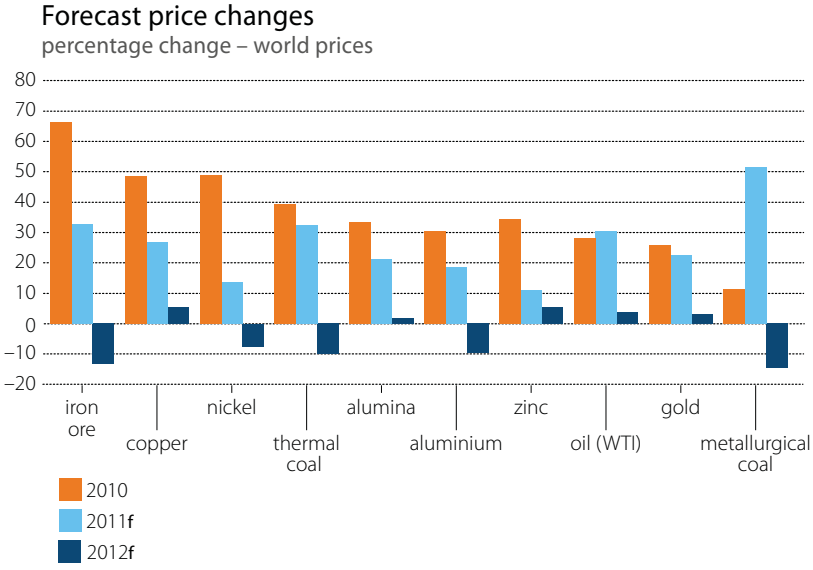
Over the next few years, Japan and China are expected to remain the major Asia–Pacific markets for woodchips. China is expected to continue focusing on accessing lower grades of woodchip resources at cheaper prices, while pulp manufacturers in Japan will be prepared to pay higher prices for premium woodchips.

Energy and minerals overview

Robert New and Tom Shael

Prices for most minerals and energy commodities increased strongly in 2010 as a number of the world's largest economies recovered from the economic slowdown in late 2008 and early 2009. In 2011, price increases for most minerals and energy commodities are expected to be supported by strong growth in demand associated with infrastructure construction and manufacturing output. Price increases in 2011 will also be supported by weak supply growth for some commodities, reflecting a combination of weather-related disruptions and delays to the start-up of new projects.

In 2012, minerals and energy commodity demand is expected to increase, underpinned by assumed stronger economic growth in most economies. Production for most commodities is expected to increase—assuming that production is relatively uninterrupted—as projects start up in a number of regions. The strong growth in production in 2012 is expected to place downward pressure on prices for a number of commodities, such as iron ore, thermal and metallurgical coal, aluminium and nickel.



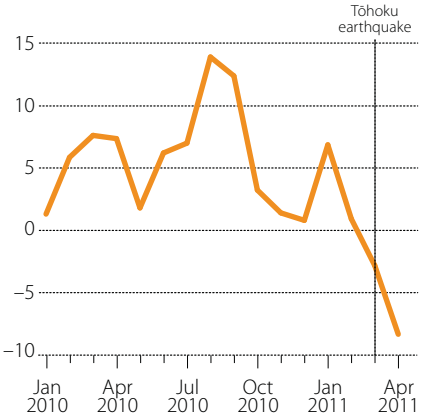
In March 2011, the Tōhoku earthquakes and tsunami directly affected several prefectures in the north-east of Japan, and indirectly affected the Japanese economy more broadly, with significant damage to a number of nuclear power plants, industrial facilities and urban infrastructure. The flow-on effects to minerals and energy markets are discussed in the box.

Impact of earthquakes and tsunami in Japan on mineral resource demand

The March 2011 earthquakes and tsunami caused tremendous loss of life and damage to buildings and infrastructure in Japan. At 20 May 2011, more than 430 000 buildings had been destroyed or damaged, with many municipalities yet to be assessed. This damage has caused disruptions to many manufacturing processes and associated supply chains.

Japan's electricity generation

year-on-year percentage change



Source: Institute of Energy Economics, Japan

According to the Institute of Energy Economics, Japan (IEEJ), damage to nuclear power stations has resulted in an estimated loss in electricity generating capacity of 12 gigawatts, or 6 per cent of Japan's total capacity. Although total demand for electricity is likely to be lower because of disruptions to economic activity, it is expected that Japan will consume more oil and liquefied natural gas (LNG) in the short term to meet electricity demand.

As the tsunami-affected area accounts for around 2 per cent of Japan's gross domestic product, the effects of disruptions to the supply chain and the wider economy are not expected to be significant and should be constrained only to the short term.

Effect on energy demand in Japan

The IEEJ revised upward its forecast of Japan's oil consumption in Japanese Fiscal Year 2011 (JFY, April 2011 to March 2012) by 20 000–30 000 barrels a day (or around 0.5 per cent of total consumption) as a result of the earthquakes and tsunami. The IEEJ now forecasts oil consumption in Japan to be around 140 000–160 000 barrels a day higher in JFY 2011 than in the previous fiscal year. This is based on the expectation of reduced electricity generation from nuclear power and the restarting of oil-fired power stations, such as Tokyo Electric Power Company's Hirono thermal power plant in Fukushima, to meet demand. Japan will also import a significant proportion of its refined oil product requirements, as around 30 per cent of its crude processing capacity was shut down after the earthquakes and tsunami.

Although three of the six tsunami-damaged refineries have resumed production, 612 500 barrels a day, or 13 per cent, of capacity remains offline. JX Nippon Oil and Energy Corporation expects to resume production at its 252 500 barrels a day Kashima refinery by the end of June 2011 while its 140 000 barrels a day Sendai refinery and Cosmo Oil Company's 220 000 barrels a day Chiba refinery will remain closed in the short term.

Closure of nuclear power capacity will also support growth in LNG consumption, at least for the next few years. The IEEJ expects total LNG consumption for power generation to be about 50.2 to 52.6 million tonnes in JFY 2011, which is 3.6 to 3.7 million tonnes higher than previously forecast.

Four coal power stations in eastern Japan, with a total capacity of around 6 gigawatts, were damaged by the tsunami, three of which are still closed. Joban-Kyodo's Nakoso thermal power station is the only damaged power station to have partially resumed receiving coal shipments in anticipation of restarting operation in early July. According to the IEEJ, this is forecast to result in a decline in thermal coal consumption in eastern Japan in 2011. Most of this decline will be offset by an expected increase in consumption in western Japan, resulting in only a marginal decline in thermal coal imports for 2011 as a whole.

continued...

Impact of earthquakes and tsunami in Japan on mineral resource demand continued

Impact on Japanese steel production

Apart from a few temporary shutdowns for safety checks, the Japanese steel industry was largely unaffected by the earthquakes and tsunami. Sumitomo Metal Industries' Kashima plant in Ibaraki prefecture in north-eastern Japan suffered the most damage. The plant, which produces more than half of Sumitomo Metal Industries' crude steel, suffered a year-on-year decline in production of 60 per cent in April 2011.

Companies that import Japanese steel, such as shipbuilders in the Republic of Korea, have endured some short-term supply disruptions. The Republic of Korea is home to the world's three largest shipbuilders—Hyundai Heavy Industries, Daewoo Shipbuilding and Marine Engineering and Samsung Heavy Industries.

Disruptions to base metal production

Since March 2011, several Japanese base metal smelters and refiners have announced temporary shutdowns, although most affected operations have either re-started production or are soon to do so. Japan's biggest copper smelter, Pan Pacific Copper, ceased production at its 120 000 tonne a year Hitachi Works refinery in Ibaraki prefecture. The company has not indicated when production will resume. Mitsubishi Materials Corporation is aiming to re-start its 240 000 tonnes a year Onahama copper smelter in Fukushima prefecture by mid-July 2011.

Impact on other manufacturing industries

In an industry survey of companies in the affected areas undertaken in early April 2011, the Japanese Ministry of Economy, Trade and Industry (METI) reported that more than 60 per cent of respondents had already finished repairs. A significant proportion of the remainder expected to complete necessary repairs within three months.

Of the affected industries, Japanese automakers were among the hardest hit. Many closed their assembly plants for several weeks. Japanese motor vehicle plants in other parts of the world have also been affected by disruptions in the supply chain. IHS Global Insight forecast that this would reduce Japanese vehicle production by 3.6 million units and non-Japanese production by 0.4 million units in 2011.

Two-paced growth in commodity demand: developing and developed

Growth in demand for minerals and energy commodities is expected to continue to be driven by developing economies in 2011, in particular China and India. While growth in demand is expected in developed economies, it will be relatively slower than in developing economies. This will especially be the case with austerity measures being implemented in a number of OECD economies. With unemployment still high in most OECD economies, consumer demand in developed economies as a whole is expected to remain subdued.

China's demand for minerals and energy commodities continues to be underpinned by urban infrastructure and rising demand for energy-intensive goods. For example, growth in demand for minerals and energy commodities will be boosted by scheduled construction of 10 million residential units in 2011 and 2012.

In India, significant urban development is also planned over the next few years. Installation of several ultra-mega coal-fired power stations, and construction and refurbishment of urban infrastructure, such as railways and highways, will underpin significant growth in demand for minerals and energy commodities.

In contrast, growth in minerals and energy commodity demand in developed economies such as the European Union and the United States is forecast to remain comparatively weak.

In the European Union, high public debt will limit the ability of some regional governments to invest in any minerals and energy–intensive infrastructure. Private demand growth is also expected to remain weak, reflecting high unemployment rates.

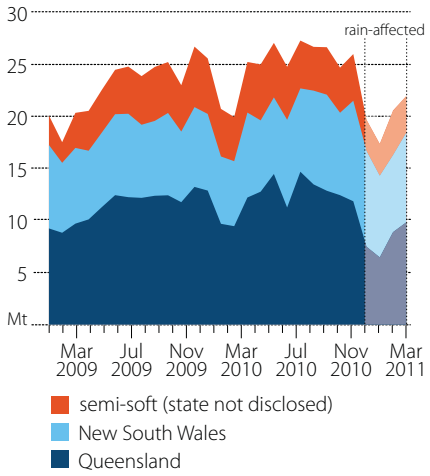
Similarly, growth in demand will be affected in the United States by the drawback in government stimulus measures, which have supported minerals and energy commodity demand during 2009 and 2010 and in the first half of 2011. Growth in consumer demand is also expected to remain fairly muted, resulting in weak minerals and energy consumption growth in 2012.

If economic conditions improve sooner than currently assumed in the major OECD economies, demand in these economies will be stronger and have the potential to significantly increase commodity prices on world markets. On the other hand, if global economic performance were to weaken unexpectedly, this would adversely affect world demand for minerals and energy commodities, placing considerable downward pressure on world prices.

Global supply of many commodities to increase in 2011 and 2012

For most minerals and energy commodities, production is forecast to increase in 2011 and 2012. This is expected to come from increased utilisation of supply chains affected by adverse weather conditions in early 2011 in countries such as Australia and Brazil and new mines scheduled for completion in 2011 and early 2012.

Australia's coal exports
monthly



In Queensland, the coal industry is assumed to be operating at full capacity by the September quarter 2011. The industry has taken longer to recover from the December 2010–January 2011 floods than had been expected. In New South Wales, mines were less affected, and exports in the June quarter 2011 were estimated to be running at close to normal capacity.

Similarly, world iron ore production in early 2011 was affected by wet weather in Australia and Brazil, which is expected to limit production and export growth in 2011.

Additional supplies of most base metals are forecast for 2011 and 2012, from the restart of some mines and commencement of production at new mines over the next 18 months. Supply increases are forecast for copper (including in Zambia, the Democratic Republic of the

Congo and Chile); zinc (mine supply in India, smelting in China); aluminium (China, India and the Middle East); alumina (Jamaica, Brazil, China, India and Vietnam); and nickel (Canada, Brazil, New Caledonia and the Philippines).

World gold mine production is also forecast to increase in 2011 and 2012, largely in response to a sustained increase in gold prices over 2010 and early 2011. New mines scheduled for completion during the forecast period are located in Africa, South America and Australia, as well as multiple small operations in China.

Australian mine production and exports

The index of Australian mine production is estimated to increase by 2 per cent in 2010–11, reflecting 11 per cent growth in metals and other minerals production. Production of energy commodities is estimated to fall by around 6 per cent.

In 2011–12, total mine production is forecast to rise by 10 per cent, underpinned by 16 per cent growth in energy-related mining, most notably metallurgical and thermal coal. Mine production for metals and other minerals is forecast to increase by 5 per cent, driven primarily by higher production of iron ore (up 6 per cent).

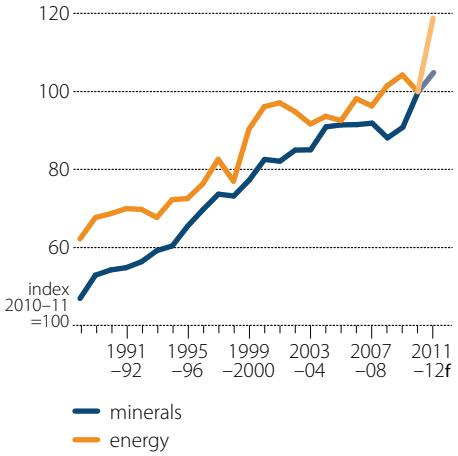
Earnings from exports of minerals and energy commodities are estimated to increase by 30 per cent in 2010–11 to $182 billion. Export earnings from energy commodities, driven primarily by metallurgical coal (up 30 per cent), are estimated to increase by 24 per cent to $71 billion. Iron ore (up 62 per cent) and copper (up 30 per cent) are expected to support growth in exports of metals and other minerals, up 35 per cent to $111 billion.

In 2011–12, the value of mineral and energy commodity exports is forecast to increase by 20 per cent to $219 billion, driven predominantly by higher prices. Earnings from energy commodities are forecast to increase by 25 per cent to $89 billion, driven by thermal coal (up 31 per cent) and metallurgical coal (up 31 per cent). Export earnings from metals and other minerals are forecast to increase by 17 per cent to $130 billion, reflecting growth in the value of exports of alumina (up 32 per cent), gold (up 33 per cent) and copper (up 21 per cent).

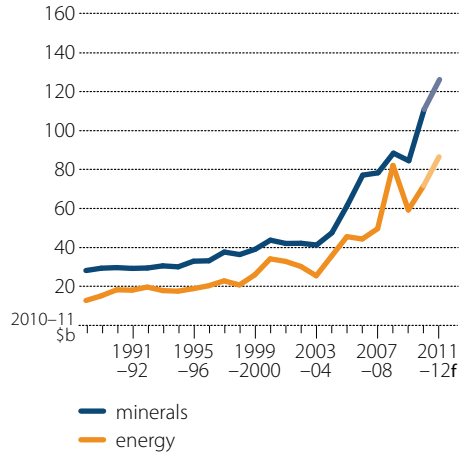
Australian minerals and energy exports

		volume				value		
		2010–11 f	2011–12 f	% change		2010–11 f	2011–12 f	% change
Oil	ML	19 755	20 718	4.9	$m	11 514	13 797	19.8
LNG	Mt	19	20	2.1	$m	9 636	10 038	4.2
Thermal coal	Mt	138	153	10.4	$m	13 999	18 320	30.9
Uranium	kt	7 724	8 250	6.8	$m	844	968	14.6
Iron ore	Mt	406	437	7.5	$m	56 004	65 332	16.7
Metallurgical coal	Mt	144	164	14.4	$m	31 924	41 734	30.7
Gold	t	312	358	14.6	$m	13 642	18 145	33.0
Alumina	kt	16 065	16 819	4.7	$m	5 364	7 095	32.3
Aluminium	kt	1 731	1 754	1.3	$m	4 250	4 494	5.8
Nickel	kt	214	234	9.2	$m	4 189	4 460	6.5
Copper	kt	865	922	6.6	$m	8 496	10 305	21.3
Zinc	kt	1 994	2 104	5.6	$m	2 847	3 125	9.8

Australian mine production



Australian export earnings

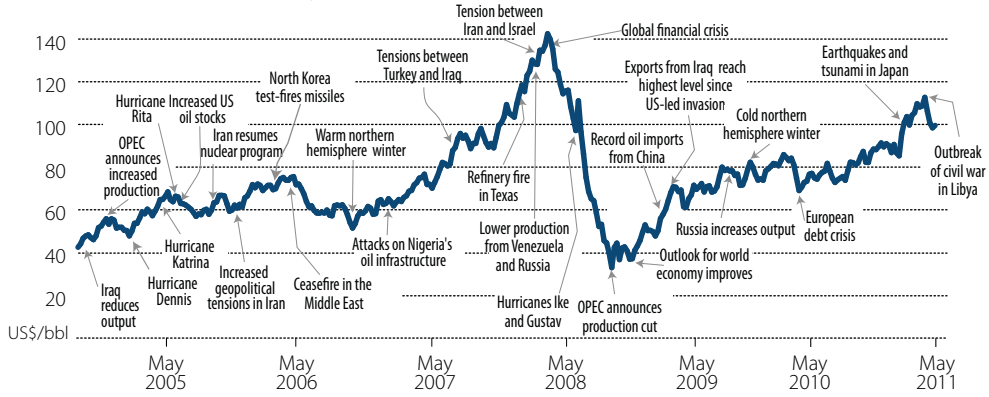


Oil and gas

Clara Cuevas-Cubria and Adrian Waring

World oil prices have increased sharply since the beginning of 2011. In the first two months of 2011, oil prices in West Texas Intermediate (WTI) terms averaged US$90 a barrel. WTI oil prices increased by 15 per cent to US$103 a barrel in March and by a further 7 per cent to US$110 a barrel in April, before falling to US$101 a barrel in May. The recent volatility in oil prices mainly reflects the effect of disruptions to oil supply in Libya, market concerns over political and social unrest in the Middle East and North Africa, and an increase in Japan's oil-fired electricity generation to replace some nuclear and coal-fired power following the March 2011 earthquakes and tsunami.

Weekly oil prices
WTI prices ended 29 May 2011



Higher oil prices over the next 18 months

In the June quarter 2011, WTI oil prices are estimated to average US$105 a barrel, an increase of 11 per cent from the previous quarter. In the second half of 2011, WTI oil prices are forecast to average US$108 a barrel, resulting in an average of US$104 for 2011 as a whole. In 2012, WTI oil prices are forecast to increase by 4 per cent to US$108 a barrel.

OPEC spare production capacity and OECD oil stocks are expected to decline over the second half of 2011 and into 2012. In both 2009 and 2010, OPEC spare production capacity averaged around 6 million barrels a day. However, in the first quarter of 2011 OPEC spare production capacity declined as some other OPEC members increased their production in response to Libyan production shut-ins. The conflict in Libya resulted in its oil production ceasing by April 2011. OPEC spare production capacity (excluding Libya) was around 4.68 million barrels a day in April 2011, compared with 4.97 million barrels a day in January 2011.

The extent of declines in OPEC spare production capacity in the short term will depend largely on political and security developments in the Middle East and Africa. Possible shut-ins to oil production facilities as a result of attacks or security risks in some countries are likely to lead to increased production from other OPEC producers to maintain supply. Saudi Arabia holds

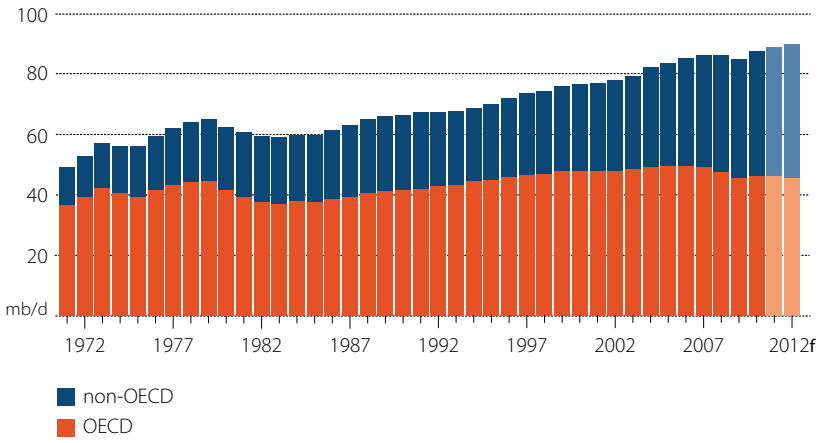
the greatest share of OPEC spare production capacity, at 3.2 million barrels a day, or around 70 per cent of total OPEC spare capacity (excluding Libya). Nigeria is the second largest holder of OPEC spare production capacity, with around 0.45 million barrels a day. However, Nigeria's ability to utilise spare capacity may be affected by a recurrence of attacks on oil production facilities from Niger Delta militants.

Total OPEC production declined in the past few months because increases in production from some producers were not sufficient to offset lower production in Libya. Over the next six months, industry oil stocks in OECD countries may be drawn on to meet increased demand, if world oil production does not increase in line with consumption growth. Oil stocks held by industry in OECD countries were at 2643 million barrels in March 2011, 1 per cent lower than in the same period a year earlier.

Oil demand growth to slow down

In 2010, world oil consumption increased by 3.3 per cent to an average of 87.9 million barrels a day, largely as a result of improved world economic growth. World oil consumption growth is forecast to moderate to 1.5 per cent in 2011 and 1.3 per cent in 2012. In addition to assumed weaker world economic growth compared with 2010, higher oil prices could also contribute to slower oil consumption growth over the next 18 months, as increases in prices are expected to induce a demand response in some countries.

World oil consumption



Demand growth in non-OECD countries to moderate

In 2010, oil consumption in non-OECD economies increased by 5.7 per cent to 41.8 million barrels a day, underpinned particularly by strong economic growth in developing Asia. Non-OECD oil consumption growth is forecast to ease to 3.1 per cent in 2011 and 2.7 per cent in 2012, largely reflecting assumed slower economic growth in China.

China's oil consumption increased by 13 per cent to 9.1 million barrels a day in 2010, representing 36 per cent of the total increase in world oil consumption. In 2011, China's oil consumption growth is forecast to moderate to around 7 per cent, leading to a daily consumption of 9.7 million barrels. In addition, less oil is expected to be used for back-up electricity generation in 2011, following cessation of government enforced shut-downs of coal-fired power generators that occurred in late 2010 and early 2011. In 2012, China's oil consumption is forecast to increase by a further 5 per cent to 10.1 million barrels a day, underpinned by continued strong growth in demand in the transport and industrial sectors.

Government-set petrol and diesel prices in China were increased in February and again in April 2011. However these increases were smaller than the rises in international prices over the same period. Petrol and diesel guidance prices were increased by 4.1 per cent and 4.5 per cent, respectively in February, and both by another 5 per cent in April.

In India, oil consumption is forecast to increase by around 3 per cent in both 2011 and 2012 to an average of 3.3 million barrels a day. This compares with growth of 2.3 per cent in 2010. India's use of petroleum fuels for transport is expected to remain strong over the next 18 months. Diesel demand, the largest component of India's petroleum product use, is expected to remain insulated from increases in world oil prices as a result of government price controls.

In the Middle East, oil consumption is forecast to increase by 3 per cent in 2011, to an average 8.0 million barrels a day, a slowdown from growth of 4 per cent in 2010. Iran, which accounts for 27 per cent of the Middle East's oil consumption, is expected to have lower oil consumption in 2011 mainly as a result of removal of domestic petrol and diesel subsidies. Following removal of government subsidies in December 2010, petrol and diesel prices in Iran increased four-fold and nine-fold respectively. Iran's oil consumption is forecast to fall by 3 per cent to 2.0 million barrels a day in 2011.

In North Africa, political unrest and supply disruptions are expected to weaken economic activity and lead to reduced oil consumption in the short term. In Egypt, which accounts for around 22 per cent of total African demand, oil consumption is forecast to fall below the 0.7 million barrels a day recorded in 2010. In Libya, oil consumption was around 0.3 million barrels a day in 2010. Despite an increase in use of diesel for military vehicles, disruptions associated with civil war are expected to lead to a decline in oil consumption. Use of diesel for military vehicles represented around 40 per cent of total diesel consumption in Libya in 2010.

OECD demand to decline

OECD oil consumption rose by 1.2 per cent to 46.2 million barrels a day in 2010. Oil consumption is forecast to remain largely unchanged in 2011, as an increase in consumption in Japan is offset by expected declines in the European economies. Consumption in North America is forecast to remain relatively stable.

In Europe oil consumption is forecast to decline by around 1 per cent in both 2011 and 2012, to an average of 14.2 million barrels a day in 2012. The forecast declines in oil consumption in Europe reflect an assumption that economic growth will remain weak over the next 18 months and a trend of falling oil use intensity will continue.

In North America oil consumption averaged 23.9 million barrels a day in 2010 and is forecast to remain at around this average over the next 18 months. US oil consumption is forecast to increase by less than 1 per cent to 19.3 million barrels a day in 2011 and to 19.5 million barrels a day in 2012. Increases in transport fuels use are expected to be the main source of growth in the United States.

In the Pacific region, oil consumption is forecast to increase by 1 per cent in 2011, to 7.9 million barrels a day, largely reflecting higher oil consumption in Japan. In 2010 Japan accounted for 57 per cent of oil consumption in the Pacific region, at 4.4 million barrels a day. Japan's oil-fired electricity generation increased in March and April 2011, after the March 2011 earthquakes and tsunami. Oil-fired electricity generation is expected to remain strong in 2011, as reduced nuclear power generation will be met by production using other fuel sources such as oil and gas. The use of oil in construction is also expected to grow as rebuilding activities increase, despite an expected temporary decline due to short-term disruptions associated with the natural disaster. Japan's oil consumption is forecast to increase by 1.5 per cent in 2011, before rising by a further 1 per cent to 4.5 million barrels a day in 2012.

Lower oil production growth in the short term

After increasing by 2.4 per cent to 87.4 million barrels a day in 2010, world oil production growth is forecast to slow to 2 per cent in 2011 and to 1.3 per cent in 2012. The forecast slowdown in oil production growth reflects slower growth in production from both OPEC and non-OPEC countries.

Modest growth in OPEC production

In 2010, OPEC crude and natural gas liquids production increased by 2.9 per cent to 34.5 million barrels a day, of which crude oil production was 1.9 per cent higher at 29.2 million barrels a day. In 2011, OPEC's crude oil production is forecast to increase only modestly; however, growth in total liquids production is expected to be around 2 per cent to 35.3 million barrels a day. OPEC's natural gas liquids production is expected to grow strongly over the next 18 months, a large part of which will be sourced as a by-product of liquefied natural gas projects in Qatar.

OPEC's crude oil production declined by 3.6 per cent in March and by 1 per cent in April 2011, mainly because of the outbreak of civil war in Libya. Libya's oil production declined by 68 per cent to 0.5 million barrels a day in March 2011. In early April, government forces attacked rebel-controlled oilfields in eastern Libya, causing all remaining oil production capacity to be shut-in. Libya's crude oil production capacity is around 1.8 million barrels a day, with production averaging 1.6 million barrels a day in 2010.

While other OPEC members, such as Saudi Arabia, Kuwait, the United Arab Emirates and Angola have increased their production, it has not so far been sufficient to offset the decline in Libyan output. However, production from these countries and other OPEC members is expected to increase further over the remainder of 2011.

In Saudi Arabia, increases in production will be supported by the ramp-up of production at the 1.2 million barrels a day Khurais field, which was completed in 2009. In April 2011, Saudi Arabia's crude oil production was 8.8 million barrels a day, representing 31 per cent of total OPEC production.

Slower growth in non-OPEC production

Following growth of 2.1 per cent in 2010, non-OPEC production growth is forecast to slow to 1.4 per cent in 2011 and to around 1 per cent in 2012. By 2012 non-OPEC production is forecast to average 54 million barrels a day, compared with an average of 52.9 million barrels a day in 2010.

In North America, oil production is forecast to increase marginally over the next 18 months, as lower production in the United States and Mexico is forecast to be largely offset by an increase in production in Canada. Canada's oil production is forecast to increase by 4 per cent in 2011 and by a further 6 per cent in 2012 to 3.7 million barrels a day, supported by increased production from oil sands. The 100 000 barrels a day expansion to the Athabasca oil sands project is scheduled to reach operational capacity by June 2011. The return to production of the 110 000 barrels a day Horizon oil sands facility following a fire in early 2011 is also expected to support higher Canadian production in 2012.

In the United States, crude oil production is forecast to decline from 5.5 million barrels a day in 2010 to 5.4 million barrels a day in 2012, reflecting lower production in the Gulf of Mexico. Although the Bureau of Ocean Energy Management, Regulation and Enforcement has issued deepwater drilling permits, new regulations on exploration and development activity are expected to result in delays to new field developments over the next 18 months.

Brazil's oil production is forecast to be the largest source of growth in non-OPEC production in the short term. Oil production in Brazil is forecast to increase by 9 per cent in 2011 and by a further 7 per cent in 2012, to 2.5 million barrels a day. These increases in production are expected to come from a ramp-up in production at the 200 000 barrels a day Lula field (previously Tupi), which started production in October 2010, and start-up of the Marlim Sul 3 (100 000 barrels a day), Peregrino (100 000 barrels a day) and Cachalote (100 000 barrels a day) fields in 2011.

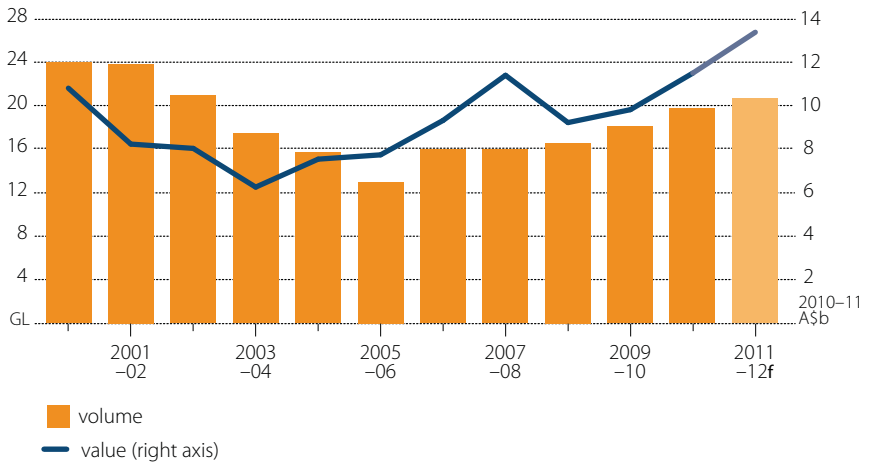
In the Middle East and North African region, production from several non-OPEC members is expected to decline in 2011. In March and April 2011, there were shut-ins to production capacity in Yemen, Gabon, Oman, and Ivory Coast. Yemen experienced the largest decline in production, with an estimated shut-in of 40 per cent of total production. While these four countries had a combined production of only 1.4 million barrels a day in 2010, recent protests and violence in countries such as Egypt, Syria, Bahrain and Tunisia also pose the risk of disruptions to supply over the second half of 2011. These latter four countries provided another 1.4 million barrels a day of production in 2010, of which Egypt contributed 53 per cent.

Higher Australian production and exports

In 2010–11 Australia's crude oil and condensate production is estimated to decline by 1.5 per cent to 25.2 gigalitres. Cyclone-related disruptions to oil production facilities, flooding in the Cooper Basin, and maintenance disruptions at some oil fields offset increases in production from the ramp-up of the Pyrenees and Van Gogh fields. In 2011–12, crude oil and condensate production is forecast to increase by 7 per cent to 26.9 gigalitres. Several new projects are expected to start in 2011–12, including the Kitan project in the fourth quarter of 2011 and the Montara/Skua project scheduled for completion in the first quarter of 2012.

New projects in the Carnarvon and Bonaparte basin are expected to support higher oil exports. Australia's oil exports are forecast to increase from an estimated 19.8 gigalitres in 2010–11 to 20.7 gigalitres in 2011–12, representing an increase of 4.9 per cent. This forecast increase in export volumes, combined with forecast higher oil prices, is expected to result in an increase in the value of Australia's oil exports to $11.5 billion in 2010–11, before rising by a further 20 per cent in 2011–12, to reach $13.8 billion.

Australian crude oil and condensate exports



Oil outlook

		2010	2011 f	2012 f	% change
World					
Production **b**	mbd	87.4	89.2	90.3	*1.3*
Consumption	mbd	87.9	89.2	90.3	*1.3*
Trade weighted crude oil price	US$/bbl	78	109	111	*1.4*
West Texas Intermediate crude oil price	US$/bbl	79	104	108	*3.7*
		2009	**2010**	**2011**	
Australia		**–10**	**–11 f**	**–12 f**	
Crude oil and condensate					
Production **b**	ML	25 572	25 192	26 856	*6.6*
Exports	ML	18 064	19 755	20 718	*4.9*
– value	A$m	9 534	11 514	13 797	*19.8*
Imports	ML	27 284	31 960	32 125	*0.5*
LPG					
Production **c**	ML	4 096	4 030	4 046	*0.4*
Exports	ML	2 776	2 458	2 474	*0.6*
– value	A$m	1 105	1 100	1 315	*19.6*

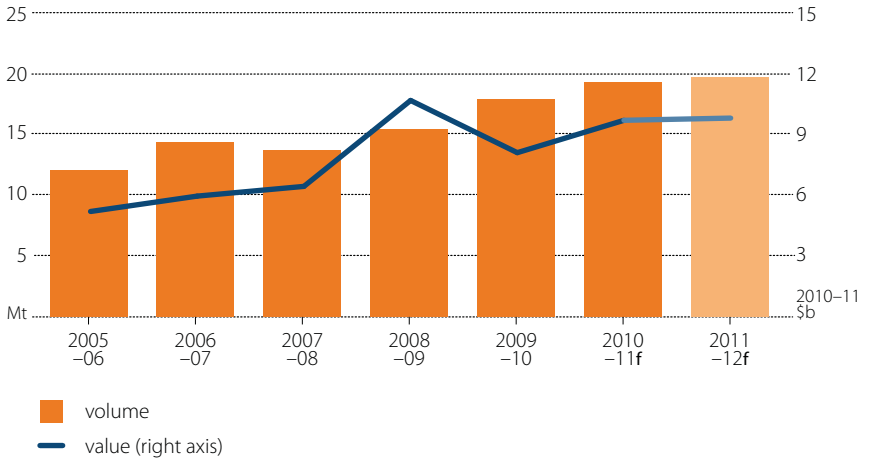
b One megalitre a year equals about 17.2 barrels a day. **c** Primary products sold as LPG. **f** ABARES forecast.
Sources: ABARES; Australian Bureau of Statistics; International Energy Agency; Energy Information Administration (US Department of Energy).

Australian LNG exports to grow

Australia's LNG exports in 2010–11 are estimated to increase by 8 per cent to 19.3 million tonnes, which reflects increased demand from Japan, the Republic of Korea and China. In 2011–12, Australian LNG exports are forecast to increase by 2 per cent to 19.7 million tonnes. This forecast increase is expected to be underpinned by the scheduled start-up of Woodside Energy's Pluto project in March 2012 increasing LNG export capacity. The Pluto project was previously scheduled to start up in September 2011.

The value of Australia's LNG exports in 2010–11 is estimated to increase by 24 per cent to $9.6 billion, mainly reflecting higher prices and increased export volumes in 2010–11 relative to 2009–10. In 2011–12, forecast increased LNG demand will likely result in higher LNG prices. Overall, the value of Australian LNG exports in 2011–12 is forecast to increase by 4 per cent to $10 billion, primarily as a result of the forecast increase in LNG prices and export volumes.

Australia's LNG exports



Gas outlook

		2009–10	2010–11 f	2011–12 f	% change
Australia					
Production	Gm^3	49.0	52.6	59.7	*13.5*
LNG exports	Mt	17.87	19.34	19.74	*2.1*
– value	A$m	7 789	9 636	10 038	*4.2*

f ABARES forecast.

Sources: ABARES; Department of Resources, Energy and Tourism.

Thermal coal

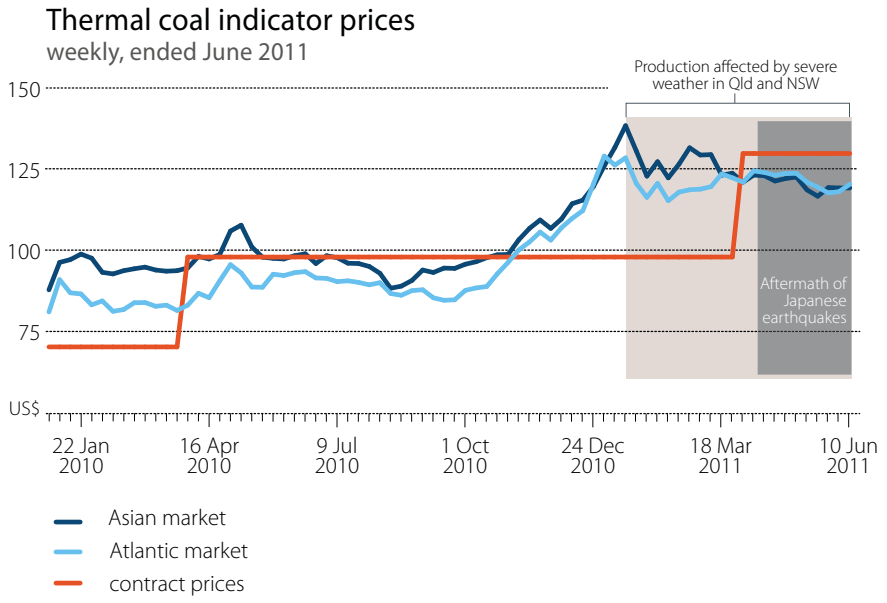
Alan Copeland and Rubhen Jeya

Thermal coal trade is forecast to increase in 2011 and 2012 underpinned by growth in imports by China, India and the European Union. Japan's thermal coal imports are forecast to decline in 2011 but then increase in 2012 reflecting increased utilisation of coal-fired electricity generation. Most of the increase in global thermal coal exports will come from Indonesia, Australia, Colombia and South Africa. Over the next 18 months, thermal coal prices are assumed to remain high although they are expected to ease from the record settlement of around US$130 a tonne for Japanese Fiscal Year 2011 (JFY, April 2011 to March 2012).

High demand and supply constraints support prices

In March 2011, Australian coal suppliers and Japanese power utilities settled some thermal coal contract prices at around US$130 a tonne a tonne for JFY 2011, an increase of around 32 per cent from a year earlier. The record price settlement reflected strong demand in Asia and a number of supply disruptions. For example, in late 2010 and early 2011 production in Australia, Colombia and Indonesia was affected by above average rainfall.

In early June, Newcastle thermal coal prices had eased to around US$120 a tonne which reflected increased supplies in Australia and Indonesia as mine production recovered. Also contributing to the fall in prices were concerns that Japan's thermal coal imports may decline as some coal-fired power stations and associated import infrastructure sustained damage in the March 2011 earthquakes and tsunami.

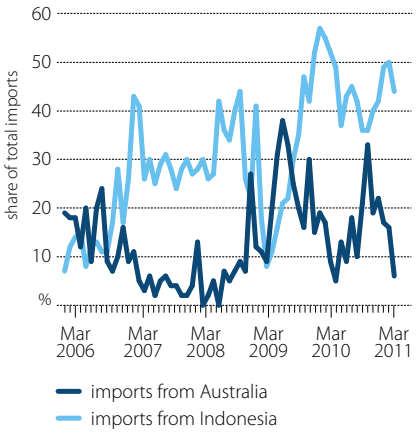


Over the next 18 months, thermal coal spot prices in the Asia–Pacific market are expected to remain above US$100 a tonne, supported by strong growth in demand for coal from electricity generators in Asia, particularly China, India and the Republic of Korea. Japan's thermal coal imports are also forecast to increase in 2012 as coal-fired electricity generation increases and use of nuclear power facilities falls.

World trade to increase strongly in 2011 and 2012

In 2011, world thermal coal trade is forecast to increase by around 2 per cent to 790 million tonnes, supported by increased demand for electricity in developed economies and new generating capacity in developing economies. Increased import demand in India and the European Union is expected to account for most of this forecast growth, with increased exports to come mainly from Indonesia, the United States and the Russian Federation. Thermal coal trade is forecast to increase by 6 per cent to 834 million tonnes in 2012, reflecting an increase in Japan's imports and more generally, further increases in Asia's demand for electricity.

China's thermal coal imports from Australia and Indonesia



Import demand to increase in China and India

In the first three months of 2011, China's imports of thermal coal decreased by about 35 per cent compared with the corresponding period in 2010. The fall in imports was due to China's domestic coal prices being lower than the delivered price of imports. However, China's domestic coal prices increased steadily throughout May and by early June the price differential had narrowed significantly. The decrease in the price differential between domestic and import prices combined with increased electricity demand is expected to result in China's thermal coal imports increasing in the second half of 2011. For 2011 as a whole, thermal coal imports are forecast to total 117 million tonnes.

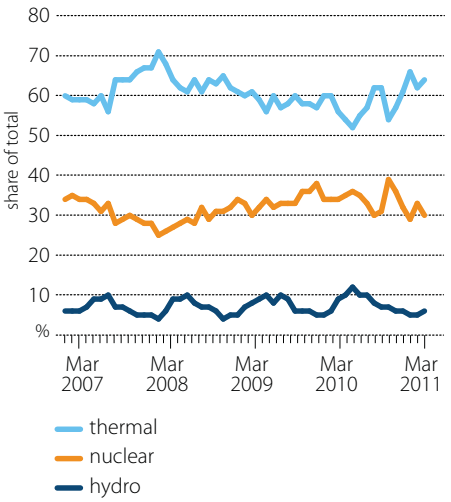
In 2012, China's thermal coal imports are forecast to increase by 2 per cent to 119 million tonnes underpinned by continued growth in coal-fired electricity generation.

India is the fastest growing importer of thermal coal—its imports are forecast to increase by 28 per cent to 77 million tonnes in 2011. In addition, coal-fired electricity generation in India is expected to expand significantly—18 gigawatts of coal-fired electricity generation capacity is scheduled to be brought online in 2010–11. The scheduled expansion of coal-fired electricity generation is expected to markedly increase import demand, as growth in domestic production will not be sufficient to meet consumption needs. These developments are expected to continue in 2012, supporting thermal coal import growth of 19 per cent to 92 million tonnes.

Japan's thermal coal imports to grow in 2012

Japan's March 2011 earthquakes and tsunami had a significant impact on its coal-fired electricity generation sector, with around 6 gigawatts of capacity affected. Some power stations suffered damage to generation equipment, while coal unloading infrastructure was damaged at others. A number of affected power stations returned to operation relatively quickly; however, some remain offline, including those inside the 30 kilometre exclusion zone around the Fukushima nuclear reactor.

Japan's electricity generation



In the first three months of 2011, Japan's thermal coal imports increased by 6 per cent compared with the corresponding period in 2010. Imports in the second half of 2011 are expected to increase in line with increased electricity demand and increased coal-fired electricity generation capacity. Increased electricity demand will be supported by rebuilding activities. Thermal coal import demand will also be supported by increases in coal-fired (and gas-fired) electricity generation underpinned by the shutdown of a number of nuclear reactors as inspections and repairs are undertaken. Many affected reactors are likely to be offline for the outlook period. For 2011 as a whole, Japan's thermal coal imports are forecast to decrease to 122 million tonnes, but in 2012 are forecast to increase by 7 per cent to 131 million tonnes.

Modest import growth forecast for Europe and the Republic of Korea

Korea's thermal coal imports are forecast to increase by 1 per cent in 2011 and again in 2012 to reach 96 million tonnes in 2012. The forecast modest growth in thermal coal imports over the next 18 months reflects slower growth in electricity demand associated with slower economic growth. In addition, Korea's thermal coal imports are expected to be limited by growth in new coal-fired electricity generation capacity following a significant expansion between 2007 and 2009.

In the European Union, thermal coal imports in 2011 are forecast to increase by 3 per cent to 153 million tonnes supported by declining domestic thermal coal production and an increase in coal-fired electricity generation. In Germany, the recent closure of a number of coal mines and scheduled start up of six coal-fired power stations (combined capacity of about 4.5 gigawatts) in 2011 and 2012 will support higher thermal coal imports. Further support for an increase in use of coal-fired electricity generation capacity may arise through the earlier than scheduled closure of a number of Germany's oldest nuclear power plants. In 2012, the European Union's thermal coal imports are forecast to increase by 2 per cent to 156 million tonnes.

Indonesian and Russian exports to grow

Despite recent growth in Indonesia's coal production and export capacity, its exports of thermal coal in the first quarter of 2011 remained at about 62 million tonnes, largely unchanged from the same period the previous year, due to above average summer rainfall. Over the remainder of 2011 growth in Indonesia's thermal coal exports is expected to be supported by increased import demand from India and China. For 2011 as a whole, Indonesia's thermal coal exports are forecast to increase by 4 per cent to 280 million tonnes and in 2012 by a further 5 per cent to 294 million tonnes, reflecting growth in import demand from China, India and Japan. Indonesia's thermal coal supplies will be supplemented by planned expansions to production at PT Bumi's four subsidiaries—PT Kaltim Prima Coal (KPC), Arutmin, Fajar Bumi Sakti and Pendopo Energi Batubara.

During the first quarter of 2011, the Russian Federation shipped its first cargo of thermal coal to India. The significant transport cost was justified by higher prices associated with strong import demand from India and reduced availability of thermal coal from other major exporters, including Australia and Indonesia. Russia's thermal coal exports are forecast to increase by 3 per cent in 2011 and 2 per cent in 2012. The growth in exports will be supported by stronger import demand in Europe and increased Russian port capacity. Recent expansions to coal export capacity include completion of the Vanino Coal Terminal and modernisation of the Vostochny Coal Terminal; both are expected to be fully operational in 2011. These terminals are expected to add around 14 million tonnes a year to the Russian Federation's east coast export capacity.

South Africa and Colombia contribute to world exports

South Africa's exports in 2011 are expected to increase by 4 per cent to around 73 million tonnes. A combination of stronger demand from the Atlantic market, where most of South Africa's coal is sold, and increased exports to Asian customers particularly India, will support this growth. In 2012, South Africa's exports are forecast to increase slightly to 74 million tonnes. Completion of the Phase V expansion project at the Richards Bay Coal Terminal in 2010 has increased capacity of the terminal by 20 per cent to 92 million tonnes. Despite the high prices and increase in demand from the European Union and Asia, growth of South Africa's thermal coal exports is expected to be limited by bottlenecks on the rail network supporting the Richards Bay Coal Terminal.

Colombia's thermal coal exports are forecast to increase by 4 per cent to around 72 million tonnes in 2011, reflecting stronger growth in the Asian and Atlantic markets. Also providing support to Colombian export growth is relatively lower freight rates, which has increased the viability of exporting Colombian thermal coal to markets in Asia. Colombia's exports of thermal coal are forecast to increase by around 7 per cent to 77 million tonnes in 2012, as import demand in the Atlantic market continues to grow and expansions to mines and export facilities are completed. Colombian thermal coal exports will be supported by planned expansion to the Glencore Prodeco mine and capacity increases at Drummond's mine operation.

Australia's thermal coal exports to increase

In 2010–11, Australia's thermal coal exports are forecast to increase by 2 per cent to 138.3 million tonnes. The increase in exports reflects the start-up of a number of mines in the past 12 months, including Xstrata Coal's Mangoola (8 million tonnes a year) and BHP Billiton's Mount Arthur open cut expansion (3.5 million tonnes a year). In addition, a number of existing mines in the Hunter Valley were able to incrementally increase production to take advantage of expanded port capacity at Newcastle. However, growth in Australia's thermal coal exports in 2010–11 was hampered by floods in Queensland and heavy rainfall over the northern part of New South Wales in January and June 2011.

Advanced projects scheduled to be completed by 2012

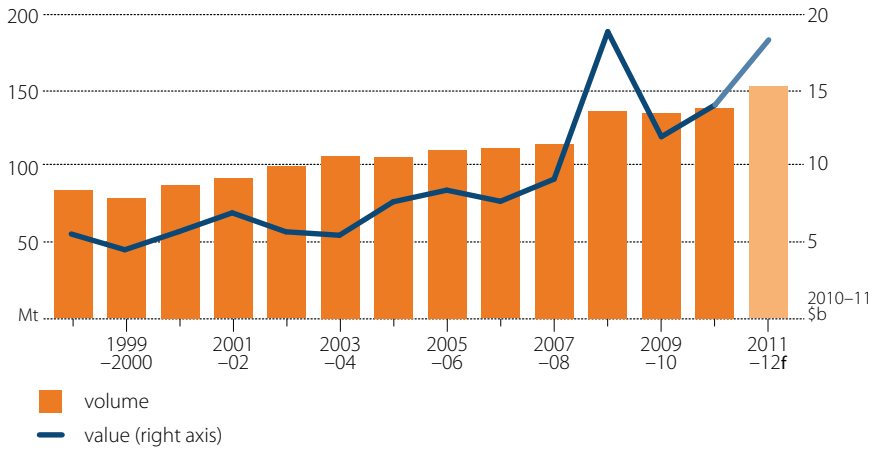
project	company	expected start-up	capacity
mining projects in NSW			
Bengalla expansion Stage 1	Wesfarmers / Coal & Allied	early 2012	1.5 Mt ROM
Narrabri Coal Project (Stage 2)	Whitehaven	2012	4.5 Mt thermal
Ravensworth North	Xstrata	2012	8 Mt thermal and semi soft
Wilpinjong	Peabody Energy	2012	2–3 Mt thermal
Mining projects in Qld			
Curragh Mine	Wesfarmers	2011	increase to 8.5 Mt
Ensham bord and pillar underground mine	Ensham Resources	2012	1.5–2.5 Mt thermal
Integrated Isaac Plains Project	Aquila Resources / Vale	mid 2011	1.6 Mt coking and thermal
Middlemount (Stage 1)	Macarthur Coal / Gloucester Coal	2012	1.8 Mt coking ROM
Newlands Northern Underground	Xstrata	2011	3 Mt
Oaky Creek (Phase 1)	Xstrata	late 2011	1 Mt coking

ROM Run-of-mine.

Australia's thermal coal exports are forecast to increase by 10 per cent to 152.6 million tonnes in 2011–12 as production increases at a number of mines that started in 2010. In addition, flood-affected mines in Queensland are expected to gradually return to full capacity during the year.

The value of Australia's thermal coal exports is estimated to increase by 18 per cent to $14 billion in 2010–11 as a result of higher coal prices and export volumes, and is forecast to increase by a further 31 per cent to $18.3 billion in 2011–12, underpinned by growth in export volumes and high contract prices for JFY 2011.

Australian thermal coal exports



Thermal coal outlook

		2010	2011 f	2012 f	%
World					
Contract prices b					*change*
Thermal coal	US$/t	98	130	117	*– 9.9*
Coal trade	Mt	771	790	834	*5.6*
Imports					
Asia	Mt	511	526	561	*6.7*
– China	Mt	119	117	119	*1.7*
– Chinese Taipei	Mt	62	63	63	*0.8*
– India	Mt	60	77	92	*19.5*
– Japan	Mt	126	122	131	*7.4*
– Korea, Rep. of	Mt	94	95	96	*1.1*
– Malaysia	Mt	16	17	18	*7.1*
– other Asia	Mt	33	36	42	*18.6*
Europe	Mt	187	194	199	*2.7*
– European Union 27 c	Mt	148	153	156	*2.0*
– other Europe	Mt	40	41	43	*5.6*
Other	Mt	73	70	74	*5.1*
Exports					
Australia	Mt	141	137	162	*18.0*
China	Mt	18	20	18	*– 7.7*
Colombia	Mt	69	72	77	*6.9*
Indonesia	Mt	270	280	294	*5.0*
Russian Federation	Mt	87	90	92	*2.2*
South Africa	Mt	70	73	74	*1.4*
United States	Mt	22	26	23	*– 11.5*
Other	Mt	92	85	83	*– 1.8*

		2009 –10	2010 –11 f	2011 –12 f	
Australia					
Production	Mt	201.9	206.6	222.4	*7.6*
Exports	Mt	135.0	138.3	152.6	*10.3*
– value	A$m	11 886	13 999	18 320	*30.9*

b Japanese Fiscal Year, starting April 1, fob Australia basis, ABARES Australia–Japan average contract price assessment. For steaming coal with a calorific value of 6700 kcal/kg (gross air dried. **c** Regarded as 27 countries for all years. **f** ABARES forecast.
Sources: ABARES; International Energy Agency; Coal Services Pty Ltd; Queensland Department of Mines and Energy.

Metals

Steel and steel-making raw materials

Alan Copeland and Rubhen Jeya

In the second half of 2011 and in 2012, global steel consumption is forecast to increase, underpinned by economic growth across most large steel consuming economies. The associated increase in steel production is expected to support growth in iron ore and metallurgical coal trade. Over the outlook period, Australian and Brazilian iron ore exports are forecast to increase as production capacity expands. Australian metallurgical coal exports are forecast to fall in 2011, affected by heavy rainfall and floods in Queensland, but then grow strongly in 2012 as the industry recovers and new and expanded mines increase to capacity.

Contract prices to ease from record levels

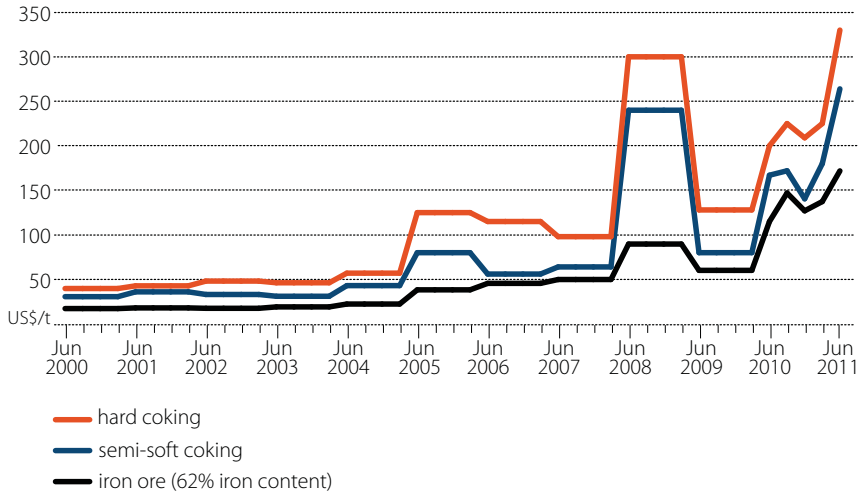
In mid-February, iron ore spot prices (in real terms) were the highest on record, reaching $185 a tonne for 62 per cent iron ore content free on board (fob) Australia. These record prices supported some June 2011 quarter contract prices reaching US$172 a tonne, a 25 per cent increase from the previous quarter. These June quarter contract prices are based on average spot prices between December 2010 and February 2011. The increase in contract prices largely reflects the effect of heavy rain in Western Australia amid strong import demand. In the second half of 2011, contract prices are expected to ease, averaging around US$159 a tonne. In 2012, contract prices are assumed to ease further to an average of US$146 a tonne. The forecast lower prices in the second half of 2011 and in 2012 largely reflect increasing supply from Australia and Brazil.

In April 2011, Japanese steel mills and Australian suppliers negotiated high-quality hard coking coal contract prices for the June quarter at $330 a tonne. This represents a 47 per cent increase from the March quarter contract price and largely reflects the effect of floods on metallurgical coal supply from Queensland. In the September and December 2011 quarters, hard coking coal contract prices are assumed to ease to US$315 and US$265 a tonne, respectively, as production and exports from Queensland increase toward capacity.

In 2012, hard coking coal contract prices are assumed to average US$241 a tonne as increased supply from Australia and North America puts downward pressure on prices.

Despite assumed lower prices, over the next 18 months, iron ore and metallurgical coal prices are assumed to remain relatively high, reflecting strong growth in steel production in developing economies and the reconstruction of parts of Japan damaged by the March 2011 earthquakes and tsunami.

Steel-making raw material contract prices
fob Australia



Steel

In 2011, world steel consumption is forecast to increase by 6 per cent to 1.4 billion tonnes; however, growth rates will vary across different regions. In the United States and European Union, steel consumption is forecast to increase by 7 per cent and 5 per cent, respectively. The forecast growth in steel consumption reflects increased manufacturing activity, of which a significant proportion is exported.

World steel outlook

	2009	2010	2011 f	2012 f
Crude steel consumption (Mt)				
European Union 27	129	147	155	161
United States	62	81	87	92
Brazil	21	25	26	28
Russian Federation	28	29	31	33
China	565	594	626	664
Japan	57	62	63	69
Republic of Korea	47	52	54	56
Chinese Taipei	14	15	16	16
India	58	66	75	81
World steel consumption	1 209	1 314	1 388	1 466
Crude steel production (Mt)				
European Union 27	139	173	180	187
United States	58	81	89	98
Brazil	27	33	36	40
Russian Federation	60	67	70	72
China	568	627	680	730
Japan	88	110	110	124
Republic of Korea	49	58	63	66
Chinese Taipei	16	20	21	22
India	57	67	74	80
World steel production	1 220	1 413	1 511	1 617

Japan's steel consumption in 2011 is forecast to increase by 2 per cent to 63 million tonnes. Consumption in the first half of the year is expected to be weaker, reflecting the slowdown in economic activity following the earthquakes and tsunami. However, in the second half of 2011, steel consumption is expected to increase gradually as reconstruction of damaged housing and infrastructure gathers pace and automobile manufacturers make up for lost production in March and April.

In China, steel consumption in 2011 is forecast to increase by 5 per cent to 626 million tonnes. Growth in

consumption will be driven by the development in the western and central provinces and the state-mandated social housing program, which has targeted the construction of 10 million new units in 2011.

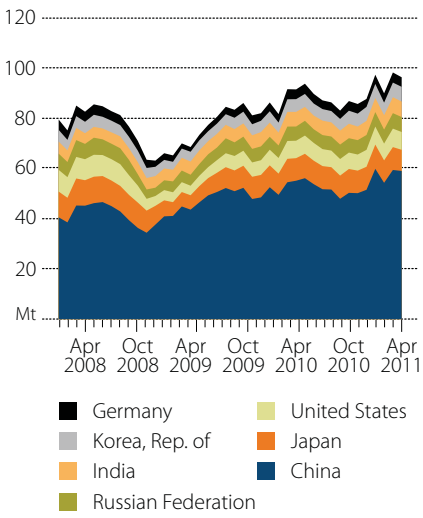
In 2012, world steel consumption is forecast to grow by about 6 per cent to 1.5 billion tonnes. The majority of the growth in 2012 is forecast to occur in China, Japan and India. China's consumption is forecast to increase by 6 per cent to 664 million tonnes in 2012, underpinned by growth in the infrastructure and housing construction sectors. In India, steel demand for infrastructure construction and automotive manufacturing is expected to underpin an 8 per cent increase in steel consumption to 81 million tonnes in 2012.

Japan's steel consumption in 2012 is forecast to increase by 10 per cent to 69 million tonnes, underpinned by growth in industrial production as damaged infrastructure and housing is repaired or rebuilt. The reconstruction is expected to be particularly steel intensive. In the United States and the European Union, steel consumption is forecast to increase by 10 per cent and 4 per cent, respectively. The forecast growth in steel consumption is supported by assumed stronger economic growth in 2012.

World steel production to increase in 2011 and 2012

World steel production in the first four months of 2011 increased by 9 per cent compared with the same period a year earlier. Stronger global demand for steel has encouraged the restarting of some idled capacity in developed economies, while expansions to existing operations in developing economies have also added to an increase in steel production.

World steel production



World steel production from major producers

For 2011, world steel production is forecast to increase by 7 per cent to 1.5 billion tonnes. China's steel production is forecast to increase by 8 per cent to 680 million tonnes and will maintain its share of world steel production at about 45 per cent. In India, steel production is forecast to increase by 10 per cent to 74 million tonnes in 2011, underpinned by increasing utilisation rates.

Japan is the world's second largest steel producing country, accounting for around 8 per cent of world production. The March 2011 earthquakes and tsunami resulted in the shutdown of production at a number of steel plants, including JFE Steel Corporation's Chiba and Keihin blast furnaces and Sumitomo Metal Industries' Kashima Steelworks.

The shutdown of steel production capacity was reflected in April 2011 steel production data, which was 7 per cent lower than a year earlier. Despite this, Japan's steel production in the first four months of 2011 increased by about 2 per cent from the corresponding period in 2010, primarily as a result of strong production in January and February. May and June steel production is expected to remain lower compared with the same period a year earlier, which will lead to steel production in the first half of 2011 decreasing by 2 per cent year-on-year.

It is assumed that Japan's steel production will start to increase in the second half of 2011 as damaged steel mills restart or capacity utilisation at other steel mills increases. In addition, increases in steel production in the later part of 2011 will be supported by the start-up of JFE Steel Corporation's refurbished No. 3 blast furnace in Fukuyama. For 2011 as a whole, steel production is forecast to be around 110 million tonnes, similar to production in 2010.

Steel production in the United States and the European Union in 2011 is forecast to increase as steel producers increase steel-capacity utilisation in response to growth in steel consumption. In 2011, US steel production is projected to increase by 10 per cent to 89 million tonnes. The increase is primarily driven by increased demand from the automotive industry and an increase in manufactured exports, which has been assisted by a depreciation of the US dollar against other international floating currencies. In 2011, European Union steel production is forecast to increase by 4 per cent to 180 million tonnes.

In 2012, world steel production is forecast to increase by 7 per cent to 1.6 billion tonnes, with growth occurring in most large steel producing economies. The strongest growth is forecast to occur in Japan, where steel production is forecast to increase by 13 per cent to 124 million tonnes, underpinned by demand for steel as the country rebuilds after the earthquakes and tsunami.

Steel production in China and India is forecast to increase by 7 per cent and 8 per cent, respectively, in 2012, supported by construction of infrastructure and housing and by manufacturing activity. Steel production in the European Union and the United States is forecast to increase by 4 per cent and 10 per cent, respectively.

Outlook for world iron ore trade (Mt)

	2009	2010	2011 f	2012 f
Iron ore imports				
European Union 27	92	133	145	154
Japan	106	133	133	149
China	628	623	642	694
Republic of Korea	42	53	57	60
Chinese Taipei	12	15	16	17
World imports	948	1 036	1 071	1 155
Iron ore exports				
Australia	363	402	414	459
Brazil	266	308	324	358
India	97	89	87	83
Canada	31	34	35	36
South Africa	45	47	52	56
Sweden	16	14	15	15
World exports	948	1 036	1 071	1 155

Iron ore

In 2011, world trade in iron ore is forecast to increase by 3 per cent to 1.1 billion tonnes. This growth reflects increased imports by China as domestic iron ore consumption outpaces growth in domestic supply and increased imports by Japan and Europe. In 2012, world trade in iron ore is forecast to increase by a further 8 per cent to 1.2 billion tonnes. The majority of increased trade in 2011 and 2012 is expected to be supplied by Australia and Brazil.

China's imports underpin growth in world iron ore imports

In 2011, China's iron ore imports are forecast to increase by 3 per cent to 642 million tonnes. The slower growth in imports compared with the annual average of 18 per cent in the previous five years reflects increased domestic production, which has become more competitive as world prices increased. However, iron ore consumption is forecast to remain higher than domestic production and hence imports will continue to grow. Despite China's slower rate of imports in 2011, it is still expected to be the largest contributor to the increase in world iron ore imports. China's iron ore imports in 2012 are forecast to rise by a further 8 per cent to 694 million tonnes, as consumption growth continues to outpace growth in domestic production.

Although China is the world's largest importer of iron ore, it is also the world's largest producer. Because of China's significant domestic production and consumption, small changes in domestic iron ore production, and therefore imports, have the potential to significantly affect the world seaborne market. China's production is responsive to changes in iron ore prices. If iron ore prices are high, China's domestic production of iron ore will increase and thereby reduce the reliance on imports.

Imports by Japan, the Republic of Korea and the European Union to increase

Japan's imports are forecast to remain around 133 million tonnes in 2011. Reduced iron ore imports and steel production in March and April 2011 associated with the earthquakes and tsunami are expected to be largely offset by expanded iron ore imports in the second half of the year as steel production increases in line with the reconstruction efforts. In 2012, Japan's iron ore imports are forecast to increase by 12 per cent to 149 million tonnes.

In 2011, iron ore imports by the European Union and the Republic of Korea are forecast to increase by 9 per cent and 8 per cent to 145 million tonnes and 57 million tonnes, respectively.

European Union iron ore imports in 2012 are forecast to increase by 6 per cent to 154 million tonnes. The forecast faster rate of growth in 2012 is expected to be underpinned by increased steel production associated with stronger economic growth and steel consumption. Iron ore imports by the Republic of Korea are forecast to increase by a further 5 per cent to 60 million tonnes in 2012.

Australia and Brazil to be the major sources of export growth

Over the next 18 months, exports from Australia and Brazil are forecast to increase while Indian exports are expected to decrease because of a rise in export taxes.

In 2011, Australian exports of iron ore are forecast to increase by 3 per cent to 414 million tonnes, reflecting the expansion of Fortescue Metal Group's Chichester Hub (15 million tonnes a year) operation and the start of production at Mount Gibson Iron's Extension Hill project. Also contributing to increased exports will be the ramp-up of production at a number of mines that commenced operations in 2010. However, growth in Australia's iron ore exports in 2011 will be limited by heavy rain in the March quarter, which limited production in Western Australia.

Australia's exports of iron ore in 2012 are forecast to increase by 11 per cent to 459 million tonnes, underpinned by increased production from projects scheduled for completion in the second half of 2011. These projects include CITIC Pacific's Sino Iron Project (28 million tonnes) and BHP Billiton's Western Australian Iron Ore Rapid Growth Project 5.

Advanced iron ore projects scheduled for completion in Australia by 2012

project	company	expected start-up	capacity
Karara Project	Gindalbie Metals / Ansteel	2011	8 Mt magnetite concentrate, 2 Mt hematite ore
Koolyanobbing	Cliffs Natural Resources	2012	2.5 Mt
Sino Iron Project	CITIC Pacific Mining	2011	28 Mt (concentrates and pellets in total)
Western Australian Iron Ore Rapid Growth Project 5	BHP Billiton	2011	50 Mt

Brazil's exports are forecast to increase by 5 per cent in 2011 and by a further 10 per cent in 2012 to reach 358 million tonnes. Growth in Brazil's exports will be underpinned by strong import demand from China, Japan and the European Union.

In early 2011, India reversed the iron ore export ban in the state of Karnataka, which was designed to prevent illegal mining. The ban, which had been in place since July 2010, contributed to India's exports falling by 8 per cent in 2010 to 89 million tonnes. In 2011 and 2012, India's iron ore exports are forecast to continue falling to 83 million tonnes in 2012. While the removal of the ban on exports from Karnataka should increase the availability of iron ore for export, the decrease in exports will be driven by the recent introduction of a nationwide 20 per cent export duty.

Outlook for world metallurgical coal trade (Mt)

	2009	2010	2011 f	2012 f
Metallurgical coal imports				
European Union 27	41	46	48	50
Japan	45	53	52	59
China	34	47	50	52
Republic of Korea	15	23	26	27
Chinese Taipei	4	6	6	7
India	23	25	29	33
Brazil	9	11	13	14
World imports	210	257	260	277
Metallurgical coal exports				
Australia	135	159	150	166
Canada	22	25	25	27
United States	34	51	52	48
Russian Federation	13	17	20	21
World exports	210	257	260	277

Metallurgical coal import market

In 2011, global trade in metallurgical coal is forecast to increase by 1 per cent to 260 million tonnes. Increased imports from India and the European Union will be partially offset by lower imports in Japan. World trade in 2012 is forecast to increase by a further 7 per cent to 277 million tonnes, supported by growth in Japan and India.

Japanese and European Union metallurgical coal imports to increase in 2012

Japan's imports of metallurgical coal in 2011 are forecast to decrease by 2 per cent to 52 million tonnes, mainly as a result of lower imports in the first half of 2011. This reflects lower imports from Australia following floods in Queensland and associated high prices, which encouraged a drawdown of stocks. In the June quarter, Japan's imports were affected by lower steel production following the earthquakes and tsunami. In the second half of 2011, metallurgical coal imports are expected to rise in line with increased steel production and increased availability of metallurgical coal from Australia.

In 2012, Japan's metallurgical coal imports are forecast to increase by 13 per cent to 59 million tonnes as steel production increases to support the rebuilding of damaged housing and infrastructure.

Imports by the European Union are forecast to increase by 4 per cent in 2011, to 48 million tonnes, and by a further 4 per cent in 2012, to 50 million tonnes. The increase in imports will be underpinned by the recovery in steel production in a number of the European Union economies.

China's imports continue to grow

In the first three months of 2011, China reduced its imports of metallurgical coal by 24 per cent from the previous quarter. This was reflected by a 27 per cent decrease in exports from Australia and a 37 per cent decrease in exports from Mongolia. Higher metallurgical coal import prices increased the competitiveness of China's domestically produced coal and encouraged the drawdown of stocks. For 2011 as a whole, China's metallurgical coal imports are forecast to increase by 6 per cent to 50 million tonnes, partly as a result of restocking at steel mills and strong steel production in the second half of 2011.

In 2012, China's imports are forecast to increase by 4 per cent to 52 million tonnes, as steel mills' metallurgical consumption outpaces growth in domestic production.

Australia still the largest exporter of metallurgical coal despite losses from Queensland flooding

In late 2010 and early 2011, metallurgical coal production in Queensland was severely disrupted by heavy rain and flooding. A significant number of mining pits were flooded and rail corridors were closed. The flooding was the main reason for Australian metallurgical exports falling by 32 per cent in the March quarter 2011 compared with the previous quarter, and by 23 per cent compared with the corresponding quarter in 2010.

Production and exports have increased steadily during the June quarter; however, the industry was still operating well below capacity in early June. Australia's exports in the second half of 2011 are expected to increase, with production assumed to operate at capacity for the majority of this period. In addition, increased capacity associated with the expansion of the Curragh, Oaky Creek and Newlands mines will support higher exports.

For 2011 as a whole, Australia's metallurgical coal exports are forecast to decrease by 6 per cent to 150 million tonnes. Despite the decrease in exports, Australia will remain the world's largest exporter of metallurgical coal, with around a 60 per cent share of the global seaborne market.

Assuming a return to more usual climatic conditions in 2012, Australian exports of metallurgical coal are forecast to increase by 11 per cent to 166 million tonnes.

In 2011, Canada's exports of metallurgical coal are forecast to remain largely unchanged at 25 million tonnes, as modest growth from new capacity is offset by weather-related supply disruptions and industrial action in the first half of the year. In early January, Teck, Canada's largest producer of metallurgical coal, declared force majeure because rail transport was affected by adverse weather conditions. In April, an industrial dispute was resolved after two months of strike action by workers at Teck's Elkview mine, which is expected to result in a loss

of metallurgical coal production. In 2012, Canada's metallurgical coal exports are projected to increase by 8 per cent to 27 million tonnes, underpinned by modest expansions to production at a number of mines.

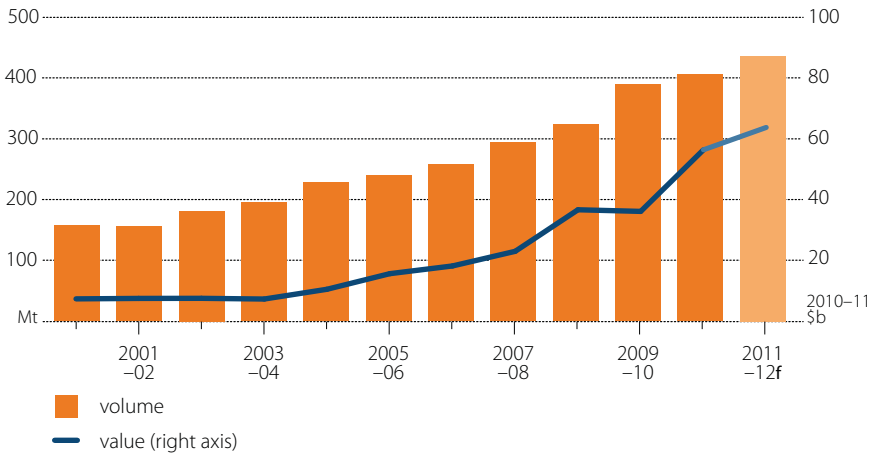
In 2011, US exports of metallurgical coal are forecast to increase by 2 per cent to 52 million tonnes. The exports are underpinned by an increase in demand from steel producing nations and supply disruptions in other exporting countries, which lowered the global availability of metallurgical coal. In 2012, US exports are forecast to decrease by 8 per cent to 48 million tonnes as mines affected by severe weather conditions in Canada and Australia are assumed to return to normal operation.

Australian exports

Australia's iron ore export volumes in 2010–11 are estimated to increase by 4 per cent to 406 million tonnes. This estimated growth in exports reflects increases in production and export capacity that have been partially offset by lower production in Western Australia due to above average summer rainfall.

In 2010–11, export earnings are estimated to increase by 62 per cent to $56.0 billion, reflecting a significant increase in iron ore prices and a moderate increase in export volumes.

Australian iron ore exports

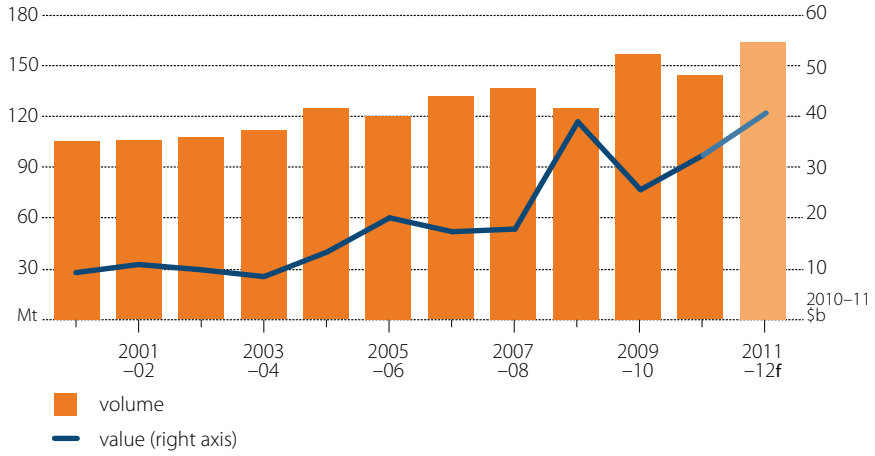


In 2011–12, Australia's iron ore export volumes are forecast to increase by 8 per cent to 437 million tonnes. This reflects the effect of higher export volumes, associated with increased production from several large projects in Western Australia's Pilbara region. Australia's iron ore export earnings in 2011–12 are forecast to increase by 17 per cent to $65.3 billion as relatively lower iron ore prices are expected to be more than offset by the increase in export volumes.

Australia's metallurgical coal export volumes are estimated to decrease by 8 per cent to 144 million tonnes in 2010–11. However, export earnings are estimated to increase by 30 per cent to $31.9 billion as a result of significantly higher average contract prices.

In 2011–12, Australia's exports of metallurgical coal are forecast to increase by 14 per cent to 164 million tonnes. Australian export earnings from metallurgical coal in 2011–12 are forecast to increase by 31 per cent to $41.7 billion, with increases in export volumes offsetting a forecast fall in export prices.

Australian metallurgical coal exports



Steel and steel-making raw materials outlook

		2010	2011 f	2012 f	% change
World					
Contract prices b					
Iron ore c	US$/t	112	159	146	*– 8.4*
Metallurgical coal d	US$/t	191	289	246	*– 14.7*
		2009 –10	**2010 –11 f**	**2011 –12 f**	
Australia					
Production					
Iron and steel es	Mt	6.89	7.44	7.98	*7.3*
Iron ore	Mt	423	442	467	*5.7*
Metallurgical coal	Mt	164	150	172	*14.2*
Exports					
Iron and steel es	Mt	1.55	1.89	1.59	*– 15.9*
– value	A$m	1 120	1 326	1 139	*– 14.1*
Iron ore	Mt	390	406	437	*7.5*
– value	A$m	34 515	56 004	65 332	*16.7*
Metallurgical coal	Mt	157	144	164	*13.9*
– value	A$m	24 526	31 924	41 734	*30.7*

b fob Australian basis, ABARES Australia–Japan average contract price assessment. **c** Fines contract, 62% iron content basis. **d** High-quality hard coking coal. For example, Goonyella export coal. **e** Includes all steel items in ABS, *Australian Harmonized Export Commodity Classification,* chapter 72, 'Iron and steel', excluding ferrous waste and scrap and ferroalloys. **f** ABARES forecast. **s** ABARES estimate.
Sources: ABARES; International Iron and Steel Institute; Coal Services Australia; Queensland Coal Board; United Nations Conference on Trade and Development.

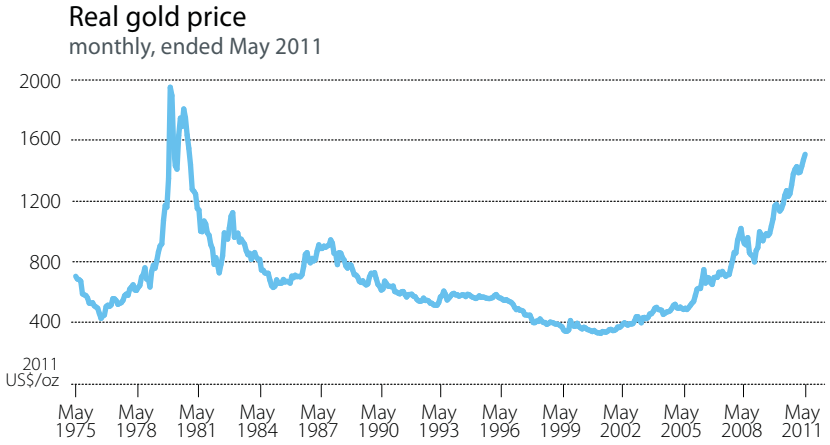
Gold

Andrew Schultz

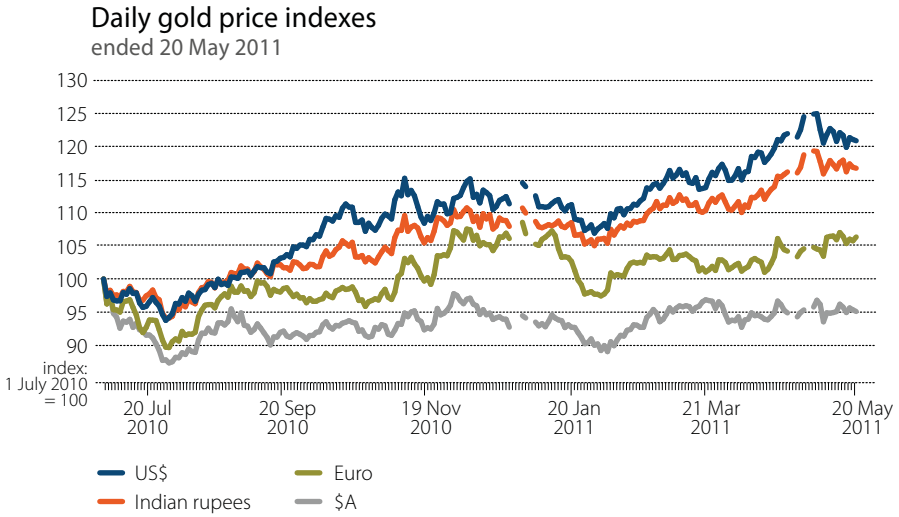
Over the outlook period, the gold price is forecast to rise to average US$1550 an ounce in 2012, driven primarily by strong global investment demand and jewellery demand in developing economies.

In the March quarter 2011, the gold price averaged US$1385 an ounce, rising by 1 per cent compared with the average price in the December quarter 2010. The gold price increased further during April and May 2011, and is estimated to average around US$1440 an ounce in the first half of 2011.

Investment demand for gold, as a store of value in periods of uncertainty, has provided significant support for the gold price. The effects of natural disasters in Japan, political instability in the Middle East and ongoing uncertainty surrounding the increase in public sector debt in some major world economies have encouraged investors to invest in gold as a low-risk asset.



Rising oil prices and ongoing expansionary monetary policy in many developed economies have also provided support for investment in gold as a hedge against inflation. A sustained decline in the value of the US dollar against other major international floating currencies over the past year has also contributed to the higher gold price. Because the gold price is denominated in US dollars, a weaker US dollar will lead to an increase in the purchasing power of investors outside the United States and contribute to an increase in the gold price.



Economic uncertainty to support gold price

In 2011, the price of gold is forecast to rise by 23 per cent to average around US$1500 an ounce. In 2012, the gold price is forecast to rise by a further 3 per cent to average US$1550 an ounce. Continued uncertainty about the ability of many developed economies to stimulate economic growth and control growing budget deficits is expected to encourage investment demand for gold as a lower risk, or safe haven, asset.

The emerging inflationary pressures in some developing countries, such as China and India, could also support demand for gold. In this environment, investment demand for gold is likely to benefit from the perception that its value is eroded less by price inflation than are the values of other asset classes. Additionally, gold demand from risk-averse investors is expected to remain strong as political and social unrest continues in some parts of the world, particularly the Middle East.

Further supporting the forecast of a high gold price in the short term is the assumption that the US dollar will remain relatively weak against other international floating currencies. As discussed above, this is expected to provide support for the price of gold.

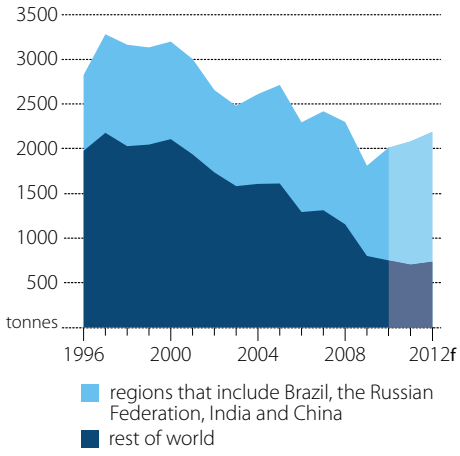
While the price of gold is forecast to average around US$1500 an ounce in 2011 and US$1550 an ounce in 2012, there are significant risk factors associated with this price outlook. This is because gold price movements can be significantly influenced by developments in global macroeconomic policy and financial markets. The strength, duration and composition of economic growth across major world economies will influence the risk profile of international investors. This will consequently affect the demand for gold as an asset class and a hedge against economic and financial market uncertainty.

Developing economies to support gold fabrication demand

Gold fabrication consists of gold used in jewellery, electronics, dental applications, medals, coins and other industrial uses. Gold used in jewellery makes up around 72 per cent of gold fabrication usage, while gold used in electronics comprises another 12 per cent.

Despite recent rises in the gold price, jewellery demand grew significantly in 2010, underpinned by rising household incomes in several developing economies. This trend is expected to continue and to provide support for a forecast rise of 2 per cent in total gold fabrication consumption to 2843 tonnes in 2011.

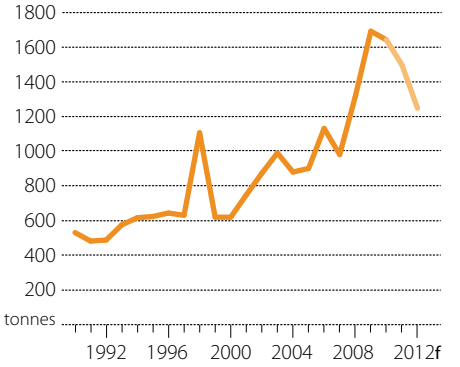
Gold used in jewellery fabrication
by selected regions



The main driver of global jewellery demand has been developing economies, especially the Indian subcontinent, China and Brazil, where income growth has been strong. In Europe and North America, a higher gold price, ongoing economic uncertainty and the continued consumer trend in favour of lighter composite jewellery is forecast to lead to further declines in jewellery consumption in 2011. In the Middle East, regional political and social instability is a main reason behind a forecast decline of 7 per cent in jewellery consumption to 247 tonnes.

In 2012, a relatively stable gold price and an assumed recovery in economic growth are expected to lead to a mild recovery in jewellery demand in developed economies. Some recovery in the use of gold for jewellery in the Middle East is also likely if the current political and social unrest subsides. Combined with continued strong jewellery demand in many developing economies and an increase in the use of gold in electronics, total gold fabrication is forecast to rise by 4 per cent to 2949 tonnes in 2012.

World gold scrap sales



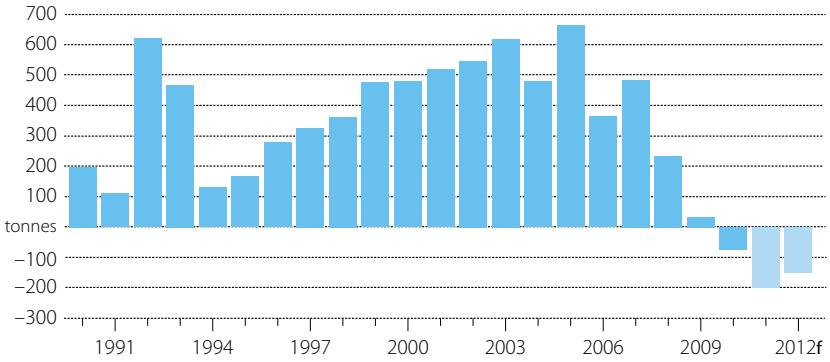
Sales of gold scrap to remain high

In 2011, the supply of gold scrap, largely sourced from recycled jewellery, is forecast to decrease by 9 per cent to 1500 tonnes. Despite the forecast higher gold price in the short term, the volume of sales of used household jewellery is expected to be lower because the historically high sales of gold scrap in recent years are likely to have reduced the remaining stocks of used gold jewellery and other physical gold available to be sold. In 2012, the volume of gold scrap is forecast to decline by 17 per cent to 1250 tonnes.

Limited activity by the official sector

In 2010, the official sector became a net gold purchaser (around 70 tonnes) for the first time since 1988. In 2011, continued interest in gold as a strategic reserve asset is expected to lead to net purchases of gold by the official sector of around 200 tonnes. These purchases are likely to be mostly undertaken by the central banks of developing economies seeking to increase their share of gold as a percentage of total reserves. In 2012, net purchases by the official sector are forecast to be around 150 tonnes. As official sector gold sales depend on policies of gold holding countries, considerable uncertainty remains in the outlook for official sector gold sales.

Official sector net gold sales



World gold mine production to grow

In 2011, world gold mine production is forecast to grow by 2 per cent to 2734 tonnes. Notable rises in gold production are forecast in China, Africa (except South Africa) and Papua New Guinea. Partly offsetting this, gold production in South Africa is forecast to decline in 2011 for the ninth consecutive year.

China is forecast to remain the largest gold producer in the short term. The forecast rise in the gold price is expected to lead to gold production in China growing by 4 per cent to 365 tonnes in 2011. China's growth in base metal refining capacity is also expected to result in higher gold production as a by-product.

In Africa (excluding South Africa), gold production is forecast to grow by 5 per cent to 339 tonnes in 2011. New projects are expected to contribute to this growth, including the start-up in Ghana of Adamus Resources' Nzema project (3 tonnes a year) and the ramping up of Centamin Egypt's Sukari project (an extra 3 to 4 tonnes a year). A higher gold price is also expected to encourage production from the large number of small-scale artisanal mines in Africa.

In the Asia–Pacific region (excluding China), gold production is forecast to grow by 2 per cent to 330 tonnes in 2011. In Papua New Guinea, the Newcrest/Harmony joint venture Hidden Valley mine is expected to approach its full capacity of around 8 tonnes a year. In Indonesia,

the start-up of Archipelago Resources' Toka Tindung mine is forecast to contribute more than 3 tonnes in 2011. This will be more than offset by a forecast fall of around 9 tonnes from Freeport McMoRan's Grasberg mine in Indonesia.

In 2012, world mine production is forecast to grow by around 2 per cent to 2780 tonnes. In Latin America, the start-up of Barrick Gold / Goldcorp's Pueblo Viejo project in the Dominican Republic is expected to increase gold production by around 20 tonnes. In Africa, Perseus Mining's Central Ashanti Gold Project in Ghana is expected to approach its full capacity of around 8 tonnes a year. In the Russian Federation, the processing of around 6 tonnes a year of gold from Polymetal's Albazino mine is expected to commence. Gold production in South Africa is forecast to fall by another 5 per cent to 183 tonnes in 2012, as large producers continue to reduce output from their higher cost operations.

Australian gold mine production to grow strongly

Despite the disruption caused by heavy rain and flooding in some gold producing regions in the March quarter 2011, Australia's gold mine production in 2010–11 is estimated to increase by 11 per cent to 268 tonnes. The largest contribution to this growth is expected to come from the ramping up of Newmont's Boddington redevelopment in Western Australia, which is estimated to produce an extra 10 tonnes of gold for the year. In 2010–11, an additional 14 tonnes is estimated to come from seven new medium-sized projects, including Regis Resources' Duketon, Exco Resources / Polymetals Group White Dam and Saracen Mineral Holdings' Carosue Dam.

In 2011–12, Australia's gold production is forecast to rise by a further 3 per cent to 277 tonnes. Reflecting first production from the King of the Hills mine, additional production of around 3 to 4 tonnes is forecast to come from St Barbara's Leonora operations in Western Australia. The start-up of Crocodile Gold Corp's Cosmo Deeps underground mine in the Northern Territory is forecast to contribute around 1 tonne to Australia's gold production in 2011–12. An additional 3 tonnes are expected from Gold Fields' St Ives operations as full production commences from the Athena underground expansion. Around 15 new smaller projects, contributing a total of around 4 tonnes, are forecast to begin producing in 2011–12. Decreases in annual production are assumed for Barrick Gold's Cowal and Newmont / Barrick Gold's Kalgoorlie operations as areas containing lower ore grades are mined.

Exports set to rise in 2011–12

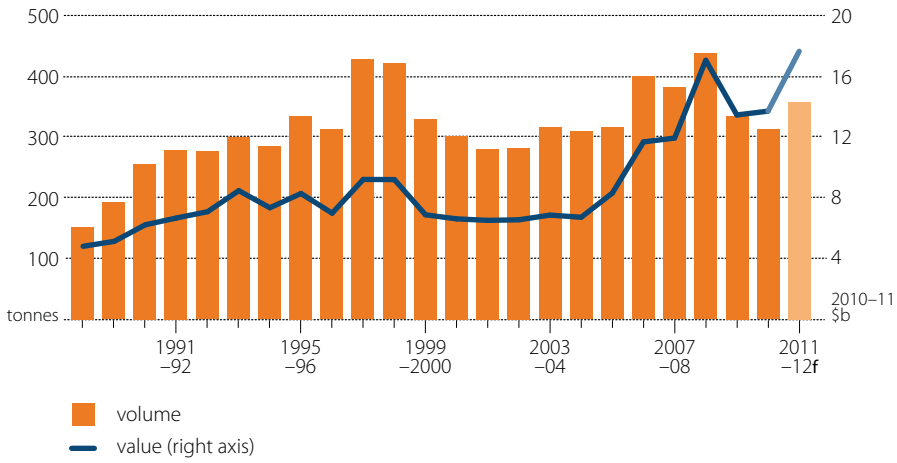
In 2010–11, the volume of Australia's gold exports is estimated to fall by 7 per cent to 312 tonnes. While exports of refined gold sourced from Australian mines is estimated to increase in line with the growth in Australian mine production, this will likely be more than offset by a decrease in the export of refined gold that is sourced from overseas.

In 2011–12, gold export volumes are forecast to rise by 15 per cent to 358 tonnes. This increase reflects a moderate rise in the export of refined gold sourced from both Australian mines and from overseas.

The appreciation of the Australian dollar against the US dollar has led to the price of gold remaining largely unchanged in Australian dollar terms over the course of 2010–11. For 2010–11 as a whole, the value of Australia's gold exports is estimated to increase by 5 per cent to $13.6 billion.

In 2011–12, export earnings from gold are forecast to rise by 33 per cent to $18.1 billion as both export volumes and the gold price are forecast to rise.

Australian gold exports



Gold outlook

		2010	2011 f	2012 f	% change
World					
Fabrication consumption	t	2 779	2 843	2 949	*3.7*
Mine production	t	2 689	2 734	2 780	*1.7*
Scrap sales	t	1 645	1 500	1 250	*– 16.7*
Net stock sales	t	(1 555)	(1 391)	(1 081)	*– 22.3*
– official sector	t	(73)	(200)	(150)	*– 25.0*
– private sector	t	(1 379)	(1 129)	(921)	*– 18.4*
– producer hedging	t	(103)	(62)	(10)	*– 83.9*
Price **b**	US$/oz	1 225	1 503	1 550	*3.1*

		2009–10	2010–11 f	2011–12 f	
Australia					
Mine production	t	240	268	277	*3.4*
Exports	t	335	312	358	*14.7*
– value	A$m	12 996	13 642	18 145	*33.0*
Price	A$/oz	1 236	1 389	1 577	*13.5*

b London Bullion Market Association AM price. **f** ABARES forecast.
Note: Net purchasing and dehedging shown in brackets.
Sources: ABARES; Gold Fields Mineral Services; Australian Bureau of Statistics; London Bullion Market Association.

Aluminium

Kate Penney

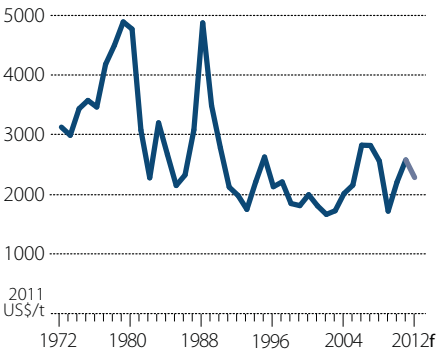
World aluminium prices are forecast to increase by 19 per cent to average around US$2580 a tonne in 2011 before declining by 10 per cent in 2012 to average around US$2330 a tonne. Australian earnings from aluminium exports are estimated to have increased by 11 per cent to $4.3 billion in 2010–11 on the back of both higher prices and higher export volumes. Earnings are forecast to increase by a further 6 per cent to $4.5 billion in 2011–12.

Aluminium prices to remain strong in the short term

Strong demand, supply disruptions and rising input costs in key producing regions have contributed to aluminium prices averaging around US$2550 a tonne in the first half of 2011, a 19 per cent increase on the corresponding period in 2010. Prices peaked at around US$2750 a tonne in late April 2011, the highest since 2008. Also contributing to rising prices was market concern surrounding the political uncertainty in the North Africa – Middle East region, where many of the newest and largest aluminium smelters are located.

For the remainder of 2011, prices are expected to remain high as a result of strong consumption and the potential for lower production from China—the world's largest producer—because of limited electricity availability. The aluminium price is forecast to average US$2576 a tonne in 2011, 19 per cent higher than in 2010.

Aluminium prices



In 2012, aluminium prices are forecast to decline by 10 per cent to average around US$2330 a tonne. Production, supported by expansions in China, India and the Middle East, is forecast to exceed consumption, resulting in higher stocks.

Rising production costs will limit the decline in aluminium prices over the forecast period. Prices will not need to fall significantly from current levels (around US$2500 a tonne) before high-cost smelters are forced to close. The majority of these smelters are located in China, where capacity can be shut more rapidly than in other parts of the world.

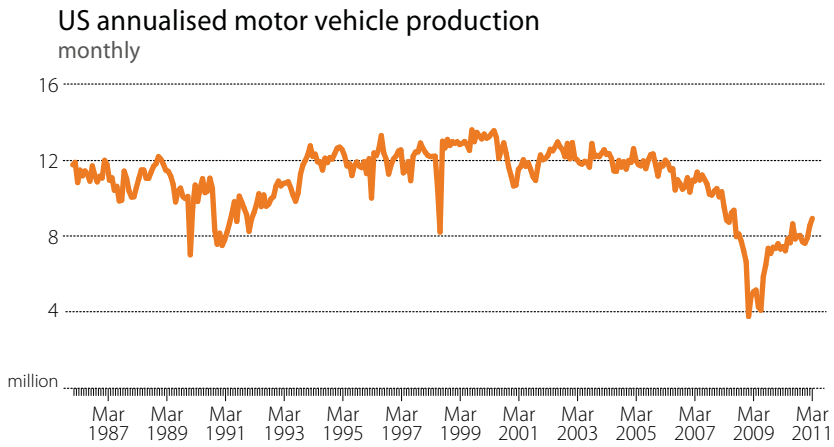
Aluminium consumption growth to remain strong

World aluminium consumption is forecast to increase by 7 per cent in 2011 to 42.6 million tonnes and by a further 8 per cent in 2012 to 46.0 million tonnes. Consumption growth is expected to remain strong, particularly in the transport sector, where aluminium is used in the manufacture of motor vehicles.

China accounted for around 40 per cent of world aluminium consumption in 2010 and developments in that economy will be important to movements in the world price. China's aluminium consumption is forecast to increase by 17 per cent to 18.5 million tonnes in 2011

and by a further 9 per cent to 20.2 million tonnes in 2012. Consumption growth in China will be supported by the expansion of non-residential construction and ultra high–voltage electricity transmission, and by domestic and export demand for aluminium-intensive manufactured products, such as motor vehicles and household appliances.

Aluminium consumption in OECD economies in 2011 is forecast to decline by around 2 per cent as higher consumption in the United States is offset by lower consumption in the European Union and Japan. US consumption of aluminium is forecast to increase in line with higher production of motor vehicles. In the first three months of 2011, production of motor vehicles in the United States was at an annualised 8.9 million units, compared with 7.6 million units in 2010. Newer lightweight vehicles are estimated to contain around 150 kilograms of aluminium, compared with around 120 kilograms in older models. OECD aluminium consumption is forecast to increase by 8 per cent in 2012, reflecting higher assumed economic growth and the expected acceleration of rebuilding efforts in Japan.



Supply to expand but energy cost and availability could curb growth

World aluminium production is forecast to increase by 8 per cent to 43.9 million tonnes in 2011 and by a further 6 per cent to 46.7 million tonnes in 2012. This growth is expected to be supported by smelter restarts and the commissioning of new capacity in China, India, the Middle East and the United States.

Chinese aluminium production increased considerably in the first quarter of 2011, following production cuts at the end of 2010 because of restricted power availability. The higher production was supported by the restart of idled smelter capacity in the Henan and Guangxi provinces and increased output from newly commissioned projects in the Gansu, Shandong and Henan provinces.

While growth in China's aluminium production is expected to be strong, power availability and the Chinese Government's intention to curb the expansion of energy-intensive industries will act to limit the increase in production. During April 2011, the Chinese Government announced that there would be power rationing over the summer because of high thermal coal prices and insufficient electricity supply. In addition, the Chinese Government recently issued a notice of its intention to curb aluminium expansion projects to reduce the volume of overcapacity. However, the effect is not expected to be significant over the forecast period because the bulk of the new smelting capacity to be commissioned is located in the west of the country, which the Chinese Government has committed to develop. In addition, most of these projects have already received the necessary approvals and financing.

In India, a number of new projects to be commissioned during 2011 and 2012 will contribute to higher production. These include Vedanta Resources' Jharsuguda II smelter (capacity of 1.25 million tonnes a year); BALCO's Korba smelter (325 000 tonnes a year); Hindalco and Aditya's Orissa smelter (359 000 tonnes a year); and Hindalco's Mahan MP smelter (359 000 tonnes a year).

Production in the Middle East has not been significantly affected by the political uncertainty and civil unrest. In the short term, production will be supported by the commissioning of new capacity, including Norsk Hydro and Qatar Aluminum's Qatalum smelter (585 000 tonnes a year) and DUBAL and Mubadala's EMAL smelter (750 000 tonnes a year), which were commissioned in early 2010, as they approach full capacity.

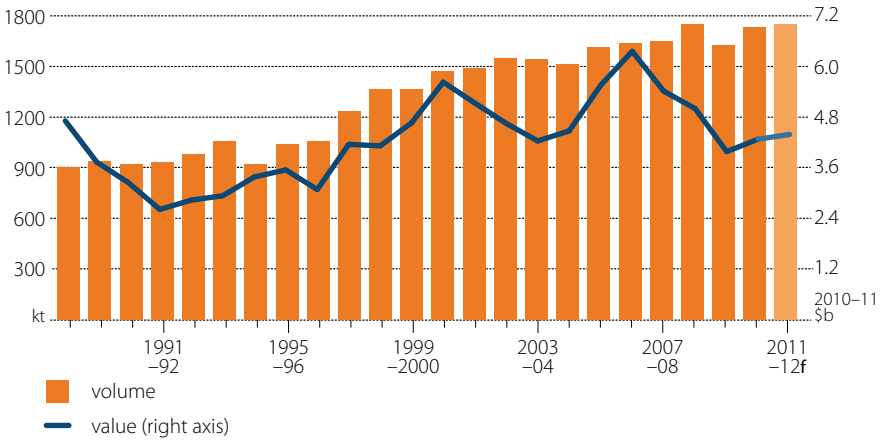
Aluminium production from the OECD is forecast to remain relatively subdued, as there are few plans to expand capacity. US production of aluminium will be supported by the partial restart of capacity at five smelters: Century's Hawesville smelter (around 52 000 tonnes a year), Ormet's Hannibal smelter (two potlines with a combined capacity of around 80 000 tonnes a year), and Alcoa's Massena East, Ferndale and Wenatchee Works smelters (a combined capacity of around 200 000 tonnes a year).

Australian export earnings to increase

Australia's aluminium production in 2010–11 is estimated to increase by 2 per cent to 1.9 million tonnes. There are currently no further committed aluminium capacity expansions in Australia. As a result, production is not expected to increase substantially in the short term. However, small increases in production are expected as efficiency improves at existing smelters. In 2011–12, Australian aluminium production is forecast to increase by 2 per cent to 2 million tonnes.

Australia's export earnings from aluminium are estimated to increase by 11 per cent to around $4.3 billion in 2010–11, and are forecast to rise by a further 6 per cent to $4.5 billion in 2011–12.

Aluminium value and volume



Alumina

Market to remain tight in 2011 and 2012

In the first six months of 2011, the alumina spot price is estimated to average around US$400 a tonne, 21 per cent higher than the corresponding period in 2010. Prices have been supported by strong demand following the recommissioning of idled smelter capacity and output expansions in China, the United States, India and the Middle East; production disruptions in Australia; and rising production costs.

For the remainder of 2011 and in 2012, strong demand for alumina, stemming from higher aluminium production, relatively slower output growth and higher production costs (energy, freight and caustic soda) are expected to maintain upward pressure on prices. Alumina spot prices are forecast to average US$403 a tonne in 2011 and to increase by a further 2 per cent in 2012 to average US$410 a tonne.

In 2010, a number of major alumina producers announced their intention to sell output on the spot market rather than through traditional contracts linked to the aluminium price. A large proportion of the new smelters expected to be commissioned in China and the Middle East over the next two years do not have integrated alumina refineries. As a result, these producers are likely to purchase alumina on the spot market, which will contribute to increased spot price volatility.

Higher prices encouraging refinery restarts

In 2011, world alumina production is forecast to increase by 8 per cent to around 87.5 million tonnes. Higher alumina prices in early 2011 encouraged a number of producers to restart idled capacity. UC RUSAL has announced that it will resume production at the Kirkvine refinery in Jamaica (600 000 tonnes a year). In addition, Hydro Aluminium will increase output by 500 000 tonnes a year at its Alunorte refinery in Brazil.

New output capacity is expected to be commissioned in China (three projects with an estimated combined capacity of around 5.1 million tonnes a year), India (two projects with a combined capacity of 1.7 million tonnes a year) and Vietnam (one project with a capacity of 325 000 tonnes a year). These projects will contribute to higher production in 2011 and 2012 as they approach full capacity.

Australian export earnings supported by higher prices

In 2010–11, Australian production of alumina is estimated to decline by 2 per cent to 19.6 million tonnes. This largely reflects lower production from the Queensland Alumina refinery and the Worsley refinery in Western Australia.

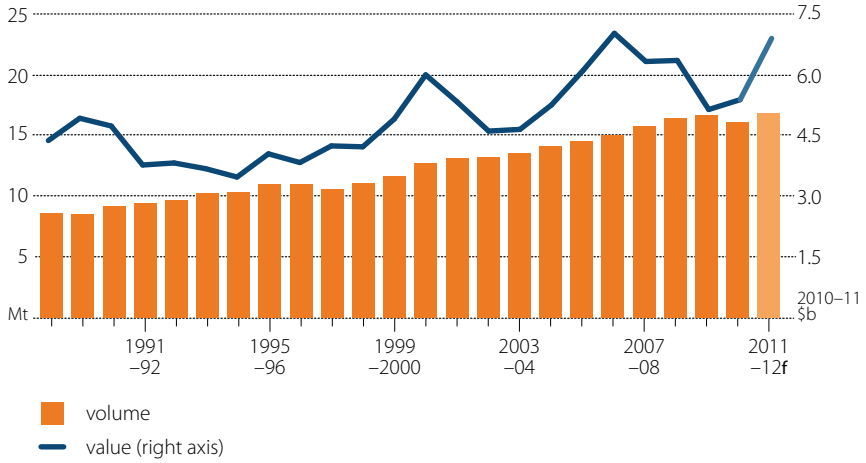
During the first quarter of 2011, production at the Queensland Alumina refinery declined by 22 per cent compared with the December quarter 2010. Following the floods in Queensland, the quality of the coal delivered to the refinery adversely affected production and equipment reliability. Production at the Worsley refinery was also lower in the March quarter because of a scheduled suspension of a major piece of equipment. In addition, BHP Billiton announced in April that the expansion of its Worsley refinery (an increase of 1.1 million tonnes a year), which was scheduled to be completed in the first half of 2011, was only 70 per cent complete.

Production is forecast to increase by 6 per cent to 20.7 million tonnes in 2011–12 as production at the Queensland Alumina refinery and Worsley refinery returns to typical volumes and as the Worsley expansion project is completed.

Reflecting lower production, Australian exports of alumina are estimated to decline by 4 per cent to 16.1 million tonnes in 2010–11. Despite lower volumes, higher prices have contributed to an 8 per cent increase in alumina export earnings, rising to an estimated $5.4 billion.

The forecast strong increase in alumina production in 2011–12 will translate into higher export volumes. With higher forecast volumes and prices, the value of Australian alumina exports is forecast to increase by 32 per cent to $7.1 billion.

Alumina value and volume



Aluminium and alumina outlook

		2010	2011 f	2012 f	% change
World aluminium					
Production	kt	40 811	43 946	46 721	*6.3*
Consumption	kt	39 680	42 593	46 041	*8.1*
Closing stocks **b**	kt	6 501	7 854	8 534	*8.7*
– weeks consumption		8.5	9.6	9.6	*0.0*
Price **c**	US$/t	2 170	2 576	2 328	*– 9.6*
	USc/lb	98	117	106	*– 9.6*
World alumina					
Spot price	US$/t	333	403	410	*1.7*
		2009	**2010**	**2011**	
Australia		**–10**	**–11 f**	**–12 f**	
Production					
Bauxite	Mt	68	68	68	*1.0*
Alumina	kt	20 057	19 609	20 705	*5.6*
Aluminium	kt	1 920	1 949	1 993	*2.3*
Exports					
Alumina	kt	16 653	16 065	16 819	*4.7*
– value	A$m	4 969	5 364	7 095	*32.3*
Aluminium	kt	1 624	1 731	1 754	*1.3*
– value	A$m	3 838	4 250	4 494	*5.7*

b Producer and LME stocks. **c** LME cash prices for primary aluminium. **f** ABARES forecast.
Sources: ABARES; London Metal Exchange; World Bureau of Metal Statistics.

Nickel

Robert New

Growth in demand for nickel will remain strong over the forecast period, supported by the manufacture of stainless steel for use in infrastructure development and consumer durables, particularly in developing economies. However, growth in demand over the next 18 months is expected to be outpaced by growth in world supply. Higher mine supply is expected from Canada, Brazil and the Asia–Pacific region, while increased refined output is expected from Canada and China. This is forecast to result in downward pressure on prices from mid-2011.

Prices to ease over the remainder of 2011 and in 2012

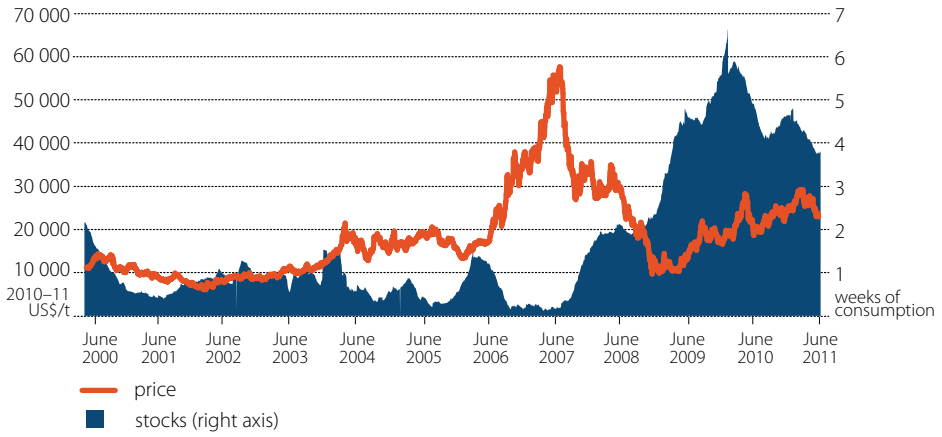
Nickel prices in 2011 are forecast to increase by 13 per cent to average US$24 707 a tonne, driven primarily by increased demand from stainless steel producers. In the first five months of 2011, nickel prices averaged US$26 283 a tonne, an increase of around 21 per cent compared with the average price in 2010. Over the remainder of 2011, higher production from Canada's mining and refining operations following the resolution of labour disputes in 2010, and increasing production from Brazil's Onça Puma mine, which began production in 2010, will place downward pressure on nickel prices.

World nickel mine and refined production is forecast to expand in 2012 as mines commissioned in 2010 and 2011 approach full capacity, thereby increasing the feed available for refineries. As a result, nickel prices in 2012 are forecast to average US$22 875 a tonne, an 7 per cent decline from the average price in 2011.

Stocks remain historically high

Although stocks on the London Metal Exchange declined from a peak of more than six weeks of consumption in early 2010 to less than four weeks of consumption in mid-June 2011, they remain high in historic terms. High stocks are the main factor preventing a sustained increase in nickel prices above US$23 000 a tonne.

Nickel prices and stocks



Source: London Metal Exchange

Conversely, the significant increase in laterite production as a share of total nickel mine production will prevent prices from averaging below US$19 000 a tonne for a significant period of time. The estimated cost of marginal nickel laterite production is around US$19 000 a tonne. Therefore, if prices fall below this level for an extended period there will be a supply response.

Higher stainless steel production to drive nickel consumption

As around two-thirds of refined nickel is used in the manufacture of stainless steel, demand for nickel is highly dependent on the demand for stainless steel. In developing economies, particularly China and India, two main factors are driving increases in demand for stainless steel. These main drivers are: government efforts to improve infrastructure such as road and rail networks, which are stainless steel intensive in their construction; and the consumer demands of increasingly wealthy and urbanised populations. The ownership rates of stainless steel–intensive consumer durables, such as white goods and televisions, are expected to continue to increase in response to assumed world economic growth over the next 18 months.

In addition to being the fastest growing consumers of stainless steel, developing economies—most notably China—are expected to account for an increasing proportion of stainless steel production. In China, stainless steel production increased by an average of 27 per cent a year over the past two years, and is expected to continue to grow strongly over the next 18 months.

Japan's stainless steel consumption is expected to increase following the earthquakes and tsunami in March 2011. A significant volume of stainless steel will be required to restore and rebuild damaged public infrastructure, commercial buildings and housing. The main reconstruction period is expected to be in late 2011 and the first half of 2012.

World nickel consumption to increase in 2011 and 2012

In 2011, world nickel consumption is forecast to increase by 8 per cent to 1.6 million tonnes. World nickel consumption is forecast to increase by a further 5 per cent in 2012, to reach almost 1.7 million tonnes. The forecast continued growth in consumption is largely a result of strong growth in stainless steel production in China, and a continued return to full capacity utilisation in the stainless steel manufacturing sector in developed economies such as the European Union and Japan.

Nickel consumption (kt)

	2009	2010	2011 f	2012 f
China	443	575	633	683
Chinese Taipei	71	70	72	74
European Union 27	288	326	342	361
India	32	34	36	39
Japan	121	149	151	153
Republic of Korea	67	74	75	77
United States	90	120	130	134
World nickel consumption	1 241	1 464	1 577	1 663

China, the world's largest consumer of nickel in 2010, is expected to be one of the fastest growing consumers in 2011 and 2012, resulting in its share of world consumption increasing from 39 per cent in 2010 to 41 per cent in 2012. A large proportion of this will be the consumption of domestically produced nickel pig iron, produced by processing

relatively low nickel content laterite ores from new projects scheduled for completion in countries such as New Caledonia, the Philippines and Indonesia.

Developed steel-making economies, such as the European Union, the United States and Japan, are also forecast to increase nickel consumption. These three economies are forecast to increase nickel consumption collectively by 5 per cent in 2011 and by a further 4 per cent in 2012. This growth represents continued rising demand from existing stainless steel manufacturers as they recommission idled capacity. Despite this forecast growth, there will still be a significant volume of idled capacity in these economies and their combined nickel consumption is expected to remain below that in 2007 and 2008.

World mine production (kt)

	2009	2010	2011 f	2012 f
Australia	166	170	189	199
Brazil	38	59	90	100
Canada	137	158	190	228
Indonesia	203	236	240	240
Russian Federation	262	270	270	275
Philippines	119	190	210	210
World mine production	1 347	1 578	1 738	1 852

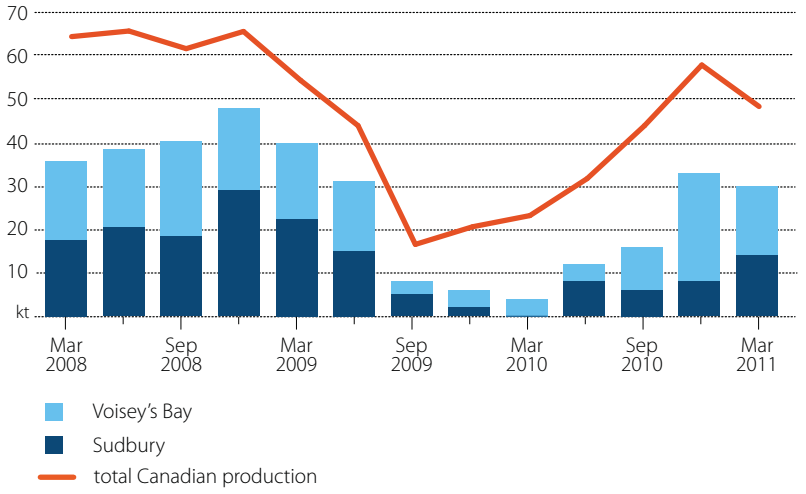
Mine production growth to average 8 per cent over 2011 and 2012

World mine production in 2011 is forecast to increase by 10 per cent to 1.7 million tonnes, supported largely by higher production in Canada and Brazil. In 2012, world mine production is forecast to increase by a further 7 per cent, underpinned by the commencement of production at several nickel laterite projects, including those in Indonesia and the Philippines.

Resolution of labour disputes in Canada to support increased production

Canada's nickel mine production was affected in 2009 and early 2010 by strikes at two of its largest nickel mines: Vale's Sudbury and Voisey's Bay operations. Following the resolution of disputes in mid-2010, production at these operations has increased strongly.

Increasing production at Vale's Canadian operations

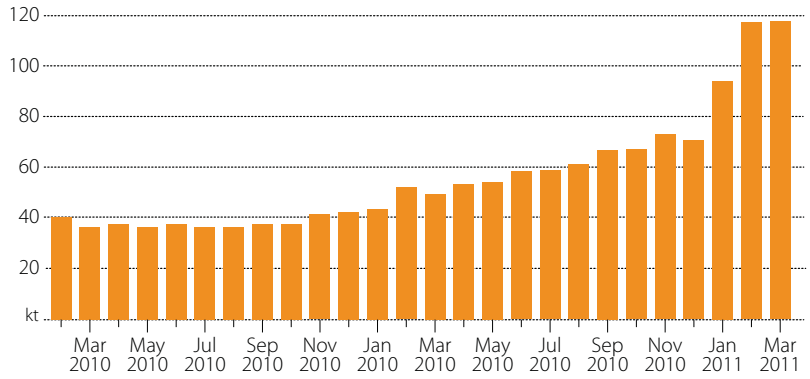


In 2011, Canada's nickel mine production is forecast to increase by 20 per cent to 190 000 tonnes, reflecting the assumption of a full year of uninterrupted production. In 2012, Canada's nickel mine production is forecast to increase by a further 20 per cent to 228 000 tonnes as the country's nickel mines continue to return to full capacity.

Brazilian production supported by the start-up of Onça Puma

In March 2011, Vale produced the first nickel from the Onça Puma mine in Brazil. Reflecting an assumed continuation of expansion at Onça Puma, Brazil's nickel mine production is forecast to increase by 53 per cent to 90 000 tonnes in 2011. In 2012, Brazil's mine production is forecast to increase by a further 11 per cent to 100 000 tonnes.

Brazil's nickel mine production
annualised monthly production



New nickel laterite projects to support increases in world production

Several large nickel mine projects in New Caledonia, Papua New Guinea, the Philippines and Madagascar are scheduled for completion in 2011. These projects will underpin an increase in nickel laterite supply, which will be processed into nickel pig iron, primarily for use in China's stainless steel industry. A number of these projects had been scheduled to start production last decade; however, sovereign risks associated with less developed regulatory frameworks and volatile nickel prices resulted in delays. If these projects are completed on schedule, production will increase significantly over the next two years.

Nickel refined production (kt)

	2009	2010	2011 f	2012 f
Australia	131	102	122	134
Canada	117	105	160	176
China	254	332	362	395
Finland	254	262	260	260
Japan	144	166	178	181
World refined production	1 331	1 443	1 573	1 692

Refined production supported by higher mine production

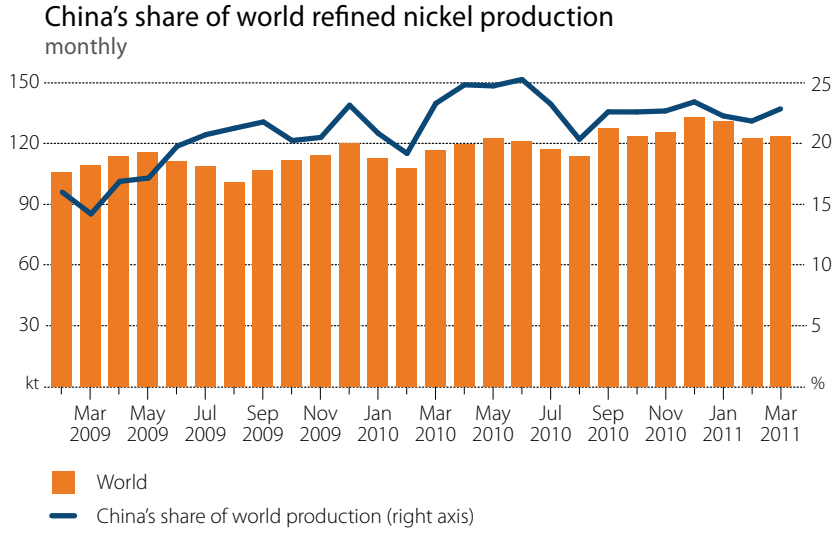
In 2011, world refined nickel production is forecast to increase by 9 per cent to nearly 1.6 million tonnes, supported primarily by increases in Canadian and Chinese production. In 2012, growth is expected in China, as laterite feed from new mine

operations in the Asia–Pacific region is used to produce nickel pig iron. This is forecast to result in an 8 per cent increase in world refined nickel production, to reach almost 1.7 million tonnes.

In 2011 and 2012, increases in Canada's refined production is forecast to largely mirror increases in mine production. Many of Canada's nickel operations are vertically integrated, resulting in a close alignment between available input from mines and refined nickel output. However, in February 2011 the second furnace at Vale's Copper Cliff nickel smelter in Sudbury encountered a problem that the company expects will result in a shutdown for a minimum of 16 weeks, resulting in 15 000 tonnes of lost output. Despite this, Canada's refined nickel production is forecast to increase by 52 per cent to 160 000 tonnes in 2011, and by a further 10 per cent in 2012 to 176 000 tonnes.

Nickel pig iron underpins China's increasing share of world refined nickel production

China is increasingly integrating nickel pig iron into the stainless steel supply chain. As a result of the declining availability of relatively high-grade sulphide ores, Chinese producers are importing low-grade nickel laterite ores for processing into nickel pig iron for use in stainless steel manufacturing. This trend is expected to continue over 2011 and 2012, resulting in a forecast 9 per cent increase in refined nickel production in 2011 to 362 000 tonnes, and a further 9 per cent increase in 2012 to 395 000 tonnes.



Australia's mine and refined production to increase strongly in 2011–12

In 2010–11, Australia's nickel mine production is estimated to increase by 13 per cent to 180 000 tonnes. This largely reflects higher production from Western Areas' operations, including the Spotted Quoll mine, which commenced production in early 2010.

Following the closure of several Australian mines in 2008 and 2009 in response to lower nickel prices, some companies are undertaking refurbishments with a view to restarting production in 2011. First Quantum is refurbishing its 39 000 tonnes a year Ravensthorpe mine, which it acquired from BHP Billiton, for a scheduled restart in the second half of 2011. Norilsk Nickel is also planning to restart production at several of their Australian nickel operations, beginning with Lake Johnston (capacity of around 8900 tonnes a year) in the second half of 2011. These restarts will underpin a forecast 13 per cent increase in mine production in 2011–12.

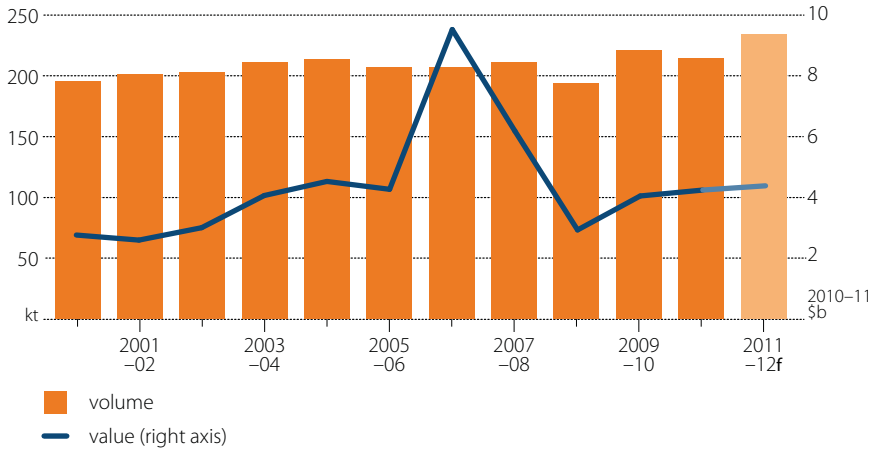
In 2010–11, Australia's refined nickel production is estimated to decline by 13 per cent to 105 000 tonnes. Contributing to this decline has been lower output from Minara Resources' Murrin Murrin refinery following a maintenance shutdown.

Australia's refined nickel production is forecast to increase by 25 per cent in 2011–12, to 131 000 tonnes. This increase will result from higher production at several existing operations, including Minara Resources' Murrin Murrin refinery, BHP Billiton's Nickel West operations and Queensland Nickel's Yabulu refinery.

In 2010–11, Australia's nickel export earnings are estimated to increase by 8 per cent to $4.2 billion, reflecting a higher average nickel price, which more than offsets a 3 per cent decrease in the total nickel content of Australia's exports.

In 2011–12, higher export volumes, particularly of refined class 1 nickel, are expected to more than offset the forecast decline in prices, resulting in export earnings increasing by 6 per cent to $4.5 billion.

Australian nickel exports



Nickel outlook

		2010	2011 f	2012 f	% change
World					
Refined					
Production	kt	1 443	1 573	1 692	*7.6*
Consumption	kt	1 464	1 577	1 663	*5.5*
Closing stocks	kt	213	208	238	*14.4*
– weeks consumption		7.6	6.9	7.5	*8.7*
Price	US$/t	21 800	24 733	22 875	*– 7.5*
	USc/lb	989	1 122	1 038	*– 7.5*
		2009	**2010**	**2011**	
Australia		**–10**	**–11 f**	**–12 f**	
Production					
Mine **bs**	kt	160	180	203	*12.8*
Refined	kt	120	105	131	*24.8*
Intermediate	kt	43	58	55	*– 5.2*
Exports **cs**	kt	221	214	234	*9.3*
– value	A$m	3 875	4 189	4 460	*6.5*

b Nickel content of domestic mine production. **c** Includes metal content of ores and concentrates, intermediate products and nickel metal. **f** ABARES forecast. **s** ABARES estimate.
Sources: ABARES; Australian Bureau of Statistics; International Nickel Study Group; London Metal Exchange; World Bureau of Metal Statistics.

Copper

Rebecca Petchey

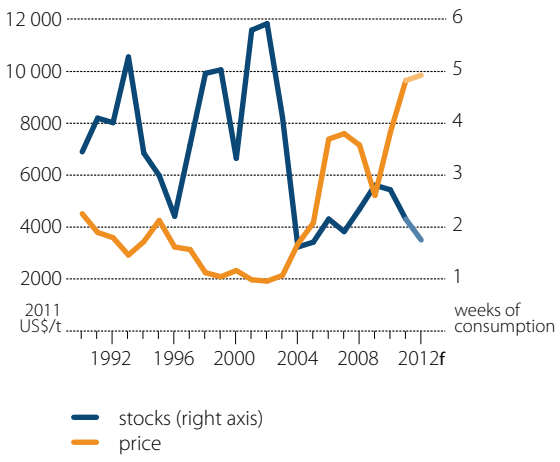
In 2011, the copper price is forecast to average US$9544 a tonne, an increase of 27 per cent compared with 2010, and to rise by a further 5 per cent in 2012 to average US$10 050 a tonne. Copper consumption is forecast to exceed copper production in the forecast period, resulting in a draw-down of stocks. In Australia, production is forecast to increase as new mines are commissioned. Earnings from Australia's copper exports are forecast to increase by 31 per cent to $8.5 billion in 2010–11, and by 21 per cent to $10.3 billion in 2011–12.

Copper prices to increase in 2011 and 2012

In the first quarter of 2011, the copper price averaged US$9650 a tonne, an increase of 12 per cent from the previous quarter. The copper price averaged around US$9500 a tonne in April 2011 before declining to around US$8500 a tonne in May. The decline in the copper price was largely driven by market concerns about the implications for world demand of rising inflationary pressures in some Asian economies, and the possibility that some European economies may default on debt.

For 2011 as a whole, the copper price is forecast to average around US$9544 a tonne, a 27 per cent increase compared with the average of 2010. While consumption growth is forecast to moderate in line with assumed slower world economic growth, production growth is also expected to slow. Consequently, copper stocks at the end of 2011 are forecast to be 2.2 weeks of consumption, down from 2.7 weeks at the end of 2010.

World copper stocks and prices



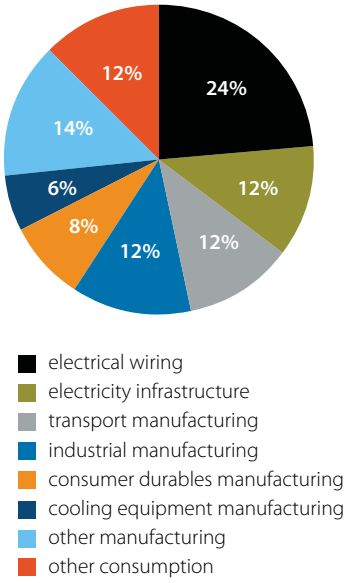
In 2012, the copper price is forecast to increase by 5 per cent to average US$10 050 a tonne. Copper consumption is forecast to continue to exceed production. This is forecast to result in copper stocks falling to 1.9 weeks of consumption by the end of 2012.

The forecast growth in production in the remainder of 2011 and 2012 largely depends on new capacity being completed on schedule and existing mines operating without significant disruptions. With copper stocks expected to be relatively low over the remainder of 2011 and 2012, any production disruptions or unexpected surges in demand will result in significantly higher prices than currently forecast.

World copper consumption growth supported by higher consumption in China and OECD economies

Copper is a versatile material that can be used in a number of applications including housing construction, manufacturing and electricity infrastructure. Around half of world copper consumption is used in manufacturing, including motor vehicles, consumer durables and industrial equipment, while around 24 per cent is used in electrical wiring in buildings. Changes in manufacturing activity, housing construction and infrastructure development therefore have large effects on global copper consumption.

Major uses of copper by sector
2009



In 2011, world copper consumption is forecast to increase by 4 per cent to 19.8 million tonnes. This reflects an expected increase in demand in both developed and developing economies as manufacturing and housing construction expands. World copper consumption is forecast to increase by a further 3 per cent in 2012 to 20.4 million tonnes, as manufacturing activity and housing construction continue to grow.

China's copper consumption in 2011 is forecast to increase by 4 per cent to 7.7 million tonnes. Rapid industrialisation and urbanisation in China is expected to continue to underpin this increase, with copper being used extensively in electricity infrastructure, housing construction and production of manufactured goods. Export demand is also expected to contribute to rising manufacturing output. In 2012, China's copper consumption is forecast to increase by a further 3 per cent to 7.9 million tonnes.

In the OECD economies, copper consumption is forecast to increase by around 2 per cent in 2011 to 8.3 million tonnes. Most of this growth is expected to occur in Germany, the United States and the Republic of Korea, supported by increased exports of copper-intensive manufactured products.

Following the March 2011 earthquakes and tsunami and subsequent loss of manufacturing production capacity, Japan's demand for copper has temporarily declined. However, on year average terms, copper consumption in Japan is not expected to fall significantly in 2011, as any decline in consumption following the earthquakes and tsunami is likely to be offset by higher consumption in the latter part of the year once rebuilding efforts begin. In contrast to the disruption to manufacturing in Japan, copper demand in the Republic of Korea has increased markedly since early 2011.

In 2012, copper consumption in OECD economies is forecast to increase by 2 per cent to 8.5 million tonnes. In Japan, efforts to rebuild housing and infrastructure are expected to accelerate, which will support higher consumption. Increasing manufacturing production in Germany and the United States are also expected to contribute to the forecast increase in OECD demand.

Higher production to be supported by expansions in Chile, Africa and Peru

In 2011, world copper mine production is forecast to increase by 4 per cent to 16.8 million tonnes, supported by expanding production capacity in Africa, Chile and Vale's Salobo project in Brazil (520 000 tonnes annual capacity). In 2012, world copper mine production is forecast to increase by 7 per cent to 17.9 million tonnes, underpinned by higher production in Chile, Indonesia and Peru.

Copper production in Africa is forecast to increase by 14 per cent in 2011 to 1.5 million tonnes, underpinned by an expansion at Anvil Mining's Kinsevere operation (60 000 tonnes annual capacity) and commissioning of Tiger Resources' Kipoi project (35 000 tonnes annual capacity), both in the Democratic Republic of the Congo. Copper mine production is forecast to increase by a further 7 per cent to 1.6 million tonnes in 2012 as these operations approach full capacity.

In Chile, copper mine production in 2011 is forecast to increase by 6 per cent to 5.8 million tonnes. Two new mines are scheduled to start up in 2011—Antofagasta's Esperanza project (195 000 tonnes annual capacity) and Vale's Tres Valles project (18 500 tonnes annual capacity). In addition, several expansions are expected at existing mines, including Codelco's Andina (additional 70 000 tonnes annual capacity), Xstrata's Collahuasi (additional 350 000 tonnes annual capacity) and Codelco's Gabriela Mistral (additional 20 000 tonnes annual capacity). In 2012, Chile's copper mine production is forecast to increase by 5 per cent to 6.1 million tonnes, as the expansions and new mines completed in 2011 approach full capacity.

In 2011, Peru's copper mine production is forecast to increase by 4 per cent to 1.3 million tonnes, supported by an expansion at the Antamina operation (additional 45 000 tonnes annual capacity). Peru's copper mine production is forecast to increase by a further 11 per cent to 1.5 million tonnes in 2012. This reflects the commissioning of Southern Copper's Rio Blanco project (191 000 tonnes annual capacity) and an expansion at their Cuajone operation (additional 72 000 tonnes annual capacity).

Indonesia's copper mine production in 2011 is forecast to remain largely unchanged at 797 000 tonnes. Higher production at Freeport-McMoRan's Grasberg operation associated with targeting of higher ore grades, and commissioning of the Big Gossan development at Grasberg in late 2010 (additional 57 000 tonnes annual capacity) will be offset by an expected decline in production from Newmont's Batu Hijau. In 2012, Indonesia's copper mine production is forecast to increase by 9 per cent as Grasberg and Batu Hijau are expected to process higher ore grades.

Refined copper production to increase

World refined copper production is forecast to increase by 2 per cent to 19.6 million tonnes in 2011 and by a further 4 per cent to 20.4 million tonnes in 2012. Over the next two years, most new projects will be based on solvent extraction – electrowinning (SX–EW) technology. These operations are able to produce refined copper on-site without using traditional pyrometallurgical processes.

Australia's copper production to increase

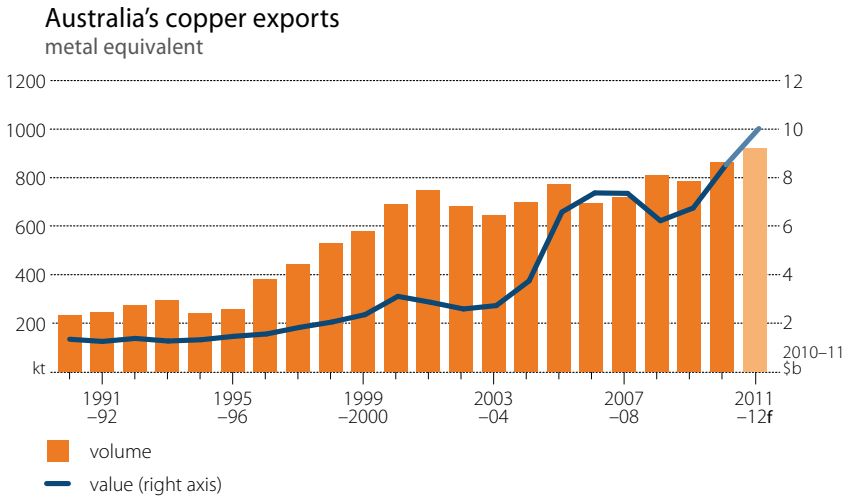
In 2010–11, Australia's copper mine production is estimated to increase by 15 per cent to 945 000 tonnes (in copper content terms). The expansion at Rio Tinto's Northparkes operation (2 million tonnes additional ore processing capacity), completed in the September quarter 2010, is expected to support this increase, as is the restart of CST Mining's Lady Annie SX–EW operation (30 000 tonnes annual capacity). Australia's copper mine production is forecast to increase by 5 per cent to 996 000 tonnes in 2011–12, reflecting commissioning of a number of new mines including Sandfire Resources' DeGrussa project (60 000 to 70 000 tonnes annual capacity) and OZ Minerals' Ankata underground development at Prominent Hill (additional 25 000 tonnes annual capacity).

Refined copper production is estimated to increase by 25 per cent to 492 000 tonnes in 2010–11. Production at BHP Billiton's Olympic Dam operation has returned to full capacity following a mechanical failure that disrupted production in late 2009 and early 2010. The restart of the Lady Annie SX–EW operation is also expected to support the increase in refined copper production. In 2011–12, refined copper production is forecast to increase by around 2 per cent to 503 000 tonnes, reflecting higher production from Lady Annie and the restart of Cape Lambert's Leichhardt SX–EW operation.

Copper exports to increase strongly in 2010–11 and 2011–12

Australia's copper exports are estimated to increase by 10 per cent to 867 000 tonnes (in copper content terms) in 2010–11, with increases expected for exports of both refined copper and ores and concentrates. In 2011–12, Australia's copper exports are forecast to increase by 7 per cent to 928 000 tonnes, mainly reflecting strong growth in exports of ores and concentrates.

The value of Australia's copper exports is estimated to increase by 31 per cent to $8.5 billion in 2010–11. A higher average copper price and increased export volumes are expected to offset the adverse effect on earnings of an appreciation of the Australian dollar. In 2011–12, the value of Australia's copper exports is forecast to increase by 21 per cent to $10.3 billion.



Copper outlook

		2010	2011 f	2012 f	% change
World					
Production					
– mine	kt	16 118	16 814	17 905	*6.5*
– refined	kt	19 167	19 630	20 373	*3.8*
Consumption	kt	19 135	19 808	20 437	*3.2*
Closing stocks	kt	1 000	821	757	*– 7.8*
– weeks consumption		2.7	2.2	1.9	*– 13.6*
Price	US$/t	7 529	9 544	10 050	*5.3*
	USc/lb	341.5	432.9	455.9	*5.3*
		2009 –10	**2010 –11 f**	**2011 –12 f**	
Australia					
Mine output	kt	819	945	996	*5.4*
Refined output	kt	395	492	503	*2.2*
Exports					
– ores and concentrates **b**	kt	1 928	1 823	1 984	*8.8*
– refined	kt	271	376	387	*2.9*
– total value	A$m	6 506	8 496	10 305	*21.3*

b Quantities refer to gross weight of all ores and concentrates. **f** ABARES forecast.
Sources: ABARES; Australian Bureau of Statistics; International Copper Study Group; World Bureau of Metal Statistics.

Zinc

Clare Stark and Kate Penney

In 2011, zinc prices are forecast to increase by 11 per cent to average US$2385 a tonne, supported by strong consumption growth and the emergence of a zinc carry trade. Zinc prices in 2012 are forecast to increase by 5 per cent to US$2513 a tonne supported by world consumption growing at a faster rate than production, leading to a decline in stocks at the end of 2012 by 4 per cent to 5.1 weeks of consumption. Australian earnings from zinc exports are estimated to increase by 29 per cent to $2.8 billion in 2010–11 supported by higher prices and export volumes. Earnings are forecast to increase by a further 10 per cent to $3.1 billion in 2011–12.

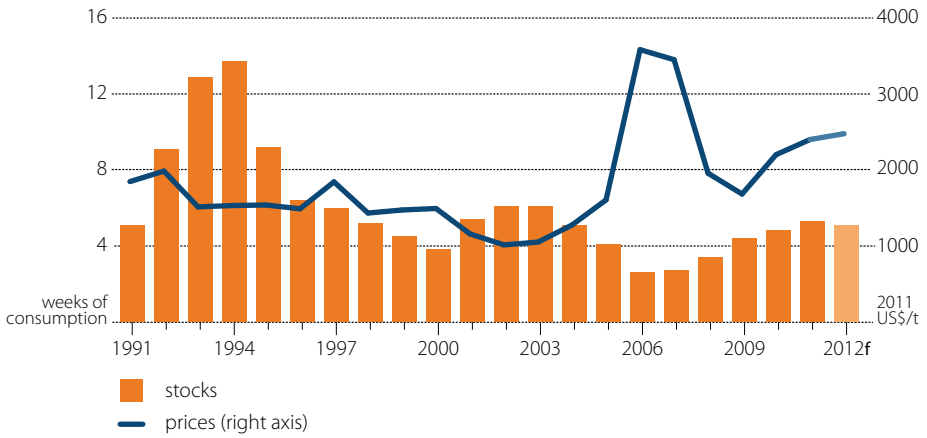
Prices to rise in 2012

In the first five months of 2011, world spot zinc prices averaged around US$2345 a tonne, 9 per cent higher than the 2010 average price of around US$2150 a tonne. Despite this high average, prices were highly volatile, ranging from US$2545 a tonne at the end of February to US$2099 a tonne in mid-May. For 2011 as a whole, prices are forecast to average US$2385 a tonne, an increase of 11 per cent from the average in 2010.

In mid-May, London Metal Exchange stocks exceeded 850 000 tonnes, the highest they have been in around 15 years. However, the zinc metal market remains tight despite the build-up of stocks. This is partly attributable to the emergence of a carry trade where large volumes of metal, including zinc, are used as security for bank lending. As a result, stocks available to meet increases in consumption or to offset potential supply disruptions are limited. This has contributed to higher zinc prices in recent times.

In 2012, prices are forecast to increase by 5 per cent to average US$2513 a tonne, as world consumption grows at a faster pace than production. At the end of 2012 total stocks are forecast to increase by 1 per cent to 1.4 million tonnes, compared with the end of 2011. However, in terms of weeks of consumption, stocks are forecast to fall by 4 per cent to 5.1 weeks.

World zinc prices and stocks



China to underpin consumption growth ...

The major use of zinc is in galvanising, an anticorrosive coating for steel, which accounts for around half of world consumption. Other major uses of zinc include zinc-based alloys for die casting, brass and bronze. These products are used widely in the construction, manufacturing and automotive industries. As a result, developments in these industries, and the subsequent effect on the demand for galvanised steel and zinc-based alloys, are important drivers of zinc consumption.

Global zinc consumption is forecast to increase by 7 per cent in 2011 to 13.4 million tonnes and by a further 5 per cent in 2012 to 14.1 million tonnes. This growth will be underpinned by increased consumption in China, and to a lesser extent, India and the OECD.

China is the world's largest consumer of zinc, accounting for around 43 per cent of global refined zinc consumption in 2010. Over the next 18 months, China's refined zinc consumption will be supported by continued public sector spending on infrastructure and production of manufactured goods to meet domestic and export demand. For example, the Chinese Government has committed to constructing and renovating 10 million housing units for low-income households in urban areas and renovating 1.5 million houses in rural areas during 2011, as part of China's Twelfth Five-Year Plan (2011–15).

Zinc consumption growth in the OECD is expected to moderate in 2011 following strong growth in 2010, which was supported by financial stimulus and other measures following the global financial crisis. Growth is expected to pick up in 2012 in line with assumed higher economic growth and industrial production. In addition, after relatively low growth of 2 per cent forecast for 2011, zinc consumption in Japan is expected to grow strongly in 2012 as rebuilding efforts accelerate following the March 2011 earthquakes and tsunami. In 2012, Japan's consumption is forecast to increase by 5 per cent to 550 000 tonnes.

... supported by India

In India, growth in zinc consumption is forecast to be robust, albeit from a smaller base than China and the United States. India's consumption of zinc is forecast to increase by 9 per cent to 570 000 tonnes in 2011, and by a further 8 per cent in 2012 to 616 000 tonnes. Underpinning this growth will be ongoing and upcoming infrastructure projects, telecommunication and electricity generation projects and increased production of automobiles. The Indian Government has committed to investing in infrastructure projects as the economy continues to develop under India's Eleventh Five-Year Plan (2007–12).

Global supply response picking up pace

Global zinc mine production is forecast to increase by 9 per cent in 2011 to 13.4 million tonnes reflecting increased production at new and existing mines. Sustained relatively high prices and the possible exhaustion of resources at some existing mines beyond 2012 have encouraged significant investment in new capacity.

In 2011, new capacity is scheduled to be commissioned in Australia and India. For example, Hindustan Zinc's Sindesar Khurd in India (capacity of 750 000 tonnes a year), Xstrata's Black

Star Open Cut Deeps expansion in Australia (120 000 tonnes at capacity), and Hindustan Zinc's 100 000 tonnes a year expansion at Rampura Agucha in India are all expected to start operation during 2011. Once the expansion is complete, production at the Rampura Agucha mine is expected to exceed 700 000 tonnes of zinc in 2011, making it the largest zinc mine in the world.

World mine production is forecast to increase by a further 6 per cent in 2012 to 14.2 million tonnes as mines commissioned during 2011 approach capacity. In addition, production is scheduled to commence at Blackthorn Resources and Glencore International's Perkoa mine in Burkina Faso (capacity of 90 000–100 000 tonnes a year), Toho's Rasp mine in Australia (70 000–90 000 tonnes) and HudBay Minerals' Lalor mine in Canada (35 000 tonnes) during 2012.

Refining capacity to expand in China

Global refined zinc production is forecast to increase by 6 per cent in 2011 to 13.6 million tonnes, supported by expanded mine output, which will increase the volume of feed available for processing. China is expected to account for most of the growth in new capacity, with around 460 000 tonnes of additional refining capacity expected to be added in the Shaanxi, Hunan, Sichuan, Jiangxi, and Yunnan provinces during 2011. New refining capacity associated with new mines, such as Hindustan Zinc's Rajpura Dariba smelter with an annual capacity of 210 000 tonnes, will also contribute to higher production.

Japan is the fifth largest producer of refined zinc, accounting for around 5 per cent of world refined production in 2010. The March 2011 earthquakes and tsunami damaged four of Japan's seven zinc refineries (combined capacity of 460 000 tonnes a year). The effect on world production is not expected to be significant, as all four refineries are scheduled to recommence operation by mid-2011.

In 2012, refined zinc production is forecast to increase by 4 per cent to 14.1 million tonnes. This includes scheduled expansion of operations at Korea Zinc Company's Onsan zinc smelter (additional capacity of 180 000 tonnes a year) in the Republic of Korea and start-up of Hulunbeier Chihong's zinc smelter (140 000 tonnes a year) in Inner Mongolia during 2012.

Australian export earnings to increase

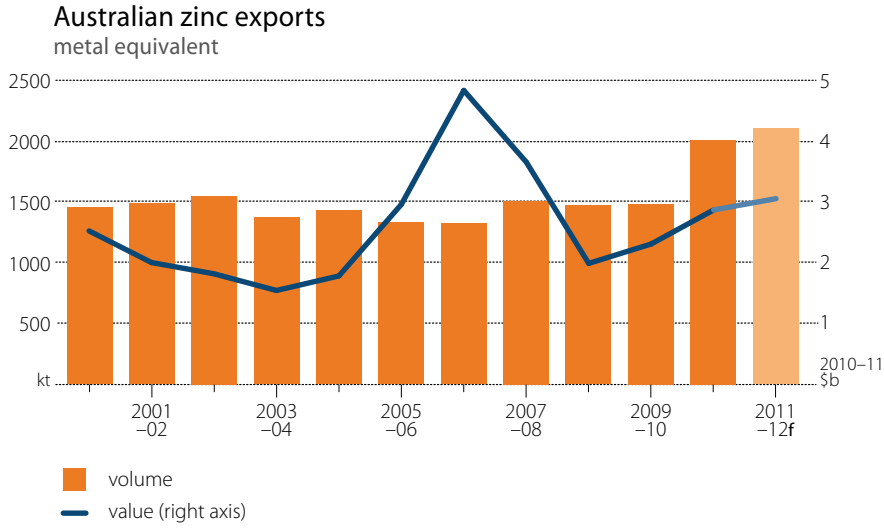
Australian zinc mine production is estimated to increase by 10 per cent to 1.5 million tonnes in 2010–11, reflecting increases in production at most mines. However, adverse weather conditions in the first quarter of 2011 affected production at a number of mines, including Xstrata's Mount Isa operations, MMG's Century mine, and Kagara Limited's Thalanga polymetallic processing facility.

In 2011–12, Australia's zinc mine production is forecast to increase by 4 per cent to 1.6 million tonnes, supported by the commissioning of new mines and the assumed resumption of normal production at mines in Queensland. In the first quarter of 2011, Bass Metals' Hellyer mine in Tasmania (55 000 tonnes a year) and Kagara Limited's Vomacka operation in North Queensland (20 000 tonnes a year) were commissioned. Production from these operations is expected to increase over the course of 2011 as they approach full capacity.

In addition, new capacity is scheduled to be commissioned during 2011–12, including Xstrata's Black Star Open Cut Deeps expansion (120 000 tonnes a year).

Australia has the capacity to produce more than 500 000 tonnes of refined zinc a year. With no major additions to capacity scheduled to be commissioned over 2011–12, refined zinc production is expected to be at close to full capacity.

Total exports of zinc (metallic content) are estimated to increase by 36 per cent to 2 million tonnes in 2010–11 and by a further 5 per cent to 2.1 million tonnes in 2011–12 in line with higher mine production. Higher zinc prices and higher export volumes are estimated to have more than offset the effect of a stronger Australian dollar, leading to a 29 per cent increase in Australian zinc export earnings to $2.8 billion in 2010–11. Export earnings are forecast to increase by a further 10 per cent to $3.1 billion in 2011–12 supported by forecast increases in both prices and export volumes.



Zinc outlook

		2010	2011 f	2012 f	% change
World					
Production – refined	kt	12 867	13 594	14 078	*3.6*
Consumption	kt	12 572	13 395	14 065	*5.0*
Closing stocks	kt	1 163	1 362	1 375	*1.0*
– weeks consumption		4.8	5.3	5.1	*– 3.8*
Price	US$/t	2 146	2 385	2 513	*5.4*
	USc/lb	97	108	114	*5.4*
		2009 –10	**2010 –11 f**	**2011 –12 f**	
Australia					
Mine output	kt	1 362	1 497	1 553	*3.7*
Refined output	kt	515	502	533	*6.2*
Exports					
– ores and concentrates **b**	kt	2 271	3 229	3 306	*2.4*
– refined	kt	425	472	507	*7.4*
– total value	A$m	2 214	2 847	3 125	*9.8*

b Quantities refer to gross weight of all ores and concentrates. **f** ABARES forecast.
Sources: ABARES; Australian Bureau of Statistics; International Lead and Zinc Study group; World Bureau of Metal Statistics.

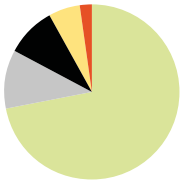
Australian commodities

Statistical tables

Contribution to GDP

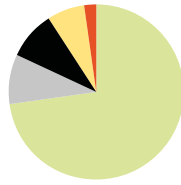
Australia reference year 2009–10

1999–2000
$950.4b



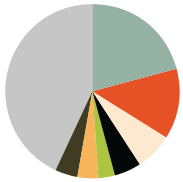
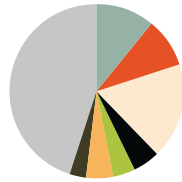
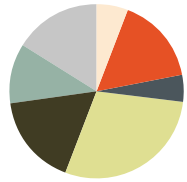
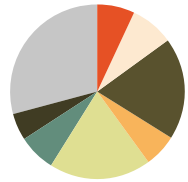
services	72%
manufacturing	11%
mining	9%
building and construction	6%
agriculture, forestry and fishing	2%

2009–10
$1284.0b



services	73%
manufacturing	9%
mining	9%
building and construction	7%
agriculture, forestry and fishing	2%

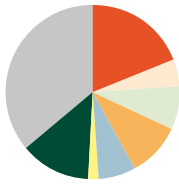
Share of Australian imports in 2009–10 dollars

	1999–2000		2009–10	
Total	$150.3b		$203.6b	
				
United States		21%		11%
Japan		13%		9%
China		7%		18%
Germany		5%		5%
Malaysia		3%		4%
Singapore		4%		5%
New Zealand		4%		3%
other		43%		45%
Agriculture	$6.7b		$10.5b	
				
China		3%		6%
ASEAN		16%		16%
other Asia		6%		5%
European Union 27		29%		29%
New Zealand		16%		17%
United States		14%		11%
other		16%		16%
Minerals and energy	$16.5b		$39.7b	
				
Indonesia		10%		7%
Malaysia		6%		8%
Singapore		5%		19%
Vietnam		12%		6%
other Asia		18%		19%
Middle East		14%		7%
New Zealand		5%		5%
other		30%		29%

Markets for Australian exports in 2009–10 dollars

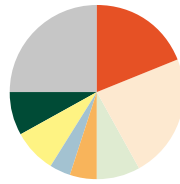
Total

1999–2000: $132.8b



China	5%
Japan	19%
Republic of Korea	8%
United States	10%
New Zealand	7%
India	2%
European Union 27	13%
other	36%

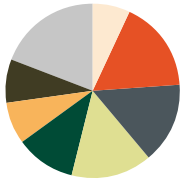
2009–10: $200.7b



China	23%
Japan	18%
Republic of Korea	8%
United States	5%
New Zealand	4%
India	8%
European Union 27	8%
other	26%

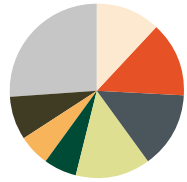
Agriculture

1999–2000: $33.5b



China	7%
Japan	17%
ASEAN	15%
other Asia	15%
European Union 27	11%
Middle East	8%
United States	8%
other	19%

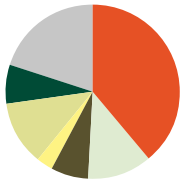
2009–10: $28.6b



China	12%
Japan	14%
ASEAN	14%
other Asia	14%
European Union 27	6%
Middle East	6%
United States	8%
other	26%

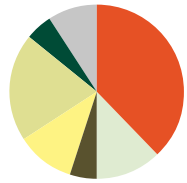
Energy

1999–2000: $25.2b



Japan	39%
Republic of Korea	12%
Chinese Taipei	7%
India	3%
other Asia	12%
European Union 27	7%
other	20%

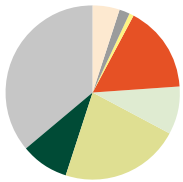
2009–10: $57.5b



Japan	38%
Republic of Korea	12%
Chinese Taipei	5%
India	11%
other Asia	20%
European Union 27	5%
other	9%

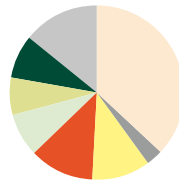
Minerals

1999–2000: $37.9b



China	5%
Thailand	2%
India	1%
Japan	16%
Republic of Korea	9%
other Asia	22%
European Union 27	9%
other	36%

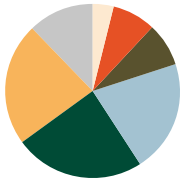
2009–10: $82.1b



China	37%
Thailand	3%
India	11%
Japan	12%
Republic of Korea	8%
other Asia	7%
European Union 27	8%
other	14%

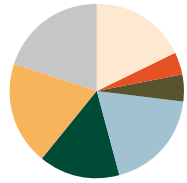
Manufacturing

1999–2000: $31.4b



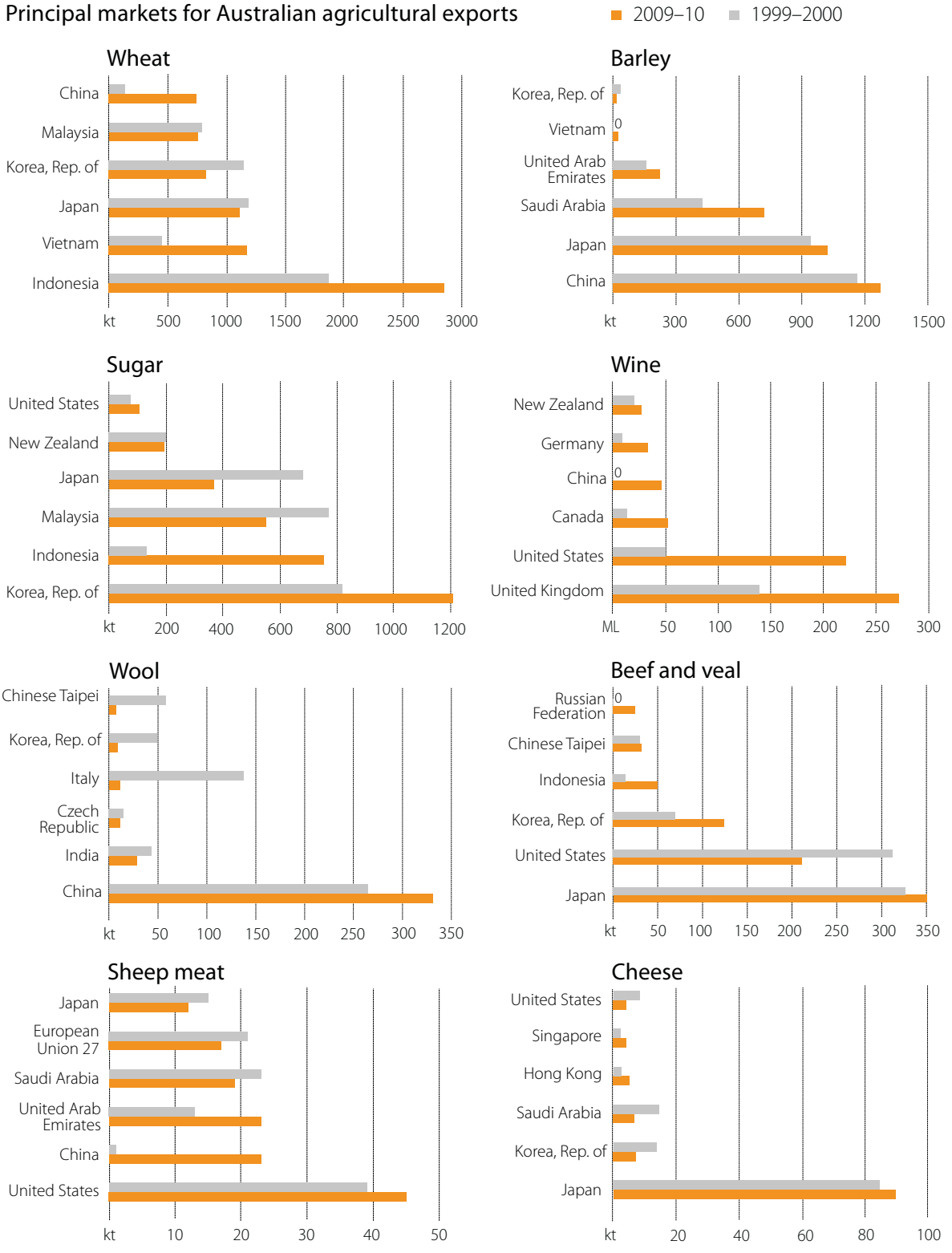
China	4%
Japan	8%
Republic of Korea	8%
New Zealand	21%
European Union 27	24%
United States	23%
other	12%

2009–10: $29.1b



China	18%
Japan	4%
Republic of Korea	5%
New Zealand	19%
European Union 27	15%
United States	19%
other	20%

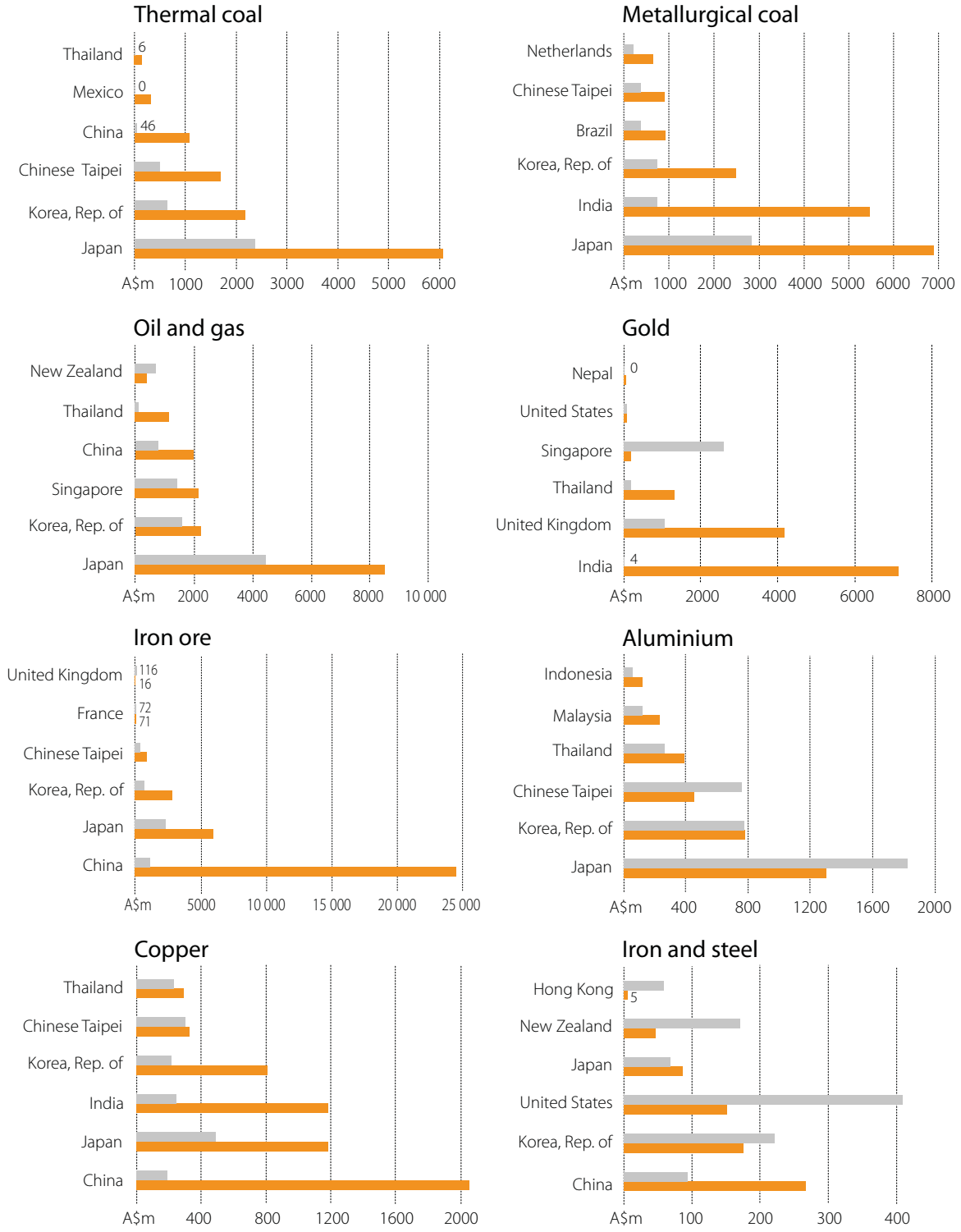
Principal markets for Australian agricultural exports



Principal markets for Australian mineral and energy exports

2009–10 1999–2000

in 2009–10 dollars



1 Indexes of prices received by farmers

Australia

	2005–06	2006–07	2007–08	2008–09	2009–10 s	2010–11 f	2011–12 f
Crops sector							
Grains							
Winter crops							
barley	93.9	153.3	196.9	145.3	108.6	127.2	121.9
canola	86.5	102.8	140.7	142.2	113.4	140.4	133.4
lupins	99.8	135.7	171.0	142.9	128.1	179.4	162.9
oats	107.8	235.8	136.9	158.3	116.9	105.2	104.1
wheat	102.5	122.4	197.2	142.1	110.4	146.7	147.3
Summer crops							
grain sorghum	84.6	126.1	152.4	121.3	126.7	130.9	128.1
Total grains a	97.2	128.5	178.3	137.4	108.9	135.8	134.1
Cotton	76.5	82.5	87.7	96.7	98.4	132.4	119.2
Sugar	90.9	108.4	80.6	98.3	136.4	137.8	138.4
Hay	143.7	230.7	254.6	219.0	181.6	167.8	142.7
Fruit	138.3	184.0	148.4	148.2	146.6	150.3	154.0
Vegetables	133.8	141.3	153.7	152.9	150.4	154.1	158.0
Total crops sector	103.9	127.6	138.0	120.2	109.0	124.6	123.6
Livestock sector							
Livestock for slaughter							
cattle	181.3	174.3	164.6	171.3	163.7	183.2	169.6
lambs b	177.7	165.6	170.3	204.3	218.7	277.4	278.8
sheep	202.7	156.2	183.3	216.8	343.3	466.0	477.2
live sheep for export	176.1	179.1	180.7	214.2	249.3	297.6	312.7
pigs	115.6	124.8	120.7	140.1	137.6	120.0	122.5
poultry	83.5	84.5	109.4	120.0	114.2	114.3	112.6
total	157.6	152.6	152.7	165.5	164.8	183.2	176.2
Livestock products							
wool	100.4	115.5	127.9	109.2	116.0	185.0	196.3
milk	111.0	111.1	166.1	142.3	125.2	144.1	144.1
eggs	92.5	102.0	107.5	108.5	105.5	106.6	107.6
total	105.7	112.2	147.0	127.5	120.0	153.8	157.7
Store and breeding stock	165.9	157.8	153.7	165.1	168.4	201.3	187.4
Total livestock sector	136.7	135.9	148.2	149.2	146.3	170.8	167.4
Total prices received	118.6	130.4	141.7	132.5	125.0	144.4	142.5

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

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

Australia

	2005–06	2006–07	2007–08	2008–09	2009–10 s	2010–11 f	2011–12 f
Farmers' terms of trade a	91.7	96.0	91.4	88.9	88.8	99.5	95.0
Materials and services							
Seed, fodder and livestock							
fodder and feedstuffs	126.4	151.7	195.3	167.9	145.9	121.2	120.8
seed, seedlings and plants	93.8	109.9	135.0	120.6	109.5	124.7	125.8
store and breeding stock	165.9	157.8	153.7	165.1	168.4	201.3	187.4
total	130.8	147.2	178.0	161.7	147.0	140.0	136.7
Chemicals	114.6	124.7	149.7	136.7	116.2	110.4	113.1
Electricity	104.6	107.6	111.3	121.4	142.0	158.0	173.8
Fertiliser	111.6	121.4	220.4	239.6	156.0	157.3	161.3
Fuel and lubricants	210.6	208.3	243.7	211.0	191.7	210.3	227.1
Total	130.9	140.3	170.8	164.2	146.5	146.8	149.6
Labour	129.7	133.5	138.0	142.6	147.3	151.7	156.2
Marketing	125.4	129.1	143.2	137.1	133.9	144.2	154.5
Overheads							
Insurance	135.1	139.4	143.5	155.6	167.0	180.4	189.4
Interest paid	123.8	127.8	142.6	116.7	111.1	122.3	129.7
Rates and taxes	128.9	132.7	137.3	141.6	144.8	149.2	153.6
Other overheads	124.8	128.5	132.8	137.1	140.5	144.7	149.0
Total	126.8	130.8	141.8	126.6	124.3	133.9	140.7
Capital items	128.4	132.3	136.8	141.1	144.7	149.2	153.7
Total prices paid	129.4	135.9	155.1	149.0	140.8	145.1	149.9
Excluding capital items	129.4	136.2	157.3	150.0	140.4	144.7	149.5
Excluding capital and overheads	129.9	137.6	161.7	156.9	145.0	147.5	151.6
Excluding seed, fodder and store and breeding stock	129.2	133.6	150.3	146.4	139.4	146.1	152.6

a Ratio of index of prices received by farmers and index of prices paid by farmers. **s** ABARES estimate. **f** ABARES 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: ABARES; Australian Bureau of Statistics.

3 Farm costs and returns
Australia

	unit	2006–07	2007–08	2008–09	2009–10 s	2010–11 f	2011–12 f
Costs							
Materials and services							
chemicals	$m	1 545	1 901	1 792	1 473	1 471	1 481
fertiliser	$m	1 659	3 034	3 381	2 118	2 234	2 271
fuel and lubricants	$m	2 199	2 551	2 243	1 946	2 213	2 372
marketing	$m	2 744	3 180	3 733	3 814	3 859	3 917
repairs and maintenance	$m	2 466	3 073	3 080	3 001	3 894	4 127
seed and fodder	$m	4 955	6 177	5 263	4 526	4 166	4 211
other	$m	3 543	3 659	3 829	3 967	4 318	4 476
total	$m	19 111	23 575	23 320	20 845	22 154	22 856
Labor	$m	3 654	3 667	3 827	3 766	4 012	4 132
Overheads							
interest paid	$m	3 848	4 901	4 331	4 455	5 023	5 460
rent and third party insurance	$m	447	462	477	493	511	527
Total	$m	7 950	9 030	8 634	8 713	9 546	10 119
Total cash costs	$m	27 060	32 605	31 955	29 558	31 700	32 975
Depreciation a	$m	4 383	4 532	4 676	4 794	4 942	5 094
Total farm costs	$m	31 443	37 137	36 631	34 352	36 642	38 068
Returns							
Gross value of farm production	$m	36 634	43 688	42 129	39 626	49 380	50 271
Gross farm cash income b	$m	37 398	43 375	38 020	39 626	49 380	50 271
Net returns and production							
Net value of farm production c	$m	5 191	6 552	5 499	5 274	12 739	12 202
Real net value of farm production d	$m	5 836	7 123	5 797	5 433	12 739	11 847
Net farm cash income e	$m	10 338	10 770	6 066	10 068	17 680	17 296
Real net farm cash income d	$m	11 621	11 709	6 395	10 372	17 680	16 793

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 2010–11 Australian dollars. **e** Gross farm cash income less total cash costs. **s** ABARES estimate. **f** ABARES forecast.
Note: Prices used in these calculations exclude GST.
Sources: ABARES; Australian Bureau of Statistics.

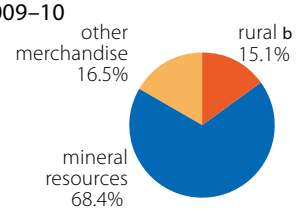
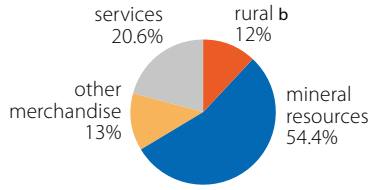
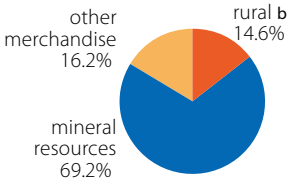
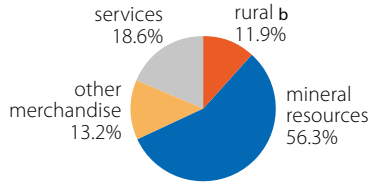
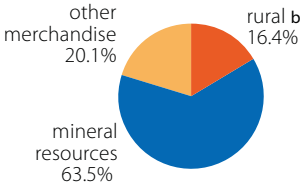
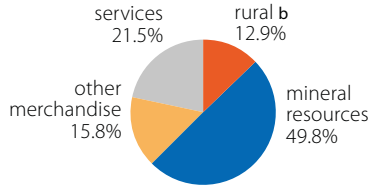
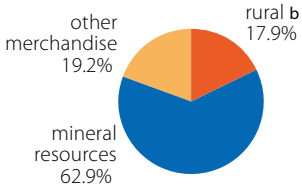
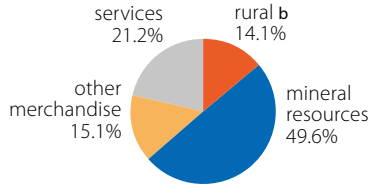
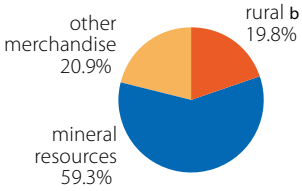
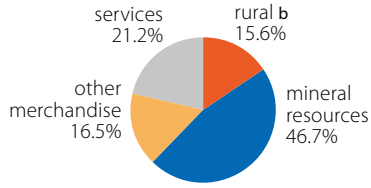
4 Unit export returns
Australia

Annual indexes a	2005–06	2006–07	2007–08	2008–09	2009–10 s	2010–11 f	2011–12 f
Farm	104.1	109.6	121.7	122.4	108.0	119.6	118.3
Energy minerals	226.0	206.6	235.8	398.3	258.9	324.7	369.2
Metals and other minerals	162.1	203.4	200.6	226.0	209.1	274.5	300.3
Total mineral resources	186.8	205.5	214.8	290.7	228.4	294.2	327.0
Total commodities	160.3	174.7	184.4	238.2	190.6	239.9	262.8

a In Australian dollars. Base: 1989–90 = 100. **s** ABARES estimate. **f** ABARES forecast.
Source: ABARES.

5 Contribution to exports by sector, balance of payments basis

Australia

	Proportion of merchandise exports	Proportion of exports of goods and services
2009–10		
2008–09		
2007–08		
2006–07		
2005–06		

b Includes farm, forest and fisheries products.

Sources: Australian Bureau of Statistics; ABARES.

6 Annual exports summary, balance of payments basis

Australia

	2006–07 $m	2007–08 $m	2008–09 $m	2009–10 $m	2010–11 f $m	2011–12 f $m
At current prices						
Rural						
Cereal grains and products	4 171	4 975	6 881	5 266	7 289	8 451
Sugar and honey	1 671	1 158	1 500	2 067	1 419	1 444
Meat and meat preparations	7 080	6 542	7 454	6 350	6 864	6 881
Wool and sheepskins	3 065	2 796	2 322	2 307	3 024	3 046
Other rural a	14 413	14 500	15 760	14 487	15 418	16 319
Total	30 400	29 971	33 917	30 477	34 014	36 140
Mineral resources						
Coal, coke and briquettes	21 928	24 599	54 957	36 777	46 221	60 656
Other mineral fuels	15 641	18 889	20 707	18 964	22 824	25 786
Metalliferous ores and other minerals bs	36 041	41 964	52 691	54 140	80 245	92 048
Gold	10 740	12 272	17 508	14 300	14 985	19 966
Other metals cs	22 330	18 453	14 358	14 031	16 205	18 127
Total s	106 680	116 177	160 221	138 212	180 480	216 584
Total commodities sector s	137 080	146 148	194 138	168 689	214 494	252 723
Other merchandise s	32 540	36 808	37 426	33 120	na	na
Total merchandise s	169 620	182 956	231 564	201 809	na	na
Services	45 342	50 105	52 877	52 323	na	na
Total goods and services	214 962	233 061	284 441	254 132	na	na
Chain volume measures d						
Rural						
Cereal grains and products	5 771	4 857	6 880	7 171	9 194	10 690
Sugar and honey	1 753	1 602	1 501	1 589	1 078	1 110
Meat and meat preparations	7 639	7 329	7 454	6 951	7 057	7 228
Wool and sheepskins	3 043	2 549	2 323	2 271	2 390	2 315
Other rural a	15 212	14 500	15 760	15 783	15 707	19 902
Total	33 418	30 837	33 918	33 765	35 426	41 245
Mineral resources						
Coal, coke and briquettes	48 322	51 210	54 958	66 225	62 145	68 370
Other mineral fuels	19 613	19 472	20 708	22 190	23 961	25 891
Metalliferous ores and other minerals bs	37 258	41 964	52 691	60 931	62 990	66 151
Gold	15 228	15 703	17 508	13 614	12 694	14 709
Other metals cs	18 737	18 453	14 358	13 668	14 890	15 723
Total s	139 158	146 802	160 223	176 628	176 679	190 844
Total commodities sector s	172 576	177 639	194 141	210 393	212 106	232 089
Other merchandise s	45 756	47 619	37 424	37 964	na	na
Total merchandise s	218 332	225 258	231 565	248 357	na	na
Services	48 163	51 761	52 877	51 270	na	na
Total goods and services	266 361	277 124	284 440	299 627	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 ABARES estimates for steel and nickel, which are retained as confidential 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 2008–09.
s ABARES estimate. **f** ABARES forecast. **na** Not available.
Sources: ABARES; Australian Bureau of Statistics, *Balance of Payments and International Investment Position, Australia,* cat. no. 5302.0, Canberra.

7 Industry gross value added [a, b]

Australia

	unit	2005–06	2006–07	2007–08	2008–09	2009–10
Agriculture, forestry and fishing						
agriculture	$m	21 936	17 959	19 454	23 294	23 625
forestry and fishing	$m	4 137	4 077	4 118	4 427	4 799
total	$m	26 019	22 042	23 573	27 721	28 423
Mining						
mining (excludes services to mining)	$m	95 395	103 415	104 702	107 695	114 597
services to mining	$m	5 567	6 085	6 748	6 767	6 497
total	$m	100 780	109 323	111 540	114 462	121 095
Manufacturing						
food, beverage and tobacco	$m	22 744	22 972	22 945	22 228	23 687
textile, clothing and other manufacturing	$m	6 153	6 096	6 381	5 720	4 641
wood and paper products	$m	8 309	8 081	7 768	7 176	7 444
printing and recorded media	$m	5 484	5 536	5 676	4 683	4 452
petroleum, coal, chemical, etc.	$m	20 980	20 608	21 113	18 995	19 652
non-metallic mineral products	$m	5 425	5 551	5 802	5 764	5 663
metal products	$m	20 049	22 024	24 520	23 738	22 990
machinery and equipment	$m	21 671	21 658	22 376	21 099	22 338
total	$m	109 798	111 869	116 306	109 402	110 868
Building and construction	$m	77 526	81 794	87 485	90 087	90 024
Electricity, gas and water supply	$m	13 217	13 272	13 630	14 249	14 397
Taxes less subsidies on products	$m	80 244	82 482	84 112	83 340	83 153
Statistical discrepancy	$m	1	0	0	0	1 417
Gross domestic product	$m	1 150 644	1 191 654	1 237 320	1 255 240	1 283 957

a Chain volume measures, reference year is 2008–09. **b** ANZSIC 2006.

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

8 Volume of production indexes
Australia

	2006–07	2007–08	2008–09	2009–10 s	2010–11 f	2011–12 f
Farm						
Grains and oilseeds	58.2	88.0	116.2	116.6	140.3	138.8
Total crops	84.0	103.9	113.4	114.5	132.7	137.4
Livestock slaughterings	115.5	113.4	112.1	109.6	110.7	113.8
Total livestock	105.2	102.3	100.8	98.7	99.2	101.7
Total farm sector	94.8	103.9	108.2	107.5	116.4	120.0
Forestry a						
Broadleaved	124.2	130.1	120.8	106.2	111.2	116.9
Coniferous	132.4	136.3	117.5	127.4	125.8	128.8
Total forestry	128.4	133.3	119.5	117.8	119.4	123.7
Mine b						
Energy minerals	118.9	116.6	122.8	126.2	118.0	136.4
Metals and other minerals	124.3	124.8	119.6	123.5	136.8	143.5
Total minerals	121.3	120.7	121.4	125.0	127.3	140.1

a Volume of logs harvested excluding firewood. **b** Uranium is included with energy. **s** ABARES estimate. **f** ABARES 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 Fisher's ideal index with a reference year of 1997–98 = 100.
Sources: ABARES; Australian Bureau of Statistics.

9 Employment a, b
Australia

	2004–05 '000	2005–06 '000	2006–07 '000	2007–08 '000	2008–09 '000	2009–10 '000
Agriculture, forestry and fishing						
agriculture	307	300	306	301	318	325
forestry and logging	9	8	8	8	7	7
commercial fishing c	14	12	10	14	9	11
support services	27	27	26	30	23	26
total	357	348	350	353	358	369
Mining						
coal	23	29	27	26	34	41
oil and gas extraction	7	9	10	11	14	15
metal ore	34	42	45	46	48	52
other mining (including services)	42	49	53	62	70	66
total	105	129	135	145	167	173
Manufacturing						
food, beverages and tobacco	217	205	214	228	224	228
textiles, clothing, footwear and leather	55	56	50	50	48	46
wood and paper product	77	77	78	69	67	64
printing, publishing and recorded media	58	52	51	54	51	52
petroleum, coal and chemical product	92	88	92	98	90	88
non-metallic mineral product	36	38	36	42	39	37
metal product	138	161	161	158	155	147
other manufacturing	379	347	342	358	344	343
total	1 051	1 025	1 024	1 056	1 017	1 006
Other industries	8 273	8 587	8 864	9 091	9 225	9 479
Total	9 786	10 088	10 374	10 644	10 767	11 027

a Average employment over four quarters. **b** ANZSIC 2006. Caution should be used when utilising employment statistics at the ANZSIC subdivision and group levels due to estimates that may be subject to sampling variability and standard errors too high for most practical purposes. **c** Includes aquaculture, fishing, hunting and trapping.
Source: Australian Bureau of Statistics, *Labour Force, Australia,* cat. no. 6291.0, Canberra.

10 Business income
Australia

	2005–06	2006–07	2007–08	2008–09	2009–10
	$m	$m	$m	$m	$m
Farm					
Net value of farm production	7 349	5 191	6 552	5 499	5 274 s
Company profits in selected industries a					
Mining	36 432	40 311	40 184	67 402	49 889
Manufacturing					
food, beverages and tobacco	5 237	4 532	5 757	6 166	8 168
textiles, clothing, footwear and leather	481	548	501	245	409
wood and paper product	988	1 085	1 184	667	615
printing, publishing and recorded media	528	578	620	170	439
petroleum, coal and chemical product	5 074	3 859	6 192	2 159	3 676
non-metallic mineral product	1 240	1 108	1 359	978	1 155
metal product	5 234	10 004	7 924	3 781	2 662
machinery and equipment	2 572	1 640	1 937	2 745	3 983
other manufacturing	603	762	851	637	712
total	21 957	24 116	26 325	17 548	21 819
Other industries (including services)	81 194	88 914	99 873	73 118	98 253
Total (including services)	139 583	153 341	166 382	158 068	169 961

a Company profits before income tax, based on ANZSIC 2006. s ABARES estimate.
Sources: ABARES; Australian Bureau of Statistics, *Australian National Accounts: National Income, Expenditure and Product*, cat. no. 5206.0, Canberra; Australian Bureau of Statistics, *Company Profits, Australia*, cat. no. 5651.0, Canberra; Australian Bureau of Statistics, *Business Indicators, Australia*, cat. no. 5676.0, Canberra; Australian Bureau of Statistics, *Australian Industry*, cat. no. 8155.0, Canberra.

11 All banks lending to business a
Australia

	2008–09		2009–10				2010–11	
	Mar	Jun	Sep	Dec	Mar	Jun	Sep	Dec
	$b	$b	$b	$b	$b	$b	$b	$b
Agriculture, fishing and forestry	55.5	57.4	57.9	58.4	57.8	59.1	58.7	59.3
Mining	12.9	11.5	10.7	13.9	14.1	12.1	11.3	11.1
Manufacturing	49.9	43.7	41.5	40.6	40.8	39.2	38.6	38.1
Construction	32.5	31.5	29.9	29.7	29.3	28.2	28.3	28.2
Wholesale, retail trade, transport and storage	96.1	93.2	92.0	91.9	91.9	90.5	89.3	92.1
Finance and insurance	142.6	133.1	128.9	131.9	126.2	130.5	129.5	124.9
Other	321.6	320.6	315.0	308.4	305.3	299.2	309.0	303.4
Total	711.0	691.0	675.8	674.8	665.4	658.7	664.7	657.2

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.

12 Rural indebtedness to financial institutions [a]

Australia

	2004–05 $m	2005–06 $m	2006–07 $m	2007–08 $m	2008–09 $m	2009–10 $m
Rural debt						
All banks [a]	39 261	43 546	47 188	53 743	57 384	59 331
Other government agencies [b]	977	1 073	1 286	1 409	1 620	1 816
Pastoral and other finance companies	3 112	3 454	4 592	5 126	4 462	2 029
Large finance institutional debt [c]	43 350	48 073	53 066	60 278	63 467	63 176
Deposits						
Farm management deposits	2 792	2 797	2 782	2 879	2 843	2 784

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** Sum of the above.

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

13 Capital expenditure of private enterprises

Australia

	2005–06 $m	2006–07 $m	2007–08 $m	2008–09 $m	2009–10 $m
At current prices					
Gross fixed capital formation a					
All sectors	279 356	305 724	346 668	355 316	359 405
New capital expenditure					
Mining b	19 659	23 621	29 201	37 977	35 185
Manufacturing					
food, beverages and tobacco	2 419	2 256	2 596	2 492	2 566
textiles, clothing, footwear and leather	157	139	112	118	140
wood and paper product	835	759	928	897	719
printing, publishing and recorded media	502	353	396	450	452
petroleum, coal and chemical product	2 412	1 767	2 126	2 239	2 207
non-metallic mineral product	571	467	474	609	731
metal product	4 976	4 761	4 137	4 608	3 689
machinery and equipment	2 058	1 436	1 110	1 160	1 112
other manufacturing	100	58	164	108	126
total	14 032	12 106	12 340	12 682	11 743
Total surveyed industries	80 611	87 475	96 833	113 201	106 994
Chain volume measures c					
Gross fixed capital formation a					
All sectors	302 915	319 291	352 446	355 316	363 815
New capital expenditure					
Mining	22 410	24 999	29 978	37 978	35 798
Manufacturing	14 843	12 517	12 887	12 680	11 863
Other selected industries	46 118	50 678	55 875	62 542	62 656
Total surveyed industries	83 393	88 268	98 730	113 201	110 316

a Estimates taken from ABS national accounts, which include taxation-based statistics. **b** ANZSIC 2006 Division B. **c** Reference year is 2008–09.

Sources: ABARES; Australian Bureau of Statistics, *Australian National Accounts: National Income, Expenditure and Product*, cat. no. 5206.0, Canberra; Australian Bureau of Statistics, *Private New Capital Expenditure and Expected Expenditure, Australia*, cat. no. 5625.0, Canberra.

14 Private mineral exploration expenditure

Australia

	2004–05 $m	2005–06 $m	2006–07 $m	2007–08 $m	2008–09 $m	2009–10 s $m
At current prices						
Energy						
Petroleum						
onshore	270.1	355.8	498.2	493.8	492.3	748.6
offshore	774.6	906.1	1 727.3	2 541.1	3 318.4	2 745.5
total	1 044.7	1 261.9	2 225.5	3 034.9	3 810.7	3 494.1
Coal	126.8	166.4	193.2	234.8	297.3	321.2
Uranium	20.7	56.1	114.1	231.5	185.2	169.1
Total	1 192.2	1 484.4	2 532.8	3 501.2	4 293.2	3 984.4
Metals and other minerals a						
Gold	391.7	399.6	455.9	592.6	438.0	575.4
Iron ore	137.9	161.3	285.4	449.8	588.7	524.1
Base metals, silver and cobalt b	261.3	356.7	555.0	783.2	519.1	457.2
Mineral sands	27.6	29.2	37.3	37.0	30.6	na
Diamonds	23.7	22.6	26.9	21.7	10.0	na
Other	38.7	48.8	46.8	110.8	154.3	147.2
Total metals and other minerals a	880.9	1 018.2	1 407.3	1 995.1	1 740.7	1 742.3
Total expenditure	2 073.1	2 502.6	3 940.1	5 496.3	6 033.9	5 726.7

a Uranium is included with energy. **b** Base metals include copper, lead, nickel and zinc. **s** ABARES estimate.
Sources: ABARES; Australian Bureau of Statistics, *Mineral and Petroleum Exploration, Australia,* cat. no. 8412.0, Canberra.

15 Annual world indicator prices of selected commodities

	unit	2006–07	2007–08	2008–09	2009–10 s	2010–11 f	2011–12 f
Crops							
Wheat a	US$/t	212	362	271	209	318	310
Corn b	US$/t	151	201	190	160	255	253
Rice c	US$/t	320	551	609	532	512	500
Soybeans d	US$/t	335	549	421	429	549	560
Cotton e	USc/lb	58.1	72.9	61.2	77.5	162.0	116.3
Sugar g	USc/lb	11.7	13.7	15.9	24.0	28.5	20.9
Livestock products							
Beef h	USc/kg	282	289	307	319	391	362
Wool i	Ac/kg	864	945	794	872	1 120	1 170
Butter j	US$/t	2 023	4 027	2 485	3 477	4 675	4 200
Cheese j	US$/t	3 004	5 073	3 281	3 748	4 208	4 250
Skim milk powder j	US$/t	3 188	4 204	2 333	2 948	3 379	3 420
Energy							
Crude oil							
Dubai	US$/bbl	61	90	69	74	93	110
West Texas Intermediate	US$/bbl	63	97	70	75	90	108
brent	US$/bbl	64	95	69	75	97	115
world trade weighted average k	US$/bbl	60	92	67	73	93	111
Uranium (U_3O_8) l	US$/lb	81.17	80.75	51.25	43.81	57.94	64.83
Minerals and metals m							
Aluminium	US$/t	2 692	2 665	1 781	2 017	2 380	2 485
Copper	US$/t	7 087	7 791	4 936	6 634	8 702	9 781
Gold n	US$/oz	639	823	874	1 092	1 372	1 593
Iron ore (negotiated) o	USc/dmtu	73	80	145	97	212	263
Lead	US$/t	1 694	2 893	1 454	2 095	2 382	2 630
Manganese (negotiated) q	US$/mtu	3.0	2.7	11.2	3.5	na	na
Nickel	US$/t	37 909	28 564	13 322	19 390	24 041	23 500
Silver r	USc/oz	1 274	1 544	1 289	1 688	2 884	3 425
Tin	US$/t	11 455	18 529	13 576	16 202	23 960	20 011
Zinc	US$/t	3 672	2 599	1 401	2 001	2 234	2 466

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. ABARES Australia–Japan average contract price assessment. **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** ABARES estimate. **f** ABARES forecast. **na** Not available.

Sources: ABARES; Australian Bureau of Statistics; Australian Dairy Corporation; Meat & 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.

16 Gross unit values or prices of farm products [a]

	unit	2006–07	2007–08	2008–09	2009–10	2010–11 [f]	2011–12 [f]
Crops [b]							
Grains and oilseeds							
Winter crops							
barley	$/t	244	313	231	173	203	194
canola	$/t	397	543	548	437	542	514
field peas	$/t	283	407	345	241	229	179
lupins	$/t	266	335	280	251	351	319
oats	$/t	241	281	216	160	144	142
triticale	$/t	223	252	257	220	227	215
wheat	$/t	242	390	281	218	290	291
Summer crops							
maize	$/t	249	258	283	268	302	288
rice	$/t	337	414	528	457	368	356
grain sorghum	$/t	213	258	205	214	222	217
soybeans [c]	$/t	353	554	551	559	686	618
sunflower seed [c]	$/t	706	814	696	696	789	712
Industrial crops							
Cotton lint [d]	c/kg	177	191	193	205	372	264
Sugar cane (cut for crushing)	$/t	34	26	32	45	41	40
Wine grapes	$/t	881	787	527	464	490	531
Livestock for slaughter							
Beef [e]	c/kg	292	286	296	288	324	300
– yearling [e]	c/kg	329	324	330	328	378	360
– ox [e]	c/kg	318	308	315	306	334	310
– cow [e]	c/kg	255	253	269	257	287	270
Lamb [eg]	c/kg	326	335	424	464	550	555
Mutton [e]	c/kg	136	159	199	322	410	420
Pig [e]	c/kg	255	240	330	309	269	275
Poultry [h]	c/kg	490	534	549	546	546	548
Livestock products							
Wool [i]	c/kg	864	945	794	872	1 120	1 170
Milk [j]	c/L	33.2	49.6	42.5	37.3	43.0	43.0

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 18–22 kg. **h** Retail price, fresh whole chickens. **i** Australian Wool Exchange eastern market indicator. **j** Weighted average farmgate price. **s** ABARES estimate. **f** ABARES forecast.

Note: Prices used in these calculation exclude GST.

Sources: ABARES; Australian Bureau of Statistics.

17 World production, consumption, stocks and trade for selected commodities [a]

	unit	2006–07	2007–08	2008–09	2009–10	2010–11 f	2011–12 f
Farm							
Grains							
Wheat							
production	Mt	597	609	686	679	650	669
consumption	Mt	609	606	644	652	661	668
closing stocks	Mt	125	129	171	198	186	187
exports **b**	Mt	111	110	137	128	123	126
Coarse grains							
production	Mt	986	1 078	1 107	1 107	1 084	1 138
consumption	Mt	1 008	1 056	1 072	1 099	1 125	1 133
closing stocks	Mt	139	162	193	196	155	160
exports **b**	Mt	118	127	113	123	115	116
Rice							
production **c**	Mt	421	434	448	440	450	456
consumption **c**	Mt	418	426	435	438	447	454
closing stocks **c**	Mt	75	81	92	94	96	98
exports **bd**	Mt	30	30	29	32	31	32
Oilseeds and vegetable oils							
Oilseeds							
production	Mt	404	392	396	442	448	465
consumption	Mt	393	401	401	423	451	461
closing stocks	Mt	73	62	56	73	68	71
exports	Mt	83	93	94	111	113	116
Vegetable oils							
production	Mt	122	128	133	139	147	152
consumption	Mt	122	126	130	138	151	152
closing stocks	Mt	10	11	13	13	9	9
exports	Mt	49	54	56	58	58	58
Vegetable protein meals							
production	Mt	224	226	223	239	259	264
consumption	Mt	223	223	223	235	258	263
closing stocks	Mt	8	7	6	7	7	8
exports	Mt	69	72	69	69	74	75
Industrial crops							
Cotton							
production	Mt	27	26	23	22	25	28
consumption	Mt	27	27	24	26	25	26
closing stocks	Mt	14	13	13	10	9	11
exports	Mt	8	8	7	8	8	9
Sugar							
production	Mt	166	167	151	158	169	177
consumption	Mt	157	161	161	163	167	170
closing stocks	Mt	66	70	61	56	59	65
exports	Mt	49	48	48	54	51	50

Continued

17 World production, consumption, stocks and trade for selected commodities [a]

continued

	unit	2006–07	2007–08	2008–09	2009–10	2010–11 [f]	2011–12 [f]
Livestock products							
Meat [deg]							
production	Mt	249	250	251	248	249	251
consumption	Mt	238	246	250	247	248	251
closing stocks	Mt	3.9	4.4	5.0	4.9	4.8	4.5
exports [b]	Mt	21.9	23.9	20.8	20.6	20.7	21.0
Wool [h]							
production	kt	1 225	1 202	1 108	1 126	1 130	1 131
consumption [di]	kt	1 240	1 185	1 105	1 115	1 140	1 150
closing stocks [j]	kt	75	55	65	55	45	26
exports [k]	kt	590	553	484	501	523	522
Butter [dg]							
production	kt	7 594	7 881	8 041	8 174	8 423	8 600
consumption	kt	7 281	7 474	7 541	7 768	7 900	8 050
closing stocks	kt	201	240	271	177	208	220
exports	kt	833	725	814	805	788	805
Skim milk powder [gl]							
production [d]	kt	3 489	3 530	3 708	3 641	3 753	3 840
consumption [d]	kt	3 158	3 220	3 187	3 294	3 429	3 500
closing stocks [d]	kt	268	331	540	516	409	340
exports	kt	1 141	1 103	1 152	1 287	1 360	1 420
Energy [d]							
Crude oil							
Production							
world [m]	mbd	85.7	86.5	85.3	87.4	89.2	90.3
OPEC [n]	mbd	34.9	35.8	33.5	34.5	35.3	36.3
Consumption [m]	mbd	86.5	86.2	85.1	87.9	89.2	90.3
Coal [d]							
Production							
hard coal [q]	Mt	5 306	5 653	5 842	6 050	6 225	6 443
brown coal	Mt	954	965	913	930	935	954
Exports							
metallurgical coal	Mt	227	236	210	257	262	277
thermal coal	Mt	696	704	725	771	790	834
Uranium (U_3O_8) [d]							
Production [rs]	kt	48.6	53.5	58.0	54.3	58.0	64.4
Consumption	kt	77.7	76.2	77.2	82.0	86.8	86.9
Metals [d]							
Bauxite production	kt	209 014	217 469	193 038	203 460	257 978	275 825
Alumina production	kt	74 120	77 564	73 667	81 023	87 450	93 500
Aluminium							
production	kt	38 186	39 669	37 171	40 811	43 946	46 721
consumption	kt	37 441	36 904	34 750	39 680	42 593	46 041
closing stocks [t]	kt	2 961	4 709	6 485	6 501	7 854	8 534

Continued

17 World production, consumption, stocks and trade for selected commodities [a]

continued

	unit	2006–07	2007–08	2008–09	2009–10 s	2010–11 f	2011–12 f
Iron and steel [d]							
Production							
iron ore [u]	Mt	1 699	1 693	1 588	1 972	2 090	2 211
pig iron	Mt	946	927	900	1 062	1 137	1 219
crude steel	Mt	1 344	1 330	1 220	1 413	1 510	1 617
Iron ore trade	Mt	830	897	948	1 036	1 070	1 155
Gold [d]							
Mine production	t	2 476	2 408	2 589	2 689	2 734	2 780
Supply	t	3 942	3 959	4 318	4 261	4 034	3 880
Fabrication consumption [v]	t	3 102	3 023	2 511	2 779	2 843	2 949
Base metals [d]							
Copper							
production [w]	kt	18 029	18 498	18 649	19 167	19 630	20 373
consumption	kt	18 108	18 094	18 243	19 135	19 808	20 437
closing stocks	kt	666	816	1 128	1 000	821	757
Lead							
production [w]	kt	8 322	9 060	8 989	9 572	10 163	10 319
consumption	kt	8 374	9 047	8 932	9 581	10 040	10 341
closing stocks	kt	265	306	388	449	572	550
Nickel							
production [w]	kt	1 430	1 396	1 331	1 443	1 573	1 692
consumption	kt	1 326	1 278	1 241	1 464	1 577	1 663
closing stocks	kt	125	155	234	213	208	238
Tin							
production [w]	kt	349	332	333	352	369	369
consumption	kt	357	337	322	368	375	375
closing stocks	kt	35	32	46	16	5	45
Zinc							
production [w]	kt	11 345	11 768	11 291	12 867	13 594	14 078
consumption	kt	11 276	11 559	10 845	12 572	13 395	14 065
closing stocks	kt	580	764	925	1 163	1 362	1 375
Mineral sands [d]							
Production							
ilmenite [x]	kt	12 039	11 132	9 332	9 217	9 392	9 598
titaniferous slag	kt	2 525	2 540	2 092	2 625	2 665	2 690
rutile concentrate	kt	601	609	581	728	722	651
zircon concentrate	kt	1 300	1 282	1 057	1 234	1 307	1 297

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** Non-fat dry milk. **m** Calendar year data, 2005–06 = 2006, includes crude oil, marine bunkers, refinery fuel, non-conventional oil and natural gas liquids. 1 million litres a year equals about 17.2 barrels a day. **n** Calendar year data, 2005–06 = 2006, includes OPEC natural gas liquids. **q** Includes anthracite and bituminous coal, and for the United States, Australia and New Zealand, sub-bituminous coal. **r** World production data have 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** ABARES estimate. **f** ABARES forecast. **na** Not available.

Sources: ABARES; Australian Bureau of Statistics; Meat & Livestock Australia; Commodities Research Unit; Commonwealth Secretariat; Consolidated Gold Fields; Department of Agriculture, Fisheries and Forestry; 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 Grains 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; Poimena Analysis, Beef + Lamb New Zealand; Capewools South Africa; Argentine Wool Federation.

18 Commodity production
Australia

	unit	2006–07	2007–08	2008–09	2009–10 s	2010–11 f	2011–12 f
Crops							
Grains and oilseeds							
Winter crops							
barley	kt	4 257	7 160	7 997	7 865	9 334	8 093
canola	kt	573	1 214	1 844	1 920	2 136	2 265
chickpeas	kt	229	313	443	487	379	385
field peas	kt	140	268	238	356	434	438
lupins	kt	470	662	708	823	618	654
oats	kt	748	1 502	1 160	1 162	1 536	1 604
triticale	kt	199	450	363	545	685	585
wheat	kt	10 822	13 569	21 420	21 834	26 325	26 159
Summer crops							
cottonseed **s**	kt	388	188	466	547	1 269	1 564
maize	kt	239	387	376	328	351	312
rice	kt	163	18	65	197	807	1 015
grain sorghum	kt	1 283	3 790	2 692	1 508	2 137	2 273
soybeans	kt	34	35	80	60	47	44
sunflower seed	kt	21	73	55	41	44	43
other oilseeds **a**	kt	34	56	34	41	40	38
Total grains and oilseeds	kt	19 602	29 683	37 940	37 713	46 141	45 473
Industrial crops							
Cotton lint	kt	301	133	329	387	898	1 106
Sugar cane (cut for crushing)	kt	36 397	32 621	31 457	31 027	27 350	30 027
Sugar (tonnes actual)	kt	5 026	4 763	4 634	4 519	3 620	3 852
Wine grapes	kt	1 410	1 837	1 684	1 533	1 502	1 654
Livestock slaughterings							
Number slaughtered							
Cattle and calves	'000	9 081	8 799	8 643	8 364	8 107	8 600
Cattle exported live **b**	'000	636	708	845	871	723	585
Sheep	'000	13 271	11 158	10 501	7 333	5 600	6 300
Lambs	'000	20 158	20 529	20 395	19 478	18 200	19 200
Sheep exported live **b**	'000	4 138	4 069	4 064	3 055	2 900	3 100
Pigs	'000	5 322	5 217	4 499	4 561	4 589	4 709
Meat produced							
Beef and veal **c**	kt	2 226	2 155	2 137	2 109	2 129	2 192
Lamb **c**	kt	413	428	416	413	393	415
Mutton **c**	kt	271	243	220	162	130	145
Pig meat	kt	382	377	322	331	336	333
Poultry meat **c**	kt	855	835	866	872	1 057	1 087
Total	kt	4 147	4 039	3 961	3 886	4 044	4 172

Continued

18 Commodity production *continued*

Australia

	unit	2006–07	2007–08	2008–09	2009–10 s	2010–11 f	2011–12 f
Livestock products							
Wool d	kt	502	459	420	423	412	422
Milk e	ML	9 583	9 223	9 388	9 023	9 100	9 300
Butter g	kt	133	128	148	128	125	123
Cheese	kt	364	361	342	349	332	340
Casein	kt	8	10	10	8	5	5
Skim milk powder h	kt	191	164	212	190	224	217
Whole milk powder	kt	135	142	148	126	149	154
Buttermilk powder	kt	14	13	15	13	12	13
Forestry							
Logs	'000 m^3	27 192	28 357	25 488	25 132	25 467	26 376
Fisheries i							
Tuna	kt	13.1	14.6	13.7	11.0	11.8	11.7
Salmonids j	kt	25.6	25.9	30.0	31.9	35.5	38.0
Other fish	kt	118.8	119.6	122.1	120.4	121.3	122.5
Prawns	kt	20.8	22.8	24.2	27.0	26.4	23.9
Rock lobster	kt	14.3	14.3	12.2	9.6	9.3	9.2
Abalone	kt	5.5	5.3	5.6	5.0	5.4	5.5
Scallops	kt	10.5	10.3	7.6	7.5	8.5	10.5
Oysters	kt	15.4	13.5	14.2	14.8	14.6	15.5
Other molluscs	kt	9.3	6.8	6.6	6.3	6.6	6.5
Other crustaceans	kt	6.5	6.4	5.8	6.2	6.6	6.2
Energy							
Coal							
black, saleable	Mt	325.4	326.2	339.6	365.9	341.5	395.0
black, raw	Mt	417.0	422.8	446.2	471.1	432.2	512.9
brown	Mt	65.6	66.0	68.3	68.8	na	na
Petroleum							
crude oil and condensate	ML	28 366	25 192	26 950	25 572	25 192	26 856
petroleum products k	ML	43 652	44 086	44 111	41 892	42 985	43 136
natural gas l	Gm^3	40.8	41.7	44.5	49.0	52.6	59.7
LPG (naturally occurring)	ML	4 550	3 971	3 930	4 096	4 030	4 046
Uranium (U_3O_8)	t	9 594	10 114	10 311	7 156	7 724	8 250
Metalliferous minerals and metals o							
Aluminium							
bauxite	Mt	62.7	63.5	64.1	67.8	67.5	68.2
alumina	kt	18 506	19 359	19 597	20 057	19 609	20 705
aluminium (ingot metal)	kt	1 954	1 964	1 974	1 920	1 949	1 993
Copper							
mine production n	kt	859	863	890	819	945	996
refined, primary	kt	435	444	499	395	492	503
Gold							
mine production n	t	250.8	229.7	217.9	239.7	268.1	276.9

Continued

18 Commodity production *continued*

Australia

	unit	2006–07	2007–08	2008–09	2009–10	2010–11 f	2011–12 f
Metalliferous minerals and metals (continued)							
Iron and steel							
ore and concentrate **o**	Mt	287.7	324.7	353.2	423.4	441.6	466.7
iron and steel	Mt	8.0	8.2	5.6	6.9	7.4	8.0
Lead							
mine production **n**	kt	642	641	596	617	684	720
refined **q**	kt	191	203	213	189	193	230
bullion	kt	114	152	155	148	115	149
Manganese							
ore, metallurgical grade	kt	5 046	5 412	3 730	5 795	6 576	6 594
metal content of ore	kt	2 037	2 180	1 504	2 365	2 663	2 673
Nickel							
mine production **n**	kt	191	190	185	160	180	203
refined, class I **s**	kt	104	105	95	114	96	120
refined, class II **t**	kt	15	15	15	6	9	12
total ore processed **u**	kt	225	222	213	200	220	243
Silver							
mine production **n**	t	1 674	1 867	1 764	1 809	1 746	1 982
refined	t	618	605	751	701	692	732
Tin							
mine production **n**	t	2 061	1 767	4 045	19 829	18 410	9 202
refined	t	321	na	na	na	na	na
Titanium							
ilmenite concentrate	kt	2 383	2 205	1 932	1 394	1 229	1 237
leucoxene concentrate	kt	169	153	117	123	200	228
rutile concentrate	kt	279	332	285	361	415	315
synthetic rutile **s**	kt	729	672	732	553	555	568
titanium dioxide pigment **s**	kt	207	201	214	222	221	204
Zinc							
mine production **n**	kt	1 375	1 571	1 411	1 362	1 497	1 553
refined	kt	496	507	506	515	502	533
Zircon concentrate	kt	564	563	485	408	624	589
Other minerals							
Diamonds	'000 ct	24 632	16 528	15 169	11 138	8 470	11 200
Salt	kt	10 857	12 043	11 311	11 745	10 591	10 429

a Linseed and safflower seed. **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 whole milk 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** Includes salmon and trout production. **k** Includes production from petrochemical plants. **l** Includes ethane, methane and non-commercial natural gas. **m** Uranium is included with energy. **n** Primary production, metal content. **o** Excludes iron oxide not intended for metal extraction. **q** Includes lead content of lead alloys from primary sources. **r** Products with a nickel content of 99 per cent or more. Includes electrolytic nickel, pellets, briquettes and powder. **t** Products with a nickel content of less than 99 per cent. Includes ferronickel, nickel oxides and oxide sinter. **u** Includes imported ore for further processing. **s** ABARES estimate. **f** ABARES forecast.

Sources: ABARES; 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.

19 Gross value of farm and fisheries production
Australia

	2006–07 $m	2007–08 $m	2008–09 $m	2009–10 s $m	2010–11 f $m	2011–12 f $m
Crops						
Grains and oilseeds						
Winter crops						
barley	1 039	2 244	1 850	1 359	1 891	1 570
canola	227	659	1 011	840	1 157	1 165
chickpeas	151	195	199	194	182	220
field peas	40	109	82	86	99	79
lupins	125	222	198	206	217	209
oats	181	423	251	186	221	228
triticale	44	113	93	120	155	126
wheat	2 619	5 292	6 021	4 765	7 637	7 618
Summer crops						
maize	60	100	106	88	106	90
rice	55	7	34	90	297	361
grain sorghum	274	977	553	323	474	492
soybeans	12	19	44	33	32	27
sunflower seed	15	59	38	29	34	31
other oilseeds a	21	35	28	35	36	34
Total grains and oilseeds	5 061	10 740	10 783	8 678	12 998	12 638
Industrial crops						
Cotton lint and cottonseed b	542	254	693	828	2 587	2 870
Sugar cane (cut for crushing)	1 221	861	1 021	1 382	1 118	1 195
Wine grapes	1 243	1 446	887	711	736	878
Total industrial crops	3 005	2 560	2 601	2 921	4 441	4 943
Horticulture						
Table and dried grapes	240	202	286	260	273	263
Fruit and nuts (excl grapes)	3 499	2 758	2 871	2 950	3 222	3 452
Vegetables	3 165	3 363	3 012	3 023	3 300	3 588
Other horticulture	1 730	1 693	1 556	1 649	1 875	1 950
Total horticulture	8 633	8 015	7 725	7 882	8 669	9 253
Other crops nei c	1 683	2 858	1 711	1 695	1 670	1 645
Total crops	18 383	24 173	22 820	21 176	27 778	28 479

Continued

19 Gross value of farm and fisheries production *continued*

Australia

	2006–07 $m	2007–08 $m	2008–09 $m	2009–10 s $m	2010–11 f $m	2011–12 f $m
Livestock slaughterings						
Cattle and calves **d**	7 552	6 907	7 144	6 718	7 589	7 233
Cattle exported live **e**	436	446	538	550	482	384
Sheep **g**	380	400	428	499	544	621
Lambs **gh**	1 387	1 481	1 725	1 832	2 214	2 349
Sheep exported live	289	286	339	297	336	378
Pigs	944	902	895	903	798	808
Poultry	1 294	1 637	1 861	1 785	2 164	2 193
Total livestock slaughterings **k**	12 335	12 103	12 982	12 634	14 179	14 018
Livestock products						
Wool **i**	2 282	2 309	1 806	1 928	2 997	3 255
Milk **j**	3 178	4 572	3 988	3 371	3 913	3 999
Eggs	388	468	447	428	421	426
Honey and beeswax	70	64	86	90	92	94
Total livestock products	5 917	7 412	6 327	5 816	7 423	7 774
Total farm	36 634	43 688	42 129	39 626	49 380	50 271
Forestry products						
Logs	1 713	1 836	1 732	1 746	1 743	1 842
Fisheries products l						
Tuna	161	210	187	125	160	156
Salmonids **m**	291	302	326	369	414	443
Other fish **n**	397	413	390	403	402	398
Prawns	267	272	290	324	308	279
Rock lobster	461	426	415	368	372	387
Abalone	217	189	189	174	183	186
Scallops	29	33	26	26	27	31
Oysters	91	89	93	100	104	114
Pearls **r**	124	114	90	104	93	91
Other molluscs **o**	70	52	53	57	59	56
Other crustaceans	63	63	66	76	86	76
Total fish q	2 217	2 207	2 214	2 178	2 175	2 118

a Linseed, safflower seed 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 18–22 kg. **i** Shorn, dead and fellmongered wool and wool exported on skins. **j** Milk intake by factories and valued at the farm gate. **k** Total livestock slaughterings includes livestock disposals. **l** Value to fishermen of product landed in Australia. **m** Includes salmon and trout production. **n** Includes an estimated value of aquaculture. **o** Includes Northern Territory aquaculture production. **q** Also includes fish and aquaculture values not elsewhere included. **r** Includes the Northern Territory from 2009–10. **s** ABARES estimate. **f** ABARES forecast.

Note: The gross value of production is the value placed on recorded production at the wholesale prices realised in the marketplace. The point of measurement can vary between commodities. Generally the marketplace 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 marketplace. Prices used in these calculations exclude GST.

Sources: ABARES; Australian Bureau of Statistics.

20 Crop areas and livestock numbers
Australia

	unit	2006–07	2007–08	2008–09	2009–10 s	2010–11 f	2011–12 f
Crop areas							
Grains and oilseeds							
Winter crops							
barley	'000 ha	4 182	4 902	5 015	4 422	4 077	4 117
canola	'000 ha	1 052	1 277	1 693	1 712	1 642	1 705
chickpeas	'000 ha	284	306	338	429	546	303
field peas	'000 ha	384	293	300	285	292	269
lupins	'000 ha	736	752	577	692	568	504
oats	'000 ha	1 003	1 238	870	850	917	1 028
triticale	'000 ha	369	360	323	350	330	330
wheat	'000 ha	11 798	12 578	13 530	13 881	13 374	14 258
Summer crops							
maize	'000 ha	49	68	65	59	61	58
rice	'000 ha	20	2	8	19	89	113
grain sorghum	'000 ha	613	942	767	498	637	702
soybeans	'000 ha	14	15	42	31	19	20
sunflower seed	'000 ha	22	48	52	27	29	29
other oilseeds a	'000 ha	43	49	22	16	17	16
Total grains and oilseeds	'000 ha	21 191	23 237	24 084	23 793	23 574	24 416
Industrial crops							
Cotton	'000 ha	144	63	164	208	590	550
Sugar cane b	'000 ha	409	381	391	386	353	380
Winegrapes	'000 ha	163	166	157	152 e	153 e	154 e
Livestock numbers c							
Cattle							
beef	million	25.37	24.78	25.29	24.04	24.88	25.46
dairy	million	2.66	2.54	2.61	2.51	2.53	2.54
milking herd d	million	1.80	1.64	1.68	1.60	1.61	1.62
total	million	28.04	27.32	27.91	26.55	27.40	28.00
Sheep	million	85.7	76.9	72.7	68.0	69.5	70.6
Pigs	million	2.60	2.41	2.30	2.30	2.12	2.17

a Linseed and safflower seed. **b** Cut for crushing. **c** At 30 June. **d** Cows in milk and dry. **e** This figure is for grapes for wine only. Prior to 2008–09 this figure includes grapes used for winemaking and other purposes such as drying and table. **s** ABARES estimate. **f** ABARES forecast.
Sources: ABARES; Australian Bureau of Statistics.

21 Average farm yields

Australia

	unit	2006–07	2007–08	2008–09	2009–10 s	2010–11 f	2011–12 f
Crops							
Grains and oilseeds							
Winter crops							
barley	t/ha	1.02	1.46	1.59	1.78	2.29	1.97
canola	t/ha	0.54	0.95	1.09	1.12	1.30	1.33
chickpeas	t/ha	0.81	1.02	1.31	1.14	0.69	1.27
field peas	t/ha	0.37	0.91	0.79	1.25	1.49	1.63
lupins	t/ha	0.64	0.88	1.23	1.19	1.09	1.30
oats	t/ha	0.75	1.21	1.33	1.37	1.68	1.56
triticale	t/ha	0.54	1.25	1.12	1.56	2.07	1.77
wheat	t/ha	0.92	1.08	1.58	1.57	1.97	1.83
Summer crops							
maize	t/ha	4.92	5.69	5.82	5.56	5.75	5.37
rice	t/ha	8.15	8.15	8.18	10.39	9.04	8.97
grain sorghum	t/ha	2.09	4.02	3.51	3.03	3.36	3.24
soybeans	t/ha	2.51	2.34	1.89	1.90	2.47	2.21
sunflower seed	t/ha	0.96	1.51	1.07	1.54	1.51	1.50
Industrial crops							
Cotton (lint)	t/ha	2.10	2.12	2.01	1.86	1.52	2.01
Sugar cane (for crushing)	t/ha	89	86	80	80	77	79
Winegrapes	t/ha	8.7	11.1	10.7	10.1	9.8	10.7
Livestock							
Wool a	kg/sheep	4.09	4.30	4.29	4.26	4.37	4.41
Whole milk	L/cow	5 336	5 624	5 602	5 653	5 652	5 741

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

22 Volume of commodity exports
Australia

	unit	2006–07	2007–08	2008–09	2009–10	2010–11 f	2011–12 f
Farm							
Grains and oilseeds							
Winter crops							
barley **a**	kt	3 136	4 051	3 898	4 234	4 190	4 055
canola	kt	238	519	973	1 238	1 293	1 912
chickpeas	kt	244	218	467	459	364	309
lupins	kt	174	76	157	377	351	312
oats (unprepared)	kt	62	115	196	216	262	268
peas **b**	kt	248	142	118	163	267	232
wheat **c**	kt	11 196	7 408	13 410	13 725	18 287	19 849
Summer crops							
cottonseed	kt	104	18	37	106	287	830
rice	kt	491	78	32	88	266	651
grain sorghum	kt	46	251	1 368	487	482	467
other oilseeds **d**	kt	13	11	10	13	8	10
Total grains and oilseeds	kt	15 950	12 886	20 667	21 107	26 059	28 894
Industrial crops							
Raw cotton **e**	kt	487	266	260	395	549	965
Sugar	kt	3 719	3 493	3 268	3 506	2 429	2 476
Wine	ML	798	709	750	775	726	740
Meat and live animals for slaughter							
Beef and veal **gh**	kt	974	930	968	899	945	975
Live cattle **i**	'000	636	708	845	871	723	585
Lamb **g**	kt	150	163	156	157	157	162
Live sheep **i**	'000	4 138	4 069	4 064	3 055	2 900	3 100
Mutton **g**	kt	162	158	146	111	86	98
Pig meat **g**	kt	41	39	32	30	31	34
Poultry meat **g**	kt	28	30	37	28	29	30
Wool							
Greasy **js**	kt	402	343	314	308	344	328
Semi-processed	kt (gr. eq.)	82	67	62	49	44	48
Skins	kt (gr. eq.)	92	73	69	70	62	63
Total **js**	kt (gr. eq.)	576	483	445	428	450	440
Dairy products							
Butter **k**	kt	81	57	70	74	60	58
Cheese	kt	213	203	146	168	162	167
Casein	kt	12	9	8	10	5	5
Skim milk powder	kt	164	123	162	126	150	142
Whole milk powder	kt	94	82	116	91	107	112

Continued

22 Volume of commodity exports *continued*

Australia

	unit	2006–07	2007–08	2008–09	2009–10	2010–11 f	2011–12 f
Forest products							
Woodchips	kt	5 952	6 166	5 255	4 818	4 960	5 222
Fisheries products							
Tuna	kt	11.6	12.6	11.5	9.5	9.0	8.9
Other fish	kt	11.4	9.8	14.2	11.2	14.7	10.8
Prawns l							
headless	kt	0.1	0.4	0.5	0.5	0.5	0.5
whole	kt	6.0	3.9	4.0	3.8	4.3	4.3
Rock lobster							
tails	kt	1.5	1.0	0.8	0.6	0.5	0.5
whole	kt	8.3	8.1	8.4	7.0	6.7	6.6
Abalone							
fresh, chilled or frozen	kt	2.2	2.1	2.1	2.2	2.1	2.1
prepared or preserved	kt	1.7	1.4	1.2	1.4	1.3	1.3
Scallops m	kt	1.4	1.1	1.1	1.1	0.6	1.3
Mineral resources							
Energy							
Crude oil n	ML	15 965	15 975	16 588	18 064	19 755	20 718
LPG	ML	2 824	2 589	2 500	2 776	2 458	2 474
LNG os	Mt	14.332	13.678	15.410	17.866	19.336	19.741
Bunker fuel q	ML	2 156	2 169	2 217	2 285	2 246	2 163
Petroleum products	ML	1 752	1 807	1 164	850	621	622
Metallurgical coal	Mt	132.0	136.9	125.2	157.3	143.5	164.2
Thermal coal	Mt	111.6	115.1	136.4	135.0	138.3	152.6
Uranium (U_3O_8)	t	9 519	10 139	10 114	7 555	7 724	8 250

Continued

22 Volume of commodity exports *continued*

Australia

	unit	2006–07	2007–08	2008–09	2009–10	2010–11 f	2011–12 f
Mineral resources (continued)							
Metalliferous minerals and metals r							
Aluminium							
alumina	kt	15 056	15 739	16 395	16 653	16 065	16 819
aluminium (ingot metal)	kt	1 638	1 650	1 748	1 624	1 731	1 754
Copper							
ore and concentrate t	kt	1 493	1 694	1 797	1 928	1 823	1 984
refined	kt	290	296	361	271	376	387
Gold u	t	400	382	437	335	312	358
Iron and steel							
iron ore and pellets	Mt	257.4	294.3	323.5	389.9	406.0	436.5
iron and steel v	kt	2 648	2 131	1 741	1 549	1 885	1 586
Lead							
ores and concentrates	kt	422	308	381	491	480	475
refined	kt	215	193	261	186	207	225
bullion	kt	112	169	147	151	116	150
Manganese t	kt	4 667	5 105	3 226	5 648	5 828	5 974
Nickel us	kt	207	211	194	221	214	234
Titanium							
ilmenite concentrate w	kt	999	894	1 538	1 763	1 804	1 819
leucoxene concentrate	kt	123	56	20	18	27	31
rutile concentrate	kt	307	399	550	575	491	373
synthetic rutile s	kt	508	513	512	513	530	545
titanium dioxide pigment	kt	171	175	141	181	184	174
Refined silver	t	431	335	423	420	291	498
Tin u	t	1 867	3 079	4 159	6 031	5 811	6 003
Zinc							
ores and concentrates t	kt	1 948	2 323	2 101	2 271	3 229	3 306
refined	kt	374	411	451	425	472	507
Zircon concentrate x	kt	555	637	685	748	963	937
Other minerals							
Diamonds	'000 ct	24 632	16 528	16 279	10 355	9 900	11 200
Salt	kt	10 749	10 686	10 978	11 185	11 162	10 561

a Includes the grain equivalent of malt. **b** Includes field peas and cowpeas. **c** Includes the wheat equivalent of flour. **d** Includes soybeans, linseed, sunflower seed, safflower seed 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, and dairy spreads, all expressed as butter. **l** Excludes volume of other prawn products. **m** Includes crumbed scallops. **n** Includes condensate and other refinery feedstock. **o** 1 million tonnes of LNG equals about 1.31 billion cubic metres of gas. **q** International ships and aircraft stores. **r** Uranium is included with energy. **t** Quantities refer to gross weight of all ores and concentrates. **u** Quantities refer to total metallic content of all ores, concentrates, intermediate products and refined metal. **v** Includes all steel items in ABS, *Australian Harmonized Export Commodity Classification*, ch. 72, 'Iron and steel', excluding ferrous waste and scrap and ferroalloys. **w** Excludes leucoxene and synthetic rutile. **x** Data from 1991–92 refer to standard grade zircon only. **s** ABARES estimate. **f** ABARES forecast.

Sources: ABARES; Australian Bureau of Statistics, *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.

23 Value of commodity exports (fob)

Australia

	2006–07 $m	2007–08 $m	2008–09 $m	2009–10 $m	2010–11 f $m	2011–12 f $m
Farm						
Grains and oilseeds						
Winter crops						
barley a	833	1 496	1 321	1 093	1 162	1 080
canola	108	303	595	583	765	1 087
chickpeas	168	139	275	255	193	160
lupins	38	31	61	115	107	91
oats	20	37	64	53	48	64
peas b	80	61	62	60	96	85
wheat c	2 765	2 990	5 028	3 692	5 528	6 246
Summer crops						
cottonseed	31	8	19	46	113	362
rice	347	71	31	78	240	565
grain sorghum	13	76	405	116	121	119
other oilseeds d	22	27	27	24	19	30
Total grains and oilseeds	4 426	5 240	7 890	6 113	8 392	9 889
Industrial crops						
Raw cotton e	823	466	500	755	1 540	2 384
Sugar	1 510	1 006	1 338	1 887	1 296	1 287
Wine	2 990	2 683	2 428	2 172	1 979	2 010
Total	5 323	4 155	4 266	4 814	4 815	5 682
Other crops	3 337	3 632	4 730	4 329	4 123	3 874
Total crops	13 086	13 027	16 886	15 256	17 329	19 445
Meat and live animals for slaughter						
Beef and veal	4 634	4 190	4 857	3 953	4 290	4 193
Live cattle g	436	446	538	550	482	384
Lamb	748	803	925	916	1 036	1 096
Live sheep g	289	286	339	297	336	378
Mutton	458	443	482	433	403	464
Pig meat	142	128	124	109	102	107
Poultry meat	26	32	43	36	37	41
Total	6 732	6 329	7 308	6 293	6 688	6 662
Wool						
Greasy h	2 316	2 115	1 729	1 777	2 392	2 339
Semi-processed	393	362	281	238	250	280
Skins	356	319	312	291	382	426
Total h	3 065	2 796	2 322	2 307	3 024	3 046
Dairy products						
Butter	179	195	232	211	266	219
Cheese	824	968	796	715	737	741
Casein	113	125	107	88	55	50
Skim milk powder	505	533	553	358	490	452
Whole milk powder	275	392	475	296	386	402
Other dairy products	543	551	518	419	384	399
Total	2 439	2 764	2 682	2 088	2 319	2 264
Other livestock exports	2 577	2 611	2 836	2 632	2 657	2 707
Total livestock exports	14 814	14 500	15 147	13 319	14 687	14 679
Total farm exports	27 900	27 527	32 033	28 575	32 016	34 124

Continued

23 Value of commodity exports (fob) *continued*

Australia

	2006–07 $m	2007–08 $m	2008–09 $m	2009–10 $m	2010–11 f $m	2011–12 f $m
Forest products						
Woodchips	950	1 072	997	856	875	931
Pulp and paper products	949	1 005	964	992	1 056	1 117
Other	455	394	382	413	457	489
Total	2 355	2 471	2 343	2 261	2 387	2 537
Fisheries products						
Tuna	162	206	177	118	134	147
Other fish	118	119	157	140	136	118
Prawns i						
headless	2	6	8	5	4	4
whole	89	56	71	53	61	55
Rock lobster						
tails	102	63	53	35	30	32
whole	357	333	405	363	421	438
Abalone						
fresh, chilled or frozen	139	124	119	133	123	127
prepared or preserved	107	93	89	83	89	91
Scallops j	35	28	33	30	14	33
Pearls	314	264	366	244	244	239
Other fisheries products	69	49	52	43	76	73
Total	1 494	1 342	1 529	1 247	1 333	1 356
Total rural exports k						
Derived as sum of above	31 748	31 340	35 905	32 083	35 736	38 017
On balance of payments basis l	30 400	29 971	33 917	30 477	34 014	36 140
Mineral resources						
Energy						
Crude oil m	8 317	10 484	8 757	9 534	11 514	13 797
LPG	1 038	1 182	1 044	1 105	1 100	1 315
LNG	5 222	5 854	10 079	7 789	9 636	10 038
Bunker fuel n	1 295	1 457	1 537	1 315	1 545	1 745
Other petroleum products	1 098	1 323	788	566	487	678
Metallurgical coal	15 039	16 038	36 813	24 526	31 924	41 734
Thermal coal	6 758	8 365	17 885	11 886	13 999	18 320
Uranium (U_3O_8)	660	887	990	751	844	968
Total						
derived as sum of above	39 427	45 591	77 892	57 472	71 050	88 594
on balance of payments basis (excl. bunker fuel)	37 569	43 488	75 664	55 741	69 044	86 442
Metalliferous minerals and metals						
Aluminium						
bauxite s	108	206	192	178	212	229
alumina	6 243	5 809	6 015	4 969	5 364	7 095
aluminium (ingot metal)	5 650	4 967	4 724	3 838	4 250	4 494
Copper o						
ore and concentrate	3 914	4 151	3 618	4 526	5 296	6 407
refined	2 612	2 579	2 245	1 980	3 200	3 898

Continued

23 Value of commodity exports (fob) *continued*

Australia

	2006–07 $m	2007–08 $m	2008–09 $m	2009–10 $m	2010–11 f $m	2011–12 f $m
Mineral resources (continued)						
Metalliferous minerals and metals (continued)						
Gold **o**	10 320	10 903	16 146	12 996	13 642	18 145
Iron and steel						
iron ore and pellets	15 512	20 511	34 239	34 515	56 004	65 332
iron and steel	1 743	1 562	1 363	1 120	1 326	1 139
Lead **o**						
ores and concentrates	855	757	645	998	1 030	696
refined	457	674	560	425	493	587
bullion	268	595	432	409	303	391
Manganese						
ore **s**	482	1 532	1 406	1 395	1 448	1 538
Titanium						
ilmenite concentrate **q**	113	104	171	197	198	200
leucoxene concentrate	35	15	12	11	17	17
rutile concentrate	259	277	335	382	369	305
synthetic rutile **s**	361	305	258	269	315	344
titanium dioxide pigment	408	375	396	448	482	436
Nickel **s**	8 469	5 655	2 717	3 875	4 189	4 460
Refined silver	221	187	245	254	257	543
Tin **o**	25	42	70	101	134	126
Zinc **o**						
ores and concentrates	2 590	2 031	935	1 237	1 864	1 999
refined	1 707	1 319	923	977	982	1 126
Zircon concentrate **r**	478	421	540	370	532	442
Total	62 830	64 979	78 188	75 472	101 909	119 948
Other minerals						
Diamonds **s**	726	625	676	471	392	434
Salt	239	232	237	247	251	237
Other	4 754	6 207	4 765	5 864	8 424	9 116
Total mineral resources exports	107 976	117 635	161 758	139 526	182 025	218 328
Total commodity exports						
Derived as sum of above	139 724	148 975	197 663	171 610	217 762	256 346
On balance of payments **t**	137 080	146 148	194 138	168 689	214 494	252 723

a Includes the grain equivalent of malt. **b** Field peas and cowpeas. **c** Includes the wheat equivalent of flour. **d** Includes soybeans, linseed, sunflower seed, safflower seed 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** Other prawn products included in other fisheries products. **j** Includes crumbed scallops. **k** Sum of farm, forest and fisheries products. **l** 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 ABARES 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. **m** Includes condensate and other refinery feedstock. **n** International ships and aircraft stores. **o** 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 refer to standard grade zircon only. **t** As derived in table 6. **s** ABARES estimate. **f** ABARES forecast.

Sources: ABARES; Australian Bureau of Statistics, *International Trade, Australia,* cat. no. 5465.0, Canberra; Department of Resources, Energy and Tourism.

24 Value of imports of selected commodities
Australia

	2005–06 $m	2006–07 $m	2007–08 $m	2008–09 $m	2009–10 $m
Fisheries products					
Edible fisheries products					
fresh, chilled or frozen fish					
canned fish	229	244	257	331	257
smoked, dried or salted fish	36	53	45	50	46
other fish preparations	64	88	87	107	106
shellfish [a]	426	483	417	458	494
total	1 028	1 184	1 132	1 283	1 246
Non-edible fisheries products					
pearls	159	182	166	321	171
other	78	101	99	107	98
total	237	283	266	427	269
Total fisheries products	1 266	1 467	1 398	1 710	1 515
Forest products					
sawnwood	419	418	492	405	429
wood-based panels	228	276	284	271	250
pulp and paper products	2 839	3 007	3 049	3 130	2 916
other [b]	530	569	586	653	604
Total forest products	4 017	4 271	4 412	4 459	4 200
Mineral and energy resources					
aluminium (ingot metal)	20	11	10	10	27
diamonds	403	397	444	417	442
ferroalloys	123	116	154	181	118
gold (refined and unrefined)	4 800	5 309	7 311	11 250	7 739
ingot steel	2 075	2 479	2 225	3 191	1 889
iron ore	222	338	311	269	259
petroleum					
crude oil [c]	12 822	13 360	17 149	14 727	15 031
natural gas	152	800	724	2 166	1 219
petroleum products [d]	8 608	7 784	12 730	13 129	11 296
phosphate rock	42	32	80	193	10
phosphates	322	267	778	549	347
silver	33	98	80	223	107
other	300	707	483	794	1 183
Total mineral and energy resources	29 922	31 698	42 479	47 098	39 666

a Includes all crustaceans and molluscs, including canned. **b** Includes roundwood, other processed wood and minor forest products.
c Includes condensate and other refinery feedstock. **d** Includes LPG.
Sources: ABARES; Australian Bureau of Statistics, *International Trade, Australia,* cat. no. 5465.0, Canberra; Department of Agriculture, Fisheries and Forestry.

25 Food exports by level of transformation

Australia

	2004–05 $m	2005–06 $m	2006–07 $m	2007–08 $m	2008–09 $m	2009–10 $m
Minimally transformed						
Live animals except fish	594	668	752	761	924	924
Fish or shellfish	584	657	632	647	747	650
Horticulture						
Vegetables	155	149	147	137	152	150
Fruit and nuts	462	482	451	433	563	472
Total	617	631	598	571	716	622
Grains a	4 672	4 305	3 329	4 221	6 383	4 632
Oilseeds	492	412	167	346	644	657
Food nec	46	49	54	41	49	43
Substantially and elaborately transformed						
Meat						
Meat processing	6 902	6 673	7 048	6 506	7 411	6 313
Poultry processing	20	21	26	32	43	36
Bacon, ham and smallgoods	107	91	43	33	47	54
Total	7 029	6 785	7 117	6 571	7 501	6 403
Seafood	689	606	548	440	417	357
Dairy						
Milk and cream processing	1 108	1 210	1 089	1 258	1 354	880
Ice cream	42	41	42	37	31	31
Cheese	877	837	824	968	796	715
Other dairy products	458	481	482	499	497	440
Total	2 485	2 569	2 438	2 763	2 679	2 066
Fruit and vegetables	511	555	574	568	575	523
Oil and fat	151	150	169	239	303	289
Flour mill and cereal food						
Flour mill products	223	230	269	315	419	365
Cereal food and baking mix	219	248	372	287	390	445
Total	441	478	642	602	809	811
Bakery products						
Bread, cake and pastry	18	26	27	26	25	26
Biscuit	114	107	111	118	127	135
Total	132	132	137	144	152	161
Other food						
Sugar a	1 127	1 503	1 551	1 035	1 374	1 924
Confectionery	259	208	215	237	269	260
Food nec	1 080	1 099	1 142	1 094	1 422	1 424
Total	2 467	2 809	2 907	2 366	3 065	3 607
Beverage and malt						
Soft drink, cordial and syrup	46	42	39	38	45	55
Beer and malt	241	218	273	335	447	406
Wine	2 721	2 768	2 894	2 700	2 493	2 188
Spirit	92	91	89	86	105	101
Total	3 100	3 120	3 294	3 159	3 091	2 750
Total food and beverage						
Minimally transformed	7 006	6 722	5 532	6 586	9 463	7 528
Substantially transformed	16 663	16 919	17 530	16 528	18 243	16 606
Elaborately transformed	341	286	297	324	350	362
Total	24 011	23 927	23 359	23 439	28 056	24 495

a Includes ABARES estimates where ABS confidentiality restrictions apply.

Source: Australian Bureau of Statistics, *International Trade, Australia,* cat. no. 5465.0, Canberra; ABARES.

26 Food imports by level of transformation

Australia

	2004–05 $m	2005–06 $m	2006–07 $m	2007–08 $m	2008–09 $m	2009–10 $m
Minimally transformed						
Live animals except fish	1	1	1	1	2	1
Fish or shellfish	46	47	57	65	67	72
Horticulture						
Vegetables	32	41	45	53	49	58
Fruit and nuts	159	191	194	216	225	262
Total	191	233	238	269	274	320
Grains	1	1	2	2	2	3
Oilseeds	25	20	78	49	49	36
Food nec	116	140	176	188	180	229
Substantially and elaborately transformed						
Meat						
Meat processing	345	290	446	381	525	497
Poultry processing	0	0	0	0	0	0
Bacon, ham and smallgoods	41	43	42	50	68	82
Total	387	333	489	431	593	579
Seafood	928	998	1 151	1 095	1 249	1 201
Dairy						
Milk and cream processing	45	45	40	67	69	66
Ice cream	29	30	40	37	39	40
Cheese	248	292	302	377	365	360
Other dairy products	62	66	98	176	157	150
Total	384	432	480	656	631	615
Fruit and vegetables	1 027	1 043	1 233	1 390	1 559	1 367
Oil and fat	376	417	481	489	578	485
Flour mill and cereal food						
Flour mill products	73	57	34	66	83	66
Cereal food and baking mix	285	305	325	462	576	577
Total	358	362	358	527	659	643
Bakery products						
Bread, cake and pastry	120	138	163	175	197	191
Biscuit	177	199	254	267	297	305
Total	297	337	417	442	493	496
Other food						
Sugar	18	19	20	22	44	71
Confectionery	307	333	371	438	518	525
Food nec	1 038	1 075	1 186	1 270	1 492	1 450
Total	1 363	1 427	1 577	1 731	2 054	2 046
Beverage and malt						
Soft drink, cordial and syrup	537	571	656	697	791	798
Beer and malt	99	112	126	161	226	212
Wine	200	248	334	454	502	477
Spirit	390	414	465	491	530	538
Total	1 226	1 345	1 582	1 802	2 050	2 026
Total food and beverage						
Minimally transformed	379	441	551	574	574	661
Substantially transformed	6 119	6 435	7 430	8 167	9 437	9 024
Elaborately transformed	228	259	338	396	429	434
Total	6 725	7 135	8 319	9 138	10 441	10 119

Sources: Australian Bureau of Statistics, *International Trade, Australia*, cat. no. 5465.0, Canberra; ABARES.

27 Total food exports, by selected destination

Australia

	2004–05 $m	2005–06 $m	2006–07 $m	2007–08 $m	2008–09 $m	2009–10 $m
Canada	447	425	423	402	380	335
China	1 158	786	664	917	1 178	1 426
Chinese Taipei	644	704	595	574	671	625
Egypt	223	471	151	174	315	266
Germany	143	172	123	162	153	109
Hong Kong, China	710	789	827	857	1 082	997
Indonesia	1 234	1 442	1 566	1 702	2 652	2 056
Japan	5 478	4 916	4 752	4 553	5 517	4 277
Korea, Rep. of	1 404	1 634	1 850	1 655	1 873	1 783
Malaysia	902	750	801	799	1 231	883
New Zealand	1 058	1 092	1 203	1 303	1 406	1 344
Philippines	339	285	240	308	563	318
Saudi Arabia	585	777	568	1 144	1 020	566
Singapore	560	622	650	712	792	722
Thailand	297	385	305	393	626	424
United Arab Emirates	276	419	284	445	567	528
United Kingdom	1 202	1 175	1 209	1 136	1 005	784
United States	3 231	3 006	3 058	2 552	3 054	2 414
Other	4 119	4 078	4 092	3 652	3 971	4 639
Total	24 011	23 927	23 359	23 439	28 056	24 495

Sources: Australian Bureau of Statistics, *International Trade, Australia,* cat. no. 5465.0, Canberra; ABARES.

28 Total food imports, by selected source

Australia

	2004–05 $m	2005–06 $m	2006–07 $m	2007–08 $m	2008–09 $m	2009–10 $m
Brazil	92	78	120	129	150	110
Canada	209	176	254	222	271	237
China a	380	416	552	634	776	733
France	165	194	224	279	290	281
India	118	122	144	160	179	168
Indonesia	117	117	140	163	207	198
Ireland	402	468	510	536	559	586
Italy	328	364	427	438	498	467
Malaysia	227	250	279	361	468	402
Netherlands	109	137	169	184	227	201
New Zealand	1 218	1 359	1 472	1 734	1 746	1 877
Papua New Guinea	31	34	38	36	45	44
Singapore	174	164	127	160	207	196
Spain	129	144	194	174	154	187
Thailand	404	450	483	554	713	698
United Kingdom	288	272	298	299	318	334
United States	595	631	721	810	1 006	902
Vietnam	219	245	279	251	299	282
Other	1 522	1 512	1 891	2 013	2 329	2 216
Total	6 725	7 135	8 319	9 138	10 441	10 119

a Excludes imports from Hong Kong.

Sources: Australian Bureau of Statistics, *International Trade, Australia*, cat. no. 5465.0, Canberra; ABARES.

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