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ABARES

Agricultural commodities

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2017 locations and dates

South Australia	Renmark	3 May
Northern Territory	Darwin	5 July
Victoria	Ararat	26 July
Tasmania	Devonport	23 August
Western Australia	Kununurra	20 September
Queensland	Toowoomba	11 October
New South Wales	Tamworth	15 November

Economic overview



Economic overview

Matthew Howden and Kirk Zammit

- World economic growth is assumed to increase by 3.4 per cent in 2017 and 3.5 per cent in 2018.
- Stronger economic growth is assumed for China, Japan and the eurozone, three of Australia's major agricultural export markets.
- Recent strength of the Australian dollar and strong competition in some of Australia's export markets could present challenges for some industries.
- In 2017–18 the value of Australian farm exports is forecast to be \$45 billion, down from 2016–17.

Global economic outlook

World economic growth is assumed to increase by 3.4 per cent in 2017 and 3.5 per cent in 2018. These growth assumptions have been revised up from *Agricultural commodities: June quarter 2017* by 0.1 percentage points. This revision is underpinned by stronger than expected growth in China, Japan and the eurozone in the June quarter 2017.

Global economic conditions have improved noticeably since the second half of 2016. This was initially led by an increase in global trade but has extended to stronger domestic activity. Growth in private consumption and business investment is evident across many advanced economies and some developing economies, such as South-East Asia.

Leading indicators suggest that momentum in global growth is accelerating. Growth in merchandise trade volumes increased by 4 per cent in the three months to June 2017 compared with a year earlier. Industrial production also improved by 4 per cent over the same period. Business and consumer sentiment is also strong.

Despite the upward revision of global growth assumptions, downside risks to the outlook remain. Heightened tensions on the Korean peninsula could reduce consumer spending and business investment in the region. In the United States, uncertainty around infrastructure investment and the implementation of fiscal policy is a risk to growth. The potential adoption of inward-looking policies that could disrupt trade and global growth also remains a risk to the outlook.

World energy prices remain subdued. Rising oil output in the United States and some OPEC member countries led to a decline in oil prices over the first half of 2017. Over the eight months to August 2017, the price of West Texas Intermediate crude oil fell by 12 per cent. In 2017–18 oil prices are assumed to increase only modestly, provided OPEC countries continue to adhere to production restrictions for the remainder of 2017. A sharp fall in commodity prices, particularly for crude oil, risks derailing the momentum in global economic growth by reducing growth prospects in developing economies and complicating monetary policy adjustment in advanced economies.

Key macroeconomic assumptions, 2015 to 2018

World	unit	2015	2016	2017 a	2018 a
Economic growth					
OECD	%	2.1	1.7	2.0	1.9
United States	%	2.6	1.6	2.2	2.2
Japan	%	1.1	1.0	1.4	1.0
Eurozone	%	2.0	1.7	1.8	1.6
– Germany	%	1.5	1.8	1.7	1.6
– France	%	1.3	1.2	1.5	1.6
– Italy	%	0.8	0.9	1.0	1.0
United Kingdom	%	2.2	1.8	1.5	1.4
Korea, Rep. of	%	2.8	2.8	2.7	2.8
New Zealand	%	3.1	4.0	3.3	3.3
non-OECD	%	4.2	4.1	4.3	4.7
– non-OECD Asia	%	6.7	6.4	6.3	6.3
South-East Asia b	%	4.8	4.9	5.0	5.2
China c	%	6.9	6.7	6.7	6.4
Taiwan	%	0.7	1.4	2.0	2.0
Singapore	%	1.9	2.0	2.4	2.5
India	%	7.5	7.9	7.0	7.5
– Latin America	%	0.1	– 1.0	1.1	2.0
Russian Federation	%	– 2.8	– 0.2	1.4	1.4
Ukraine	%	– 9.8	2.3	2.0	3.2
Eastern Europe	%	4.7	3.0	3.0	3.3
World d	%	3.4	3.1	3.4	3.5
Inflation					
United States	%	0.1	1.3	1.9	2.0
Interest rates					
US prime rate e	%	3.3	3.5	4.1	4.7
Australia					
	unit	2014–15	2015–16	2016–17 a	2017–18 a
Economic growth	%	2.4	2.7	1.9	2.8
Inflation	%	1.7	1.4	1.7	2.0
Interest rates g	%	4.4	4.0	3.8	3.9
Australian exchange rates					
A\$/US\$		0.84	0.73	0.75	0.77
TWI for A\$ h		67	62	65	65

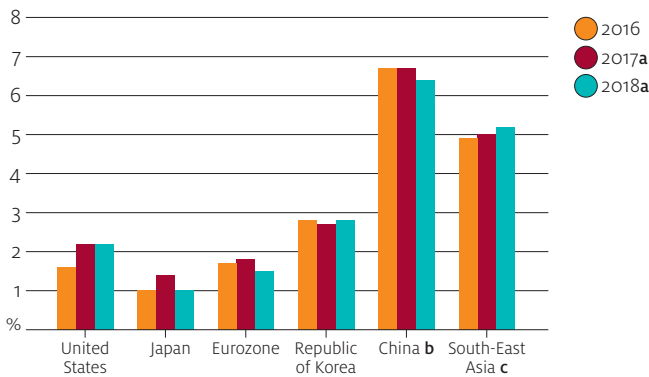
a ABARES assumption. **b** Indonesia, Malaysia, the Philippines, Thailand and Vietnam. **c** Excludes Hong Kong. **d** Weighted using 2016 purchasing-power-parity valuation of country gross domestic product by the International Monetary Fund. **e** Commercial bank prime lending rates in the US. **g** Large business weighted-average variable rate on credit outstanding. **h** Base: May 1970 = 100.

Sources: ABARES; Australian Bureau of Statistics; Indian Ministry of Statistics and Programme Implementation; International Monetary Fund; Reserve Bank of Australia; US Bureau of Labor Statistics; US Federal Reserve

Stronger growth in Australia's major agricultural export markets

Economic growth in Australia's major agricultural markets is assumed to be stronger in 2017 and 2018 than assumed in *Agricultural commodities: June quarter 2017*. Recent economic performance in China and Japan, two of Australia's largest agricultural export markets, has surpassed the assumptions reported in June. The outlooks for the Republic of Korea and South-East Asia have improved as a result of increased global trade activity.

Economic growth in Australia's main trading partners, 2016 to 2018



a ABARES assumption. b Excludes Hong Kong. c Indonesia, Malaysia, the Philippines, Thailand and Vietnam. Sources: ABARES; International Monetary Fund

Economic growth assumptions for China have been revised up to 6.7 per cent in 2017 and 6.4 per cent in 2018. This revision assumes a more gradual slowdown in the Chinese economy due to government action to maintain stable growth in the lead-up to the 19th National Congress of the Communist Party of China (expected to be held in October 2017). Government-led infrastructure investment, strong housing construction and a pick-up in manufacturing have contributed positively to industrial-sector output growth. Growth in the services sector also remains high.

Economic growth assumptions for Japan have been revised up to 1.4 per cent in 2017 and 1.0 per cent in 2018. This revision follows a sharp acceleration in economic growth in the June quarter 2017, led by a 1.0 per cent increase in private consumption over the same period. This was the fastest rate of growth since the government raised the consumption tax in October 2014. Strong growth in private consumption was assisted by the prevailing tight labour market conditions. The unemployment rate in July 2017 was 2.8 per cent, well below the five-year average of 3.5 per cent. The labour force participation rate has been rising since the beginning of 2013, underpinned by government structural reforms. In July 2017 the female labour force participation rate was 51.3 per cent, the highest in over 25 years. Increasing workforce participation is important for future income growth due to the ageing population.

The economic growth assumption for the eurozone has been increased to 1.8 per cent in 2017. This is an upward revision of 0.3 percentage points and is largely due to faster than anticipated growth in France and Germany. The increase in economic activity has been broad based. Spending on private investment has improved because of favourable financial conditions and increased corporate profitability. Private consumption growth has also increased, assisted by ongoing gradual improvement in the labour market. These factors are assumed to continue into 2018 and underlie the growth assumption of 1.6 per cent.

Economic growth in the United States is assumed to be 2.2 per cent in 2017 and 2018. Economic conditions are developing largely in line with the growth assumptions reported in *Agricultural commodities: March quarter 2017*. Tight labour market conditions have been supporting private consumption growth. The unemployment rate remains comparatively low and the labour force participation rate has been increasing since 2015. Wage growth remains low but is expected to increase gradually over 2017 and 2018.

Economic growth in the Republic of Korea is assumed to be 2.7 per cent in 2017 and 2.8 per cent in 2018. Growth prospects have improved in recent months, reflecting increased trade activity and a more stable political environment following the presidential election in June. Demand for Korean exports is assumed to rise in response to the recovery in global growth and favourable economic prospects in China and the United States, its two largest trading partners. The rise in trade is expected to stimulate consumer spending and private investment. Domestic demand may be further bolstered by record low interest rates and the government's job creation agenda.

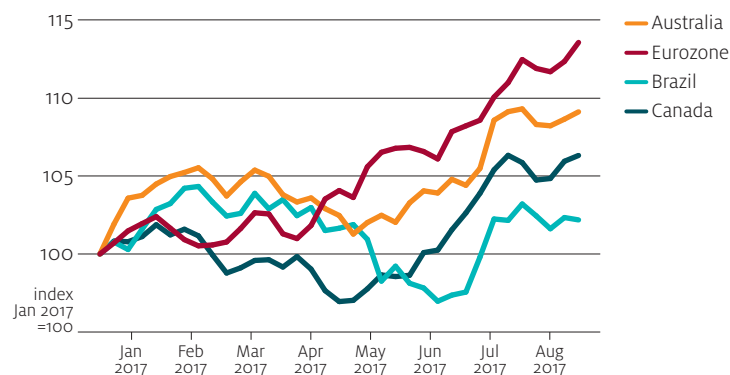
The economic outlook for South-East Asia is expected to remain strong, with assumed growth at 5.0 per cent in 2017 and 5.2 per cent in 2018. These assumptions are consistent with robust domestic demand and increased export volumes in the first half of 2017. Higher commodity prices compared with the lows of 2015–16 and improved financial market stability have lifted profits and wages. This is expected to encourage consumer spending and private investment through the remainder of 2017 and into 2018. In addition, increased tax receipts have allowed regional governments to implement welfare and infrastructure investment programs. These are expected to support growth in the short to medium term and improve productivity in the longer term.

Broad-based weakness in the US dollar

In the eight months to August 2017 the US dollar depreciated by 8 per cent on a trade-weighted basis. The reasons for this downward movement are varied. They include an adjustment to market participant expectations for economic growth, and inflation and interest rate increases in the United States relative to other economies. Difficulties faced by the US administration in passing reforms, a more stable political environment in the European Union following several elections and positive growth signals in Asia have also influenced the direction of the US dollar.

The US dollar has depreciated against the currencies of major agricultural exporters, including Australia. Over the eight months to August 2017 the euro rose by 14 per cent, the Canadian dollar by 6 per cent and the Brazilian real by 2 per cent.

Selected currencies against the US dollar, January 2017 to August 2017



Source: ABARES; US Federal Reserve

Australian economy

In 2016–17 economic growth slowed to 1.9 per cent, down from 2.7 per cent in 2015–16. The slowdown was largely because of poor climatic conditions disrupting economic activity in the September and June quarters. In 2017–18 the economy is expected to recover and grow at 2.8 per cent.

Heavy rainfall during the September quarter 2016 disrupted residential construction activity. In the June quarter Tropical Cyclone Debbie caused temporary disruptions to metallurgical coal exports, tourism and agricultural production. In 2017–18 economic conditions are expected to improve, supported by a rise in private consumption and an increase in export volumes—particularly of liquefied natural gas. Mining investment peaked in 2012–13 and has since fallen, detracting from GDP growth. However, much of the adjustment in mining investment is now complete, reducing its negative effect on economic growth.

Domestic and international factors present risks to Australia's economic outlook. Domestically, slower than expected growth in private consumption attributed to low income growth and rising utility prices could put downward pressure on GDP growth. In contrast, China's stronger than expected growth since the beginning of 2017 is an upside risk to Australia's assumed growth. The increase in Chinese construction and manufacturing activity since mid 2016 is expected to strengthen demand for Australia's resource exports, particularly metallurgical coal and iron ore.

Inflation

Inflation in June 2017 was 1.9 per cent, just below the Reserve Bank of Australia's target band of between 2.0 per cent and 3.0 per cent. In 2017–18 inflation is expected to increase to 2.0 per cent, driven by increasing utility prices and tobacco excise. Increases to award rates and the minimum wage on 1 July 2017 are also expected to exert upward pressure on market prices. The rise in inflation is assumed to be constrained by strong retail competition and a higher assumed exchange rate.

Australian dollar

Over the eight months to August 2017 the Australian dollar appreciated 9 per cent against the US dollar. This was in response to stronger growth prospects in the region, particularly China, and uncertainty around US policy direction. If sustained the appreciation could negatively affect farm incomes, particularly for producers exporting lower-value bulk commodities that are in abundant supply globally.

The assumed value of the Australian dollar in 2017–18 has been revised up to US77 cents from the US73 cents assumed in *Agricultural commodities: June quarter 2017*. This revision is largely attributed to the high value of the dollar at the start of the 2017–18 financial year and expected stronger demand by China for Australian commodities.

The Australian dollar has also appreciated against the currencies of its major agricultural export markets, such as the Indonesian rupiah (9 per cent), Chinese yuan (5 per cent) and Japanese yen (3 per cent). This could put downward pressure on export demand for Australian agricultural commodities in favour of lower-priced alternatives.

Australian agriculture overview

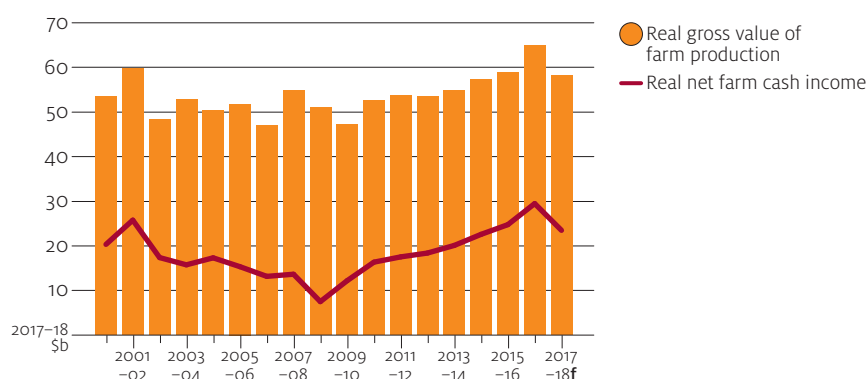
Agriculture supported Australian economic growth in 2016–17

In 2016–17 the gross value of farm production increased by 12 per cent to a record of \$63.7 billion. The rise was driven by record winter crop production and relatively high prices for livestock and livestock products.

The latest national accounts data, released by the Australian Bureau of Statistics on 6 September 2017, showed that in 2016–17 agricultural value-added directly contributed 0.5 percentage points to real growth in Australia's gross domestic product (GDP) of 1.9 per cent. This is significant given that agricultural value-added represents only about 2.6 per cent of GDP.

In 2016–17 real net farm cash income increased by 19 per cent to \$29 billion. Its steady rise since 2008–09 reflects the increase in the gross value of agricultural production and, more recently, a favourable economic environment. This includes the generally lower Australian dollar, low interest rates, and low fuel and fertiliser import costs. Strong growth in farm income has enabled investment in land and machinery, which is expected to contribute to future productivity growth.

Farm gross value of production and net farm cash income, Australia, 2000–01 to 2017–18



f ABARES forecast.

Source: ABARES; Australian Bureau of Statistics

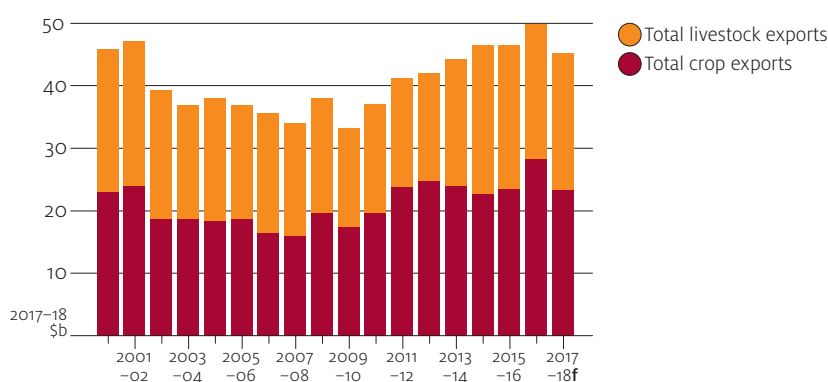
Export growth in 2016–17 driven by crops

The total value of farm exports has been rising at an average rate of 6 per cent a year since 2009–10, making this the fastest period of growth in over 15 years. Recovery from recurring dry conditions from the mid 1990s to 2010 has contributed to this growth.

In 2016–17 the total value of farm exports increased by 7 per cent, reflecting a sharp increase in the volume of crop exports, particularly grains, oilseeds and pulses. This is a shift from the three previous years, when growth in value of farm exports was driven by rising prices—particularly for livestock and livestock products.

In 2016–17 the Australian farm export unit returns index is estimated to have declined by 0.8 per cent. The index is a measure of average export price growth received by farmers. In the three years to 2015–16, average annual growth in the index was almost 6 per cent. The slight fall in 2016–17 was due to a sharp decline in export prices for grains, particularly wheat and barley. This was partially offset by higher export prices for canola, chickpeas, sugar, livestock and livestock products. In 2016–17 a slightly stronger Australian dollar also negatively affected farm export returns compared with 2015–16, reducing returns to farmers for commodities denominated in US dollars.

Australian agricultural exports, 2000–01 to 2017–18



^f ABARES forecast.

Source: ABARES; Australian Bureau of Statistics

Dry winter to affect crop and pasture growth in early 2017–18

In 2017–18 the gross value of farm production is forecast to be almost 9 per cent lower than in 2016–17. This is mainly due to a forecast decline of 39 per cent in total winter crop production as a result of an expected fall in yields from the record highs achieved in 2016–17.

The outlook for agricultural production in 2017–18 has been affected by drier and warmer than average seasonal conditions through June and July. Timely rainfall across southern Australia in August improved soil moisture levels and enhanced the outlook for crops and pasture growth. However, these rainfall events are likely to have arrived too late to benefit winter crop production in the north-west cropping region in New South Wales, the south-west cropping region in Queensland and the northern cropping region in Western Australia.

See ‘Seasonal conditions and climate influences’ for more on the climatic conditions affecting Australian agriculture.

Export earnings forecast to decline in 2017–18

In 2017–18 the value of farm exports is forecast to fall by 7 per cent to \$45 billion. Export earnings for livestock and livestock products are forecast to rise by 4 per cent to \$22 billion in 2017–18 from \$21 billion in 2016–17. This is expected to be more than offset by a 16 per cent fall in export earnings for crops, down from \$28 billion in 2016–17 to \$23 billion in 2017–18.

Livestock

In 2017–18 rising income growth in Australia’s major export markets is assumed to support demand for Australian meat, wool and dairy products. The projected 4 per cent increase in livestock export earnings is due largely to a forecast increase in export volumes. Prices are expected to remain relatively high despite increasing competition, particularly for beef.

Export earnings are forecast to rise for wool (up 13 per cent), dairy (up 7 per cent) and lamb (up 2 per cent). Partly offsetting these increases are forecast decreases for beef and veal (down 1 per cent), live feeder/slaughter cattle (down 3 per cent) and mutton (down 1 per cent).

Crops

A forecast fall in crop export volumes, particularly wheat and barley, is the principal driver behind the 16 per cent forecast decline in the total value of crop exports in 2017–18. Prices for cereal grains are forecast to remain historically low in 2017–18. Lower global supplies of coarse grains and reduced production of high-quality wheat in the United States are expected to provide modest support to prices.

Export earnings for crops are forecast to decrease in 2017–18 for wheat (down 16 per cent), coarse grains (down 23 per cent), sugar (down 12 per cent), canola (down 45 per cent) and chickpeas (down 57 per cent). Partly offsetting these decreases are forecast increases for wine (up 6 per cent) and cotton (up 19 per cent).

Fisheries

In 2017–18 export earnings for fisheries are forecast to remain unchanged at around \$1.4 billion. Export earnings for tuna are forecast to rise (up 11 per cent) as a result of higher total allowable catch lifting domestic production. The value of abalone exports is forecast to rise by 7 per cent. Offsetting these increases are forecast decreases in the value of salmonids and other exported fish (down 14 per cent in total) and prawns (down 6 per cent). Export earnings for rock lobster are forecast to remain relatively unchanged at around \$680 million.

Major indicators of Australia's agriculture and natural resources based sector

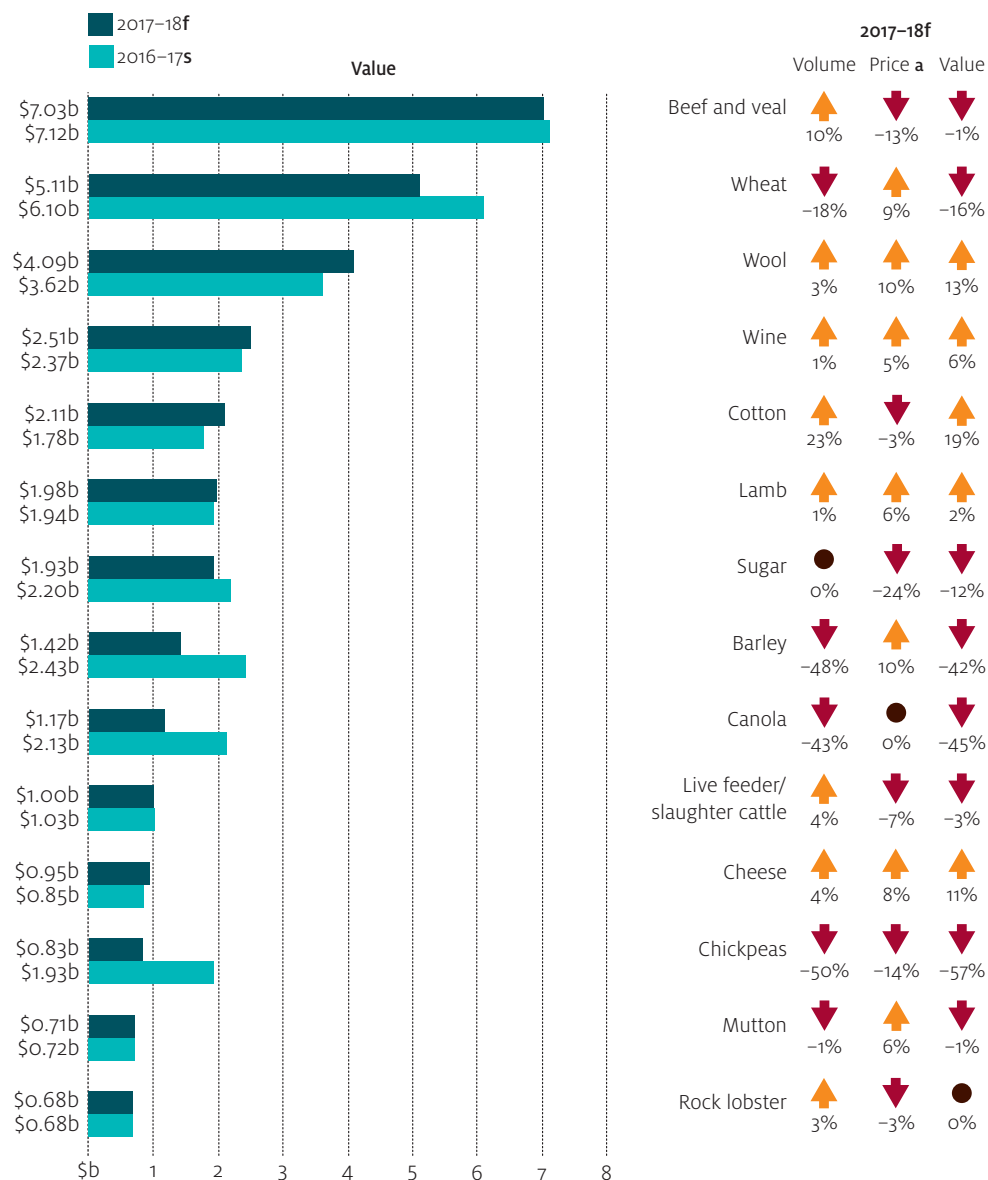
Category		2012–13	2013–14	2014–15	2015–16	2016–17 s	2017–18 f	% change
Exchange rate	A\$/US\$	1.03	0.92	0.84	0.73	0.75	0.77	2.7
Australian export unit returns a								
Farm	index	100.0	107.7	114.9	120.5	119.6	117.7	– 1.6
Value of exports								
Farm	A\$m	38,278	41,373	44,208	44,802	48,780	45,192	– 7.4
– crops	A\$m	22,558	22,318	21,574	22,529	27,748	23,304	– 16.0
– livestock	A\$m	15,720	19,055	22,633	22,274	21,032	21,888	4.1
Fisheries products	A\$m	1,175	1,304	1,440	1,542	1,438	1,438	0.0
Gross value of production b								
Farm	A\$m	48,692	51,357	54,425	56,673	63,701	58,227	– 8.6
– crops	A\$m	28,592	28,550	27,422	27,880	35,104	29,406	– 16.2
– livestock	A\$m	20,099	22,807	27,002	28,793	28,597	28,821	0.8
Forestry and fisheries	A\$m	3,902	4,314	4,871	5,289	5,367	5,311	– 1.0
– forestry	A\$m	1,516	1,840	2,025	2,270	2,489	2,405	– 3.4
– fisheries	A\$m	2,386	2,473	2,846	3,019	2,878	2,906	1.0
Volume of farm production c	index	119.7	122.2	122.3	120.8	132.3	122.0	– 7.8
– crops	index	133.2	131.9	125.0	130.1	166.5	136.0	– 18.3
– livestock	index	104.9	111.3	118.1	111.0	103.7	108.5	4.6
Production area and livestock numbers								
Crop area (grains and oilseeds)	'000 ha	23,856	22,583	22,934	21,362	23,890	23,567	– 1.4
Sheep	million	75.5	72.6	70.9	67.5	70.9	73.2	3.2
Cattle	million	29.3	29.1	27.4	25.0	25.7	26.7	3.9
Farm costs	A\$m	37,194	37,957	38,441	38,515	40,464	40,527	0.2
Net cash income d	A\$m	16,694	18,745	21,428	23,684	28,862	23,437	– 18.8
Net value of farm production e	A\$m	11,497	13,400	15,984	18,158	23,237	17,700	– 23.8
Farmers' terms of trade g	index	95.0	98.2	103.9	109.2	111.2	108.0	– 2.9
Employment								
Agriculture, forestry and fishing	'000	301	311	318	321	302	na	na
Australia	'000	11,385	11,450	11,654	11,882	12,036	na	na

a Base: 2012–13 = 100. b For a definition of the gross value of farm production see Table 13. c Chain-weighted basis using Fisher's ideal index with a reference year of 1997–98 = 100. d Gross value of farm cash income less total cash costs. e Gross value of farm production less total farm costs.

f ABARES forecast. g Ratio of index of prices received by farmers and index of prices paid by farmers; base: 1997–98 = 100. s ABARES estimate (excluding the exchange rate and employment figures). na Not available.

Sources: ABARES; Australian Bureau of Statistics; Reserve Bank of Australia

Major Australian agricultural commodity exports



^a Wheat, cotton, sugar, barley, canola and cheese are world indicator prices in US\$. Beef and veal, lamb and mutton are saleyard prices in A\$. All other commodities are export unit returns in A\$. ^f ABARES forecast. ^s ABARES estimate.

Understanding ABARES agricultural forecasts

ABARES provides forecasts of production, consumption, prices and exports for agricultural commodities to support decision-making. It bases these forecasts on economic assessments of data and information from various sources—supported by discussions with industry experts, use of quantitative analytical tools and professional judgement.

TABLE 1 Price forecasts and actual outcomes of selected commodities, 2016–17

Commodity a	Unit	September 2016 b			December 2016 b		March 2017 b	
		2016–17 actual	forecast	error (%)	forecast	error (%)	forecast	error (%)
Wheat	US\$/t	197	180	–9%	182	–8%	190	–4%
Barley	US\$/t	158	152	–4%	158	0%	153	–3%
Canola	US\$/t	425	424	0%	425	0%	425	0%
Cotton c	USc/lb	83	75	–9%	78	–6%	78	–6%
Sugar d	USc/lb	17	19	12%	20	18%	21	24%
Beef	Ac/kg	535	550	3%	540	1%	540	1%
Lamb	Ac/kg	592	595	0%	595	0%	585	–1%
Wool	Ac/kg	1,402	1,300	–7%	1,300	–7%	1,360	–3%
Milk	Ac/L	44	42	–4%	44	–1%	44	0%
Cheese	US\$/t	3,742	3,150	–16%	3,400	–9%	3,650	–2%

a Wheat, barley, canola, cotton, sugar and cheese prices are world indicators in US\$. All other commodities are domestic prices in Australian cents per kilogram or litre. **b** Release time of ABARES forecasts. **c** Cotton indicator price shown for marketing year August to July. **d** Sugar indicator price shown for marketing year October to September.

The accuracy of ABARES forecasts depends on how much factors affecting commodity markets can be anticipated, the quality and timeliness of the data available for each commodity and how far the changing factors that affect agricultural markets are incorporated into ABARES analytical frameworks. Actual outcomes often differ from the forecasts ABARES makes. A key reason for this difference is that market information is often incomplete, requiring ABARES to make estimates. As more information becomes available, ABARES uses it to revise forecasts.

Differences between forecasts and actual outcomes also reflect the effects of unforeseen events. These may include policy changes, unexpected seasonal conditions and macroeconomic developments including changes in exchange rates. Sudden changes to consumer preferences or the price of related products can have unpredictable effects on demand, and changes to input costs can affect supply.

continued ...

Understanding ABARES agricultural forecasts continued

International seasonal conditions also affect forecast outcomes. For example, in 2016–17 (October to September) the world indicator price for sugar was affected by faster than expected growth in sugar production in Brazil and Asia due to favourable weather conditions. In preparing the forecast for this price in the September quarter 2016, ABARES assumed that the El Niño event in 2015–16 (October to September) would constrain production growth in most major sugar-producing countries. ABARES also assumed that record sugar consumption would support the world price. Based on these assumptions, ABARES forecast the world indicator price to average US19 cents a pound in 2016–17.

However, world sugar demand outpaced supply in the first half of 2016–17—leading to higher world prices than forecast. In the December quarter 2016, ABARES revised its forecast to average US20 cents a pound and in the March quarter 2017 it made a further upward revision to US21 cents a pound. In the second half of 2016–17, timely rains and drier weather conditions during crushing in Australia, India, China and Thailand led to higher sugar production than forecast. Also, a larger than expected share of the Brazilian cane crush was allocated to sugar production than ethanol production. These factors led to a 33 per cent increase in sugar production and the world indicator price falling towards the end of the marketing year.

FIGURE 1 World sugar price, September 2016 to August 2017



Source: International Exchange

Changes in Australian production data for 2015–16 onwards

Andrew Cameron

The Australian Bureau of Statistics (ABS) released its latest estimates of the value and volume of agricultural production from the 2015–16 Agricultural Census on 7 July 2017.

The ABS changed the scope for inclusion in the census to all businesses with an estimated value of agricultural operations (EVAO) of \$40,000 or greater from all businesses with an EVAO of \$5,000 or greater. The previous scope applied from 1993–94. It made this change to better align the survey with contemporary definitions of an agricultural business and reduce the overall reporting load for smaller agricultural businesses. The ABS is expected to apply this scope to all future ABS rural environmental and agricultural commodity collections.

The ABS designed the EVAO to estimate the relative size of agricultural activity undertaken by a business. The EVAO is used to determine whether an agricultural business is within scope for rural environmental and agricultural commodity surveys. Three-year average weighted prices are applied to livestock sales and livestock numbers on the farm, and to area and production data for crops. The resultant aggregation of these commodity values is the EVAO. The EVAO indicates the size or extent of agricultural activity, not the value of receipts (turnover) of individual farms (ABS 2017a).

The ABS has also released revised production and value data for the five years from 2010–11 to 2014–15 based on the updated EVAO cut-off. These revised data give an indication of how the changes affect individual commodities. Table 1 shows the average difference in total number of agricultural businesses and area, production and value for selected major commodities.

The higher EVAO cut-off results in a 5 per cent reduction in estimated area used for agricultural purposes, and a 32 per cent reduction in estimated number of agricultural businesses. The livestock herd is the most affected, reducing by an average 8 per cent (over 2 million head) for beef cattle and 4 per cent (over 3 million head) for sheep. Area, production and value estimates for all crops are reduced. Estimates of the value of most livestock production remain unchanged because they are drawn from other ABS surveys not affected by the EVAO change and do not depend on estimated livestock numbers.

Implications for ABARES outputs

ABARES has incorporated the ABS figures for 2015–16 into this edition of *Agricultural commodities*. The higher EVAO cut-off has resulted in a structural break in the time series published by ABARES, so data from 2015–16 onwards are not directly comparable with earlier data.

ABARES will make all future agricultural commodity forecasts on the basis of the higher EVAO cut-off. Previous ABARES forecasts cannot be assessed for accuracy against the new data. Users of ABS rural environment and agricultural commodity data should be cautious when analysing long time series of data and ensure they are familiar with the notes to tables in ABARES publications.

The ABS has changed the EVAO cut-off from time to time. It was \$5,000 or greater from 1993–94 to 2014–15, \$22,500 or greater for 1991–92 and 1992–93, \$20,000 or greater for 1989–90 and 1990–91, \$5,000 or greater from 1986–87 to 1988–89 and \$2,500 or greater before that.

continued ...

Changes in Australian production data for 2015–16 onwards continued**TABLE 1** Old and new ABS thresholds for EVAO, selected estimates, five-year average to 2015–16

	unit	EVAO \$5,000 and above	EVAO \$40,000 and above	% difference
Total agriculture				
Total area	'000 ha	400,595	382,218	–5%
Number of businesses	no.	130,369	88,147	–32%
Crops				
Barley				
Area	'000 ha	3,787	3,702	–2%
Production	kt	8,302	8,126	–2%
Value	\$m	2,077	2,035	–2%
Corn (maize)				
Area	'000 ha	64	62	–5%
Production	kt	440	426	–3%
Value	\$m	121	117	–3%
Grain sorghum				
Area	'000 ha	641	619	–3%
Production	kt	1,979	1,922	–3%
Value	\$m	489	475	–3%
Oats				
Area	'000 ha	771	737	–4%
Production	kt	1,193	1,152	–3%
Value	\$m	262	253	–3%
Rice				
Area	'000 ha	88	84	–4%
Production	kt	863	822	–5%
Value	\$m	255	243	–5%
Wheat				
Area	'000 ha	13,076	12,823	–2%
Production	kt	25,843	25,355	–2%
Value	\$m	7,221	7,089	–2%
Canola				
Area	'000 ha	2,686	2,654	–1%
Production	kt	3,460	3,417	–1%
Value	\$m	1,845	1,822	–1%
Livestock products				
Eggs				
Production	million dozen	312	308	–1%
Value	\$m	649	642	–1%
Livestock numbers				
Beef cattle	'000 head	25,795	23,716	–8%
Dairy cattle	'000 head	2,751	2,669	–3%
Milking herd	'000 head	1,663	1,624	–2%
Sheep	'000 head	73,378	70,203	–4%
Pigs	'000 head	2,220	2,195	–1%
Sows	'000 head	252	248	–2%

EVAO Estimated value of agricultural operations.

Note: Estimates of the value of most livestock production remain unchanged because they are drawn from other ABS surveys not affected by the increase in EVAO cut-off and do not depend on estimated livestock numbers.

Source: ABS 2017a, b

References

ABS 2017a, [Agricultural commodities](#), Australia, 2015–16, cat. no. 7121.0, Australian Bureau of Statistics, Canberra, accessed 30 August 2017.

— 2017b, [Value of agricultural commodities produced](#), Australia, 2015–16, Australian Bureau of Statistics, Canberra, accessed 30 August 2017.

Seasonal conditions and climate influences

Nicholas Perndt and Matthew Miller

The start of winter 2017 saw well below average rainfall but late season rainfall has increased soil moisture levels, improving prospects for winter crops and benefiting pasture growth in southern Australia. It is likely that this rainfall has arrived too late to benefit winter crop production in the north-west cropping region in New South Wales, the south-west cropping region in Queensland and the northern cropping region in Western Australia.

Local drivers dominate with larger scale climate drivers neutral

During the winter months, rainfall and temperature in Australia are typically influenced by large-scale oceanic drivers such as the El Niño–Southern Oscillation (ENSO) and the Indian Ocean Dipole (IOD). However, during winter 2017 ENSO and IOD were both neutral. Rainfall and temperature were affected by more localised drivers such as the Southern Annular Mode (SAM) and the sub-tropical ridge. These allowed stable high-pressure systems to remain over southern Australia, blocking frontal systems that typically bring rain during winter.

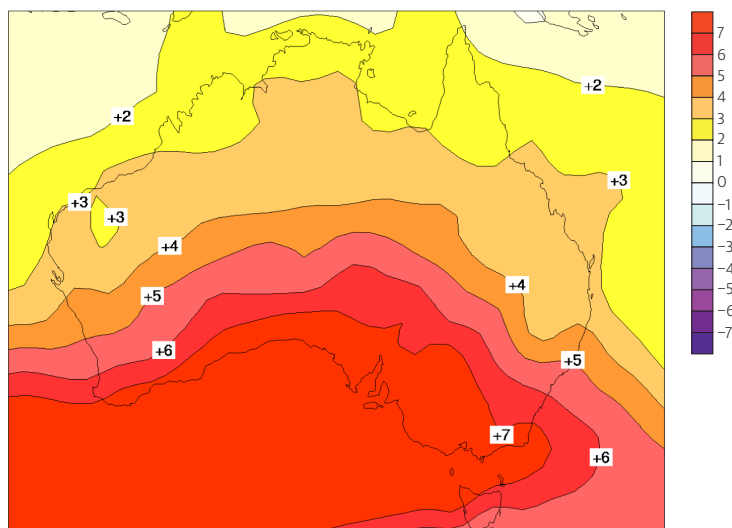
The SAM is the north–south movement of the strong westerly winds that dominate the middle to higher latitudes of the southern hemisphere. During late autumn and early winter 2017, the SAM was in a positive phase. This caused a southward shift of westerly winds and brought higher than normal pressure to southern Australia. As a result, rain-bearing systems did not reach inland New South Wales, South Australia and central Western Australia. In late winter the SAM returned to neutral levels, and cold fronts brought rainfall to coastal and adjacent inland parts of southern states.

The sub-tropical ridge is the region of high mean sea-level pressure that encircles the globe in the middle latitudes. The sub-tropical ridge typically moves northward during winter, bringing dry and stable conditions to northern Australia and allowing cold fronts and low pressure systems to bring rain to southern Australia. In winter 2017 the sub-tropical ridge remained further south than normal. This resulted in higher than average mean sea-level pressure (Map 1) and prevented cold fronts from delivering rainfall to much of southern Australia.

continued ...

Seasonal conditions and climate influences continued

MAP 1 Mean sea-level pressure anomaly, Australia, June 2017



Note: Departure of mean sea-level pressure (hPa) for June compared with average conditions for June between 1979 and 2000.

Source: Bureau of Meteorology

Recent rainfall and pasture growth

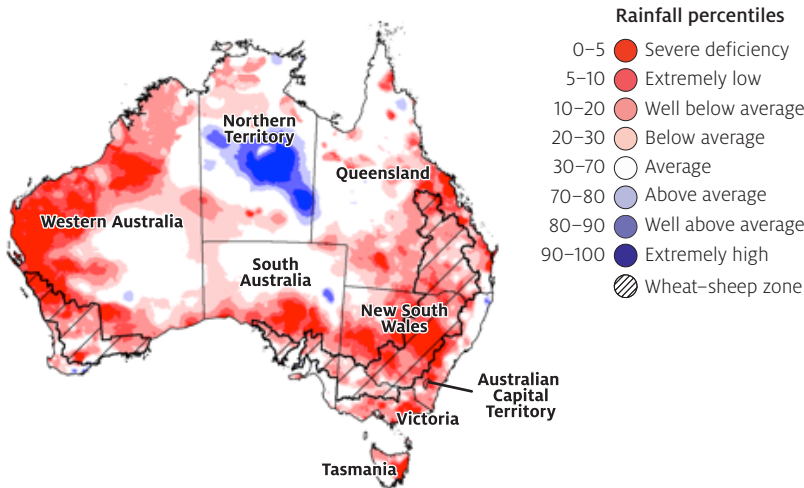
Rainfall during winter 2017 was well below average across much of southern, eastern and western Australia (Map 2). June 2017 was the second-driest June on record for Australia. Rainfall during July was variable, ranging from above average in the north and south to below average across large areas of western and eastern Australia. August 2017 rainfall (Map 3) was close to average in southern states but remained below average in central and northern New South Wales, central and southern Queensland and central South Australia.

Winter rainfall in cropping regions was below average to average in Victoria, South Australia and southern Western Australia and severely deficient to well below average in New South Wales, Queensland and northern Western Australia.

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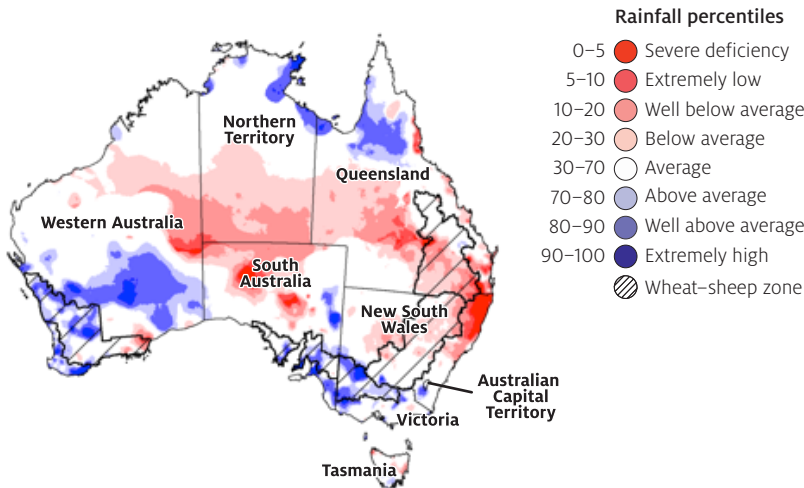
Seasonal conditions and climate influences continued

MAP 2 Rainfall deficiencies, Australia, 1 June to 31 August 2017



Note: Rainfall for June to August 2017 is compared with rainfall recorded for that period during the historical record (1900 to present).
Source: Bureau of Meteorology

MAP 3 Rainfall deficiencies, Australia, 1 to 31 August 2017



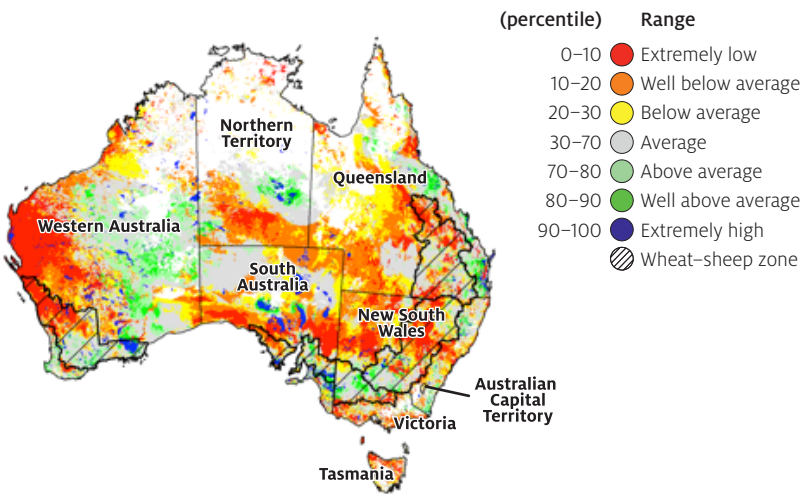
Note: Rainfall for August 2017 is compared with rainfall recorded for that period during the historical record (1900 to present).
Source: Bureau of Meteorology

continued ...

Seasonal conditions and climate influences continued

Modelled pasture growth for winter (June to August 2017) was below average in northern and central New South Wales, central Queensland, southern South Australia and large parts of Western Australia. Above average pasture growth was confined to the eastern seaboard and isolated areas across southern New South Wales, western Victoria, central and south-east South Australia and central Western Australia. It was close to average for the remainder of the country (Map 4).

MAP 4 Relative pasture growth, Australia, 1 June to 31 August 2017



Note: AussieGRASS pasture growth estimates are relative to the long-term record and shown in percentiles. Percentiles rank data on a scale of zero to 100. This analysis ranks the pasture growth for the selected period against the average pasture growth for the long-term record (1957 to 2016). Pasture growth is modelled at 5 km² grid cells.
Source: Queensland Government Department of Science, Information Technology and Innovation

Recent soil moisture levels

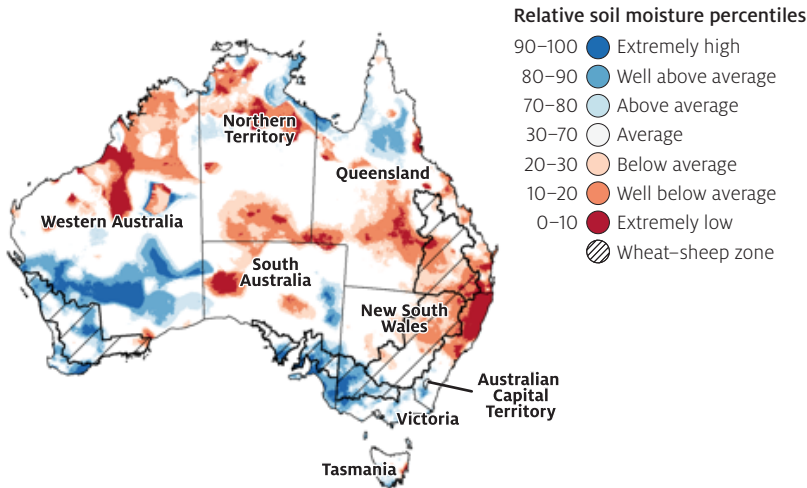
Map 5 and Map 6 show relative levels of modelled soil moisture for Australia in the upper layer (surface to 0.1 metres) and lower layer (0.1 to 1.0 metres) for August 2017.

Relative upper layer soil moisture for August 2017 was generally above average for large areas of southern Australia and parts of northern Australia, and close to average for the rest of the country (Map 5). However, upper layer soil moisture remains below average for large areas of central and northern New South Wales and southern Queensland. The pattern of relative upper layer soil moisture reflects August 2017 rainfall.

continued ...

Seasonal conditions and climate influences continued

MAP 5 Modelled upper layer soil moisture, Australia, 1 to 31 August 2017



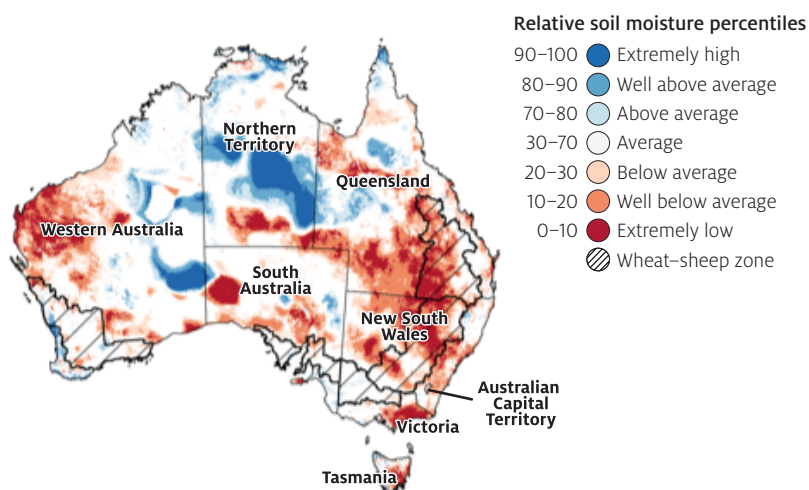
Note: Soil moisture estimates are relative to the long-term record and ranked in percentiles. Estimates are used to compare upper layer soil moisture from August 2017 and ranked by percentiles for each August in the 1911–2015 historical reference period. The extremely high band indicates where the estimated soil moisture level for August 2017 was in the wettest 10 per cent of estimated soil moisture levels for August during the reference period. The extremely low band indicates where the estimated soil moisture level for August 2017 was in the driest 10 per cent of estimated soil moisture levels for August during the reference period.
Source: Bureau of Meteorology (Australian Water Resources Assessment Landscape model)

Relative lower layer soil moisture for August 2017 was well below average in central and southern Queensland and large areas of New South Wales, eastern Victoria and northern Western Australia (Map 6). It was well above average in central and northern parts of the Northern Territory and isolated parts of south-western and eastern Western Australia. It was close to average in the remainder of Victoria, South Australia and Western Australia.

continued ...

Seasonal conditions and climate influences continued

MAP 6 Modelled lower layer soil moisture, Australia, 1 to 31 August 2017



Note: Soil moisture estimates are relative to the long-term record and ranked in percentiles. Estimates are used to compare lower layer soil moisture from August 2017 and ranked according to percentiles for each August in the 1911–2015 historical reference period. The extremely high band indicates where the estimated soil moisture level for August 2017 was in the wettest 10 per cent of estimated soil moisture levels for August during the reference period. The extremely low band indicates where the estimated soil moisture level for August 2017 was in the driest 10 per cent of estimated soil moisture levels for August during the reference period. Source: Bureau of Meteorology (Australian Water Resources Assessment Landscape model)

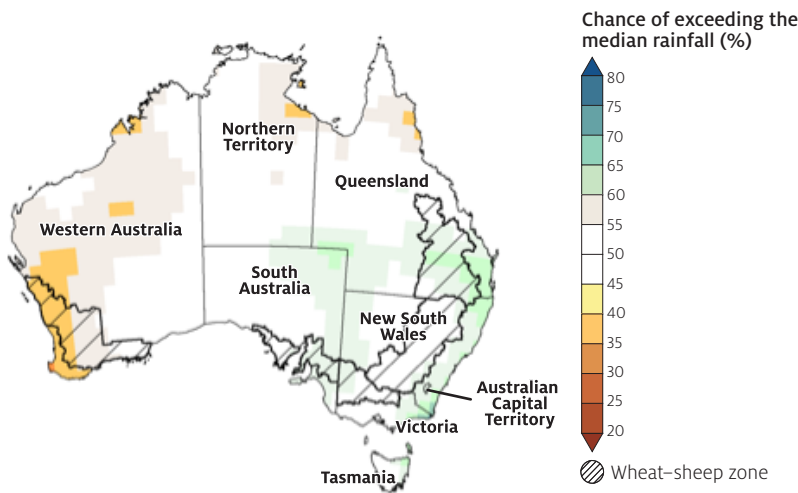
Climate outlook

The climate outlook for spring 2017 (September to November) indicates that the chances of above and below median rainfall are roughly equal for most of Australia (Map 7). The chance of rainfall exceeding the median during spring in parts of south-western Western Australia is lower than average and for parts of eastern Australia it is slightly higher. The state of major oceanic climate drivers is currently neutral, so Australia's climate is likely to be affected by more localised influences such as sea surface temperatures around the Australian coastline.

continued ...

Seasonal conditions and climate influences continued

MAP 7 Rainfall outlook, Australia, September to November 2017



Note: Rainfall climate outlook maps show the likelihood, as a percentage, of exceeding the 1981–2010 median rainfall for the upcoming three months. Median rainfall is defined as the 50th percentile calculated from the 1981–2010 reference period.
Source: Bureau of Meteorology

Agriculture

Crops





↑19%
to US\$215/t^a
in 2017-18



Wheat

Wheat price to increase but remain low, reflecting a fall in high-quality wheat supply.

↑10%
to US\$174/t^b
in 2017-18



Coarse grains

World barley prices to increase but remain low due to abundant supplies.

0%
to US\$425/t^c
in 2017-18



Oilseeds

World canola prices to remain unchanged due to tight canola supplies and falling soybean prices.

↓24%
to USc 13/lb^d
in 2017-18



Sugar

World sugar prices to fall as a result of increased world supply.

↓3%
to USc 80/lb^e
in 2017-18



Cotton

World cotton prices to fall as a result of supply growing faster than demand.

^a US no. 2 hard red winter, fob Gulf. ^b France feed barley, fob Rouen. ^c Europe rapeseed, fob Hamburg. ^d Intercontinental Exchange, nearby futures, no. 11 contract (October to September). ^e Cotlook 'A' index.

Wheat

Sarah Smith

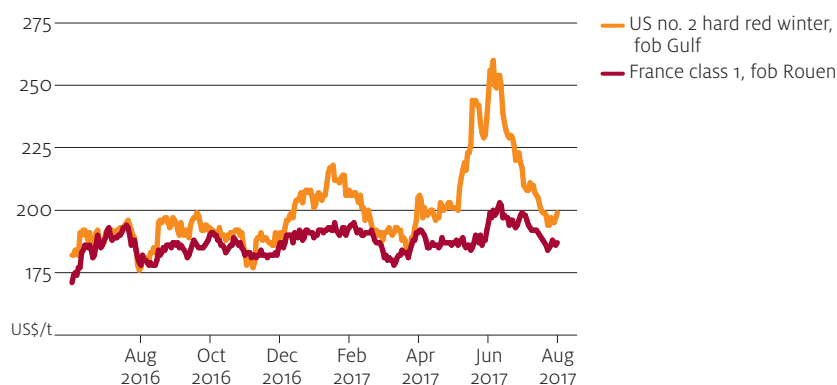
- The world wheat indicator price is forecast to increase by 9 per cent in 2017–18, driven by a decline in high-quality milling wheat supplies.
- Exportable wheat supplies are expected to decrease in some major exporting countries but remain historically high.
- Australian wheat production is forecast to fall to 22 million tonnes in 2017–18.

High-quality wheat prices expected to rise

The world wheat indicator price (US no. 2 hard red winter, fob Gulf) is forecast to average US\$215 a tonne in 2017–18—an upward revision of 5 per cent from the forecast in *Agricultural commodities: June quarter 2017*. This reflects a forecast fall in world supplies of hard, high-quality wheat, driven by declines in Australian, Canadian and US production.

The world wheat indicator price averaged US\$237 a tonne in July 2017—after rallying in June and July in response to poor crop conditions in Australia, Canada and the European Union and particularly in the United States. The world indicator price declined in August to average US\$203 a tonne after the northern hemisphere harvest entered the supply chain. Prices of hard, high-quality wheat are expected to rise modestly from August but remain volatile through the remainder of 2017–18. Prices of other wheat varieties are not expected to increase by the same amount.

World wheat prices, July 2016 to August 2017



Source: International Grains Council

Wheat quality explained

Sarah Smith

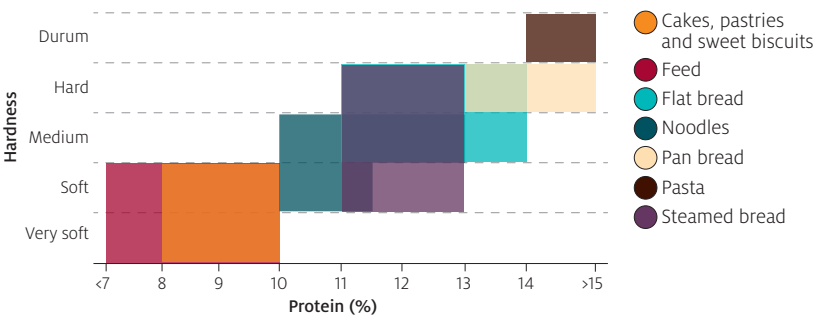
Wheat quality is measured by many parameters including grain hardness, protein content, grain condition and milling characteristics. These factors affect the likelihood of grain meeting consumer preferences for intermediate products like flour and end products like bread. Variety, seasonal conditions during crop development and harvest and post-harvest treatment all affect wheat quality.

Australia and the United States have wheat quality grading systems. Grain Trade Australia and the US Federal Grain Inspection Service set quality standards for particular wheat grades or classes. Producers, processors and traders use these standards to value and classify wheat and assure buyers of wheat quality.

Grain hardness is a varietal characteristic. Hard wheat varieties have high levels of gluten, which improves dough elasticity and chewiness. This is favourable for bread, noodles and pasta. Most Australian and US production is classified as hard wheat. Soft wheat varieties have less gluten, making them more suitable for biscuits, crackers and pastries.

Protein content corresponds to milling properties including dough strength, elasticity and water absorption. Some varieties are more likely to accumulate protein than others. However, the amount of protein accumulated also depends on seasonal conditions and crop nutrition.

FIGURE 1 Wheat uses and characteristics



Note: Protein and hardness boundaries are approximate.
Sources: ABARES; Food and Agriculture Organization of the United Nations; GrainGrowers

continued ...

Wheat quality explained continued

Grain condition is affected by seasonal conditions and post-harvest treatment. Grain Trade Australia and the US Federal Grain Inspection Service specify limits on test weight, defects and contaminants. Milling grade limits are more stringent than feed grade limits. Test weight is a measure of density and an indicator of grain condition. Low test weight grain is undesirable for end users because it indicates high moisture content or other defects.

Millers and other end users also value flour characteristics (such as ash content, colour and yield), dough characteristics (such as absorption, stability and strength) and baking characteristics (such as crumb size and shape). These characteristics relate to variety and quality parameters like protein and starch content.

The world wheat indicator price

ABARES world wheat indicator price is US no. 2 hard red winter, fob Gulf. Hard red winter wheat may be classified as no. 2 if it meets the US Federal Grain Inspection Service standards for high quality. These include a minimum test weight and low levels of defects and contaminants. The United States does not grade wheat by protein content. However, buyers of US wheat consider protein content and other characteristics in determining the value of wheat and often specify minimum requirements in contracts. Hard red winter wheat accounts for around 30 per cent to 45 per cent of US production and exports.

World production forecast to fall modestly

World wheat production is forecast to fall by 2 per cent in 2017–18 to 741 million tonnes. Russian Federation production prospects have improved significantly since the June forecast. This is expected to offset downward revisions to Canadian, EU and US production.

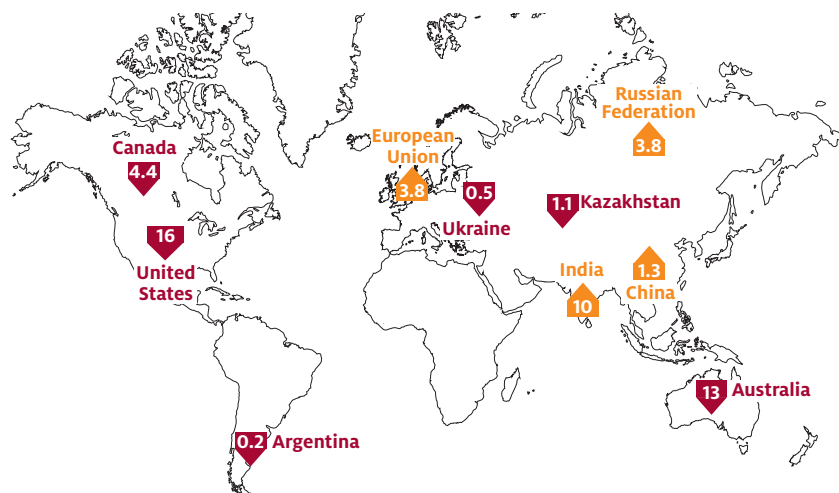
Russian wheat production is forecast to be a record 76 million tonnes in 2017–18. Beneficial rainfall and mild conditions boosted winter crop development, and average yield is forecast to surpass the record achieved in 2016–17.

Forecast US production for 2017–18 has been revised down further to 47 million tonnes, 25 per cent lower than in 2016–17. Winter wheat production fell significantly due to a decline in area planted, increased abandonment and below average yields. Harvest reports indicate hard red winter wheat quality is mixed and protein content is below average at 11.4 per cent. Expectations for US spring and durum wheat production diminished due to drought in the Northern Plains during June and July. In August more than 40 per cent of the US spring crop was in poor or very poor condition. This was the highest proportion since 1988.

Forecast Canadian production has also been revised downwards to 27 million tonnes for 2017–18, 14 per cent lower than in 2016–17. The dry conditions that led to reduced quality in US spring and durum wheat also affected the Canadian spring wheat crop. Assuming a return to average quality, a greater proportion of Canadian production in 2017–18 is expected to be high-quality milling wheat.

In the European Union, wheat production is forecast to be 148 million tonnes, up 3 per cent from the below average harvest of 2016–17 but revised down by 3 million tonnes since the June forecast. Seasonal conditions across the region have been mixed, with crop development hindered by heatwaves and low rainfall in Spain and north-western France. Rainfall during harvest in Germany, Poland and the United Kingdom is likely to reduce quality.

Forecast change in wheat production volume, million tonnes, 2017–18

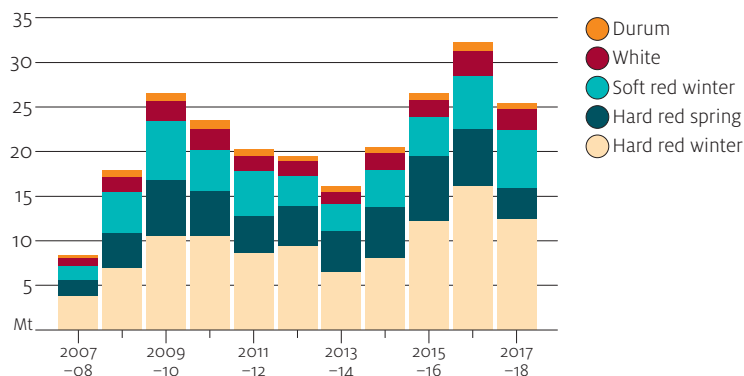


Stocks in major exporting countries to contract

Supplies in major exporting countries are expected to remain historically high in 2017–18, supported by high opening stocks. Exports from Canada and the European Union are forecast to increase as a result of larger exportable supplies. Canadian exportable supplies were constrained in 2016–17 by quality issues. Russian exports are forecast to increase for the sixth consecutive year to over 30 million tonnes, reflecting high supplies (production and stocks) and improved international competitiveness due to a depreciation in the rouble. However, Black Sea region hard wheat quality varies more than that of wheat sourced from Australia, Canada and the United States. In 2017–18 quality-sensitive end users in Asian markets are unlikely to significantly increase use of Black Sea wheat.

In 2017–18 world closing stocks are forecast to reach a new record of 246 million tonnes. China is forecast to continue its accumulation of wheat stocks and is expected to hold 44 per cent of world stocks by the end of 2017–18, up 5 percentage points from 2016–17. These stocks are unlikely to enter the global market under the Chinese Government's grain reserve system. Stocks held in major exporting countries are forecast to decline, particularly in the United States.

US wheat closing stocks, 2007–08 to 2017–18

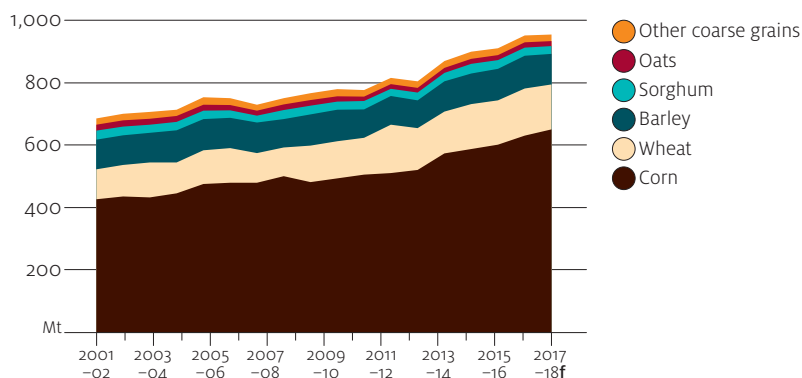


Source: US Department of Agriculture

Wheat for human consumption to rise but feed use down

World wheat consumption is forecast to be largely unchanged in 2017–18 at 738 million tonnes. An increase in wheat for human consumption is expected to be offset by a decline in feed wheat use. Consumption of feed grains and protein meals is forecast to rise in key livestock- and dairy-producing regions. However, abundant supplies of cheap alternative feed grains such as corn are expected to reduce feed wheat demand. World feed wheat use is forecast to fall by 5 per cent to 144 million tonnes, driven by reductions in Canadian, Chinese and EU consumption.

World feed grain consumption, 2001–02 to 2017–18



f ABARES forecast.

Import demand to fall slightly in 2017–18

In 2017–18 world trade in wheat is forecast to fall by 2 per cent to 172 million tonnes. Wheat harvests in China, India, northern Africa and Turkey have improved in quality and volume. This has reduced demand for imports to meet the shortfall between domestic production and consumption. Other major importing countries, including Egypt and Indonesia, are forecast to increase imports modestly. A decrease in import demand tends to put downward pressure on prices.

Australian wheat production to fall

In 2017–18 area planted to wheat is estimated to have fallen by 3 per cent to 12 million hectares. Planting and establishment conditions were unfavourably dry in northern and central New South Wales, Queensland, the Eyre and Yorke peninsulas in South Australia and northern and central Western Australia. This led to reduced planted area and crops suffering severe moisture stress. In contrast, wheat crops in other regions (particularly Victoria) developed well and were in good condition at the start of spring.

The Bureau of Meteorology’s spring outlook, issued on 31 August 2017, indicates that most Australian cropping regions are likely to receive around average rainfall. However, spring rainfall for Western Australia is likely to be below average. Yields are forecast to be below average for all states except Victoria. Australian wheat production is forecast to be 22 million tonnes—11 per cent lower than the June forecast.

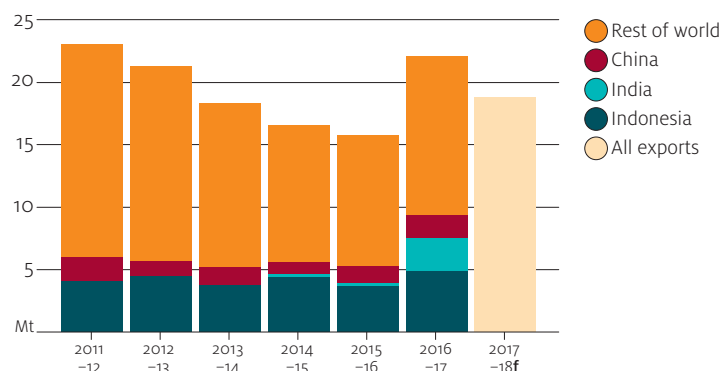
Forecast wheat yields, difference from average, Australia, 2017–18



India to import less Australian wheat in 2017–18

In 2016–17 Australian wheat exports exceeded 22 million tonnes, the second-highest export volume on record. The largest markets for Australian wheat were Indonesia and India. In 2017–18 the volume of Australian wheat exports is forecast to fall by 18 per cent to 18 million tonnes across all destination markets. Exportable supplies are expected to decrease because of the smaller harvest. Exports to China and India are also forecast to decline due to improved local harvests.

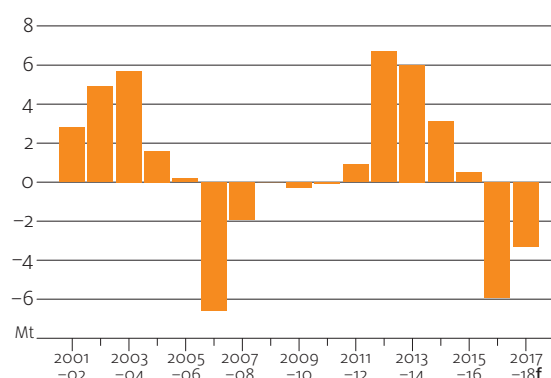
Wheat exports, by destination, Australia, 2011–12 to 2017–18



f ABARES forecast.

India is a large importer of Australian wheat in years when its domestic supplies of high-quality milling wheat are insufficient to meet demand. This was the case in 2016–17. In September 2016 the Indian Government reduced the wheat import duty from 25 per cent to 10 per cent and eliminated it completely in December 2016. These changes were driven by a domestic shortage of milling quality wheat following a lower-quality harvest and drawdown in stocks. In 2016–17 wheat imports into India increased substantially, and Australian wheat comprised 42 per cent of the total. The Indian Government reinstated the wheat import duty in March 2017 due to expectations of a larger and better quality domestic harvest in 2017. Indian wheat imports are forecast to fall by 41 per cent to 3.7 million tonnes in 2017–18.

Indian wheat net trade, 2001–02 to 2017–18



Note: Net trade is exports minus imports.

f ABARES forecast.

Outlook for wheat

Category	unit	2015–16	2016–17 s	2017–18 f	% change
World					
Production	Mt	738	754	741	– 1.8
– Black Sea region a	Mt	102	114	116	1.9
– China	Mt	130	129	130	0.6
– European Union	Mt	160	144	148	2.6
– India	Mt	86.5	86.0	96.4	12.1
– United States	Mt	56.1	62.9	47.3	– 24.8
Consumption	Mt	718	737	738	0.1
– human	Mt	488	497	507	1.9
– feed	Mt	143	151	144	– 4.6
Closing stocks	Mt	226	243	246	1.1
Stocks-to-use ratio	%	31.4	33.0	33.3	–
Trade	Mt	166	175	172	– 1.7
Exports b					
– Argentina	Mt	9.5	11.5	10.7	– 7.0
– Australia c	Mt	15.8	22.1	18.2	– 17.6
– Black Sea region a	Mt	50.2	53.2	55.0	3.4
– Kazakhstan	Mt	7.4	7.4	7.5	1.4
– Russian Federation	Mt	25.4	27.8	31.7	14.0
– Ukraine	Mt	17.4	18.0	15.8	– 12.2
– Canada	Mt	21.7	20.1	21.0	4.5
– European Union	Mt	35.1	27.2	29.4	8.1
– United States	Mt	21.1	28.7	26.5	– 7.7
Price d	US\$/t	211	197	215	9.3
Australia					
Area	'000 ha	11,282	12,835	12,447	– 3.0
Production	kt	22,275	35,009	21,614	– 38.3
Exports c	kt	15,777	22,067	18,153	– 17.7
– value	A\$m	5,120	6,101	5,106	– 16.3
APW pool return	A\$/t	303	268	297	10.8

a Kazakhstan, Russian Federation and Ukraine. **b** Local marketing years. **c** July–June years.

d US no. 2 hard red winter wheat, fob Gulf, July–June. **f** ABARES forecast. **s** ABARES estimate.

Sources: ABARES; Australian Bureau of Statistics; International Grains Council; US Department of Agriculture

Coarse grains

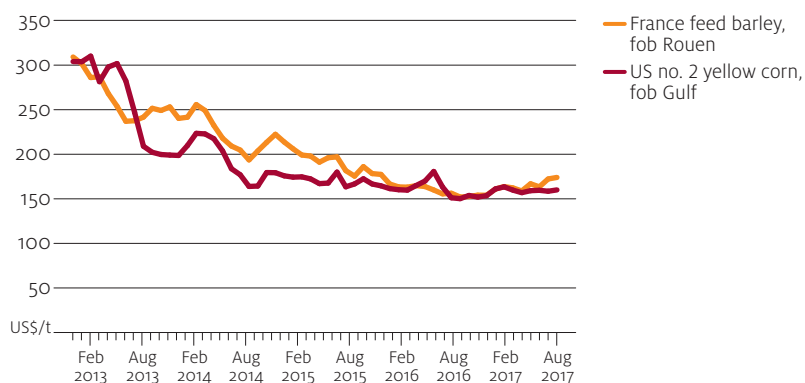
Amelia Brown

- World coarse grain prices are forecast to increase in 2017–18 but remain historically low, reflecting plentiful world grain stocks.
- World coarse grain production is forecast to fall by 4 per cent in 2017–18.
- World consumption is forecast to reach a new record in response to low prices.
- Australian coarse grain production and exports to fall in 2017–18.

Prices to remain historically low in 2017–18

In 2017–18 the world coarse grain indicator price (US no. 2 yellow corn, fob Gulf) is forecast to average US\$161 a tonne, a 2 per cent increase from 2016–17. The world indicator price for barley (France feed barley, fob Rouen) is forecast to average US\$174 a tonne—an upward revision of 5 per cent from the *Agricultural commodities: June quarter 2017* forecast. This revision reflects a further reduction in supply in major exporting countries.

World coarse grain indicator prices, January 2013 to July 2017



Global production to fall but trade to remain at record levels

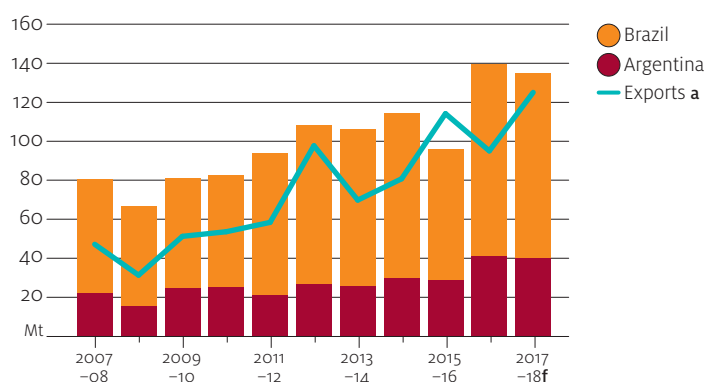
In 2017–18 global coarse grain production is forecast to fall by 4 per cent to just over 1.3 billion tonnes. This reflects a fall in area planted and a decline in yields in most major producing countries.

In 2017–18 global area planted to corn is forecast to fall by 1 per cent and production by 3 per cent. A shift into soybean production in the two largest corn-producing countries is estimated to have resulted in area planted to corn falling by 4 per cent in the United States and 5 per cent in China. Below average seasonal conditions in the United States are expected to result in a decline in yields. US production is forecast to fall by 7 per cent to around 360 million tonnes. Production in China is forecast to fall by 2 per cent to around 215 million tonnes. If realised, this would be the second consecutive year of lower Chinese production. Production in Argentina and Brazil is forecast to decline due to lower yields than the records reached in 2016–17.

World barley production is forecast to fall in 2017–18 by 5 per cent to 141 million tonnes, reflecting a 2 per cent fall in area planted and an expected fall in yields from the record achieved in 2016–17. Lower production is forecast for most major exporters including Australia, Canada, the European Union, Kazakhstan and Ukraine. However, favourable growing conditions are forecast to result in increased production in the Russian Federation.

Corn exports are forecast to increase to a new record of 152 million tonnes in 2017–18 (October to September) despite lower world production. Forecast increased exports from Argentina and Brazil (following record production in 2016–17) are expected to offset forecast lower US corn exports. Import demand for feed corn is forecast to continue to grow in most major importing countries as dairy, livestock and poultry production continue to rise. Historically low prices have led to increased competitiveness of corn compared with other feed substitutes.

Corn production and exports, South America, 2007–08 to 2017–18



a October to September. f ABARES forecast.

In 2017–18 world trade in barley is forecast to be 6 per cent lower compared with the previous year, reflecting a reduction in supply and less competitive prices than for other feed grain substitutes. However, import demand in Saudi Arabia—the world's largest barley importer—is forecast to remain strong as the government seeks to reduce water-intensive fodder production.

Consumption to continue to grow

Global coarse grain consumption in 2017–18 is forecast to rise to a new record of 1.3 billion tonnes. Corn is expected to continue to be the main ingredient in compound feed rations due to ample competitively priced global supplies. This is expected to result in additional demand for corn for feed in most major importing markets—including Asia, the Black Sea region, the European Union and Mexico—as they substitute away from higher priced alternatives. Total feed consumption is forecast to rise as a result of major producers increasing meat and dairy production.

In 2017–18 global food, seed and industrial use of coarse grains is forecast to reach a new record of around 533 million tonnes. This reflects continued growth in starch and ethanol production in China, the European Union and the United States.

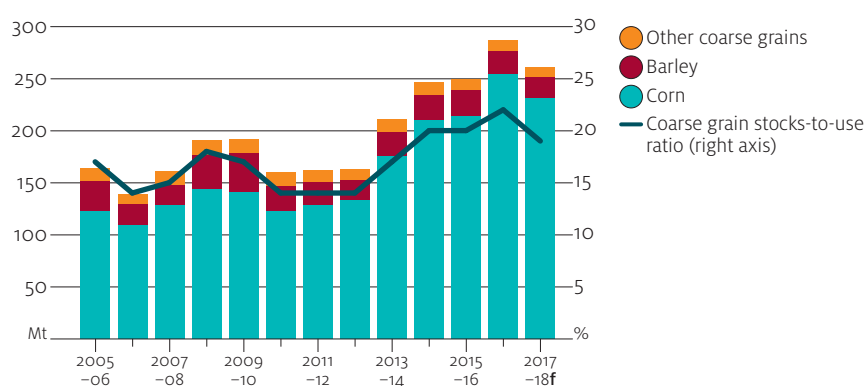
World consumption of barley in 2017–18 is forecast to decrease by 6 per cent—reflecting reduced supplies, less competitive prices and high supplies of feed grain substitutes such as corn and oilseed meal. Demand for malting barley is forecast to remain strong as demand for brewing continues to increase, particularly in Asia.

World stocks to fall in 2017–18

In 2017–18 world coarse grain closing stocks are forecast to fall by 9 per cent to around 262 million tonnes due to forecast growth in consumption being higher than for production. Despite this, stocks are expected to be the second highest on record.

World closing stocks of corn in 2017–18 are forecast to be 9 per cent lower, at around 231 million tonnes. This mainly reflects a forecast reduction in stocks in China and the United States. World closing stocks of barley are forecast to fall by 4 per cent to just over 22 million tonnes. If realised, this would be the lowest level since 2012–13. Barley export supply in Australia and the European Union—the two largest exporters—is forecast to be lower and support an increase in world barley prices.

World coarse grain stocks, 2005–06 to 2017–18



f ABARES forecast.

Australian production to fall in 2017–18

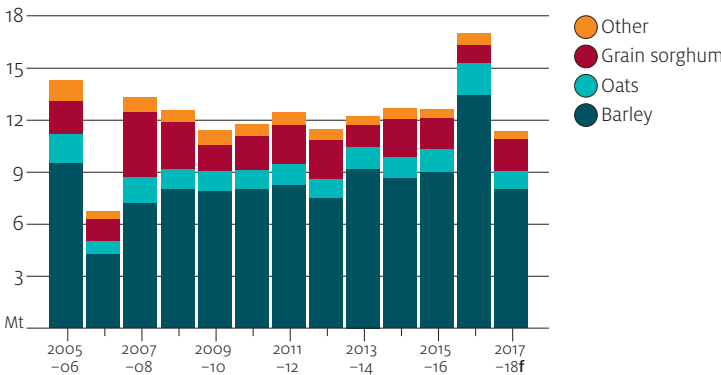
In 2017–18 Australian coarse grain production is forecast to fall by 33 per cent to just over 11 million tonnes. Barley production is forecast to fall by 40 per cent to 8.0 million tonnes and oats by 45 per cent to 1.0 million tonnes.

This forecast is based on an estimated reduction in planted area assuming that growers have responded to low cereal prices by shifting production to pulse and oilseed crops. Area planted to barley is estimated to have fallen by 3 per cent and area to oats by 19 per cent. Poor seasonal conditions in cropping regions in north-west and central New South Wales, parts of South Australia and northern and central Western Australia have resulted in significant loss of yield.

In 2017–18 grain sorghum production is forecast to increase from the drought-affected 2016–17 crop by 81 per cent to 1.8 million tonnes. Area planted to grain sorghum is forecast to be around the 10-year average of 596,000 hectares.

The grain sorghum forecast is very dependent on adequate spring rainfall in the summer cropping regions of northern New South Wales and Queensland. The poor winter cropping season across large areas of these states means that a large area of fallow land is available for summer crops. Low winter crop production is likely to increase local feed and industrial demand, providing an incentive for producers to plant grain sorghum if rainfall is adequate.

Coarse grain production, Australia, 2005–06 to 2017–18



f ABARES forecast.

Domestic demand to increase

The number of cattle on feed continues to expand across Australia, increasing to a record of over 1 million head in the June quarter 2017. Most (58 per cent) are in Queensland, increasing local demand for feed grain. Poor winter cropping conditions in northern New South Wales and Queensland have led to decreased supply of feed grain and increased prices.

On 1 January 2017 the Queensland biofuels mandate came into effect. It mandates 3 per cent ethanol content in total fuel sales volume. The mandate will increase to 4 per cent from 1 July 2018. Australia's first grain-to-ethanol facility is Dalby Bio-Refinery Ltd. At full capacity it will consume nearly 200,000 tonnes of grain sorghum to produce 76 million litres of ethanol (61 per cent of the mandated ethanol component of Queensland's total fuel sales in 2015–16) and 180,000 tonnes of wet distillers grain a year.

The Queensland biofuel mandate will increase demand for grain sorghum and lead to higher prices for growers supplying the refinery. Increased competition for feed grain is likely to increase the cost of grain for users like the cattle feed-lotting industry. This is expected to add to the seasonal pressures on grain prices forecast for 2017–18.

Exports to fall in 2017–18

In 2017–18 Australian coarse grain exports are forecast to fall from the records achieved in 2016–17. This is expected to result from lower barley and oat production, and competition from low-cost feed grain substitutes like corn and soybeans from South America and barley from the Black Sea region.

Grain sorghum exports are forecast to increase from the drought-affected 2016–17 level if spring rainfall supports production. Increased domestic feed and industrial demand is expected to limit the volume available for export.

Outlook for coarse grains

Category	unit	2015–16	2016–17 s	2017–18 f	% change
World					
Production	Mt	1,260	1,364	1,315	– 3.6
– barley	Mt	149	148	141	– 4.9
– corn	Mt	969	1,071	1,033	– 3.5
Consumption	Mt	1,273	1,327	1,340	1.0
Trade	Mt	163	201	189	– 6.2
Closing stocks	Mt	250	287	262	– 8.8
Stocks-to-use ratio	%	19.6	21.6	19.5	–
Corn price a (fob Gulf)	US\$/t	168	157	161	2.4
Barley price b (fob Rouen)	US\$/t	173	158	174	9.8
Australia					
Area	'000 ha	5,581	5,501	5,402	– 1.8
– barley	'000 ha	4,108	4,035	3,925	– 2.7
– grain sorghum	'000 ha	521	386	596	54.3
Production	kt	12,610	16,987	11,387	– 33.0
– barley	kt	8,992	13,414	8,009	– 40.3
– grain sorghum	kt	1,791	1,017	1,840	81.0
Exports	kt	6,845	10,718	6,028	– 43.8
– value	A\$m	2,280	2,801	2,165	– 22.7
Feed barley price c	A\$/t	237	174	219	26.3
Malting barley price d	A\$/t	274	188	239	27.0

a US no. 2 yellow corn, fob Gulf, July–June. b France feed barley, fob Rouen, July–June. c Feed 1, delivered Geelong. d Gairdner Malt 1, delivered Geelong. f ABARES forecast. s ABARES estimate.

Sources: ABARES; Australian Bureau of Statistics; International Grains Council; UN Commodity Trade Statistics Database (UN Comtrade); US Department of Agriculture

Oilseeds

Nathan Pitts

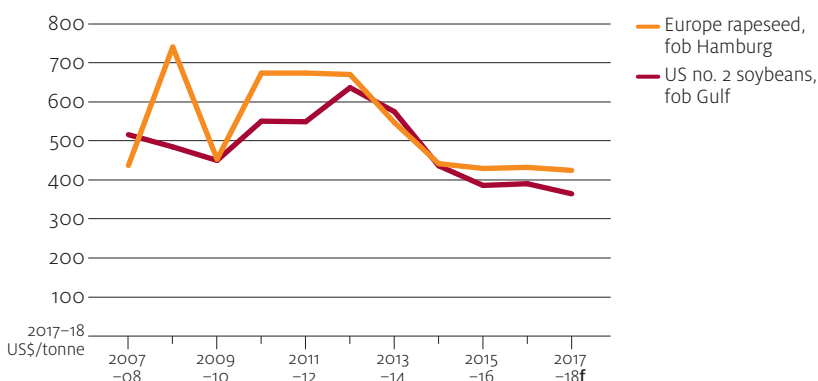
- World oilseed prices are forecast to fall in 2017–18 because of high carry-over stocks and forecast high production.
- Global oilseed production is forecast to remain at record highs, driven by increased plantings.
- Australian canola production is forecast to fall in 2017–18 due to unfavourable growing conditions.

Prices to fall in response to abundant oilseed supplies

Record high carry-over stocks and forecast continued high production in 2017–18 are expected to drive lower oilseed prices in 2017–18. The world oilseed indicator price (US no. 2 soybeans, fob Gulf) is forecast to average US\$365 a tonne in 2017–18, down 5 per cent year-on-year.

The world canola indicator price (Europe rapeseed, fob Hamburg) is forecast to remain unchanged in 2017–18 to average US\$425 a tonne. Unfavourable growing conditions in Australia and Canada—the world's largest canola producers—are expected to cause canola and soybean prices to diverge further.

World oilseed indicator prices, 2007–08 to 2017–18



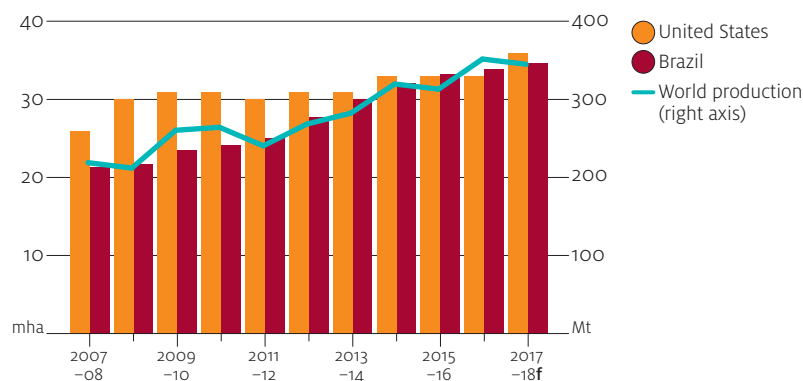
f ABARES forecast.

Oilseed supply to increase through high production and plentiful stocks

World oilseed production in 2017–18 is forecast to remain steady at the 2016–17 record of 570 million tonnes. Area planted to oilseeds is forecast to increase by 5 per cent to a record 244 million hectares, reflecting higher expected returns relative to alternative crops. Soybean production is forecast to fall in 2017–18, but this is expected to be more than offset by increased production of rapeseed (including canola), cottonseed and palm oil.

In 2017–18 global soybean production is forecast to decline by 1 per cent to 345 million tonnes as Brazilian yields fall following the record achieved in 2016–17. However, global area planted to soybeans is forecast to increase by 5 per cent to a record 127 million hectares—reflecting higher expected returns than for alternatives such as corn. Soybean production in Brazil is forecast to fall to 107 million tonnes, 6 per cent lower than the 2016–17 record. US soybean production is forecast to increase marginally to 118 million tonnes. Record high plantings are forecast to be partially offset by expected lower yields resulting from drier than average growing conditions.

World soybean production and area planted, Brazil and United States, 2007–08 to 2017–18

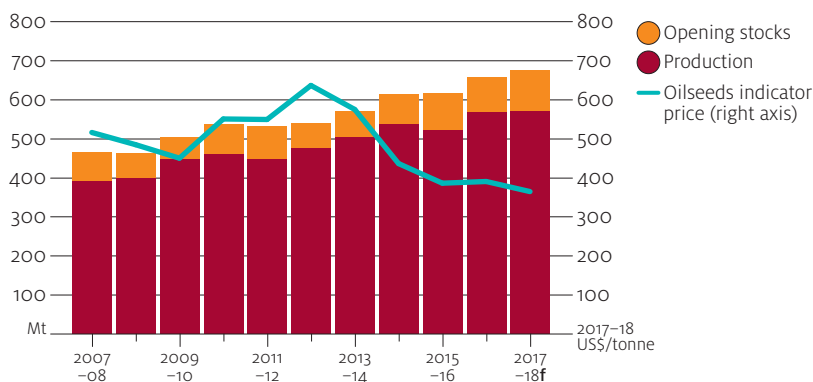


^f ABARES forecast.

World rapeseed (including canola) production is forecast to increase by 2 per cent to 71 million tonnes in 2017–18. In 2017–18 EU rapeseed (including canola) production is forecast to increase by 4 per cent to 21 million tonnes. Canola production in Canada is forecast to reach 19 million tonnes, a marginal increase on 2016–17. An increase to a record area planted is expected to be offset by decreased yields as a result of unfavourably hot conditions.

Forecast record world oilseed production for 2017–18 is expected to add to already high opening stocks. Closing stocks for 2016–17 reached a record 108 million tonnes due to a greater than expected Brazilian soybean harvest. Global closing stocks in 2017–18 are forecast to increase marginally to 110 million tonnes.

World oilseed supply and price, 2007–08 to 2017–18



^f ABARES forecast.

Abundant oilseed supplies and low prices to drive consumption growth

Global oilseed consumption is forecast to grow by 3 per cent to 569 million tonnes in 2017–18. Soybeans are expected to account for 60 per cent of oilseed consumption in 2017–18 and to increase by 3 per cent to 344 million tonnes due to abundant supplies and strong Chinese demand. Chinese soybean consumption is forecast to increase by 7 per cent to 108 million tonnes as a result of increased feed use in Chinese livestock industries, particularly the pig industry. Consumption of both oilseed meal and vegetable oils is forecast to increase by 3 per cent, reflecting lower prices.

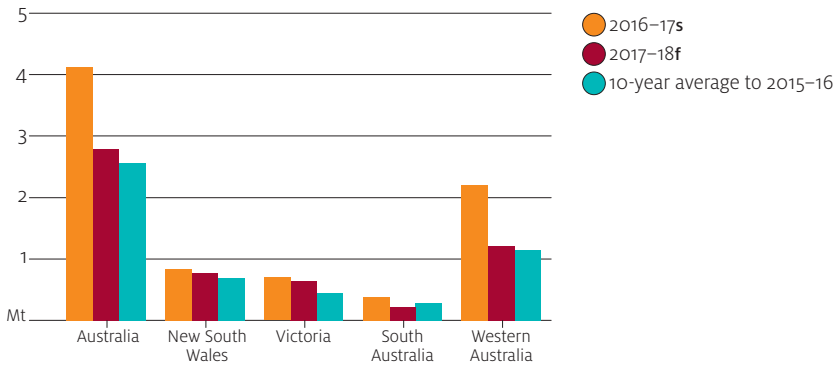
World oilseed exports are forecast to increase by 2 per cent to 170 million tonnes, driven by increased supplies from major exporters. Rapeseed (including canola) exports are forecast to reach 15 million tonnes, down 6 per cent from the previous year due to lower exportable supplies from Australia.

Australian production to fall significantly following record harvest

In 2016–17 Australian canola production reached a record high of 4.1 million tonnes as favourable seasonal conditions led to exceptionally high yields. Canola production in 2017–18 is forecast to be 2.8 million tonnes. Above average plantings are forecast to more than compensate for lower yields, with 2017–18 production expected to be 7 per cent above the 10-year average to 2015–16.

As a result of below average winter rainfall, yields across Australia are forecast to average 1.1 tonnes a hectare—7 per cent below the 10-year average to 2015–16. Yields are forecast to be below average for all major producing states excluding Victoria. Most of the fall in national production in 2017–18 is expected to occur in Western Australia due to well below average rainfall in autumn and early winter.

Australian canola production, by state, 2016–17 to 2017–18

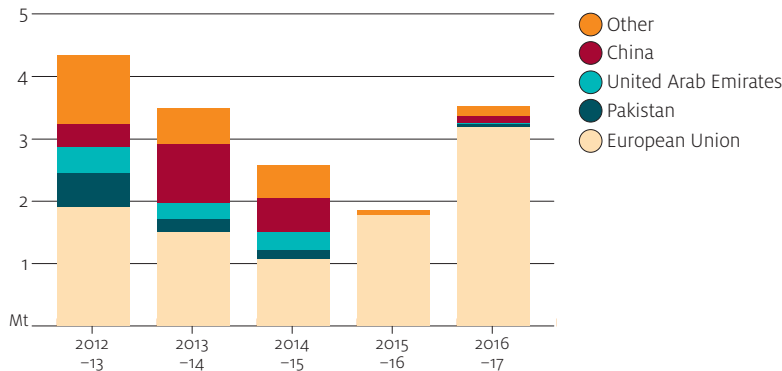


f ABARES forecast. s ABARES estimate.

Volume and value of canola exports to decrease

In 2016–17 Australian canola exports increased by 85 per cent to 3.6 million tonnes. The European Union was the leading destination for Australian canola, accounting for 88 per cent of exports. Australian canola exports in 2017–18 are forecast to fall by 43 per cent to 2.0 million tonnes, 14 per cent above the 10-year average to 2015–16. EU import demand is forecast to fall, reflecting an expected recovery in production. In addition, Australian canola exports to the European Union are expected to decrease due to a forecast increase in canola production in Ukraine, a key competitor for Australia in that market.

Australian canola exports, by destination, 2012–13 to 2016–17



Outlook for oilseeds

Category	unit	2015–16	2016–17 <i>s</i>	2017–18 <i>f</i>	% <i>change</i>
World					
Production	Mt	521	570	570	0
Consumption	Mt	526	551	569	3.3
– oilseed meal	Mt	305	321	330	2.8
– vegetable oil	Mt	178	185	190	2.7
Exports	Mt	153	167	170	1.8
Closing stocks	Mt	88.6	108	110	1.9
Stocks-to-use ratio	%	16.9	19.6	19.3	–
Soybean indicator price <i>a</i>	US\$/t	373	385	365	– 5.2
Canola indicator price <i>b</i>	US\$/t	415	425	425	0
Australia					
Total production	kt	3,750	5,564	4,227	– 24.0
– winter	kt	2,780	4,145	2,759	– 33.4
– summer	kt	970	1,419	1,467	3.4
Canola					
Production	kt	2,775	4,135	2,753	– 33.4
Exports <i>c</i>	kt	1,946	3,598	2,043	– 43.2
– value	A\$m	1,097	2,128	1,167	– 45.2
Price <i>d</i>	A\$/t	542	530	521	– 1.7

a US no. 2 soybeans, fob Gulf. *b* Rapeseed, Europe, fob Hamburg, July–June. *c* Delivered Melbourne. *d* July–June years. *f* ABARES forecast. *s* ABARES estimate.

Sources: ABARES; Australian Bureau of Statistics; US Department of Agriculture

Cotton

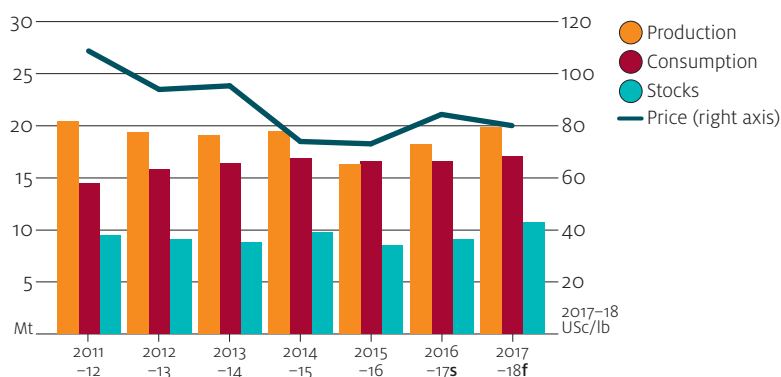
Benjamin K Agbenyegah

- World cotton prices are forecast to fall by 3 per cent due to supply growing faster than demand.
- Higher production of and strong import demand for high-quality cotton are expected to support growth in Australian cotton exports in 2017–18.
- Returns to Australian cotton growers are forecast to fall in 2017–18, reflecting lower world prices.

World cotton prices to fall in 2017–18

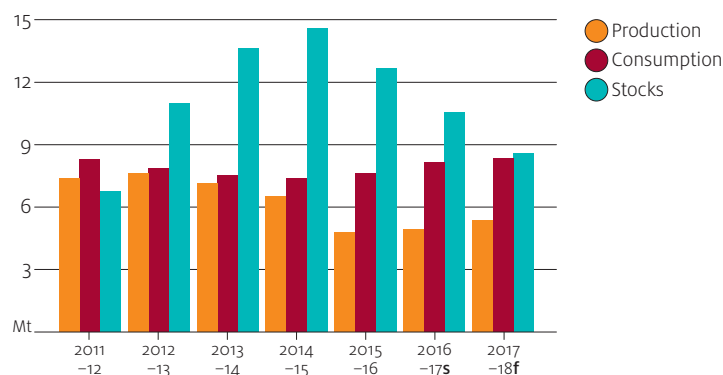
The world indicator price for cotton (Cotlook 'A' index) is forecast to fall by 3 per cent in 2017–18 (August to July) to average US80 cents a pound. This 4 per cent downward revision from the *Agricultural commodities: June quarter 2017* forecast is due to world (excluding China) production increasing faster than previously expected. World (excluding China) cotton supply is expected to grow at a faster rate than demand and to result in higher stocks, a higher stocks-to-use ratio and lower world cotton prices.

World (excluding China) cotton production, consumption and stocks and world indicator price, 2011–12 to 2017–18



^f ABARES forecast. ^s ABARES estimate.

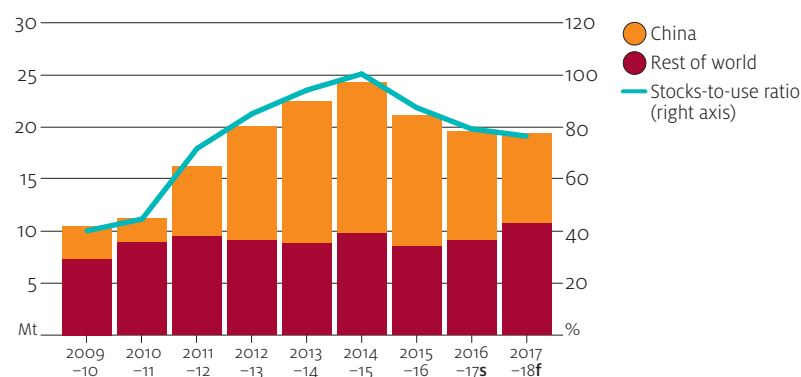
Cotton production, consumption and stocks, China, 2011–12 to 2017–18



^f ABARES forecast. ^s ABARES estimate.

In 2017–18 Chinese cotton stocks are expected to fall by 19 per cent to 8.7 million tonnes, more than offsetting an expected rise in world (excluding China) cotton stocks to 11 million tonnes (17 per cent). World cotton stocks are forecast to fall as a result by around 1 per cent to 19 million tonnes. The world stocks-to-use ratio is expected to fall by 3 percentage points to 76 per cent.

World cotton stocks, 2009–10 to 2017–18



^f ABARES forecast. ^s ABARES estimate.

World cotton production to increase in 2017–18

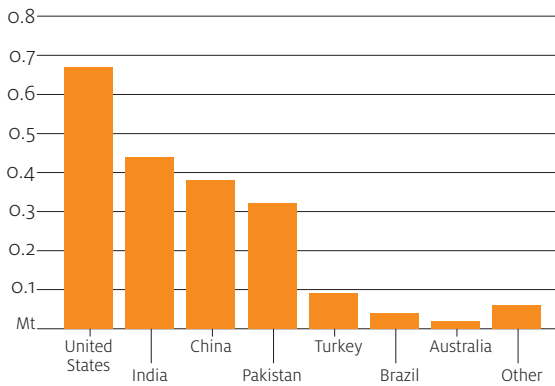
In 2017–18 world cotton production is forecast to increase by 9 per cent to 25 million tonnes. This 3 per cent upward revision on the June forecast is partly the result of increased area planted and faster than anticipated growth in Asia and the United States following well-distributed rains at the time of planting. Area planted to cotton is forecast to increase by 11 per cent in response to relatively high world prices and favourable returns compared with those for alternatives such as soybeans, grain sorghum, maize and wheat.

In 2017–18 cotton production in the United States is forecast to increase by 15 per cent to around 4.4 million tonnes. If realised, this would be the highest since 2006–07. This forecast is largely driven by a 16 per cent expansion in area planted to cotton to 4.9 million hectares. Average lint yield is assumed to increase by 3 per cent to a record 1 tonne a hectare, largely due to timely arrival of rains in the cotton-growing belts.

Cotton production in India is forecast to be around 6.3 million tonnes in 2017–18, up from 5.9 million tonnes the previous year. This is largely based on an expected 14 per cent increase in area planted to cotton in response to relatively high domestic cotton prices. Lint yields are assumed to average 6 per cent lower at 0.5 tonnes a hectare because of a whitefly pest attack on crops in some regions.

Chinese cotton production in 2017–18 is forecast to rise by 8 per cent to around 5.3 million tonnes, mainly reflecting an estimated 8 per cent increase in cotton planting. Xinjiang region farmers have responded to higher cotton prices offered by the Chinese Government by expanding area planted to cotton. Average lint yield is assumed to be largely unchanged at a record 1.7 tonnes a hectare, assuming favourable seasonal conditions of the previous year are repeated.

World cotton production, forecast changes, by country, 2017–18



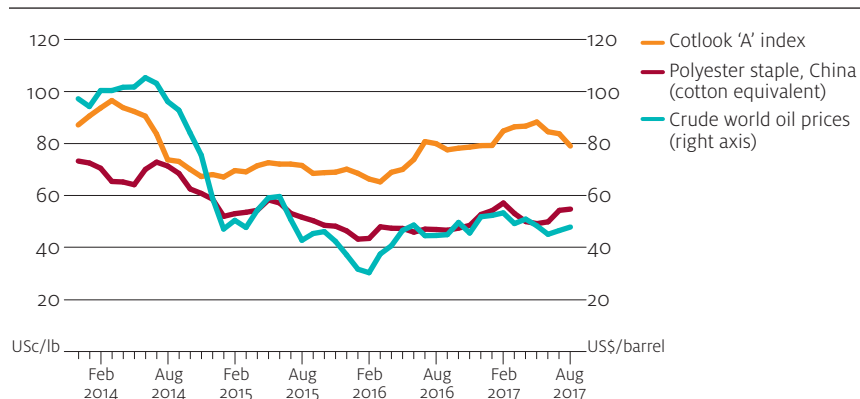
In 2017–18 world raw cotton exports are forecast to increase by 2 per cent to 8.4 million tonnes as a result of forecast increased production in all major exporting countries. Higher exports from Australia, Brazil, India and the United States are expected to be supported by strong global import demand for raw cotton.

Lower prices to support world cotton consumption in 2017–18

In 2017–18 world cotton consumption is forecast to be 25 million tonnes, up by 3 per cent year-on-year. This expected increase reflects strong demand for raw cotton in Bangladesh, China, India, Pakistan, Thailand, Turkey and Vietnam—driven by a rapid expansion in local textile and garment industries.

Cotton consumption in China is forecast to rise by 2 per cent to around 8.3 million tonnes in 2017–18. If realised, Chinese raw cotton consumption would be at its highest since 2009–10. Consumption in India is forecast to be 5.3 million tonnes, a 4 per cent increase on the previous year. Despite increased demand in these countries, growth in world cotton consumption is expected to be constrained by relatively low polyester prices.

World cotton prices and Chinese polyester prices, December 2013 to August 2017

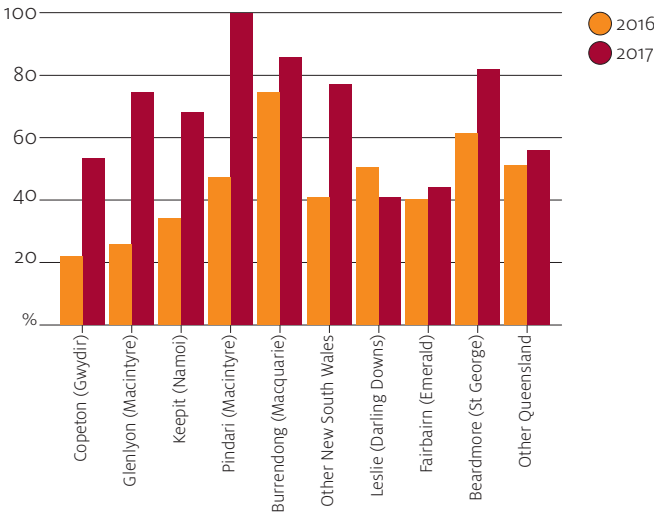


Australian cotton production to increase in 2017–18

Australian cotton production in 2017–18 is forecast to rise by 2 per cent to 956,000 tonnes. This mainly reflects a forecast 33 per cent rise in average yield, partially offset by an expected 23 per cent decline in planted area. Average yield is forecast to increase because of an expected rise in the share of area planted to irrigated cotton, which has higher yields than dryland cotton.

In 2017–18 area planted to cotton is forecast to fall by 23 per cent to 430,000 hectares. This is mainly due to a forecast decline of 73 per cent in area planted to dryland cotton (to 56,000 hectares), in response to low levels of soil moisture. However, area planted to irrigated cotton is forecast to rise by 7 per cent to 374,000 hectares as a result of an increase in the supply of irrigation water and favourable returns from growing irrigated cotton compared with alternative crops. On 28 August 2017 average storage levels of public irrigation dams serving cotton-growing regions were around 67 per cent of capacity, 11 percentage points higher than at the same date in 2016.

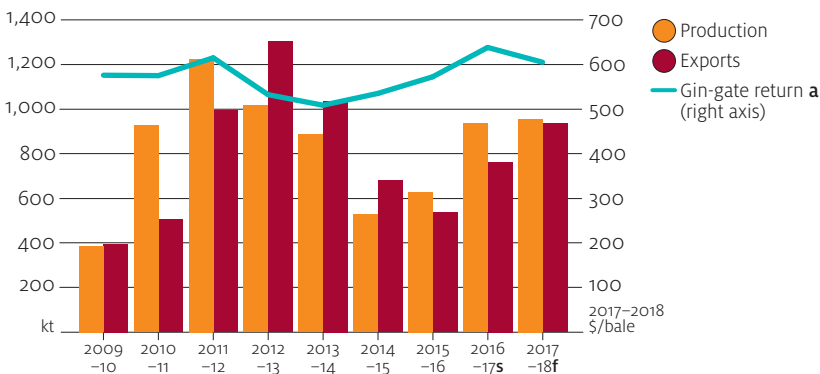
Storage levels of main irrigation dams, at 28 August



In 2017–18 returns to Australian cotton growers are forecast to average \$605 a bale (227 kilograms) of lint (including value of cottonseed and net of ginning costs), compared with around \$626 a bale in 2016–17. This forecast decline reflects lower world cotton prices.

Australian cotton exports in 2017–18 are forecast to increase by 23 per cent to around 935,000 tonnes. This expected increase is the result of production increases in 2016–17 and 2017–18 and strong import demand for quality cotton from Asia. The value of Australian cotton exports is forecast to increase by 19 per cent to around \$2.1 billion in 2017–18, reflecting a rise in export volumes.

Cotton production, exports and gin-gate returns, Australia, 2009–10 to 2017–18



a Value of lint and cottonseed less ginning costs. f ABARES forecast. s ABARES estimate.

Outlook for cotton

Category	unit	2015–16	2016–17 s	2017–18 f	% change
World a					
Production	Mt	21.1	23.2	25.2	8.6
Consumption	Mt	24.2	24.7	25.4	2.8
Exports	Mt	7.7	8.2	8.4	2.4
Closing stocks	Mt	21.2	19.6	19.4	–1.0
Stocks-to-use ratio	%	87.4	79.4	76.4	–
Cotlook 'A' index	USc/lb	70.4	82.7	80.0	–3.3
Australia b					
Area harvested	'000 ha	270	557	430	–22.9
Lint production	kt	629	935	956	2.2
Exports	kt	536	763	935	22.7
– value	A\$m	1,269	1,778	2,110	18.7
Gin-gate return c	A\$/bale	552	626	605	–3.3

a August–July years. b July–June years. c Value of lint and cottonseed less ginning costs.

f ABARES forecast. s ABARES estimate.

Sources: ABARES; Australian Bureau of Statistics; US Department of Agriculture

Sugar

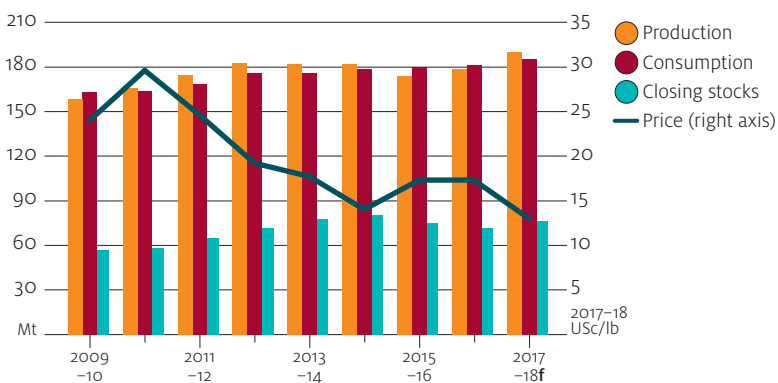
Benjamin K Agbenyegah

- World raw sugar prices are forecast to fall by 24 per cent in 2017–18 as a result of increased world supplies.
- Returns to Australian cane growers are forecast to average around \$44 a tonne of cane cut for crushing in 2017–18.
- Australian sugar production is forecast to remain largely unchanged in 2017–18 despite a fall in cane production.

Record world sugar supply to drive prices down in 2017–18

The world indicator price for raw sugar (Intercontinental Exchange, nearby futures, no. 11 contract) is forecast to fall by 24 per cent in 2017–18 (October to September) to average US13 cents a pound. This is a 13 per cent downward revision from the *Agricultural commodities: June quarter 2017* forecast and reflects world sugar production increasing at a faster rate than previously expected. Most forecast production growth is expected to occur in Asia and Europe. Global supply is expected to grow faster than demand during 2017–18, leading to this significant fall in price.

World sugar production, consumption, stocks and price, 2009–10 to 2017–18 ^a



^a Production, consumption and stocks are raw value equivalent and years are from October to September.
^f ABARES forecast.

In the 2016–17 marketing year, sugar prices are estimated to have increased by 2 per cent to average US17 cents a pound. This reflects lower sugar production in India and the United States due to unfavourable weather.

Record world sugar production forecast for 2017–18

World sugar production in 2017–18 is forecast to increase by 7 per cent to a record 190 million tonnes, slightly higher than the June 2017 forecast. Production is forecast to increase in Brazil, China, the European Union, India, Thailand and other smaller producing countries.

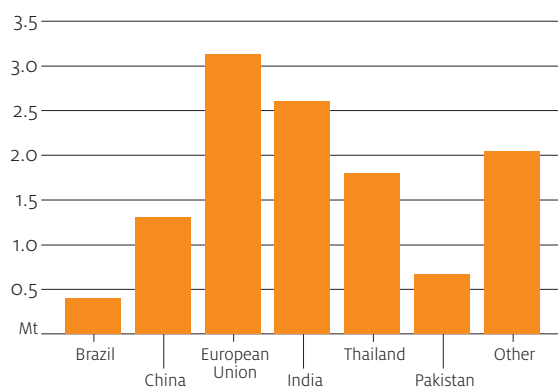
In 2017–18 sugar production in Brazil—the world's largest producer—is forecast to increase by 1 per cent to 40 million tonnes. This is in response to relatively high sugar prices compared with ethanol and despite a forecast 3 per cent decline in cane production. Around 47 per cent of cane crush is expected to be allocated to sugar production in 2017–18, up from 46 per cent in 2016–17.

In China and Thailand, production is expected to increase in 2017–18 in response to higher relative returns, increased yields and a return to average monsoon rains during the 2016 planting season. Chinese sugar production is forecast to be 12 million tonnes in 2017–18 (June to May), up by 15 per cent year-on-year. Thai sugar production is forecast to be 12 million tonnes, up by 18 per cent.

In India, increased prices and a return to average monsoon rains and higher yields are expected to drive sugar production up by 11 per cent to around 27 million tonnes in 2017–18. The Indian Government increased its 'fair and remunerative price' for cane in 2017–18 by around 11 per cent to 255 rupees a quintal (around US4 cents a kilogram).

Increased beet plantings in the European Union in 2017–18 ahead of the abolition of EU production quotas in October 2017 are estimated to increase EU sugar production by 18 per cent to around 20 million tonnes (raw value equivalent). If realised, EU sugar production would be its highest since 2005–06.

Forecast changes in world sugar production, by country, 2017–18



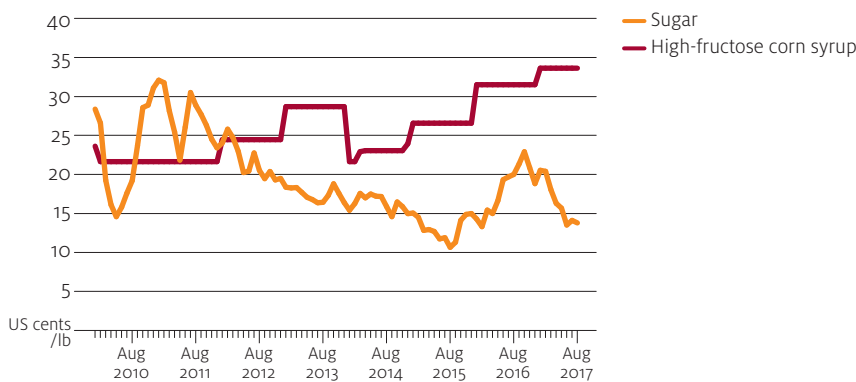
In 2017–18 world sugar exports are forecast to increase by 3 per cent to 70 million tonnes, consistent with the forecast increase in global sugar production. Higher exports from Brazil and Thailand are expected to meet strong import demand from Algeria, Bangladesh, Indonesia, Malaysia, Nigeria, the United Arab Emirates and the United States.

Lower prices to boost world sugar consumption in 2017–18

In 2017–18 world sugar consumption is forecast to rise by around 2 per cent to 185 million tonnes. Consumption is forecast to increase in non-OECD countries including Brazil, China, India, Indonesia, Pakistan, the Russian Federation and Ukraine due to falling sugar prices and rising consumer incomes. Consumption is expected to continue to fall in the European Union and the United States because of long-term declines in the population growth rate, as well as trends in diet and nutrition policies driven by health concerns.

Relatively low sugar prices compared with the prices of alternatives (high-fructose corn syrup and isoglucose) have widened the price gap between these commodities in recent years. This is expected to help sugar maintain its share of world sweetener consumption in 2017–18.

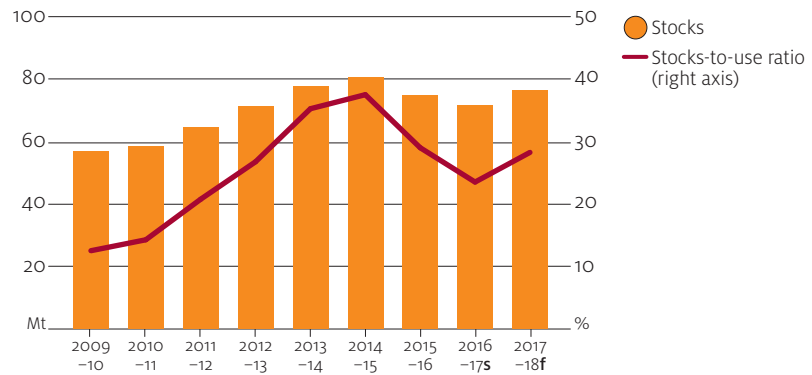
Sugar and high fructose corn syrup prices, monthly, January 2010 to August 2017



World sugar stocks to increase in 2017–18

In 2017–18 world stocks of sugar are forecast to increase by 7 per cent to around 76 million tonnes as a result of world sugar production rising at a faster rate than world consumption. The world stocks-to-use ratio is expected to increase to 41 per cent in 2017–18 from around 39 per cent in 2016–17.

World sugar stocks, 2009–10 to 2017–18 a



a Stocks are raw value equivalent and years are from October to September.
f ABARES forecast. s ABARES estimate.

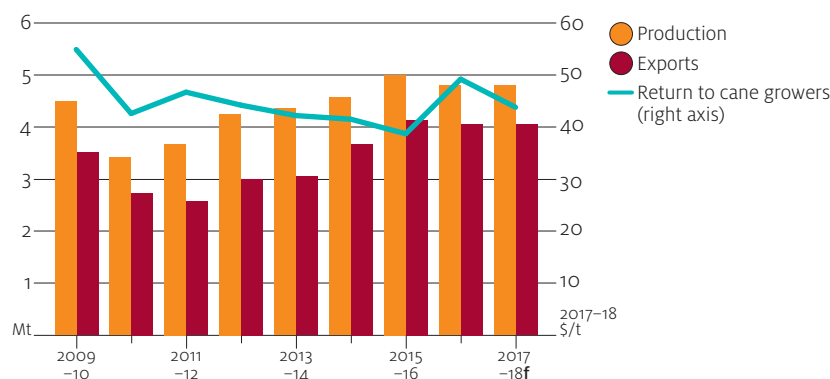
Australian sugar production largely unchanged in 2017–18 despite lower crush

In 2017–18 cane crush is forecast to fall by 5 per cent to 35 million tonnes. Reduced cane production is expected as a result of continued dry seasonal conditions (July 2016 to March 2017) in southern Queensland, particularly in the Maryborough mill area. In March 2017 Tropical Cyclone Debbie caused damage to cane in the northern Queensland regions of Burdekin, Mackay and Proserpine. However, a 5 per cent rise in commercial cane sugar content is expected to offset an assumed 6 per cent fall in average cane yields and to result in total sugar production being largely unchanged at around 4.8 million tonnes.

Returns to Australian cane growers are forecast to average around \$44 a tonne in 2017–18. This is down from \$48 a tonne in 2016–17 due to lower forecast world prices.

Australian sugar exports are forecast to remain largely unchanged at 4.1 million tonnes in 2017–18. However, the value of Australian sugar exports is forecast to fall by 12 per cent to around \$2 billion, reflecting lower world prices.

Sugar production, exports and returns to cane growers, Australia, 2009–10 to 2017–18 ^a



^a Production and exports are in raw value equivalent. ^f ABARES forecast.

Outlook for sugar ^a

Category	unit	2015–16	2016–17 ^s	2017–18 ^f	% change
World ^b					
Production	Mt	174	178	190	6.6
– Brazil	Mt	38.1	39.6	40.0	1.0
Consumption	Mt	180	182	185	2.0
Exports	Mt	58.5	68.0	70.0	2.9
Closing stocks	Mt	74.8	71.6	76.4	6.7
Stocks-to-use ratio	%	41.6	39.4	41.3	–
Price	US\$/lb	16.7	17.0	13.0	– 23.5
Australia ^c					
Area	'000 ha	381	372	380	2.2
Production	kt	4,920	4,804	4,800	– 0.1
Exports	kt	4,140	4,049	4,051	0.0
– value	A\$m	1,823	2,191	1,929	– 12.0
Return to cane growers	A\$/t	37.3	48.2	44.0	– 8.3

^a Volumes are raw value equivalent. ^b October–September years. ^c July–June years. ^f ABARES forecast. ^s ABARES estimate.

Sources: ABARES; Australian Bureau of Statistics; F.O. Licht, International Sugar and Sweetener Report, World Sugar Balances, Ratzeburg, Germany; F.O. Licht, International Sugar and Sweetener Report, Ratzeburg, Germany; US Department of Agriculture

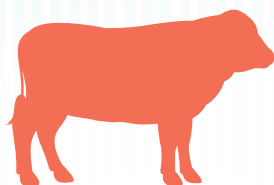
Agriculture

Livestock





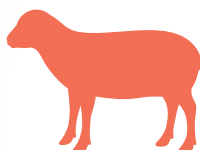
↓13%
to 465 Ac/kg^a
in 2017-18



Beef and veal

Saleyard prices to fall due to weaker export returns and increased beef production.

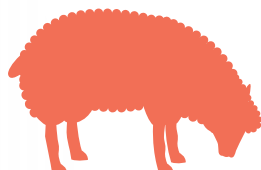
↑6%
to 625 Ac/kg^b
in 2017-18



Sheep meat

Firm export demand and restocker demand to support lamb prices.

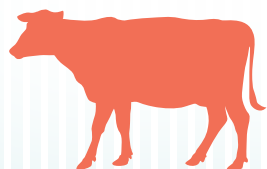
↑10%
to 1,550 Ac/kg^c
in 2017-18



Wool

Wool prices to rise due to strong export demand and slow supply growth.

↑6%
to 47 Ac/L^d
in 2017-18



Dairy

Milk prices to rise, reflecting firmer global demand and competition for milk supply.

^a Australian weighted average saleyard price of beef cattle. ^b Australian weighted average saleyard price of lamb. ^c Eastern Market Indicator price, clean equivalent. ^d Australian average farmgate milk price.

Beef and veal

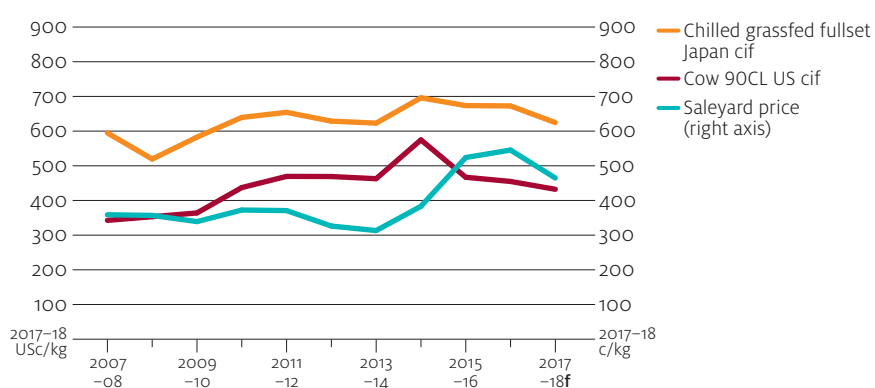
Jack Mullumby

- Lower beef export prices to place downward pressure on saleyard and live export prices.
- Higher slaughter to expand Australian beef production by 8 per cent.
- Cattle numbers to increase for the second consecutive year.
- The value of Australian beef exports to fall despite increased export volumes.

Cattle prices face downward pressure

In 2017–18 the weighted average saleyard price of beef cattle is forecast to fall to 465 cents a kilogram (carcase weight), 13 per cent below the 2016–17 average. This is a downward revision from the *Agricultural commodities: June quarter 2017* forecast, reflecting weaker than expected demand in export markets (principally Japan) due to strong competition from the United States. In the September quarter 2017 the chilled beef indicator price (chilled grassfed fullset Japan cif) averaged 15 per cent lower year-on-year.

Weighted average saleyard price, beef cattle, and export indicator prices, Australia, 2007–08 to 2017–18



f ABARES forecast.

Competition in the Japanese chilled beef market is expected to remain strong. This is forecast to drive the chilled beef indicator price down by 5 per cent year-on-year to average US\$625 cents a kilogram in 2017–18. In the United States, expanding local beef production is expected to reduce import demand and drive the frozen manufacturing beef indicator (cow 90CL US cif price) down by 3 per cent to US\$433 cents a kilogram.

Increased slaughter to raise production

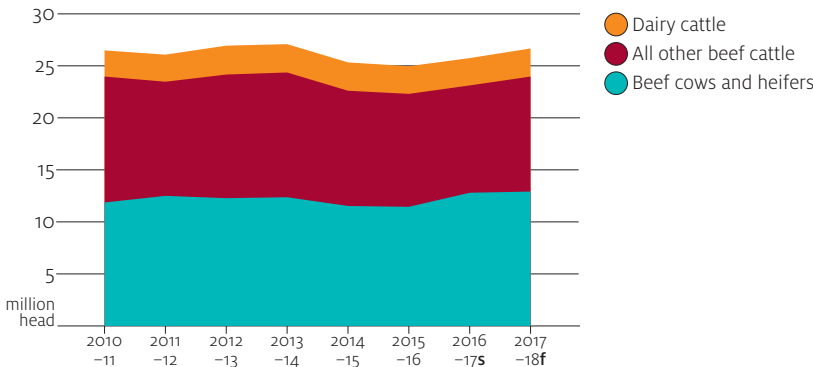
In 2017–18 Australian cattle and calf slaughter is forecast to increase by 5 per cent to 7.8 million head, mainly reflecting increased turn-off in Queensland. Southern region beef-producing farms are expected to continue expanding herds, assuming favourable seasonal conditions.

Average slaughter weights are forecast to increase from the 2016–17 record of 279 kilograms, supported by a relatively high share of male cattle in turn-off and cattle on feed. Australian beef and veal production is forecast to increase by 8 per cent to 2.2 million tonnes (carcase weight).

Australian herd to expand for second consecutive year

In 2017–18 the Australian cattle herd is forecast to increase by 4 per cent to 26.7 million head (including 24.0 million beef cattle). If realised, this would be the second consecutive year of herd expansion—mainly reflecting lower turn-off across Australia. Assumed favourable seasonal conditions are expected to lead to improved branding rates and lower cattle death rates, resulting in herd expansion. However, the Australian cattle herd is expected to remain at around 2 per cent below the recent peak of 27.1 million head (2013–14).

Cattle herd, Australia, 2010–11 to 2017–18



f ABARES forecast. s ABARES estimate.

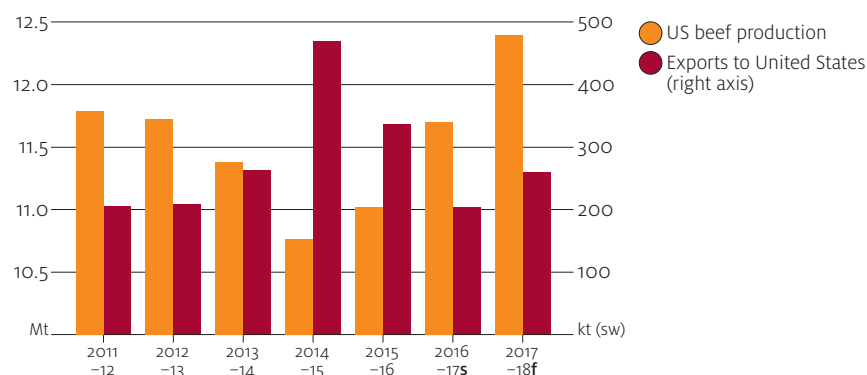
Increased exports and lower unit values forecast

Australian beef and veal exports are forecast to increase in 2017–18 by 10 per cent to 1.1 million tonnes (shipped weight), reflecting increased beef production. Despite this increase, the value of Australian beef exports is forecast to fall by 1 per cent to \$7.0 billion. Lower average export unit values are forecast because strong competition in major export markets is expected to reduce demand for Australian beef exports, particularly in the United States and Japan.

US import demand to remain weak

In 2017–18 Australian beef exports to the United States are forecast to expand to around 260,000 tonnes (shipped weight). If realised, this would represent an increase of 27 per cent on the previous year but exports would remain around 12 per cent below the average for the five years to 2016–17. US demand for imported beef is expected to remain weak as a result of further expansion in the domestic cow herd and in beef production. In 2016–17 US beef production expanded by 7 per cent and beef imports fell by 7 per cent. Over the same period, the frozen manufacturing beef indicator (cow 90 CL US cif price) fell by 1 per cent to average US\$447 cents a kilogram.

US cow slaughter and Australian beef exports to the United States, 2011–12 to 2017–18



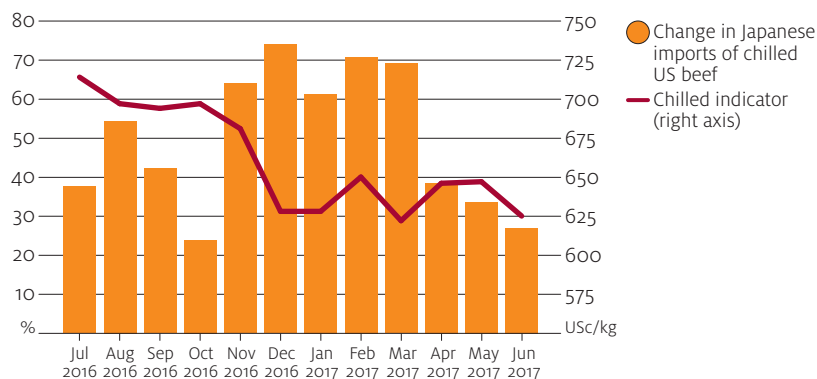
^f ABARES forecast. ^s ABARES estimate.

Strong competition for chilled exports to Japan

Australian beef exports to Japan are forecast to increase in 2017–18 by 6 per cent to around 291,000 tonnes. Japanese demand for imported beef is expected to remain robust, supported by forecast higher consumption and a decline in local production.

In 2016–17 Japanese beef production fell by 2 per cent to 325,000 tonnes, the lowest volume in 30 years. This reflected continued consolidation in the Japanese cattle industry, driven by older producers exiting the industry. In contrast, Japanese beef consumption rose by around 6 per cent in response to lower imported beef prices. Between July 2016 and June 2017, the Japanese chilled beef indicator price fell by 13 per cent to US\$623 cents a kilogram. Over the same period, monthly imports of chilled US beef increased sharply to average 50 per cent higher year-on-year.

Japanese imports of chilled US beef, year-on-year change, and chilled beef export indicator price, Australia, July 2016 to June 2017



Korean import demand strong

In 2017–18 Australian beef exports to the Republic of Korea are forecast to increase by 3 per cent to 185,000 tonnes. Demand for imported beef in Korea continues to be strong, supported by robust income growth and falling local beef production. Frozen beef is expected to account for most of the forecast increase. Demand for chilled Australian beef is likely to be lower due to strong competition from US exports.

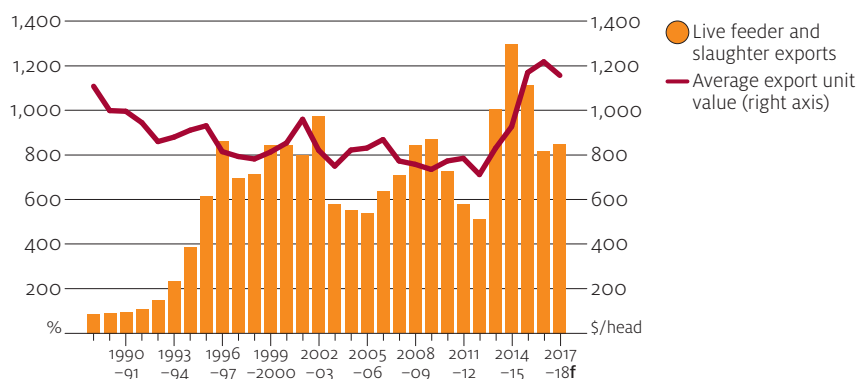
Increased exports to China forecast

Australian beef exports to China are forecast to increase in 2017–18 by 1 per cent to around 105,000 tonnes. This mainly reflects an increase in supply of beef available for export. China's share of Australian beef exports has been relatively stable since 2014–15 at around 10 per cent. Chinese beef imports are forecast to increase. Import demand is expected to remain strong, supported by assumed higher incomes and limited growth in local beef production. In 2016–17 Chinese beef imports from all suppliers except Australia expanded by 15 per cent.

Live export unit values to fall from 2016–17 record

In 2017–18 the value of Australian live feeder and slaughter cattle exports is forecast to remain largely unchanged at \$1 billion. Exports are expected to increase by 4 per cent to 850,000 head. This reflects strong import demand in the major markets of Indonesia and Vietnam supported by increasing incomes and limited growth in local beef production. Export prices for Australian live cattle are forecast to average around \$1,180 a head. If realised, this would be a 6 per cent reduction on the previous year's record average price of \$1,260 a head and the third-highest average price on record.

Live feeder and slaughter cattle exports and average export unit value, Australia, 1988–89 to 2017–18



f ABARES forecast.

Outlook for beef and veal

Category	unit	2015–16	2016–17 s	2017–18 f	% change
Cattle numbers ab	million	25.0	25.7	26.7	3.9
– beef cattle a	million	22.3	23.1	24.0	3.9
Slaughterings	'000	8,796	7,423	7,800	5.1
Production	kt (cw)	2,344	2,069	2,244	8.5
Exports					
– to Japan	kt (sw)	265	274	291	6.2
– to United States	kt (sw)	336	204	260	27.5
– to China	kt (sw)	129	104	105	1.0
– to Korea, Rep. of	kt (sw)	189	179	185	3.4
– total	kt (sw)	1,196	992	1,090	9.9
– value	A\$m	8,495	7,119	7,026	– 1.3
Live feeder/slaughter cattle exports c	'000	1,114	818	850	3.9
– value	A\$m	1,280	1,031	1,000	– 3.0
Price					
– saleyard	Ac/kg (cw)	505	535	465	– 13.1
– United States import d	USc/kg	451	447	433	– 3.1
– Japan import e	USc/kg	650	661	625	– 5.4

a At 30 June. b Includes dairy cattle. c Includes buffalo. d Cow 90CL US cif price. e Chilled grassfed fullset Japan cif price. f ABARES forecast. s ABARES estimate.

Sources: ABARES; Australian Bureau of Statistics; Meat & Livestock Australia

Sheep meat and wool

Peter Berry

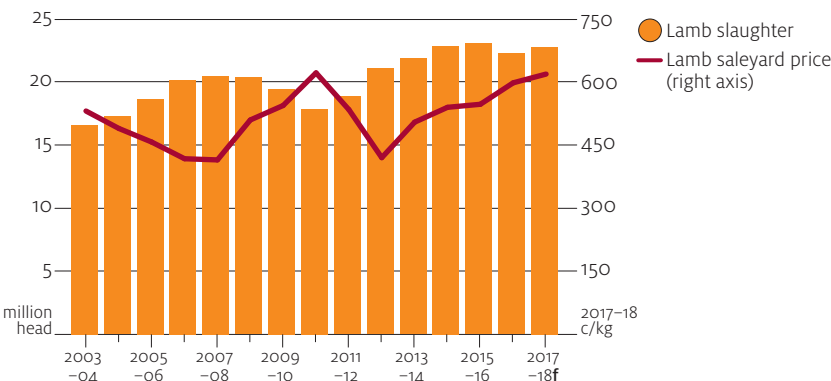
- Saleyard lamb prices are forecast to rise in 2017–18 as a result of firm export demand and continued flock rebuilding.
- Wool prices are forecast to rise in 2017–18 as growth in global demand for fine wool outpaces growth in supply.
- The national sheep flock is forecast to expand in 2017–18, albeit at a slower rate following a return to drier seasonal conditions during the year.

Lamb prices to rise

In 2017–18 Australian saleyard prices of lamb are forecast to rise by 6 per cent to average 625 cents a kilogram. This reflects continued (though slower) flock rebuilding and firm demand for lamb in Australia’s key export markets.

Flock rebuilding activity has slowed due to a return to drier conditions in some of the main sheep-producing regions of southern Australia. This has driven higher rates of turn-off in affected regions. In the seven months to the end of July, lamb turn-off through saleyards increased by 12 per cent year-on-year. In contrast, lamb slaughter was down by 7 per cent. Over the same period, the average restocker lamb price maintained a premium over the average slaughter lamb price. This indicates that restocker demand remains relatively strong.

Lamb saleyard price and slaughter, Australia, 2003–04 to 2017–18



f ABARES forecast.

Sheep prices to remain strong

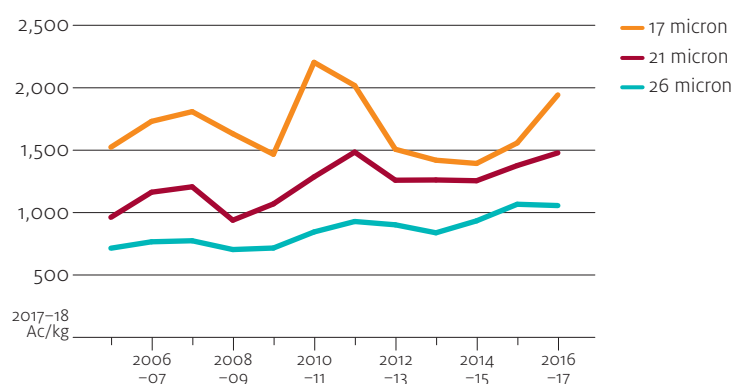
Sheep prices are forecast to increase by 6 per cent to average 440 cents a kilogram in 2017–18 as graziers continue to retain breeding ewes to rebuild flocks. The retention of breeding ewes has been aided by on-farm fodder stores in many regions and availability of relatively low-priced feed grains for supplementary feeding.

Wool prices to rise as global demand continues to outpace growth in supply

In 2017–18 the Australian Eastern Market Indicator (EMI) wool price is forecast to rise by 10 per cent to 1,550 cents a kilogram. This is an upward revision on the *Agricultural commodities: June quarter 2017* forecast, reflecting stronger than expected growth in global demand for woollen textiles and apparel relative to growth in global fine wool supplies. In particular, prices for superfine apparel wool (19 micron and finer) have increased—driving the EMI to a record 1,614 cents a kilogram in August 2017.

The Australian Wool Exchange reweighted the EMI at the end of 2016–17 to reflect the increasing fineness of the Australian wool clip. Finer wools achieve higher prices and the reweighting has contributed to an increase of around 2 per cent in this price series from July 2017.

Average wool prices, Australia, 2005–06 to 2016–17



Flock rebuilding to continue at a slower rate

In 2016–17 improved seasonal conditions across Australia’s major sheep-producing regions led to increased retention of breeding ewes and widespread flock rebuilding. As a result, the national flock is estimated to have increased by 5 per cent to around 71 million head by 30 June 2017.

In 2017–18 seasonal conditions have been mixed. Dry conditions in western New South Wales, eastern Victoria, Queensland and Western Australia have led to a slowing in flock rebuilding compared with last season. In contrast, conditions have been more favourable in eastern New South Wales, western Victoria and south-eastern South Australia, supporting higher rates of flock rebuilding.

For the three months to November 2017, the Bureau of Meteorology has forecast close to average conditions across eastern Australia and continued dry conditions in Western Australia. Overall spring pasture growth in 2017 is expected to be less favourable than in 2016 and as a result the rate of flock rebuilding is expected to slow. The national flock is forecast to rise by 3 per cent to around 73 million head by the end of June 2018.

Lamb production to increase but mutton production to fall

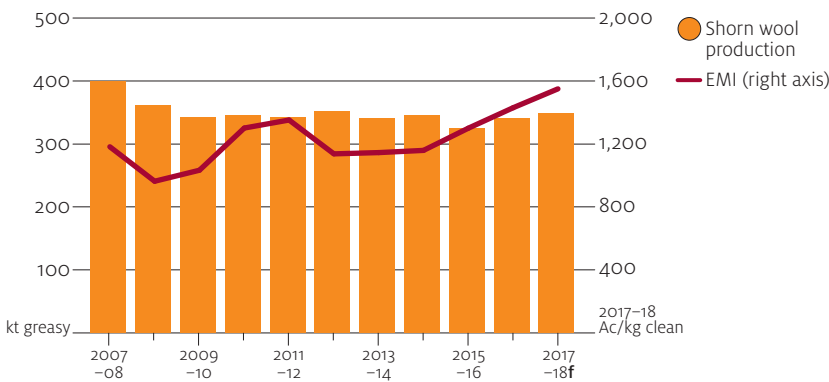
In 2017–18 lamb slaughter is forecast to increase by 2 per cent to 22.8 million head, reflecting increased lamb markings. Lamb production is forecast to increase by 1 per cent to 512,000 tonnes for the year, reflecting a forecast fall in carcase weights in response to less favourable pastures.

In 2017–18 sheep slaughter is forecast to fall by 1 per cent to 6.5 million head and mutton production by 1 per cent. This reflects continued retention of breeding ewes and lower forecast carcase weights following a return to drier conditions.

Shorn wool production to grow in 2017–18

In 2017–18 shorn wool production is forecast to increase by 4 per cent to 353,000 tonnes. Less favourable pasture conditions are expected to put downward pressure on wool yields. However, this will be partly offset by an expected increase in the number of wethers and the maturation of recent additions to the national flock. The number of sheep shorn is forecast to increase to 78 million head.

Shorn wool production and price, Australia, 2007–08 to 2017–18



f ABARES forecast.

Lamb exports to increase as mutton exports fall

In 2017–18 lamb export volumes are forecast to increase by 1 per cent to 258,000 tonnes, valued at \$2.0 billion. Import demand for Australian lamb by China and other Asian countries is forecast to grow as a result of rising incomes and lower exports from New Zealand (Australia's main competing supplier). Australian exports to the United States are forecast to recover somewhat as lamb supplies increase.

In 2017–18 Australian mutton exports are forecast to fall by 1 per cent to around 134,000 tonnes, reflecting lower mutton production. Countries in the Middle East are expected to remain the main markets for Australian mutton. Increased incomes due to forecast higher oil prices and assumed stronger economic growth are expected to result in increased exports to some Gulf Cooperation Council members.

Live sheep exports to grow slowly

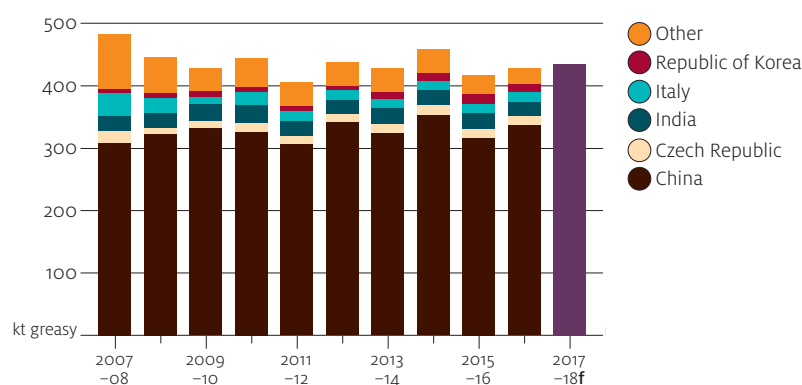
In 2017–18 live sheep exports are forecast to grow by 1 per cent to around 1.9 million head. Growth in live exports is expected to be limited by continued flock rebuilding, particularly in Western Australia—which accounts for the bulk of Australia's live exports. The Middle East accounted for 96 per cent of Australia's live exports in 2016–17, and export demand is assumed to remain firm for the year.

Australian wool exports to grow

In 2017–18 Australian wool exports are forecast to increase by 3 per cent to 442,000 tonnes, reflecting increased wool production. Forecast higher wool prices are expected to drive a 13 per cent increase in the value of wool exports to \$4.1 billion.

In 2017–18 Australian wool exports to China are forecast to increase by 3 per cent to 346,000 tonnes. China has accounted for around 78 per cent of Australia's wool exports on average over the past five years. The increase largely reflects growth in China's domestic demand for woollen apparel in response to strong economic growth and rising incomes.

Australian wool exports, by destination, 2007–08 to 2017–18



f ABARES forecast.

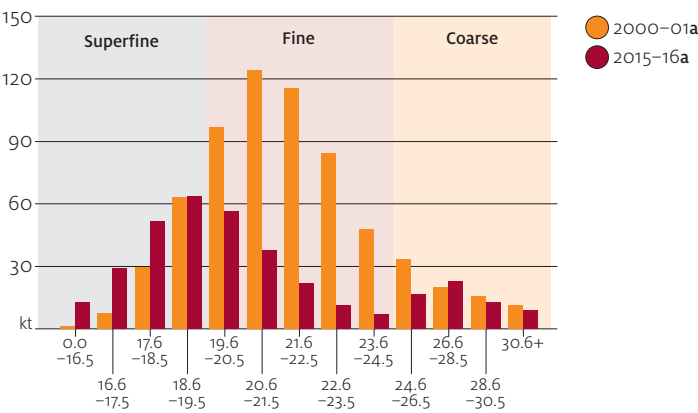
Changes in Australian wool production by micron

Peter Berry

Australian wool production has been in long-term decline since the early 1990s due to strong price competition from synthetic fibres. Combined with the growing profitability of lamb production, this has led to fundamental changes in the mix of wool in Australia’s national wool clip.

Before the early 1990s the bulk of Australia’s wool was fine (with a diameter of 19.6 to 24.5 microns) and shorn from merino sheep which constituted the bulk of the national flock. Superfine wool (less than 19.6 microns) accounted for only a small share of Australian wool production. A small proportion of Australia’s wool clip also came from breeds other than merinos that produced much coarser wools (greater than 24.5 micron).

Wool production by diameter, Australia, 2000–01 and 2015–16



a Three-year average, ending in the year shown.
 Source: Australian Wool Testing Authority

The incentives for wool growers to produce wool of different diameters have been changing. Since the early 1990s wool has been displaced from global textiles markets by lower-cost synthetic fibres. In the mid 1990s wool was three times more expensive than synthetic fibres for textile manufacturers and in 2017 it was nine times more expensive.

Clothing made from superfine wool has become a niche segment of the luxury apparel market for consumers who are prepared to pay for its thermal qualities and feel. This demand has translated to high sustained prices for superfine wool, which growers have responded to by increasing production.

In the decade to 2017–18 rising lamb prices have provided an incentive for farmers to crossbreed merinos with other breeds that have more favourable meat characteristics. However, these new breeds typically produce coarser wool.

The result of these market forces is that the diameter distribution of Australia’s wool clip has become distinctly ‘bimodal’, with two separate peaks forming towards the superfine and coarser ends of the spectrum.

Outlook for sheep meat and wool

Category	unit	2015–16	2016–17 s	2017–18 f	% change
Sheep numbers a	million	67.5	70.9	73.2	3.2
Sheep shorn	million	73.4	74.3	77.6	4.4
Slaughterings					
Lambs	'000	23,131	22,344	22,800	2.0
Sheep	'000	8,127	6,553	6,500	– 0.8
Production					
Lamb	kt (cw)	516	506	512	1.2
Mutton	kt (cw)	196	163	161	– 1.2
Wool production (greasy)					
– shorn	kt	325	340	353	3.8
– other b	kt	79.2	73.4	74.5	1.4
– total	kt	404	414	428	3.4
Exports					
Lamb	kt (sw)	261	255	258	1.2
– value	\$m	1,771	1,939	1,984	2.3
Mutton	kt (sw)	156	135	134	– 0.7
– value	\$m	699	720	713	– 1.0
Live sheep	'000	1,859	1,851	1,875	1.3
– value	\$m	228	233	240	3.0
Wool					
– volume	kt (gr. eq.)	417	429	442	3.0
– to China	kt (gr. eq.)	316	336	346	3.0
– value c	\$m	3,283	3,619	4,093	13.1
Prices					
Lambs d	c/kg (cw)	533	592	625	5.6
Sheep d	c/kg (cw)	316	415	440	6.0
Eastern Market Indicator e	c/kg	1,256	1,415	1,550	9.5

a At 30 June. **b** Includes wool on sheepskins, fellmongered and slipe wool. **c** Balance of payments basis. **d** Saleyards prices. **e** Clean equivalent. **f** ABARES forecast. **s** ABARES estimate.

Sources: ABARES; Australian Bureau of Statistics; Australian Wool Exchange; Meat & Livestock Australia

Chicken meat

Conrad Rees

- Australian chicken meat production is forecast to increase by 4 per cent in 2017–18.
- The volume of chicken meat exports is forecast to increase by 11 per cent in 2017–18.
- Australian chicken meat consumption per person is forecast to reach a new record high.

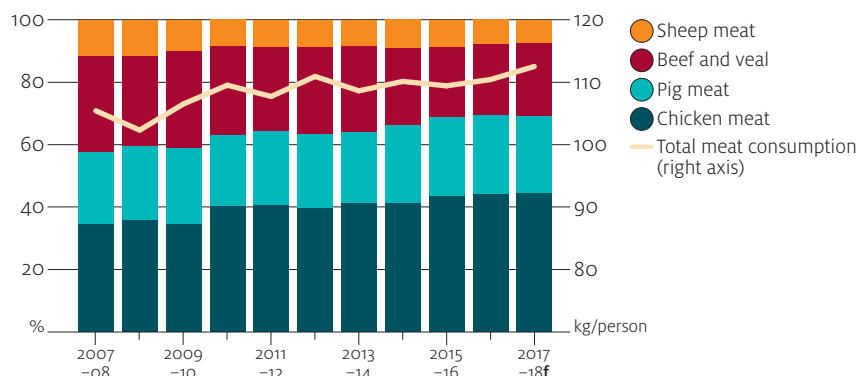
Lower red meat prices to increase competition

In 2017–18 Australian chicken meat production is forecast to increase by 4 per cent to 1.3 million tonnes (carcase weight), reflecting low feed grain prices. Chicken slaughter is forecast to increase by 4 per cent to 680 million birds. A marginal increase in average carcase weight is also expected.

Forecast declines in the prices of beef and pig meat are expected to increase competition in the domestic meat market in 2017–18. However, continued productivity improvements in the chicken industry are expected to continue to place downward pressure on the retail price of chicken meat and support consumer demand.

Australian chicken meat consumption is forecast to increase by 3 per cent year-on-year to average just under 50 kilograms per person in 2017–18. Chicken meat is expected to remain the most consumed meat in Australia, accounting for around 44 per cent of the total volume of domestic meat consumption. In contrast, consumption of pig meat is forecast to average 28 kilograms per person, beef and veal 26 kilograms and sheep meat 8.5 kilograms.

Meat consumption total and shares, Australia, 2007–08 to 2017–18



f ABARES forecast.

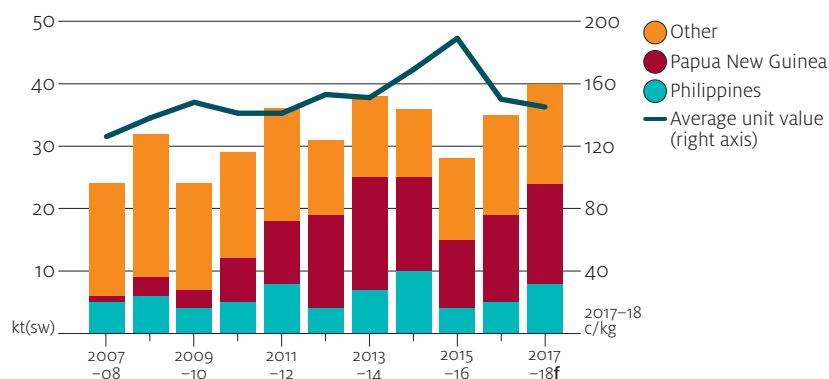
Exports to continue growing

In 2016–17 Australian exports of chicken meat increased by 31 per cent to 35,700 tonnes (shipped weight). Chicken meat exports to Papua New Guinea and the Philippines together increased by 34 per cent to 19,500 tonnes. These two nations accounted for around 60 per cent of Australian chicken meat exports.

In 2017–18 Australian chicken meat exports are expected to continue growing to reach a forecast 40,000 tonnes, representing an increase of 12 per cent. The value of Australian chicken meat exports is forecast to increase by around 6 per cent to reach \$58 million. Lower domestic prices are expected to make exports more attractive for chicken meat producers. Income growth in the Asia-Pacific region remains the most important driver of demand for Australian exports. The recent outbreak of avian influenza in the Philippines is also expected to support demand for Australian exports.

Exports as a share of production are forecast to increase slightly in 2017–18 and account for around 4 per cent of domestic production.

Chicken meat export volume and average unit value, Australia, 2007–08 to 2017–18



f ABARES forecast.

Outlook for chicken meat

	unit	2015–16	2016–17	2017–18 f	% change
Production	kt (cw)	1,170	1,230	1,284	4.5
Slaughterings	million	623	653	680	4.0
Export volume	kt (sw)	27.3	35.7	40.0	12.0
Export value	\$m	49.8	54.9	58.0	5.6

f ABARES forecast.

Sources: ABARES; Australian Bureau of Statistics

Pig meat

Conrad Rees

- The Australian weighted over-the-hooks price of pigs in 2017–18 is forecast to fall by 18 per cent to average 285 cents a kilogram (dressed weight).
- In 2017–18 domestic pig production is forecast to increase by 4 per cent to 411,000 tonnes.
- Australian pig meat imports are forecast to increase by 2 per cent to 170,000 tonnes in 2017–18.

Pig prices to fall further

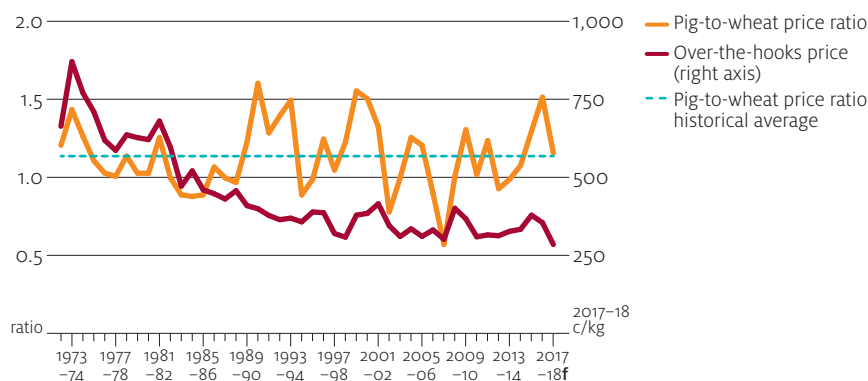
In 2017–18 the Australian weighted average over-the-hooks price of pigs is forecast to fall by around 18 per cent to 285 cents a kilogram, a downward revision from the *Agricultural commodities: March quarter 2017* forecast. This revision reflects a sharp 24 per cent price decline between December 2016 and June 2017 as a result of strong growth in supply and increased competition from alternative meats.

In 2017–18 Australian pig meat production and imports are forecast to grow. This will further increase supply and maintain downward pressure on pig prices. In addition, lower retail prices for beef and chicken are expected to encourage substitution by consumers away from pig meat.

If realised, the 2017–18 average price will be the lowest on record (adjusted for inflation). However, pig-to-feed price ratios (indicators of relative profitability) are expected to remain relatively favourable due to forecast low feed prices. The forecast average pig-to-wheat price ratio is 1.16, higher than the average since 1972–73 of 1.14. This is expected to provide an incentive for producers to increase production.

In 2017–18 Australian pig meat consumption is forecast to remain relatively unchanged at around 28 kilograms per person. Increased competition from other meats at the retail level is expected to limit consumption growth and demand for pig meat imports.

Weighted average over-the-hooks pig price and pig-to-wheat price ratio, Australia, 1972–73 to 2017–18



f ABARES forecast.

Sow herd and production to grow

In 2017–18 closing sow numbers are forecast to increase by around 1 per cent to 244,000 head. Low feed prices are expected to continue to provide producers with an incentive to maintain breeding herds.

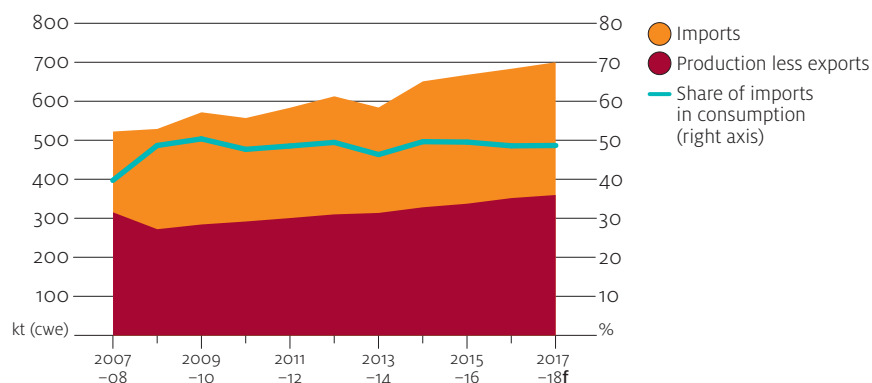
Australian pig slaughter in 2017–18 is forecast to expand for the ninth consecutive year, by 3 per cent to 5.3 million head. Low feed costs are expected to result in higher average slaughter weights, leading to a forecast increase in pig meat production of around 4 per cent to 411,000 tonnes (carcase weight).

Import growth constrained

Australia's biosecurity protocols require the processing of all imported pig meat before sale, usually into bacon, ham or smallgoods. All fresh pig meat sold in Australia is domestically produced.

In 2017–18 Australian demand for processed pig meat imports is expected to remain strong and increase by 2 per cent to 170,000 tonnes (shipped weight). The European Union and the United States are expected to remain the largest exporters to Australia. The share of Australian pig meat consumption sourced from imports is forecast to remain at the 10-year average to 2016–17 of 49 per cent.

Pig meat supply and share of imports in consumption, Australia, 2007–08 to 2017–18



^f ABARES forecast.

Export volume to grow but value expected to fall

In 2017–18 higher production and slower growth in Australian consumption is forecast to increase Australian pig meat exports by around 10 per cent to 34,000 tonnes. Despite this, the value of Australian pig meat exports is forecast to decline by around 4 per cent to \$119 million because of lower average export unit values. Australian pig meat exports are forecast to account for 13 per cent of production in 2017–18.

Outlook for pig meat

	unit	2015–16	2016–17 ^s	2017–18 ^f	% change
Over-the-hooks price	c/kg (cw)	366	348	285	–18.2
Sow numbers ^a	'000	240	242	244	1.0
Slaughterings	'000	5,000	5,160	5,300	2.7
Production	kt (cw)	378	397	411	3.6
Import volume	kt (sw)	167	167	170	1.5
Export volume	kt (sw)	27.9	30.8	34.0	10.4
Export value	\$m	128	124	119	–4.0

^a At 30 June. ^f ABARES forecast. ^s ABARES estimate.

Sources: ABARES; Australian Bureau of Statistics; Australian Pork Limited

Dairy

Tim Whitnall

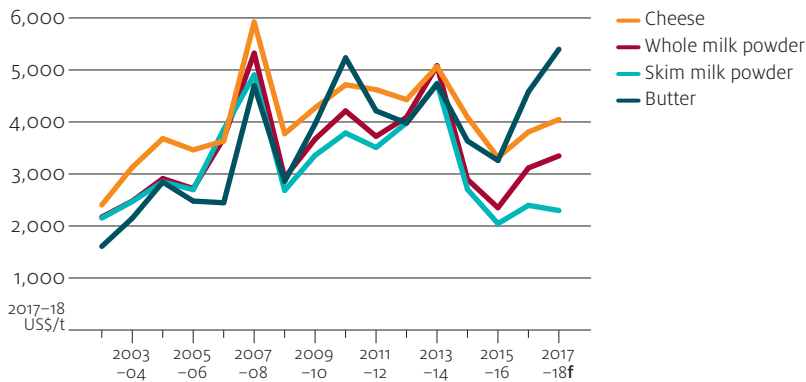
- In 2017–18 world prices for butter, cheese and whole milk powder are forecast to rise. World prices for skim milk powder are forecast to fall.
- Demand is expected to strengthen for butter in western countries and for most dairy commodities in Asia.
- Australian farmgate milk prices are forecast to rise by 6 per cent in 2017–18 as a result of forecast higher export returns to processors.
- Australian production is forecast to recover, reflecting increased milk yields and some herd rebuilding.

World prices to diverge in 2017–18

In 2017–18 world prices are forecast to rise for most dairy commodities in response to higher global demand. World prices are forecast to rise for butter by 20 per cent, cheese by 8 per cent and whole milk powder by 9 per cent. The world price of skim milk powder is forecast to fall by 2 per cent.

Forecast world prices of cheese, skim milk powder and whole milk powder have been revised down since *Agricultural commodities: June quarter 2017*. This follows the extension of the Russian Federation embargo on dairy products and expected increased exports from the United States. The forecast price of butter has been revised upwards, reflecting weaker than expected production in the European Union over spring and higher expected global demand.

World dairy prices, 2002–03 to 2017–18



f ABARES forecast.

The spread of prices between butter and skim milk powder reached a record high in January 2017 and grew consistently wider in the six months to July 2017. It is expected to remain high in 2017–18. Global demand for butter is forecast to support high prices. These are expected to encourage increased production of butter and skim milk powder because both are products of the same manufacturing process. However, growth in demand for skim milk powder is forecast to be much weaker and skim milk powder prices are forecast to fall.

Butter and skim milk powder, world price ratio, July 1989 to July 2017



Global demand for dairy products to strengthen

In 2016–17 global demand for butter grew strongly, particularly in western markets such as Australia, the European Union and the United States (among the largest exporters and per person consumers of butter). Strong demand in these markets and lower butter production compounded to reduce available supplies and put upward pressure on world prices. In 2017–18 domestic demand for butter in these markets is expected to continue to rise as a result of consumers increasingly preferring butter to other fat sources for perceived health reasons.

In 2017–18 import demand for dairy products is expected to be higher—particularly in Asia, where economic growth is assumed to remain strong. China is expected to increase imports of most dairy commodities, reflecting a recent drawdown in stocks of milk powder and lower expected domestic milk production.

Skim milk powder is the major exception to this forecast for China, because it is used in the manufacture of infant milk formula. In 2016–17 growth in formula production slowed in anticipation of Chinese Government regulations due to come into effect on 1 October 2017. These regulations will limit the number of product lines sold by individual manufacturers, and require manufacturers to register formulas with authorities and meet strict quality and safety requirements. This is expected to continue to constrain growth in Chinese production of infant milk formula in 2017–18 and further reduce demand for skim milk powder. The regulations would have similarly affected demand for whole milk powder but this is expected to be largely offset by increased demand for use in production of yogurt and ultra heat-treated milk.

In June 2017 the Russian Federation announced the extension to 31 December 2018 of its embargo on dairy products from Australia, Canada, the European Union, Norway and the United States. This will partially offset expectations for global import demand growth, particularly for cheese.

Global supply to grow in 2017–18

In 2016–17 milk production fell by a combined 2 per cent in Australia, the European Union and New Zealand—three of the four largest dairy exporters. This was largely a result of adverse weather conditions, relatively low farmgate milk prices and EU policy initiatives. In 2017–18 milk production is expected to recover in these regions as farmgate milk prices improve.

EU milk production over the 2017 northern hemisphere spring peak production period was expected to rise following the March 2017 conclusion of the European Commission's voluntary reduction program. However, production was lower than expected and ended relatively unchanged year-on-year. Cold and dry conditions adversely affected pasture growth in France, Germany, Poland and the United Kingdom—four of the five largest producing nations.

In the 2017–18 marketing year (April to March) EU milk production growth is expected to recover marginally, after declining by 2 per cent in 2016–17. Growth is expected to be limited by herd reductions in the Netherlands, the fourth-largest EU milk producer. The national herd is forecast to contract by around 7 per cent (to 2015 levels) in response to environmental regulations introduced in February 2017.

In 2016–17 US milk production grew by 2 per cent, reflecting relatively high farmgate milk prices and low feed grain prices. In 2017–18 production is forecast to continue to grow in response to continuing high farmgate milk prices, driven by growing domestic demand for cheese and butter. US exports are expected to increase as a result of an assumed slight depreciation of the US dollar, putting downward pressure on world prices of cheese and skim milk powder. The United States is a significant exporter of these commodities.

Australian milk production to rise

In 2017–18 the value of Australian dairy exports is expected to rise by 7 per cent to \$3.2 billion, reflecting higher volumes of dairy product exports. This is a downward revision since the June forecast, reflecting lower forecast prices for cheese and skim milk powder (Australia's two largest dairy exports by value) and the assumed appreciation of the Australian dollar.

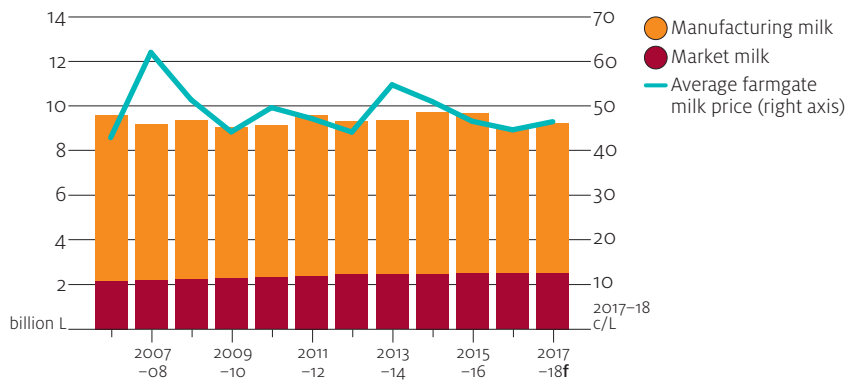
The average Australian farmgate milk price in 2017–18 is forecast to rise by 6 per cent to 47 cents a litre, reflecting higher forecast export returns to dairy processors. Competition for milk supply is expected to remain strong as processors attempt to maintain their market share in southern Australia.

During 2016–17 the amount of milk processed by Australia's largest processor, Murray Goulburn, fell by 22 per cent (approximately 800 million litres). This was due partly to lower milk production across Victoria but also to dairy farmers switching to other processors such as Fonterra and Bega. Milk production fell by 16 per cent in northern Victoria and by 8 per cent in Victoria as a whole.

For 2017–18 Murray Goulburn offered its milk suppliers an opening farmgate price of \$4.70 a kilogram of milk solids, compared with offers of \$5.20 a kilogram from Fonterra and \$5.50 a kilogram from Bega. Murray Goulburn later increased its offer to \$5.20 and Fonterra to \$5.50. The lower Murray Goulburn price gives its suppliers an ongoing incentive to produce less than they would otherwise and switch to other processors.

Australian milk production in 2017–18 is forecast to rise by 3 per cent to 9.3 million litres. Input prices for water, fertiliser and fodder are expected to remain relatively low. This is expected to raise yields per cow by aiding pasture growth and increasing supplementary feed use, and to support herd rebuilding. End-of-season (April to June 2017) cow-culling rates were 40 per cent lower year-on-year in Victoria, the largest milk-producing state. The national dairy cow herd is forecast to recover by 1 per cent because lower turn-off is expected to continue throughout the season.

Milk production and farmgate milk prices, Australia, 2006–07 to 2017–18



f ABARES forecast.

Outlook for dairy

Category	unit	2015–16	2016–17 s	2017–18 f	% change
Australia					
Cow numbers a	'000	1,562	1,530	1,540	0.7
Milk yields	L/cow	6,198	5,892	6,006	1.9
Production					
Total milk	ML	9,679	9,015	9,250	2.6
– market sales	ML	2,520	2,505	2,530	1.0
– manufacturing	ML	7,160	6,510	6,720	3.2
Butter b	kt	119	101	106	5.0
Cheese c	kt	344	344	355	3.2
Whole milk powder	kt	66.1	53.0	53.0	0
Skim milk powder	kt	256	217	230	6.0
Farmgate milk price	Ac/L	44.9	43.8	46.5	6.2
Value of exports	A\$m	3,001	3,032	3,236	6.7
World prices					
Butter	US\$/t	3,146	4,500	5,400	20.0
Cheese	US\$/t	3,200	3,742	4,050	8.2
Skim milk powder	US\$/t	1,975	2,356	2,300	– 2.4
Whole milk powder	US\$/t	2,269	3,063	3,350	9.4

a At 30 June. **b** Includes the butter equivalent of butter oil, butter concentrate, ghee and dry butterfat. **c** Excludes processed cheese. **f** ABARES forecast. **s** ABARES estimate.

Sources: ABARES; Australian Bureau of Statistics; Dairy Australia

Articles



Trends in Australian meat consumption

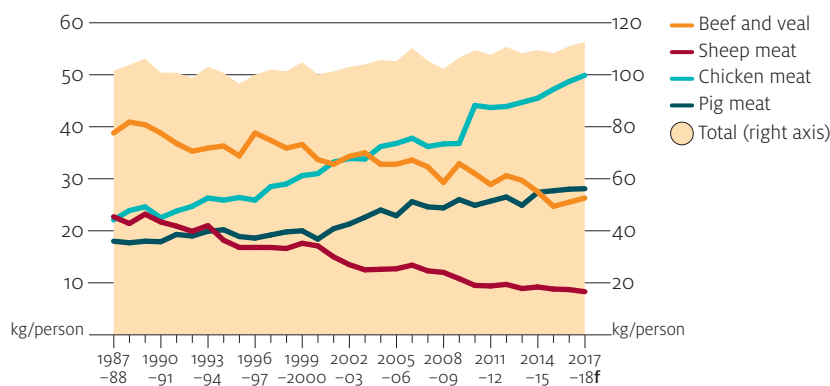
Conrad Rees and Jack Mullumby

Australia's per person meat consumption is the second highest in the world, after the United States. In 2016 it was 37 per cent higher than the OECD average and 4 per cent lower than US consumption (OECD 2017). Domestic consumers continue to be the largest market for Australia's meat industry. In the five years to 2016–17, around 50 per cent of Australian meat production was consumed by the domestic market. This article summarises ABARES 2017–18 forecasts for meat consumption in Australia and reviews major long-term trends in Australian meat consumption and expenditure over the past 30 years.

Per person consumption

In 2017–18 meat consumption in Australia is forecast to expand by 2 per cent to 113 kilograms a person (carcase weight). This is expected to include higher consumption of beef and veal, chicken and pig meat (Figure 1). Sheep meat consumption is forecast to fall due to relatively high retail prices. Chicken meat is expected to remain the dominant meat consumed in Australia, accounting for a forecast 44 per cent of the total. Most of the remainder is expected to be accounted for by pig meat (25 per cent) and beef and veal (23 per cent). The share to sheep meat is forecast to fall to around 8 per cent.

FIGURE 1 Meat consumption, per person, Australia, 1987–88 to 2017–18



f ABARES forecast.

Note: Meat consumption in Australia is expressed in carcase weight equivalent.

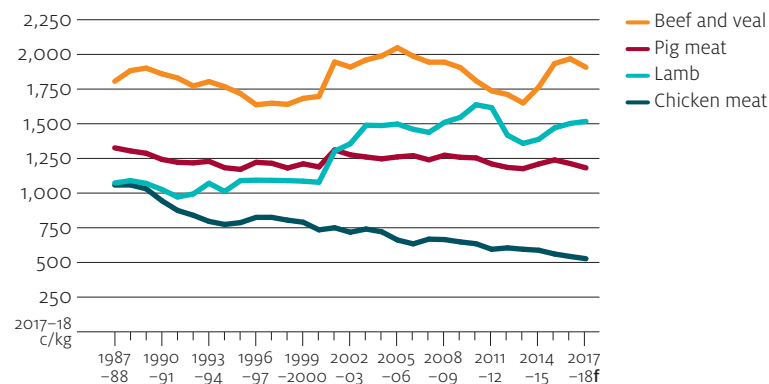
Over the 30 years to 2016–17 meat consumption in Australia gradually expanded, increasing by around 10 per cent or 10 kilograms per person. This rise was driven by increased consumption of chicken and pig meat at the expense of beef and veal and sheep meat. Between 1987–88 and 2016–17 chicken meat consumption increased by 121 per cent to 49 kilograms and pig meat by 56 per cent to 28 kilograms. In contrast, sheep meat consumption fell by almost two-thirds to 8.5 kilograms and beef and veal consumption by a third to 26 kilograms.

The changing make-up of meat demand has been widely discussed in Australia and internationally (see Gallet 2010; Muhammad et al. 2017). In Australia, meat consumption is driven by a range of factors including relative retail prices and growth in incomes. Changing tastes and preferences have also been shown to affect the structure of meat demand. For example, increased health consciousness explains some of the shift away from red and processed meats, and increased chicken and pig meat consumption has been linked to increased demand for diverse, versatile and convenient foods (MLA 2017; WHO 2015; Williams & Droulez 2010).

Australian meat retail prices

Changing meat consumption patterns also reflect long-term trends in retail prices. Chicken and pig meat have become increasingly more affordable compared with beef and veal and sheep meat. Between 1987–88 and 2016–17 the real retail price of chicken fell by 49 per cent to 543 cents a kilogram (Figure 2). Over the same period, the retail price of pig meat fell to 1,213 cents a kilogram (down 8 per cent). In contrast, the retail price of beef and veal rose by 9 per cent to 1,968 cents a kilogram and sheep meat by 40 per cent to 1,502 cents a kilogram.

FIGURE 2 Real retail meat prices, Australia, 1987–88 to 2017–18



f ABARES forecast.

The long-term downward trend in chicken and pig meat prices in Australia is also evident in other developed countries and reflects production efficiency gains in those industries. In the United States, lower chicken and pig meat retail prices have been attributed to increased use of production contracts and vertical integration. This has led to efficiency gains associated with lower transaction costs, increased value-adding, improved quality control and reduced production and processing costs (Martinez 2002).

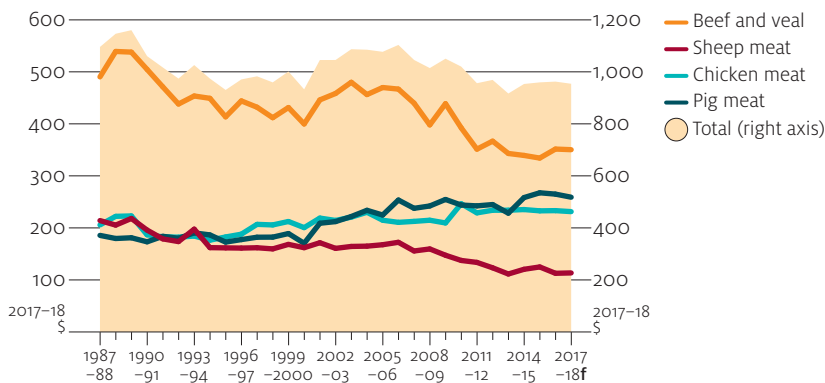
The increase in real Australian retail prices of beef and veal and lamb between 1987–88 and 2016–17 mainly reflects strong demand in major export markets. However, during this time retail beef and veal prices also underwent periods of sustained decline. Throughout the 1990s beef and veal prices fell as a result of an expansion in the Australian cattle herd. Between 2006–07 and 2013–14 increased competition from US exports placed downward pressure on Australian export and retail beef and veal prices (MLA 2015a, b).

In 2017–18 the retail price of chicken meat is forecast to reach a record low of 527 cents a kilogram (in 2017–18 dollars), a 3 per cent decline on the previous year. Strong competition in major markets is forecast to result in reduced retail prices for beef and veal (down 3 per cent to 1,907 cents a kilogram) and pig meat (down 3 per cent to 1,182 cents a kilogram). In contrast, the sheep meat retail price is forecast to increase by 1 per cent to average 1,517 cents a kilogram, reflecting a forecast increase in the saleyard price of lambs.

Australian expenditure on meat

In the 30 years to 2016–17 reduced consumption of relatively expensive beef and veal and sheep meats has contributed to a decline in total Australian expenditure on meat of around 13 per cent to \$963 a person (Figure 3). The share of expenditure on beef and veal fell from 45 per cent to 37 per cent, and expenditure on sheep meat fell from 20 per cent to 12 per cent. In 2016–17 pig meat accounted for the second-largest share of meat expenditure, at 27 per cent of the total. Chicken meat accounted for the remaining 24 per cent.

FIGURE 3 Meat expenditure, per person, Australia, 1987–88 to 2017–18



f ABARES forecast.

Note: Meat expenditure is the product of apparent per person meat consumption converted to a retail weight equivalent and the corresponding retail meat price.

Income growth has also contributed to the long-term contraction in expenditure on Australian meat. Higher incomes have led to Australians moving away from preparing meals at home to eating commercially prepared food (Guthrie, Biing-Hwan & Frazao 2002; Hogan 2017). Between 1988–89 and 2009–10 the share of household expenditure on meat fell from 19 per cent to 13 per cent, and the share for fast food and meals out increased from 26 per cent to 33 per cent (ABS 2017; Hogan 2017).

In 2017–18 meat expenditure in Australia is forecast to fall by 1 per cent to \$952 a person, due to lower expenditure on pig meat being marginally offset by increased expenditure on beef and veal. This is expected to be driven by changes in relative retail prices. Income growth in Australia is assumed to remain subdued, limiting growth in household food expenditure.

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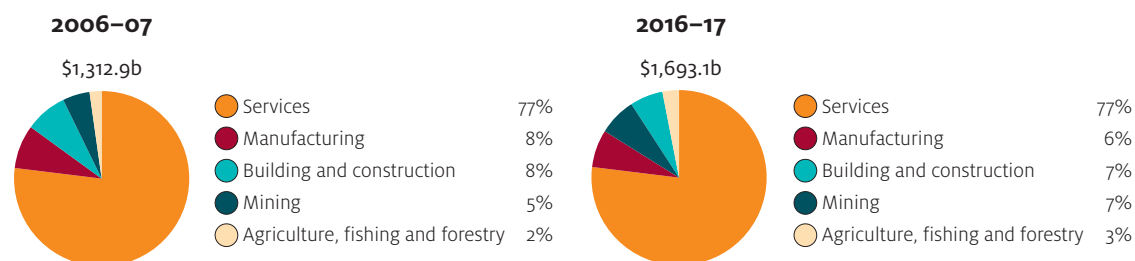
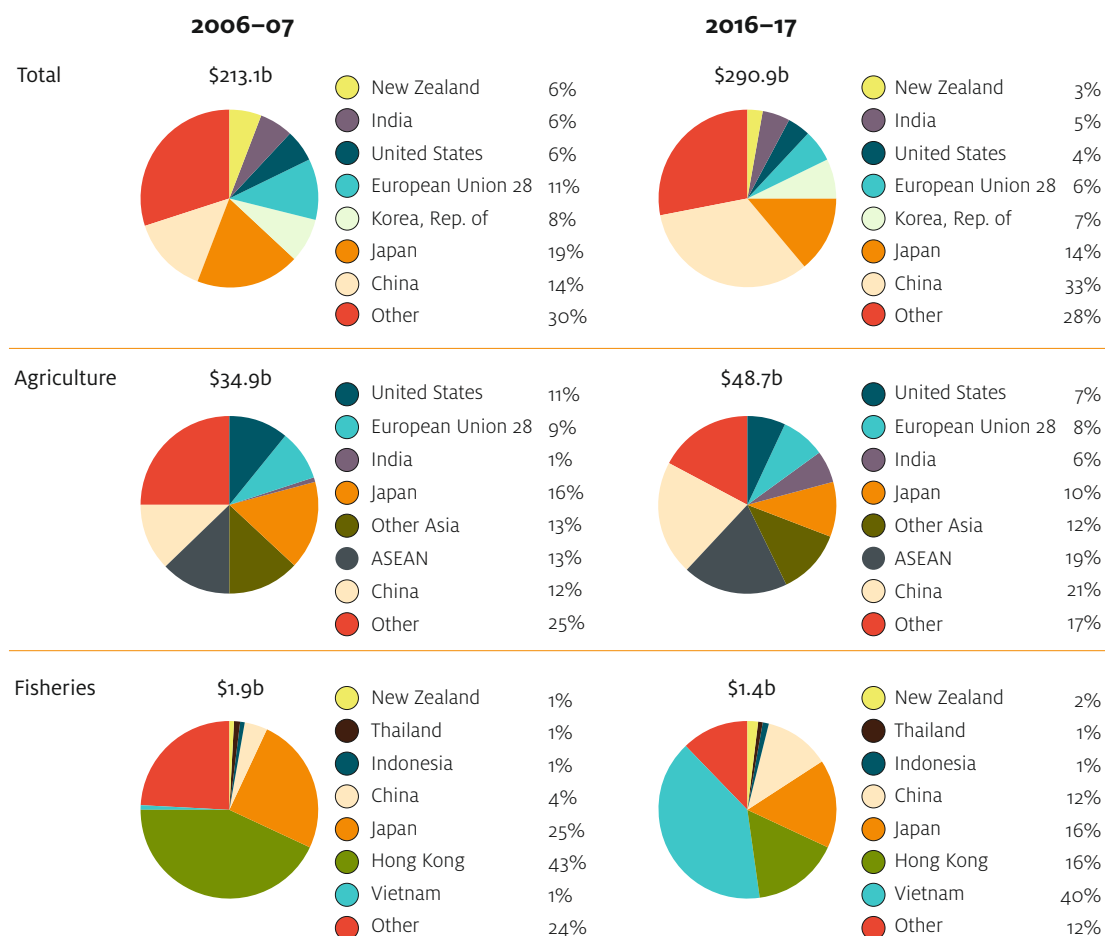
FIGURE 1 Contribution to GDP Australia, chain volume measures, reference year 2014–15**FIGURE 2** Markets for Australian merchandise exports in 2016–17 dollars

FIGURE 3 Sources of Australian merchandise imports in 2016–17 dollars

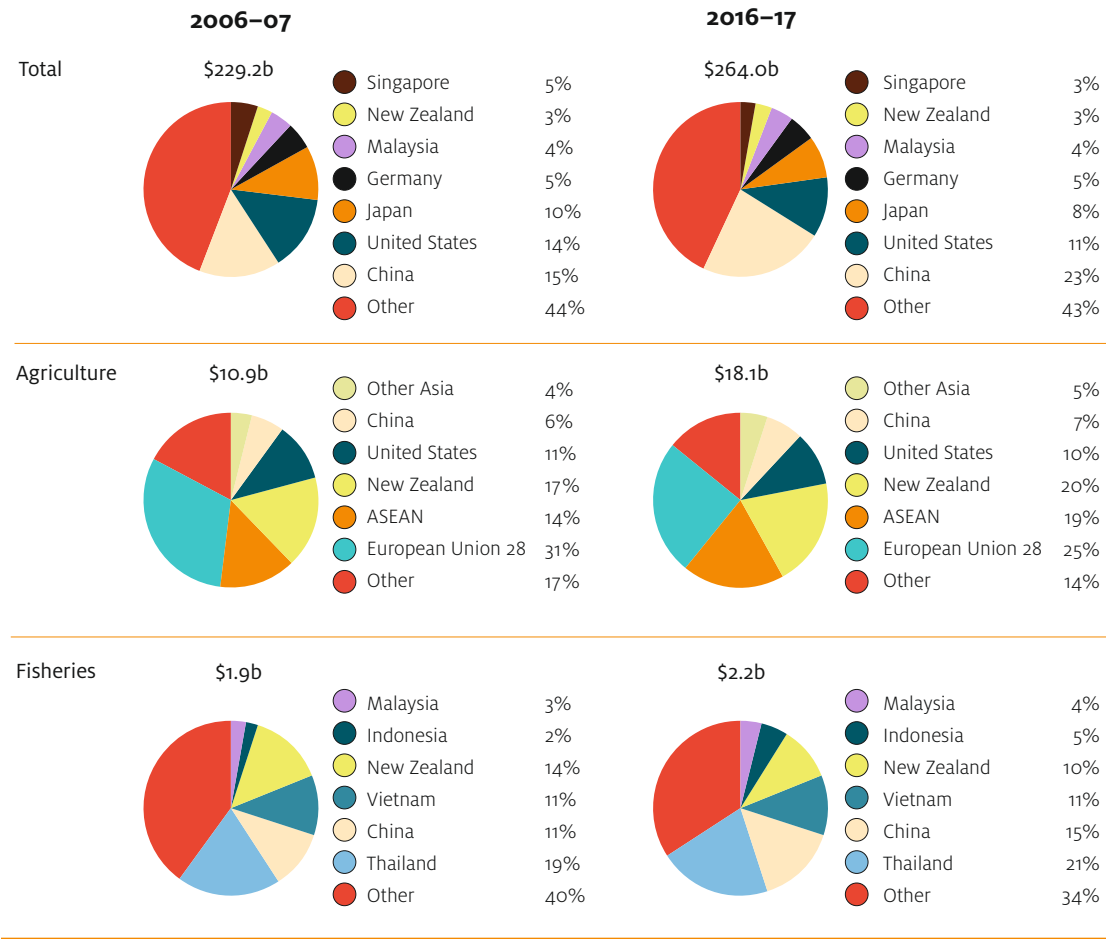
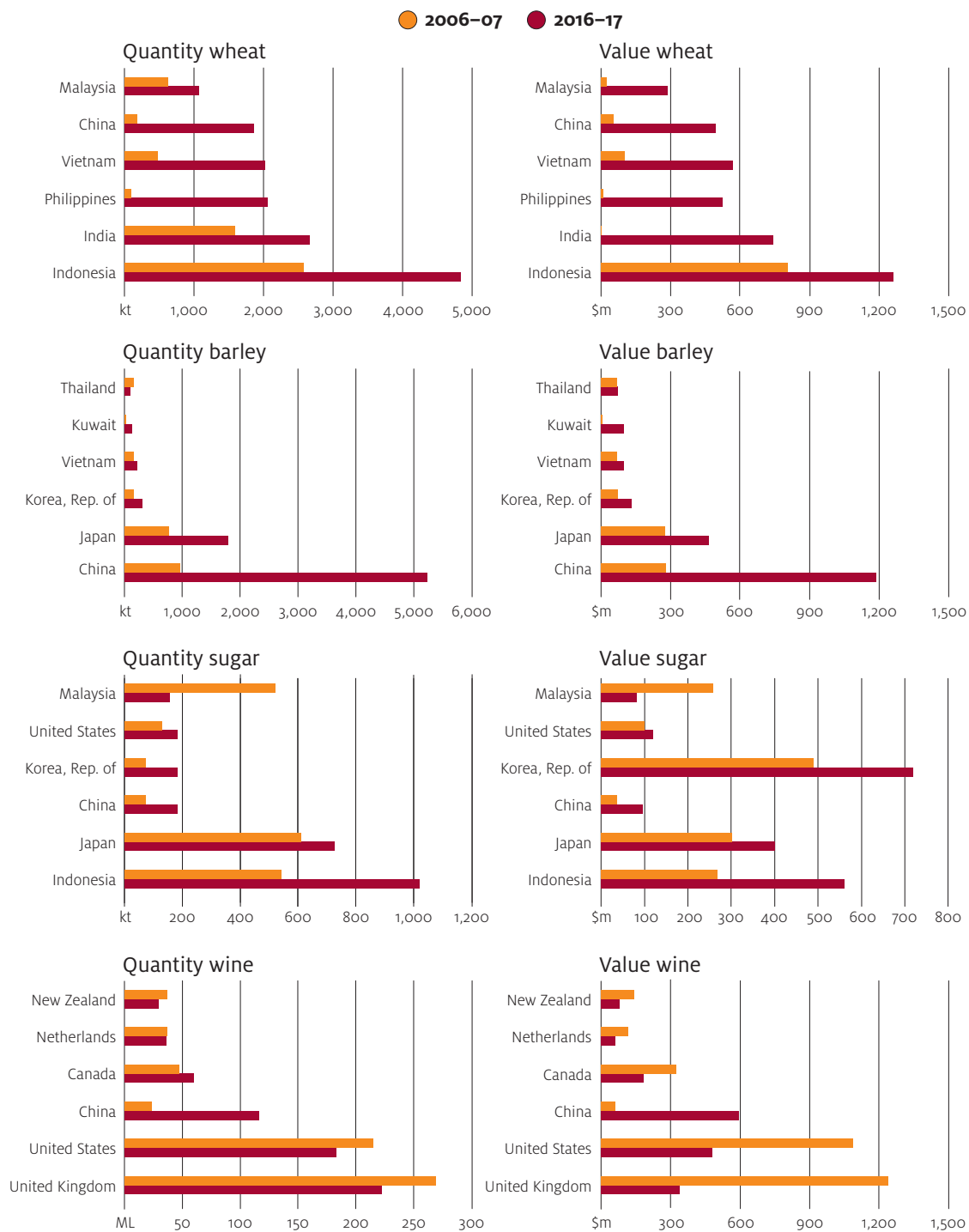
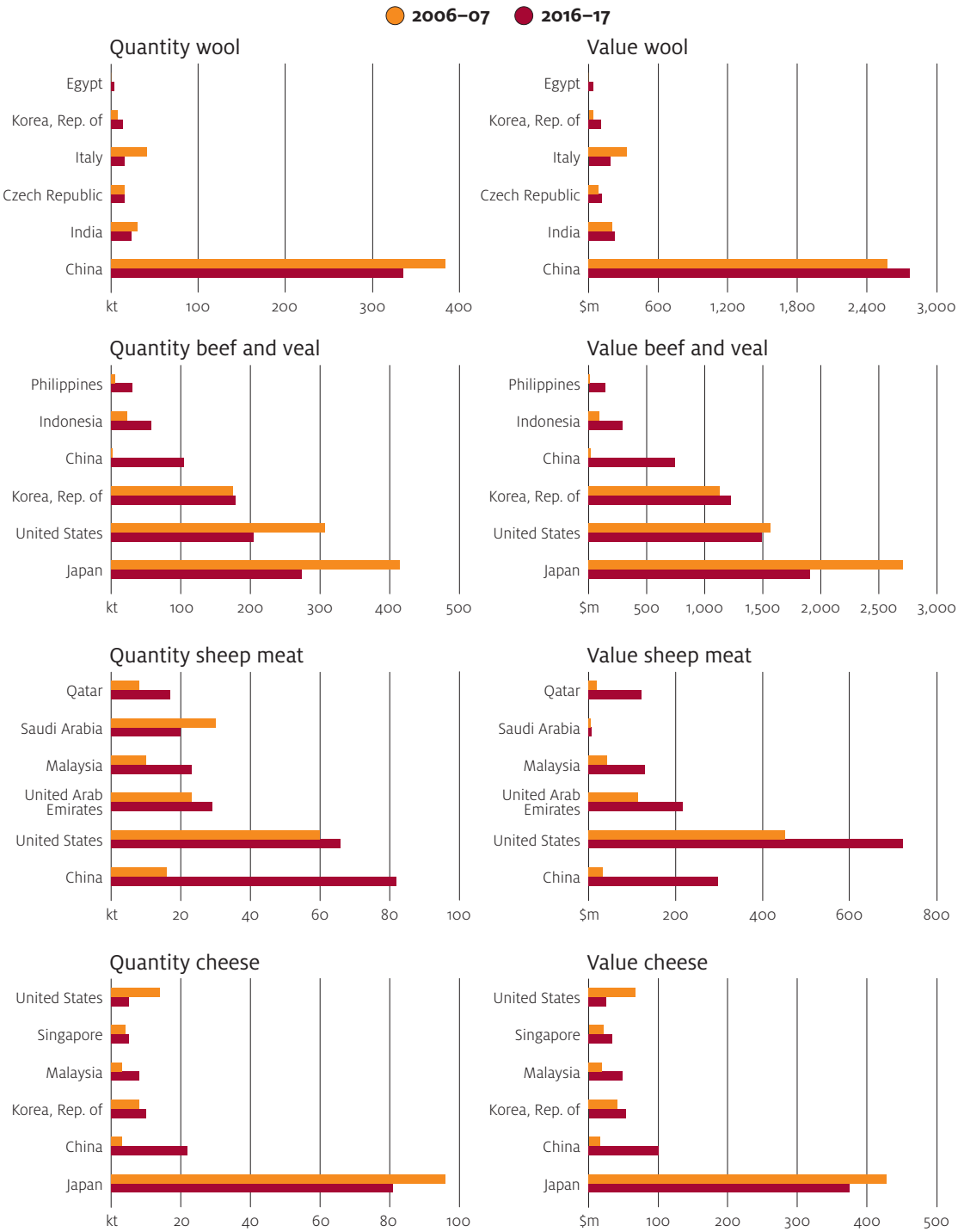


FIGURE 4 Principal markets for Australian agricultural, forestry and fisheries exports in 2016–17 dollars

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FIGURE 4 Principal markets for Australian agricultural, forestry and fisheries exports in 2016–17 dollars continued



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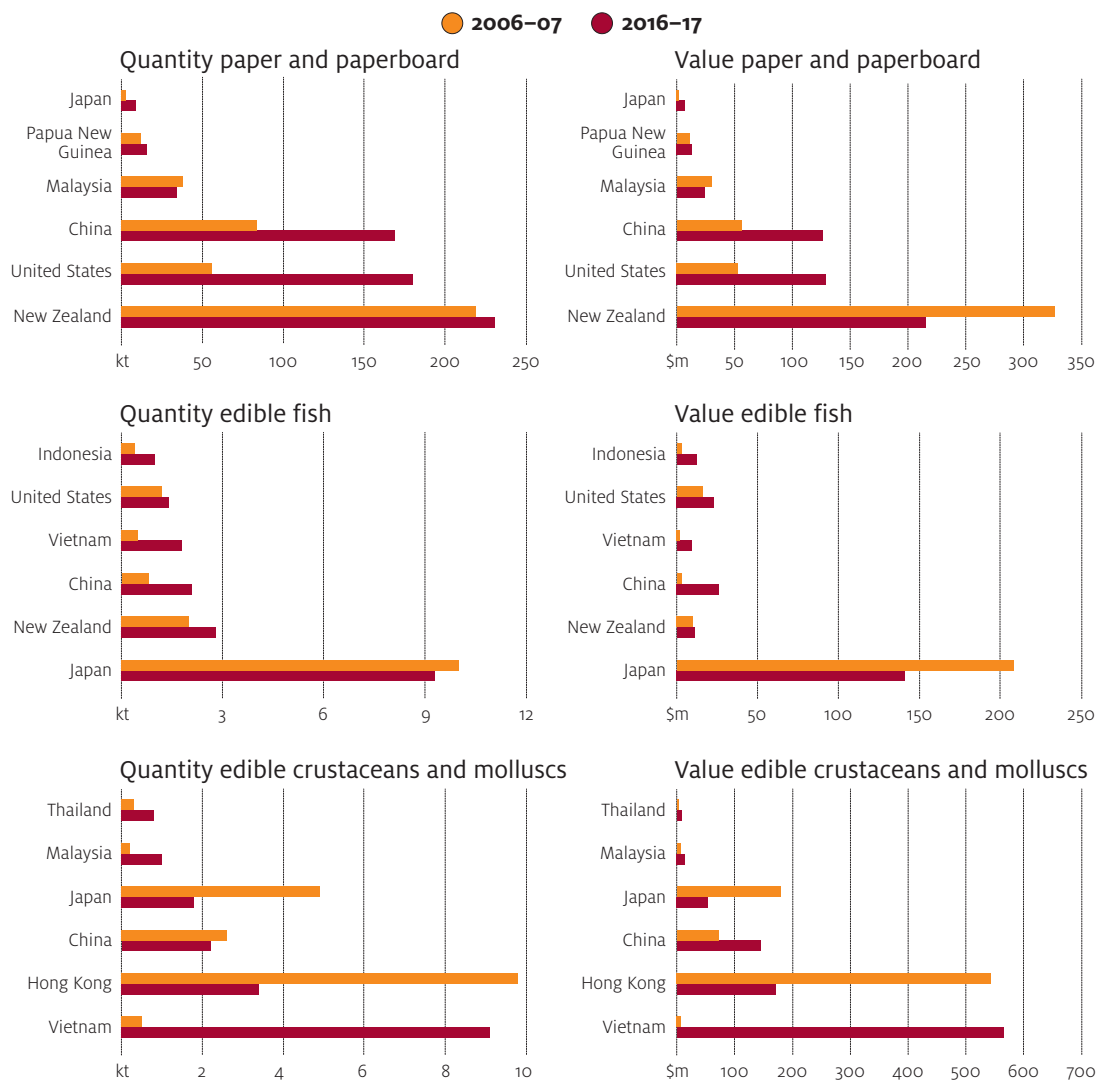
FIGURE 4 Principal markets for Australian agricultural, forestry and fisheries exports in 2016–17 dollars continued

TABLE 1 Indexes of prices received by farmers Australia

Commodity	2012–13	2013–14	2014–15	2015–16	2016–17 s	2017–18 f
Crops						
Grains						
Barley	173.4	167.9	175.6	159.0	119.8	152.0
Canola	142.1	144.1	130.6	137.9	147.8	145.3
Grain sorghum	148.9	177.2	178.1	162.3	135.0	141.1
Lupins	173.5	176.4	149.3	185.0	141.3	159.8
Oats	172.9	156.0	183.1	224.0	172.3	189.6
Wheat	158.3	159.8	151.7	140.1	124.4	130.6
Total grains a	147.9	149.9	147.0	141.9	126.8	134.2
Cotton	98.2	103.9	104.4	111.7	126.7	122.5
Hay	144.9	160.9	169.6	176.4	180.4	189.4
Fruit	156.5	158.8	170.4	162.0	164.8	168.1
Sugar	117.5	125.4	127.2	117.8	163.5	142.3
Vegetables	172.8	174.1	179.1	172.9	175.9	179.4
Total crops	129.3	131.1	131.8	128.4	125.4	127.9
Livestock						
Livestock for slaughter						
Cattle	164.2	156.3	196.4	252.9	267.8	232.8
Lambs	182.8	201.8	233.4	236.2	291.6	307.8
Sheep	200.0	250.8	337.8	304.1	462.5	482.7
Live sheep for export	247.6	233.4	286.6	312.3	321.3	326.7
Pigs	132.5	151.7	156.4	181.0	169.2	138.4
Poultry	114.4	116.9	126.2	126.8	125.9	125.4
Total livestock for slaughter	158.6	161.2	192.4	227.5	244.8	225.8
Livestock products						
Wool	147.3	153.5	159.1	186.5	208.7	228.6
Milk	134.7	169.1	162.6	148.2	146.8	155.8
Eggs	107.4	112.7	114.6	112.7	113.7	114.8
Total livestock products	136.1	157.2	155.8	156.1	162.3	173.7
Store and breeding stock	173.8	169.2	209.7	260.1	294.5	273.6
Total livestock	149.0	157.4	177.8	201.5	215.9	207.6
Total prices received	137.9	142.9	152.4	161.0	164.9	163.2

a Total for the group includes commodities not separately listed. f ABARES forecast. s ABARES estimate.

Notes: The indexes for commodity groups are calculated on a chain-weighted 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. Prices used in these calculations exclude GST. Series break in 2015–16. Prior to 2015–16 figures are based on establishments with an estimated value of agricultural operations (EVAO) of \$5,000. From 2015–16 (inclusive) figures are based on establishments with an EVAO of \$40,000.

Source: ABARES

TABLE 2 Terms of trade and indexes of prices paid by farmers Australia

Category	2012–13	2013–14	2014–15	2015–16	2016–17 ^s	2017–18 ^f
Farmers' terms of trade ^a	95.0	98.2	103.9	109.2	111.2	108.0
Materials and services						
Seed, fodder and livestock						
Fodder and feedstuffs	127.1	126.8	134.5	138.5	132.3	137.3
Seed, seedlings and plants	128.0	130.6	130.4	129.9	123.3	128.2
Store and breeding stock	173.8	169.2	209.7	261.1	295.3	274.1
Total seed, fodder and livestock	137.9	136.9	151.2	165.2	168.2	167.2
Chemicals	110.3	113.6	115.0	116.2	117.7	119.5
Electricity	180.8	185.7	176.4	178.9	182.0	200.2
Fertiliser	157.9	153.2	154.7	157.8	142.0	142.0
Fuel and lubricants	216.8	221.1	196.8	167.9	175.7	181.0
Total	149.5	150.8	155.1	159.1	160.3	162.1
Labour	159.2	163.5	166.3	168.6	171.5	174.9
Marketing	153.5	159.3	152.9	144.1	149.6	154.6
Overheads						
Insurance	190.0	195.2	198.5	201.3	204.8	208.8
Interest paid	96.4	85.3	79.5	74.8	69.5	72.8
Rates and taxes	156.4	160.6	163.4	165.6	168.5	171.8
Other overheads	151.7	155.8	158.5	160.7	163.4	166.7
Total	117.6	110.6	107.1	104.1	100.7	104.2
Capital items	157.0	161.5	164.4	166.9	169.9	173.3
Total prices paid	145.1	145.5	146.7	147.4	148.3	151.2
Excluding capital items	143.9	143.9	144.9	145.5	146.2	149.0
Excluding capital and overheads	151.9	154.3	156.8	158.7	160.8	163.3
Excluding seed, fodder and livestock	146.5	147.3	145.5	143.5	143.9	147.6

^a Ratio of index of prices received by farmers and index of prices paid by farmers. ^f ABARES forecast. ^s ABARES estimate.

Notes: The indexes for commodity groups are calculated on a chain-weighted basis using Fisher's ideal index with a reference year of 1997–98 = 100. Prices used in these calculations exclude GST. Series break in 2015–16. Prior to 2015–16 figures are based on establishments with an estimated value of agricultural operations (EVAO) of \$5,000. From 2015–16 (inclusive) figures are based on establishments with an EVAO of \$40,000.

Sources: ABARES (compiled from various market sources); Australian Bureau of Statistics

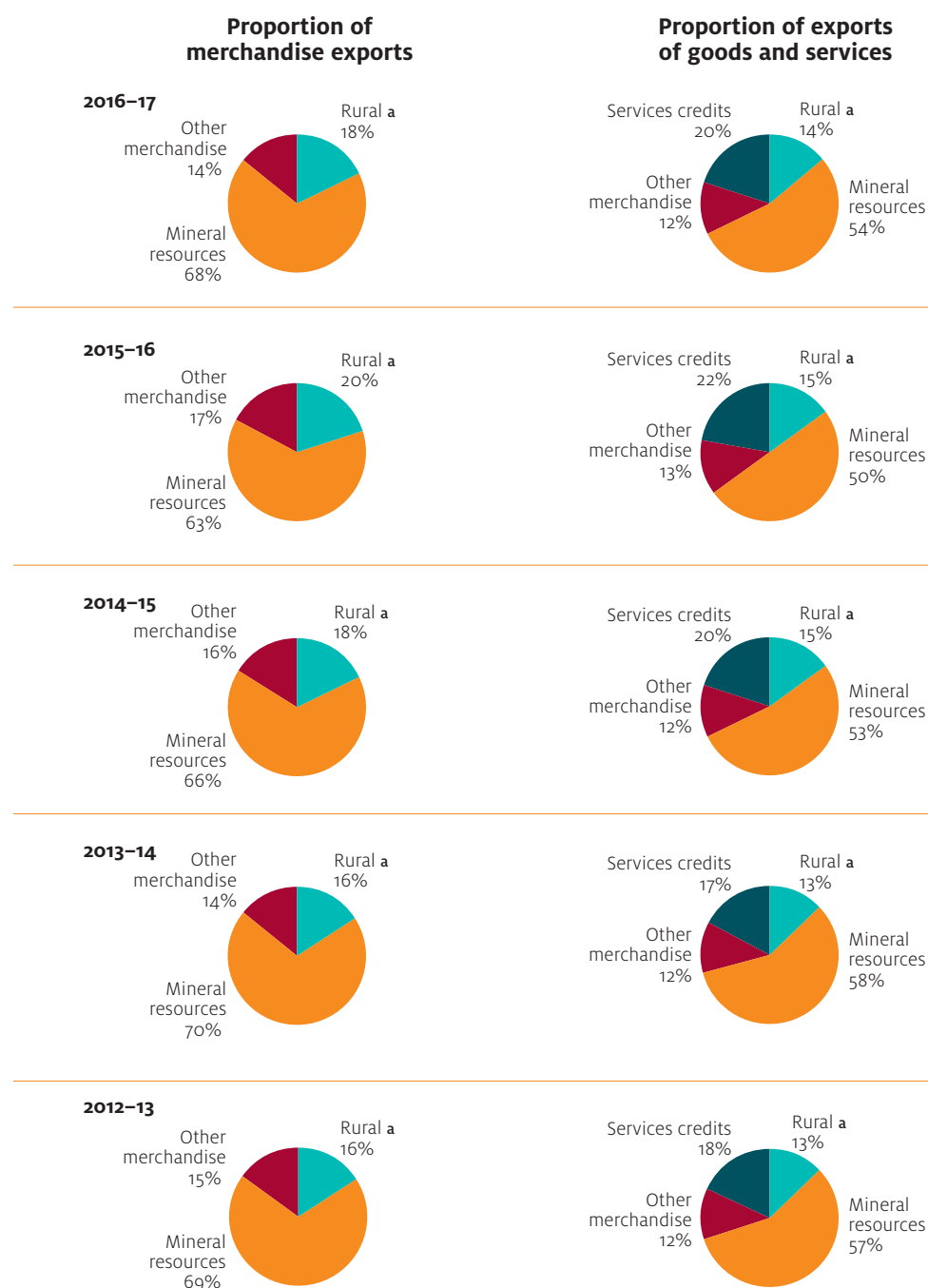
TABLE 3 Farm costs and returns Australia

Category	unit	2012–13	2013–14	2014–15	2015–16	2016–17 s	2017–18 f
Costs							
Materials and services							
Chemicals	\$m	1,369	1,406	1,455	1,510	1,507	1,522
Fertiliser	\$m	2,168	2,091	2,121	2,169	1,947	1,956
Fuel and lubricants	\$m	2,232	2,248	1,978	1,659	1,734	1,797
Marketing	\$m	3,849	4,108	4,118	4,079	4,972	4,233
Repairs and maintenance	\$m	4,121	4,529	4,922	5,267	6,071	5,719
Seed and fodder	\$m	4,619	4,650	4,938	5,026	4,948	5,320
Other	\$m	4,545	4,711	4,727	4,738	5,041	5,047
Total materials and services	\$m	22,903	23,741	24,259	24,448	26,220	25,594
Labour	\$m	4,298	4,364	4,303	4,145	4,308	4,503
Overheads							
Interest paid	\$m	4,259	3,956	3,874	3,828	3,733	4,103
Rent and third-party insurance	\$m	537	551	561	569	578	590
Total overheads	\$m	9,094	8,871	8,738	8,542	8,620	9,196
Total cash costs	\$m	31,997	32,612	32,997	32,989	34,840	34,790
Depreciation a	\$m	5,197	5,345	5,444	5,526	5,624	5,737
Total farm costs	\$m	37,194	37,957	38,441	38,515	40,464	40,527
Returns							
Gross value of farm production	\$m	48,684	51,494	54,431	56,673	63,701	58,227
Net returns and production							
Net value of farm production b	\$m	11,490	13,537	15,990	18,158	23,237	17,700
Real net value of farm production c	\$m	12,380	14,199	16,491	18,837	23,702	17,700
Net farm cash income d	\$m	16,687	18,882	21,434	23,684	28,862	23,437
Real net farm cash income c	\$m	17,979	19,806	22,105	24,570	29,439	23,437

a Based on estimated movements in capital expenditure and prices of capital inputs. b Gross value of farm production less total farm costs. c In 2017–18 Australian dollars. d Gross farm cash income less total cash costs. f ABARES forecast. s ABARES estimate.

Notes: Prices used in these calculations exclude GST. Series break in 2015–16. Prior to 2015–16 figures are based on establishments with an estimated value of agricultural operations (EVAO) of \$5,000. From 2015–16 (inclusive) figures are based on establishments with an EVAO of \$40,000.

Sources: ABARES (compiled from various market sources); Australian Bureau of Statistics

FIGURE 5 Contribution to exports by sector, balance of payments basis Australia

a ABARES rural balance of payments adjusted to include farm, fisheries and forestry products classified as other merchandise by Australian Bureau of Statistics.

Sources: ABARES; Australian Bureau of Statistics

TABLE 4 Volume of production indexes Australia

Commodity	unit	2012–13	2013–14	2014–15	2015–16	2016–17 s	2017–18 f
Farm							
Grains and oilseeds	index	137.6	144.1	138.0	130.0	201.4	130.3
Total crops	index	141.6	140.2	132.8	130.1	166.5	136.0
Livestock slaughterings	index	116.3	127.9	137.3	127.0	116.6	123.2
Total livestock	index	105.4	112.1	118.9	111.0	103.7	108.5
Total farm sector	index	123.8	126.6	126.7	120.8	132.3	122.0
Forestry a							
Hardwood	index	89.0	107.5	121.9	135.4	143.9	138.4
Softwood	index	123.0	130.4	135.5	148.4	161.7	154.0
Total forestry	index	106.7	119.4	129.0	142.2	153.2	146.5

a Volume of logs harvested excluding firewood. f ABARES forecast. s ABARES estimate.

Notes: 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. Series break in 2015–16. Prior to 2015–16 figures are based on establishments with an estimated value of agricultural operations (EVAO) of \$5,000. From 2015–16 (inclusive) figures are based on establishments with an EVAO of \$40,000.

Sources: ABARES; Australian Bureau of Statistics

TABLE 5 Industry gross value added ^{ab} Australia

Industry	unit	2011–12	2012–13	2013–14	2014–15	2015–16	2016–17
Agriculture, forestry and fishing							
Agriculture	\$m	32,716	32,479	32,711	32,959	30,268	38,335
Forestry and fishing	\$m	5,502	5,524	5,554	5,619	5,738	6,035
Total	\$m	38,219	38,001	38,266	38,578	36,007	44,370
Mining	\$m	83,741	91,548	100,426	108,178	114,573	116,400
Manufacturing							
Food, beverage and alcohol	\$m	26,301	26,779	26,606	25,915	25,326	26,398
Textile, clothing, footwear and leather	\$m	5,145	5,087	5,097	5,248	5,284	4,839
Wood and paper products	\$m	6,277	6,273	6,373	6,473	6,482	6,145
Printing, publishing and recorded media	\$m	3,749	3,705	3,528	3,349	3,264	3,155
Petroleum, coal, chemical products	\$m	20,557	19,425	19,176	18,613	18,081	17,843
Non-metallic mineral products	\$m	5,984	5,713	5,767	6,244	6,158	6,117
Metal products	\$m	18,406	16,912	17,204	16,660	15,690	15,345
Machinery and equipment	\$m	22,440	21,401	20,020	19,647	18,988	17,644
Total manufacturing	\$m	108,847	105,251	103,722	102,151	99,272	97,487
Building and construction	\$m	123,718	127,155	132,925	130,585	134,347	128,701
Electricity, gas and water supply	\$m	41,932	42,240	41,185	41,953	42,828	42,967
Taxes less subsidies on products	\$m	106,943	108,242	108,364	109,447	110,771	112,089
Statistical discrepancy	\$m	0	1	1	0	6,738	1,951
Gross domestic product	\$m	1,500,084	1,538,635	1,578,785	1,617,016	1,660,918	1,693,119

a Chain volume measures, reference year is 2014–15. b ANZSIC 2006.

Notes: Zero is used to denote nil or less than \$0.5 million (absolute value).

Sources: Australian Bureau of Statistics, *Australian national accounts: national income, expenditure and product*, cat. no. 5206.0, Canberra; Australian Bureau of Statistics, *Balance of payments, Australia*, cat. no. 5302.0, Canberra

TABLE 6 Employment ab Australia

Industry	unit	2011–12	2012–13	2013–14	2014–15	2015–16	2016–17
Agriculture, forestry and fishing							
Horticulture c	'000	57	57	63	51	67	63
Sheep, beef cattle and grain	'000	129	107	107	116	94	91
Other crop growing	'000	9	14	6	5	3	4
Dairy cattle	'000	22	20	26	21	30	25
Poultry	'000	10	9	4	6	13	9
Other livestock d	'000	10	11	9	17	13	9
Other agriculture nfd	'000	39	44	55	59	62	51
Total agriculture	'000	277	261	270	275	282	252
Forestry and logging	'000	8	6	6	5	6	8
Forestry support services	'000	3	3	3	3	3	4
Aquaculture	'000	4	3	5	7	5	8
Fishing	'000	6	5	3	6	5	7
Hunting and trapping	'000	0	0	0	1	0	0
Fishing, hunting and trapping nfd	'000	1	1	0	0	1	0
Agriculture and fishing support services e	'000	20	19	22	18	17	21
Total agriculture, forestry and fishing	'000	321	301	311	318	321	302
Manufacturing							
Food product	'000	186	190	188	197	194	201
Beverage and tobacco	'000	33	26	35	31	34	33
Wood product	'000	38	37	48	43	42	37
Pulp, paper and converted paper product	'000	15	15	14	13	13	18
Total manufacturing	'000	938	934	926	913	877	904
Total employment	'000	11,249	11,385	11,450	11,654	11,882	12,036

a Average employment over four quarters. b ANZSIC 2006. c Includes nursery, floriculture, vegetable, fruit and tree nut growing. d Includes deer farming. e Includes agriculture, forestry and fishing support services not further defined. nfd Not further defined.

Notes: Australian Bureau of Statistics advises caution using employment statistics at the ANZSIC subdivision and group levels because estimates may be subject to sampling variability and standard errors too high for most practical purposes. Zero is used to denote nil or less than 500 persons.

Source: Australian Bureau of Statistics, *Labour force, Australia*, cat. no. 6291.0.55.003, Canberra

TABLE 7 All banks lending to business a Australia

Industry	unit	Mar–16	Jun–16	Sep–16	Dec–16	Mar–17	Jun–17
Agriculture, forestry and fishing	\$b	64.3	66.9	67.9	67.2	67.2	na
Mining	\$b	34.6	34.6	32.5	31.9	29.4	na
Manufacturing	\$b	45.5	44.8	45.3	47.7	45.7	na
Construction	\$b	31.7	32.0	32.8	31.9	33.3	na
Wholesale and retail trade, transport and storage	\$b	114.0	115.1	117.2	122.8	120.1	na
Finance and insurance	\$b	164.2	172.4	178.9	184.6	187.0	na
Other	\$b	426.9	431.5	437.8	452.9	456.7	na
Total	\$b	881.2	897.2	912.4	938.9	939.5	na

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

TABLE 8 Rural indebtedness to financial institutions Australia

Institution	unit	2011–12	2012–13	2013–14	2014–15	2015–16	2016–17
Rural debt							
All banks a	\$m	59,749	61,778	62,461	64,966	66,912	na
Other government agencies b	\$m	2,076	2,236	2,451	878	973	na
Pastoral and other finance companies	\$m	1,801	1,569	1,486	1,463	1,622	na
Large finance institutional debt c	\$m	63,626	65,583	66,397	67,307	69,508	na
Deposits							
Farm management deposits	\$m	3,532	3,721	4,139	4,604	5,068	na

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. **c** Sum of rural debt.

Sources: ABARES; Department of Agriculture and Water Resources; Reserve Bank of Australia, *Estimated rural debt to specified lenders*, Bulletin Statistical Table D9

TABLE 9 Annual world indicator prices of selected commodities

Commodity	unit	2012–13	2013–14	2014–15	2015–16	2016–17 s	2017–18 f
Crops							
Wheat a	US\$/t	348	317	266	211	197	215
Corn b	US\$/t	312	219	174	168	157	161
Rice c	US\$/t	565	429	419	386	382	403
Soybeans d	US\$/t	597	547	418	373	385	365
Cotton e	USc/lb	88	91	71	70	83	80
Sugar g	USc/lb	18	17	13	17	17	13
Livestock products							
Beef h	USc/kg	440	440	551	451	447	433
Wool i	Ac/kg	1,035	1,070	1,098	1,256	1,415	1,550
Butter j	US\$/t	3,727	4,498	3,483	3,146	4,500	5,400
Cheese j	US\$/t	4,150	4,817	3,921	3,200	3,742	4,050
Skim milk powder j	US\$/t	3,731	4,513	2,592	1,975	2,356	2,300

a US no. 2 hard red winter wheat, fob Gulf. **b** US no. 2 yellow corn, fob Gulf. **c** USDA nominal quote for Thai white rice, 100 per cent, Grade B, fob, Bangkok (August–July basis). **d** US no. 2 soybeans, fob Gulf. **e** Cotlook 'A' index.

f ABARES forecast. **g** Nearby futures price (October–September basis), Intercontinental Exchange, New York no. 11 contract. **h** Cow 90CL US cif price. **i** Australian Wool Exchange eastern market indicator. **j** Average of traded prices (excluding subsidised sales). **s** ABARES estimate.

Sources: ABARES; Australian Bureau of Statistics; Australian Wool Exchange; Cotlook Ltd; Dairy Australia; Intercontinental Exchange; International Grains Council; Meat & Livestock Australia; New York Board of Trade; US Department of Agriculture

TABLE 10 Gross unit values of farm products ^a

Commodity	unit	2012–13	2013–14	2014–15	2015–16	2016–17 ^s	2017–18 ^f
Crops ^b							
Grains							
Barley	\$/t	276	267	280	253	191	242
Corn (maize)	\$/t	238	297	330	326	292	287
Grain sorghum	\$/t	252	300	301	275	228	239
Oats	\$/t	236	213	250	306	235	259
Rice	\$/t	260	340	395	419	359	381
Triticale	\$/t	249	258	256	248	126	126
Wheat	\$/t	313	316	300	277	246	258
Oilseeds							
Canola	\$/t	548	555	503	532	570	560
Soybeans ^c	\$/t	468	538	588	560	577	396
Sunflower seed ^c	\$/t	570	660	756	652	629	510
Pulses							
Chickpeas	\$/t	394	352	567	784	900	826
Field peas	\$/t	406	419	413	449	328	307
Lupins	\$/t	340	345	292	362	277	313
Industrial crops							
Cotton lint ^d	c/kg	199	229	199	226	243	267
Sugar cane (cut for crushing)	\$/t	37.3	40.2	40.3	37.3	48.2	44.0
Wine grapes	\$/t	499	441	476	544	565	539
Livestock							
Beef cattle	c/kg	318	304	382	492	521	453
Lambs	c/kg	371	410	474	480	592	625
Pigs	c/kg	262	300	310	358	335	274
Poultry	c/kg	205	209	226	227	226	225
Livestock products							
Wool	c/kg	579	604	626	734	821	899
Milk	c/L	39.6	50.5	48.5	44.2	43.8	46.5
Eggs	c/dozen	195	221	229	238	242	226

^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. ^f ABARES forecast. ^s ABARES estimate.

Notes: Prices used in these calculations exclude GST. Series break in 2015–16. Prior to 2015–16 figures are based on establishments with an estimated value of agricultural operations (EVAO) of \$5,000. From 2015–16 (inclusive) figures are based on establishments with an EVAO of \$40,000.

Sources: ABARES; Australian Bureau of Statistics

TABLE 11 World production, consumption, stocks and trade for selected commodities a

Commodity	unit	2012–13	2013–14	2014–15	2015–16	2016–17 s	2017–18 f
Grains							
Wheat							
Production	Mt	658	717	730	738	754	741
Consumption	Mt	678	697	715	718	737	738
Closing stocks	Mt	171	191	206	226	243	246
Exports bc	Mt	142	157	153	166	175	172
Coarse grains							
Production	Mt	1,140	1,284	1,312	1,260	1,364	1,315
Consumption	Mt	1,143	1,229	1,260	1,273	1,327	1,340
Closing stocks	Mt	164	211	247	250	287	262
Exports b	Mt	123	165	186	163	201	189
Rice d							
Production	Mt	474	479	480	472	484	487
Consumption	Mt	468	479	476	474	483	488
Closing stocks	Mt	116	115	119	118	119	119
Exports be	Mt	37.8	42.5	41.7	38.9	40.4	40.9
Oilseeds and vegetable oils							
Oilseeds							
Production	Mt	475	504	537	521	570	570
Consumption	Mt	469	493	517	526	551	569
Closing stocks	Mt	67.8	77.7	93.4	88.6	108	110
Exports b	Mt	119	134	147	153	167	170
Vegetable oils							
Production	Mt	162	170	176	176	185	194
Consumption	Mt	159	170	173	178	185	190
Closing stocks	Mt	20.6	21.5	20.5	18.7	19.2	22.8
Exports b	Mt	68.4	70.1	76.6	74.8	76.6	78.7
Vegetable protein meals							
Production	Mt	268	282	299	306	321	333
Consumption	Mt	265	279	294	305	321	330
Closing stocks	Mt	12.6	13.8	15.4	16.7	16.8	19.3
Exports b	Mt	78.6	82.4	85.5	87.3	90.4	93.2
Industrial crops							
Cotton							
Production	Mt	27.0	26.2	25.9	21.1	23.2	25.2
Consumption	Mt	23.4	23.7	24.3	24.2	24.7	25.4
Closing stocks	Mt	20.1	22.5	24.3	21.2	19.6	19.4
Exports	Mt	10.1	9.0	7.7	7.7	8.2	8.4
Sugar							
Production	Mt	183	182	182	174	178	190
Consumption	Mt	176	176	179	180	182	185
Closing stocks	Mt	71.4	77.6	80.5	74.8	71.6	76.4
Exports	Mt	60.6	58.0	55.6	58.5	68.0	70.0

continued ...

TABLE 11 World production, consumption, stocks and trade for selected commodities ^a continued

Commodity	unit	2012–13	2013–14	2014–15	2015–16	2016–17 ^s	2017–18 ^f
Livestock products							
Meat ^{egh}							
Production	Mt	268	273	274	274	277	285
Consumption	Mt	264	267	269	269	272	283
Closing stocks	Mt	2.5	2.8	2.6	2.5	2.6	2.6
Exports ^b	Mt	27.5	28.8	28.3	29.6	30.8	30.4
Wool ⁱ							
Production	kt	1,163	1,163	1,158	1,155	1,154	1,156
Consumption ^{ej}	kt	1,156	1,147	1,164	1,155	1,154	1,156
Closing stocks ^k	kt	34.5	35.0	30.0	33.0	35.0	37.0
Exports ^l	kt	576	553	551	549	547	548
Butter ^{eh}							
Production	kt	9,249	9,636	9,893	10,089	10,327	10,534
Consumption	kt	8,716	9,023	9,175	9,405	9,689	9,883
Closing stocks	kt	231	250	340	347	291	259
Exports	kt	868	924	916	991	1,006	1,026
Skim milk powder ^{ehm}							
Production	kt	4,051	4,512	4,773	4,784	4,779	4,875
Consumption	kt	3,488	3,592	3,790	3,749	3,910	3,988
Closing stocks	kt	383	513	606	903	881	784
Exports	kt	1,759	1,968	2,077	1,968	2,127	2,170

^a Figures sourced from external organisations may not be based on precise or complete analyses. ^b Excludes intra-EU trade. ^c Includes the grain equivalent of wheat flour. ^d Milled equivalent. ^e On a calendar year basis, e.g. 2011–12 = 2012. ^f ABARES forecast. ^g Beef and veal, mutton, lamb, goat, pig and chicken meat. ^h Selected countries. ⁱ Clean equivalent. ^j Virgin wool at the spinning stage in 65 countries. ^k Held by marketing bodies and on-farm in five major exporting countries. ^l Five major exporting countries. ^m Non-fat dry milk. ^s ABARES estimate. Sources: ABARES; Argentine Wool Federation; Australian Bureau of Statistics; Capewools South Africa; Commonwealth Secretariat; Economic Commission for Europe; Fearnleys; International Grains Council; International Sugar Organization; International Wool Textile Organisation; Ministry of Agriculture, Forestry and Fisheries (Japan); New Zealand Wool Board; Poimena Analysis, Melbourne; UN Food and Agriculture Organization; US Department of Agriculture; Uruguayan Association of Wool Exporters

TABLE 12 Agricultural, fisheries and forestry commodity production Australia

Commodity	unit	2012–13	2013–14	2014–15	2015–16	2016–17 s	2017–18 f
Crops							
Grains							
Barley	kt	7,472	9,174	8,646	8,992	13,414	8,009
Corn (maize)	kt	506	390	495	400	428	367
Grain sorghum	kt	2,229	1,282	2,209	1,791	1,017	1,840
Oats	kt	1,121	1,255	1,198	1,300	1,873	1,033
Rice	kt	1,161	819	690	274	814	854
Triticale	kt	171	126	143	127	255	137
Wheat	kt	22,855	25,303	23,743	22,275	35,009	21,614
Oilseeds							
Canola	kt	4,142	3,832	3,540	2,775	4,135	2,753
Cottonseed	kt	1,439	1,252	746	890	1,322	1,352
Soybeans	kt	69.5	31.6	37.4	40.2	46.7	61.1
Sunflower seed	kt	37.9	17.9	30.4	25.1	31.7	39.4
Other oilseeds a	kt	41.5	26.5	21.5	19.9	28.7	21.0
Pulses							
Chickpeas	kt	813	629	555	875	1,854	1,188
Field peas	kt	320	342	290	205	415	280
Lupins	kt	459	626	549	652	1,032	528
Total grains, oilseeds and pulses b	kt	42,836	45,105	42,895	40,640	61,676	40,079
Industrial crops							
Cotton lint	kt	1,017	885	528	629	935	956
Sugar cane (cut for crushing)	kt	30,001	30,521	32,360	34,828	36,507	34,800
Sugar (tonnes actual)	kt	4,248	4,364	4,572	4,920	4,804	4,800
Wine grapes	kt	1,642	1,438	1,608	1,752	1,835	1,590
Horticulture							
Fruit							
Apples	kt	289	267	295	308	302	305
Bananas	kt	330	254	252	354	334	363
Oranges	kt	401	350	338	399	394	418
Vegetables							
Carrots	kt	272	243	261	300	317	313
Onions	kt	302	256	315	265	289	322
Potatoes	kt	1,273	1,171	1,155	1,130	1,274	1,387
Tomatoes	kt	456	326	389	405	334	345
Livestock							
Slaughterings							
Cattle and calves	'000	8,457	9,473	10,103	8,796	7,423	7,800
Lambs	'000	21,122	21,899	22,867	23,131	22,344	22,800
Sheep	'000	8,192	10,066	9,022	8,127	6,553	6,500
Pigs	'000	4,745	4,778	4,924	5,000	5,160	5,300
Chickens	million	563	580	591	623	653	680
Live exports							
Cattle c	'000	634	1,133	1,379	1,258	917	950
Sheep d	'000	2,000	2,020	2,180	1,859	1,851	1,875
Meat produced e							
Beef and veal	kt (cw)	2,245	2,464	2,662	2,344	2,069	2,244
Lamb	kt (cw)	457	474	507	516	506	512
Mutton	kt (cw)	183	228	214	196	163	161
Pig meat	kt (cw)	356	360	371	378	397	411
Chicken meat	kt (cw)	1,046	1,084	1,116	1,170	1,230	1,284
Total meat produced	kt (cw)	4,287	4,610	4,869	4,604	4,365	4,612

continued ...

TABLE 12 Agricultural, fisheries and forestry commodity production Australia continued

Commodity	unit	2012–13	2013–14	2014–15	2015–16	2016–17 s	2017–18 f
Livestock products							
Wool g	kt (gr. eq.)	427	419	427	404	414	428
Milk h	ML	9,317	9,372	9,732	9,679	9,015	9,250
Eggs	million dozen	335	322	318	329	339	349
Butter i	kt	118	116	119	119	101	106
Cheese j	kt	338	311	344	344	344	355
Skim milk powder	kt	224	211	242	256	217	230
Whole milk powder	kt	109	126	97	66	53	53
Buttermilk powder	kt	10.5	11.1	11.6	10.7	11.3	11.3
Forestry products k							
Hardwood	'000 m ³	9,029	10,899	12,361	13,737	14,592	14,035
Softwood	'000 m ³	13,551	14,367	14,929	16,346	17,817	16,965
Total forestry products	'000 m ³	22,580	25,266	27,290	30,083	32,409	31,000
Fisheries l							
Tuna	kt	10.6	10.7	12.4	14.2	11.6	13.0
Salmonids m	kt	43.0	41.8	48.6	56.3	52.7	54.3
Other fish	kt	106.6	101.7	101.5	123.3	114.3	105.6
Prawns	kt	21.3	25.0	25.5	24.6	23.6	23.3
Rock lobster n	kt	10.3	10.5	10.3	10.1	10.7	10.8
Abalone	kt	5.0	4.7	4.6	4.2	4.2	4.3
Scallops	kt	6.8	4.4	4.3	5.0	4.8	4.9
Oysters	kt	12.4	11.6	11.0	11.3	10.3	10.6
Other molluscs	kt	8.0	5.9	7.2	7.2	7.2	7.1
Other crustaceans	kt	5.3	5.5	5.6	5.2	5.4	5.4

a Linseed, safflower seed and peanuts. b Total includes components not listed separately. c Includes all bovine for feeder/slaughter, breeding and dairy purposes. d Includes animals for breeding. e Includes carcase equivalent of canned meats. f ABARES forecast. g Includes shorn wool (includes crutching), dead and fellmongered wool, and wool exported on skins. h Includes the whole milk equivalent of farm cream intake. i Includes the butter equivalent of butter oil, butter concentrate, ghee and dry butterfat. j Excludes processed cheese. k Excludes logs harvested for firewood. l Liveweight. m Includes salmon and trout production. n Includes Queensland bugs. s ABARES estimate.

Note: Series break in 2015–16. Prior to 2015–16 figures are based on establishments with an estimated value of agricultural operations (EVAO) of \$5,000. From 2015–16 (inclusive) figures are based on establishments with an EVAO of \$40,000.

Sources: ABARES; Australian Bureau of Statistics; Australian Fisheries Management Authority; Dairy Australia; Department of Fisheries, Western Australia; Department of Primary Industries, Parks, Water and Environment, Tasmania; Fisheries Queensland, Department of Agriculture, Fisheries and Forestry; Fisheries Victoria, Department of Primary Industries; Industry & Investment New South Wales; Northern Territory Department of Regional Development, Primary Industry, Fisheries and Resources; Primary Industries and Regions, Fisheries, South Australia; Pulse Australia; Raw Cotton Marketing Advisory Committee; South Australian Research and Development Institute; state and territory forest services; various Australian forestry industries

TABLE 13 Gross value of farm, fisheries and forestry production Australia

Commodity	unit	2012–13	2013–14	2014–15	2015–16	2016–17 s	2017–18 f
Crops							
Grains							
Barley	\$m	2,063	2,453	2,417	2,277	2,559	1,938
Corn (maize)	\$m	120	116	163	130	125	105
Grain sorghum	\$m	562	384	666	492	232	439
Oats	\$m	265	268	300	398	441	268
Rice	\$m	302	279	273	115	292	326
Triticale	\$m	42.7	32.4	36.7	31.6	32.2	17.3
Wheat	\$m	7,154	7,998	7,124	6,170	8,613	5,580
Other cereals	\$m	110	115	90	14.5	105	110
Oilseeds							
Canola	\$m	2,270	2,129	1,782	1,476	2,357	1,542
Soybeans	\$m	32.5	17.0	22.0	22.5	27.0	24.2
Sunflower seed	\$m	21.6	11.8	23.0	16.4	19.9	20.1
Other oilseeds a	\$m	32.8	25.6	26.3	19.3	21.7	17.7
Pulses							
Chickpeas	\$m	320	222	315	685	1,669	982
Field peas	\$m	130	143	120	91.8	136	86.1
Lupins	\$m	156	216	160	236	285	165
Other pulses	\$m	347	391	425	522	1,154	828
Total grains, oilseeds and pulses	\$m	13,927	14,800	13,943	12,697	18,070	12,448
Industrial crops							
Cotton lint and cottonseed b	\$m	2,174	1,855	1,184	1,530	2,579	2,550
Sugar cane (cut for crushing)	\$m	1,118	1,226	1,304	1,299	1,760	1,531
Wine grapes	\$m	858	672	765	953	1,037	857
Total industrial crops	\$m	4,150	3,753	3,252	3,783	5,376	4,938
Horticulture							
Table and dried grapes	\$m	303	331	343	453	364	374
Fruit and nuts (excl. grapes)	\$m	3,662	3,187	3,512	4,225	4,013	4,160
Vegetables	\$m	3,770	3,510	3,350	3,585	4,020	4,159
Nursery, cut flowers and turf	\$m	1,285	1,247	1,252	1,296	1,349	1,343
Other horticulture nei c	\$m	251	233	232	241	252	263
Total horticulture	\$m	9,271	8,507	8,689	9,801	9,998	10,299
Other crops nei d	\$m	1,245	1,490	1,538	1,600	1,660	1,720
Total crops	\$m	28,592	28,550	27,422	27,880	35,104	29,406

continued ...

TABLE 13 Gross value of farm, fisheries and forestry production Australia continued

Commodity	unit	2012–13	2013–14	2014–15	2015–16	2016–17 s	2017–18 f
Livestock							
Slaughtering							
Cattle and calves e g	\$m	7,136	7,495	10,175	11,536	10,783	10,167
Sheep g	\$m	329	513	650	535	678	698
Lambs g	\$m	1,696	1,943	2,401	2,477	2,998	3,198
Pigs g	\$m	934	1,081	1,149	1,353	1,330	1,127
Poultry	\$m	2,214	2,344	2,610	2,748	2,857	2,971
Live exports							
Cattle exported live h	\$m	589	1,049	1,356	1,551	1,198	1,169
Sheep exported live i	\$m	194	185	245	228	233	240
Total livestock j	\$m	13,199	14,750	18,775	20,653	20,316	19,755
Livestock products							
Wool k	\$m	2,472	2,530	2,676	2,965	3,397	3,846
Milk l	\$m	3,687	4,729	4,722	4,282	3,949	4,301
Eggs	\$m	653	710	729	783	821	789
Honey and beeswax	\$m	88.4	88.0	101	110	116	130
Total livestock products	\$m	6,900	8,057	8,227	8,140	8,282	9,066
Total farm	\$m	48,692	51,357	54,425	56,673	63,701	58,227
Forestry products m							
Hardwood	\$m	680	822	961	1,076	1,115	1,084
Softwood	\$m	836	1,018	1,064	1,194	1,374	1,321
Total forestry products	\$m	1,516	1,840	2,025	2,270	2,489	2,405
Fisheries products n							
Tuna	\$m	176	147	161	173	132	171
Salmonids o	\$m	518	543	631	718	745	765
Other fish p	\$m	446	405	435	523	476	437
Prawns	\$m	278	339	365	389	352	348
Rock lobster q	\$m	439	588	668	695	675	681
Other crustaceans	\$m	64.5	63.9	141.7	61.8	63.8	64.0
Abalone	\$m	178	164	164	160	163	173
Scallops	\$m	14.7	11.3	11.3	14.0	13.4	13.5
Oysters	\$m	93.5	91.3	93.0	97.0	95.8	94.1
Pearls	\$m	79.2	60.7	67.9	78.4	69.0	71.7
Other molluscs	\$m	40.1	33.5	40.8	33.5	46.8	40.1
Other nei	\$m	58.6	27.1	67.7	77.3	45.7	48.6
Total fisheries products	\$m	2,386	2,473	2,846	3,019	2,878	2,906

a Linseed, safflower seed and peanuts. b Value delivered to gin. c Other horticulture includes mainly coffee, tea, spices, essential oils, vegetables for seed and other miscellaneous horticultural products. d Mainly fodder crops. e Includes dairy cattle slaughtered.

f ABARES forecast. g Excludes skin and hide values. h Includes all bovine for feeder/slaughter, breeding and dairy purposes. i Includes animals exported for breeding purposes. j Total livestock slaughtering includes livestock disposals. k Shorn, dead and fellmongered wool, and wool exported on skins. l Milk intake by factories and valued at the farm gate. m Excludes logs harvested for firewood. n Value to fishers of product landed in Australia. o Includes salmon and trout production. p Includes an estimated value of aquaculture. q Includes Queensland bugs. s ABARES estimate. nei Not elsewhere included.

Notes: 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. Series break in 2015–16. Prior to 2015–16 figures are based on establishments with an estimated value of agricultural operations (EVAO) of \$5,000. From 2015–16 (inclusive) figures are based on establishments with an EVAO of \$40,000.

Sources: ABARES; Australian Bureau of Statistics

TABLE 14 Crop and forestry areas and livestock numbers Australia

Commodity	unit	2012–13	2013–14	2014–15	2015–16	2016–17 s	2017–18 f
Crop areas							
Grains							
Barley	'000 ha	3,644	3,814	4,078	4,108	4,035	3,925
Corn (maize)	'000 ha	78.0	52.3	59.6	53.3	66.8	56.7
Grain sorghum	'000 ha	647	532	732	521	386	596
Oats	'000 ha	729	715	854	821	914	742
Rice	'000 ha	113	74.9	69.7	26.6	80.4	84.4
Triticale	'000 ha	99.2	79.9	81.5	78.4	99.5	82.5
Wheat	'000 ha	12,979	12,613	12,384	11,282	12,835	12,447
Oilseeds							
Canola	'000 ha	3,272	2,721	2,897	2,091	2,317	2,588
Soybeans	'000 ha	47.7	24.9	20.2	20.8	27.6	32.6
Sunflower seed	'000 ha	32.7	17.1	25.4	22.8	29.1	36.8
Other oilseeds a	'000 ha	32.9	21.3	12.7	12.7	15.1	14.1
Pulses							
Chickpeas	'000 ha	574	508	425	677	1,052	1,099
Field peas	'000 ha	281	245	237	238	230	218
Lupins	'000 ha	450	387	443	534	515	508
Total grains, oilseeds and pulses b	'000 ha	23,856	22,583	22,934	21,362	23,890	23,567
Industrial crops							
Cotton	'000 ha	443	392	197	270	557	430
Sugar cane c	'000 ha	349	356	378	381	372	380
Wine grapes d	'000 ha	133	127	132	130	134	140
Livestock numbers e							
Beef cattle	million	26.46	26.30	24.60	22.31	23.12	23.97
Dairy cattle	million	2.83	2.81	2.81	2.67	2.63	2.70
Milking herd g	million	1.69	1.65	1.69	1.56	1.53	1.54
Total cattle	million	29.29	29.10	27.41	24.97	25.75	26.67
Sheep	million	75.55	72.61	70.91	67.54	70.90	73.20
Pigs	million	2.10	2.31	2.27	2.29	2.38	2.45
Sows	'000	260	266	271	240	242	244
Forestry plantation area							
Hardwood	'000 ha	976	963	928	928	na	na
Softwood	'000 ha	1,024	1,024	1,035	1,037	na	na
Total plantation area h	'000 ha	2,013	2,000	1,973	1,975	na	na

a Linseed, safflower seed and peanuts. b Total includes components not listed separately. c Cut for crushing. d This figure is for grapes for wine only. e At 30 June. f ABARES forecast. g Cows in milk and dry. h Includes areas where plantation type is unknown. s ABARES estimate. na Not available.

Note: Series break in 2015–16. Prior to 2015–16 figures are based on establishments with an estimated value of agricultural operations (EVAO) of \$5,000. From 2015–16 (inclusive) figures are based on establishments with an EVAO of \$40,000.

Sources: ABARES; Australian Bureau of Statistics; Pulse Australia; Cotton Australia, Australian cotton industry statistics - Cotton Annual, Sydney; Australian Sugar Milling Council, Annual Review, Brisbane.

TABLE 15 Average farm yields Australia

Commodity	unit	2012–13	2013–14	2014–15	2015–16	2016–17 ^s	2017–18 ^f
Crops							
Grains							
Barley	t/ha	2.05	2.41	2.12	2.19	3.33	2.04
Corn (maize)	t/ha	6.49	7.45	8.30	7.51	6.41	6.48
Grain sorghum	t/ha	3.45	2.41	3.02	3.44	2.63	3.09
Oats	t/ha	1.54	1.76	1.40	1.58	2.05	1.39
Rice	t/ha	10.28	10.94	9.91	10.29	10.14	10.13
Triticale	t/ha	1.73	1.57	1.76	1.63	2.57	1.66
Wheat	t/ha	1.76	2.01	1.92	1.97	2.73	1.74
Oilseeds							
Canola	t/ha	1.27	1.41	1.22	1.33	1.78	1.06
Soybeans	t/ha	1.46	1.27	1.86	1.93	1.69	1.87
Sunflower seed	t/ha	1.16	1.05	1.20	1.10	1.09	1.07
Pulses							
Chickpeas	t/ha	1.42	1.24	1.31	1.29	1.76	1.08
Field peas	t/ha	1.14	1.40	1.23	0.86	1.80	1.29
Lupins	t/ha	1.02	1.62	1.24	1.22	2.00	1.04
Industrial crops							
Cotton (lint)	t/ha	2.30	2.26	2.68	2.33	1.68	2.22
Sugar cane (for crushing)	t/ha	86	86	86	91	98	92
Wine grapes	t/ha	12.3	11.3	12.1	13.5	13.7	11.4
Livestock products							
Wool ^a	kg/sheep	4.47	4.37	4.50	4.43	4.58	4.55
Whole milk	L/cow	5,518	5,692	5,761	6,198	5,892	6,006

^a Shorn (including lambs). ^f ABARES forecast. ^s ABARES estimate.

Note: Series break in 2015–16. Prior to 2015–16 figures are based on establishments with an estimated value of agricultural operations (EVAO) of \$5,000. From 2015–16 (inclusive) figures are based on establishments with an EVAO of \$40,000.

Sources: ABARES; Australian Bureau of Statistics; Dairy Australia; Pulse Australia

TABLE 16 Volume of agricultural and fisheries exports Australia

Commodity	unit	2012–13	2013–14	2014–15	2015–16	2016–17 s	2017–18 f
Farm							
Crops							
Grains							
Barley a	kt	5,165	7,124	6,208	5,498	9,539	5,005
Corn (maize)	kt	134	83.3	58.1	41.3	80.3	71.8
Grain sorghum	kt	1,291	701	1,205	1,075	729	763
Oats	kt	241	213	284	230	369	189
Rice	kt	584	544	461	314	234	433
Wheat b	kt	21,265	18,336	16,571	15,777	22,067	18,153
Oilseeds							
Canola	kt	3,488	3,194	2,445	1,946	3,598	2,043
Cottonseed	kt	754	464	167	147	184	260
Other oilseeds c	kt	9.9	13.6	5.8	10.0	10.8	15.0
Pulses							
Chickpeas	kt	852	562	674	1,140	1,978	985
Peas	kt	208	155	179	143	225	189
Lupins	kt	416	298	270	220	463	371
Other pulses	kt	691	771	597	588	1,256	956
Total grains, oilseeds and pulses	kt	35,100	32,458	29,124	27,130	40,735	29,434
Industrial crops							
Raw cotton d	kt	1,305	1,036	681	536	763	935
Sugar	kt	3,004	3,052	3,675	4,140	4,049	4,051
Wine	ML	717	717	745	727	789	800
Meat and live animals							
Beef and veal e	kt (sw)	1,052	1,214	1,376	1,196	992	1,090
Live feeder/slaughter cattle g	'000	513	1,006	1,295	1,114	818	850
Live breeder cattle h	'000	121	127	83	144	99.0	100
Lamb e	kt (sw)	208	236	254	261	255	258
Live sheep h	'000	2,000	2,020	2,180	1,859	1,851	1,875
Mutton e	kt (sw)	153	186	180	156	135	134
Pig meat ej	kt (sw)	27.2	27.7	28.5	27.9	30.8	34.0
Poultry meat e	kt (sw)	31.9	36.7	35.7	29.0	36.5	41.6
Wool							
Greasy ks	kt	316	295	325	296	313	323
Semi-processed	kt (gr. eq.)	34.4	35.2	41.4	34.8	30.9	34.5
Skins	kt (gr. eq.)	86.4	97.1	92.5	86.0	85.2	84.8
Total wool ks	kt (gr. eq.)	437	428	459	417	429	442
Dairy products							
Butter l	kt	53.7	49.3	43.6	33.6	21.5	21.0
Cheese	kt	174	151	159	172	167	174
Casein	kt	4.2	2.9	0.2	0.4	0.4	0.4
Skim milk powder	kt	147	143	186	181	153	155
Whole milk powder	kt	87	94	69	57	60	59

continued ...

TABLE 16 Volume of agricultural and fisheries exports Australia continued

Commodity	unit	2012–13	2013–14	2014–15	2015–16	2016–17 ^s	2017–18 ^f
Fisheries products							
Tuna	kt	8.9	11.0	12.1	13.8	10.8	12.2
Salmonids	kt	2.6	1.8	5.0	8.0	5.1	5.1
Other fish	kt	6.3	5.8	6.5	20.6	15.5	7.0
Abalone	kt	2.8	2.7	2.6	2.6	2.6	2.7
Prawns	kt	3.9	7.1	6.5	6.7	7.0	7.0
Rock lobster	kt	7.8	8.0	8.2	8.0	8.6	8.8
Other crustaceans and molluscs	kt	2.9	2.5	2.4	2.4	2.0	1.9
Total edible ^m	kt	35.3	38.9	43.3	62.1	51.5	44.7

^a Includes the grain equivalent of malt. ^b Includes the grain equivalent of wheat flour. ^c Includes soybeans, linseed, sunflower seed, safflower seed and peanuts. Excludes meals and oils. ^d Excludes cotton waste and linters. ^e Fresh, chilled or frozen. ^f ABARES forecast. ^g Includes buffalo. ^h Includes dairy cattle and buffalo. ⁱ Includes breeding stock. ^j Includes preserved pig meat. ^k Australian Bureau of Statistics recorded trade data adjusted for changes in stock levels held overseas. ^l Includes ghee, dry butterfat, butter concentrate and butter oil, and dairy spreads, all expressed as butter. ^m total non-edible export volume not available. ^s ABARES estimates.

Note: Zero used to denote nil or less than 500 tonnes.

Sources: ABARES; Australian Bureau of Statistics; Department of Foreign Affairs and Trade; UN Commodity Trade Statistics Database (UN Comtrade)

TABLE 17 Value of agricultural and fisheries exports (fob) Australia

Commodity	unit	2012–13	2013–14	2014–15	2015–16	2016–17 s	2017–18 f
Farm							
Crops							
Grains							
Barley a	\$m	1,626	2,199	2,137	1,790	2,429	1,416
Corn (maize)	\$m	49.7	36.5	30.0	21.7	33.9	36.4
Grain sorghum	\$m	364	253	424	364	212	242
Oats	\$m	83.0	80.0	106	104	126	67.2
Rice b	\$m	459	490	506	408	258	423
Wheat c	\$m	6,776	6,103	5,547	5,120	6,101	5,106
Oilseeds							
Canola	\$m	2,094	1,929	1,349	1,097	2,128	1,167
Cottonseed	\$m	219	168	74.7	68.9	86.2	113
Other oilseeds d	\$m	13.3	18.3	13.6	19.0	19.0	21.9
Pulses							
Chickpeas	\$m	533	297	414	1,013	1,928	826
Peas	\$m	89.1	67.2	90.5	85.5	109	88.1
Lupins	\$m	143	125	119	97	155	118
Other pulses	\$m	418	530	541	584	962	679
Total grains, oilseeds and pulses	\$m	12,869	12,296	11,352	10,772	14,548	10,303
Industrial crops							
Raw cotton e	\$m	2,695	2,355	1,546	1,269	1,778	2,110
Sugar	\$m	1,438	1,385	1,643	1,823	2,191	1,929
Wine	\$m	1,867	1,847	1,983	2,184	2,368	2,508
Total industrial crops	\$m	5,999	5,587	5,172	5,277	6,337	6,547
Horticulture							
Fruit	\$m	634	724	755	1,072	1,089	1,147
Tree nuts	\$m	348	610	734	930	822	1,013
Vegetables	\$m	257	268	289	340	354	358
Nursery	\$m	11.9	11.3	11.9	14.8	19.7	13.4
Other horticulture g	\$m	201	220	230	252	282	281
Total horticulture	\$m	1,452	1,833	2,019	2,609	2,567	2,812
Other crops and crop products	\$m	2,239	2,601	3,031	3,872	4,297	3,642
Total crops	\$m	22,558	22,318	21,574	22,529	27,748	23,304
Meat and live animals							
Beef and veal	\$m	5,052	6,422	9,040	8,495	7,119	7,026
Live feeder/slaughter cattle h	\$m	339	795	1,163	1,280	1,031	1,000
Live breeder cattle i	\$m	251	255	192	271	167	169
Lamb	\$m	1,128	1,534	1,779	1,771	1,939	1,984
Live sheep j	\$m	194	185	245	228	233	240
Mutton	\$m	510	772	824	699	720	713
Pig meat	\$m	90	94	110	128	124	119
Poultry meat	\$m	42.8	49.7	56.1	53.6	57.0	60.2
Total meat and live animals	\$m	7,605	10,105	13,411	12,924	11,389	11,311
Wool							
Greasy k	\$m	2,261	2,212	2,497	2,590	3,016	3,402
Semi-processed	\$m	209	238	282	281	248	304
Skins	\$m	398	426	375	412	355	387
Total wool k	\$m	2,869	2,877	3,154	3,283	3,619	4,093

continued ...

TABLE 17 Value of agricultural and fisheries exports (fob) Australia continued

Commodity	unit	2012–13	2013–14	2014–15	2015–16	2016–17 s	2017–18 f
Dairy products							
Butter	\$m	180	243	198	156	112	129
Cheese	\$m	784	765	823	859	849	945
Casein	\$m	46.2	42.3	10.5	10.4	11.2	9.0
Skim milk powder	\$m	467	708	682	516	455	463
Whole milk powder	\$m	312	532	294	257	269	287
Other dairy products i	\$m	942	904	868	1,202	1,337	1,403
Total dairy products	\$m	2,731	3,194	2,876	3,001	3,032	3,236
Other livestock and livestock products	\$m	2,515	2,879	3,193	3,066	2,991	3,248
Total livestock exports	\$m	15,720	19,055	22,633	22,274	21,032	21,888
Total farm exports	\$m	38,278	41,373	44,208	44,802	48,780	45,192
Fisheries products							
Tuna	\$m	163	136	151	163	146	162
Salmonids	\$m	25.4	17.4	48.1	79.9	59.2	57.8
Other fish	\$m	70.1	72.5	72.1	111	103	81.7
Abalone	\$m	186	170	174	182	187	200
Prawns	\$m	51.8	101	94.2	114	115	108
Rock lobster	\$m	447	590	691	693	677	677
Other crustaceans and molluscs	\$m	59.1	51.6	62.3	74.1	48.6	47.5
Pearls	\$m	152	144	111	95.9	75.4	74.6
Other fisheries products	\$m	21.3	21.5	36.2	27.5	27.2	30.3
Total fisheries products	\$m	1,175	1,304	1,440	1,542	1,438	1,438

a Includes malt. b Includes the milled equivalent of rice flour. c Includes wheat flour. d Includes soybeans, linseed, sunflower seed, safflower seed and peanuts. Excludes meals and oils. e Excludes cotton waste and linters. f ABARES forecast. g Other horticulture includes mainly coffee, tea, spices, essential oils, vegetables for seed and other miscellaneous horticultural products. h Includes buffalo. i Includes dairy cattle and buffalo. j Includes breeding stock. k On a balance of payments basis. Australian Bureau of Statistics recorded trade data adjusted for changes in stock levels held overseas. l Other dairy products include food preparations identified by industry as containing a high proportion of dairy products. s ABARES estimate.

Sources: ABARES; Australian Bureau of Statistics; Department of Agriculture and Water Resources, Canberra; UN Commodity Trade Statistics Database (UN Comtrade)

TABLE 18 Agricultural exports to China (fob) Australia

Commodity	unit	2011–12	2012–13	2013–14	2014–15	2015–16	2016–17 s
Farm							
Crops							
Grains							
Barley a	\$m	454	494	1,080	1,464	834	1,187
Grain sorghum	\$m	3.9	98.0	215	410	350	179
Wheat b	\$m	457	357	484	323	426	493
Other grains c	\$m	0.1	5.7	0.2	0.4	0.7	0.3
Oilseeds	\$m	116	344	627	317	13.6	150
Pulses	\$m	4.3	1.3	0.6	16.9	20.0	7.3
Total grains, oilseeds and pulses	\$m	1,035	1,300	2,407	2,531	1,645	2,017
Industrial crops							
Raw cotton d	\$m	1,812	1,849	1,520	851	636	468
Sugar	\$m	20.8	2.0	42.0	126	120	95.3
Wine	\$m	209	241	202	269	416	596
Total industrial crops	\$m	2,041	2,093	1,764	1,246	1,172	1,159
Horticulture							
Fruit	\$m	10.0	27.6	37.4	64.2	187	259
Tree nuts	\$m	11.5	36.4	37.1	38.6	62.7	74.4
Vegetables	\$m	2.5	2.6	3.3	3.9	3.8	2.9
Nursery	\$m	0.5	0.3	0.3	0.8	1.1	1.0
Other horticulture e	\$m	3.0	3.0	2.9	4.5	4.9	4.9
Total horticulture	\$m	27.5	69.9	81.0	112	260	342
Other crops and crop products	\$m	66.0	65.3	119	361	802	1,080
Total crops	\$m	3,170	3,528	4,370	4,250	3,878	4,598
Meat and live animals							
Beef and veal	\$m	59	408	787	758	867	747
Live breeder cattle g	\$m	133	125	180	149	221	126
Lamb	\$m	85	120	217	191	144	208
Mutton	\$m	30.3	123	229	168	86.0	89.5
Other meat and live animals h	\$m	0.5	1.3	19.4	36.7	29.8	8.9
Total meat and live animals i	\$m	308	778	1,433	1,303	1,347	1,179
Wool							
Greasy	\$m	1,925	1,844	1,713	1,986	2,017	2,425
Semi-processed	\$m	24.5	18.3	17.6	32.2	14.5	16.7
Skins	\$m	369	337	378	336	385	329
Total	\$m	2,319	2,200	2,109	2,354	2,417	2,770
Dairy products							
Butter	\$m	7.2	5.9	7.5	11.4	11.1	11.5
Cheese	\$m	36.7	44.0	74.0	72.3	85.0	101
Casein	\$m	1.3	1.0	0.9	0.2	0.3	0
Skim milk powder	\$m	49.6	35.5	108	58.6	70.3	76.2
Whole milk powder	\$m	11.2	55.7	159	19.9	82.4	77.9
Other dairy products	\$m	185	208	151	173	427	552
Total dairy product exports	\$m	291	350	501	335	676	819
Other livestock exports	\$m	614	635	778	833	653	535
Total livestock and livestock products	\$m	3,532	3,962	4,820	4,826	5,093	5,304
Total agricultural exports	\$m	6,702	7,490	9,190	9,076	8,971	9,902

a Includes malt. b Includes wheat flour. c Includes grains not separately listed (excluding rice). d Excludes cotton waste and linters. e Other horticulture includes mainly coffee, tea, spices, essential oils, vegetables for seed and other miscellaneous horticultural products. g Includes dairy cattle and buffalo. h Includes meat and other live animals not listed separately. i Excludes value of live feeder slaughter for October 2015. s ABARES estimate.

Note: Zero is used to denote nil or less than \$0.5 million.

Sources: ABARES; Australian Bureau of Statistics

TABLE 19 Agricultural exports to Indonesia (fob) Australia

Commodity	unit	2011–12	2012–13	2013–14	2014–15	2015–16	2016–17 s
Farm							
Crops							
Grains							
Barley a	\$m	10.4	7.1	6.4	5.4	4.7	3.3
Wheat b	\$m	1,156	1,395	1,194	1,403	1,127	1,263
Other grains, oilseeds and pulses	\$m	13.7	11.8	27.6	14.4	17.9	20.4
Total grains, oilseeds and pulses	\$m	1,180	1,414	1,228	1,423	1,150	1,287
Industrial crops							
Raw cotton e	\$m	282	220	174	136	130	178
Sugar	\$m	302	316	467	519	476	560
Wine	\$m	4.3	4.5	2.6	3.9	4.0	5.9
Total industrial crops	\$m	588	540	644	659	610	743
Horticulture							
Fruit	\$m	33.2	48.9	53.0	62.2	90.7	76.8
Tree nuts	\$m	1.5	1.4	1.2	2.4	5.1	5.8
Vegetables	\$m	10.9	12.4	11.1	6.0	10.0	9.4
Nursery	\$m	0.1	0.0	0	0.0	0	0.1
Other horticulture g	\$m	2.7	2.3	2.9	3.8	1.5	1.8
Total horticulture	\$m	48.5	64.9	68.2	74.4	107	93.9
Other crops and crop products	\$m	24.7	33.8	39.3	43.4	47.8	50.4
Total crops	\$m	1,842	2,053	1,980	2,200	1,915	2,174
Meat and live animals							
Beef and veal	\$m	168	137	258	247	315	293
Live feeder/slaughter cattle h	\$m	252	165	452	595	578	620
Live breeder cattle h	\$m	2.4	9.4	8.8	5.0	7.2	15.9
Lamb	\$m	8.8	7.8	4.5	7.1	7.6	8.7
Mutton	\$m	1.3	1.6	1.2	4.1	6.2	5.8
Other meat and live animals i	\$m	0.6	0.5	0	0.0	0	0.0
Total meat and live animals	\$m	433	321	724	858	914	943
Wool	\$m	0.4	0.3	0.9	0.6	0.5	0.4
Dairy products							
Butter	\$m	3.9	5.5	6.6	4.6	3.2	3.5
Cheese	\$m	18.6	18.3	18.4	18.1	17.7	24.7
Casein	\$m	7.2	9.4	9.7	0	0	0.4
Skim milk powder	\$m	71.6	68.1	126	164	120	108
Whole milk powder	\$m	34.0	18.0	37.3	8.0	2.9	3.0
Other dairy products	\$m	39.1	28.4	38.8	56.5	51.2	61.2
Total dairy product exports	\$m	174	148	237	251	195	200
Other livestock products	\$m	113	146	147	142	122	151
Total livestock and livestock products	\$m	721	615	1,109	1,252	1,231	1,294
Total agricultural exports	\$m	2,563	2,668	3,089	3,452	3,146	3,469

a Includes malt. b Includes wheat flour. c Includes grains, oilseeds and pulses not separately listed. d Excludes cotton waste and lintens. e Other horticulture includes mainly coffee, tea, spices, essential oils, vegetables for seed and other miscellaneous horticultural products. g Includes buffalo. h Includes dairy cattle and buffalo. i Includes meat and other live animals not listed separately. s ABARES estimate.

Note: Zero is used to denote nil or less than \$0.5 million.

Sources: ABARES; Australian Bureau of Statistics

TABLE 20 Agricultural exports to Japan (fob) Australia

Commodity	unit	2011–12	2012–13	2013–14	2014–15	2015–16	2016–17 s
Farm							
Grains							
Barley a	\$m	316	292	251	177	223	465
Grain sorghum	\$m	219	202	16.2	2.3	0.6	2.1
Wheat b	\$m	395	392	322	305	326	308
Oilseeds							
Canola	\$m	47.4	71.7	113.5	174.7	62.7	83.8
Cottonseed	\$m	30.9	36.1	30.9	23.3	27.3	18.8
Other grains and oilseeds c	\$m	9.4	16.9	9.9	6.4	5.2	7.0
Pulses	\$m	11.5	10.4	10.6	8.5	14.5	3.3
Total grains, oilseeds and pulses	\$m	1,030	1,021	754	697	659	888
Industrial crops							
Raw cotton d	\$m	62.6	27.6	31.9	25.4	26.6	30.0
Sugar	\$m	211	198	244	164	233	401
Wine	\$m	45.3	42.2	41.5	43.8	45.6	47.1
Total industrial crops	\$m	318	268	318	233	306	479
Horticulture							
Fruit	\$m	59.0	62.6	60.6	59.2	89.0	105
Tree nuts	\$m	20.3	22.5	19.3	22.7	35.4	45.0
Vegetables	\$m	40.8	41.1	39.1	37.6	44.1	50.8
Nursery	\$m	2.9	2.6	1.8	1.7	2.0	5.0
Other horticulture e	\$m	4.6	2.3	7.0	7.1	7.1	6.9
Total horticulture	\$m	128	131	128	128	178	212
Other crops and crop products	\$m	355	337	370	375	364	374
Total crops	\$m	1,830	1,757	1,570	1,433	1,506	1,954
Meat and live animals							
Beef and veal	\$m	1,580	1,466	1,439	1,858	1,813	1,910
Live feeder/slaughter cattle gh	\$m	19.7	14.6	15.1	14.4	14.7	23.0
Lamb	\$m	62.7	56.3	75.5	86.0	72.0	83.2
Mutton	\$m	25.0	16.9	28.8	27.3	35.1	32.2
Other meat and live animals i	\$m	2.9	3.5	3.7	4.7	10.8	9.1
Total meat and live animals	\$m	1,690	1,558	1,562	1,990	1,946	2,058
Wool							
Greasy	\$m	11.6	8.0	0.6	0.2	0.0	0.1
Semi-processed	\$m	26.1	21.5	10.3	14.2	20.5	11.1
Skins	\$m	1.6	1.0	1.6	1.8	1.7	1.5
Total	\$m	39.3	30.4	12.5	16.2	22.2	12.6
Dairy products							
Butter	\$m	8.7	3.9	2.2	3.9	3.3	2.7
Cheese	\$m	423	415	343	407	410	375
Casein	\$m	21.5	16.8	20.4	5.4	4.9	3.1
Skim milk powder	\$m	2.0	5.0	16.5	30.5	5.2	9.8
Whole milk powder	\$m	0.7	0.4	0.0	0.1	0.0	0.0
Other dairy products	\$m	45.9	68.0	38.6	33.4	38.8	39.4
Total dairy product exports	\$m	502	509	421	481	462	430
Other livestock products	\$m	302	294	277	293	359	367
Total livestock and livestock products	\$m	2,532	2,391	2,273	2,780	2,789	2,867
Total agricultural exports	\$m	4,363	4,148	3,843	4,213	4,295	4,820

a Includes malt. b Includes the grain equivalent of wheat flour. c Includes grains and oilseeds not separately listed. d Excludes cotton waste and linters. e Other horticulture includes mainly coffee, tea, spices, essential oils, vegetables for seed and other miscellaneous horticultural products. g Excludes breeding stock and includes buffalo for feeder/slaughter purposes. h Excludes value of live feeder slaughter for October 2015. i Includes other meat and live animals not listed separately. s ABARES estimate.

Note: Zero is used to denote nil or less than \$0.5 million.

Sources: ABARES; Australian Bureau of Statistics

TABLE 21 Agricultural exports to the Republic of Korea (fob) Australia

Commodity	unit	2011–12	2012–13	2013–14	2014–15	2015–16	2016–17 ^s
Farm							
Crops							
Grains ^a							
Barley ^b	\$m	94.3	87.2	116	116	95.7	132
Wheat ^c	\$m	628	449	310	354	410	300
Corn (maize)	\$m	12.3	19.6	22.6	21.6	13.2	25.8
Oilseeds							
Cottonseed	\$m	26.5	36.8	30.5	15.4	19.1	12.7
Other grains and oilseeds ^d	\$m	0.9	2.3	5.9	1.9	4.0	3.5
Pulses	\$m	35.7	74.0	57.0	68.4	25.0	19.3
Total grains, oilseeds and pulses	\$m	798	669	541	577	567	492
Industrial crops							
Raw cotton ^e	\$m	120	119	130	81.8	24.4	21.5
Sugar	\$m	514	467	300	512	631	718
Wine	\$m	8.8	10.2	7.6	10.5	13.1	13.5
Total industrial crops	\$m	643	596	438	604	668	753
Horticulture							
Fruit	\$m	4.9	6.6	6.0	9.6	12.3	9.0
Tree nuts	\$m	2.6	2.3	3.9	10.8	17.6	14.9
Vegetables	\$m	9.1	7.0	4.7	8.5	16.6	14.9
Other horticulture ^g	\$m	1.7	1.9	2.7	1.9	1.9	3.1
Total horticulture	\$m	18.2	17.8	17.4	30.7	48.5	41.9
Other crops and crop products	\$m	135	141	166	156	174	245
Total crops	\$m	1,594	1,424	1,162	1,368	1,458	1,533
Meat and live animals							
Beef and veal	\$m	654	703	892	1,068	1,324	1,229
Lamb	\$m	14.6	13.6	24.0	32.0	48.9	95.8
Mutton	\$m	4.3	3.9	5.7	7.1	8.8	10.1
Other meat and live animals ^h	\$m	1.8	1.0	1.3	1.8	3.1	3.4
Total meat and live animals	\$m	675	722	923	1,108	1,385	1,338
Wool	\$m	43.2	43.5	61.1	81.3	127	108
Dairy products							
Butter	\$m	9.2	6.9	6.3	9.6	14.3	9.6
Cheese	\$m	31.0	29.8	26.1	32.0	39.2	53.2
Casein	\$m	2.4	1.5	1.1	0.1	0.2	0
Skim milk powder	\$m	23.3	19.3	26.5	24.6	13.6	19.6
Whole milk powder	\$m	7.4	1.9	3.1	2.4	1.9	2.1
Other dairy products	\$m	42.2	29.0	29.0	24.3	29.6	30.5
Total dairy product	\$m	116	88.4	92.1	92.9	98.7	115
Other livestock products	\$m	125	101	118	185	171	204
Total livestock and livestock products	\$m	958	954	1,194	1,468	1,782	1,765
Total agricultural exports	\$m	2,552	2,378	2,357	2,836	3,239	3,298

^a Includes commodities subjected to ABS confidentiality restrictions. ^b Includes malt. ^c Includes wheat flour. ^d Includes grains not separately listed. ^e Excludes cotton waste and linters. ^g Other horticulture includes mainly coffee, tea, spices, essential oils, vegetables for seed and other miscellaneous horticultural products. ^h Includes dairy cattle and buffalo. ⁱ Includes meat and other live animals not listed separately. ^j Excludes value of live feeder slaughter for October 2015. ^s ABARES estimate.

Note: Zero is used to denote nil or less than \$0.5 million.

Sources: ABARES; Australian Bureau of Statistics

TABLE 22 Agricultural exports to the United States (fob) Australia

Commodity	unit	2011–12	2012–13	2013–14	2014–15	2015–16	2016–17 ^s
Farm							
Crops							
Grains ^a	\$m	0.2	1.2	1.7	0.3	0.1	0.2
Oilseeds	\$m	19.7	49.9	66.2	21.6	1.5	20.4
Pulses	\$m	5.0	4.0	4.8	4.4	4.5	7.7
Total grains, oilseeds and pulses	\$m	24.8	55.1	72.7	26.3	6.1	28.3
Industrial crops							
Sugar	\$m	120	54.2	31.0	52.7	77.9	119.7
Wine	\$m	493	483	472	463	477	479
Total industrial crops	\$m	613	537	504	515	555	599
Horticulture							
Fruit	\$m	33.1	25.4	31.3	23.8	34.0	34.0
Tree nuts	\$m	14.6	27.8	48.3	64.9	82.1	43.3
Vegetables	\$m	4.9	5.0	6.4	8.0	8.7	9.5
Nursery	\$m	1.7	1.5	1.5	1.7	2.1	2.0
Other horticulture ^b	\$m	9.7	9.3	17.7	19.9	19.7	29.1
Total horticulture	\$m	64.0	69.0	105	118	147	118
Other crops and crop products	\$m	207	243	322	323	364	357
Total crops	\$m	909	904	1,003	983	1,072	1,102
Meat and live animals							
Beef and veal	\$m	894	970	1,360	3,233	2,488	1,495
Lamb	\$m	304	303	398	532	617	620
Mutton	\$m	24.5	33.8	50.6	77.7	94.3	102
Other meat and live animals ^c	\$m	0.0	0.1	0.2	1.3	0.5	0.5
Total meat and live animals	\$m	1,223	1,307	1,809	3,844	3,200	2,218
Wool							
Greasy	\$m	7.8	6.7	3.9	6.7	7.3	2.8
Semi-processed	\$m	2.9	1.7	2.5	2.7	4.2	2.3
Skins	\$m	0.0	0.5	0.3	0.1	0	0.1
Total wool	\$m	10.7	8.9	6.6	9.5	11.6	5.1
Dairy products							
Butter	\$m	6.8	12.7	0.5	13.0	9.6	1.4
Cheese	\$m	3.4	11.1	8.5	26.7	32.1	24.8
Casein	\$m	6.5	8.9	4.2	0.9	1.4	2.9
Whole milk powder	\$m	3.8	5.1	0	0.9	4.4	1.6
Other dairy products	\$m	17.4	22.1	16.4	17.3	19.8	16.0
Total dairy products	\$m	37.9	60.0	29.7	58.8	67.3	46.6
Other livestock products	\$m	116	136	177	289	301	336
Total livestock and livestock products	\$m	1,387	1,512	2,022	4,202	3,579	2,606
Total agricultural exports	\$m	2,296	2,415	3,025	5,185	4,651	3,708

^a Includes commodities subjected to ABS confidentiality restrictions. ^b Other horticulture includes mainly coffee, tea, spices, essential oils, vegetables for seed and other miscellaneous horticultural products. ^c Includes meat and live animals not listed separately. ^s ABARES estimate.

Note: Zero is used to denote nil or less than \$0.5 million.

Sources: ABARES; Australian Bureau of Statistics

TABLE 23 Volume of fisheries products exports Australia

Commodity	unit	2011–12	2012–13	2013–14	2014–15	2015–16	2016–17
Edible ^a							
Fish							
Live	kt	0.9	0.8	0.9	0.8	0.8	0.8
Tuna	kt	8.9	8.9	11.0	12.1	13.8	10.8
Salmonids	kt	5.8	2.6	1.8	5.0	8.0	5.1
Swordfish	kt	0.5	0.5	0.4	0.5	0.6	0.5
Whiting	kt	0.9	0.4	0.1	0.0	0.0	0.0
Other fish	kt	5.1	4.7	4.4	5.3	19.2	14.2
Total fish	kt	22.0	17.8	18.6	23.6	42.4	31.4
Crustaceans and molluscs							
Rock lobster	kt	6.9	7.8	8.0	8.2	8.0	8.6
Prawns	kt	5.4	3.9	7.1	6.5	6.7	7.0
Abalone	kt	3.1	2.8	2.7	2.6	2.6	2.6
Scallops	kt	0.4	0.4	0.5	0.3	0.4	0.4
Crabs	kt	0.8	0.4	0.4	0.6	0.6	0.5
Other crustaceans and molluscs	kt	1.7	2.1	1.6	1.6	1.5	1.1
Total crustaceans and molluscs	kt	18.4	17.5	20.3	19.7	19.7	20.2
Total edible fisheries products	kt	40.5	35.3	38.9	43.3	62.1	51.5

^a Includes prepared and preserved.

Note: Zero is used to denote nil or less than 50 tonnes.

Source: Australian Bureau of Statistics

TABLE 24 Value of fisheries products exports (fob) Australia

Commodity	unit	2011–12	2012–13	2013–14	2014–15	2015–16	2016–17
Edible							
Fish							
Live	\$m	32.0	30.7	34.2	29.9	30.2	31.6
Tuna	\$m	163	163	136	151	163	146
Salmonids	\$m	41.8	25.4	17.4	48.1	79.9	59.2
Swordfish	\$m	4.2	3.9	3.9	4.4	6.9	7.5
Whiting	\$m	2.5	1.4	0.2	0.1	0.0	0.1
Other fish	\$m	46.2	34.2	34.2	37.7	74.3	63.8
Total fish	\$m	289	258	225	271	355	308
Crustaceans and molluscs							
Rock lobster	\$m	387	447	590	691	693	677
Prawns	\$m	66.7	51.8	101	94.2	114	115
Abalone	\$m	197	186	170	174	182	187
Scallops	\$m	15.3	10.8	13.6	10.7	11.7	12.0
Crabs	\$m	11.0	8.2	5.5	7.9	7.6	7.7
Other crustaceans and molluscs	\$m	34.4	40.2	32.5	43.7	54.8	28.9
Total crustaceans and molluscs	\$m	711	744	913	1,021	1,064	1,028
Total edible fisheries products	\$m	1,001	1,002	1,138	1,293	1,418	1,336
Non-edible							
Marine fats and oils	\$m	7.3	10.0	9.1	20.9	11.2	10.0
Fish meal	\$m	0.4	1.0	0.7	1.0	0.5	1.1
Pearls ^a	\$m	207	152	144	111	95.9	75.4
Ornamental fish	\$m	2.3	3.8	2.0	1.9	2.1	2.3
Other non-edible	\$m	9.4	6.5	9.7	12.3	13.8	13.8
Total non-edible fisheries products	\$m	226	173	166	147	123	103
Total fisheries products	\$m	1,227	1,175	1,304	1,440	1,542	1,438

^a Includes items temporarily exported and re-imported.

Source: Australian Bureau of Statistics

TABLE 25 Volume of fisheries products imports Australia

Commodity	unit	2011–12	2012–13	2013–14	2014–15	2015–16	2016–17
Edible a							
Fish							
Tuna	kt	40.8	46.9	50.1	49.2	44.9	47.9
Salmonids	kt	10.2	11.9	14.2	16.1	15.1	14.7
Hake	kt	5.3	6.1	4.5	4.9	5.1	5.7
Swordfish	kt	0.2	0.2	0.2	0.2	0.2	0.1
Toothfish	kt	0.1	0.2	0.2	0.1	0.2	0.1
Herrings	kt	0.9	1.8	0.9	1.1	2.2	0.8
Shark	kt	0.5	0.5	0.7	0.6	0.4	0.2
Other fish	kt	86.6	92.8	90.0	87.6	86.4	87.2
Total fish b	kt	144.4	160.5	160.8	159.8	154.5	156.7
Crustaceans and molluscs							
Prawns	kt	37.5	34.8	38.7	32.4	31.9	31.8
Lobster	kt	0.9	0.8	1.0	1.1	0.9	1.2
Crabs	kt	1.5	1.5	2.1	2.0	1.9	1.7
Mussels	kt	2.8	3.7	3.6	3.1	3.3	3.6
Scallops	kt	3.0	3.1	3.5	2.9	2.6	3.0
Squid and octopus	kt	17.0	19.9	23.2	22.3	23.4	23.9
Other crustaceans and molluscs	kt	7.3	4.1	4.8	4.0	4.2	4.3
Total crustaceans and molluscs	kt	69.8	67.9	76.7	67.8	68.3	69.5
Total edible fisheries products abc	kt	214.2	228.4	237.5	227.6	222.8	226.2

a Includes prepared and preserved. b Excludes live tonnage. c Includes other fisheries products not classified into fish or crustaceans and molluscs.

Source: Australian Bureau of Statistics

TABLE 26 Value of fisheries products imports Australia

Commodity	unit	2011–12	2012–13	2013–14	2014–15	2015–16	2016–17
Edible a							
Fish							
Tuna	\$m	205.5	258.2	296.1	283.9	274.8	302.7
Salmonids	\$m	91.8	118.8	167.5	190.7	184.7	217.0
Hake	\$m	20.9	23.4	19.5	21.8	23.6	23.1
Swordfish	\$m	1.2	1.7	1.4	1.7	1.6	1.2
Toothfish	\$m	1.3	2.2	3.0	3.5	8.2	4.7
Herrings	\$m	4.2	5.1	4.5	3.9	5.7	4.2
Shark	\$m	4.0	4.6	5.5	4.9	3.9	2.2
Other fish	\$m	459.6	480.0	507.5	544.2	570.3	576.6
Total fish b	\$m	788.6	894.0	1,004.9	1,054.6	1,072.7	1,131.7
Crustaceans and molluscs							
Prawns	\$m	350.9	304.8	495.1	431.2	400.9	402.5
Lobster	\$m	16.0	15.3	22.4	28.3	29.9	33.8
Crabs	\$m	15.5	16.8	28.3	31.1	28.7	24.9
Mussels	\$m	11.7	17.1	19.1	17.9	20.0	21.7
Scallops	\$m	43.6	41.1	52.9	49.6	55.0	68.6
Squid and octopus	\$m	90.4	97.7	114.5	111.6	134.8	166.6
Other crustaceans and molluscs	\$m	57.0	40.7	44.0	42.9	50.7	49.8
Total crustaceans and molluscs	\$m	585.1	533.4	776.3	712.5	720.0	767.9
Total edible fisheries products abc	\$m	1,373.8	1,427.7	1,781.3	1,767.3	1,792.9	1,899.8
Non-edible							
Pearls d	\$m	138.2	105.4	102.1	97.2	144.4	131.6
Fish meal	\$m	34.2	43.3	43.2	64.3	61.7	60.8
Ornamental fish	\$m	3.7	4.0	4.5	4.4	4.9	4.2
Marine fats and oils	\$m	39.5	39.1	40.1	52.7	61.1	56.0
Other marine products	\$m	17.1	29.0	30.4	22.2	21.3	22.7
Total non-edible fisheries products	\$m	232.8	220.7	220.3	240.8	293.5	275.4
Total fisheries products	\$m	1,606.6	1,648.4	2,001.6	2,008.1	2,086.4	2,175.2

a Includes prepared and preserved. b Includes live value. c Includes other fisheries products not classified into fish or crustaceans and molluscs. d Mainly re-imports.

Source: Australian Bureau of Statistics

TABLE 27 Value of Australian fisheries products trade, by selected countries Australia

Trade	unit	2011–12	2012–13	2013–14	2014–15	2015–16	2016–17
Exports							
Edible (including live)							
Hong Kong	\$m	479.1	317.0	208.9	192.3	223.7	203.3
Vietnam	\$m	60.5	293.2	565.6	715.6	681.7	574.4
Japan	\$m	254.6	236.0	192.1	192.1	205.3	195.0
China	\$m	58.5	45.2	36.6	48.7	104.6	170.8
Singapore	\$m	42.5	31.0	34.2	35.0	35.3	37.7
United States	\$m	23.1	17.9	22.1	28.0	44.8	38.5
Taiwan	\$m	17.5	9.8	13.7	15.1	20.9	13.4
Thailand	\$m	18.1	9.3	8.0	10.0	9.4	11.8
New Zealand	\$m	10.1	9.1	14.5	13.9	19.9	17.0
Malaysia	\$m	7.7	7.8	9.9	11.2	7.5	17.5
Indonesia	\$m	6.1	7.4	9.9	9.3	10.0	12.6
Non-edible							
Hong Kong	\$m	96.6	54.3	74.6	55.9	53.2	29.3
Japan	\$m	44.4	33.0	26.9	23.4	24.0	29.8
United States	\$m	22.2	21.0	19.2	16.6	21.6	14.4
Imports							
Edible (excluding live)							
Thailand	\$m	362.1	399.8	417.0	422.1	416.1	455.0
New Zealand	\$m	197.3	206.3	206.8	189.6	199.8	215.0
China	\$m	231.5	196.5	341.5	284.7	292.2	305.2
Vietnam	\$m	174.5	163.1	231.7	233.1	243.0	242.7
Malaysia	\$m	73.2	81.0	97.9	94.7	88.9	100.6
United States	\$m	45.1	52.2	56.0	53.0	54.9	51.1
Indonesia	\$m	36.3	50.9	73.5	85.6	89.5	78.8
Taiwan	\$m	38.9	48.1	44.5	58.3	60.3	55.4
South Africa	\$m	31.3	35.1	31.6	27.5	27.7	26.5
Denmark	\$m	25.3	32.2	44.8	58.2	47.7	61.8
Norway	\$m	27.1	29.9	45.4	68.1	66.8	91.3

Source: Australian Bureau of Statistics

TABLE 28 Volume of forest products exports Australia

Commodity	unit	2011–12	2012–13	2013–14	2014–15	2015–16	2016–17
Volume							
Roundwood	'000 m ³	1,806	1,516	2,363	2,616	3,685	4,347
Sawnwood a							
Softwood roughsawn b	'000 m ³	198	207	268	300	247	265
Softwood dressed c	'000 m ³	13	3	5	25	11	8
Hardwood roughsawn	'000 m ³	26	20	73	117	19	28
Hardwood dressed	'000 m ³	15	7	25	73	23	21
Total	'000 m ³	252	237	371	515	300	321
Railway sleepers	'000 m ³	8	8	17	14	7	6
Wood-based panels							
Veneers	'000 m ³	106	52	64	50	45	78
Plywood	'000 m ³	18	36	36	14	31	39
Particleboard	'000 m ³	4	2	6	11	11	5
Hardboard	'000 m ³	2	2	3	11	21	5
Medium-density fibreboard	'000 m ³	79	52	75	78	85	67
Softboard and other fibreboards	'000 m ³	5	1	1	21	4	1
Total wood-based panels	'000 m ³	214	146	184	185	197	195
Paper and paperboard							
Newsprint	kt	30	72	85	56	50	193
Printing and writing	kt	132	139	153	141	139	96
Household and sanitary	kt	26	12	20	23	17	16
Packaging and industrial	kt	933	906	950	948	924	940
Total	kt	1,121	1,127	1,207	1,168	1,130	1,244
Recovered paper	kt	1,403	1,506	1,449	1,397	1,420	1,358
Pulp	kt	1	0	0	0	0	0
Woodchips deg	kt	4,150	3,806	4,776	5,707	6,082	6,067

a Excludes railway sleepers. **b** Softwood roughsawn includes softwood dressed from January 2017. **c** Softwood dressed for 2016–17 only includes data for July 2016 to December 2016. **d** Includes particles. **e** Bone dry tonnes. **g** Softwood woodchips are subject to ABS confidentiality restriction from March 2016 to May 2017 and are not included in these figures.

Notes: Components may not add to totals due to rounding. Zero is used to denote nil or less than 500 tonnes.

Sources: ABARES; Australian Bureau of Statistics

TABLE 29 Value of forest products exports (fob) Australia

Commodity Value	unit	2011–12	2012–13	2013–14	2014–15	2015–16	2016–17
Roundwood	\$m	175	155	292	313	438	600
Sawnwood							
Softwood roughsawn a	\$m	55	61	75	74	68	69
Softwood dressed b	\$m	3	2	3	11	7	5
Hardwood roughsawn	\$m	23	20	22	20	17	29
Hardwood dressed	\$m	7	6	7	5	11	6
Total sawnwood	\$m	88	90	108	110	103	110
Railway sleepers	\$m	3	3	3	2	2	2
Miscellaneous forest products c	\$m	65	76	89	98	141	208
Wood-based panels							
Veneers	\$m	51	24	29	27	24	40
Plywood	\$m	2	4	3	3	4	4
Particleboard	\$m	1	1	1	2	2	2
Hardboard	\$m	2	2	2	2	7	3
Medium-density fibreboard	\$m	26	19	26	27	28	23
Softboard and other fibreboards	\$m	1	0	0	6	1	0
Total wood-based panels	\$m	83	51	62	67	66	73
Paper and paperboard							
Newsprint	\$m	15	36	59	39	33	97
Printing and writing	\$m	120	117	139	146	128	96
Household and sanitary	\$m	64	33	49	60	53	38
Packaging and industrial	\$m	518	526	605	657	683	680
Total paper and paperboard	\$m	717	712	853	901	898	911
Paper manufactures d	\$m	134	132	132	109	102	110
Recovered paper	\$m	240	230	241	241	249	261
Pulp	\$m	1	0	0	0	0	1
Woodchips e	\$m	729	611	768	954	1,096	1,083
Total wood products	\$m	2,235	2,059	2,546	2,795	3,094	3,358

a Softwood roughsawn includes softwood dressed from January 2017. **b** Softwood dressed for 2016–17 only includes data from July 2016 to December 2016. **c** Includes such items as wooden doors, mouldings, packing cases, parquet flooring, builders carpentry, cork, gums, resins, eucalyptus and tea tree oils, and other miscellaneous wood articles. Excludes wooden furniture. **d** Includes other paper articles that have had some further processing; **e** Softwood woodchips are subject to ABS confidentiality restriction from March 2016 to May 2017 and are not included in these figures.

Notes: Components may not add to totals due to rounding. Zero is used to denote nil or less than \$0.5 million.

Sources: ABARES; Australian Bureau of Statistics

TABLE 30 Volume of forest products imports Australia

Commodity	unit	2011–12	2012–13	2013–14	2014–15	2015–16	2016–17
Volume							
Roundwood	'000 m ³	1	1	1	1	2	1
Sawnwood a							
Softwood roughsawn	'000 m ³	239	247	271	291	241	220
Softwood dressed	'000 m ³	470	443	449	608	540	506
Hardwood roughsawn	'000 m ³	46	41	41	43	39	29
Hardwood dressed	'000 m ³	36	28	25	26	22	32
Total sawnwood	'000 m ³	791	759	786	968	841	786
Wood-based panels							
Veneers	'000 m ³	15	13	9	12	14	15
Plywood	'000 m ³	293	278	287	341	357	405
Particleboard	'000 m ³	67	72	95	95	89	134
Hardboard	'000 m ³	69	60	86	82	91	101
Medium-density fibreboard	'000 m ³	91	77	65	85	89	98
Softboard and other fibreboards	'000 m ³	7	6	5	7	7	6
Total wood-based panels	'000 m ³	542	505	548	622	648	759
Paper and paperboard							
Newsprint	kt	121	85	75	76	69	65
Printing and writing	kt	1,174	1,155	1,172	1,040	960	861
Household and sanitary	kt	118	159	123	142	155	164
Packaging and industrial	kt	333	385	357	392	410	427
Total paper and paperboard	kt	1,746	1,783	1,727	1,651	1,595	1,517
Recovered paper	kt	3	4	5	4	1	2
Pulp	kt	256	263	297	302	281	299
Woodchips b	kt	1	1	2	2	2	3

a Excludes railway sleepers. **b** Bone dry tonnes.

Sources: ABARES; Australian Bureau of Statistics

TABLE 31 Value of forest products imports Australia

Commodity Value	unit	2011–12	2012–13	2013–14	2014–15	2015–16	2016–17
Roundwood	\$m	1	1	1	1	2	4
Sawnwood							
Softwood roughsawn	\$m	105	100	111	128	112	108
Softwood dressed	\$m	248	246	281	382	361	345
Hardwood roughsawn	\$m	44	41	46	57	55	44
Hardwood dressed	\$m	51	35	31	34	28	37
Total sawnwood	\$m	448	423	468	601	555	535
Miscellaneous forest products a	\$m	756	769	946	1,102	1,304	1,205
Wood-based panels							
Veneers	\$m	21	19	15	22	24	21
Plywood	\$m	183	184	210	264	300	349
Particleboard	\$m	26	27	35	38	41	52
Hardboard	\$m	54	48	72	67	69	68
Medium-density fibreboard	\$m	36	32	35	45	51	51
Softboard and other fibreboards	\$m	3	2	3	3	4	4
Total wood-based panels	\$m	323	311	370	439	489	545
Paper and paperboard							
Newsprint	\$m	91	58	49	48	44	40
Printing and writing	\$m	1,217	1,151	1,194	1,123	1,036	877
Household and sanitary	\$m	187	244	208	254	305	296
Packaging and industrial	\$m	543	590	654	728	845	882
Total paper and paperboard	\$m	2,037	2,043	2,105	2,153	2,230	2,096
Paper manufactures b	\$m	486	446	537	582	662	648
Recovered paper	\$m	1	1	2	1	0	0
Pulp	\$m	164	154	203	217	222	215
Woodchips	\$m	2	3	3	3	4	5
Total wood products	\$m	4,217	4,151	4,636	5,099	5,468	5,254

a Includes such items as wooden doors, mouldings, packing cases, parquet flooring, builders carpentry, cork, gums, resins, eucalyptus oils and other miscellaneous wood articles. Excludes wooden furniture. **b** Includes other paper articles that have had some further processing.

Notes: Components may not add to totals due to rounding. Zero used to denote nil or less than \$0.5 million.

Sources: ABARES; Australian Bureau of Statistics

TABLE 32 Value of Australian forest products trade, by selected countries ^a

Trade	unit	2011–12	2012–13	2013–14	2014–15	2015–16	2016–17
Exports							
China	\$m	535	474	542	817	1,331	1,572
Hong Kong	\$m	39	16	10	13	11	21
Japan	\$m	579	394	21	316	427	373
Korea, Rep. of	\$m	40	33	44	38	37	42
Malaysia	\$m	112	73	88	71	71	89
New Zealand	\$m	305	270	292	297	318	328
Taiwan	\$m	68	68	57	73	110	118
Imports							
China	\$m	800	913	1,110	1,321	1,497	1,479
Finland	\$m	120	205	221	184	160	143
Germany	\$m	148	135	163	150	156	146
Indonesia	\$m	342	313	348	427	495	448
Malaysia	\$m	236	227	249	270	306	306
New Zealand	\$m	634	557	605	646	673	624
United States	\$m	298	304	339	361	347	356

^a Value of wood products trade to selected countries may exclude data where ABS confidentiality restrictions apply.

Sources: ABARES; Australian Bureau of Statistics

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