



**Australian Government**  
**Department of Agriculture**  
ABARES



# **Australian lamb**

## **Financial performance of slaughter lamb producing farms, 2012–13 to 2014–15**

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Research by the Australian Bureau of Agricultural  
and Resource Economics and Sciences

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# Key points

- Farm cash income of specialist slaughter lamb producing farms, which are more reliant on lamb production than non-specialist farms, is estimated to have increased from an average of \$80 900 a farm in 2013–14 to \$98 300 a farm in 2014–15. This increase was mainly a result of higher prices for lambs and sheep.
- Farm cash incomes and business profit of all slaughter lamb producers are estimated to have fallen in 2014–15 compared with 2013–14. Average farm cash income of slaughter lamb producers is estimated to have declined by 8 per cent from an average of \$180 100 a farm in 2013–14 to \$166 000 a farm in 2014–15 in real terms.
- In 2014–15 reduced grain production is estimated to have resulted in lower average total receipts of slaughter lamb producing farms. This is despite an increase in sheep and lamb receipts mainly a result of increased prices. Crop receipts are estimated to have declined by 13 per cent but sheep and lamb receipts to have increased by 5 per cent.
- Farm debt of slaughter lamb producing farms averaged \$649 577 a farm in 2013–14, slightly more than that in 2012–13 (\$641 400). Farm debt is estimated to have fallen in 2014–15 compared with 2013–14. This is a result of loan repayment and reductions in new borrowings.
- Asset values and new investment remain high for slaughter lamb producing farms and while debt is also high, equity ratios and debt servicing are in line with long-term averages. Equity ratios for slaughter lamb producing farms averaged 85 per cent at 30 June 2014. Equity ratios have declined from the highs of the early 2000s, but overall, equity ratios remain strong relative to long-term averages.
- In 2013–14 the proportion of farm receipts needed to fund interest payments averaged 7 per cent, slightly above the estimated 6 per cent recorded through the second half of the 1990s. In 2014–15 the ratio of interest payments to farm receipts is estimated to remain at an average of 7 per cent.
- Productivity growth in the sheep industry averaged 0.2 per cent a year from 1977–78 to 2012–13. This long-run average masks a downward trend to the mid 1990s, followed by a period of strong productivity growth. Productivity gains made since the mid 1990s reflect significant adjustment in the sheep industry as production shifted from wool to sheep meat. Productivity grew by an average of 2.3 per cent a year from 2000–01 to 2012–13, a higher rate than that achieved by other broadacre industries over the same period.

# 1 Introduction

This report presents the detailed financial performance of slaughter lamb producing farms in 2012–13, 2013–14 and 2014–15 and discusses productivity in a historical context. The report draws heavily on data from the ABARES annual Australian Agricultural and Grazing Industries Survey (AAGIS).

AAGIS provides data on the financial performance of broadacre farm businesses and their associated production, farm management practices and farm household socio-economic characteristics. It also provides the main means of monitoring and analysing productivity growth in the various broadacre industries. AAGIS is funded by the Department of Agriculture, Meat & Livestock Australia (MLA) and the Grains Research and Development Corporation (GRDC). This report was commissioned and funded by MLA.

Information presented in this report expands on farm survey results published in *Australian farm survey results 2012–13 to 2014–15* (ABARES 2015b) and *Agricultural commodities: March quarter 2015* (ABARES 2015a). The report covers:

- overview of slaughter lamb producing farms—background, characteristics of slaughter lamb producers, production and selling methods (see [Industry background](#) and [Slaughter lamb production](#))
- profile and farm financial performance of slaughter lamb producing farms—overview of recent commodity prices and seasonal conditions and an examination of production and financial performance results from 2012–13 to 2014–15. Also reviewed are differences in results across producers of varying scale, specialisation and grain finishing methods, trends in slaughter lamb selling methods and costs of production (see [Financial performance](#))
- investment and financial position of slaughter lamb producing farms—trends in farm investment and debt and the financial position and liquidity of slaughter lamb producers (see [Farm investment](#) and [Farm debt](#))
- productivity growth in the sheep industry—trends and sources of productivity growth for the sheep industry (as defined by the Australian Bureau of Statistics). The slaughter lamb industry is part of the broader sheep industry (see [Productivity](#)).

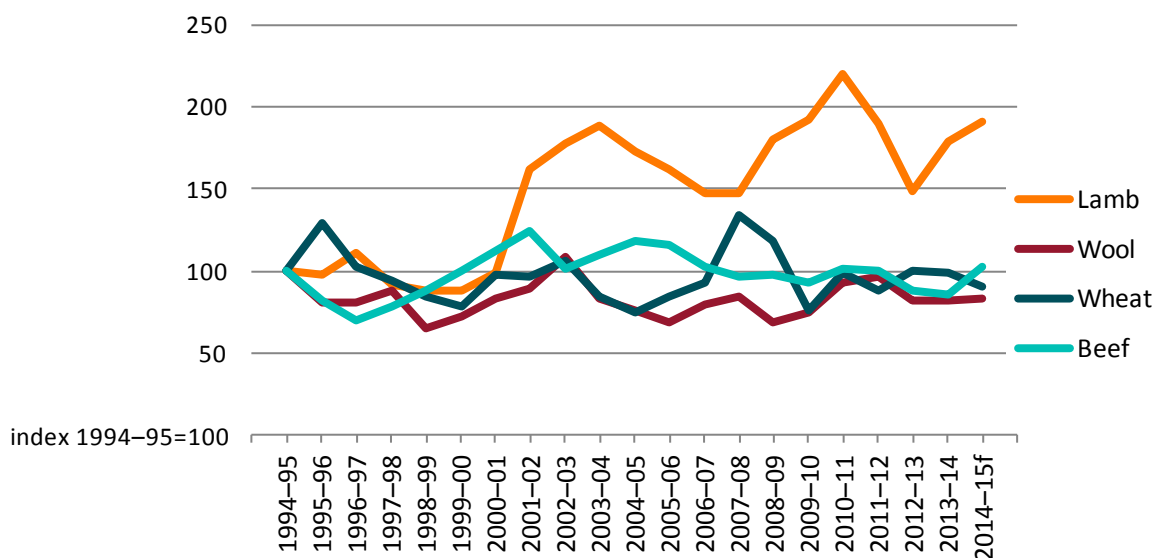
For the purpose of this report, broadacre farm businesses are classified as slaughter lamb producing farms if they sold, on average, more than 200 lambs a financial year over the three years ending 2013–14. Based on this definition, approximately 19 500, or around one-third, of all broadacre farms are classified as slaughter lamb producing farms.

Slaughter lamb producing farms are further divided into specialist and non-specialist farms. Farms are classified as specialist slaughter lamb producing farms if, on average, more than 20 per cent of their total income over the three years from 2011–12 to 2013–14 was from the sale of lambs for slaughter. Based on this definition, around 11 500 slaughter lamb producing farms (44 per cent of slaughter lamb producing farms) were classified as specialists in 2013–14. These farms generally have smaller cropping and beef cattle enterprises than other slaughter lamb producing farms, resulting in a smaller overall scale of operations and lower average farm cash incomes.

## 2 Industry background

The Australian slaughter lamb industry has undergone a long period of structural adjustment, following a downward shift in global demand for wool and low wool prices in the early 1990s. Since then, the industry has shifted focus from wool to prime lamb production. As a result the industry has transitioned from predominantly small, wool-focused enterprises to larger, lamb-slaughter focused enterprises or enterprises geared to combined slaughter lamb-wool production. This has been supported by strong growth in lamb prices since the early 2000s—but little or no long-term growth in wool, wheat and beef prices, in real terms (Figure 1). Most farms producing lambs for slaughter are mixed enterprises, deriving receipts from cropping, beef cattle, sheep and wool and from the sale of slaughter lambs.

Figure 1 Index of real commodity prices, 1994–95 to 2014–15f



f ABARES forecast.  
Source: ABARES

In line with relatively favourable lamb prices, the total number of lambs slaughtered has increased. In the past decade, annual production has increased by 30 per cent to around 22.5 million head in 2014–15 (Table 1). At the same time, average slaughter lamb weight has increased by around 8 per cent, supporting growth of aggregate meat production to 487 kilotons in 2014–15—an increase of 38 per cent over the past decade (Table 1).

The shift in focus to slaughter lamb production has resulted in significant long-term adjustments in the national sheep flock. National sheep flock size declined by 43 per cent between 1994–95 and 2014–15, reaching a low of 68 million head in 2009–10 following prolonged drought conditions. In 2013–14 and 2014–15 dry seasonal conditions in some sheep producing regions together with strong export demand for lamb and mutton drove a significant rise in sheep turn-off. As a result, sheep numbers are estimated to have fallen from 73 million head in 2013–14 to 70 million head in 2014–15 (Table 1 and Figure 2).

Composition of the national sheep flock has also changed. The flock proportion represented by wethers (primarily carried for wool production) has declined sharply, while the proportion of ewes and lambs has increased (Figure 2). Adult sheep numbers have also declined because more sales have occurred at the lamb stage.

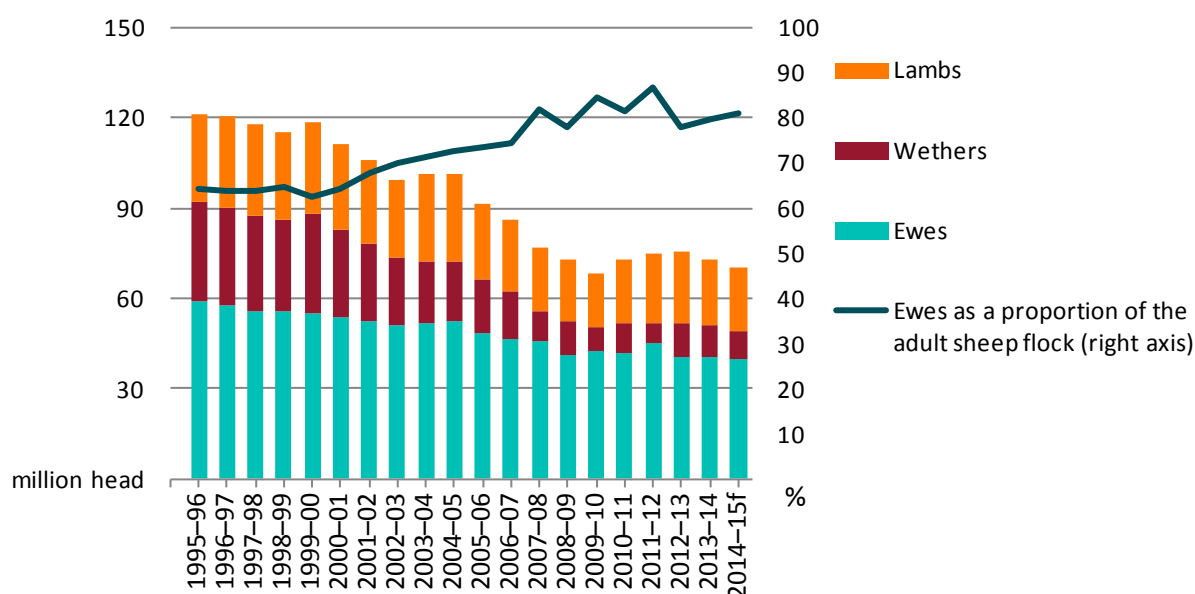


**Table 1 Sheep numbers and lamb production**

Year	Sheep numbers c (million head)	Lambs slaughtered b ('000)	Slaughter weight (kg/hd)	Lamb meat production ab (kt)	Lamb meat exports a (kt)
2004–05	101	17 331	20.4	354	146
2005–06	91	18 666	20.5	382	173
2006–07	86	20 158	20.5	413	179
2007–08	77	20 529	20.9	428	194
2008–09	73	20 395	20.4	416	184
2009–10	68	19 478	21.2	413	190
2010–11	73	17 880	21.9	391	188
2011–12	75	18 879	22.2	419	207
2012–13	76	21 122	21.6	457	235
2013–14	73	21 899	21.5	474	265
2014–15f	70	22 500	22.1	487	273
Percentage change between 2004–05 and 2014–15	-31%	30%	8%	38%	87%

a Carcass weight. b Data from 2007 do not include farm kills. c As at 30 June. f ABARES forecast.  
Source: Australian Bureau of Statistics

**Figure 2 Composition of Australian sheep flock, 1995–96 to 2014–15f**



f ABARES forecast.

Source: Australian Bureau of Statistics Agricultural Census and Agricultural Commodities Survey

ABARES defines the size of slaughter lamb producing farms based on the average number of lambs sold over the three years ending 2013–14.

- Small-scale farms—200 to 500 lambs sold for slaughter a year
- Medium-scale farms—500 to 1 000 lambs sold for slaughter a year
- Large-scale farms—1 000 to 2 000 lambs sold for slaughter a year
- Very large-scale farms—more than 2 000 lambs sold for slaughter a year.

From 2011–12 to 2013–14 larger producing farms (farms selling more than 1 000 head a year) represented 20 per cent of all slaughter lamb producing farms but accounted for more than half the total annual value of slaughter lamb production (Table 2). At the other extreme, around 53 per cent of producers on average sold less than 500 head a year and accounted for 18 per cent of slaughter lambs sold over the three years ending 2013–14.

**Table 2 Distribution of broadacre farms selling lambs for slaughter, by number of slaughter lambs sold, 2011–12 to 2013–14p**

Number of slaughter lambs sold	Average number of producers (no.)	Share of producers (%)	Share of slaughter lambs sold (%)	Share of slaughter lamb value of production (%)
Less than 200 slaughter lambs	5 200	21	3	3
200 to 500 slaughter lambs	8 000	32	15	14
500 to 1 000 slaughter lambs	6 400	26	25	25
1 000 to 2 000 slaughter lambs	3 500	14	27	28
More than 2 000 slaughter lambs	1 600	6	29	30
<b>All broadacre farms selling slaughter lambs</b>	<b>24 700</b>	<b>100</b>	<b>100</b>	<b>100</b>

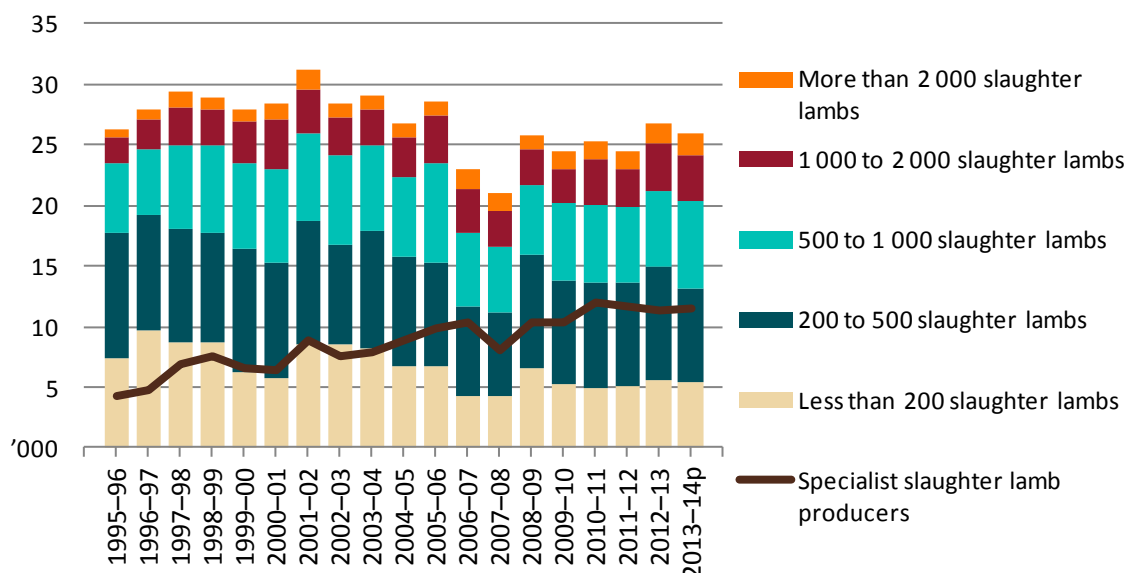
p Preliminary estimate.

Note: Includes only broadacre farms with an estimated value of agricultural operations of more than \$40 000. Totals may vary because of rounding.

Source: ABARES Australian Agricultural and Grazing Industries Survey

Although slaughter lamb production has continued to rise, the number of broadacre farms involved in slaughter lamb production has declined over the past decade. Increases in total production have been driven largely by an increase in the average number of head sold per farm (Figure 3).

**Figure 3 Number of farms selling slaughter lambs, 1995–96 to 2013–14p**



p Preliminary estimate.

Source: ABARES Australian Agricultural and Grazing Industries Survey

Specialist slaughter lamb producing farms represent an increasingly important proportion of slaughter lamb production, accounting for 55 per cent of the total value of lamb production on average over the three years ending 2013–14. Most producers (65 per cent) selling more than

500 slaughter lambs a year are also slaughter lamb specialists. In contrast, most producers selling 200 to 500 slaughter lambs a year are non-specialists with a greater emphasis on cropping, wool or beef production (Table 3; Dahl, Martin & Gray 2014).

Because flocks on specialist producing farms are optimised for slaughter lamb production, producers on these farms on average sell more prime lambs and achieve a higher average price per head than non-specialists. These specialists achieve on average lower wool production per head and a lower wool price per kilogram (Table 3; Caboche & Thompson 2013).

**Table 3 Physical characteristics, by number of lambs sold for slaughter**average per farm, 2011–12 to 2013–14<sup>p</sup>

Physical characteristics	unit	Small-scale farms 200 to 500 slaughter lambs	Medium-scale farms 500 to 1 000 slaughter lambs	Large-scale farms 1 000 to 2 000 slaughter lambs	Very large-scale farms more than 2 000 slaughter lambs	Slaughter lamb producers	Specialist slaughter lamb producers
Area operated	ha	1 989	3 199	3 861	7 793	3 157	1 854
Area sown to crop	ha	410	631	839	1 100	612	182
Beef cattle at 30 June	no.	83	102	193	346	128	99
Sheep at 30 June	no.	1 623	2 372	3 804	7 289	2 682	2 276
– rams	%	1	1	1	1	1	1
– ewes	%	58	60	61	63	61	63
– wethers	%	10	8	7	5	8	6
– lambs	%	30	30	30	31	30	30
Ewes mated	no.	799	1 253	2 063	4 315	1 436	1 285
Lambs marked	no.	691	1 147	1 964	4 195	1 329	1 243
Lamb marking percentage	%	86	92	95	97	93	97
Adult sheep sold	no.	282	330	577	1 130	413	294
Total lambs sold	no.	372	739	1 484	3 559	929	1 030
– prime lambs	no.	169	434	951	2 349	558	704
– other lambs for slaughter	no.	178	268	467	1 144	331	309
– lambs not for slaughter	no.	25	38	66	65	40	18
Sheep and lambs shorn	no.	1 588	2 362	4 059	7 849	2 751	2 310
Wool production	kg	6 657	9 928	16 888	31 620	11 422	9 017
Wool cut per head shorn	kg/hd	4.2	4.2	4.2	4.0	4.2	3.9
<b>Average price received</b>							
Wool price	c/kg	737	709	683	678	703	638
Adult sheep price	\$/hd	86	80	76	75	80	75
Slaughter lamb price	\$/hd	97	102	105	108	104	107

<sup>p</sup> Preliminary estimate.

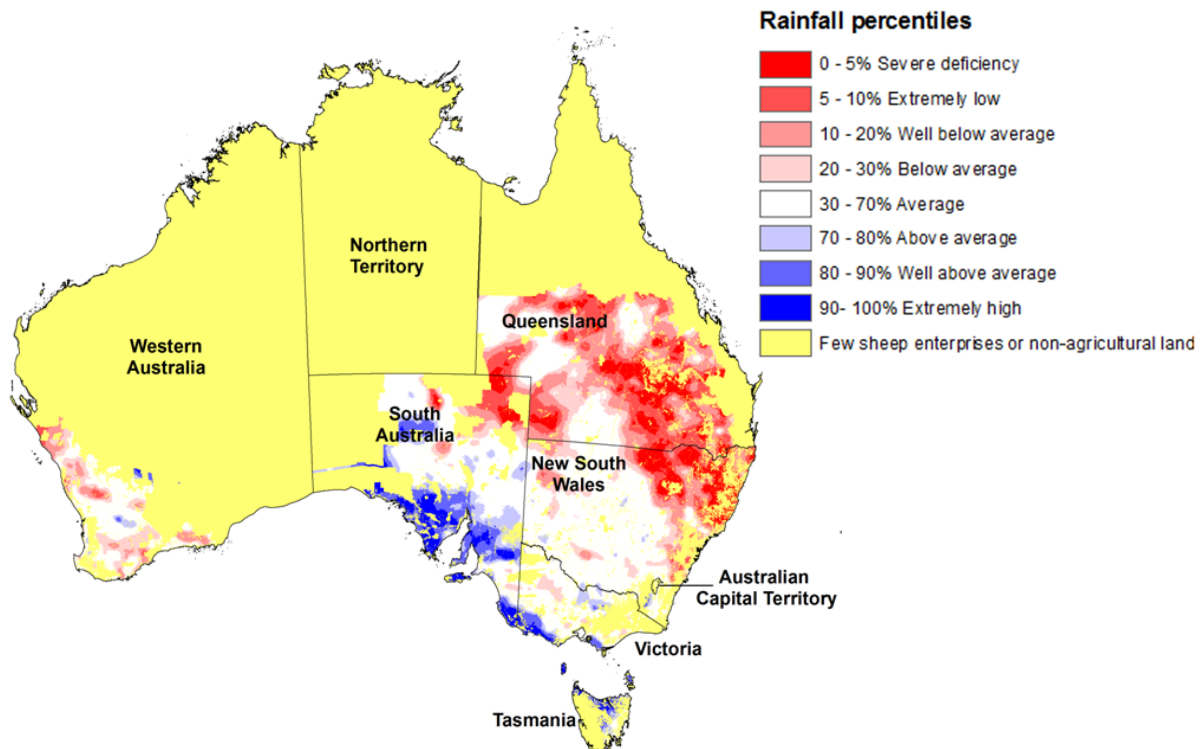
Source: ABARES Australian Agricultural and Grazing Industries Survey

## 3 Slaughter lamb production

### Slaughter lamb production 2013–14

Below average winter rainfall in 2012 resulted in drier seasonal conditions and a rise in lamb turn-off in 2012–13. In 2013–14 dry seasonal conditions persisted in northern and western New South Wales and Queensland and turn-off remained high (Figure 4) despite more favourable seasonal conditions in southern regions (Map 1).

Map 1 Rainfall percentiles 1 July 2013 to 30 June 2014



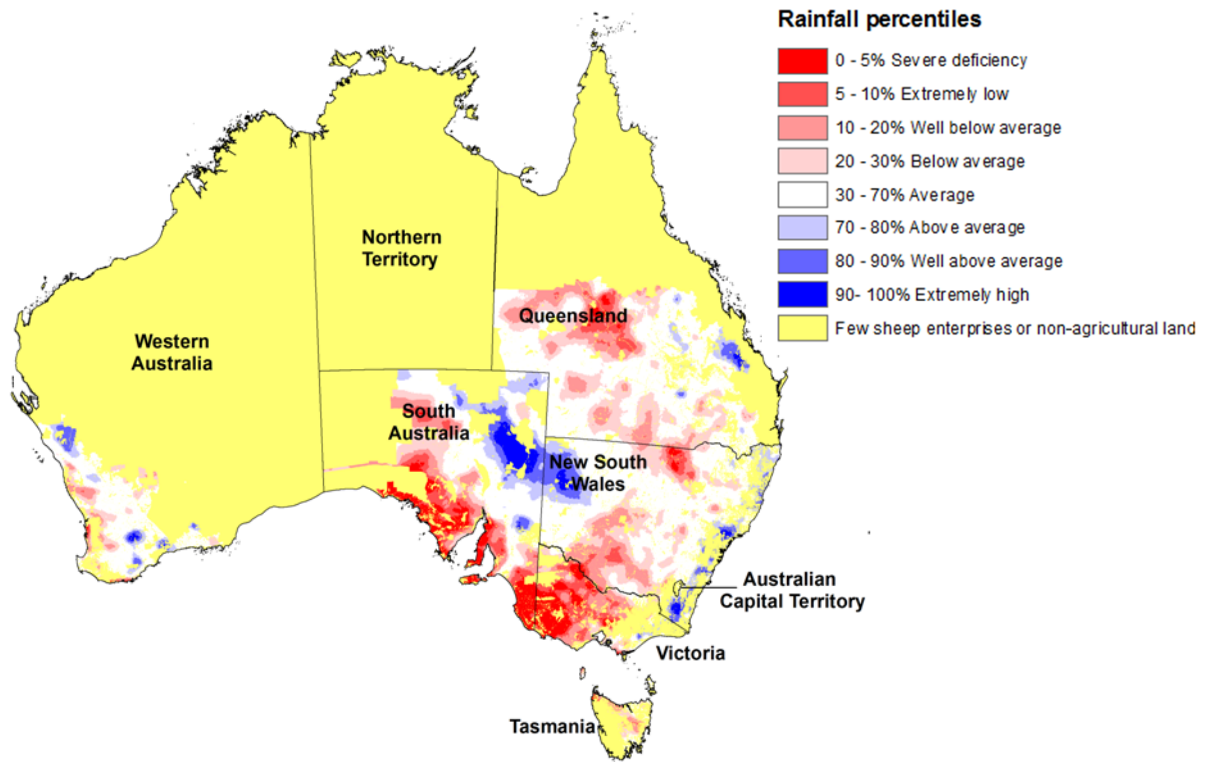
Source: Bureau of Meteorology

In 2013–14 improved seasonal conditions in some regions supported growth in ewe joinings and lamb marking rates, particularly for large-scale and very large-scale producers (Table 4 and Figure 5). Overall, ewe joinings increased, the number of lambs marked increased by 3 per cent and the number of lambs sold increased by around 8 per cent in 2013–14 compared with 2012–13. Sheep and lambs sold by specialist producers are estimated to have increased by 6 per cent in 2013–14 (Table 4).

### Slaughter lamb production 2014–15

In 2014–15 seasonal conditions were drier in most lamb producing regions than in 2013–14 (Map 2). Despite this, ewe joinings are estimated to have risen by 5 per cent, driving an overall increase of 7 per cent in the average number of lambs marked. Lamb sales are estimated to have increased by 2 per cent to an average of 997 lambs a farm in 2014–15 (Figure 6). Sales of lambs by specialist producers are estimated to have risen by around 5 per cent (Table 4).

Map 2 Rainfall percentiles 1 July 2014 to 31 May 2015



Source: Bureau of Meteorology

**Table 4 Selected physical characteristics, slaughter lamb industry, ranked by annual slaughter lamb sales**

average per farm

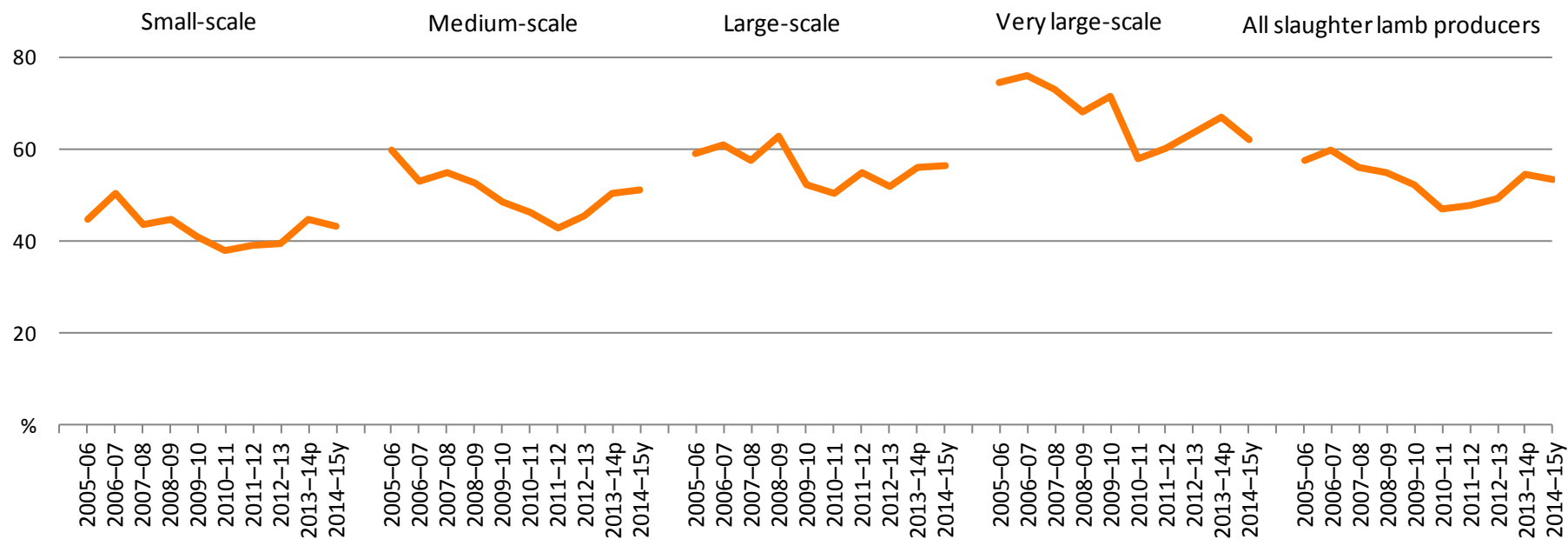
Farm scale	Area operated (ha)	Change in sheep numbers (%)	Ewes mated (no.)	Lambs marked (no.)	Lamb marking percentage (%)	Sheep sold (no.)	Lambs sold (no.)	Slaughter lambs sold (no.)	Area sown to crops (ha)	Change in beef cattle numbers (%)
<b>Small-scale farms (200 to 500 slaughter lambs)</b>										
2012–13	1 804	-0.9	754	655	87	264	358	334	441	2.6
2013–14p	1 726	-2.0	737	633	86	286	371	342	349	1.5
2014–15y	1 789	5.2	848	762	90	227	431	na	327	4.8
<b>Medium-scale farms (500 to 1 000 slaughter lambs)</b>										
2012–13	3 017	1.5	1 324	1 164	88	359	750	708	653	2.3
2013–14p	3 001	2.0	1 180	1 085	92	371	726	696	531	1.3
2014–15y	3 152	-0.6	1 215	1 083	89	375	757	na	498	-7.4
<b>Large-scale farms (1 000 to 2 000 slaughter lambs)</b>										
2012–13	4 185	1.7	2 017	1 909	95	505	1 429	1 421	968	2.6
2013–14p	2 836	-5.0	2 086	1 923	92	676	1 468	1 410	782	-1.7
2014–15y	2 827	-0.4	2 173	2 078	96	560	1 514	na	725	-2.7
<b>Very large-scale farms (more than 2 000 slaughter lambs)</b>										
2012–13	7 861	-2.0	4 152	4 092	99	1 100	3 529	3 431	1 028	-0.6
2013–14p	8 352	-6.0	4 296	4 148	97	1 229	3 568	3 543	1 109	-3.4
2014–15y	7 351	6.5	4 370	4 344	99	1 009	3 352	na	953	-0.3
<b>Slaughter lamb producers</b>										
2012–13	3 058	0.3	1 409	1 292	92	398	905	873	647	1.9
2013–14p	2 954	-2.6	1 451	1 335	92	470	975	941	560	-0.4
2014–15y	2 936	2.3	1 525	1 426	94	408	997	na	515	-1.9
<b>Specialist slaughter lamb producers</b>										
2012–13	1 959	-3.2	1 235	1 180	96	299	1 012	996	171	3.6
2013–14p	1 595	-1.4	1 293	1 241	96	323	1 065	1 053	184	2.2
2014–15y	1 661	1.1	1 379	1 350	98	294	1 113	na	164	0.6

p Preliminary estimate. y Provisional estimate. na Not available.

Source: ABARES Australian Agricultural and Grazing Industries Survey

Figure 4 Sheep and lamb turn-off rate, by number of lambs sold for slaughter, 2005-06 to 2014-15y

average per farm



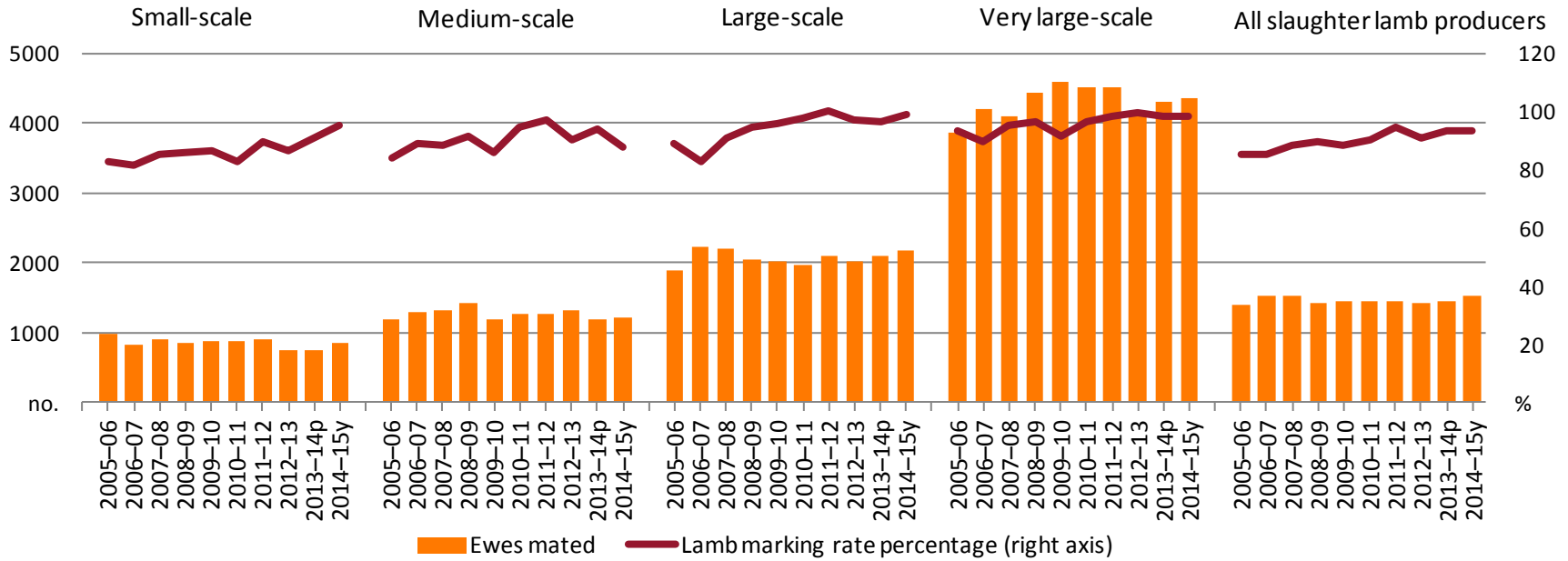
p Preliminary estimate. y Provisional estimate.

Source: ABARES Australian Agricultural and Grazing Industries Survey



Figure 5 Number of ewes mated and lambing rate, by number of lambs sold for slaughter, 2005-06 to 2014-15y

average per farm

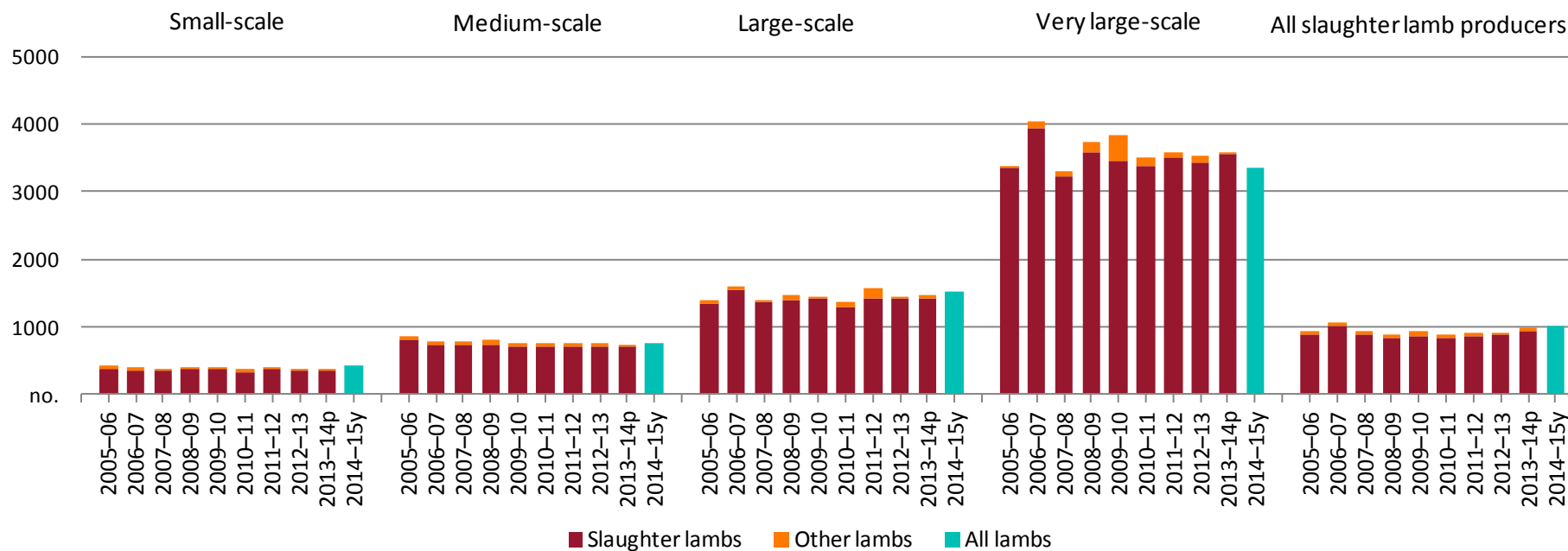


p Preliminary estimate. y Provisional estimate.

Source: ABARES Australian Agricultural and Grazing Industries Survey

Figure 6 Lamb sales, by number of lambs sold for slaughter, 2005-06 to 2014-15y

average per farm



p Preliminary estimate. y Provisional estimate.

Source: ABARES Australian Agricultural and Grazing Industries Survey

## Lamb and sheep selling methods

Over the decade to 2013–14, greater focus on production of lambs specifically bred for slaughter and on better finishing of lambs before sale have resulted in producers changing their method of sale. In the early 1990s, almost all lambs sold by slaughter lamb producing farms were sold at auction or in the paddock (Box 1). Since then, the proportion of lambs sold over the hooks (lambs delivered directly to the abattoir with change of ownership taking place at the abattoir scales) increased, on average, from 5 per cent in 1991–92 to 33 per cent in 2013–14. At the same time, the proportion of lambs sold by auction and in the paddock declined (Figure 7).

### Box 1 Lamb and sheep selling methods

Lamb and sheep may be sold in Australia as stud, store or finished stock. Different selling methods are used, depending on the type of stock and market outlet for the stock.

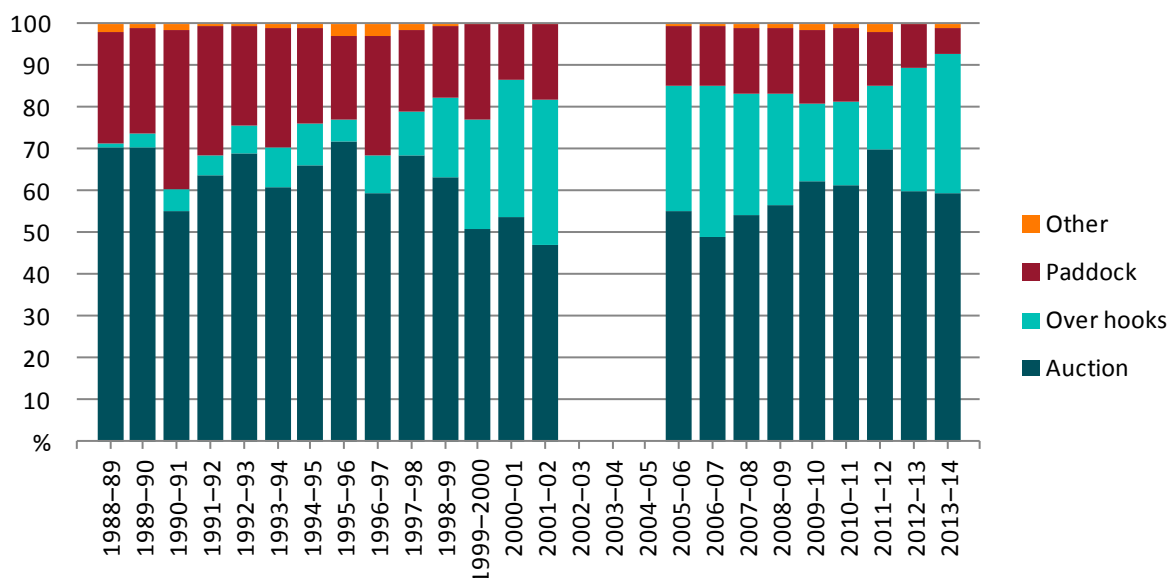
**Paddock sales:** Buyers inspect stock on the producer’s property, price is generally negotiated on a dollar per head basis and ownership is generally transferred at the farm gate. This method is often favoured for producer-to-producer sales of store or breeding stock.

**Over the hooks:** Price is negotiated on a cents per kilogram carcass weight basis, with ownership usually transferred at the point of slaughter. Producers receive clear market and price signals relating to carcass quality and are provided with carcass feedback. The principal drawback of over-the-hooks selling is the lack of a transparent price discovery mechanism.

**Auction sales:** Stock is sold by open auction on either a dollar per head basis or, if stock are weighed, on a cents per kilogram live weight basis. Auction sales are usually conducted off farm at saleyards, although they may be held on farm. Ownership is generally transferred at the point of sale. Auction selling involves additional costs and stock handling and can mask the quality–price relationship. However, the interaction of multiple buyers and sellers can allow for true price discovery.

**Other:** Include AuctionsPlus and other electronic online auction of livestock by description. Combines the features of the saleyard system and allows direct consignment to the abattoir or buyer. Producers retain full control of livestock and are able to set a reserve price.

Figure 7 Lamb selling methods, slaughter lamb producing farms, 1988–89 to 2013–14<sup>p</sup>



<sup>p</sup> Preliminary estimate.

Note: Because of changes in data collected, consistent results cannot be provided for 2002–03 to 2004–05.

Source: ABARES Australian Agricultural and Grazing Industries Survey

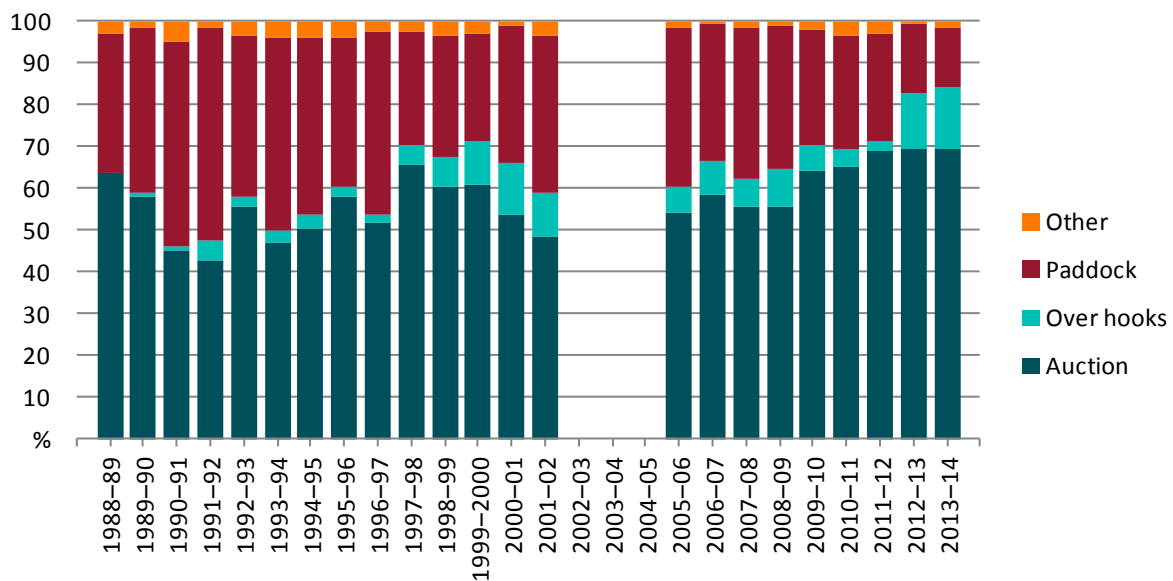
In the five years ending 2011–12, the proportion of lambs sold over the hooks declined and the proportion sold at auction increased. This may be because of more consistent supply of lambs

and strong auction markets during favourable seasons between 2007–08 and 2011–12. In 2012–13 and 2013–14 there was a return to sale over the hooks. The proportion of lambs sold by this method increased to 30 per cent in 2012–13 and to 33 per cent in 2013–14.

Producers with larger sheep flocks are more likely to sell over the hooks because they can generate larger sale numbers. Direct methods of sale such as over the hooks can also reduce carcass damage and loss of meat quality caused by the additional handling involved in saleyards and auction sales. On average, slaughter lamb producing farms that used the direct selling methods in 2012–13 and 2013–14 had larger flocks.

Changes also occurred in sale methods for adult sheep (Figure 8). The proportion of sheep sold at auction trended upward from 2005–06, reaching 69 per cent in 2013–14, compared with 54 per cent in 2005–06. At the same time, the proportion of sheep sold in the paddock declined to 14 per cent in 2013–14, the lowest level in 25 years. Greater use of specialised meat breeds of sheep resulted in the proportion of sheep sold over the hooks increasing in the late 1990s, mainly at the expense of paddock sales. As with lamb sales, the proportion of sheep sent over the hooks then trended downward for a decade (to 2 per cent in 2011–12 ) before rising sharply to 13 per cent in 2012–13 and then to 15 per cent in 2013–14. This is likely to have resulted from high turn-off, with some producers using this method of sale because it provided greater price certainty than selling at auction.

**Figure 8 Adult sheep selling methods, slaughter lamb producing farms, 1988–89 to 2013–14p**



p Preliminary estimate.

Note: Because of changes in data collected, consistent results cannot be provided for 2002–03 to 2004–05.

Source: ABARES Australian Agricultural and Grazing Industries Survey

# 4 Financial performance

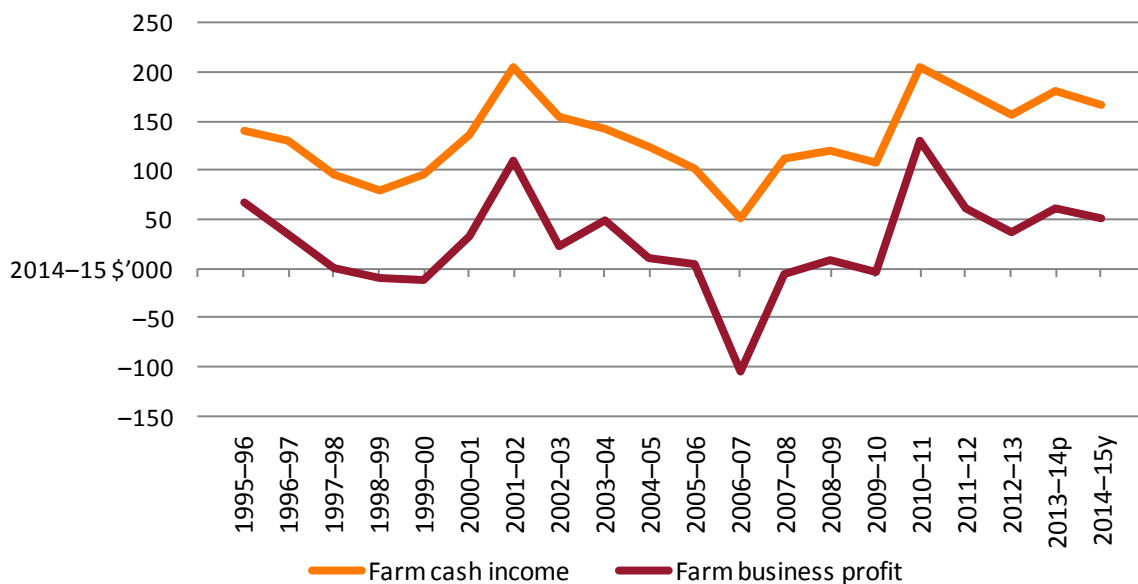
## Financial performance 2013–14

In 2012–13 average farm cash income of slaughter lamb producing farms declined. Increased slaughter lamb sales in 2012–13 were more than offset by lower prices arising from higher turn-off and lower slaughter weights as seasonal conditions became drier.

Farm cash income of slaughter lamb producing farms recovered in 2013–14 as a result of increased lamb prices and winter crop production. Average farm cash income rose by 15 per cent to \$180 100 a farm (Figure 9 and Table 5). For specialist slaughter lamb producing farms, average farm cash income increased by 12 per cent to \$80 900 a farm (Table 6).

**Figure 9 Financial performance, slaughter lamb producers, 1995–96 and 2014–15y**

average per farm



**p** Preliminary estimate. **y** Provisional estimate.

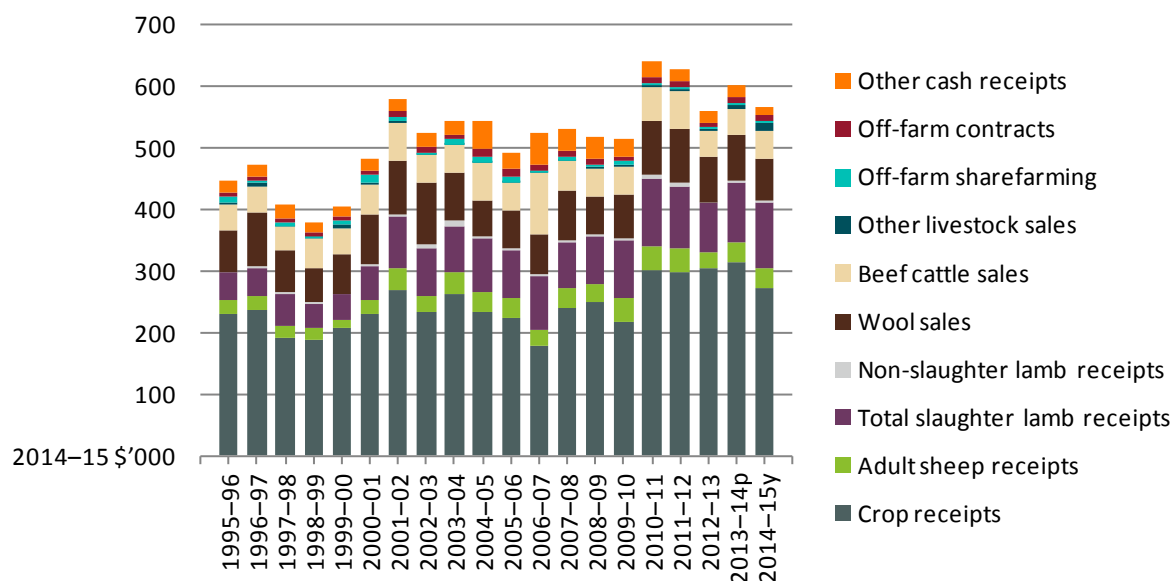
Source: ABARES Australian Agricultural and Grazing Industries Survey

In 2013–14 sheep and lamb receipts increased by 26 per cent for slaughter lamb producing farms and by 21 per cent a farm for specialist slaughter lamb producing farms. This was a result of higher prices for adult sheep and lambs and higher sheep and lamb turn-off.

Crop receipts increased in 2013–14, further boosting total farm receipts (Figure 10), mainly as a result of much higher winter crop production in South Australia, Western Australia and southern New South Wales. Overall, wool receipts were slightly higher because higher wool prices were partly offset by a reduction in the average quantity of wool sold. Average beef cattle receipts changed little overall because an increase in the numbers of cattle sold was mostly offset by lower average prices received.

**Figure 10 Composition of receipts, slaughter lamb producers, 1995–96 to 2014–15y**

average per farm



p Preliminary estimate. y Provisional estimate.

Source: ABARES Australian Agricultural and Grazing Industries Survey

In 2013–14 farm cash costs for slaughter lamb producing farms increased by 4 per cent compared with 2012–13. In Western Australia and South Australia, increased cropping-related costs resulted from harvesting and marketing much larger winter crops. Fodder costs increased in northern New South Wales, while sheep and lamb purchases slowed further. Further reductions in interest rates and average farm debt resulted in expenditure on interest declining in 2013–14 (see [Farm investment](#)).

## Financial performance 2014–15

In 2014–15 farm cash income of slaughter lamb producing farms is estimated to have declined by 8 per cent to average \$166 000 a farm (Table 5).

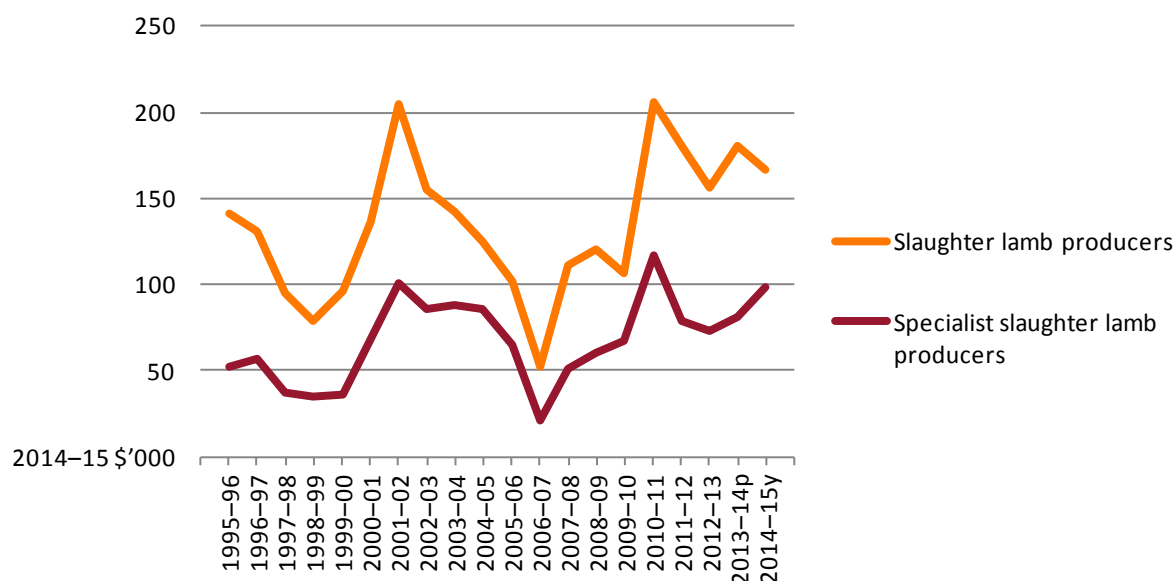
Total receipts of slaughter lamb producing farms are estimated to have declined by 6 per cent in 2014–15. Increase in receipts from lambs, sheep and beef cattle is estimated to have been offset by reduced crop receipts. The decrease in crop receipts was mainly a result of lower crop production and reduced prices for wheat, oilseeds and pulses in 2014–15. Crop receipts accounted for around 48 per cent of the total receipts of slaughter lamb producers in 2014–15.

In 2014–15 farm cash costs are estimated to have decreased by 5 per cent for slaughter lamb producing farms. Sheep and lamb purchases declined and minor reductions are estimated for cropping related costs, mainly because of the lower cost of harvesting and marketing a smaller crop.

For specialist producers total receipts are estimated to have increased by 5 per cent in 2014–15 compared with 2013–14. In 2014–15 sheep and lamb receipts accounted for 45 per cent of total receipts of specialist lamb producers. Farm cash income of specialist lamb producing farms is estimated to have increased by 22 per cent to an average of \$98 300 a farm (Figure 11 and Table 6).

**Figure 11 Farm cash income, slaughter lamb producers and specialist slaughter lamb producers, 1995–96 to 2014–15y**

average per farm



p Preliminary estimate. y Provisional estimate.

Source: ABARES Australian Agricultural and Grazing Industries Survey

**Table 5 Financial performance, slaughter lamb producers**

average per farm

	unit	2012-13	2013-14p	2014-15y
<b>Physical</b>				
Area operated	ha	3 058	2 954 (15)	2 936
Area sown to crops	ha	647	560 (5)	515
Beef cattle at 30 June	no.	125	125 (12)	124
Sheep at 30 June	no.	2 669	2 633 (4)	2 672
Ewes mated	no.	1 409	1 451 (3)	1 525
Lambs marked	no.	1 292	1 335 (3)	1 426
Lamb marking percentage	%	92	92 (1)	94
Sheep and lamb turn-on rate	%	5	7 (11)	6
Sheep and lamb turn-off rate	%	49	54 (3)	53
Sheep sold	no.	398	470 (6)	408
Total lambs sold	no.	905	975 (4)	997
Slaughter lambs sold	no.	873	941 (4)	na
<b>Receipts</b>				
Sheep and lamb sales	\$	106 550	133 900 (4)	140 000
Adult sheep receipts	\$	25 820	33 500 (6)	32 000
Lamb receipts	\$	80 730	100 400 (5)	108 000
Slaughter lamb receipts	\$	78 560	97 700 (5)	na
Non-slaughter lamb receipts	\$	2 170	2 700 (22)	na
Crop receipts	\$	305 470	313 600 (6)	273 000
Wool sales	\$	74 050	74 300 (4)	71 000
Beef cattle sales	\$	41 650	42 900 (11)	45 000
Total cash receipts	\$	560 490	601 600 (4)	565 000

continued ...

**Table 5 Financial performance, slaughter lamb producers (continued)**

average per farm					
<b>Costs</b>	<b>unit</b>	<b>2012-13</b>	<b>2013-14<sup>p</sup></b>		<b>2014-15<sup>y</sup></b>
Sheep and lamb purchases	\$	13 840	19 400	(8)	15 000
Fodder	\$	8 770	9 700	(11)	9 000
Fertiliser	\$	54 090	56 500	(6)	56 000
Sprays	\$	36 580	37 100	(6)	36 000
Fuel, oil and lubricants	\$	33 210	32 400	(4)	29 000
Repairs and maintenance	\$	37 150	38 300	(4)	38 000
Interest payments	\$	41 940	40 400	(6)	39 000
Hired labour	\$	14 430	16 300	(8)	15 000
Total cash costs	\$	404 080	421 500	(4)	399 000
<b>Farm capital and debt</b>					
Total capital value	\$	4 509 310	4 426 800	(3)	4 258 000
Farm debt	\$	648 600	649 600	(6)	633 000
Equity ratio	%	85	85	(1)	na
<b>Farm financial performance</b>					
Farm cash income	\$	156 400	180 100	(6)	166 000
Farm business profit	\$	36 320	60 900	(18)	52 000
Rate of return excluding capital appreciation	%	2.0	2.6	(9)	2.4
<b>Prices</b>					
Slaughter lamb price	\$/hd	90	104	(1)	na
Average lamb price	\$/hd	89	103	(1)	109
Population	no.	17 970	19 300	-	19 000

**p** Preliminary estimate. **y** Provisional estimate. **na** Not available.

Note: Figures in parentheses are standard errors expressed as a percentage of the estimate provided.

Source: ABARES Australian Agricultural and Grazing Industries Survey

**Table 6 Financial performance, specialist slaughter lamb producers**

average per farm					
<b>Physical</b>	<b>unit</b>	<b>2012-13</b>	<b>2013-14<sup>p</sup></b>		<b>2014-15<sup>y</sup></b>
Area operated	ha	1 959	1 595	(19)	1 661
Area sown to crops	ha	171	184	(47)	164
Beef cattle at 30 June	no.	100	100	(13)	103
Sheep at 30 June	no.	2 202	2 200	(8)	2 222
Ewes mated	no.	1 235	1 293	(8)	1 379
Lambs marked	no.	1 180	1 241	(9)	1 350
Lamb marking percentage	%	96	96	(2)	98
Sheep and lamb turn-on rate	%	7	9	(28)	8
Sheep and lamb turn-off rate	%	59	63	(5)	64
Sheep sold	no.	299	323	(10)	294
Total lambs sold	no.	1 012	1 065	(12)	1 113
Slaughter lambs sold	no.	996	1 053	(12)	na

continued ...



**Table 6 Financial performance, specialist slaughter lamb producers (continued)**

average per farm					
<b>Receipts</b>	<b>unit</b>	<b>2012–13</b>	<b>2013–14<sup>p</sup></b>		<b>2014–15<sup>y</sup></b>
Sheep and lamb sales	\$	113 130	137 400	(12)	149 000
Adult sheep receipts	\$	18 290	22 100	(11)	22 000
Lamb receipts	\$	94 840	115 300	(14)	126 000
Slaughter lamb receipts	\$	93 590	114 100	(14)	na
Non-slaughter lamb receipts	\$	1 250	1 300	(48)	na
Crop receipts	\$	70 130	76 800	(60)	78 000
Wool sales	\$	50 630	51 800	(11)	50 000
Beef cattle sales	\$	28 770	31 800	(14)	35 000
Total cash receipts	\$	282 090	317 600	(21)	334 000
<b>Costs</b>					
Sheep and lamb purchases	\$	15 190	20 300	(21)	16 000
Fodder	\$	8 720	9 300	(17)	10 000
Fertiliser	\$	17 030	21 800	(60)	23 000
Sprays	\$	9 810	12 500	(57)	13 000
Fuel, oil and lubricants	\$	15 150	15 500	(20)	14 000
Repairs and maintenance	\$	20 880	21 700	(15)	22 000
Interest payments	\$	21 230	22 800	(16)	23 000
Hired labour	\$	6 300	8 300	(35)	9 000
Total cash costs	\$	209 620	236 700	(22)	235 000
<b>Farm capital and debt</b>					
Total capital value	\$	3 128 310	3 034 600	(8)	2 961 000
Farm debt	\$	317 570	358 600	(16)	371 000
Equity ratio	%	90	88	(1)	na
<b>Farm financial performance</b>					
Farm cash income	\$	72 470	80 900	(22)	98 300
Farm business profit	\$	-20 320	-4 200	(400)	14 500
Rate of return excluding capital appreciation	%	0.2	0.8	(73)	1.4
<b>Prices</b>					
Slaughter lamb price	\$/hd	94	108	(3)	na
Average lamb price	\$/hd	94	108	(3)	114
Population	no.	9 550	10 300	-	10 100

<sup>p</sup> Preliminary estimate. <sup>y</sup> Provisional estimate. **na** Not available.

Note: Figures in parentheses are standard errors expressed as a percentage of the estimate provided.

Source: ABARES Australian Agricultural and Grazing Industries Survey

## Financial performance by state

Average farm cash income of slaughter lamb producing farms declined across most states in 2012–13 because drier seasonal conditions resulted in lower lamb and sheep prices and reduced crop production. However, incomes increased in New South Wales in 2012–13 compared with 2011–12, largely as a result of increased crop production in southern New South Wales.

In 2013–14 average farm cash income recovered across most states (Table 7 and Figure 12). Prices were higher for lamb, sheep and wool and favourable seasonal conditions resulted in increased grain production in South Australia, Western Australia and southern New South

Wales. However, in northern New South Wales, incomes of slaughter lamb producers declined. This was a result of lower grain receipts after persistent dry seasonal conditions.

In 2014–15 lamb and sheep receipts increased in all states except Tasmania, where receipts from cropping increased. In the other states lower receipts from crops and lower farm costs, mainly resulting from reduced crop production, resulted in farm cash incomes differing across states. Average farm cash income of slaughter lamb producing farms is estimated to have increased in New South Wales, South Australia and Tasmania and decreased in Victoria and Western Australia.

## Financial performance by production scale

Average farm cash income of medium and very large-scale producers is estimated to have declined in 2014–15 (Table 8 and Figure 13). It remained unchanged for small-scale producers and increased for large-scale producers. The decreases in farm cash incomes are mainly a result of lower crop receipts for slaughter lamb producing farms at all scales of lamb production.

Larger slaughter lamb producers achieve higher rates of return to total capital than smaller-scale producers. In 2014–15 rates of return for large and very large-scale producers are estimated to have averaged 3.5 per cent, compared with 1.4 per cent for small-scale producers and 1.6 per cent for medium-scale producers.

**Table 7 Financial performance, slaughter lamb producers, by state**

average per farm

State	Farm cash income			Farm business profit			Rate of return excluding capital appreciation		
	2012–13	2013–14p	2014–15y	2012–13	2013–14p	2014–15y	2012–13	2013–14p	2014–15y
New South Wales	139 580	155 200 (8)	162 000	20 120	43 700 (29)	59 000	1.7	2.2 (14)	2.7
Victoria	146 120	139 500 (10)	104 000	40 980	40 800 (31)	4 000	2.1	2.2 (16)	1.1
South Australia	167 750	195 100 (15)	212 000	54 880	51 000 (58)	83 000	2.4	2.1 (24)	2.8
Western Australia	198 590	337 900 (17)	255 000	34 570	180 800 (32)	101 000	2.1	4.6 (20)	3.2
Tasmania	121 600	123 200 (19)	179 000	41 280	54 600 (35)	111 000	1.6	2.0 (15)	2.9
Australia	156 400	180 100 (6)	166 000	36 320	60 900 (18)	52 000	0.2	0.8 (73)	1.4

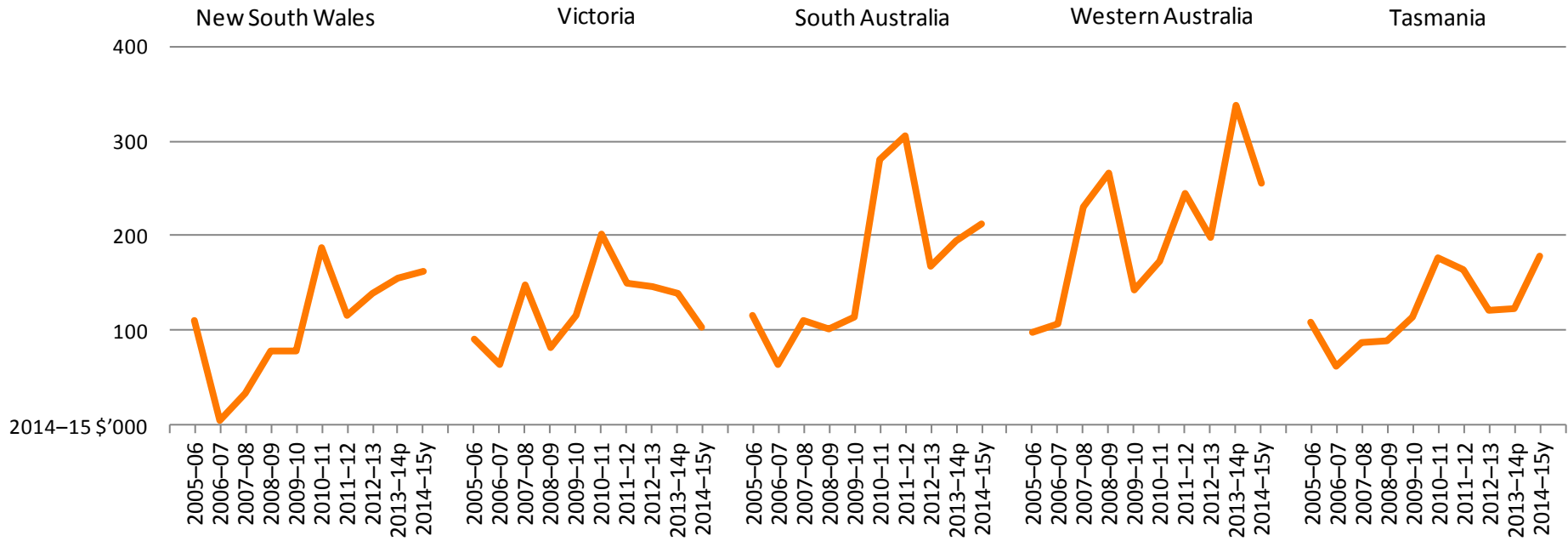
**p** Preliminary estimate. **y** Provisional estimate.

Note: Figures in parentheses are standard errors expressed as a percentage of the estimate provided.

Source: ABARES Australian Agricultural and Grazing Industries Survey

Figure 12 Farm cash income, slaughter lamb producers, by state, 2005-06 to 2014-15y

average per farm



p Preliminary estimate. y Provisional estimate.

Source: ABARES Australian Agricultural and Grazing Industries Survey

**Table 8 Financial performance, slaughter lamb producers, ranked by slaughter lamb production scale**

average per farm

Receipts	unit	Small-scale farms 200 to 500 slaughter lambs			Medium-scale farms 500 to 1 000 slaughter lambs				
		2012–13	2013–14p	2014–15y	2012–13	2013–14p	2014–15y		
Adult sheep receipts	\$	18 330	22 000	(15)	21 000	22 910	26 700	(12)	29 000
Slaughter lamb receipts	\$	28 560	33 100	(5)	na	61 320	72 900	(4)	na
Total lamb receipts	\$	30 010	35 500	(5)	45 000	64 240	74 600	(4)	83 000
Slaughter lamb price	\$/hd	85	97	(3)	na	87	105	(2)	na
Average lamb price	\$/hd	84	96	(3)	105	86	103	(2)	109
Crop receipts	\$	205 630	198 100	(11)	174 000	286 890	296 800	(9)	244 000
Wool sales	\$	44 760	41 300	(10)	40 000	69 410	62 600	(9)	59 000
Beef cattle sales	\$	26 150	22 000	(15)	24 000	35 500	32 800	(21)	37 000
Total cash receipts	\$	345 990	337 800	(7)	328 000	512 390	532 400	(6)	484 000
<b>Costs</b>									
Sheep and lamb purchases	\$	5 340	7 100	(14)	6 000	10 170	14 600	(11)	13 000
Fodder	\$	4 180	4 800	(34)	4 000	8 890	9 300	(19)	7 000
Fertiliser	\$	36 500	33 100	(13)	34 000	48 740	49 400	(8)	51 000
Sprays	\$	23 470	23 500	(10)	25 000	34 770	35 200	(9)	36 000
Fuel, oil and lubricants	\$	22 540	21 700	(8)	22 000	30 830	28 500	(6)	25 000
Repairs and maintenance	\$	25 690	24 600	(8)	24 000	32 780	32 500	(7)	33 000
Interest payments	\$	27 060	26 800	(11)	24 000	41 580	31 900	(9)	32 000
Hired labour	\$	5 440	4 800	(20)	5 000	12 860	12 900	(15)	12 000
Total cash costs	\$	245 570	243 800	(7)	239 000	377 590	361 500	(5)	349 000
<b>Financial performance</b>									
Farm cash income	\$	100 420	94 000	(13)	89 000	134 800	170 900	(13)	135 000
Farm business profit	\$	3 580	800	(1518)	7 000	18 710	70 600	(28)	19 000
Rate of return excluding capital appreciation	%	1.2	1.2	(35)	1.4	1.7	3.0	(18)	1.6

continued ...

**Table 8 Financial performance, slaughter lamb producers, ranked by slaughter lamb production scale (continued)**

average per farm

Receipts	unit	Large-scale farms (1 000 to 2 000 slaughter lambs)			Very large-scale farms (more than 2 000 slaughter lambs)				
		2012–13	2013–14p	2014–15y	2012–13	2013–14p	2014–15y		
Adult sheep receipts	\$	30 350	43 800	(12)	42 000	72 190	88 800	(13)	71 000
Slaughter lamb receipts	\$	128 610	148 000	(5)	na	326 860	372 400	(7)	na
Total lamb receipts	\$	129 170	153 100	(5)	166 000	334 140	375 100	(6)	365 000
Slaughter lamb price	\$/hd	91	105	(2)	na	95	105	(2)	na
Average lamb price	\$/hd	90	104	(2)	110	95	105	(2)	109
Crop receipts	\$	467 430	420 500	(15)	411 000	570 080	650 500	(18)	531 000
Wool sales	\$	110 280	106 400	(8)	101 000	177 090	196 700	(10)	189 000
Beef cattle sales	\$	56 910	61 400	(18)	62 000	122 840	135 900	(34)	130 000
Total cash receipts	\$	839 060	831 700	(8)	834 000	1 344 860	1 533 100	(10)	1 355 000
<b>Costs</b>									
Sheep and lamb purchases	\$	21 000	26 500	(10)	18 000	62 870	76 800	(14)	61 000
Fodder	\$	12 410	12 100	(22)	12 000	26 460	27 000	(12)	28 000
Fertiliser	\$	78 030	78 000	(13)	75 000	121 930	140 500	(14)	130 000
Sprays	\$	59 600	46 700	(12)	43 000	64 010	83 500	(19)	74 000
Fuel, oil and lubricants	\$	50 340	44 300	(9)	37 000	63 640	68 700	(19)	55 000
Repairs and maintenance	\$	52 370	52 000	(8)	51 000	86 170	91 700	(15)	87 000
Interest payments	\$	52 310	54 300	(12)	53 000	106 100	105 100	(8)	98 000
Hired labour	\$	20 760	21 600	(12)	19 000	59 070	68 500	(15)	66 000
Total cash costs	\$	587 760	581 500	(8)	542 000	1 000 440	1 095 100	(9)	1 001 000
<b>Financial performance</b>									
Farm cash income	\$	250 200	(14)	292 000	344 410	438 000	(15)	354 000	250 200
Farm business profit	\$	93 600	(38)	133 000	146 650	209 600	(29)	207 000	93 600
Rate of return excluding capital appreciation	%	2.9	2.7	(21)	3.5	3.0	3.5	(16)	3.5

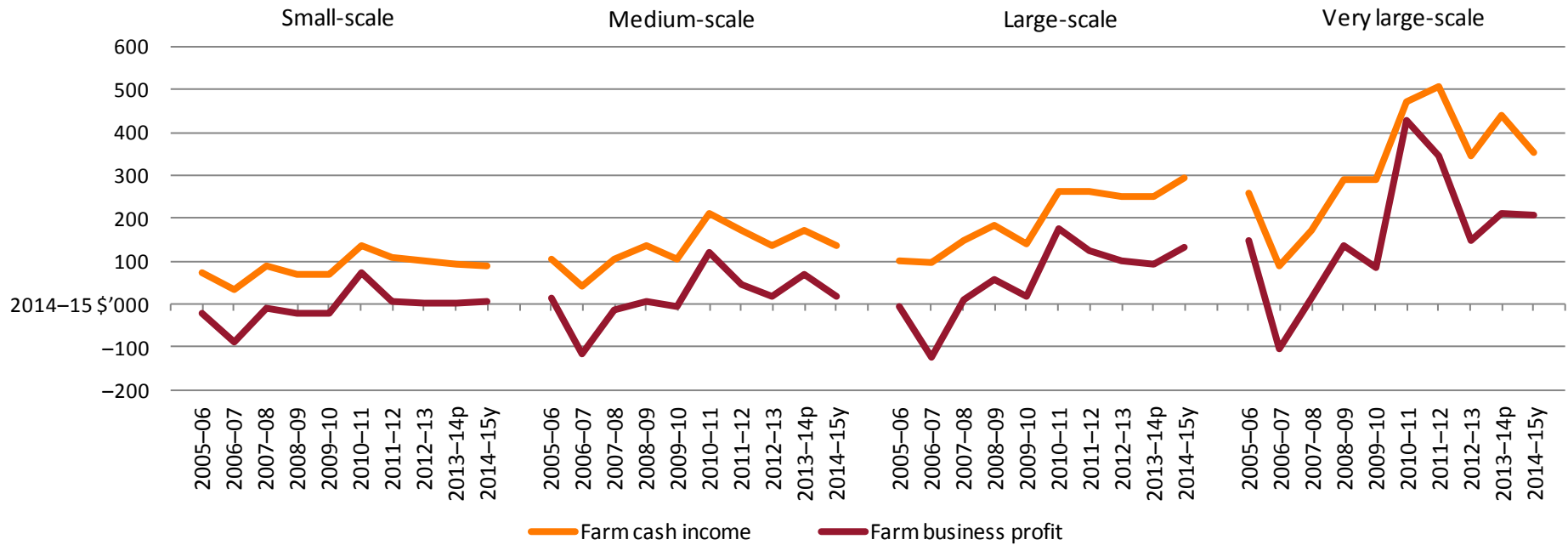
p Preliminary estimate y Provisional estimate. na Not available.

Note: Figures in parentheses are standard errors expressed as a percentage of the estimate provided.

Source: ABARES Australian Agricultural and Grazing Industries Survey

Figure 13 Financial performance, by number of lambs sold for slaughter, 2005-06 to 2014-15y

average per farm



p Preliminary estimate y Provisional estimate.

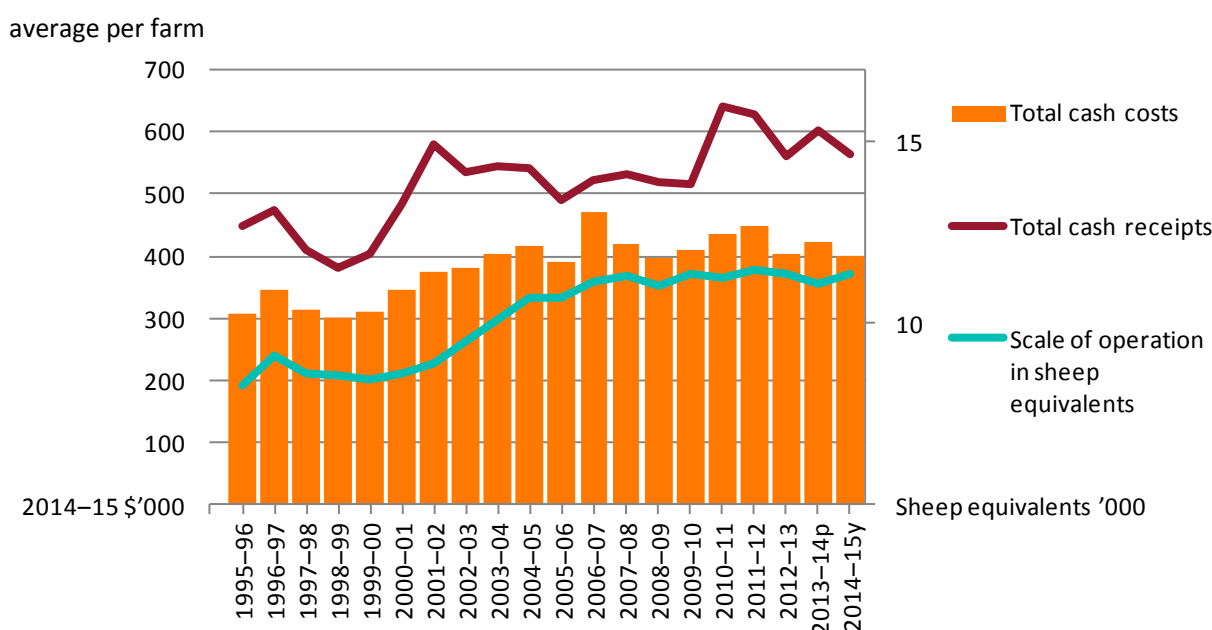
Source: ABARES Australian Agricultural and Grazing Industries Survey

## Costs of slaughter lamb producters

Average total cash costs of slaughter lamb producing farms rose by around 30 per cent between 1995–96 and 2014–15 in real terms. This increase in total costs over the long term has largely been in line with growth in average farm scale (Figure 14). Total cash costs averaged \$38 per sheep equivalent for the three years ending 2013–14, unchanged from the three years ending 1997–98.

For slaughter lamb producing farms, the costs that increased most were those associated with crop production, particularly sprays, fertiliser and depreciation. The share of total costs accounted for by sprays, fertiliser and depreciation increased from 32 per cent in 1995–96 to 42 per cent in 2014–15.

**Figure 14 Farm costs and scale of operation, slaughter lamb producing farms, Australia, 1995–96 to 2014–15y**



**p** Preliminary estimate. **y** Provisional estimate.

Source: ABARES Australian Agricultural and Grazing Industries Survey

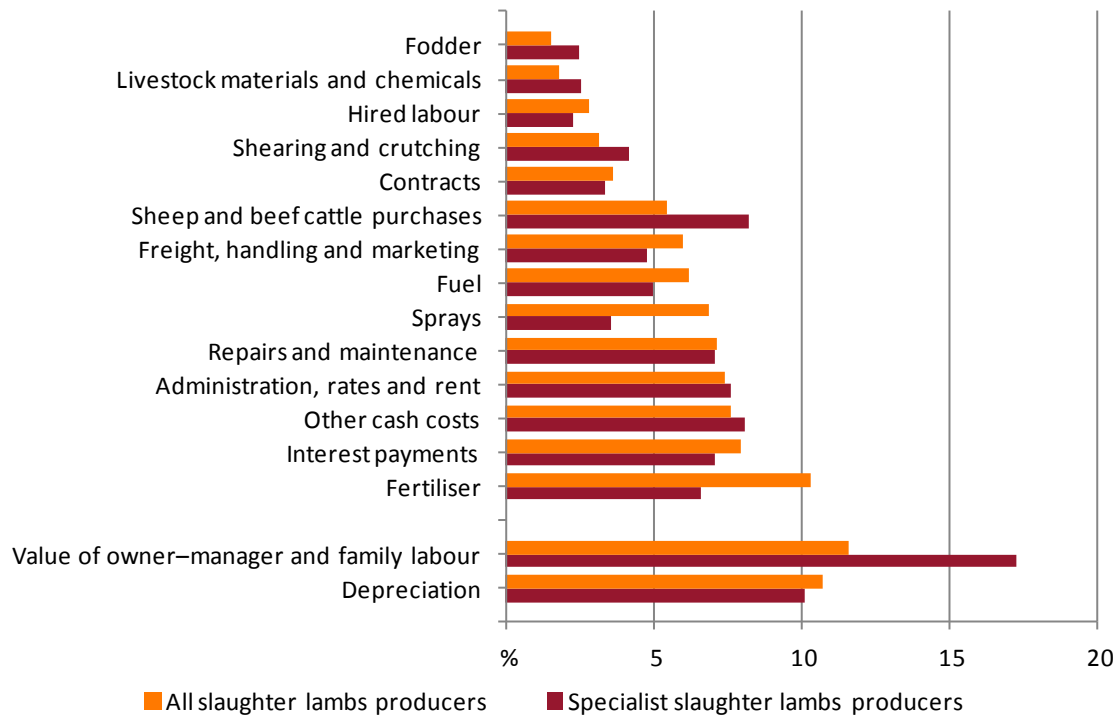
On average, fertiliser is the largest cash cost of slaughter lamb producing farms (10 per cent of costs) and sheep and beef cattle purchase the largest cash cost for specialist slaughter lamb producers (8 per cent). Interest payments are the second-largest cash cost for both slaughter lamb producing farms (8 per cent) and specialist slaughter lamb producing farms (7 per cent)(Figure 15).

Specialist slaughter lamb producers rely heavily on family and partner labour. The value of this labour is by far the largest cost for these farms, averaging 17 per cent of total costs for the three years ending 2013–14. Depreciation was the second-largest cost for both slaughter lamb producers (averaging 10 per cent) and specialist slaughter lamb producers (averaging 11 per cent).



**Figure 15 Composition of farm costs, slaughter lamb producing farms, 2011–12 to 2013–14p**

average per farm



p Preliminary estimate.

Source: ABARES Australian Agricultural and Grazing Industries Survey

## Grain finishing

In the three years ending 2013–14, around 6 per cent of slaughter lamb producing farms (around 970 farms) finished some lambs with grain. Most of these farms are located in the eastern states (37 per cent in New South Wales, 13 per cent in Victoria, 24 per cent in South Australia and 3 per cent in Queensland). However, the proportion of slaughter lamb producing farms finishing lambs on grain is higher in Western Australia (8 per cent) than in the eastern states (4 per cent).

Farms that grain finished lambs received slightly higher prices for lambs sold and generated higher farm cash income per hectare operated (Table 9).

Most farms using grain finishing grow grain and operate a smaller farm area than non-grain finishing farms. Grain finishers also had significantly higher sheep and lamb turn-on and turn-off rates. This indicates a much higher degree of lamb trading with lambs purchased for finishing compared with non-grain finishing producers, who mainly sold lambs bred on farm. On average, grain finishing producers sold 36 per cent more lambs than non-grain finishers, of which 67 per cent were grain finished to some extent. The choice to use grains to finish lambs or to sell them is made by the slaughter lamb producer based on factors including forecast prices.

**Table 9 Physical and financial performance indicators, by use of grain finishing of lambs**

average per farm, 2011–12 to 2013–14p

<b>Indicator</b>	<b>unit</b>	<b>Grain finishing of lambs</b>		<b>No grain finishing of lambs</b>	
Population	no.	970	-	17 630	-
<b>Physical</b>					
Area operated at 30 June	ha	1 985	(35)	3 222	(5)
Area sown to crops	ha	685	(21)	608	(3)
Sheep at 30 June	no.	2 723	(14)	2 679	(2)
Lambs marked	no.	1 356	(19)	1 328	(2)
Sheep and lamb turn-on rate	%	22	(30)	6	(6)
Sheep and lamb turn-off rate	%	67	(11)	50	(2)
Total lambs sold	no.	1 409	(18)	902	(2)
<b>Grain finishing</b>					
Lambs grain finished	no.	921	(21)	-	-
Average length of grain finishing	days	56	(10)	-	-
Proportion of lambs sold that were grain finished	%	67	(9)	-	-
Slaughter lamb price	\$/hd	110	(3)	103	(1)
<b>Farm financial performance</b>					
Total lamb receipts	\$	155 210	(19)	92 740	(2)
Total cash receipts	\$	730 820	(22)	589 620	(2)
Sheep and lamb purchases	\$	51 000	(28)	18 640	(5)
Fodder cost	\$	22 300	(22)	7 410	(6)
Total cash costs	\$	561 500	(21)	416 930	(2)
Farm cash income	\$	169 310	(27)	172 690	(4)
Farm cash income per hectare operated	\$	85	(26)	54	(6)
Rate of return excluding capital appreciation	%	2.1	(30)	2.4	(6)

p Preliminary estimate.

Note: Financial statistics are expressed in 2014–15 dollars. Figures in parentheses are standard errors expressed as a percentage of the estimate provided.

Source: ABARES Australian Agricultural and Grazing Industries Survey

Results for grain finishing producers were also considered for farms that grain finished lambs for different lengths of time:

- less than 40 days
- 40 to 60 days
- more than 60 days.

No significant difference was noted in the average price received for lambs sold for slaughter across groups that grain finished lambs for less than 40 days or for 40 to 60 days. This suggests that on average these producers sold lambs of similar weight and quality. It is likely that slaughter lamb producers feeding their lambs for less than 60 days used grain mainly to get lambs to a minimum acceptable sale weight, rather than using grain to produce heavier lambs. Slaughter lamb producers that grain fed lambs for more than 60 days received a slightly higher price on average than those that fed their lambs for less than 60 days (Table 10).

Comparison of expenditure on fodder per unit of livestock carried, together with information on grain use collected in the AAGIS, suggests that farms grain finishing lambs predominantly used grain grown on farm rather than purchased grain (Caboche & Thompson 2013). However, in 2012–13 and 2013–14 the proportion of farms that bought additional fodder to finish lambs increased, particularly in regions in eastern states that had dry seasonal conditions.

**Table 10 Physical and financial performance indicators, producers grain finishing lambs, by length of time on grain**

average per farm, 2011–12 to 2013–14p

<b>Indicator</b>	<b>unit</b>	<b>Less than 40 days</b>		<b>40 to 60 days</b>		<b>More than 60 days</b>	
Population	no.	304	-	408	-	258	-
Estimated number of lambs grain finished	'000	245	-	367	-	281	-
Share of grain finished lambs	%	27	-	41	-	31	-
<b>Physical</b>							
Area operated at 30 June	ha	1 946	(33)	1 938	(33)	2 108	(32)
Area sown to crops	ha	778	(25)	674	(41)	591	(54)
Sheep at 30 June	no.	2 698	(17)	2 621	(12)	2 915	(23)
Lambs marked	no.	1 289	(20)	1 296	(17)	1 531	(19)
Sheep and lamb turn-on rate	%	28	(64)	19	(25)	21	(148)
Sheep and lamb turn-off rate	%	63	(29)	70	(10)	68	(44)
Total lambs sold	no.	1 266	(35)	1 452	(14)	1 509	(68)
<b>Grain finishing lambs</b>							
Lambs grain finished	no.	804	(52)	900	(21)	1 091	(87)
Average length of grain finishing	days	27	(5)	54	(3)	93	(2)
Proportion of lambs grain finished	%	64	(18)	63	(14)	74	(23)
Slaughter lamb price	\$/hd	109	(4)	107	(3)	116	(13)
<b>Farm financial performance</b>							
Lamb receipts	\$	137 410	(38)	156 900	(15)	174 000	(81)
Total cash receipts	\$	868 810	(44)	676 700	(25)	654 000	(38)
Sheep and lamb purchases	\$	60 600	(58)	43 800	(23)	51 000	(159)
Fodder cost	\$	7 780	(33)	27 100	(130)	32 000	(41)
Total cash costs	\$	643 020	(45)	545 000	(23)	491 000	(46)
Farm cash income	\$	225 790	(46)	131 700	(37)	162 000	(44)
Rate of return excluding capital appreciation	%	3.1	(26)	1.5	(76)	1.6	(142)

**p** Preliminary estimate.

Note: Financial statistics are expressed in 2014–15 dollars. Figures in parentheses are standard errors expressed as a percentage of the estimate provided.

Source: ABARES Australian Agricultural and Grazing Industries Survey

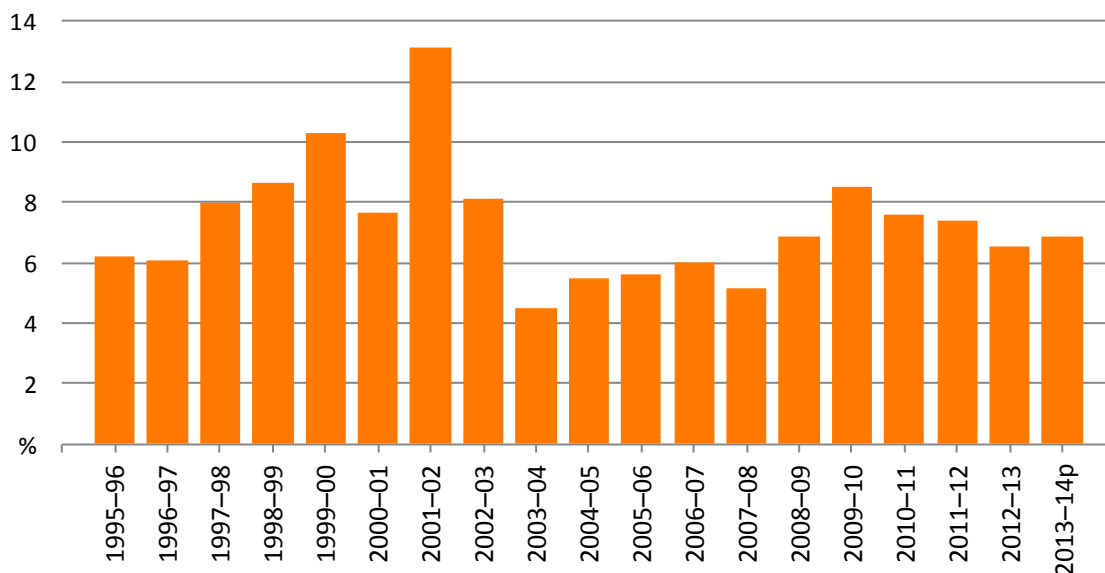
## 5 Farm investment

Producers' capacity to generate farm income is influenced by their past investments in land to expand the scale of their farming activities and in new infrastructure, plant and machinery to boost productivity in the longer term.

Over the 10 years to 2013–14, slaughter lamb producers responded to improved financial performance by undertaking considerable new investments in land, plant and machinery. In 2013–14 new investment remained relatively high in historical terms.

The proportion of slaughter lamb producers buying land increased slightly in 2013–14 and remained relatively high in historical terms at almost 7 per cent (Figure 16). In contrast, around 6 per cent of broadacre farms acquired additional land in 2013–14 (ABARES 2015b).

**Figure 16 Proportion of slaughter lamb producers purchasing land, 1995–96 to 2013–14p**



**p** Preliminary estimate.

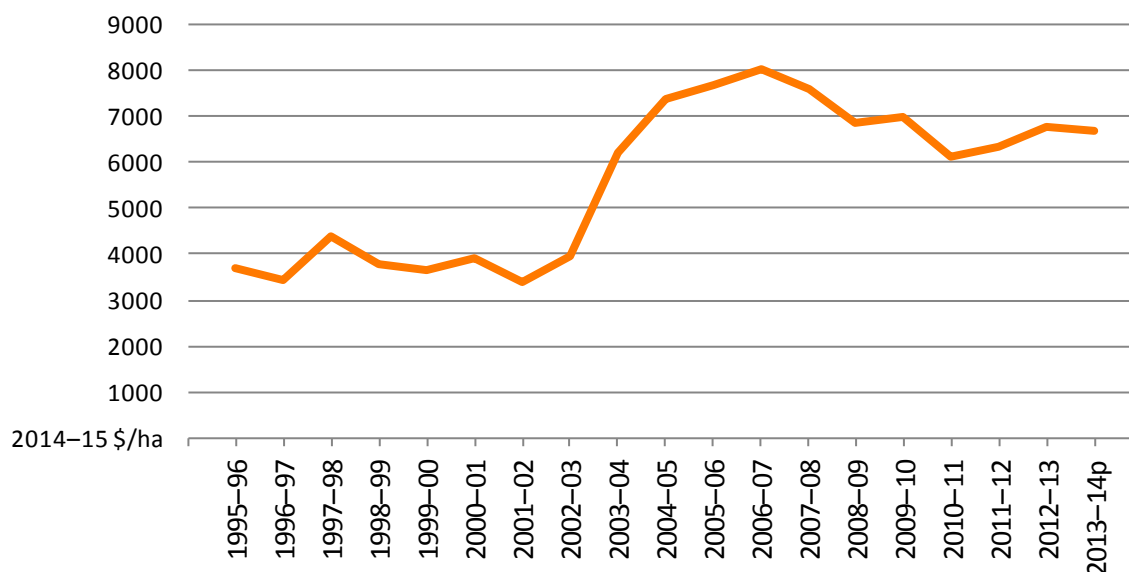
Source: ABARES Australian Agricultural and Grazing Industries Survey

Land values reported for slaughter lamb producing farms increased sharply between 2002–03 and 2006–07. From 2006–07 to 2013–14, land values generally followed a downward trend in real terms (Figure 17).

Only a relatively small proportion of farms buy land in any one year, but most producers make some investment in plant, vehicles, machinery or infrastructure each year. However, because of the much larger average value of land transactions, the value of land purchases dominates total investment.

**Figure 17 Land value per hectare, slaughter lamb farms, 1995–96 to 2013–14p**

average per farm



p Preliminary estimate.

Source: ABARES Australian Agricultural and Grazing Industries Survey

Net investment, excluding land purchase, is the difference between the total value of plant, vehicles, machinery and farm infrastructure purchased and the total value of those items sold or disposed of. In addition to acquiring new capital items and replacing old items, farmers invest in ongoing maintenance and repair of existing plant, vehicles, machinery and farm infrastructure. This expenditure is recorded in ABARES surveys as the cash cost of repairs and maintenance. Most reported annual expenditure on repairs and maintenance is actually the capital cost of replacing and upgrading items of farm capital, such as fencing, stockyards and watering facilities. Annual expenditure on repairs and maintenance is strongly correlated with farm income. Expenditure on repairs and maintenance rises in years of high farm cash income and falls in years of lower farm cash income.

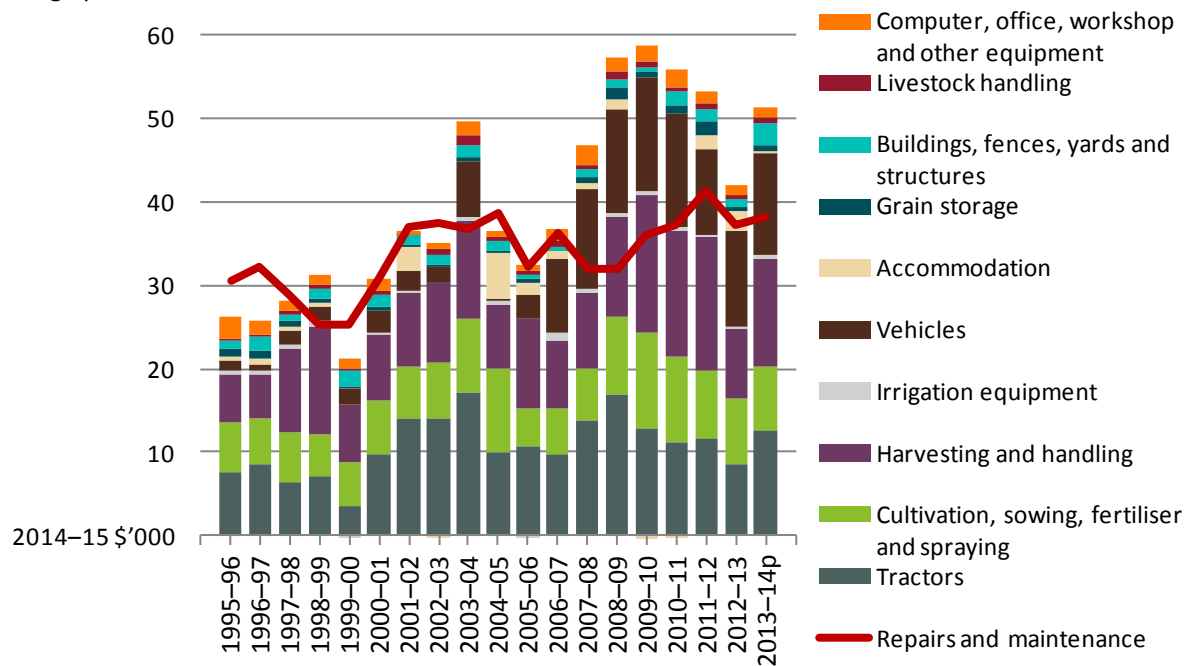
Much of the rising trend in real expenditure on net capital additions and repairs and maintenance over the two decades to 2013–14 resulted from an increase in the average scale of operations of slaughter lamb producing farms, increased production of crops and increased intensification of enterprises. Poor seasonal conditions through the early and mid 2000s reduced farm cash incomes. As a result, expenditure on repairs and maintenance slowed in real terms as farmers sought to reduce discretionary expenditure. From 2007–08 to 2013–14, generally high real net capital additions were augmented by an increase in expenditure on repairs and maintenance (Figure 18).

Following several years of high investment, net investment in non-land capital decreased in 2012–13 as a result of a decrease in farm cash income. In 2013–14 net capital additions excluding land increased by 13 per cent (from \$79 121 in 2012–13 to \$89 695 in 2013–14). The increase was mainly a result of higher farm cash incomes in 2013–14 providing an opportunity for slaughter lamb producers to invest.

The major capital investments excluding land in 2013–14 were harvesting and handling equipment (14 per cent) and vehicles (13 per cent) reflecting the cropping activities on slaughter lamb producing farms.

**Figure 18 Composition of net capital additions excluding land, slaughter lamb producing farms, 1995–96 to 2013–14p**

average per farm



p Preliminary estimate.

Source: ABARES Australian Agricultural and Grazing Industries Survey

In the three years ending 2013–14, the highest capital expenditure by slaughter lamb producers was on crop growing activities and vehicles. Crop cultivation, sowing, fertiliser, spraying, harvesting and handling equipment accounted for around 25 per cent of average total net additions. Tractors accounted for 12 per cent of average total net capital additions on slaughter lamb producing farms and vehicles accounted for 13 per cent.

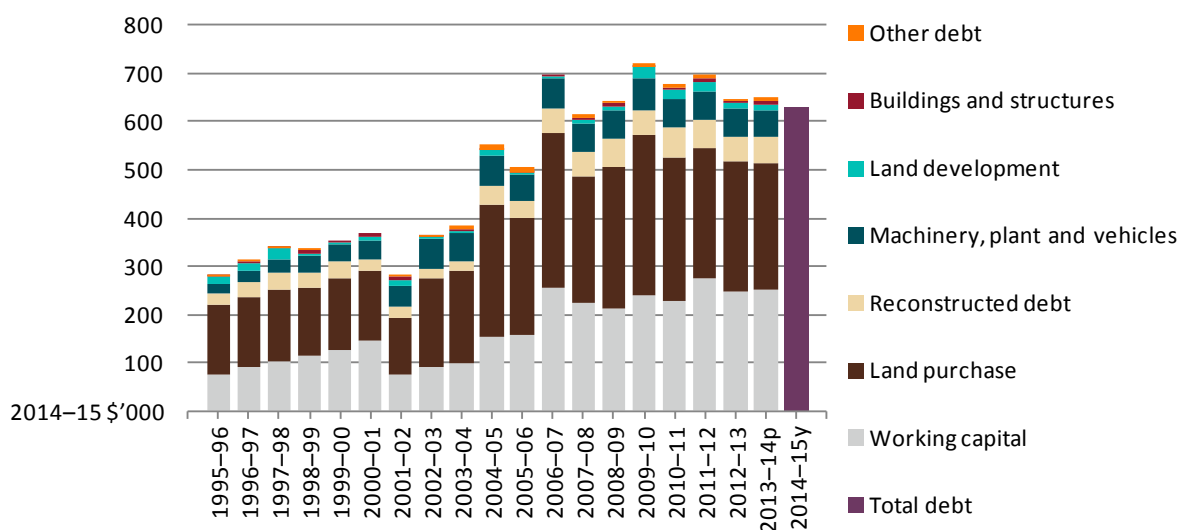
## 6 Farm debt

Debt is an important source of funds for farm investment and ongoing working capital for farms in the broadacre and dairy industries. Around 95 per cent of broadacre and dairy farms are family-owned and operated. For family farms, funding for farm expansion and improvement is limited to the funds available to the family, the profits the farm business can generate and the funds it can borrow.

For slaughter lamb producing farms, average debt per farm business doubled between 2000–01 and 2009–10 in real terms, from an average of \$366 880 a farm in 2000–01 to \$719 800 in 2009–10. Increasing farm size and changes in enterprise mix contributed to debt increases for slaughter lamb producers. Borrowing to fund the purchase of land has been the largest contributor to increased farm debt over the 20 years to 2013–14. Debt to fund the purchase of land accounted for around 40 per cent of average farm debt in 2013–14 (Figure 19). Working capital was also a significant component of debt on slaughter lamb producing farms, accounting for 39 per cent of total farm business debt in 2013–14. Machinery, plant and vehicles and reconstructed debt each accounted for around 8 per cent of the total farm debt in 2013–14.

**Figure 19 Composition of farm business debt, slaughter lamb producers, 1995–96 to 2014–15y**

average per farm



p Preliminary estimate.

Source: ABARES Australian Agricultural and Grazing Industries Survey

Several factors have contributed to the increase in debt during the 2000s. Poor seasonal conditions depressed farm cash incomes in many regions and led to increased borrowing to meet working capital requirements. Movement of resources away from less input-intensive wool production to more intensive cropping and slaughter lamb activities required substantial new investment in machinery and borrowing to purchase inputs. In addition, expansion of cropping activities and increased use of inputs, such as herbicides and fertiliser, contributed to the increase in farm debt as producers borrowed to purchase annual inputs. This, coupled with the move to more intensive cropping activities, resulted in working capital debt as a proportion of total debt increasing from 24 per cent in 2002–03 to 39 per cent in 2013–14.

The proportion of reconstructed debt increased from around 5 per cent in 2002–03 to around 8 per cent in 2013–14. Reconstructed debt is mostly pre-existing debt incurred for a range of purposes that has been consolidated into longer-term and, usually, lower interest rate loans.

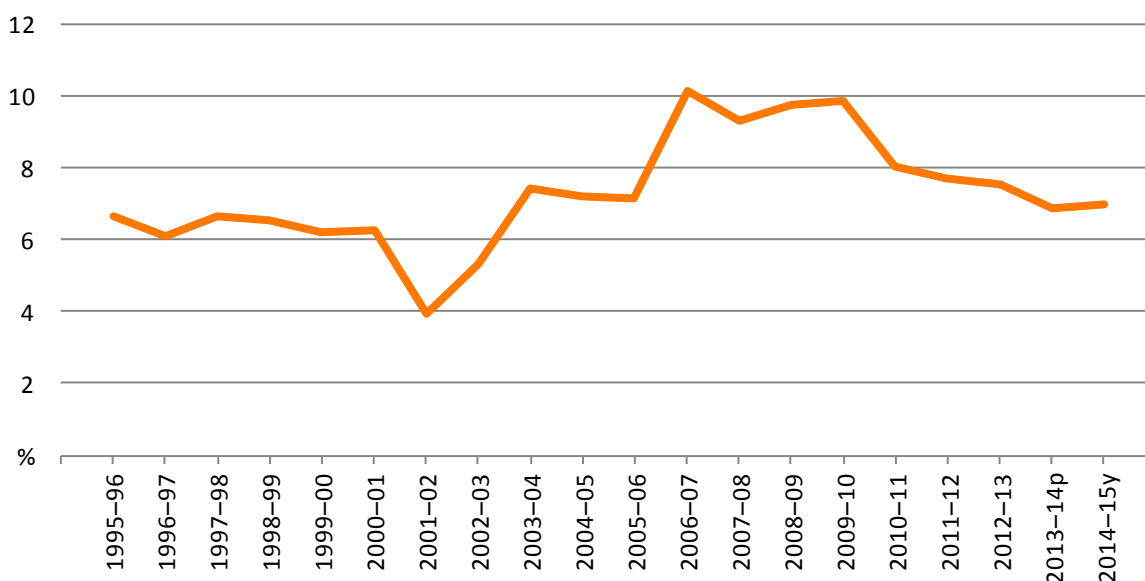
Debt slowed from 2009–10 to 2013–14. For slaughter lamb producers, average debt decreased from \$696 270 in 2011–12 to \$641 400 a farm in 2012–13. Average farm debt in 2013–14 for slaughter lamb producing farms was \$649 577 a farm, largely unchanged from 2012–13. Farm debt is estimated to have fallen further in 2014–15 (Figure 19).

## Debt servicing

Large increases in farm debt in the decade ending 2009–10 and reduced receipts arising from extended drought conditions resulted in a marked rise in the proportion of farm receipts required to fund interest payments. This proportion has declined since 2009–10 as a result of lower interest rates, reductions in average farm debt and increases in average farm receipts. In 2013–14 the ratio of interest payments to farm receipts is estimated to have fallen further as a result of slightly lower interest rates and an estimated increase in farm receipts. In 2013–14 the proportion of farm receipts needed to meet interest payments was around 6.9 per cent, close to the relatively low average of 6.4 per cent recorded through the second half of the 1990s (Figure 20). In 2014–15 the ratio of interest payments to farm receipts is estimated to have remained at around 7 per cent.

**Figure 20 Ratio of interest to total cash receipts, slaughter lamb producers, 1995–96 to 2014–15y**

average per farm



**p** Preliminary estimate. **y** Provisional estimate.

Source: ABARES Australian Agricultural and Grazing Industries Survey

## Farm equity

The general downward trend in land values since 2007–08 has reduced farm equity in some regions and prompted financial institutions to tighten lending, restricting access of some farm businesses to further finance.



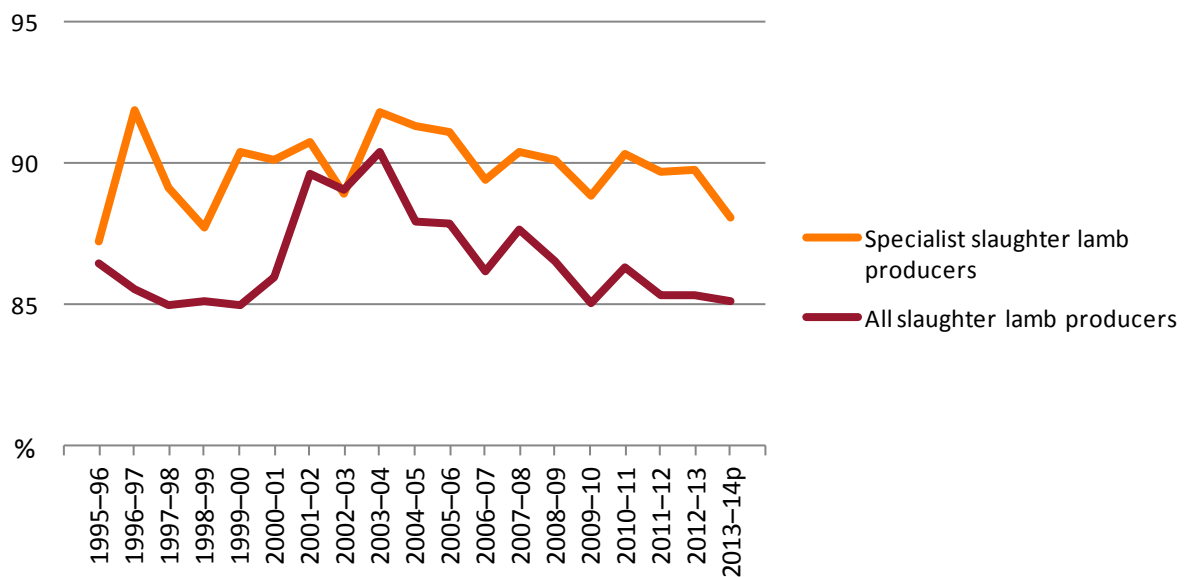
Historically, the average equity ratio for specialist slaughter lamb producers has been significantly higher than that for all slaughter lamb producers. Equity ratios for specialist slaughter lamb producers averaged 88 per cent at 30 June 2014 (Figure 21).

Equity ratios for all slaughter lamb producers averaged 85 per cent at 30 June 2014, a decline from the highs of the early 2000s but similar to ratios in the late 1990s before land values increased.

The overall financial position of slaughter lamb producing farms in 2014–15 is generally strong. Asset values and investment remain high and while debt is also high, equity ratios and debt servicing are in line with long-term averages.

**Figure 21 Equity ratio slaughter lamb producers, 1995–96 to 2013–14p**

average per farm



p Preliminary estimate.

Source: ABARES Australian Agricultural and Grazing Industries Survey

## 7 Productivity

ABARES produces a number of productivity estimates relating to the Australian broadacre and dairy industries (Box 2). The principal measure is total factor productivity (TFP), defined as the ratio of total market outputs to total market inputs. TFP growth is a useful indicator of trends in the efficiency of agricultural production as it captures the overall effect of changes in multiple inputs and outputs. In contrast, partial factor productivity (PFP)—also measured by ABARES—captures changes in total output relative to single inputs, such as output per hectare of land.

### Box 2 Productivity statistics produced by ABARES

The ABARES preferred estimate of productivity is total factor productivity (TFP), which is the ratio of a quantity index of market outputs to a quantity index of market inputs. To achieve annual industry-level TFP estimates, it aggregates multiple outputs and inputs across farms using the Fisher index. Average annual TFP growth rates are estimated by fitting an exponential trend line. A detailed description of ABARES TFP methodology is in Zhao, Sheng & Gray (2012).

Data used to estimate the productivity of Australia's broadacre (non-irrigated cropping and grazing) and dairy industries are collected annually through the ABARES national farm survey programme. A consistent methodology has been applied to broadacre farms since 1977–78 and to dairy farms since 1978–79.

The broadacre and dairy industries are defined by the Australian and New Zealand Standard Industrial Classification (ANZSIC), described in [Survey methods and definitions](#).

Together, the broadacre and dairy industries accounted for 73 per cent of commercial-scale farm businesses and for an estimated 60 per cent of the total gross value of Australian agricultural production in 2013–14. In addition, these farms managed more than 90 per cent of the total area of agricultural land in Australia and accounted for most of Australia's family-owned and operated farms (ABARES 2014).

Productivity growth is generally measured over the long term because it is usually treated as an indicator of technological progress, which can involve significant time lags in both on-farm implementation and realised benefits. Further, short-term variability in productivity can be dominated by seasonal conditions rather than reflecting shifts in underlying technology or efficiency.

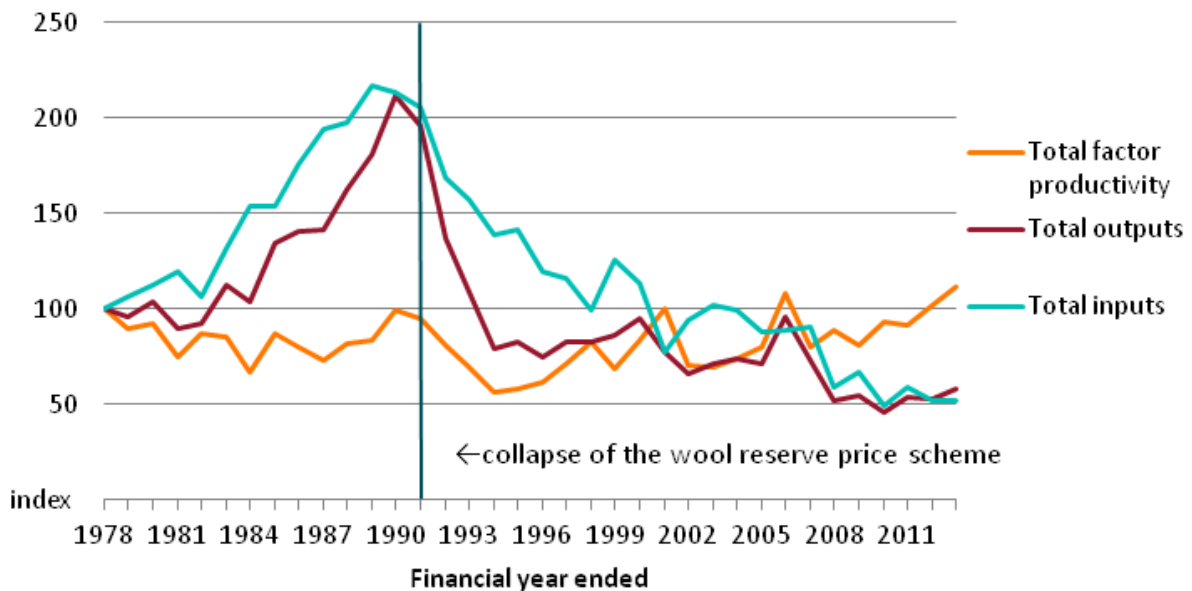
**Table 11 Average annual broadacre productivity growth, by industry, 1977–78 to 2012–13**

Category	All broadacre	Cropping	Mixed crop–livestock	Beef	Sheep
<b>Total factor productivity</b>					
Productivity	1.1	1.5	0.9	1.3	0.2
Outputs	0.1	2.6	-0.8	1.1	-2.6
Inputs	-1.0	1.1	-1.7	-0.2	-2.8
<b>Partial factor productivity</b>					
Land	1.1	1.2	0.5	1.3	0.0
Labour	2.3	3.4	2.0	1.9	0.8
Capital	1.7	2.8	2.0	0.8	1.3
Materials	-1.7	-1.5	-1.5	-1.0	-2.0
Services	1.0	1.8	0.9	1.0	0.2
<b>Input use</b>					
Land	-0.9	1.4	-1.3	-0.2	-2.6
Labour	-2.2	-0.7	-2.8	-0.8	-3.4
Capital	-1.5	-0.2	-2.9	0.3	-3.9
Materials	1.8	4.1	0.7	2.1	-0.6
Services	-0.9	0.9	-1.7	0.1	-2.7

Source: ABARES

Productivity growth in the sheep industry averaged 0.2 per cent a year from 1977–78 to 2012–13 (Table 11). This long-run average masks a downward trend to the mid 1990s, followed by a period of strong productivity growth (Figure 22). Negative productivity growth coincided with rapid industry expansion in response to strong global demand for wool in the 1980s. Following a decline in global demand and the collapse of the wool reserve price scheme in 1991, many producers exited the wool industry.

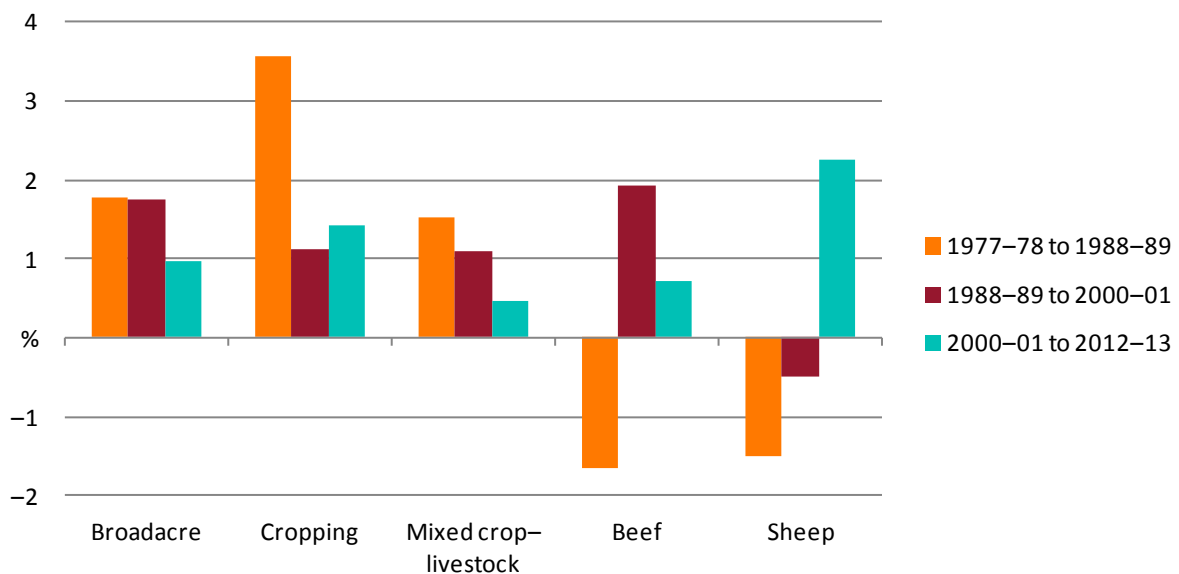
**Figure 22 Trends in sheep industry total factor productivity, total inputs and total outputs, 1977–78 to 2012–13**



Source: ABARES

Productivity gains made since the mid 1990s reflect significant adjustment in the sheep industry as production shifted from wool to sheep meat. Productivity grew by an average of 2.3 per cent a year from 2000–01 to 2012–13, a higher rate than that achieved by other broadacre industries over the same period (Figure 23).

**Figure 23 Broadacre total factor productivity growth, by period**



Source: ABARES

Other factors also contributed to increased sheep industry productivity after the collapse of the wool reserve price scheme in 1991. These included advances in animal breeding and genetics and improved herd, disease and fodder management (Gray, Leith & Davidson 2014). An increase in the proportion of ewes in flocks and a significant decline in the share of wethers (Dahl, Leith & Gray 2013) contributed to long-term growth in lamb production. In the same period, increased use of non-Merino rams, first-cross ewes and specialty meat breeds, as well as increased emphasis on selection and breeding for meat production traits, boosted productivity through higher lamb growth rates and higher incidence of twinning. In addition, greater use of improved pastures, fodder crops and supplementary feed improved ewe fertility, reduced lamb mortality rates and increased average slaughter weights.

# Survey methods and definitions

ABARES has conducted surveys of selected Australian agricultural industries since the 1940s. These surveys provide a broad range of information on the economic performance of farm business units in the rural sector. This comprehensive dataset is used for research and analysis that forms the basis of many publications, briefing material and industry reports. Since 1977–78 ABARES has conducted the annual Australian Agricultural and Grazing Industries Survey (AAGIS) to provide a set of data that are collected nationally using a consistent methodology.

## Definitions of industries

Industry definitions are based on the 2006 Australian and New Zealand Standard Industrial Classification (ANZSIC06). This classification is in line with an international standard applied comprehensively across Australian industry, permitting comparisons between industries, both within Australia and internationally. Farms assigned to a particular ANZSIC have a high proportion of their total output characterised by that class. Further information on ANZSIC and on farming activities included in each of these industries is provided in Australian and New Zealand Standard Industrial Classification (ABS 2006).

The five broadacre industries covered by AAGIS are:

- Wheat and other crops industry (ANZSIC06 Class 0146 and 0149)
  - farms engaged mainly in growing rice, other cereal grains, coarse grains, oilseeds and/or pulses
- Mixed livestock–crops industry (ANZSIC06 Class 0145)
  - farms engaged mainly in running sheep and/or beef cattle and growing cereal grains, coarse grains, oilseeds and/or pulses
- Sheep industry (ANZSIC06 Class 0141)
  - farms engaged mainly in running sheep
- Beef industry (ANZSIC06 Class 0142)
  - farms engaged mainly in running beef cattle
- Sheep–beef industry (ANZSIC06 Class 0144)
  - farms engaged mainly in running both sheep and beef cattle.

## Target populations

AAGIS is designed from a population list drawn from the Australian Business Register (ABR) and maintained by the Australian Bureau of Statistics (ABS). The ABR comprises businesses registered with the Australian Taxation Office. The ABR-based population list provided to ABARES consists of agricultural establishments with their corresponding geography code (currently Australian Statistical Geography Standard), ANZSIC, and a size of operation variable.

ABARES surveys target farming establishments that make a significant contribution to the total value of agricultural output (commercial farms). Farms excluded from ABARES surveys will be

the smallest units and in aggregate will contribute less than 2 per cent to the total value of agricultural production for the industries covered by the surveys.

The size of operation variable used in ABARES survey designs is usually ‘estimated value of agricultural operations’ (EVAO). However, in some surveys in recent years other measures of agricultural production have also been used. EVAO is a standardised dollar measure of the level of agricultural output. A definition of EVAO is given in *Agricultural industries: financial statistics* (ABS 2001). Since 2004–05 the ABARES survey has included establishments classified as having an EVAO of \$40 000 or more. Between 1991–92 and 2003–04 the survey included establishments with an EVAO of \$22 500 or more. Between 1987–88 and 1990–91 the survey included establishments with an EVAO of \$20 000 or more. Before 1987–88 the survey included establishments with an EVAO of \$10 000 or more.

## Survey design

The target population is grouped into strata defined by ABARES region, ANZSIC and size of operation. The sample allocation is a compromise between allocating a higher proportion of the sample to strata with high variability in the size variable and an allocation proportional to the population of the stratum.

A large proportion of sample farms is retained from the previous year’s survey. The sample chosen each year maintains a high proportion of the sample between years to accurately measure change while meeting the requirement to introduce new sample farms. New farms are introduced to account for changes in the target population, as well as to reduce the burden on survey respondents.

The sample size for AAGIS is usually around 1 600 farms.

The main method of collecting data is face-to-face interviews with the owner–manager of the farm business. Detailed physical and financial information is collected on the operations of the farm business during the preceding financial year. Respondents to AAGIS are also contacted by telephone in October each year to obtain estimates of projected production and expected receipts and costs for the current financial year. ABARES surveys also allow supplementary questionnaires to be attached to the main or to the telephone surveys. These additional questions help address specific industry issues—such as grain cost of production, livestock management practices and adoption of new technologies on dairy farms.

## Sample weighting

ABARES survey estimates are calculated by appropriately weighting the data collected from each sample farm and then using the weighted data to calculate population estimates. Sample weights are calculated so that population estimates from the sample for numbers of farms, areas of crops and numbers of livestock correspond as closely as possible to the most recently available Australian Bureau of Statistics (ABS) estimates from its Agricultural Census and surveys.

The weighting methodology for AAGIS uses a model-based approach, with a linear regression model linking the survey variables and the estimation benchmark variables. The details of this method are described in Bardsley and Chambers (1984).

For AAGIS, the benchmark variables provided by the ABS include:

- total number of farms in scope
- area planted to wheat, rice, other cereals, grain legumes (pulses) and oilseeds
- closing numbers of beef and sheep.

Generally, larger farms have smaller weights and smaller farms have larger weights. This reflects both the strategy of sampling a higher fraction of the larger farms than smaller farms and the relatively lower numbers of large farms. Large farms have a wider range of variability of key characteristics and account for a much larger proportion of total output.

## Reliability of estimates

The reliability of the estimates of population characteristics published by ABARES depends on the design of the sample and the accuracy of the measurement of characteristics for the individual sample farms.

## Preliminary estimates and projections

Estimates for 2012–13 and all earlier years are final. All data from farmers, including accounting information, have been reconciled; final production and population information from the ABS has been included and no further change is expected in these estimates.

The 2013–14 estimates are preliminary, based on full production and accounting information from farmers. However, editing and addition of sample farms may be undertaken and ABS production and population benchmarks may also change.

The 2014–15 estimates are projections developed from the data collected through on-farm and telephone interviews from October to December, as well as from the preliminary estimates. Projection estimates include crop and livestock production, receipts and expenditure up to the date of interview together with expected production, and receipts and expenditure for the remainder of the projection year. Modifications are made to expected receipts and expenditure where significant production and price change has occurred post interview. Projection estimates are necessarily subject to greater uncertainty than preliminary and final estimates.

Preliminary and projection estimates of farm financial performance are produced within a few weeks of the completion of survey collections. However, these may be updated several times at later dates. These subsequent versions will be more accurate, as they will be based on upgraded information and slightly more accurate input datasets.

## Sampling errors

Only a subset of farms out of the total number of farms in a particular industry is surveyed. The data collected from each sample farm are weighted to calculate population estimates. Estimates derived from these farms are likely to be different from those that would have been obtained if information had been collected from a census of all farms. Any such differences are called 'sampling errors'.

The size of the sampling error is influenced by the survey design and the estimation procedures, as well as the sample size and the variability of farms in the population. The larger the sample size, the lower the sampling error is likely to be. Hence, national estimates are likely to have lower sampling errors than industry and state estimates.

To give a guide to the reliability of the survey estimates, standard errors are calculated for all estimates published by ABARES. These estimated errors are expressed as percentages of the survey estimates and termed ‘relative standard errors’.

### Calculating confidence intervals using relative standard errors

Relative standard errors can be used to calculate ‘confidence intervals’ that give an indication of how close the actual population value is likely to be to the survey estimate.

To obtain the standard error, multiply the relative standard error by the survey estimate and divide by 100. For example, if average total cash receipts are estimated to be \$100 000 with a relative standard error of 6 per cent, the standard error for this estimate is \$6 000. This is one standard error. Two standard errors equal \$12 000.

There is roughly a two-in-three chance that the ‘census value’ (the value that would have been obtained if all farms in the target population had been surveyed) is within one standard error of the survey estimate. This range of one standard error is described as the 66 per cent confidence interval. In this example, there is an approximately two-in-three chance that the census value is between \$94 000 and \$106 000 (\$100 000 plus or minus \$6 000).

There is roughly a 19-in-20 chance that the census value is within two standard errors of the survey estimate (the 95 per cent confidence interval). In this example, there is an approximately 19-in-20 chance that the census value lies between \$88 000 and \$112 000 (\$100 000 plus or minus \$12 000).

### Comparing estimates

When comparing estimates between two groups, it is important to recognise that the differences are also subject to sampling error. As a rule of thumb, a conservative estimate of the standard error of the difference can be constructed by adding the squares of the estimated standard errors of the component estimates and taking the square root of the result.

For example, suppose the estimates of total cash receipts were \$100 000 in the beef industry and \$125 000 in the sheep industry—a difference of \$25 000—and the relative standard error is given as 6 per cent for each estimate. The standard error of the difference can be estimated as:

$$\sqrt{((6 \times \$100\,000 / 100)^2 + (6 \times \$125\,000 / 100)^2)} = \$9605$$

A 95 per cent confidence interval for the difference is:

$$\$25\,000 \pm 1.96 \times \$9\,605 = (\$6\,174, \$43\,826)$$

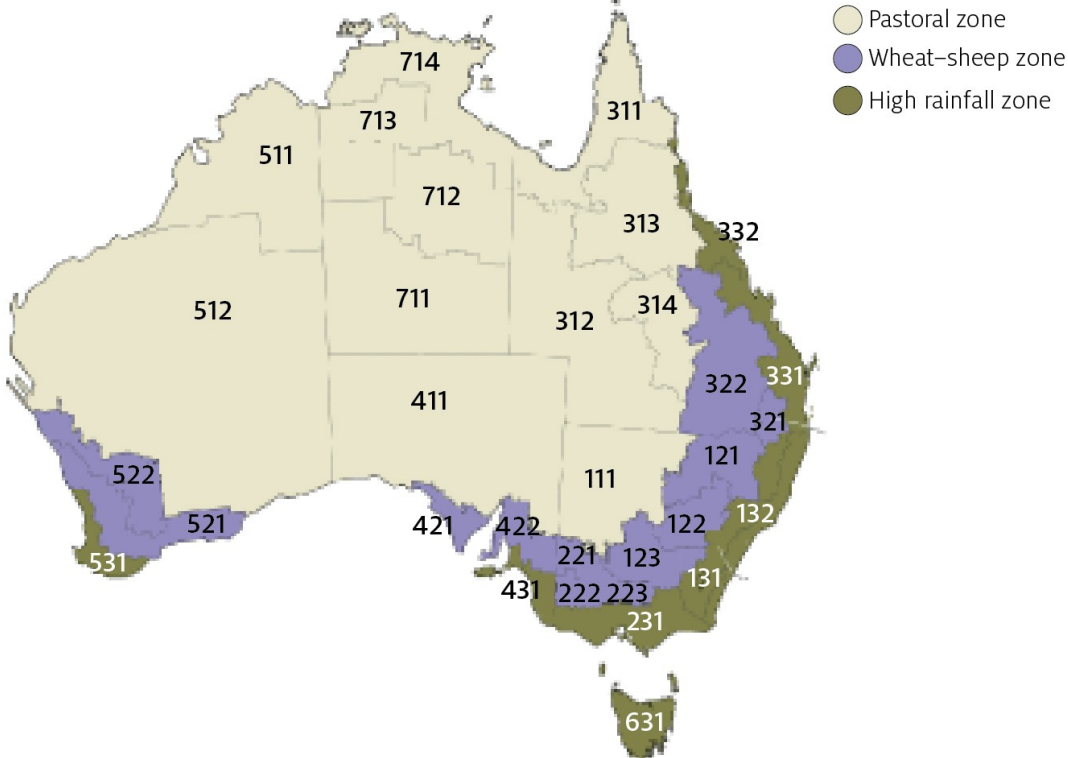
Hence, if a large number (towards infinity) of different samples are taken, in approximately 95 per cent of them, the difference between these two estimates will lie between \$6 174 and \$43 826. Also, since zero is not in this confidence interval, it is possible to say that the difference between the estimates is statistically significantly different from zero at the 95 per cent confidence level.

### Regions

Broadacre statistics are also available by region (Map 3). These regions represent the finest level of geographical aggregation for which the survey is designed to produce reliable estimates.



Map 3 ABARES Australian broadacre zones and regions



Note: Each region is identified by a unique code of three digits. The first digit identifies the state or territory, the second digit identifies the zone and the third digit identifies the region.  
 Source: ABARES

# Glossary

**Owner–manager** The primary decision-maker for the farm business. This person is usually responsible for day-to-day operation of the farm and may own or have a share in the farm business.

## Physical items

**beef cattle** Cattle kept primarily for the production of meat, irrespective of breed.

**dairy cattle** Cattle kept or intended mainly for the production of milk or cream.

**hired labour** Excludes the farm business manager, partners and family labour and work by contractors. Expenditure on contract services appears as a cash cost.

**labour** Measured in work weeks, as estimated by the owner–manager or manager. It includes all work on the farm by the owner–manager, partners, family, hired permanent and casual workers and sharefarmers but excludes work by contractors.

**total area operated** Includes all land operated by the farm business, whether owned or rented by the business, but excludes land sharefarmed on another farm.

## Financial items

**capital** The value of farm capital is the value of all the assets used on a farm, including the value of leased items but excluding machinery and equipment either hired or used by contractors. The value of ‘owned’ capital is the value of farm capital excluding the value of leased machinery and equipment.

ABARES uses the owner–manager’s valuation of the farm property. The valuation includes the value of land and fixed improvements used by each farm business in the survey, excluding land sharefarmed off the sample farm. Residences on the farm are included in the valuations.

Livestock are valued at estimated market prices for the land use zones within each state. These values are based on recorded sales and purchases by sample farms.

Before 2001–02 ABARES maintained an inventory of plant and machinery for each sample farm. Individual items were valued at replacement cost, depreciated for age. Each year the replacement cost was indexed to allow for changes in that cost.

Since 2001–02 total value of plant and machinery has been based on market valuations provided by the owner–manager for broad categories of capital, such as tractors, vehicles and irrigation plant.

The total value of items purchased or sold during the survey year was added to or subtracted from farm capital at 31 December of the

	relevant financial year, irrespective of the actual date of purchase or sale.
change in debt	Estimated as the difference between debt at 1 July and the following 30 June within the survey year, rather than between debt at 30 June in consecutive years. It is an estimate of the change in indebtedness of a given population of farms during the financial year and is thus unaffected by changes in sample or population between years.
farm business debt	Estimated as all debts attributable to the farm business but excluding personal debt, lease financed debt and underwritten loans, including harvest loans. Information is collected at the interview, supplemented by information contained in the farm accounts.
farm liquid assets	Assets owned by the farm business that can be readily converted to cash. They include savings bank deposits, interest bearing deposits, debentures and shares. Excluded are items such as real estate, life assurance policies and other farms or businesses.
receipts and costs	<p>Receipts for livestock and livestock products sold are determined at the point of sale. Selling charges and charges for transport to the point of sale are included in the costs of sample farms.</p> <p>Receipts for crops sold during the survey year are gross of deductions made by marketing authorities for freight and selling charges. These deductions are included in farm costs. Receipts for other farm products are determined on a farmgate basis. All cash receipt items are the revenue received in the financial year.</p> <p>Farm receipts and costs relate to the whole area operated, including areas operated by on-farm sharefarmers. Thus, cash receipts include receipts from the sale of products produced by sharefarmers. If possible, on-farm sharefarmers' costs are amalgamated with those of the sample farm. Otherwise, the total sum paid to sharefarmers is treated as a cash cost.</p> <p>Some sample farm businesses engage in off-farm contracting or sharefarming, employing labour and capital equipment also used in normal on-farm activities. Since it is not possible to accurately allocate costs between off-farm and on-farm operations, the income and expenditure attributable to such off-farm operations are included in the receipts and costs of the sample farm business.</p>
total cash costs	<p>Payments made by the farm business for materials and services and for permanent and casual hired labour (excluding owner–manager, partner and other family labour). It includes the value of livestock transfers onto the property as well as any lease payments on capital, produce purchased for resale, rent, interest, livestock purchases and payments to sharefarmers. Capital and household expenditures are excluded from total cash costs.</p> <p>Handling and marketing expenses include commission, yard dues and</p>

levies for farm produce sold.

Administration costs include accountancy fees, banking and legal expenses, postage, stationery, subscriptions and telephone.

Contracts paid refers to expenditure on contracts such as harvesting. Capital and land development contracts are not included.

Other cash costs include stores and rations, seed purchased, electricity, artificial insemination and herd testing fees, advisory services, motor vehicle expenses, travelling expenses and insurance. While other cash costs may comprise a relatively large proportion of total cash costs, individually the components are relatively small overall and, as such, have not been listed.

total cash receipts Total of revenues received by the farm business during the financial year, including revenues from the sale of livestock, livestock products and crops, plus the value of livestock transfers off a property. It includes revenue received from agistment, royalties, rebates, refunds, plant hire, contracts, sharefarming, insurance claims and compensation, and government assistance payments to the farm business.

### Financial performance measures

build-up in trading stocks	The closing value of all changes in the inventories of trading stocks during the financial year. It includes the value of any change in herd or flock size or in stocks of wool, fruit and grains held on the farm. It is negative if inventories are run down.
depreciation of farm improvements, plant and equipment	Estimated by the diminishing value method, based on the replacement cost and age of each item. The rates applied are the standard rates allowed by the Commissioner of Taxation. For items purchased or sold during the financial year, depreciation is assessed as if the transaction had taken place at the midpoint of the year. Calculation of farm business profit does not account for depreciation on items subject to a finance lease because cash costs already include finance lease payments.
farm business equity	The value of owned capital, less farm business debt, at 30 June. The estimate is based on those sample farms for which complete data on farm debt are available.
farm business profit	Farm cash income plus build-up in trading stocks, less depreciation and the imputed value of the owner–manager, partner(s) and family labour.
farm cash income	The difference between total cash receipts and total cash costs.
farm equity ratio	Calculated as farm business equity as a percentage of owned capital at 30 June.
imputed labour	Payments for owner–manager and family labour may bear little relationship to the actual work input. An estimate of the labour input of

cost	the owner–manager, partners and their families is calculated in work weeks and a value is imputed at the relevant Federal Pastoral Industry Award rates.
off-farm income	Collected for the owner–manager and spouse only, including income from wages, other businesses, investment, government assistance to the farm household and social welfare payments.
profit at full equity	Farm business profit, plus rent, interest and finance lease payments, less depreciation on leased items. It is the return produced by all the resources used in the farm business.
rates of return	Calculated by expressing profit at full equity as a percentage of total opening capital. Rate of return represents the ability of the business to generate a return to all capital used by the business, including that which is borrowed or leased. The following rates of return are estimated: rate of return excluding capital appreciation; and rate of return including capital appreciation.

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