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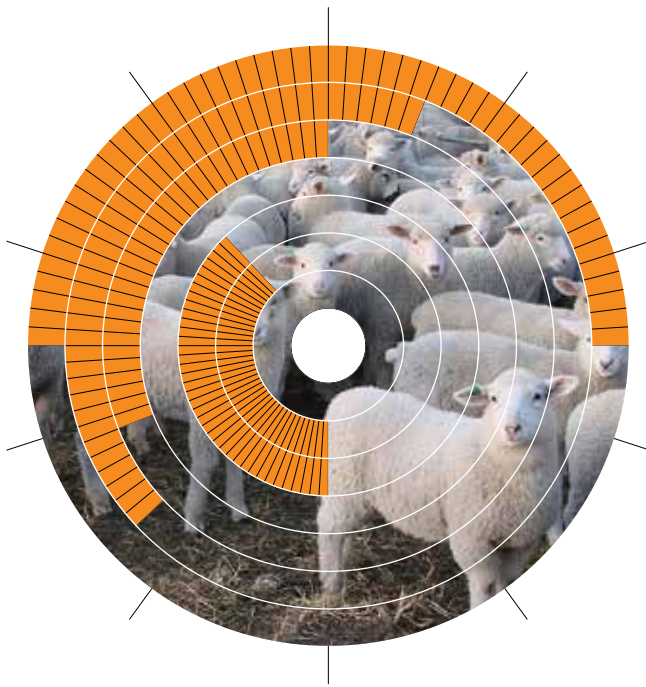
## Financial performance of slaughter lamb producing farms 2010–11 to 2012–13

Tim Caboche and Therese Thompson

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

RESEARCH REPORT 13.7





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# Summary

Around 18 800 Australian broadacre farms sell more than 200 lambs for slaughter. These farms are classified as slaughter lamb producers in this report. Most of these farms are mixed enterprise, deriving a substantial proportion of their receipts from cropping, beef cattle, sheep and wool, as well as from the sale of slaughter lambs.

The average financial performance of Australian slaughter lamb producing farms is expected to weaken in 2012–13 but remain above the long-term industry average. This is due to significantly lower prices received for slaughter lambs, sheep and wool despite increased turn-off as seasonal conditions become drier. Average farm cash income for Australian slaughter lamb producing farms is projected to decrease from an average of \$172 000 per farm in 2011–12 to \$139 000 per farm in 2012–13, still around 13 per cent above the average for the 10 years ending 2012–13 in real terms.

Around 11 300 slaughter lamb producers earned more than 20 per cent of their total farm receipts from the sale of slaughter lambs in 2012–13. These businesses are classified as specialist slaughter lamb producers in this report. These farms generally have much smaller cropping and beef cattle enterprises than other slaughter lamb producing farms, resulting in a smaller overall scale of operations. As a result they have lower farm cash incomes, on average.

Farm cash income for specialist slaughter lamb producers (that is, farms more reliant on lambs) is projected to decline from an average of \$76 100 per farm in 2011–12 to \$62 000 per farm in 2012–13. If achieved this would be around 9 per cent below the average for the 10 years ending 2012–13 in real terms.

Farm business debt increased only slightly in 2011–12 and farm business equity ratios remained relatively high, averaging 87 per cent at 30 June 2012. Farm debt is expected to remain stable in 2012–13 and, combined with lower interest rates, is expected to lead to improvements in the debt servicing position of slaughter lamb producing farms. Nevertheless, the proportion of farm receipts needed to meet interest payments remains relatively high.

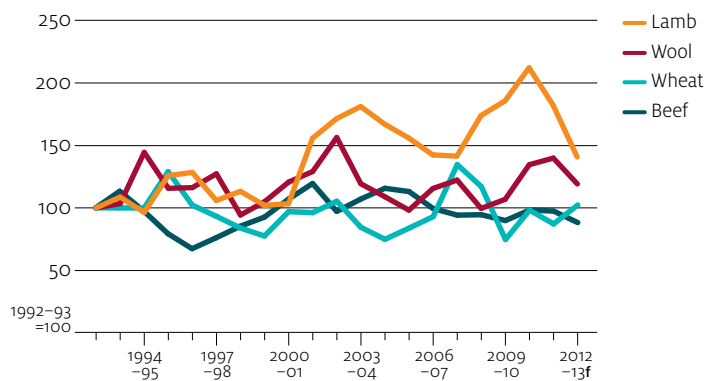
Australian slaughter lamb producers are estimated to be in an above average financial position in 2012–13. Improved seasonal conditions in 2010–11 and 2011–12 have resulted in increased sheep and lamb numbers. High farm cash incomes in these years have resulted in record investment in land, vehicles, plant, machinery and improvements in recent years. This should provide a basis to further increase farm productivity and, together with strong farm equity, underpin farm financial performance over the medium term despite dry seasonal conditions and lower prices in 2012–13.

# Chapter 1

## Introduction

The incentives for Australian farmers to increase production of slaughter lambs have been generally strong over the past decade as farmers have experienced much larger increases in prices for lambs relative to wool, beef cattle and wheat (Figure 1). Many sheep producers responded to these market signals by switching their focus from wool to meat production, particularly lamb meat production. However, this trend softened in 2012–13 due to significant falls in prices for slaughter lamb as lamb supply increased and drier seasonal conditions resulted in increased turn-off of lighter lambs.

**FIGURE 1** Index of real commodity prices

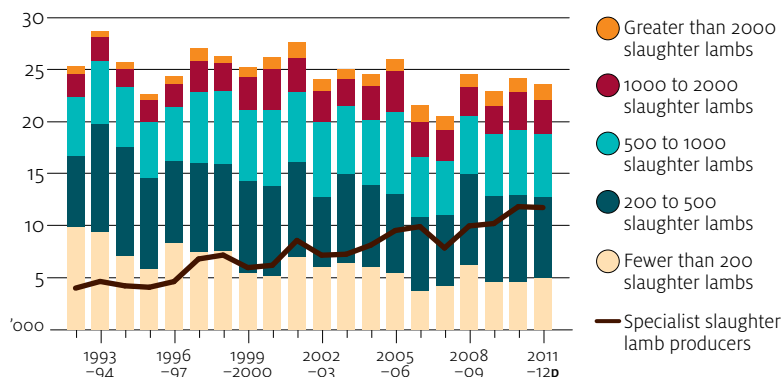


f ABARES forecast.  
Source: ABARES

The ABARES Australian Agricultural and Grazing Industries Survey (AAGIS) indicates that, while the overall number of farms that sold lambs for slaughter has generally decreased over the long term, declining by around 7 per cent in the 20 years ending 2011–12 to around 23 500, most of this reduction has been on farms that sold only a relatively small number of slaughter lambs (Figure 2). The number of farms that sold less than 200 lambs has declined by around 50 per cent. The number that sold between 200 and 500 has increased by 14 per cent. However, the number of slaughter lamb farms in large output categories has increased markedly, especially farms selling between 1000 and 2000 (up 55 per cent) and farms selling more than 2000 slaughter lambs (up 87 per cent).

The same period has seen a large increase in the number of farms that receive a substantial proportion of their receipts from the sale of slaughter lambs. The number of farms deriving more than 20 per cent of their receipts from the sale of slaughter lambs has increased by 193 per cent, from 4000 in 1992–93 to 11 800 in 2011–12 (Figure 2).

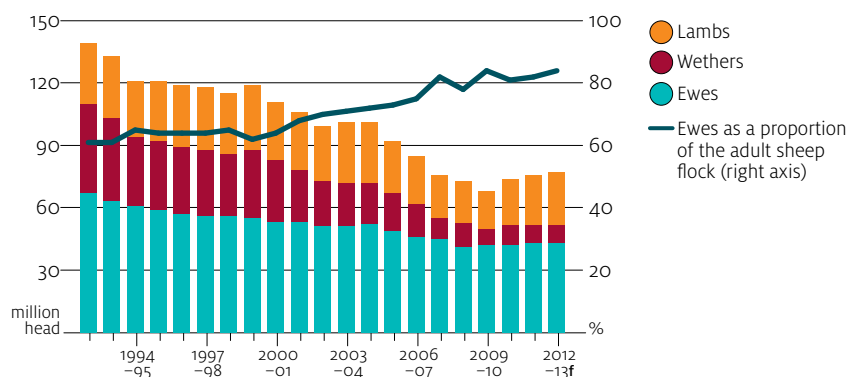
**FIGURE 2** Number of farms selling slaughter lambs



p Preliminary estimate.  
Source: ABARES

In the 10 years to 2009–10 total sheep numbers declined (Table 1 and Figure 3). The change in focus to lamb production led to a sharp decline of 23 per cent in the number of wethers in the Australian sheep flock (Figure 3) and a commensurate increase in the proportion of ewes. The proportion of ewes increased from around 62 per cent in 1999–2000 to around 82 per cent in 2011–12.

**FIGURE 3** Composition of the Australian sheep flock



f ABARES forecast.  
Source: Australian Bureau of Statistics

**TABLE 1** Sheep numbers and lamb production

	Sheep numbers	Lambs slaughtered b	Slaughter weight a	Lamb meat production ab	Lamb meat exports a
	million head	'000	kg/hd	kt	kt
2002–03	99	16 430	20.1	330	123
2003–04	101	16 675	20.4	340	131
2004–05	101	18 228	20.6	375	170
2005–06	91	19 483	20.5	400	176
2006–07	86	20 971	20.8	436	193
2007–08	77	19 970	20.4	407	179
2008–09	73	20 493	20.7	424	198
2009–10	68	18 609	21.6	402	186
2010–11	73	17 793	22.1	393	193
2011–12	76	20 009	22.2	443	222
	%	%	%	%	%
Percentage change between 2002–03 and 2011–12	–23	22	10	34	81

a Carcase weight. b Data from 2007 does not include farm kills.

Source: Australian Bureau of Statistics

The number of lambs slaughtered remained high relative to flock numbers, fluctuating between a high of almost 21 million in 2006–07 and a low of 16 million in 2002–03. The increased availability of slaughter lambs resulted in a 12 per cent increase in the number of lambs slaughtered between 2010–11 and 2011–12.

The increased focus on the production of lambs for meat resulted in a 10 per cent increase in average slaughter weight for lambs over the decade to 2011–12 and contributed to an increase of 34 per cent in total lamb meat production. This aided an increase in total lamb meat exports of 81 per cent between 2002–03 and 2011–12 (Table 1).

The extended run of historically high prices for sheep and lambs created an incentive for flock rebuilding. However, adverse seasonal conditions through much of the 2000s constrained moves to expand production during this period.

In 2009–10 the national sheep flock declined to its lowest level at around 68 million head. Following favourable seasonal conditions the national sheep flock reached 73 million head at 30 June 2011, an estimated 7 per cent increase over the previous year (ABS 2012). This was the first significant increase in the Australian sheep flock in over a decade. Increased slaughter in 2011–12 slowed restocking activity, resulting in sheep numbers increasing more slowly to around 76 million head. Most flock growth during 2011–12 was in wethers and lambs, as wethers were retained for wool production and the number of lambs marked increased, resulting in a small decline in the proportion of ewes in the national flock to 81 per cent (Figure 3).



## Slaughter lamb producers

To monitor changes in the production and financial performance of the Australian slaughter lamb industry, Meat & Livestock Australia (MLA) funds a range of surveys and analytical research. This report draws heavily on information obtained from the annual ABARES AAGIS, which is partly funded by MLA. Issues examined in this report include the financial performance of slaughter lamb producing farms, and recent investment by slaughter lamb producers in new capital to expand production and improve productivity.

Between 2009–10 and 2011–12 an average of around 23 600 broadacre farms sold lambs for slaughter (Table 2). Around 6 per cent of broadacre producers (1400 farms) each sold more than 2000 lambs per year for slaughter, accounting for 28 per cent of the gross value of broadacre slaughter lamb production. Around 20 per cent of producers sold fewer than 200 lambs for slaughter each year, just 3 per cent of the gross value of slaughter lamb production. On average, these businesses generated only around 6 per cent of their total farm cash receipts from the sale of slaughter lambs. They have therefore been excluded from this analysis of the lamb industry.

**TABLE 2** Distribution of broadacre farms selling lambs for slaughter, by number of slaughter lambs sold

	Average number of producers	Share of producers	Share of slaughter lambs sold	Share of slaughter lamb value of production
	no.	%	%	%
Fewer than 200 slaughter lambs	4 700	20	3	3
200–500 slaughter lambs	8 100	34	17	16
500–1000 slaughter lambs	6 100	26	26	26
1000–2000 slaughter lambs	3 200	14	26	27
Greater than 2000 slaughter lambs	1 400	6	28	28
All broadacre farms selling slaughter lambs	23 500	100	100	100

Note: Includes only broadacre farms with an estimated value of agricultural operations greater than \$40 000. Totals vary due to rounding.

Source: ABARES

An average of 18 800 broadacre farms sold more than 200 lambs for slaughter each year between 2009–10 and 2011–12. In this report these farms are classified as slaughter lamb producing farms.

To investigate the physical and financial characteristics of slaughter lamb producing farms of different scales surveyed by ABARES, farms have been classified into four groups based on the number of slaughter lambs sold:

- small-scale farms—200 to 500 lambs sold for slaughter
- medium-scale farms—500 to 1000 lambs sold for slaughter
- large-scale farms—1000 to 2000 lambs sold for slaughter
- very large-scale farms—more than 2000 lambs sold for slaughter.

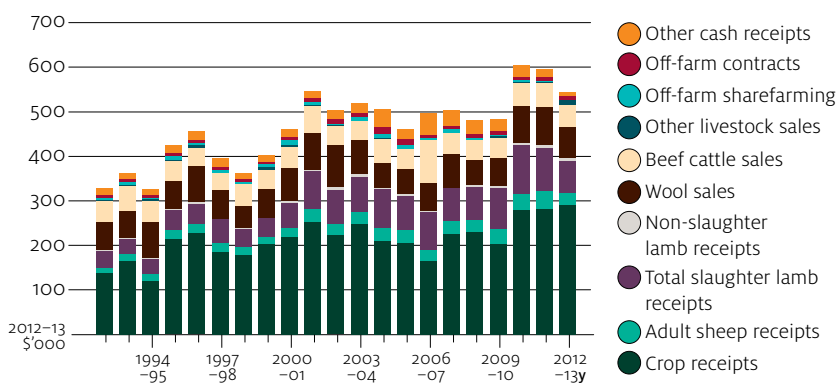
In this report slaughter lamb producing farms that sold more than 200 lambs for slaughter are classified as specialist slaughter lamb producers if they earned, on average, more than 20 per cent of farm receipts from the sale of lambs for slaughter in the three-year period ending in the current year. An average of 11 300 farms were classified as specialist slaughter lamb producers between 2009–10 and 2011–12. The proportion of producers classified as specialist slaughter lamb producers increased to average 48 per cent between 2009–10 and 2011–12, accounting for 65 per cent of the total value of slaughter lamb production.

## Chapter 2

# Characteristics of slaughter lamb producers

Broadacre slaughter lamb producers mostly operate diversified farm businesses, cropping and running beef cattle in addition to producing wool, sheep and lambs (Figure 4). On average, Australian slaughter lamb producers received 18 per cent of total farm cash receipts from the sale of slaughter lambs in the three years ending 2011–12, with 48 per cent of receipts coming from crop sales. The contribution of slaughter lambs to total farm cash receipts varied across states, at 22 per cent in Tasmania, 21 per cent each in Victoria and New South Wales, 13 per cent in Queensland and 11 per cent in Western Australia.

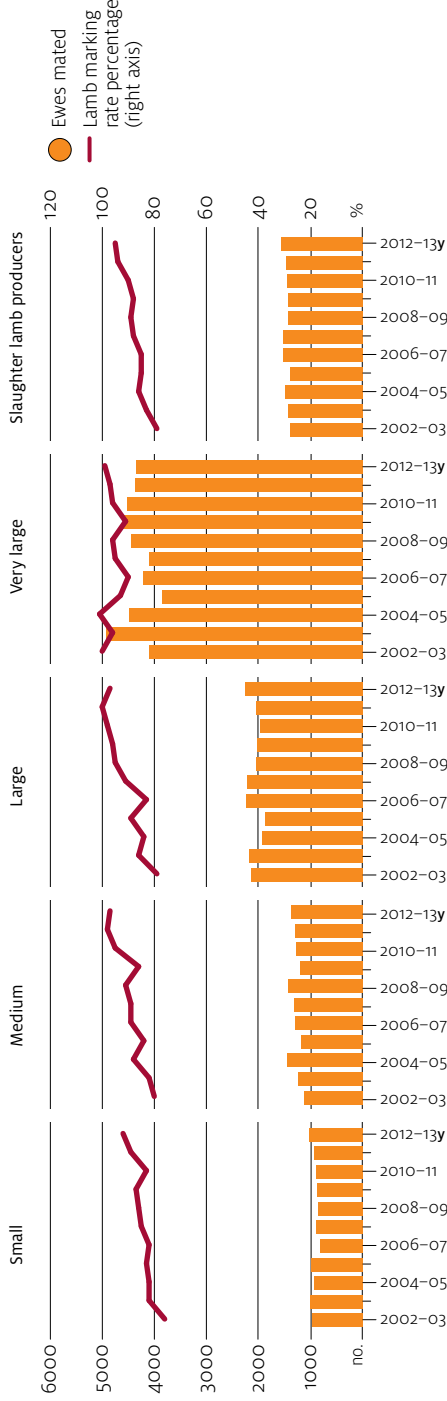
**FIGURE 4** Composition of receipts, slaughter lamb producers, Australia



y Provisional estimate.  
Source: ABARES

For a sheep and wool producer to place greater focus on slaughter lamb production, significant changes in flock demographics and management are required. Producers generally increase the proportion of ewes in their flock to maximise lamb production, thereby decreasing the proportion of wethers in order to free up resources (Table 3). Increased specialisation in lamb production is also reflected in an increase in the lambing rate (Figure 5).

**FIGURE 5** Number of ewes mated and lambing rate, by number of lambs sold for slaughter

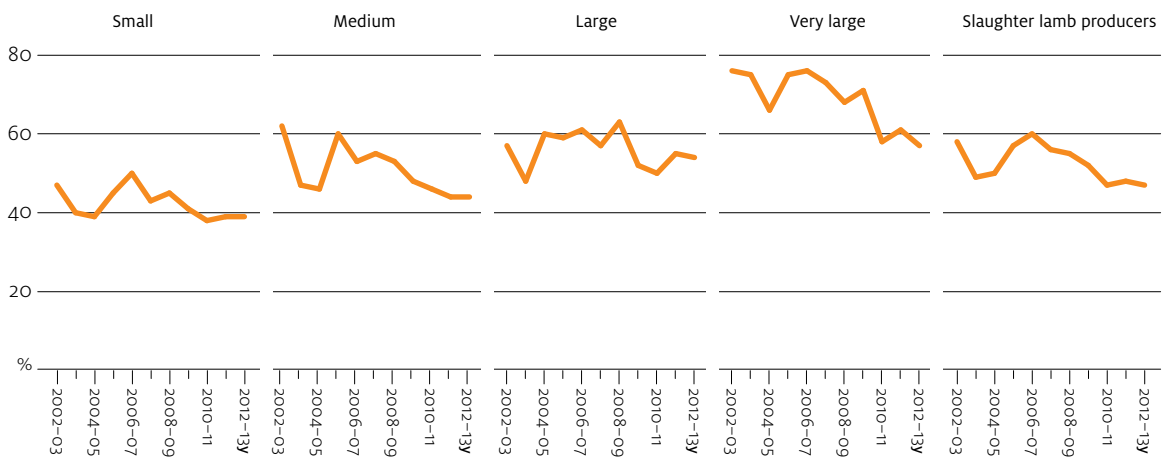


y Provisional estimate.  
Source: ABARES

The increased lambing rates reflect an increase in the use of non-merino, first cross ewes and specialty sheep meat breeds. First cross and specialty sheep meat breeds have a higher incidence of twinning. Increased use of improved pastures, fodder crops and supplementary feeding enhances ewe fertility and reduces lamb mortality rates.

In addition, sheep and lamb turn-off rates generally decrease while producers expand their flock (Figure 6). In the three years to 2011–12 very large-scale slaughter lamb producers’ turn-off rates averaged 67 per cent, while the rate for small-scale producers averaged 41 per cent. This is due to small producers’ greater focus on wool production than prime lamb production, which is also indicated by the higher proportion of wethers in their flocks (Figure 3).

**FIGURE 6** Sheep and lamb turn-off rate, by number of lambs sold for slaughter



y Provisional estimate.  
Source: ABARES

In the three years ending 2011–12 several other characteristics distinguished very large slaughter lamb producers. On average, very large producers had more than four times as many sheep as their small-scale counterparts, joined more than five times as many ewes and sold nine times as many lambs for slaughter (Table 3).

Very large-scale slaughter lamb producers, on average, realised a 9 per cent price premium in real terms, compared with the average for small slaughter lamb producers over this period, reflecting their production of lambs specifically bred and finished for slaughter.

One consequence of increasing the scale and specialisation of slaughter lamb production is a decline in wool quality. Wool quality is adversely affected by the greater focus on producing sheep with desirable meat traits rather than wool traits. In recent years this has resulted in larger-scale lamb producers realising a lower average price for wool. In the three years ending 2011–12 very large-scale slaughter lamb producers realised a 4 per cent lower average real price for wool than their small-scale counterparts. Specialist slaughter lamb producers realised a 7 per cent lower average real price for wool than the price received by all slaughter lamb producers (Table 3).

**TABLE 3** Physical characteristics, by number of lambs sold for slaughter, 2009–10 to 2011–12 average per farm

		Small	Medium	Large	Very large	Slaughter lamb producers	Specialist slaughter lamb producers
Area operated	ha	2 359	3 390	4 691	6 758	3 391	2 165
Area sown to crop	ha	447	721	832	1 167	651	242
Beef cattle at 30 June	no.	94	104	177	377	130	99
Sheep at 30 June	no.	1 780	2 381	3 700	7 450	2 689	2 365
– rams	%	1	2	2	1	1	1
– ewes	%	64	65	64	67	65	67
– wethers	%	7	5	4	3	6	4
– lambs	%	28	28	30	28	28	28
Ewes mated	no.	899	1 257	2 010	4 499	1 450	1 349
Lambs marked	no.	760	1 148	1 935	4 290	1 327	1 301
Lamb marking percentage	%	89	97	101	100	95	97
Adult sheep sold	no.	295	307	422	1 115	376	234
Total lambs sold	no.	386	756	1 457	3 612	908	1 046
– prime lambs	no.	206	438	920	2 436	555	713
– other lambs for slaughter	no.	148	269	450	978	295	307
– lambs not for slaughter	no.	31	49	87	198	58	25
Sheep and lambs shorn	no.	1 747	2 348	3 799	8 180	2 730	2 373
Wool production	kg	7 532	10 312	15 724	33 238	11 584	9 607
Wool cut per head shorn	kg/hd	4.3	4.3	4.0	4.0	4.2	4.1
<b>Average price received</b>							
Wool price	c/kg	616	585	565	588	595	552
Adult sheep price	\$/hd	101	102	111	97	103	101
Slaughter lamb price	\$/hd	107	112	120	117	112	114

Source: ABARES

## Chapter 3

# Slaughter lamb production

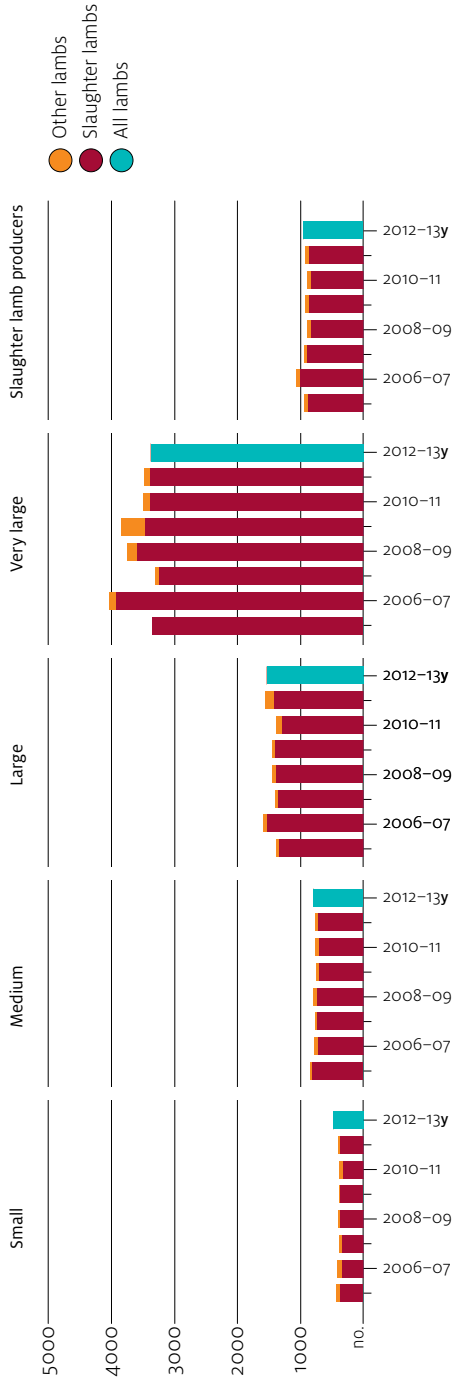
Turn-off rates for sheep and lambs peaked in 2006–07 (Figure 6) at the height of the drought in the eastern states. Since then the turn-off rate has trended downward as producers have attempted to rebuild sheep numbers. In 2011–12 the turn-off rate for slaughter lamb producers averaged 48 per cent, an increase on the 2010–11 rate of 47 per cent, which was the lowest turn-off rate since 1996–97. The average number of lambs sold increased by 3 per cent in 2011–12 and is estimated to increase by 4 per cent in 2012–13 (Table 4), driven by increased lamb numbers and drier seasonal conditions.

All states experienced above average rainfall in 2011–12 from late spring extending throughout the remainder of the year. This resulted in abundant pasture growth for most regions and led to an increase in the average lamb marking percentage and an increase in the number of lambs marked. The number of lambs marked increased by around 3 per cent and sheep numbers increased for producers at all scales of production (Table 4) in response to improved grazing conditions and relatively high lamb, sheep and wool prices.

Generally good seasonal conditions in the first half of 2012 resulted in increased matings, high lamb mating percentages and an increase in the number of lambs across all scales of production. Drier seasonal conditions for most slaughter lamb producers in 2012–13 resulted in reduced pasture availability compared with the much wetter years of 2010–11 and 2011–12. The number of slaughter lambs sold per farm is expected to increase by 4 per cent in 2012–13, on average, driven by an increase in lambs marked and increased turn-off of lambs and sheep in response to drier seasonal conditions. Drier conditions are estimated to have resulted in turn-off of less finished lower slaughter weight lambs.

The response of slaughter lamb producers for 2012–13 is expected to differ across scales of production, with small and medium-scale producers increasing their turn-off and large and very large producers reducing their turn-off (Figure 7). Turn-off of adult sheep is expected to increase by 6 per cent, on average, as producers slow the rate at which they rebuild their flocks and reduce stocking rates.

FIGURE 7 Lamb sales, by production group



y Provisional estimate.  
Source: ABARES



**TABLE 4** Selected physical characteristics, slaughter lamb industry, ranked by slaughter lamb sales average per farm

	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 crop ha	Change in beef cattle numbers %
		%	no.								
<b>Small</b>											
2010-11	2 286	4.2	885	745	84	280	375	327	431	11.5	
2011-12p	2 553	5.4	928	799	86	298	392	371	439	2.0	
2012-13y	2 789	5.5	1 031	947	92	286	479	na	481	-2.1	
<b>Medium</b>											
2010-11	3 084	4.9	1 275	1 164	91	305	762	707	683	-0.5	
2011-12p	3 733	8.8	1 295	1 225	95	273	761	712	740	5.4	
2012-13y	3 112	6.7	1 366	1 292	95	318	792	na	697	0.8	
<b>Large</b>											
2010-11	5 443	9.9	1 965	1 915	97	373	1 376	1 293	813	0.5	
2011-12p	4 358	4.8	2 045	2 020	99	483	1 553	1 424	773	4.5	
2012-13y	4 955	3.7	2 249	2 220	99	610	1 530	na	821	2.6	
<b>Very large</b>											
2010-11	6 759	9.3	4 521	4 371	97	730	3 494	3 389	1 014	10.4	
2011-12p	6 530	2.7	4 369	4 176	96	989	3 473	3 385	1 191	6.1	
2012-13y	6 852	6.0	4 352	4 295	99	844	3 376	na	1 120	3.9	
<b>All slaughter lamb producers</b>											
2010-11	3 423	6.7	1 449	1 334	92	335	889	829	622	5.7	
2011-12p	3 514	5.7	1 465	1 370	94	366	914	861	645	4.2	
2012-13y	3 520	5.5	1 563	1 493	96	387	949	na	654	1.1	
<b>Specialist slaughter lamb producers</b>											
2010-11	2 295	9.5	1 402	1 357	97	204	1 028	1 012	238	4.4	
2011-12p	2 146	5.8	1 348	1 321	98	261	1 017	992	193	5.8	
2012-13y	2 369	4.1	1 439	1 413	98	280	1 039	na	173	2.5	

p Preliminary estimate. y Provisional estimate.  
Source: ABARES

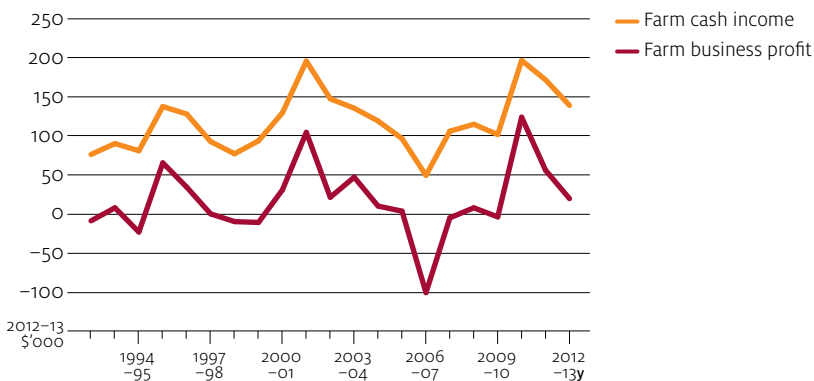
## Chapter 4

# Farm financial performance 2011–12 and 2012–13

### 2011–12

In 2011–12 the financial performance of slaughter lamb producers weakened slightly compared with record high performance in 2010–11, driven by an increase in farm costs and a decline in farm receipts. On average, farm cash income declined by 13 per cent compared with 2010–11, to \$172 010 per farm (Table 5). This was around 39 per cent above the average for the 10 years ending 2011–12 in real terms (Figure 8).

**FIGURE 8** Financial performance of slaughter lamb producers



y Provisional estimate.

Source: ABARES

Slaughter lamb producers' receipts from lamb sales decreased by around 6 per cent. This was despite an increase of 3 per cent in the number of lambs sold for slaughter, as average prices received for slaughter lambs decreased by 11 per cent compared with 2010–11 (Table 5). In contrast, average prices for non-slaughter lambs rose by 3 per cent, as strong restocker demand led to high saleyard prices. Receipts from adult sheep also increased by 1 per cent, driven by a 9 per cent increase in the number of adult sheep sold. Wool receipts increased by 3 per cent, driven by higher production. Beef cattle receipts rose by 6 per cent as turn-off increased.

**TABLE 5** Financial performance of slaughter lamb producers average per farm

		2010–11	2011–12p	2012–13y
<b>Physical</b>				
Area operated	ha	3 423	3 510 (12)	3 520
Area sown to crop	ha	622	650 (5)	650
Beef cattle at 30 June	no.	135	130 (9)	130
Sheep at 30 June	no.	2 707	2 750 (3)	2 920
Ewes mated	no.	1 449	1 460 (3)	1 560
Lambs marked	no.	1 334	1 370 (3)	1 490
Lamb marking percentage	%	92	94 (1)	96
Sheep and lamb turn-on rate	%	8	8 (13)	4
Sheep and lamb turn-off rate	%	47	48 (3)	47
Sheep sold	no.	335	370 (6)	390
Total lambs sold	no.	889	910 (4)	950
Slaughter lambs sold	no.	829	860 (4)	na
<b>Receipts</b>				
Sheep and lamb sales	\$	150 660	141 700 (4)	106 000
Adult sheep receipts	\$	38 780	39 200 (8)	26 000
Lamb receipts	\$	111 880	102 500 (4)	80 000
Slaughter lamb receipts	\$	105 330	96 500 (5)	na
Non-slaughter lamb receipts	\$	6 540	5 900 (20)	na
Crop receipts	\$	286 570	288 100 (6)	303 000
Wool sales	\$	81 690	84 000 (4)	68 000
Beef cattle sales	\$	52 930	55 900 (23)	52 000
Total cash receipts	\$	612 320	601 700 (4)	560 000
<b>Costs</b>				
Sheep and lamb purchases	\$	27 990	26 600 (10)	12 000
Fodder	\$	5 040	5 700 (12)	7 000
Fertiliser	\$	51 700	56 400 (5)	59 000
Sprays	\$	35 310	37 600 (6)	40 000
Fuel, oil and lubricants	\$	30 860	34 600 (4)	37 000
Repairs and maintenance	\$	35 540	38 500 (5)	42 000
Interest payments	\$	48 500	46 500 (6)	43 000
Hired labour	\$	12 890	15 000 (11)	17 000
Total cash costs	\$	415 600	429 700 (5)	421 000
<b>Farm capital and debt</b>				
Total capital value	\$	4 841 080	4 659 100 (4)	4 504 000
Farm debt	\$	646 730	676 700 (6)	679 700
Equity ratio	%	86	85 (1)	na
<b>Farm financial performance</b>				
Farm cash income	\$	196 710	172 000 (7)	139 000
Farm business profit	\$	124 190	56 400 (19)	20 000
Rate of return excluding capital appreciation	%	3.9	2.5 (9)	1.7
<b>Prices</b>				
Slaughter lamb price	\$/hd	127	112 (1)	na
Average lamb price	\$/hd	126	112 (1)	84
Population	no.	18 913	18 440	18 500

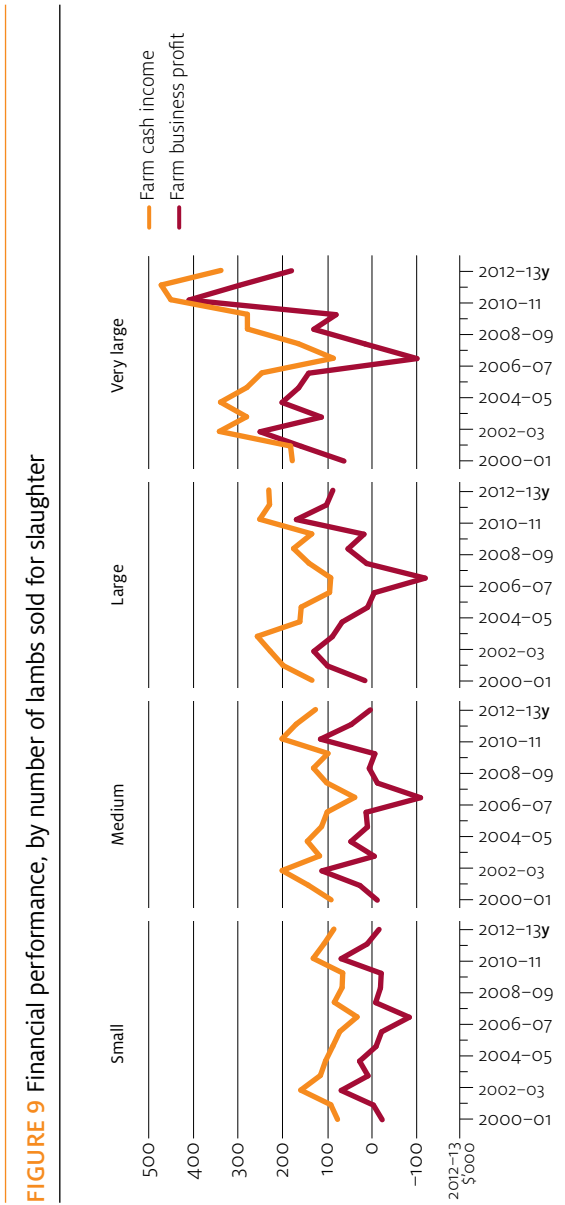
p Preliminary estimate. y Provisional estimate. na Not available.

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

Source: ABARES

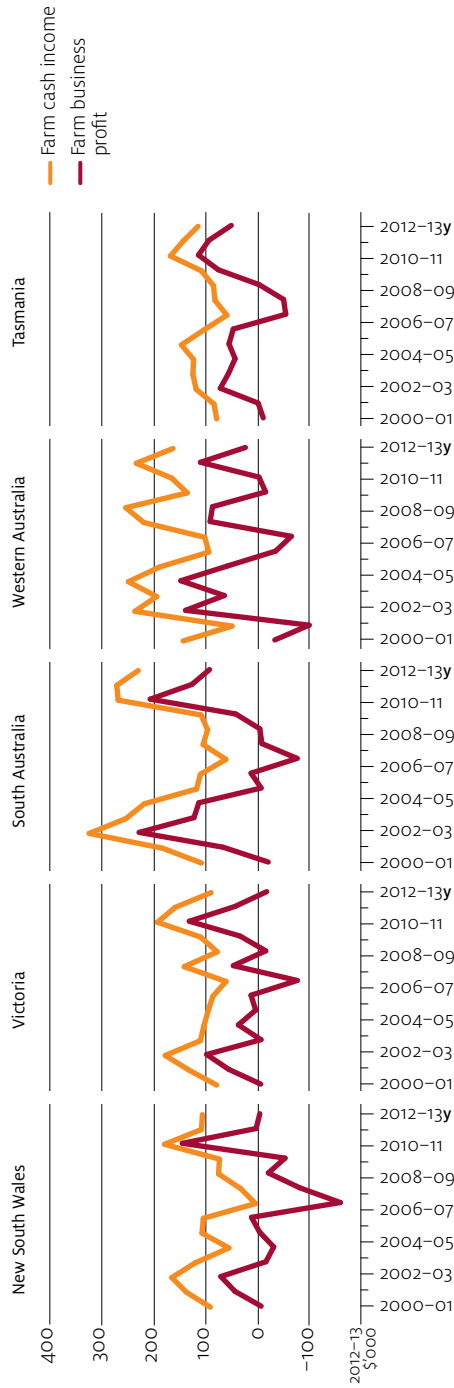
Growing conditions over winter and spring 2011–12 were generally favourable in the major winter cropping regions. Favourable conditions combined with an increase in area planted resulted in the largest total winter production on record. However, high production was offset by lower prices for most grains and oilseeds, resulting in crop receipts increasing by only 1 per cent to \$288 120. This was the highest average for crop receipts recorded by slaughter lamb producers in the past 10 years.

Farm financial performance declined for all scales of slaughter lamb production (Figure 9) and in all states, except South Australia and Western Australia (Figure 10).



y Provisional estimate.  
Source: ABARES

**FIGURE 10** Farm cash income, slaughter lamb producers, by state



y Provisional estimate.  
Source: ABARES

## 2012–13

In 2012–13 slaughter lamb producers' receipts from lamb sales are projected to decline by 22 per cent, to average \$80 000 per farm. An increase in the number of lambs expected to be sold will be more than offset by a reduction in average prices received for lambs (Table 5). In 2012–13 the average price for lambs sold for slaughter is expected to be 25 per cent lower due to lower priced lighter weight lambs and an increased number of lambs sold at less finished weights. Receipts from adult sheep are also expected to reduce due to lower prices and despite an increase in the number expected to be sold.

Although the 2012–13 grain harvest is expected to be smaller than the record set in 2011–12, slaughter lamb producers' crop receipts are expected to increase by 5 per cent, on average, due to higher grain prices. This is despite crop receipts decreasing in Victoria and Western Australia due to much drier seasonal conditions. By contrast, wool receipts are expected to decline in all states due to lower average prices for wool. With a relatively small increase in grain receipts compared with the decline in lamb, sheep and wool receipts, average total cash receipts for slaughter lamb producers are expected to decline by around 7 per cent.

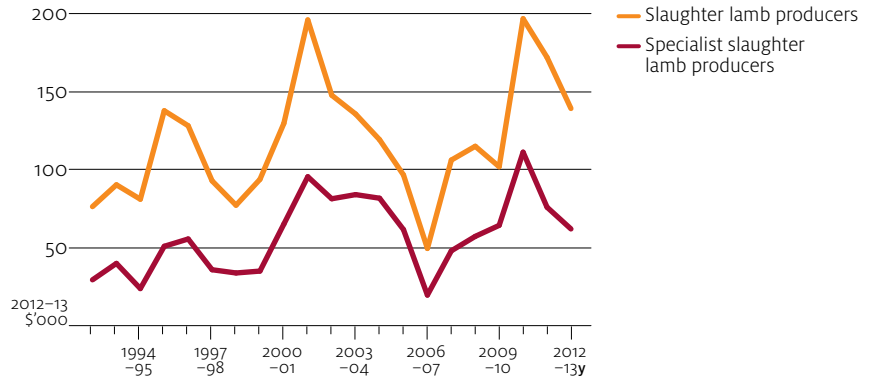
Increased expenditure on fodder, crop sprays, repairs, fertiliser, fuel, repairs and maintenance is expected to be offset by a reduction in expected expenditure on purchases of sheep and lambs, and interest payments. As a result, average farm cash costs are expected to decrease slightly compared with 2011–12.

Overall, the financial performance of slaughter lamb producing farms is forecast to weaken, on average. With farm cash receipts declining by around 7 per cent, and farm cash costs declining by only 2 per cent, farm cash income is expected to be reduced from an average of \$172 000 per farm in 2011–12 to average \$139 000 per farm in 2012–13. If achieved, this would still be around 13 per cent above the average for the 10 years ending 2012–13, in real terms.

A reduction in farm cash income and farm business profit is expected for all scales of slaughter lamb production (Table 9) in all states. New South Wales is expected to experience the smallest decline in farm cash income as a result of large increases in crop receipts compared with other states.

Farm cash income for specialist slaughter lamb producers is projected to decline to average \$62 000 per farm in 2012–13. This is 9 per cent below the average for the 10 years ending 2012–13, in real terms (Table 6 and Figure 11).

**FIGURE 11** Farm cash income, slaughter lamb producers and specialist slaughter lamb producers



y Provisional estimate.

Source: ABARES

Over the past three years, very large-scale producers have generated an average rate of return excluding capital appreciation of 4.3 per cent, large producers 3.2 per cent, medium producers 2.4 per cent and small producers 1.3 per cent (Table 8).

Very large-scale slaughter lamb producers are expected to continue to realise the highest rate of return excluding capital appreciation in 2012–13, averaging 3.3 per cent, compared with the average for all slaughter lamb producers of 1.7 per cent (Table 5).

**TABLE 6** Financial performance of specialist slaughter lamb producers average per farm

		2010–11	2011–12p		2012–13y
<b>Physical</b>					
Area operated	ha	2 295	2 150	(9)	2 370
Area sown to crop	ha	238	190	(12)	170
Beef cattle at 30 June	no.	101	100	(10)	100
Sheep at 30 June	no.	2 456	2 460	(4)	2 570
Ewes mated	no.	1 402	1 350	(5)	1 440
Lambs marked	no.	1 357	1 320	(5)	1 410
Lamb marking percentage	%	97	98	(1)	98
Sheep and lamb turn-on rate	%	9	8	(24)	5
Sheep and lamb turn-off rate	%	53	54	(5)	52
Sheep sold	no.	204	260	(9)	280
Total lambs sold	no.	1 028	1 020	(6)	1 040
Slaughter lambs sold	no.	1 012	990	(7)	na
<b>Receipts</b>					
Sheep and lamb sales	\$	155 180	141 800	(7)	107 000
Adult sheep receipts	\$	22 350	25 100	(11)	17 000
Lamb receipts	\$	132 830	116 700	(8)	90 000
Slaughter lamb receipts	\$	130 890	113 400	(8)	na
Non-slaughter lamb receipts	\$	1 950	3 300	(34)	na
Crop receipts	\$	86 970	61 200	(19)	76 000
Wool sales	\$	62 570	65 900	(6)	56 000
Beef cattle sales	\$	37 150	32 100	(11)	30 000
Total cash receipts	\$	364 500	317 700	(7)	285 000
<b>Costs</b>					
Sheep and lamb purchases	\$	30 080	28 200	(19)	12 000
Fodder	\$	4 740	5 300	(22)	5 000
Fertiliser	\$	22 590	23 400	(12)	24 000
Sprays	\$	11 890	11 100	(17)	12 000
Fuel, oil and lubricants	\$	16 770	16 400	(7)	17 000
Repairs and maintenance	\$	22 820	23 100	(8)	24 000
Interest payments	\$	26 530	23 800	(12)	20 000
Hired labour	\$	6 550	6 700	(17)	7 000
Total cash costs	\$	253 150	241 600	(8)	222 000
<b>Farm capital and debt</b>					
Total capital value	\$	3 552 730	3 227 100	(11)	2 954 000
Farm debt	\$	330 780	328 000	(12)	306 000
Equity ratio	%	90	90	(2)	na
<b>Farm financial performance</b>					
Farm cash income	\$	111 340	76 100	(13)	62 000
Farm business profit	\$	58 570	2 600	(330)	-24 000
Rate of return excluding capital appreciation	%	2.6	1.0	(27)	na
<b>Prices</b>					
Slaughter lamb price	\$/hd	129	114	(2)	na
Average lamb price	\$/hd	129	115	(2)	86
Population	no.	10 099	9 990		10 000

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



**TABLE 7** Financial performance of slaughter lamb producers, by state average per farm

	Farm cash income			Farm business profit			Rate of return excluding capital appreciation		
	2010–11	2011–12p	2012–13y	2010–11	2011–12p	2012–13y	2010–11	2011–12p	2012–13y
New South Wales	179 270	108 300 <sup>(16)</sup>	107 000	145 080	3 500	<sup>(453)</sup>	5.0	1.5 <sup>(25)</sup>	1.3
Victoria	192 830	158 900 <sup>(10)</sup>	90 000	131 730	43 900	<sup>(35)</sup>	3.9	2.2 <sup>(16)</sup>	0.7
South Australia	268 250	271 000 <sup>(12)</sup>	229 800	206 690	126 600	<sup>(20)</sup>	5.6	3.8 <sup>(13)</sup>	3.1
Western Australia	165 460	233 000 <sup>(14)</sup>	163 000	-1 950	110 300	<sup>(31)</sup>	1.4	3.0 <sup>(22)</sup>	1.7
Tasmania	167 860	143 600 <sup>(14)</sup>	115 000	114 150	93 900	<sup>(22)</sup>	3.2	2.9 <sup>(15)</sup>	1.9
Australia	196 710	172 000 <sup>(7)</sup>	139 000	124 190	56 400	<sup>(19)</sup>	3.9	2.5 <sup>(9)</sup>	1.7

<sup>p</sup> Preliminary estimate. <sup>y</sup> Provisional estimate.

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

Source: ABARES

**TABLE 8** Financial performance of slaughter lamb producers, by of slaughter lamb sales average per farm

	Small			Medium		
	2010–11	2011–12p	2012–13y	2010–11	2011–12p	2012–13y
<b>Receipts</b>						
Adult sheep receipts	\$ 30 640	32 100 (13)	21 000	37 210	32 000 (16)	20 000
Slaughter lamb receipts	\$ 38 430	38 200 (5)	na	87 180	77 800 (4)	na
Total lamb receipts	\$ 43 090	41 100 (5)	38 000	93 380	82 300 (4)	66 000
Slaughter lamb price	\$/hd 120	100 (2)	na	120	110 (2)	na
Average lamb price	\$/hd 110	100 (2)	80	120	110 (2)	80
Crop receipts	\$ 192 280	181 700 (10)	188 000	313 390	333 000 (12)	327 000
Wool sales	\$ 58 370	57 500 (8)	48 000	71 560	71 100 (6)	56 000
Beef cattle sales	\$ 33 760	33 400 (15)	30 000	35 840	29 200 (29)	31 000
Total cash receipts	\$ 394 210	368 600 (5)	346 000	587 710	574 400 (7)	527 000
<b>Costs</b>						
Sheep and lamb purchases	\$ 14 540	13 800 (19)	5 000	19 410	18 400 (14)	9 000
Fodder	\$ 2 430	2 800 (18)	6 000	2 850	4 400 (20)	5 000
Fertiliser	\$ 30 740	36 100 (9)	39 000	56 030	56 000 (11)	58 000
Sprays	\$ 23 970	25 000 (10)	27 000	34 080	40 300 (10)	42 000
Fuel, oil and lubricants	\$ 20 710	23 400 (7)	25 000	32 710	36 300 (7)	39 000
Repairs and maintenance	\$ 25 010	24 200 (9)	27 000	35 320	39 500 (8)	43 000
Interest payments	\$ 30 620	28 400 (11)	26 000	47 700	47 300 (13)	44 000
Hired labour	\$ 6 520	6 400 (21)	9 000	10 720	12 700 (14)	14 000
Total cash costs	\$ 263 270	262 100 (6)	261 000	386 850	405 300 (7)	401 000
<b>Financial Performance</b>						
Farm cash income	\$ 130 940	106 600 (11)	85 000	200 860	169 100 (12)	126 000
Farm business profit	\$ 68 370	10 400 (104)	-16 000	114 660	45 800 (43)	3 000
Rate of return –excluding capital appreciation	% 3.3	1.5 (22)	0.6	3.7	2.3 (21)	1.3

continued...

**TABLE 8** Financial performance of slaughter lamb producers, by scale of slaughter lamb sales  
average per farm *continued*

	Large			Very large		
	2010–11	2011–12 <sup>p</sup>	2012–13 <sup>y</sup>	2010–11	2011–12 <sup>p</sup>	2012–13 <sup>y</sup>
<b>Receipts</b>						
Adult sheep receipts	\$ 44 320	51 400	(17) 40 000	83 980	91 300	(20) 56 000
Slaughter lamb receipts	\$ 173 620	163 700	(7) na	437 920	401 800	(7) na
Total lamb receipts	\$ 183 530	178 000	(6) 134 000	448 800	413 130	(7) 294 000
Slaughter lamb price	\$/hd 130	110	(3) na	130	120	(3) na
Average lamb price	\$/hd 130	110	(3) 90	130	120	(3) 90
Crop receipts	\$ 381 340	371 300	(10) 443 000	493 460	543 300	(19) 585 000
Wool sales	\$ 97 780	111 800	(11) 102 000	238 990	251 900	(13) 168 000
Beef cattle sales	\$ 69 880	75 600	(25) 74 000	216 050	290 100	(39) 247 000
Total cash receipts	\$ 831 440	840 100	(6) 851 000	1 531 010	1 656 200	(12) 1 406 000
<b>Costs</b>						
Sheep and lamb purchases	\$ 44 440	44 800	(34) 21 000	112 090	106 000	(17) 51 000
Fodder	\$ 7 990	10 600	(25) 12 000	24 680	18 500	(30) 14 000
Fertiliser	\$ 72 580	85 200	(7) 94 000	106 490	116 900	(20) 109 000
Sprays	\$ 54 280	51 200	(11) 55 000	61 120	71 100	(19) 73 000
Fuel, oil and lubricants	\$ 42 240	45 300	(9) 48 000	55 010	71 400	(14) 72 000
Repairs and maintenance	\$ 45 980	54 600	(10) 62 000	75 410	86 000	(14) 88 000
Interest payments	\$ 67 870	64 500	(12) 61 000	113 680	114 400	(18) 105 000
Hired labour	\$ 16 530	21 300	(13) 26 000	54 930	66 900	(22) 68 000
Total cash costs	\$ 580 760	611 400	(9) 620 000	1 081 150	1 184 800	(13) 1 069 000
<b>Financial Performance</b>						
Farm cash income	\$ 250 690	228 700	(12) 230 000	449 860	471 400	(13) 338 000
Farm business profit	\$ 168 620	101 300	(22) 87 000	409 060	297 000	(20) 180 000
Rate of return						
–excluding capital appreciation	% 4.1	2.9	(24) 2.6	5.3	4.4	(12) 3.3

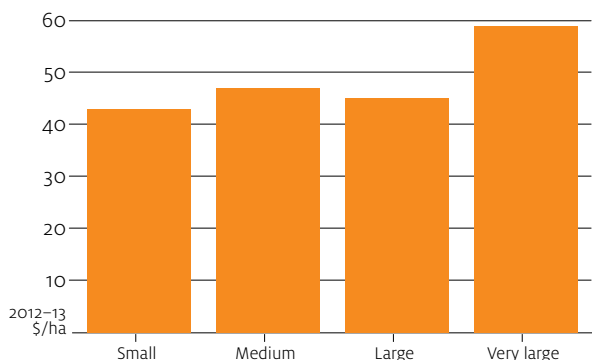
<sup>p</sup> Preliminary estimate. <sup>y</sup> Provisional estimate. **na** Not available.

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

Source: ABARES

Higher rates of return for larger-scale slaughter lamb producers mostly reflect higher average farm cash income per hectare, generated by larger-scale slaughter lamb producers. In the three years ending 2011–12, farm cash income averaged \$59 per hectare operated for very large-scale producers compared with \$43 per hectare for small-scale producers (Figure 12).

**FIGURE 12** Average farm cash income per hectare operated for slaughter lamb producers



Source: ABARES

## Grain finishing of lambs

In the three years to 2011–12, just over 5 per cent of slaughter lamb producers finished some lambs with grain and around 6 per cent of lambs sold for slaughter were finished on grain, according to estimates from the AAGIS. Further, the number of farms finishing lambs on grain declined in each of these three years. To gain an insight into the possible economic benefits of grain finishing lambs before sale, slaughter lamb producers in the AAGIS were classified into one of two groups, depending on their use of grain to finish lambs for sale during this period (Table 10).

Producers who used grain to finish lambs in the three years ending 2011–12 generally had a much higher proportion of their farm planted to grain crops. On average, 44 per cent of the farm area operated was planted to grain crops on farms grain finishing lambs, compared with an average of just 18 per cent for farms with no grain finishing. Western Australia had a relatively high proportion of farms grain finishing lambs.

On average, grain finishing farms fed grain to 911 lambs, or 76 per cent of the lambs sold, for an average of 50 days. These farms sold 1241 lambs in total, with around 97 per cent of lambs sold directly for slaughter over this period. By comparison, non-grain finishing farms sold an average of 889 lambs, of which 93 per cent were sold directly for slaughter. Producers who grain finished lambs realised an average price for lambs sold directly to slaughter of \$117 a head, compared with \$114 a head for producers who did not grain finish lambs for slaughter.

Farms grain finishing lambs had a higher sheep and lamb turn-on rate than farms that did not grain finish, but still not a high turn-on rate. This indicates that most lambs finished on grain were bred on-farm, but that some farms also purchased additional lambs for grain finishing.

**TABLE 9** Physical and financial performance indicators, by use of grain finishing for lambs, 2009–10 to 2011–12 average per farm

		Grain finishing of lambs	No. grain finishing of lambs
Estimated population of farms	no.	1 000	17 300
Share of farms	%	5	95
<b>Location of farms</b>			
Eastern states	%	59	83
Western Australia	%	41	17
<b>Physical</b>			
Area operated at 30 June	ha	2 712 (11)	3 430 (5)
Area sown to crop	no.	1 194 (10)	620 (2)
Sheep at 30 June	no.	2 709 (8)	2 688 (2)
Lambs marked	no.	1 338 (9)	1 327 (2)
Sheep and lamb turn-on rate	%	19 (27)	7 (6)
Sheep and lamb turn-off rate	%	57 (11)	49 (2)
Total lambs sold	no.	1 241 (15)	889 (2)
<b>Grain finishing</b>			
Lambs grain finished	no.	911 (18)	
Average length of grain finishing	days	50 (6)	
Proportion of lambs sold grain finished	%	76 (7)	
<b>Prices received</b>			
Adult sheep price	\$/hd	102 (7)	99 (2)
Slaughter lamb price	\$/hd	117 (4)	114 (1)
<b>Farm financial performance</b>			
Adult sheep receipts	\$	25 780 (15)	38 710 (5)
Lamb receipts	\$	144 600 (16)	100 580 (2)
Total cash receipts	\$	802 840 (13)	557 410 (2)
Sheep and lamb purchases	\$	48 210 (24)	24 090 (5)
Fodder cost	\$	7 510 (26)	5 440 (7)
Total cash costs	\$	655 130 (13)	398 640 (2)
Farm cash income	\$	147 710 (21)	158 770 (4)
Farm cash income per ha operated	\$	54 (19)	46 (6)
Farm business profit	\$	40 090 (64)	61 840 (9)
<b>Rate of return</b>			
–excluding capital appreciation	%	2.6 (17)	2.6 (5)

Note: Financial statistics are expressed in 2012–13 dollars. Figures in parentheses are standard errors expressed as a percentage of the estimate provided.

Source: ABARES

**TABLE 10** Physical and financial performance indicators of producers grain finishing lambs, by length of time on grain, 2009–10 to 2011–12 average per farm

		Less than 40 days		40 to 60 days		More than 60 days	
Estimated population of farms	no.	400		390		190	
Estimated number of lambs grain finished	'000	324		413		160	
Share of grain finished lambs	%	36		46		18	
<b>Physical</b>							
Area operated at 30 June	ha	2 728	(38)	2 632	(24)	2 840	(20)
Area sown to crop	no.	1 201	(62)	1 139	(29)	1 291	(17)
Sheep at 30 June	no.	2 708	(26)	2 802	(17)	2 521	(13)
Lambs marked	no.	1 311	(26)	1 388	(22)	1 291	(14)
Sheep and lamb turn-on rate	%	17	(56)	21	(52)	18	(29)
Sheep and lamb turn-off rate	%	54	(19)	59	(22)	57	(9)
Total lambs sold	no.	1 155	(31)	1 364	(30)	1 171	(11)
<b>Grain finishing lambs</b>							
Lambs grain finished	no.	805	(29)	1 059	(37)	832	(16)
Average length of grain finishing	days	26	(8)	53	(2)	93	(5)
Proportion of lambs grain finished	%	75	(16)	78	(13)	73	(12)
Slaughter lamb price	\$/hd	115	(5)	114	(6)	126	(4)
<b>Farm financial performance</b>							
Adult sheep receipts	\$	26 690	(34)	25 470	(40)	24 510	(23)
Lamb receipts	\$	133 280	(32)	154 920	(33)	147 390	(12)
Total cash receipts	\$	868 090	(44)	787 390	(21)	697 460	(10)
Sheep and lamb purchases	\$	42 810	(45)	55 120	(56)	45 520	(23)
Fodder cost	\$	4 520	(48)	9 400	(63)	9 950	(39)
Total cash costs	\$	677 490	(39)	669 340	(23)	579 430	(8)
Farm cash income	\$	190 590	(68)	118 050	(19)	118 030	(37)
Farm business profit	\$	67 630	(138)	18 270	(121)	26 690	(172)
Rate of return –excluding capital appreciation	%	2.8	(60)	2.3	(22)	3.1	(32)

Note: Financial statistics are expressed in 2012–13 dollars. Figures in parentheses are standard errors expressed as a percentage of the estimate provided.

Source: ABARES

Farms that used grain to finish lambs achieved slightly weaker farm financial performance, on average, in the three years ending 2011–12. Generally, grain finishing farms generated a slightly lower average farm cash income and a 35 per cent lower farm business profit. The rate of return was comparable between grain finishing and non-grain finishing producers at 2.6 per cent. However producers grain finishing lambs for slaughter achieved a significantly higher farm cash income per hectare, reflecting the higher contribution of crop receipts to total receipts.

To further explore these apparent benefits of grain finishing, slaughter lamb producers who grain finished lambs were divided into three groups, based on the average length of time lambs were fed:

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

Lambs finished on grain for 40 to 60 days represented the largest share (46 per cent). Lambs finished for less than 40 days accounted for 36 per cent of grain finished lambs and lambs finished for more than 60 days, 18 per cent (Table 10). Furthermore, farms grain finishing lambs for 40 to 60 days had a higher average sheep and lamb turn-on rate than farms in other groups. This may indicate that more farms in this group purchased additional lambs for grain finishing.

The financial performance of producers varied across the three grain finishing groups. Farms grain finishing lambs for less than 40 days achieved the strongest financial performance with farm cash income of \$190 590, on average. Farm cash income and farm business profit were stronger for these producers than for non-grain finishing producers. Farms grain finishing lambs for 40 to 60 days and more than 60 days achieved relatively weaker financial performance each with farm cash income of approximately \$118 000. Despite this, the highest rate of return of 3.1 per cent was achieved by farms grain finishing lambs for more than 60 days.

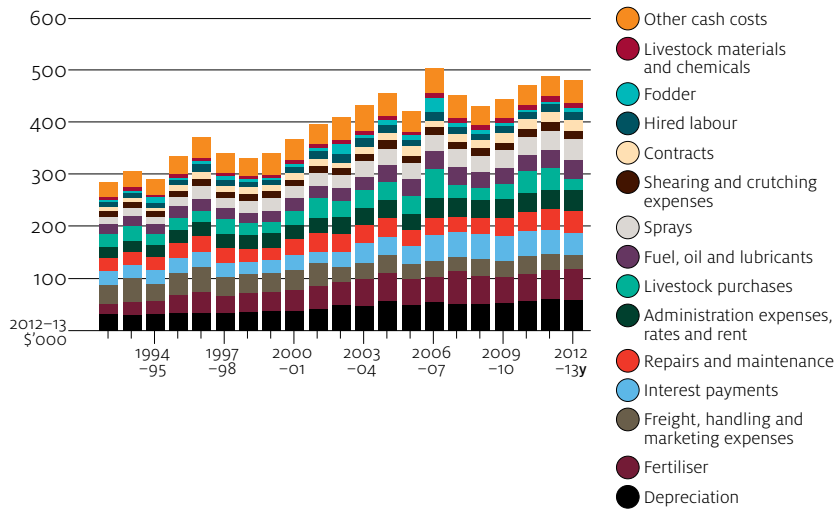
There was no significant difference in the average price received for lambs sold for slaughter between farms finishing lambs for less than 40 days and farms finishing lambs for 40 to 60 days. These prices were similar to the average price received by slaughter lamb producers who did not grain finish in the three years to 2010–11, suggesting that these producers mainly used grain to grow lambs to minimum acceptable sale weight, rather than using grain to produce heavier lambs. The average price received by producers who grain finished lambs for more than 60 days was significantly higher at \$126 a head, indicating that grain was used to grow heavier lambs.

## Farm costs

Average total farm cash costs for slaughter lamb producers rose by 71 per cent and depreciation on farm capital increased by 84 per cent over the 20 years from 1992–93 to 2011–12, in real terms (Figure 13). A large proportion of this increase is attributable to the rise in the average scale of operations of slaughter lamb producing farms. This rise was mostly due to an increase in the scale of cropping enterprises and changes in cropping technologies.

Further, the fastest rates of increase in farm expenditure have been for crop related items. In real terms, expenditure on fertiliser has increased at an annual rate of 5.6 per cent a year over the 20 years to 2011–12, crop spray expenditure by 5.4 per cent, contract expenditure by 4.9 per cent, depreciation on vehicles, plant and machinery by 3.1 per cent and fuel by 2.8 per cent. By contrast, the annual rate of growth in all other farm cash costs averaged 1.9 per cent a year. Included in these other cash costs is most livestock related expenditure, including shearing, veterinary chemicals and livestock materials, hired labour and livestock purchase expenditure.

**FIGURE 13** Farm costs, slaughter lamb producers, Australia



y Provisional estimate.  
Source: ABARES

## Farm investment

The capacity of producers to generate farm income will be influenced by both their past investments in additional 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 past decade, slaughter lamb producers have responded to rising lamb prices and improved financial performance by undertaking considerable new investments in land, plant and machinery. In 2011–12 new investment remained relatively high in historical terms.

The proportion of slaughter lamb producers buying land was unchanged in 2011–12 and remained relatively high in historical terms at almost 8 per cent (Figure 14). By contrast, only 5 per cent of general broadacre and dairy industry producers bought land in 2011–12 (ABARES 2013).

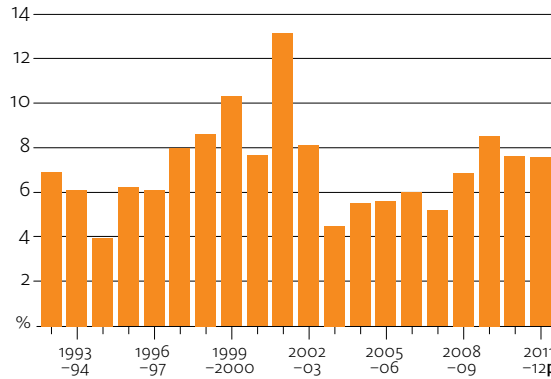
After steep rises in the value of land operated by slaughter lamb producers through the early and mid-2000s, reported land values levelled off and declined slightly in the high-rainfall and wheat–sheep zones over the five years to 2011–12 (Figure 14).

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.

Net investment in plant, vehicles, machinery and farm infrastructure for all scales of slaughter lamb producers has been historically high since 2007–08 (Figure 15). In this period, the largest increase in net investment was for large and very large producers.



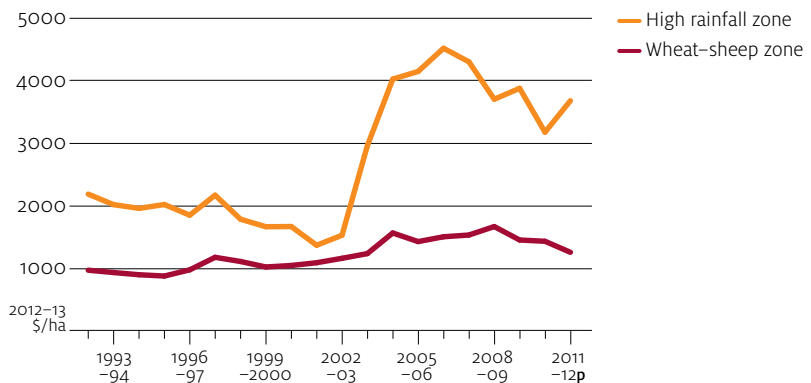
**FIGURE 14** Proportion of slaughter lamb producers purchasing land



p Preliminary estimate.  
Source: ABARES

In 2008–09 and 2009–10 investment in plant, machinery and farm infrastructure (such as buildings, irrigation systems, water supply structures and fencing) is likely to have been stimulated by the investment allowance offered to businesses that committed to investing in depreciating assets between 31 December 2008 and 31 December 2009. This was part of the Australian Government’s Nation Building and Jobs Plan to support economic activity during the global financial crisis. In 2010–11 and 2011–12 historically high farm cash incomes resulted in net investment in non-land capital remaining high.

**FIGURE 15** Land value per hectare for slaughter lamb farms, by zone



p Preliminary estimate.  
Source: ABARES

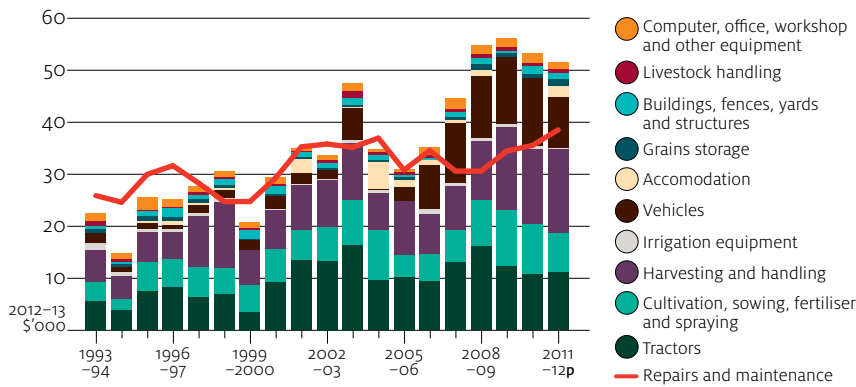
Net investment is the difference between the total value of plant, vehicles, machinery and farm infrastructure purchased and the total value of those items sold or disposed of. In addition to the acquisition of new capital items and the replacement of old items, farmers fund ongoing maintenance and repair of existing plant, vehicles, machinery and farm infrastructure. This expenditure is recorded in ABARES surveys as the cash cost of repairs and maintenance. A significant proportion of 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.

Much of the rising trend in real expenditure on net capital additions and repairs and maintenance over the past 23 years is due to an increase in the average scale of operations of slaughter lamb producing farms, increased production of crops and increased intensification of enterprises.

In the three years ending 2011–12, crop harvesting and handling equipment accounted for around 31 per cent of average total net capital additions for slaughter lamb producing farms; tractors accounted for 21 per cent, vehicles 19 per cent, cultivation, sowing and planting equipment 15 per cent, accommodation 4 per cent, grains storage and computing and workshop equipment both 3 per cent.

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. Since 2007–08 generally high real net capital additions have been augmented by an increase in expenditure on repairs and maintenance (Figure 16).

**FIGURE 16** Composition of net capital additions, slaughter lamb producers



p Preliminary estimate.  
Source: ABARES

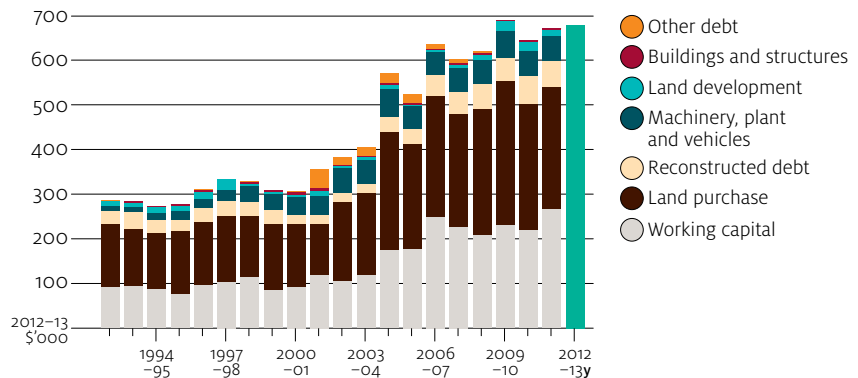
## Farm debt

Producers fund farm investment from their farm business cash flows by running down liquid assets, by utilising off-farm income or assets and by increasing farm business debt.

Average debt per farm business more than doubled between 2000–01 and 2009–10 in real terms, from an average of \$305 400 per farm in 2000–01 to \$690 700 in 2009–10. Several factors contributed to growth in debt over this period, including the effects of lower interest rates, increases in the size and scale of farm enterprises, changes in the financing packages offered to farmers, increased cropping and reduced farm cash incomes in the 2000s as a consequence of widespread and extended drought conditions. Since 2009–10 growth in debt has slowed with average debt per farm in 2011–12 of \$673 000 in real terms.

Increasing farm size and change in enterprise mix have been particularly important factors in debt increases for slaughter lamb producers. The largest contributor to increased farm debt over the past 20 years has been borrowing to fund the purchase of land. Debt to fund the purchase of land accounts for around 41 per cent of average farm debt in 2011–12 (Figure 17). Between 1991–92 and 2011–12 debt to fund the purchase of land increased by 95 per cent in real terms. However, borrowing to finance the purchase of machinery, plant and vehicles increased most over the past 20 years, rising 367 per cent since 1991–92 in real terms. Borrowing to fund farm buildings and structures increased by 192 per cent and borrowing to reconstruct debt increased by 94 per cent.

**FIGURE 17** Composition of farm business debt, slaughter lamb producers



y Provisional estimate.  
Source: ABARES

During the 2000s poor seasonal conditions depressed farm cash incomes in many regions and led to increased borrowing to meet working capital requirements. Working capital debt increased by 192 per cent between 1991–92 and 2011–12, in real terms, accelerating between 2002–03 and 2006–07 as a result of widespread drought.

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. Deregulation of grain markets also led to increased borrowing to provide working capital between grain harvests and construct grain storage. This, coupled with the move to more intensive cropping activities, has resulted in working capital debt as a proportion of total debt increasing from 27 per cent in 2002–03 to 40 per cent in 2011–12.

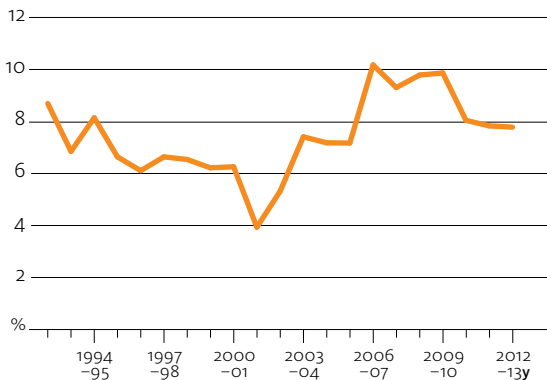
The proportion of reconstructed debt increased from around 5 per cent in 2002–03 to around 8 per cent in 2011–12. Reconstructed debt is mostly pre-existing debt incurred for a range of purposes that has been consolidated into longer term and, usually, lower interest rate loans.

Average debt for slaughter lamb producers increased to average \$673 000 per farm in 2011–12, and is projected to increase slightly by 1 per cent in 2012–13 (Figure 17).

### Debt servicing

Large increases in farm debt in the decade ending 2009–10 have resulted in a marked rise in the proportion of farm receipts required to fund interest payments. Further, this proportion has remained high despite lower interest rates since 2008–09. The reduction in interest payments exceeded the reduction in farm receipts in 2011–12, resulting in a slight fall in the proportion of farm receipts required to fund interest payments (Figure 18). This was despite an increase in total debt per farm. In 2012–13 the ratio of interest payments to farm receipts is projected to further reduce due to lower interest rates. Nevertheless, the proportion of farm receipts needed to meet interest payments is expected to remain relatively high, compared with those recorded historically (Figure 18).

**FIGURE 18** Ratio of interest to total cash receipts, slaughter lamb producers

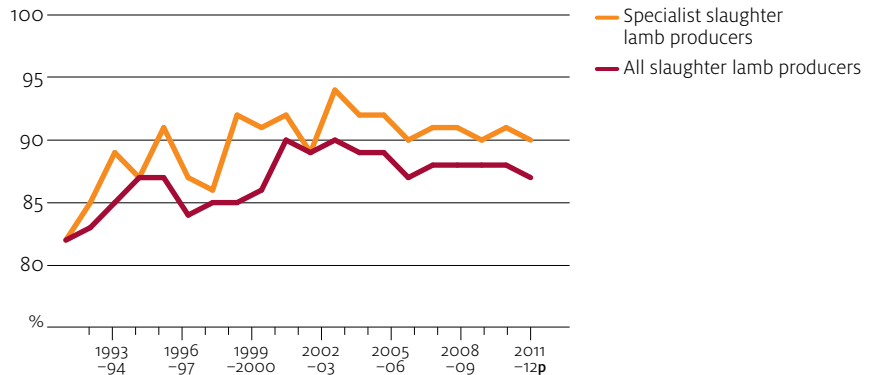


y Provisional estimate.  
Source: ABARES

## Farm equity

The rapid rise in land prices during the early 2000s resulted in increases in farm equity ratios (the proportion of farm capital owned). However, with a continued increase in farm debt in the period to 2011–12 and static or declining land values, some reduction in equity ratios has been recorded.

**FIGURE 19** Equity ratio, slaughter lamb producers



p Preliminary estimate.

Source: ABARES

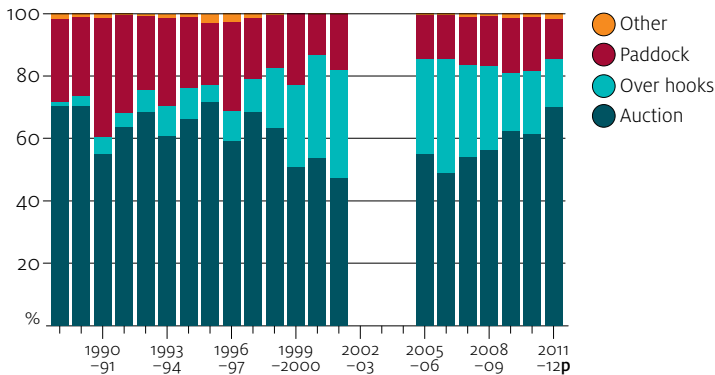
Historically, the average equity ratio for specialist slaughter lamb producers has been significantly higher than that for all slaughter lamb producers. Equity ratios for specialist slaughter lamb producers averaged 90 per cent at 30 June 2012. Average equity ratios for all slaughter lamb producers averaged 87 per cent at 30 June 2012, and were similar to those recorded in 2000, before the largest increases in land values occurred (Figure 19). Overall, equity ratios remain strong relative to long-term historical averages.

## Chapter 5

# Selling methods for adult sheep and lambs

The greater focus over the past decade on production of lambs specifically bred for slaughter and on better finishing of lambs before sale, has resulted in producers changing their method of sale (Figure 20). In the early 1990s almost all lambs sold by slaughter lamb producing farms were sold by auction or in the paddock. However, since the early 1990s the proportion of lambs sold over the hooks increased, on average, from less than 5 per cent to more than 30 per cent between 2001–02 and 2006–07. The past three years has seen the proportion of lambs sold over the hooks contract to average less than 20 per cent. The reduction since 2006–07 may be due to increased demand from restockers and finishers, leading to stronger auction markets.

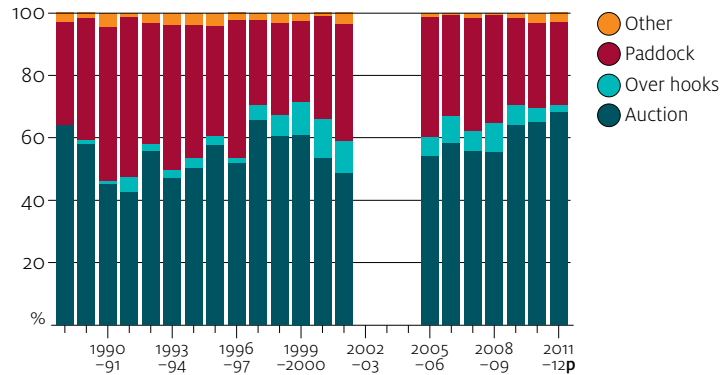
**FIGURE 20** Lamb selling methods, slaughter lamb producing farms



p Preliminary estimate.  
Source: ABARES

The increased use of specialised sheep breeds for meat production appears to have resulted in some changes in the method used to sell adult sheep (Figure 21). Historically, adult sheep have either been sold by auction or in the paddock. Although these methods of sale still dominate, during the late 1990s and most of the 2000s the proportion of adult sheep sold over the hooks increased modestly, but has since dropped away to around 3 per cent in 2011–12.

**FIGURE 21** Adult sheep selling methods, slaughter lamb producing farms



<sup>p</sup> Preliminary estimate.

Source: ABARES

Over the past three years, strong demand from restockers appears to have led producers to direct sheep to sale by auction and the proportion of sheep sold by auction rose to 68 per cent in 2011–12, the highest recorded in the past 20 years (Figure 21). The proportion of sheep sold in the paddock has decreased significantly in the past 20 years from around 40 per cent to 26 per cent.

# 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 information is widely used for research and analysis and forms the basis of many publications, briefing material and industry reports.

Two annual agricultural surveys currently undertaken are:

- Australian Agricultural and Grazing Industries Survey (AAGIS)
- Australian Dairy Industry Survey (ADIS).

## 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 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.

ADIS covers farms that are engaged in dairying.



## 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.

The population for ADIS is a list of dairy farms that have paid levies based on their milk deliveries, sourced from the Department of Agriculture, Fisheries and Forestry. This list is provided by Dairy Australia and consists of dairy businesses with their corresponding region and total milk production. The design measure for ADIS is total milk production for each dairy business on the frame.

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). Before 1986–87 the survey included establishments with an EVAO of \$10 000 or more. Between 1987–88 and 1991–92, the survey included establishments with an EVAO of \$20 000 or more. Between 1991–92 and 2003–04 the survey included establishments with an EVAO of \$22 500 or more. Since 2004–05 ABARES farm surveys have included establishments classified as having an EVAO of \$40 000 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 1600 farms and for ADIS around 300.

The main method of collection for both surveys is face-to-face interviews with the owner–manager of the farm. Detailed physical and financial information is collected on the operations of the farm business during the preceding financial year. Respondents to the AAGIS and ADIS 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 ABS estimates from data collected from Agricultural Census and Surveys.

The weighting methodology for AAGIS and ADIS 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.

For ADIS, the benchmark variables provided by Dairy Australia are:

- total number of in-scope dairy farms
- total milk production.

Generally, larger farms have smaller weights and smaller farms have larger weights. This reflects both the strategy of sampling a higher fraction of the large 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 2010–11 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 2011–12 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 2012–13 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, which 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 \$6000. 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 \$6000).

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:

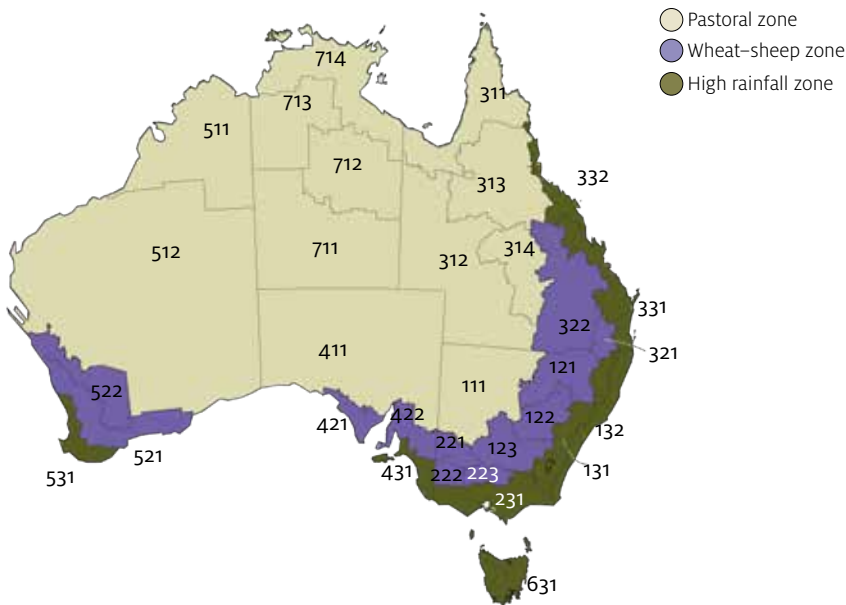
$$\$25\,000 \pm 1.96 \times \$9605 = (\$6174, \$43\,826)$$

Hence, if a large number (toward infinity) of different samples are taken, in approximately 95 per cent of them the difference between these two estimates will lie between \$6174 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 and dairy statistics are also available by region. These regions represent the finest level of geographical aggregation from which reliable estimates can be produced (Map 1).

Map 1 Australian broadacre zones and regions

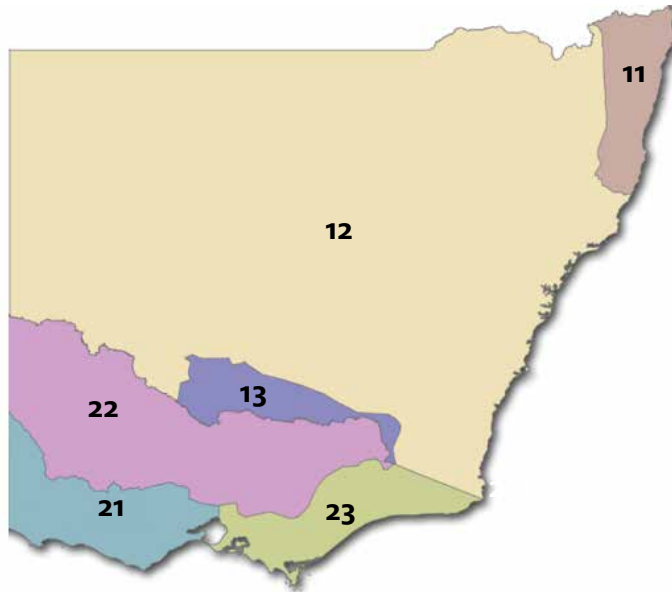


Note: Each region is identified by a unique code of three digits. The first digit identifies the state or territory, the second digit identifies the zone and the third digit identifies the region.

Source: ABARES

For states other than New South Wales and Victoria, the Australian Dairy Industry Survey regions comprise the entire state (Map 2).

**Map 2** Australian Dairy Industry Survey regions



Note: New South Wales and Victoria are divided into multiple regions. These regions are identified by a unique two digit code. The first digit identifies the state and the second digit identifies the region within the state.  
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.
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### Physical items

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.
Sheep and lamb turn-off rate	Proportion of average sheep and lamb numbers sold during the financial year
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.

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### Financial items

Capital	<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>
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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>

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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 levies for farm produce sold.</p> <p>Administration costs include accountancy fees, banking and legal expenses, postage, stationery, subscriptions and telephone.</p> <p>Contracts paid refers to expenditure on contracts such as harvesting. Capital and land development contracts are not included.</p> <p>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.</p>
Total cash receipts	<p>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.</p>

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## Financial performance measures

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Build-up in trading stocks	<p>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.</p>
Depreciation of farm improvements, plant and equipment	<p>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.</p>
Farm business equity	<p>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.</p>

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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 cost	Payments for owner–manager and family labour may bear little relationship to the actual work input. An estimate of the labour input of 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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## Further information on lamb producers

### **Farm survey data for the beef, lamb and sheep industries**

[abares.win.hostaway.net.au/AME/mla/mla.asp](http://abares.win.hostaway.net.au/AME/mla/mla.asp)

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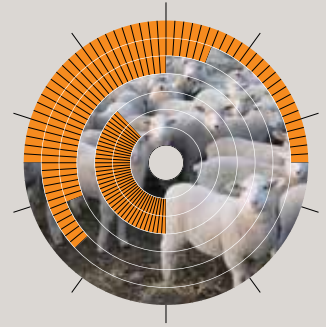
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### The 'Biosphere' graphic element

The biosphere is a key part of the department's visual identity. Individual biospheres are used to visually describe the diverse nature of the work we do as a department, in Australia and internationally.



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