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Australian lamb

Financial performance of slaughter lamb producing farms

2008–09 to 2010–11

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Contents

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- Around 19 240 Australian broadacre farms are classified as slaughter lamb producers in this report (those farms that sold more than 200 lambs for slaughter in 2009–10). 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.
- In 2010–11, the average financial performance of slaughter lamb producing farms is projected to increase markedly due to higher lamb, grain, wool and beef cattle prices together with increased crop and livestock production resulting from above average seasonal conditions in eastern states. Farm cash income for slaughter lamb producers is projected to increase from an average of $90 070 a farm in 2009–10 to $133 700 a farm in 2010–11.
- Around 9400 slaughter lamb producers earn more than 20 per cent of their total farm receipts from the sale of slaughter lambs and are classified as specialist slaughter lamb producers in this report. These farms have much smaller cropping and beef cattle enterprises than other slaughter lamb producing farms resulting in a smaller overall scale of operations. As a consequence they generally 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 increase from an average of $59 520 a farm in 2009–10 to $98 600 a farm in 2010–11. If achieved this would be the highest farm cash income recorded for specialist slaughter lamb producers in the past 22 years, in real terms.
- In 2008–09 and 2009–10, new investment by slaughter lamb producers was the highest recorded in the past 22 years. Most new investment in 2008–09 and 2009–10 was in machinery, vehicles, plant and farm improvements.
- Overall, slaughter lamb producers had strong farm equity at 30 June 2010, with farm equity ratio averaging 85 per cent.
- Although farm business debt from slaughter lamb producers increased in 2008–09 and 2009–10, the rate of increase slowed compared with the situation in the early and mid 2000s. However, rising farm debt has meant that the proportion of farm receipts required to meet interest payments remains relatively high.
- Around 9 per cent of slaughter lamb producers finished slaughter lambs on grain in the three years to 2009–10.

Introduction

Over the past decade, Australian lamb producers have been experiencing historically higher prices for lambs relative to wool, beef cattle and wheat. This is the result of the combined effects of strong growth in international demand for Australian lamb meat and constrained supplies because of falling sheep numbers and adverse seasonal conditions (figure 1). At the same time, wool prices have remained at relatively low levels, despite a sharp contraction in wool production.

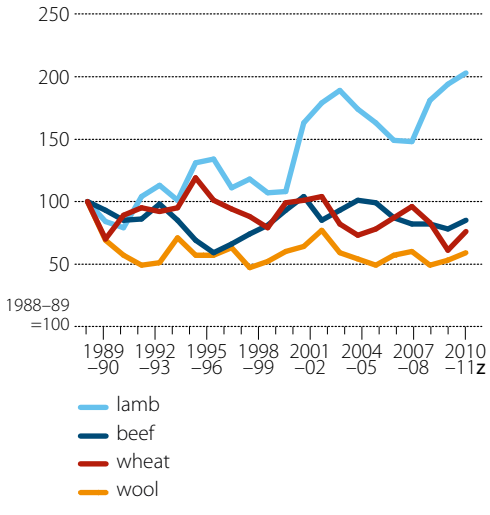
Many sheep producers have responded to these market signals by switching their focus from wool to meat production, particularly lamb meat. As a result there has been a sharp decline in the number of wethers in the Australian sheep flock (figure 2) and a commensurate increase in the proportion of ewes. The proportion of ewes has increased from around 55 per cent in 1989–90 to around 84 per cent in 2009–10.

With the change in focus, many existing slaughter lamb producers have expanded their scale of lamb production. The change in the relative profitability of lamb and wool production has also led many previously mainly wool producing sheep farms to commence slaughter lamb production.

The ABARES Australian Agricultural and Grazing Industries Survey (AAGIS) indicates that, while the overall number of farms that sold lambs for slaughter has decreased by 6 per cent during the 15 years to 2009–10 (figure 3), most of this reduction has been on farms that sold only a relatively small number of slaughter lambs. The number of farms that sold less than 200 lambs has declined by 28 per cent. The number that sold between 200 and 500 has also declined, by 16 per cent. Over this period, however, the number of slaughter lamb farms of all other scales has increased markedly, especially the farms selling more than 2000 slaughter lambs (up 130 per cent) and farms selling between 1000 and 2000 (up 30 per cent).

Over the same period there has been 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 140 per cent from 4300 in 1995–96 to 10 500 in 2009–10.

1 Index of real commodity prices



z Provisional estimate.

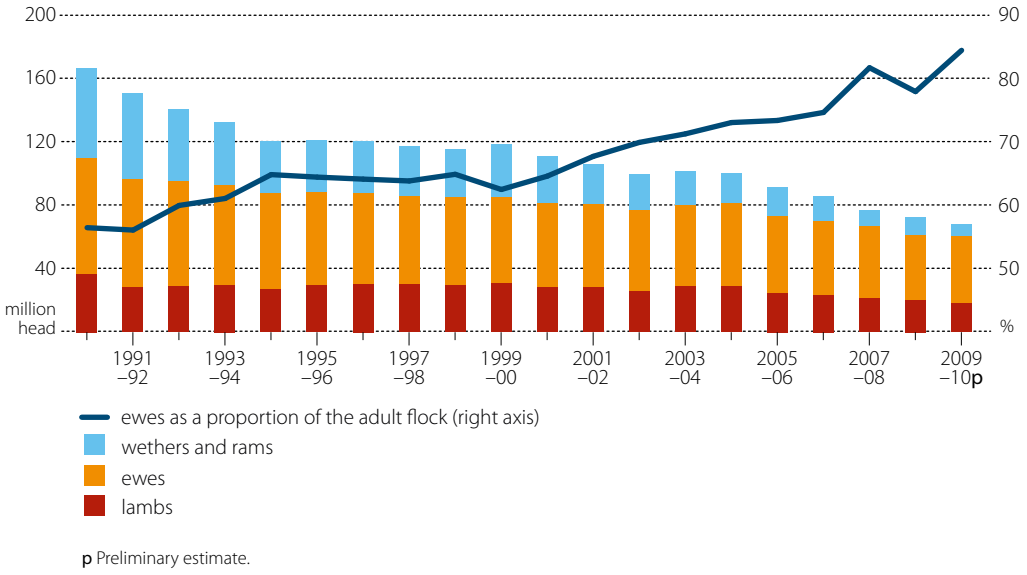
Total sheep numbers declined by 43 per cent over the decade to 2010 (table 1). The number of lambs slaughtered has remained high relative to flock numbers over this period, fluctuating between a high of almost 21 million in 2007 and a low of 16 million in 2003. In 2010, the number of lambs slaughtered was 18.6 million, around 4 per cent above slaughter numbers a decade earlier in 2001.

1 Sheep numbers and lamb production

	sheep numbers million head	lambs slaughtered b '000	slaughter weight a kg/hd	lamb meat production ab kt	lamb meat exports a kt
2001	111	17 897	19.7	353	125
2002	106	17 086	19.8	338	116
2003	99	16 430	20.1	330	123
2004	101	16 675	20.4	340	131
2005	101	18 228	20.6	375	170
2006	91	19 483	20.5	400	176
2007	86	20 971	20.8	436	193
2008	77	19 970	20.4	407	179
2009	73	20 493	20.7	424	198
2010	68	18 609	21.6	402	186
Percentage change between 2001 and 2010	% –39	% 4	% 10	% 14	% 49

a Carcass weight. **b** Data from 2007 do not include farm kills.
Source: ABS.

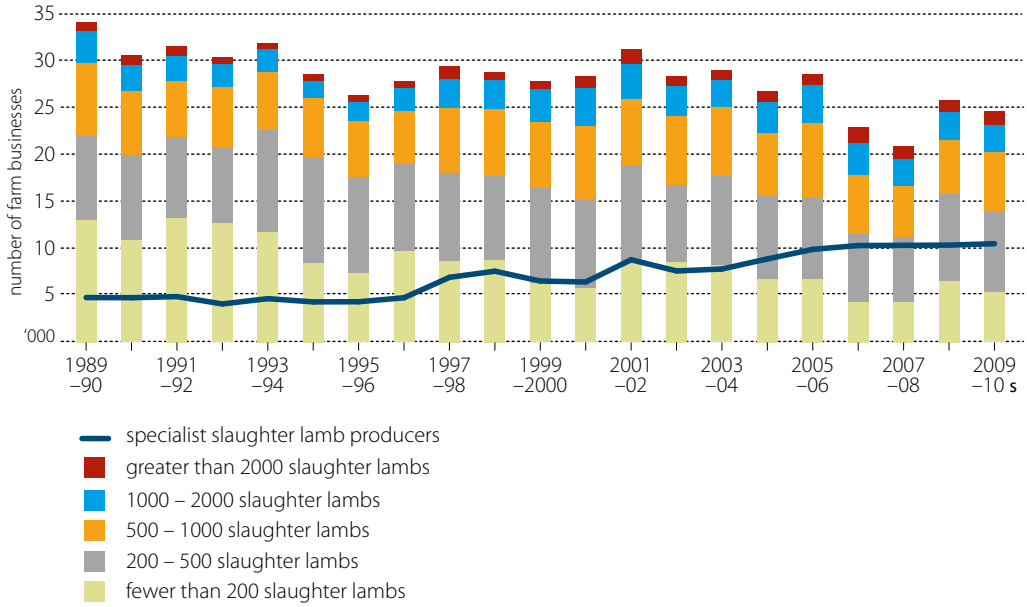
2 Composition of the Australian sheep flock



p Preliminary estimate.

Source: ABS

3 Number of slaughter lamb producing farms



While there has not been a large change in the number of lambs slaughtered between 2001 and 2010, the increased focus on production of lambs for meat has resulted in a 10 per cent inrease in average slaughter weight for lambs and has been the main contributor to an increase of 14 per cent in total lamb meat production. This aided an increase in total lamb meat exports of 49 per cent between 2001 and 2010 (table 1).

In order to monitor 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 the information obtained from the annual ABARES AAGIS that is partly funded by MLA. Issues examined in this report include the financial performance of farms that grain finish lambs, as well as the capacity of slaughter lamb producers to continue to invest in new capital to expand production and improve productivity.

For the purposes of this report, broadacre farms are classified as being slaughter lamb producing farms if they sold an average of more than 200 lambs for slaughter in the three-year period ending in the current year.

Slaughter lamb producing farms 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. Non-specialist producers are classified as slaughter lamb producing farmers who earn, on average, less than 20 per cent of farm receipts from slaughter lamb sales.

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.

Between 2005–06 and 2009–10, an average of around 24 600 broadacre farms sold lambs for slaughter (table 2). This included 6 per cent of broadacre producers (1400) farms that each sold more than 2000 lambs per year for slaughter and accounted for 29 per cent of the gross value of broadacre slaughter lamb production in this period. At the other extreme, around 22 per cent of producers sold fewer than 200 lambs for slaughter each year, which represented just 3 per cent of the gross value of slaughter lamb production. Given that, on average, these businesses generated only around 3 per cent of their total farm cash receipts from the sale of slaughter lambs, they have been excluded from this analysis of the lamb industry.

An average of 10 300 farms were classified as specialist slaughter lamb producers between 2005–06 and 2009–10, or 42 per cent of slaughter lamb producing farms.

2 Distribution of broadacre slaughter lamb producing farms, 2005–06 to 2009–10, by number of slaughter lambs sold

	number of producers	share of producers	share of slaughter lambs sold	share of slaughter lamb value of production
	no.	%	%	%
Fewer than 200 slaughter lambs	5 400	22	3	3
200 – 500 slaughter lambs	8 100	33	15	15
500 – 1000 slaughter lambs	6 300	26	26	26
1000 – 2000 slaughter lambs	3 300	13	26	27
Greater than 2000 slaughter lambs	1 400	6	29	29
All broadacre slaughter lamb producers	24 600	100	100	100

Characteristics of slaughter lamb producers

Broadacre slaughter lamb producers generally operate diversified farm businesses, undertaking cropping and running beef cattle in addition to producing wool, sheep and lambs. 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, and thereby decrease the proportion of wethers to free up resources (table 3). Increased specialisation in lamb production is also reflected in an increase in the proportion of ewes mated and the lambing rate (figure 4). 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 increase as producers expand their production of lambs to be sold for slaughter (figure 5). In the 10 years to 2010–11, the very large scale slaughter lamb producers' turn-off rate averaged 70 per cent, while the rate for small scale producers averaged 41 per cent.

Between 2002–03 and 2009–10, a number of other characteristics distinguished the very large slaughter lamb producers. Apart from, on average, having more than four times as many sheep as their small scale counterparts (table 3), very large producers joined more than five times as many ewes and sold almost 10 times as many lambs for slaughter. Further, very large scale slaughter lamb producers, on average, realised a 3 per cent price premium in real terms compared with the average for all slaughter lamb producers over this period, reflecting their production of lambs specifically bred and finished for slaughter.

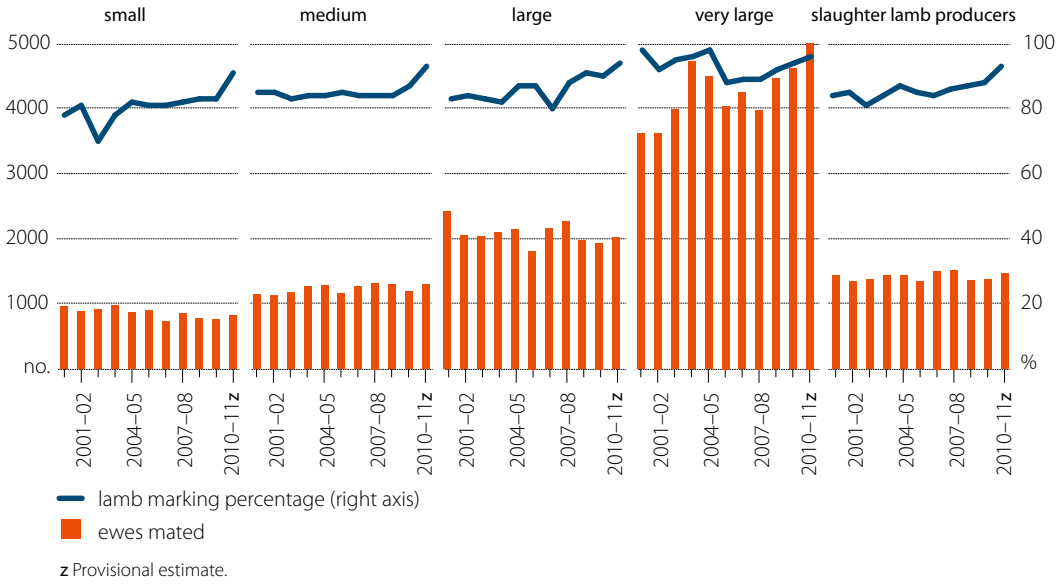
3 Physical characteristics, 2002-03 to 2009-10, by number of lambs sold for slaughter

average per farm

		small	medium	large	very large	slaughter lamb producers
Area operated	ha	1 758	3 063	3 544	6 163	2 795
Area sown to crops	ha	435	608	803	902	586
Beef cattle at 30 June	no.	87	100	161	331	120
Sheep at 30 June	no.	1 696	2 273	3 635	7 042	2 576
– rams	%	1	1	1	1	1
– ewes	%	44	47	51	52	48
– wethers	%	12	8	7	5	8
– lambs	%	20	21	23	20	21
Ewes mated	no.	844	1 245	2 045	4 401	1 421
Lambs marked	no.	683	1 062	1 773	4 091	1 224
Lamb marking percentage	%	81	85	87	93	86
Adult sheep sold	no.	319	438	647	1 134	469
Total lambs sold	no.	358	726	1 356	3 564	867
– prime lambs	no.	176	353	805	2 164	475
– other lambs for slaughter	no.	95	220	363	834	232
– lambs not for slaughter	no.	38	71	50	124	57
Sheep and lambs shorn	no.	1 791	2 455	3 879	8 165	2 796
Wool production	kg	7 836	10 533	16 582	32 765	11 894
Wool cut per head shorn	kg/hd	4.4	4.3	4.3	4.0	4.3
Average price received						
Wool	c/kg	602	570	565	525	569
Adult sheep	$/hd	71	64	62	63	66
Slaughter lambs	$/hd	83	84	88	90	87

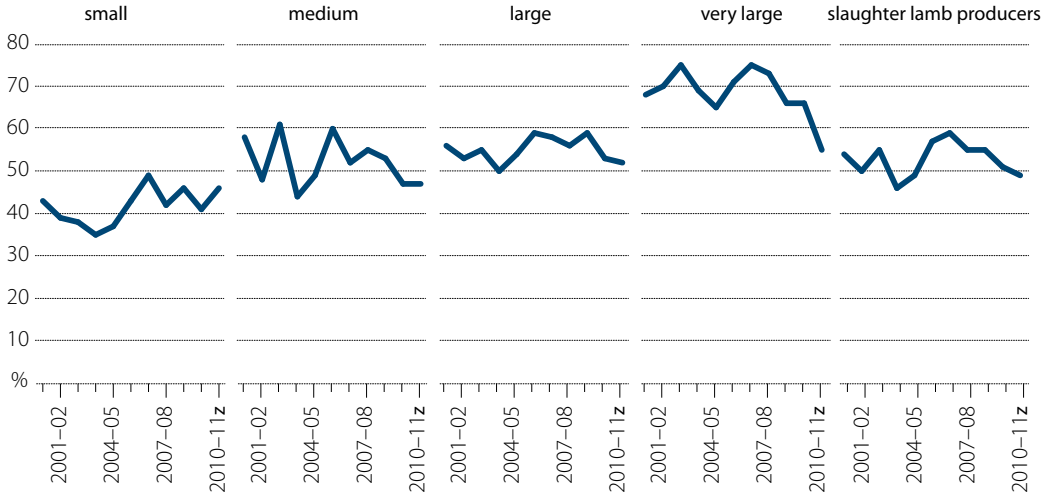
4 Number of ewes mated and lambing rate, by number of lambs sold for slaughter

average per farm



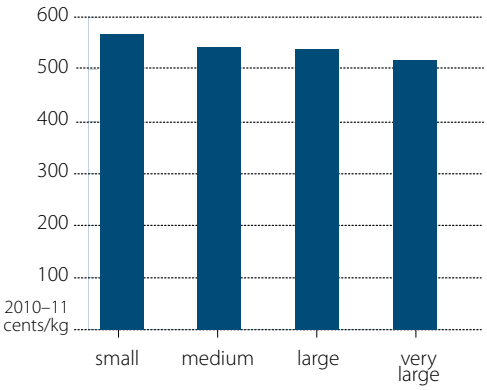
z Provisional estimate.

5 Sheep turn-off rate, by number of lambs sold for slaughter
average per farm



z Provisional estimate.

6 Average price for wool, 2006–07 to 2010–11



One consequence of increasing the scale of slaughter lamb production is a decline in both wool production and quality. A steady increase in the proportion of ewes and lambs shorn and a reduction in the proportion of wethers results in a fall in the production of wool per head shorn. On average, wool production per sheep shorn averaged 4.0 kilograms a head for very large scale producers compared with 4.4 kilograms a head for small scale farms for the eight years to 2009–10 (table 3).

Wool quality is adversely affected by the greater focus on producing sheep with desirable meat traits rather than fine wool traits. In recent years, this has resulted in larger scale lamb producers realising a lower average price for wool (figure 6). Between 2006–07 and 2010–11, very large scale slaughter lamb producers realised a 10 per cent lower real price for wool than the price received by their small scale counterparts (table 3).

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 %
Small										
2008–09	1 697	–6.1	774	645	83	316	342	315	386	–1.5
2009–10 **p**	1 753	1.2	756	624	83	241	348	331	421	–2.2
2010–11 **z**	1 745	1.1	818	744	91	244	423	na	389	4.1
Medium										
2008–09	5 030	–8.0	1 296	1 083	84	545	744	691	713	–2.5
2009–10 **p**	3 339	2.2	1 186	1 037	87	367	691	650	766	–2.2
2010–11 **z**	2 963	4.3	1 304	1 211	93	321	790	na	729	2.2
Large										
2008–09	3 683	–3.4	1 979	1 810	91	654	1 374	1 326	858	2.8
2009–10 **p**	3 959	3.5	1 936	1 736	90	503	1 301	1 250	960	–3.9
2010–11 **z**	3 914	5.1	2 019	1 908	94	432	1 358	na	945	9.2
Very large										
2008–09	5 911	–2.3	4 461	4 092	92	1100	3 518	3 306	979	–7.9
2009–10 **p**	6 379	–5.4	4 612	4 315	94	1429	3 659	3 316	1 235	–1.5
2010–11 **z**	6 847	11.1	5 007	4 784	96	700	3 568	na	1 105	–6.5
Slaughter lamb producers										
2008–09	3 287	–5.4	1 356	1 180	87	488	828	778	596	–1.8
2009–10 **p**	3 013	0.3	1 375	1 214	88	414	861	806	678	–2.4
2010–11 **z**	2 846	5.1	1 472	1 375	93	331	919	na	635	2.4

p Preliminary estimate. **z** Provisional estimate.

Slaughter lamb production

In recent years, strong prices for lamb and depressed wool prices have encouraged many sheep producers to either commence slaughter lamb production or expand their existing enterprise. However, adverse seasonal conditions have constrained these moves to expand production at various stages during this period.

In 2009–10, for example, the impact of destocking in the previous year and dry seasonal conditions early in 2009 resulted in reduced ewe joinings on small and medium scale farms. However, improved late autumn seasonal conditions in lamb producing regions of Victoria, South Australia and Tasmania allowed producers to reduce sheep turn-off and resulted in higher lambing rates in 2009–10 than in 2008–09 (figure 4, table 4). Improved on-farm feed availability during spring and summer in southern regions also led to a small increase in the number of slaughter lambs sold as improved on-farm feed availability enabled producers to finish a greater proportion of their lambs before sale (figure 7, table 4).

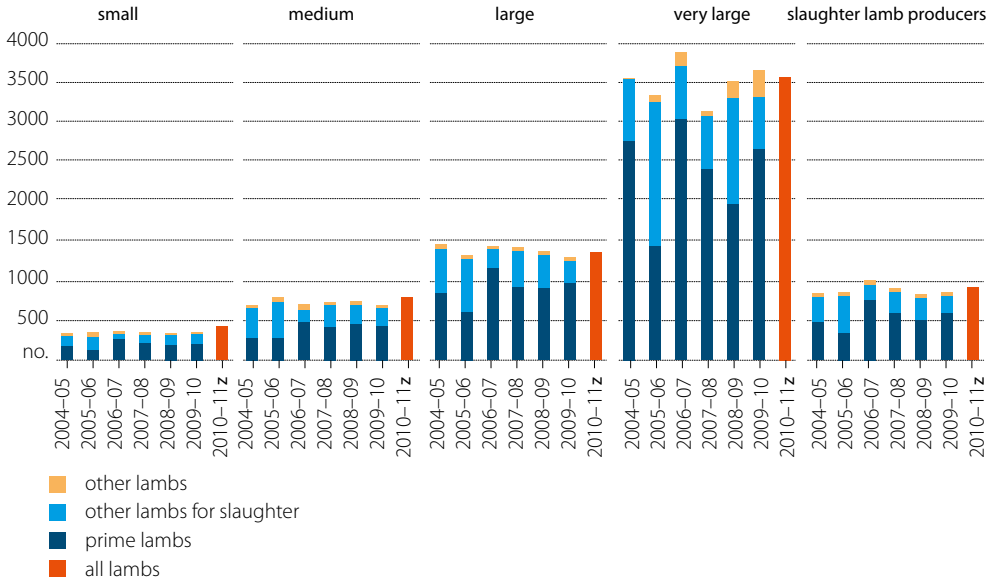
In 2010–11, above average rainfall and seasonal conditions from late autumn in eastern and southern Australia resulted in an increase in ewe joinings. Well above average seasonal conditions through winter and spring led to increased lamb marking percentages and is expected to result in a small increase in the total number of lambs sold, as well as an increase in sheep numbers on slaughter lamb producing farms . However, numbers of lambs sold on very large scale farms are expected to be reduced as flocks are rebuilt following the reduction in sheep numbers in the previous two years. An increased proportion of female lambs is expected to be sold to other farms to increase flock numbers in response to improved seasonal conditions and relatively high lamb, sheep and wool prices in 2010–11.

Selling methods for adult sheep and lambs

The greater focus over the past decade on production of lambs specifically bred for slaughter, as well as better finishing of lambs before sale, has resulted in producers changing their method of sale (figure 8). In the early 1990s, almost all of the 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 has increased, on average, from less than 5 per cent to more than 30 per cent between 2001–02 and 2006–07. In 2009–10, the proportion of lambs sold over the hooks is estimated to have fallen to an average of around 18 per cent. The reduction since 2006–07 may be due to tight lamb supplies and increased demand from restockers and finishers, leading to stronger auction markets.

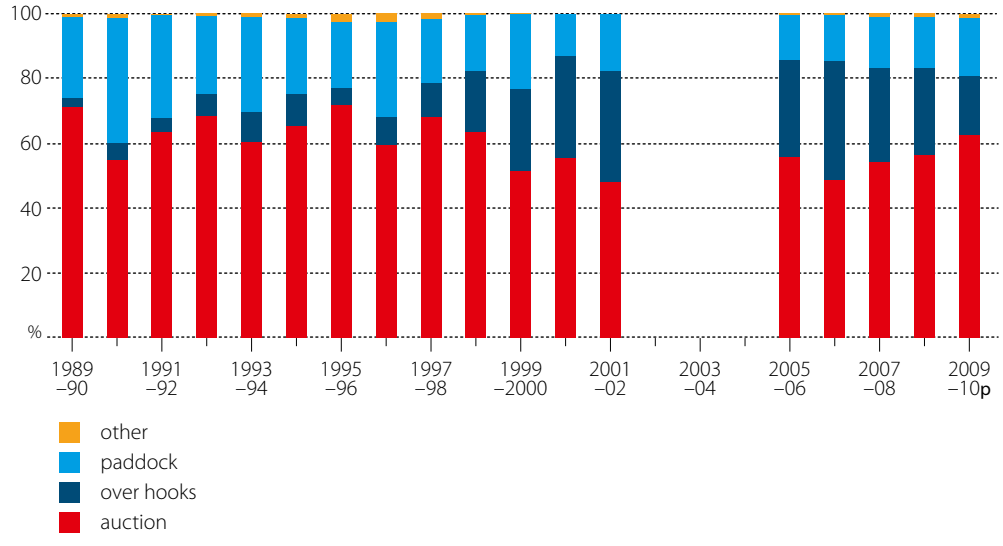
7 Lamb sales, by production group

average per farm



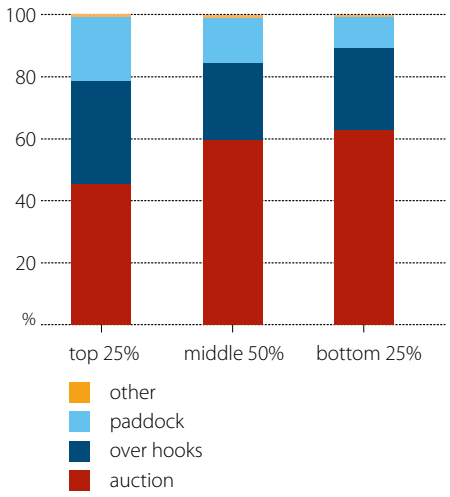
z Provisional estimate.

8 Lamb selling methods, slaughter lamb producing farms



p Preliminary estimate.

9 Lamb selling methods used, by farm performance group, 2006–07 to 2009–10



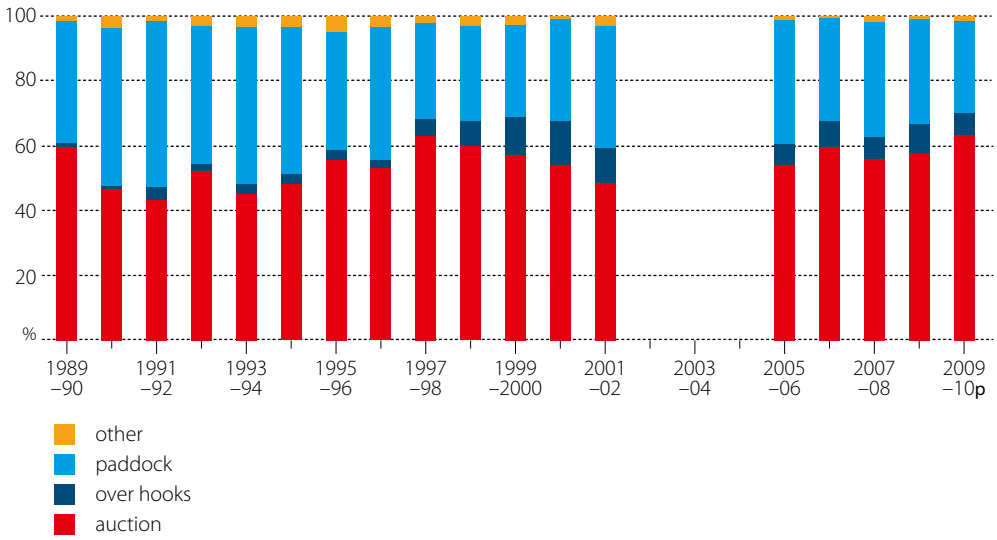
Note: Farms ranked by rate of return excluding capital appreciation.

When slaughter lamb producers were ranked by farm financial performance (as measured by rate of return, excluding capital appreciation) for the period 2006–07 to 2009–10, considerable differences in selling methods were apparent for the top 25 per cent of producers compared with those used by other producers (figure 9). The better performing slaughter lamb producers, on average, sold a greater proportion of their lambs over the hook and markedly fewer by auction than producers in other performance groups, during this period.

The production of more meat breeds of sheep also appears to have resulted in some changes in the method used to sell adult sheep (figure 10). 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 has increased modestly. In the five years to 2009–10, around 7 per cent of adult sheep were sold over the hooks.

In 2009–10, strong demand from restockers led producers to direct sheep to sale by auction and the proportion of sheep sold by auction rose to 63 per cent, the highest recorded in the past 20 years (figure 10).

10 Adult sheep selling methods, slaughter lamb producing farms



p Preliminary estimate.

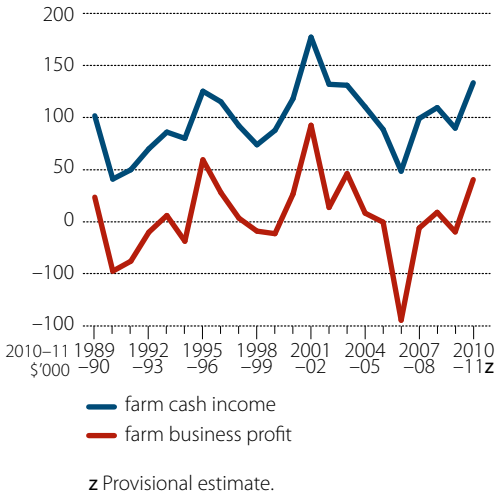
Farm financial performance 2009–10 and 2010–11

2009–10

In 2009–10, overall farm financial performance of slaughter lamb producers declined slightly despite strong growth in lamb, sheep and wool receipts. Farm cash income for slaughter lamb producers declined to average $90 070 a farm in 2009–10 (figure 11, table 5).

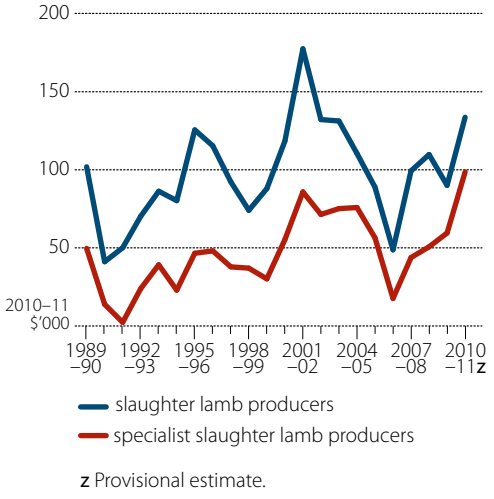
Average prices for slaughter lambs increased by 15 per cent compared with 2008–09 (table 5) but, overall, increases in lamb, sheep and wool receipts were more than offset by reduced receipts from crops and beef cattle. These reductions were due to lower prices, reduced beef cattle turn-off and an increase farm cash costs. Higher farm cash costs were driven in large part by a 45 per cent increase in expenditure on purchases of sheep and lambs in response to improved seasonal conditions, and by increased expenditure on sprays as areas planted to crop increased.

11 Financial performance, slaughter lamb producers



z Provisional estimate.

12 Farm cash income, slaughter lamb producers



z Provisional estimate.

5 Financial performance of slaughter lamb producers

average per farm

		specialist slaughter lamb producers				all slaughter lamb producers			
		2008–09	2009–10p		2010–11z	2008–09	2009–10p		2010–11z
Physical									
Area operated	ha	1 876	2 140	(10)	2 100	3 287	3 010	(7)	2 800
Area sown to crop	ha	253	305	(18)	279	596	678	(6)	635
Beef cattle at 30 June	no.	89	96	(12)	98	130	118	(10)	115
Sheep at 30 June	no.	2 085	2 203	(6)	2 330	2 342	2 505	(3)	2 597
Ewes mated	no.	1 253	1 309	(8)	1 377	1 356	1 375	(3)	1 472
Lambs marked	no.	1 179	1 225	(7)	1 351	1 180	1 214	(3)	1 375
Lamb marking percentage	%	94	94	(2)	98	87	88	(1)	93
Sheep and lamb turn-off rate	%	64	61	(4)	58	55	51	(3)	49
Sheep sold	no.	310	260	(12)	223	488	414	(9)	331
Total lambs sold	no.	1 033	1 077	(8)	1 094	828	861	(3)	919
Slaughter lambs sold	no.	997	1 030	(11)	na	778	806	(8)	na
Receipts									
Sheep and lamb sales	$	110 198	129 690	(7)	137 200	95 980	115 990	(3)	124 700
Adult sheep receipts	$	17 846	20 650	(12)	20 400	26 930	32 890	(9)	29 700
Lamb receipts	$	92 352	109 040	(9)	116 800	69 050	83 110	(3)	94 900
Slaughter lamb receipts	$	90 394	105 550	(11)	na	47 054	64 180	(4)	na
Non-slaughter lamb receipts	$	1 958	3 490	(37)	na	21 996	18 920	(8)	na
Crop receipts	$	53 006	52 850	(15)	109 700	209 075	193 050	(7)	246 600
Wool sales	$	38 950	43 590	(9)	43 900	53 451	61 070	(4)	58 500
Beef cattle sales	$	30 459	33 980	(11)	36 800	42 919	39 800	(14)	39 800
Total cash receipts	$	254 600	282 100	(8)	344 800	447 382	451 170	(4)	502 800
Costs									
Sheep and lamb purchases	$	15 802	23 150	(17)	22 600	12 782	18 600	(8)	17 300
Beef cattle purchases	$	4 867	5 870	(29)	4 900	6 203	6 870	(38)	6 000
Fodder	$	7 169	5 210	(31)	3 600	7 247	5 390	(12)	3 700
Agistment	$	1 017	1 360	(26)	600	1 159	1 530	(25)	500
Fertiliser	$	19 634	22 180	(16)	25 300	46 434	45 700	(8)	47 500
Sprays	$	9 055	12 660	(16)	16 000	28 275	31 930	(7)	37 400
Fuel, oil and lubricants	$	15 948	15 980	(8)	17 700	28 589	28 690	(5)	31 100
Repairs and maintainance	$	17 641	20 320	(8)	23 600	27 852	32 290	(5)	34 100
Interest payments	$	27 455	25 700	(12)	29 200	43 147	44 220	(6)	49 400
Hired labour	$	5 545	5 810	(20)	7 100	10 612	11 780	(9)	12 000
Total cash costs	$	203 939	222 580	(9)	246 100	337 576	361 100	(4)	369 100
Farm capital and debt									
Total capital value	$	3 307 799	3 269 620	(5)	3 272 300	4 243 814	4 349 470	(3)	4 258 300
Farm debt	$	334 307	368 310	(13)	360 700	550 902	635 780	(7)	608 800
Equity ratio	%	90	89	(4)	na	84	82	(2)	na
Interest paid to receipts ratio	%	10	11	(21)	8	10	10	(5)	10
Farm financial performance									
Farm cash income	$	50 661	59 520	(10)	98 600	109 806	90 070	(9)	133 700
Farm business profit	$	–24 895	–14 390	(52)	30 400	9 170	–9 680	(76)	40 600
Rate of return									
– excluding capital appreciation	%	0.2	0.5	(44)	2.0	1.5	1.0	(16)	2.4
– including capital appreciation	%	1.0	0.4	(324)	na	2.1	–0.3	(366)	na
Prices									
Slaughter lamb price	$/hd	91	103	(2)	na	85	98	(1)	na
Average lamb price	$/hd	89	101	(2)	107	83	96	(1)	103
Population of farms	no.	8 639	9 410		9 600	19 059	19 240		19 400

p Preliminary estimate. **z** Provisional estimate. **na** Not available.
Note: Figures in parentheses are standard errors expressed as a percentage of the estimate provided.

6 Financial performance of slaughter lamb producers, ranked scale of slaughter lamb sales

average per farm

		small				medium			
		2008–09	2009–10p		2010–11z	2008–09	2009–10p		2010–11z
Receipts									
Sheep and lamb sales	$	45 187	51 530	(5)	63 900	89 752	94 530	(5)	113 400
Adult sheep receipts	$	17 814	20 330	(14)	22 600	29 221	28 150	(14)	29 800
Lamb receipts	$	27 373	31 200	(4)	41 300	60 531	66 380	(5)	83 600
Slaughter lamb price	$/hd	81	91	(2)	na	84	97	(2)	na
Average lamb price	$/hd	80	90	(2)	98	81	96	(2)	106
Composition of lamb receipts									
– prime lambs	$	17 019	20 120	(7)	na	40 826	44 060	(8)	na
– other slaughter lambs	$	1 773	1 080	(40)	na	2 741	3 110	(47)	na
– lambs not for slaughter	$	8 581	10 000	(13)	na	16 964	19 210	(12)	na
Beef cattle sales	$	32 099	20 950	(20)	20 700	35 736	37 940	(39)	41 400
Wool sales	$	34 238	36 990	(9)	35 200	52 555	56 070	(8)	57 600
Crop receipts	$	116 548	118 620	(13)	144 000	248 643	219 810	(14)	274 200
Off-farm sharefarming	$	2 910	2 290	(39)	3 000	2 020	5 290	(29)	6 400
Off-farm contracts	$	7 868	12 090	(72)	13 000	6 095	7 590	(31)	7 000
Total cash receipts	$	268 771	260 660	(9)	292 100	461 727	449 950	(9)	517 400
Costs									
Sheep and lamb purchases	$	4 535	6 340	(15)	5 400	12 133	15 460	(14)	14 200
Beef cattle purchases	$	4 392	2 960	(60)	1 700	4 398	5 620	(126)	6 000
Shearing and crutching expenses	$	7 137	7 020	(9)	7 500	13 564	11 550	(6)	12 400
Contracts	$	7 663	8 140	(28)	7 900	10 692	14 910	(22)	16 000
Sprays	$	17 573	18 830	(13)	20 800	31 349	36 790	(13)	46 000
Fertiliser	$	28 074	26 700	(13)	29 500	50 622	53 600	(17)	52 800
Fodder	$	4 214	3 180	(14)	2 300	6 514	3 360	(30)	2 200
Fuel, oil and lubricants	$	19 240	19 050	(12)	18 700	29 344	30 830	(10)	37 800
Freight, handling and marketing	$	14 464	15 720	(14)	17 000	29 503	30 360	(12)	30 400
Hired labour	$	4 857	4 110	(20)	3 800	9 814	11 650	(17)	13 200
Interest payments	$	24 656	23 860	(11)	25 200	40 283	41 040	(12)	47 600
Repairs and maintainance	$	18 803	21 230	(10)	21 800	28 487	33 450	(9)	36 300
Total cash costs	$	203 011	206 600	(9)	205 200	344 093	362 090	(10)	382 700
Financial Performance									
Farm cash income	$	65 759	54 060	(21)	86 900	117 634	87 860	(19)	134 700
Farm business profit	$	–17 493	–28 330	(31)	3 400	7 687	–11 140	(137)	31 500
Rate of return									
– excluding capital appreciation	%	0.5	0.1	(603)	1.3	1.3	1.0	(34)	2.2
– including capital appreciation	%	0.0	0.4	(607)	na	2.6	–0.4	(306)	na

continued...

6 Financial performance of slaughter lamb producers, ranked scale of slaughter lamb sales

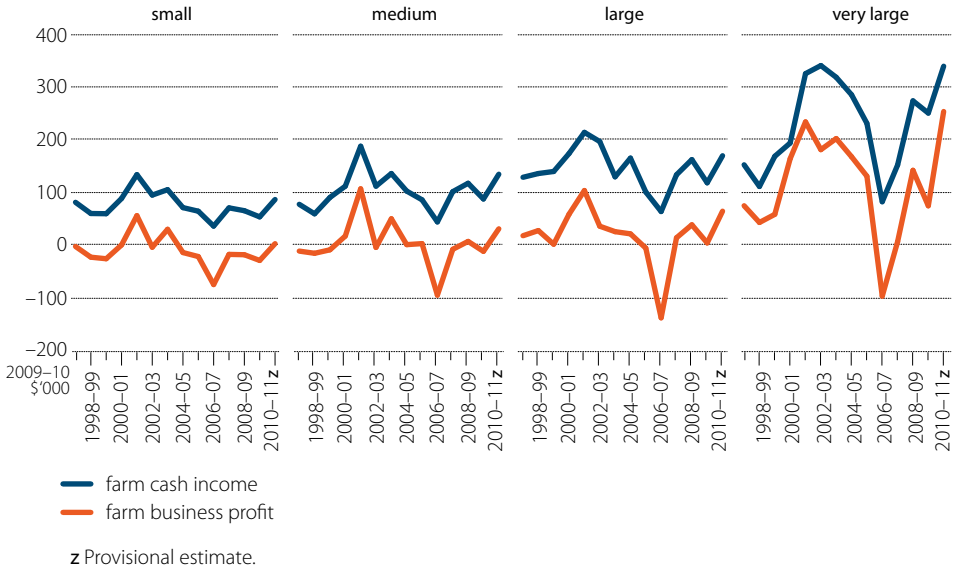
average per farm continued

		large				very large			
		2008–09	2009–10p		2010–11z	2008–09	2009–10p		2010–11z
Receipts									
Sheep and lamb sales	$	154 239	173 530	(3)	178 800	362 413	462 950	(6)	428 900
Adult sheep receipts	$	37 375	40 780	(14)	39 200	58 654	109 310	(26)	53 600
Lamb receipts	$	116 864	132 750	(4)	139 700	303 759	353 640	(7)	375 300
Slaughter lamb price	$/hd	86	103	(2)	na	88	99	(2)	na
Average lamb price	$/hd	85	102	(2)	103	86	97	(2)	105
Composition of lamb receipts									
– prime lambs	$	77 923	104 030	(6)	na	180 679	272 950	(9)	na
– other slaughter lambs	$	2 635	3 560	(62)	na	12 094	24 080	(40)	na
– lambs not for slaughter	$	36 306	25 160	(16)	na	110 987	56 610	(23)	na
Beef cattle sales	$	57 017	55 450	(17)	50 200	123 293	125 070	(19)	127 000
Wool sales	$	78 729	78 190	(10)	75 600	139 487	186 530	(10)	168 300
Crop receipts	$	334 116	283 950	(13)	374 700	407 806	329 850	(15)	495 200
Off-farm sharefarming	$	7 658	6 730	(38)	7 800	2 052	4 610	(37)	5 400
Off-farm contracts	$	12 394	8 010	(24)	10 000	17 163	13 090	(34)	14 000
Total cash receipts	$	685 672	642 190	(7)	722 400	1 131 941	1 174 940	(7)	1 272 400
Costs									
Sheep and lamb purchases	$	19 381	34 180	(13)	29 800	61 256	71 610	(16)	77 200
Beef cattle purchases	$	12 378	10 240	(41)	10 400	13 283	27 920	(35)	22 800
Shearing and crutching expenses	$	20 025	20 210	(8)	21 300	43 363	51 280	(10)	47 900
Contracts	$	19 909	24 440	(17)	31 800	42 535	54 410	(17)	56 400
Sprays	$	45 436	46 810	(12)	55 100	51 840	57 580	(17)	66 300
Fertiliser	$	76 101	61 730	(10)	63 500	91 447	90 180	(13)	101 900
Fodder	$	10 849	8 650	(31)	6 000	24 563	20 130	(23)	13 600
Fuel, oil and lubricants	$	42 461	37 960	(8)	40 700	61 014	56 810	(9)	58 100
Freight, handling and marketing	$	43 850	44 880	(12)	46 000	64 511	77 240	(11)	85 600
Hired labour	$	16 241	15 110	(19)	16 200	43 585	49 770	(16)	47 900
Interest payments	$	71 208	72 360	(12)	86 300	126 386	119 220	(16)	129 500
Repairs and maintainance	$	40 177	42 350	(9)	44 900	62 358	71 200	(9)	78 000
Total cash costs	$	523 340	523 730	(7)	552 700	858 523	924 630	(9)	933 500
Financial Performance									
Farm cash income	$	162 332	118 470	(16)	169 700	273 418	250 310	(15)	338 900
Farm business profit	$	39 112	4 800	(359)	64 800	142 125	74 990	(44)	253 300
Rate of return									
– excluding capital appreciation	%	2.0	1.5	(20)	2.9	3.1	2.1	(16)	4.3
– including capital appreciation	%	3.6	–3.4	(93)	na	2.9	2.5	(49)	na

p Preliminary estimate. **z** Provisional estimate. **na** Not available.
Note: Figures in parentheses are standard errors expressed as a percentage of the estimate provided.

13 Financial performance by number of lambs sold for slaughter

average per farm



z Provisional estimate.

Reduction in financial performance occurred consistently across all scales of slaughter lamb production (figure 13) with some variation in the causes of reduced total cash receipts and higher total cash costs for the very large scale producers and for small scale producers. The increase in receipts from lambs and sheep was relatively larger for the very large scale producers, but this increase was more than offset by an even larger reduction in crop receipts (table 6). This was mainly a consequence of the onset of dry seasonal conditions in the Western Australian grain belt where some of these larger producers are located, leading to high turn-off of sheep and lambs and reduced crop production. In contrast, receipts from crops increased slightly for small scale producers but the increases in lamb and sheep receipts were more than offset by reduced receipts from beef cattle. The turn-off of beef cattle was reduced by herd rebuilding, as seasonal conditions improved in south-eastern regions of Australia where many small scale producers are located.

In contrast, for specialist slaughter lamb producers, farm cash incomes increased by 17 per cent in 2009–10 to average $59 520 a farm (figure 12, table 5). This increase was mainly driven by increases in prices received for slaughter lambs, with increases in lamb receipts more than offsetting increases in farm costs despite an increase in expenditure on sheep and lamb purchases of almost 50 per cent. These farms have much smaller cropping and beef cattle enterprises than other slaughter lamb producers, resulting in a smaller overall scale of operations. As a consequence they generally have lower farm cash incomes, on average.

2010–11

In 2010–11, farm financial performance of slaughter lamb producers is forecast to strengthen, with growth in farm receipts expected to significantly exceed growth in farm costs. On average, farm cash income is expected to rise by 48 per cent to $133 700 a farm–around 20 per cent above the average for the ten years ending 2009–10 in real terms.

Slaughter lamb producers' receipts from lamb sales are expected to increase by around 10 per cent with average prices received for lambs sold projected to increase by around 5 per cent compared with 2009–10. The number of lambs sold is also expected to increase (table 5). However, overall receipts from adult sheep are expected to be slightly reduced despite record saleyard prices, because of lower turn-off as sheep flocks are increased. In addition, grain yields in 2009–10 were well above average so that, with higher grain prices, resulting grain receipts are projected to increase by over 20 per cent. Overall, total cash receipts for slaughter lamb producers are projected to increase by around 11 per cent.

Despite increased expenditure on crop sprays, interest payments and repairs, the increase in total cash costs is expected to be only around 3 per cent in 2010–11. Expenditure on crop sprays rose mainly because of increased weed growth following the wet conditions in 2010–11. Purchases of sheep and cattle and expenditure on fodder are expected to be reduced by slaughter lamb producers in 2010–11.

Improved farm financial performance is expected for all scales of slaughter lamb production, because of increased lamb and wool receipts and higher crop receipts (figure 13). The largest increase is projected for small scale slaughter lamb producers at 63 per cent, followed by medium scale producers at 53 per cent, large scale at 43 per cent and very large producers at 45 per cent.

Very large scale producers are expected to continue to realise the highest rate of return excluding capital appreciation in 2010–11, averaging 4.3 per cent compared with the average for all slaughter lamb producers of 2.4 per cent (table 6).

Over the past three years, very large scale producers have generated an average rate of return excluding capital appreciation of 3.2 per cent, large producers 2.1 per cent, medium producers 1.5 per cent and small producers 0.6 per cent.

Farm cash income for specialist slaughter lamb producers is projected to increase to average $98 600 a farm in 2010–11. If realised this would be almost 70 per cent above the average for the 10 years ending 2009–10 in real terms and the highest farm cash income recorded for specialist slaughter lamb producers in the past 22 years (figure 12, table 5).

Financial performance by sale type

According to the AAGIS survey, in the three years ending 2009–10 around 87 per cent of lambs produced for slaughter were sold direct to slaughter. Around 11 per cent were sold for further finishing, 8 per cent sold as stores and 3 per cent sold to feedlots or for backgrounding. A further 2 per cent are reported to have been sold for live export.

To explore the financial performance of producers selling to these different markets, slaughter lamb producers were grouped according to which market they predominantly sold lambs to during the period 2007–08 to 2009–10. These groups are:

- predominantly sold lambs directly for slaughter
- predominantly sold lambs for live export
- predominantly sold lambs to feedlots or for backgrounding
- predominantly sold lambs to breeders or as stores.

In the three years to 2009–10, around 90 per cent of farms predominately sold lambs direct to slaughter (table 7). Producers who sold lambs directly for slaughter realised the highest sale price for lambs, averaging $88 a head, while producers who predominantly sold lambs to feedlots realised the lowest prices, averaging $66 a head, over this period. This result largely reflects the type of lambs being sold by these producers — that is, lighter lambs are sold to feedlots. Producers selling lambs for live export also received relatively lower prices, averaging $70 a head or 21 per cent less than that realised by producers who sold lambs directly for slaughter. Producers selling lambs to breeders or for store purposes averaged $75 a head (table 7).

Almost all producers who mostly sold lambs to live export markets were located in Western Australia. These farms had the largest sheep flocks, on average, but derived the smallest percentage of receipts from sale of sheep and lambs of any group. Receipts for these farms were predominantly derived from the sale of grain. These farms also recorded the strongest financial performance during this period, with the highest average farm cash income, highest farm cash income to receipts ratio and the highest rate of return (table 7). This result follows from the fact that during 2007–08 seasonal conditions for farms in most grain-growing areas of Western Australia were better than those in many parts of eastern states, where drought constrained the area sowed to grain crops and reduced grain yields as well as livestock reproduction. However, in 2008–09 seasonal conditions were drier in Western Australia, resulting in increased turn-off of sheep and lambs.

While average farm cash income for farms selling lambs to breeders or for store purposes were similar to those selling lambs direct to slaughter, the farm cash income to receipts ratio and rate of return was much lower for those predominantly selling lambs to breeders or as stores. This result is a consequence of higher cash and capital costs for these farms relative to the value of their output.

7 Physical and financial performance indicators, grouped by main market targeted, 2007–08 to 2009–10

average per farm

		direct for slaughter		live export		feedlot / backgrounding		breeders or store	
Area operated, 30 June	ha	2 578	(3)	5 642	(33)	11 374	(10)	4 731	(15)
Area sown to crops	ha	624	(2)	1 019	(10)	458	(98)	723	(20)
Beef cattle at 30 June	no.	126	(4)	69	(39)	84	(50)	184	(21)
Sheep at 30 June	no.	2 364	(2)	3 679	(10)	2346	(13)	3 708	(13)
Ewes mated	no.	1 341	(2)	2 162	(10)	1353	(11)	2 102	(12)
Lambs marked	no.	1 185	(2)	1 711	(10)	1097	(10)	1 768	(11)
Lamb marking percentage	%	88	(1)	79	(2)	81	(4)	84	(4)
Sheep sold	no.	415	(4)	837	(12)	426	(26)	855	(24)
Total lambs sold	no.	886	(2)	899	(12)	703	(12)	1 217	(12)
– direct for slaughter	no.	867	(2)	72	(30)	30	(94)	203	(16)
– for live export	no.	1	(40)	788	(13)	0		7	(103)
– to feedlot/backgrounding	no.	2	(35)	4	(113)	663	(11)	7	(81)
– to breeders/store	no.	16	(16)	34	(52)	10	(63)	1 001	(13)
Sheep turn-off rate	%	55	(2)	47	(7)	47	(16)	54	(10)
Sheep equivalents per labour unit	se	5 241	(2)	7 812	(6)	4749	(47)	5 880	(10)
Prices received									
Wool	c/kg	529	(1)	537	(4)	536	(5)	631	(5)
Adult sheep	$/ hd	59	(2)	54	(10)	50	(11)	59	(8)
Slaughter lambs	$/ hd	88	(1)	70	(4)	66	(5)	75	(6)
Non-slaughter lambs	$/ hd	63	(10)	37	(24)	50	(21)	61	(6)
Farm financial performance									
Adult sheep receipts	$	24 886	(5)	46 252	(14)	21 395	(24)	51 173	(24)
Lamb receipts	$	77 890	(2)	61 496	(11)	45 906	(12)	79 919	(11)
Total cash receipts	$	439 826	(2)	713 480	(8)	354 066	(67)	529 535	(12)
Total cash costs	$	344 799	(2)	497 694	(8)	269 498	(68)	432 409	(14)
Farm cash income	$	95 027	(5)	215 786	(16)	84 568	(73)	97 126	(28)
Farm cash income to receipts margin	%	22	(4)	30	(11)	24	(31)	18	(26)
Farm business profit	$	–2 962	(159)	85 847	(37)	–71	(999)	–32 792	(102)
Rate of return									
– excluding capital appreciation	%	1.2	(9)	2.8	(20)	1.2	(127)	0.7	(101)
– including capital appreciation	%	1.9	(21)	4.5	(21)	3.6	(42)	1.3	(124)
Number of farms **a**	no.	15 542		547		554		810	
Share of farms	%	85		3		3		4	

a A further 700 farms sold to a range of markets such that no single market dominated. **p** Preliminary estimate. **z** Provisional estimate.
Note: Figures in parentheses are standard errors expressed as a percentage of the estimate provided.

Grain finishing of lambs

In the three years to 2009–10, just over 9 per cent of slaughter lamb producers finished some of their lambs with grain and 8 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 increased in each of these three years. To gain some insights into the possible economic benefits of grain finishing lambs before sale, the 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 8).

Producers who used grain to finish lambs in 2007–08 and 2009–10 generally had a much higher proportion of their farm planted to grain crops. On average, 42 per cent of the farm area operated was planted to grain crops on farms grain finishing lambs, compared with an average of just 19 per cent for farms with no grain finishing.

On average, grain finishing farms fed grain to 725 lambs, or 67 per cent of the lambs sold, for an average of 55 days. These farms sold 1128 lambs with 67 per cent of lambs sold finished on grain. Around 98 per cent of lambs sold were sold directly for slaughter, over this period. In comparison, non–grain finishing farms sold an average of 786 lambs of which 85 per cent were sold directly for slaughter.

8 Physical and financial performance indicators, grouped by use of grain finishing for lambs, 2007–08 to 2009–10 average per farm

		grain finishing of lambs		no grain finishing of lambs	
Area operated, 30 June	ha	2 801	(13)	3 163	(3)
Area sown to crops	no.	1 179	(15)	590	(2)
Beef cattle at 30 June	no.	88	(15)	131	(4)
Sheep at 30 June	no.	2 609	(7)	2 480	(2)
Wool production	kg	12 631	(10)	11 407	(2)
Sheep equivalents per labour unit	no.	7 103	(5)	5 164	(2)
Lambs marked	no.	1 362	(9)	1 216	(2)
Sheep and lamb turn-off rate	%	59	(6)	53	(2)
Sheep and lamb turn-on rate	%	11	(15)	7	(6)
Total lambs sold	no.	1 124	(11)	836	(2)
– lambs for slaughter	no.	1 082	(11)	786	(2)
– lambs not for slaughter	no.	42	(35)	50	(12)
Grain finishing					
Lambs grain finished	no.	725	(10)		
Average length of grain finishing	days	55	(5)		
Proportion of lambs sold grain finished	%	67	(8)		
Prices received					
Adult sheep price	$/hd	63	(7)	59	(2)
Slaughter lamb price	$/hd	92	(2)	86	(1)
Farm financial performance					
Adult sheep receipts	$	28 746	(12)	29 615	(4)
Lamb receipts	$	101 914	(11)	70 624	(2)
Total cash receipts	$	662 272	(12)	437 390	(2)
Sheep and lamb purchases	$	22 207	(17)	14 633	(4)
Fodder cost	$	11 474	(15)	6 648	(8)
Total cash costs	$	536 392	(10)	340 260	(2)
Farm cash income	$	125 880	(25)	97 130	(4)
Farm cash income per hectare operated	$	45	(19)	31	(4)
Farm business profit	$	–3 198	(909)	–1 880	(228)
Rate of return					
– excluding capital appreciation	%	1.5	(38)	1.2	(9)
– including capital appreciation	%	1.0	(145)	1.8	(31)
Estimated population of farms	no.	1 645		16 568	

Note: Financial statistics are expressed in 2010–11 dollars. Figures in parentheses are standard errors expressed as a percentage of the estimate provided.

While purchasing or producing grain increases producer costs it also results in lambs that realise higher prices, mainly because these lambs realise a higher carcass weight and have superior meat characteristics. Producers who grain finished lambs realised an average price for lambs sold directly to slaughter of $92 a head, which was 7 per cent more than their non–grain finishing counterparts.

Farms that used grain to finish lambs achieved only slightly stronger farm financial performance on average in the three years to 2009–10. On average, grain finishing slaughter lamb producing farms generated a higher average farm cash income and a slightly higher rate of return. They also recorded a higher farm cash income per hectare operated of $45 per hectare compared with $31 for their non–grain finishing counterparts

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. These were:

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

In 2007–08, 2008–09 and the first half of 2009–10, drought conditions influenced whether some producers decided to feed grain, as well as the duration and intensity of grain feeding. During this period, more than 50 per cent of producers who fed lambs on grain for more than 60 days were experiencing drought. In comparison, just 10 per cent of producers feeding for less than 40 days and 18 per cent of producers feeding for 40 to 60 days considered their properties to be in drought.

The largest share of lambs finished on grain was those finished for 40 to 60 days, at 46 per cent. Lambs finished for less than 40 days accounted for 33 per cent of lambs grain finished and lambs finished for more than 60 days accounted for just 21 per cent (table 9).

The proportion of lambs sold that had been grain finished on farm increased with the average length of time lambs were on feed. That is, the proportion of lambs sold that had been grain finished among the producers who fed grain for more than 60 days averaged 75 per cent. In contrast, around 60 per cent of lambs sold by producers feeding for less than 40 days were grain finished (table 9).

In the three years to 2009–10, the average price received for lambs sold for slaughter was highest for lambs that were fed for more than 40 days and lowest for lambs fed for less than 40 days. Furthermore, the average price received for lambs fed for less than 40 days was comparable to the average price realised by non–grain finishing slaughter lamb producers (table 9).

9 Physical and financial performance indicators of producers grain finishing lambs, by length of time on grain, 2007–08 to 2009–10

average per farm

		less than 40 days		40 to 60 days		more than 60 days	
Area operated	ha	2 689	(26)	3 006	(28)	2 574	(16)
Area sown to crops	no.	1 299	(11)	1 103	(14)	1 139	(18)
Sheep at 30 June	no.	3 032	(12)	2 467	(20)	2 259	(13)
Lambs marked	no.	1 660	(10)	1 237	(25)	1 157	(10)
Sheep sold	no.	1 880	(10)	1 451	(26)	1 350	(12)
Sheep and lamb turn-off rate	%	58	(6)	62	(14)	54	(8)
Sheep and lamb turn-on rate	%	7	(30)	17	(27)	9	(27)
Total lambs sold	no.	1 209	(13)	1 169	(28)	930	(10)
– lambs for slaughter	no.	1 176	(13)	1 135	(28)	860	(10)
– lambs not for slaughter	no.	33	(86)	34	(53)	70	(40)
Grain finishing of lambs							
Lambs grain finished	no.	698	(12)	793	(18)	648	(12)
Average length of grain finishing	days	30	(4)	52	(3)	96	(9)
Proportion of lambs sold grain finished	%	59	(8)	70	(22)	75	(7)
Lambs sold							
– auction	%	19	(30)	41	(43)	53	(18)
– over hooks	%	65	(20)	37	(57)	39	(24)
– sold in paddock	%	17	(35)	22	(37)	8	(59)
Slaughter lamb price	$/hd	84	(3)	97	(5)	96	(4)
Farm financial performance							
Adult sheep receipts	$	40 407	(11)	26 535	(27)	16 170	(25)
Lamb receipts	$	101 551	(14)	112 041	(25)	85 231	(12)
Total cash receipts	$	843 149	(10)	624 887	(21)	470 485	(12)
Sheep and lamb purchases	$	16 433	(30)	30 039	(30)	16 719	(22)
Fodder cost	$	13 515	(22)	12 211	(31)	7 371	(25)
Total cash costs	$	635 438	(10)	522 233	(19)	418 076	(12)
Farm cash income	$	207 711	(22)	102 653	(47)	52 408	(48)
Farm business profit	$	54 636	(78)	–3 389	(1150)	–83 298	(51)
Rate of return							
– excluding capital appreciation	%	2.5	(29)	1.4	(53)	–0.1	(589)
– including capital appreciation	%	2.4	(86)	0.2	(1690)	–0.1	(1244)
Estimated population of farms	no.	556		692		393	
Share of grain finished lambs	%	33	(12)	46	(18)	21	(12)

Note: Financial statistics are expressed in 2010–11 dollars. Figures in parentheses are standard errors expressed as a percentage of the estimate provided.

This suggests that producers who grain finished for less than 40 days are still selling animals that, on average, are either lighter or have inferior meat characteristics (or both) than their longer duration grain finishing counterparts. This may also indicate that these producers are using grain to get their lambs to a minimum acceptable weight before sale, rather than using grain to produce heavy lambs.

Prices received for slaughter lambs were similar for farms finishing lambs for 40 to 60 days and farms finishing for more than 60 days, indicating that both groups produced lambs of similar average slaughter weight.

Fodder expenditure per unit of livestock carried was much higher for farms finishing lambs on grain for 40 to 60 days than for farms not using grain finishing. This fact, together with information on grain use data collected in the AAGIS, suggests that this group used both purchased feeds and feeds grown on farm to finish lambs.

In contrast, fodder expenditure by producers feeding for more than 60 days was similar to that for farms not grain finishing. It appears that these producers mainly fed grain and hay produced on farm and that feeding was carried out at a relatively low level over an extended period in order to sell heavy lambs, rather than accept a lower price by turning off lambs earlier at a lighter weight.

During the three years to 2009–10, slaughter lamb producers who grain finished their lambs for less than 40 days realised the strongest farm financial performance. On average, these farms generated an average farm cash income of $207 700 a farm, and recorded the highest rate of return among the groups.

Farm investment

The capacity of producers to boost farm income in coming years will be influenced by 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. 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.

Investments undertaken

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 2009–10, new investment rose further to be the highest recorded in the past 20 years, in real terms.

Investment in plant, vehicles, machinery and farm infrastructure increased for all scales of slaughter lamb producers in 2008–09 and 2009–10. However, by far the largest increase occurred for large and very large producers (figure 14).

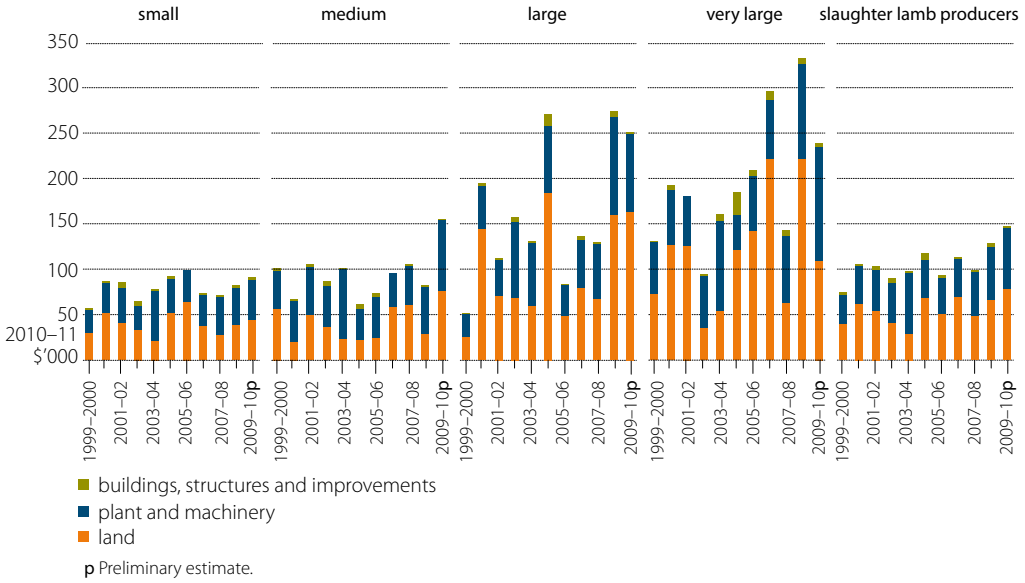
Overall, the largest share of new investment by slaughter lamb producers was allocated to buying land. Only a relatively small proportion of farms buy land in any one year, but most producers usually make some investment in plant, vehicles, machinery or infrastructure in any one year. However, because of the much larger average value of land transactions, the value of land purchases dominates total investment.

The proportion of slaughter lamb producers buying land in 2008–09 and 2009–10 varied across the scales but was generally lower than the proportion in the early 2000s (figure 15). The high average value of land purchases was mainly driven by high prices paid for land. The value of land operated by slaughter lamb producers rose sharply between 2000–01 and 2005–06, but has since levelled off or fallen slightly (figure 16).

Financing investments

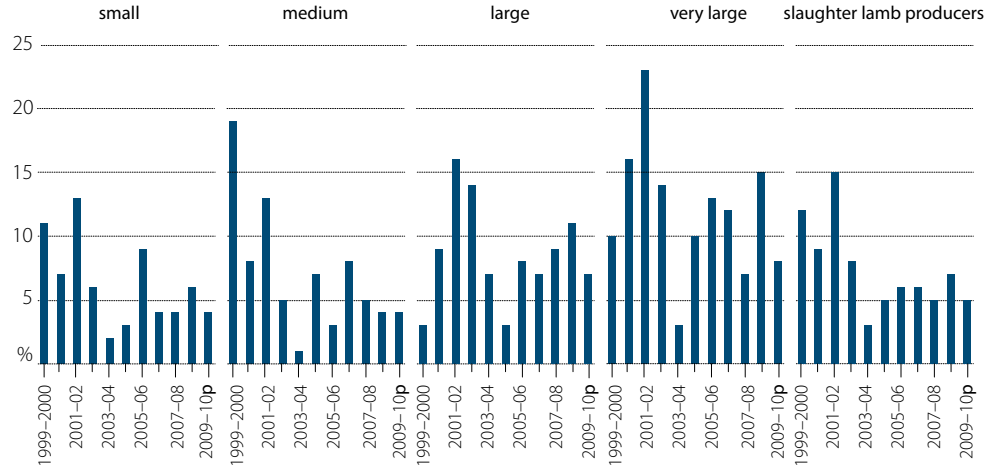
Producers have a number of options available to fund farm investment, including using their farm business cash flows, increasing debt, running down liquid assets and using off-farm income or assets.

14 Composition of farm capital purchases, by number of lambs sold for slaughter



p Preliminary estimate.

15 Proportion of producers purchasing land, by number of lambs sold for slaughter



p Preliminary estimate.

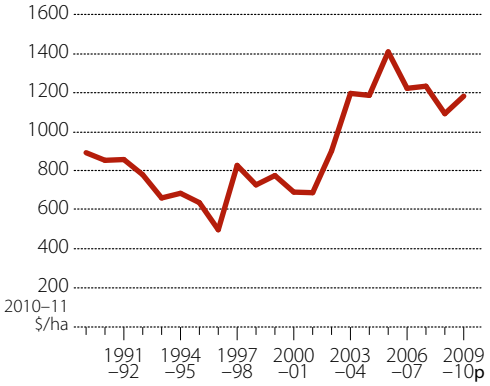
After recording relatively large annual increases in farm debt through the early and mid-2000s, largely on account of land purchases, annual increases in farm debt have slowed in recent years. The average increase in farm debt for slaughter lamb producers in 2009–10 was 8 per cent, the lowest recorded in the past 10 years. Smaller increases in farm debt occurred across all scales of slaughter lamb producers in 2008–09 and 2009–10 (figure 17).

Relatively low farm cash incomes across most scales of slaughter lamb production in the period between 2003–04 and 2006–07 resulted in increases in borrowing to provide working capital, and a reduction in farm liquid assets (figure 18).

Higher farm cash incomes for very large producers in 2009–10 led to a substantial increase in reported average liquid assets for this group.

Large increases in farm debt over the past decade 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 in 2008–09 and 2009–10. However, in 2010–11 higher farm receipts are projected to result in a slight fall in the proportion of

16 Land value per hectare, slaughter lamb producing farms



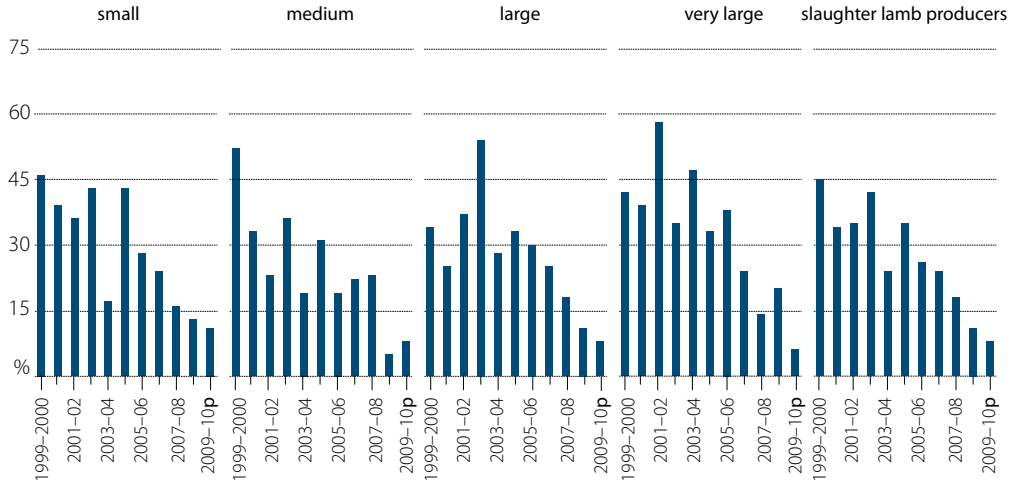
p Preliminary estimate.

farm receipts required to fund interest payments. Nevertheless, the proportion of farm receipts needed to meet interest payments remains relatively high historically, compared with those recorded for producers of all scales (figure 19).

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 continued increase in farm debt in recent years and static land values, some reduction in equity ratios has been recorded. At 85 per cent, average equity ratios for slaughter lamb producers in 2009–10 were similar to those recorded in 1999–2000, before the largest increases in land values occurred (figure 20).

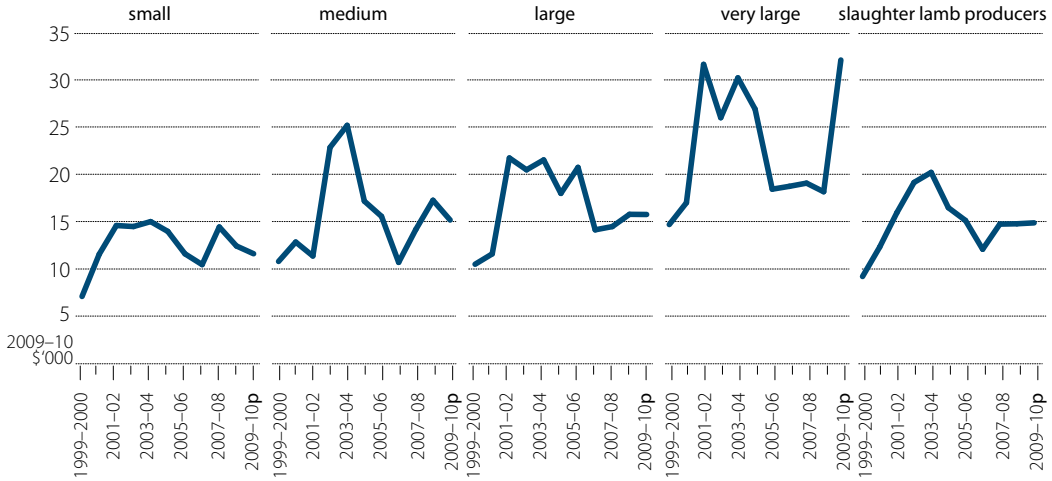
Overall, equity ratios remain high and reductions in equity ratios in recent years have mainly been for large and very large scale producers with high recorded levels of new investment and a strong capacity to service debt. Increases in farm financial performance are projected for 2010–11 and if expectations of sustained high lamb prices are realised over the medium term, investments should provide the basis to further increase productivity and scale of agricultural activities and continue to increase farm financial performance.

17 Change in farm business debt
average per farm



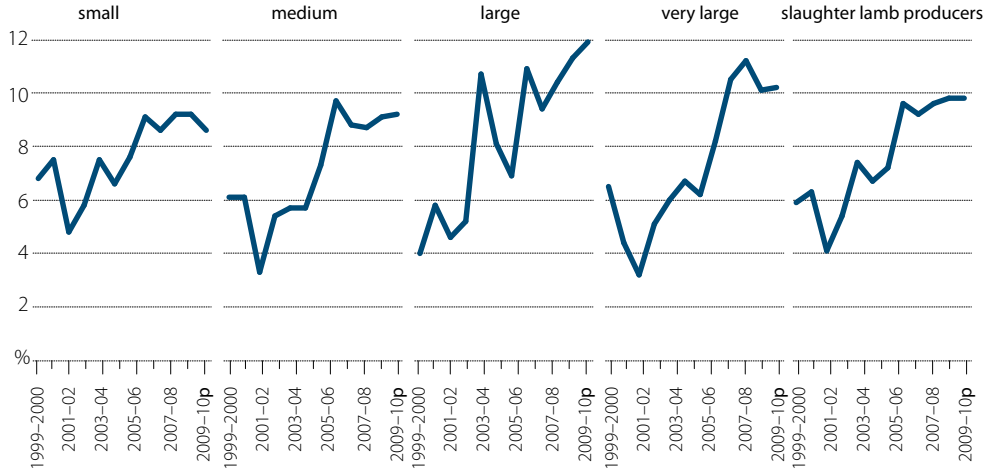
p Preliminary estimate.

18 Liquid assets, by number of lambs sold for slaughter
average per farm



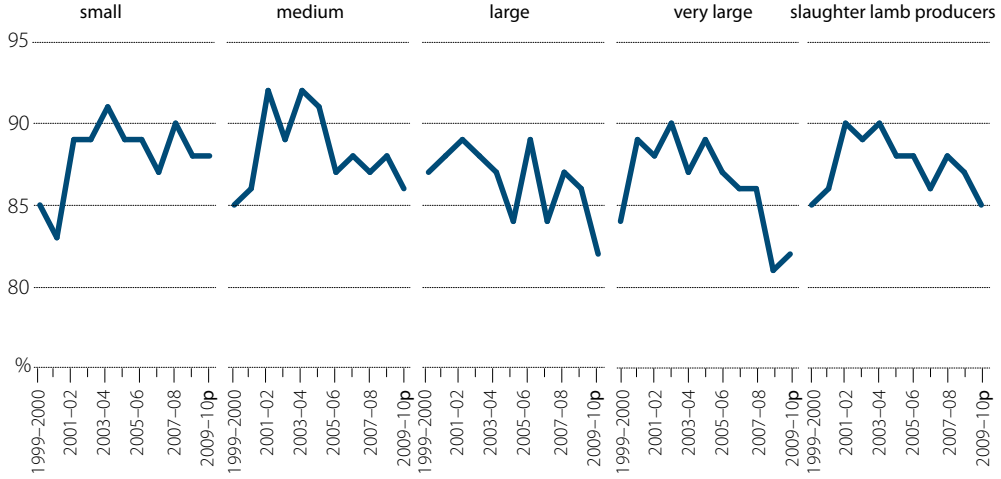
p Preliminary estimate.

19 Ratio of interest payments to total cash receipts, by number of lambs sold for slaughter average per farm



p Preliminary estimate.

20 Equity ratio, by number of lambs sold for slaughter
average per farm



p Preliminary estimate.

Survey methodology and definitions

Target population

ABARES surveys are designed and samples selected on the basis of a framework drawn from the Business Register maintained by the Australian Bureau of Statistics (ABS). The framework comprises businesses registered with the Australian Taxation Office. The ABR-based population list provided to ABARES consists of agricultural establishments in each statistical local area, classified by industry type and size of operation.

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. There is further information on ANZSIC and on the farming activities included in each of these industries in the Australian and New Zealand Standard Industrial Classification (ABS / Statistics New Zealand 2006, cat. no. 1292.0).

ABARES surveys target farming establishments that make a significant contribution to the total value of agricultural output (commercial farms). Farms excluded from the ABARES target population are the smallest units, and in aggregate 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, cat. no. 7506.0). 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 1991–92 the survey included establishments with an EVAO of $20 000 or more. Before 1986–87, the survey included establishments with an EVAO of $10 000 or more.

Survey design and sample weighting

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 to account for changes in the target population, as well as to reduce the burden on survey respondents.

The sample size for the AAGIS is usually around 1600.

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. Cooperating farms are required to provide detailed accounting information. Respondents to the 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 to address specific current issues.

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 the 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 the AAGIS, the benchmark variables provided by 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, reflecting both the strategy of sampling a higher fraction of the larger farms than smaller farms (the former having greater variability of key characteristics and accounting for a much larger proportion of total output) and the relatively lower numbers of large farms.

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 2008–09 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 2009–10 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 2010–11 estimates are projections developed from the data collected by on-farm interviews and telephone interviews in the period 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, 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 after interview. Projection estimates are necessarily subject to greater uncertainty than the 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, because 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 most 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 (RSEs) 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 $6000. This is one standard error. Two standard errors equal $12 000.

For a 66 per cent confidence interval, 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).

For a 95 per cent confidence interval, 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).

The size of the RSE is mainly influenced by the design of the survey, the sample size and the variability in the population. For example, the larger the sample size, the lower the RSE is likely to be.

Comparing estimates

When comparing estimates between two groups, it is important to recognise that the differences are subject to sampling error. As a rough rule of thumb, a conservative estimate (an overestimate) 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 farm cash income are $59 334 for small scale slaughter lamb producers and $51 664 for medium scale slaughter lamb producers, with the relative standard errors given as 38 and 42 per cent respectively. The difference between these two estimates is $7670. The standard error of the difference can be estimated as:

$$\sqrt{((38 \times \$59\,334 / 100)^2 + (42 \times \$51\,664 / 100)^2)} = \$31\,292$$

A 95 per cent confidence interval for the difference is:

$$\$7670 \pm 1.96 \times \$31\,292 = (-\$53\,662, \$69\,002)$$

Hence, if 100 different samples are taken, in 95 of them, the difference between these two estimates is between –$53 662 and $69 002. Also, since zero is in this confidence interval, it is possible to say that the difference between the estimates is not statistically significantly different from zero at the 95 per cent confidence level.

Definition of terms

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

Area operated Includes all land operated by the business, whether owned or rented by the business.

Labour Measured in work-weeks, as estimated by the owner manager. It includes all work on the business by the owner manager, partners, family, hired permanent and casual workers, but excludes work done by contractors.

Hired labour Excludes the owner manager, partners and family labour, and work undertaken by contractors. Expenditure on contract services appears as a cash cost.

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, irrigation plant etc.

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.

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 survey interview, supplemented by information contained in the farm accounts.

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 liquid assets Assets owned by the farm business which can be readily converted to cash. They include savings bank deposits, interest bearing deposits, debentures and shares. Items such as real estate, life assurance policies and other farms or businesses are excluded.

Receipts and costs 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.

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.

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.

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.

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. Total cash receipts include revenue received from agistment, royalties, rebates, refunds, plant hire, contracts, sharefarming, insurance claims and compensation, and government assistance payments to the farm business.

Total cash costs 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). These costs include 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.

- Handling and marketing expenses include commission, yard dues and 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, traveling 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.

Farm cash income The difference between total cash receipts and total cash costs.

Buildup 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.

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.

Farm business profit Farm cash income plus buildup in trading stocks, less depreciation and the imputed value of the owner manager, partner(s) and family labour.

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
- rate of return including capital appreciation.

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 equity ratio Calculated as farm business equity as a percentage of owned capital at 30 June.

Off-farm income Income not derived from the surveyed farm business. 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.

Lamb turn-off rate Proportion of lambs marked that were sold during the financial year.

Sheep turn-off rate Proportion of adult sheep on hand at 1 July that were sold during the financial year.

References

ABS / Statistics New Zealand 2006, *Australian and New Zealand Standard Industrial Classification 2006*, cat. no. 1292.0, ABS Canberra, February.

Bardsley, P and Chambers, RL 1984, 'Multipurpose estimation from unbalanced samples', *Journal of the Royal Statistical Society, Series C* (Applied Statistics), vol. 33, pp. 290–9.

Further information on lamb producers

Farm survey data for the beef, lamb and sheep industries
www.abares.gov.au/surveys

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